

The Geeglee logo features a stylized 'G' composed of a grid of white dots of varying sizes, creating a 3D effect. To the right of the 'G' is the word 'Geeglee' in a bold, white, sans-serif font, followed by a registered trademark symbol (®).

Geeglee®

AUGMENTED HUMAN INTELLIGENCE

Know, Understand, Plan and Act



LA
PLACE
STRATÉGIQUE

This training document is broken down into three parts:

Geeglee's ontology



Generic tools handle



Specific tools handle





OBJECTIVES OF THIS 2-DAY TRAINING



OBJECTIVES OF THIS TRAINING

DAY ONE: HOW TO USE BOTH GEEGLEE

- Quick reminder about Geeglee
 - What is it useful for?
 - Geeglee « Pattern » and « Intelligence »
- Geeglee Pattern “GEP”
 - Method and functionalities behind “GEP”
 - How to initiate your first model?
 - How to use all functionalities?
- Geeglee Intelligence “GEI”
 - Method and functionalities behind “GEI”
 - How to build consistent GEI analysis?
 - How to use automatic GEP analysis in GEI?

DAY TWO: APPLY IT TO YOUR NEEDS

- Initiate your first “real” project into Geeglee
 - With the support of a modeling expert

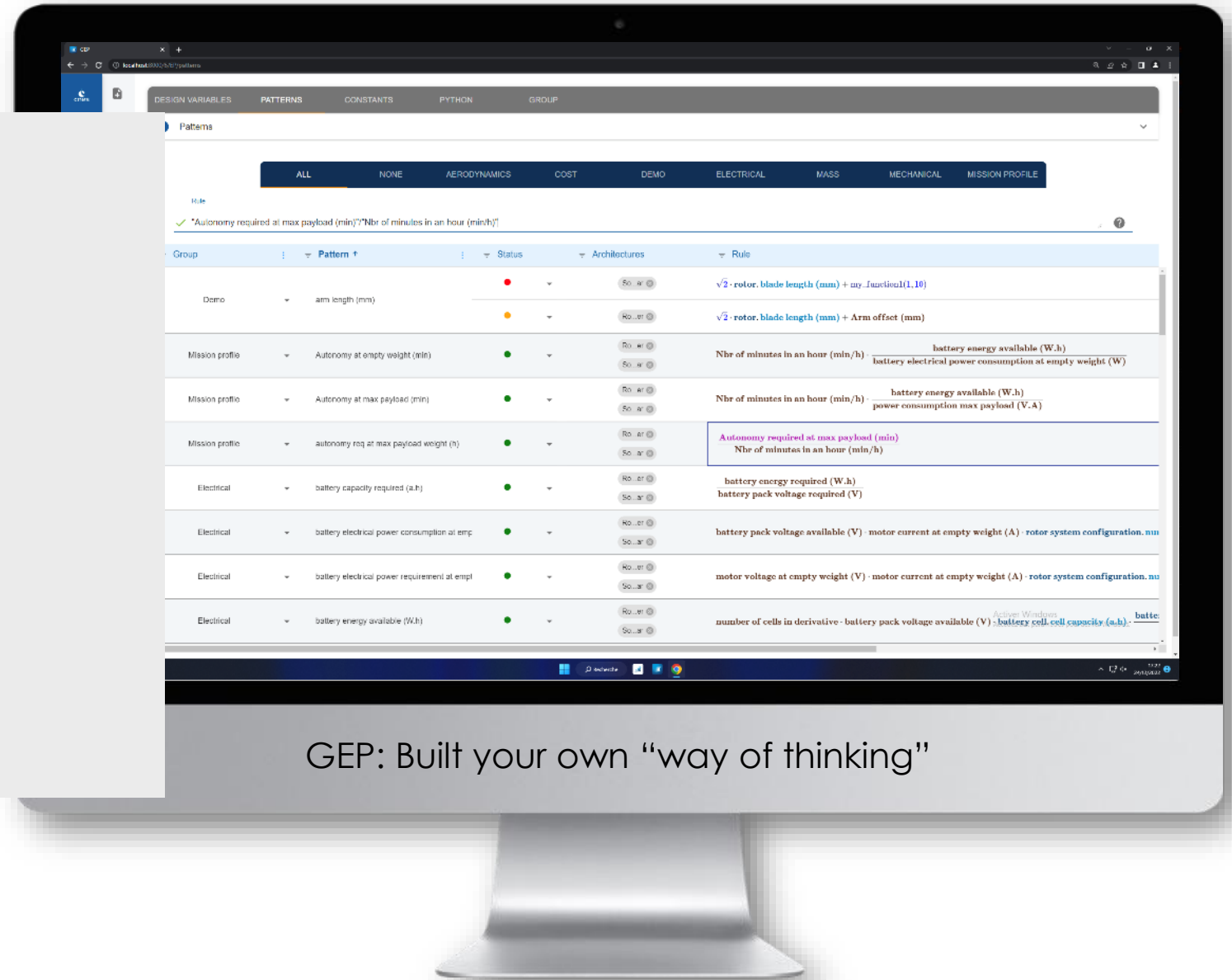
TO GO FURTHER: THE EXAMPLE BOOK

- Best practices while modeling
- The Wind Farm example

01

Modeling in GEP

« Geeglee Pattern »



Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.
 - It can be an overall electrical aircraft project, or only the battery pack or even all your know-how...

Geegle's definition

PROJECT EXAMPLE: ENGINEERING DESIGN A PLANE



Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.

SOI, standing for System-of-Interest:

- It is the ambition perimeter of study for your system.
 - It can include all or only a part of the project.

Geeglee's definition

SOI, STANDING FOR SYSTEM-OF-INTEREST, EXAMPLE: ENGINEERING DESIGN THE “MOTOR”



It's blurry because, at this stage, only the main function is known!

Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.

SOI, standing for System-of-Interest:

- It is the ambition perimeter of study for your system.
 - It can include all or only a part of the project.

TIPS #1: breakdown your SOI to minimize dependencies (Nam Suh theory)

TIPS #2: breakdown your SOI CANNOT be to split engineering vs. testing

Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.

SOI, standing for System-of-Interest:

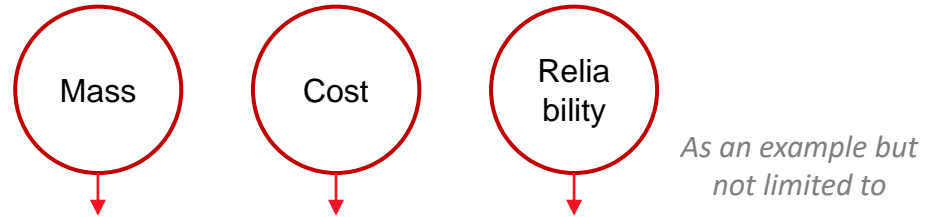
- It is the ambition perimeter of study for your system.
 - It can include all or only a part of the project.

HLR, standing for High-Level Requirements

- All Key Performance Indicators that you may concern for your decision purpose.

Geeglee's definition

HLR, STANDING FOR HIGH-LEVEL REQUIREMENTS, FOR EXAMPLE THE OBJECTIVES OF YOUR SOI



All the KPI needed to take your decision on the choice of the system

Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.

SOI, standing for System-of-Interest

- It is the ambition perimeter of study for your system.
 - It can include all or only a part of the project.

HLR, standing for High-Level Requirements

- All Key Performance Indicators that you may concern for your decision purpose.

Environments

- Any external things interacting with our SOI.
 - Anything that will influence your engineering design on which you do not have a hand/the control).

Geeglee's definition

ENVIRONMENT SYSTEMS EXAMPLE



*The plane itself
(without its motors)*



Maintenance team



Airline companies

A much more (all needed): weather...

Motors position

Duration

Flight range (km)

Nber of passengers (#)

Mass

Cost

Reliability



Geeglee's definition

ENVIRONMENT SYSTEMS DEFINITION

In Geeglee, environment is a breakdown in two categories:

1. Environment systems

- Any external systems interacting with our SOI. Systems that will influence your decisions on which you do NOT have a hand/the control
- Alternatives
 - Any potential implementation of environmental systems. Only one alternative if the environment system never changes, few if context may change
- Characteristics
 - Any characteristics needed to define an environment system
- Values
 - Values of characteristics for any alternatives (can be real data or just comparison values)

Geeglee's definition

ENVIRONMENT SYSTEM EXAMPLE



Airline companies

Environment system is useful to set characteristic that are correlated.

Alternatives for Airline companies environment

<i>Companies name</i>	Air France	EasyJet	Emirates
<i>Characteristic</i>			
Investment capacity (€)	1Mds	100M	10Mds
Flight range (km)	4800	1000	6000
Number of passengers to carry (#)	230	230	400
Operational cost per passengers (€) (on an average trip)	500	90	1500
			<i>Values</i>

Geeglee's definition

ENVIRONMENT SYSTEMS DEFINITION

In Geeglee, environment is broken down in two categories:

1. Environment systems

- Any external systems interacting with our SOI. Systems that will influence your decisions on which you do NOT have a hand/the control.
- Alternatives
 - Any potential implementation of environmental systems. Only one alternative if the environment system never changes, few if context may change
- Characteristics
 - Any characteristics needed to define an environment system
- Values
 - Values of characteristics for any alternatives (can be real data or just comparison values)

2. Environment variables

- Any external variables (on which you have NO hands) that you want to test for any environment system configuration.

Geeglee's definition

ENVIRONMENT VARIABLES EXAMPLE



Environment variables are useful to test a full set of combinations of variables.

For instance, runway characteristics vary following the considered airport.

If you want to test the capacity of an airplane to take off from thousands of airports, it's much easier to set values and to lead Geeglee to explore to combination of values automatically.

Differences between environment system and variable

ENVIRONMENT SYSTEM: EVERY CHARACTERISTIC IS CORRELATED
 – IT MEANS THAT GEEGLEE WILL **NOT TRY TO MIX** VALUE CHARACTERISTICS OVER PROPOSED ALTERNATIVES

ENVIRONMENT VARIABLE: EVERY CHARACTERISTIC IS NOT CORRELATED – IT MEANS THAT GEEGLEE WILL **TRY TO MIX** VALUE CHARACTERISTICS

<i>Companies name</i>	Air France	EasyJet	Emirates
<i>Characteristic</i>			
Investment capacity (€)	1Mds	100M	10Mds
Flight range (km)	4800	1000	6000
Number of passengers to carry (#)	230	230	400
Operational cost per passengers (€) (on an average trip)	500	90	1500

Investment capacity (€) = (100M, 1Mds, 10Mds)

Flight range (km) = (1000, 4800, 6000)

Nber of passengers = (230, 400)

Operational cost = (90, 500, 1500)

**Environment Variable =
54 alternatives to test (3*3*2*3)**

**Environment System =
3 alternatives to test**



Geeglee's definition

OVERALL DEFINITION

Black Box

- Is everything around your SOI. By around, we mean everything that will influence your system (the design of) on which you do NOT have the hand (you cannot choose them, you must be robust in regard to them)
- *In Geeglee, its integrate:*
 - HLR
 - All Key Performance Indicators that you may concern for your decision purpose.
 - Environments
 - Any external things interacting with our SOI (anything that will influence your engineering design on which you do not have a hand/the control).
- 1. Environment systems
 - Any external systems interacting with our SOI. Systems that will influence your decisions on which you do NOT have a hand/the control
- 2. Environment variables
 - Any external variables (on which you have NO hands) that you want to test for any environment system configuration.

Geeglee's definition

ENVIRONMENTS

- Incompatibility
 - Does environment systems cannot occur at the same time? Incompatibility must be used to avoid the simultaneous occurrence that cannot exist in SOI life

Geeglee's definition

HIGH-LEVEL REQUIREMENTS

Constraints (system level)

- Geeglee is an exploration tool. It means that it does NOT decide anything for you: the Geeglee Intelligence will let you take the hand on the result to choose.
- Constraints, as well as incompatibility, are the only place where Geeglee can take the hands and kill solutions for you. Set any constraints that must be satisfying to achieve a feasible solution.
- Use only system KPIs as for instance :
 - Plane must have the length to take off : “take off length” < “Runway length”

Geeglee's definition

OVERALL DEFINITION

Project

- It is the database that will contain all the relevant data for your project.

SOI standing for System-of-Interest:

- It is the ambition perimeter of study for your system.

Black Box

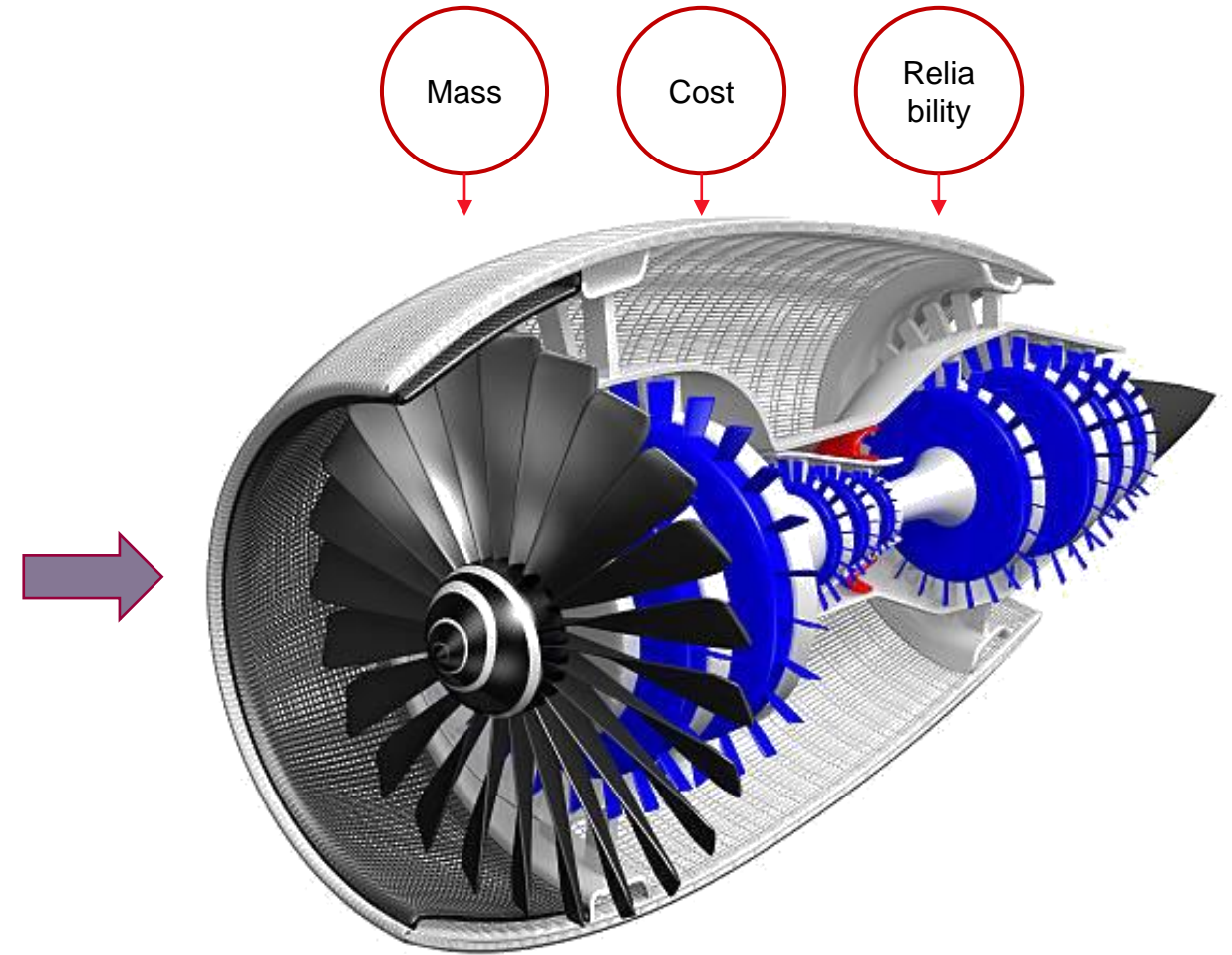
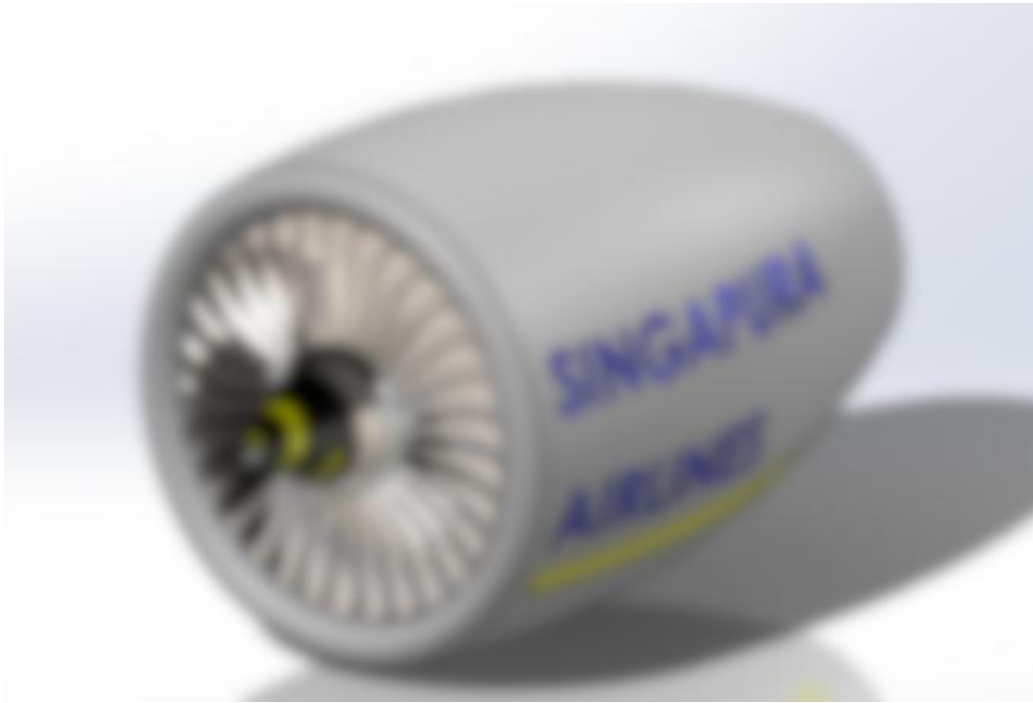
- Is everything around your SOI. By around, we mean everything that will influence your system (the design of) on which you do NOT have the hand (you cannot choose them, you must be robust in regard to them)

White Box:

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

Geeglee's definition

WHITE BOX EXAMPLE



Geeglee's definition

WHITE BOX DEFINITION (1/6)

White Box (reminder)

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

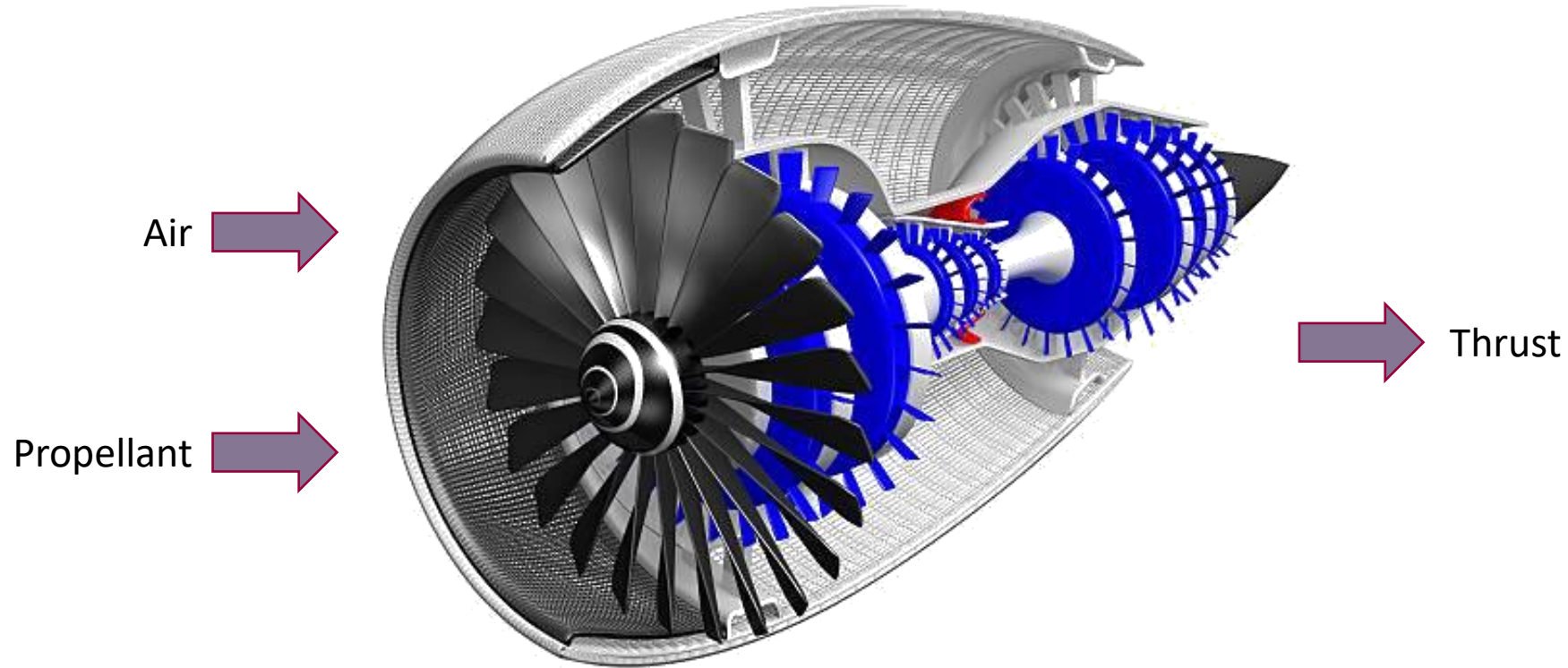
Function (**what the system does**)

- Any leaf functions need for the system.
 - Up to now, Geeglee does NOT capitalize FBS in it entire breakdown: only low level is set.

Geeglee's definition

MAIN FUNCTION EXAMPLE

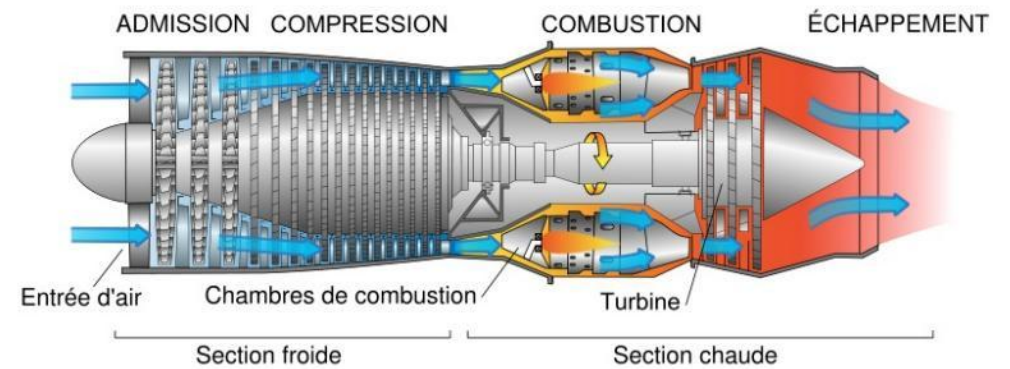
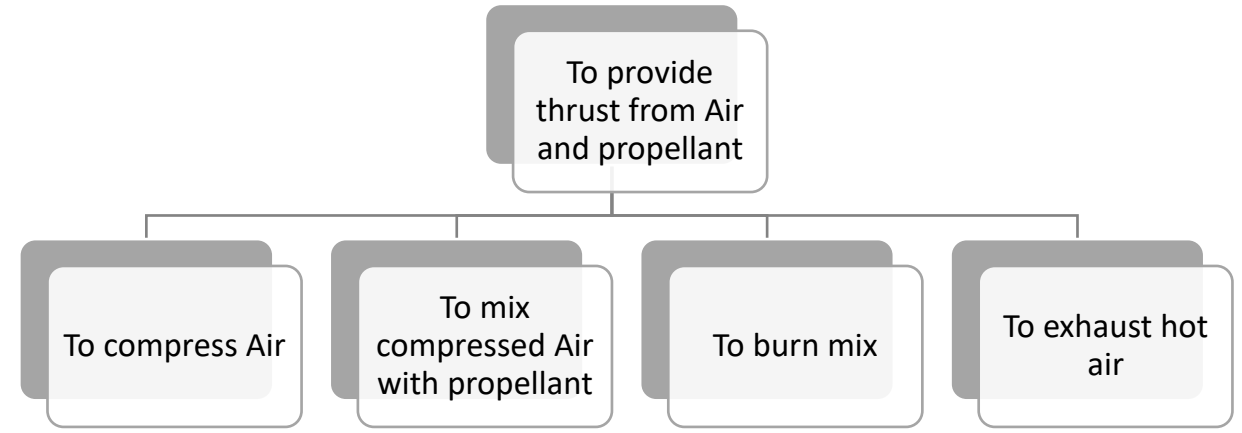
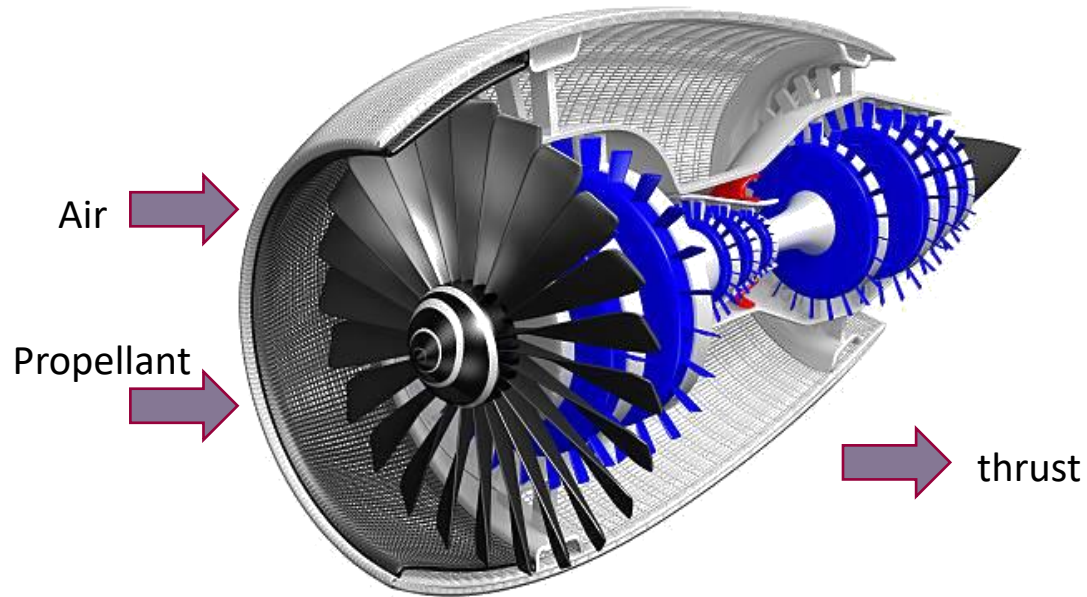
Main Function: "To provide thrust from air and propellant"



Geeglee's definition

FUNCTION BREAKDOWN STRUCTURE EXAMPLE

Main Function: "To provide thrust from Air and propellant"



Geeglee's definition

WHITE BOX DEFINITION (2/6)

White Box (reminder)

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

Function (what the system does)

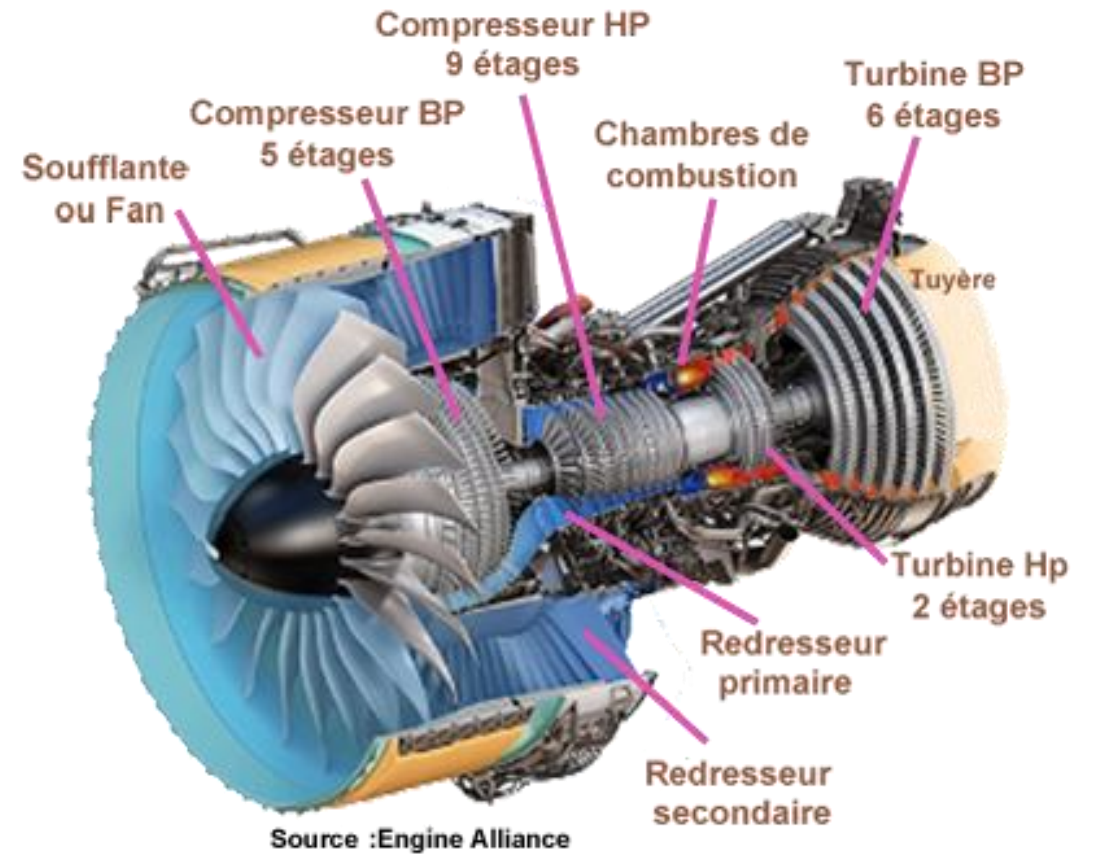
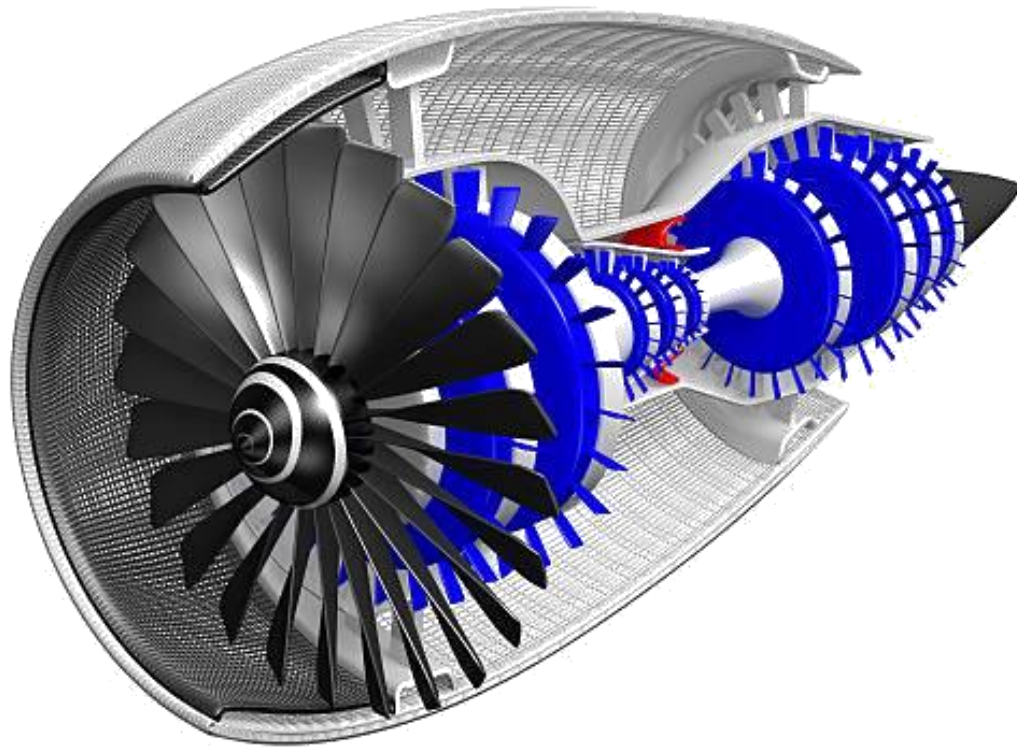
- Any leaf functions need for the system.
 - Up to now, Geeglee does NOT capitalize FBS in it entire breakdown: only low level is set.

Module (what the system is)

- Any leaf element of the PBS for the system.
 - Up to now, Geeglee does NOT capitalize PBS in it entire breakdown: only low level is set.

Geeglee's definition

MODULE EXAMPLE



Geeglee's definition

WHITE BOX DEFINITION (3/6)

White Box (reminder)

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

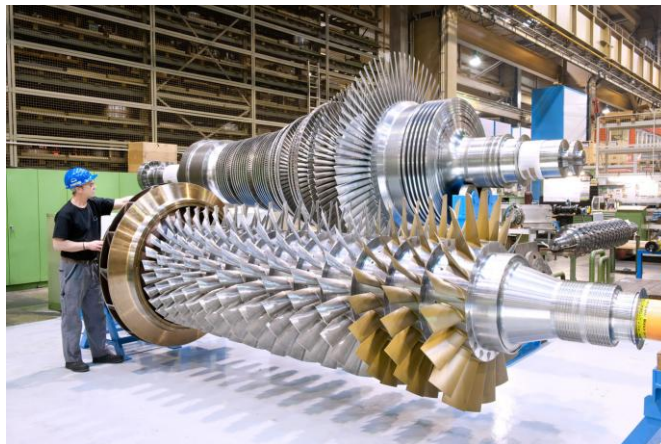
Module (**what the system is**)

- Any leaf element of the PBS for the system (within all diversity of architecture).
- Characteristics
 - Any characteristics needed to define a module
- Alternatives
 - Any potential implementation of modules. Only one alternative if you have no choice.
- Values
 - Values of characteristics for any alternatives (can be real data or just comparison values)

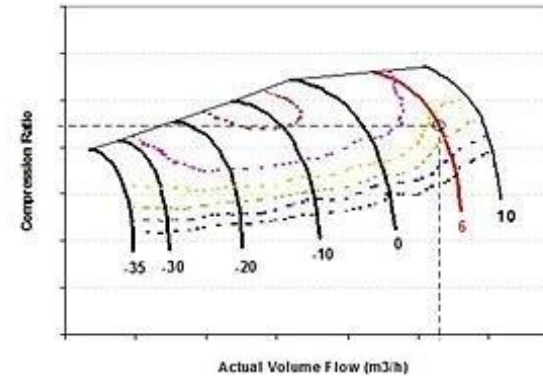
Geegle's definition

MODULE EXAMPLE: DIFFERENCES BETWEEN AXIAL & CENTRIFUGAL COMPRESSORS

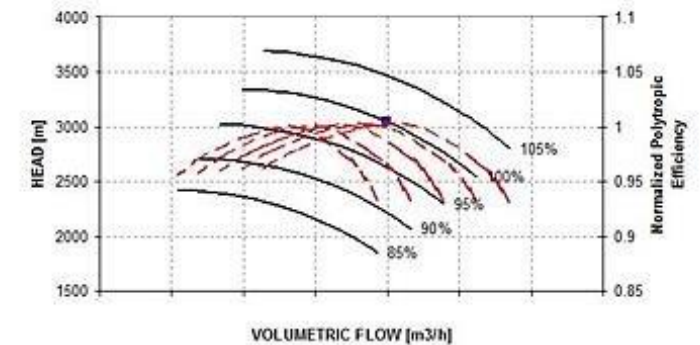
Alternatives for compressor's module



Axial Compressor



Centrifugal Compressor



Characteristics of compressor's module

- 16 – 28 MW
- up to 5 Kg/m³ inlet density
- up to 300,000 m³/h inlet vol flow
- high efficiency 90%
- flexibility for operation and start up
- fixed speed, VSV, reliability

- 16 – 44 MW
- up to 60+ bar disch press
- IGV&speed variation
- good efficiency 86%
- up to 500,000 m³/h (double flow)
- High reliability

Geeglee's definition

WHITE BOX DEFINITION (4/6)

White Box (reminder)

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

Module (what the system is)

- Any leaf element of the PBS for the system (within all diversity of architecture).
- Characteristics
 - Any characteristics needed to define a module
- Alternatives
 - Any potential implementation of modules. Only one alternative if you have no choice.
- Values
 - Values of characteristics for any alternatives (can be real data or just comparison values)
- Incompatibility
 - Does module alternatives cannot occur at the same time? Incompatibility must be used to avoid the simultaneous occurrence that cannot exist

Geeglee's definition

WHITE BOX DEFINITION (5/6)

AJOUTER : vision d'ingénieurs

White Box (reminder)

- Is everything inside your SOI. By inside, we mean everything that you decide (it's your perimeter of responsibility) on which you have the hand (the goal of your model is to choose them, you must choose it)

Function (what the system does)

- Any leaf functions need for the system.

Module (what the system is)

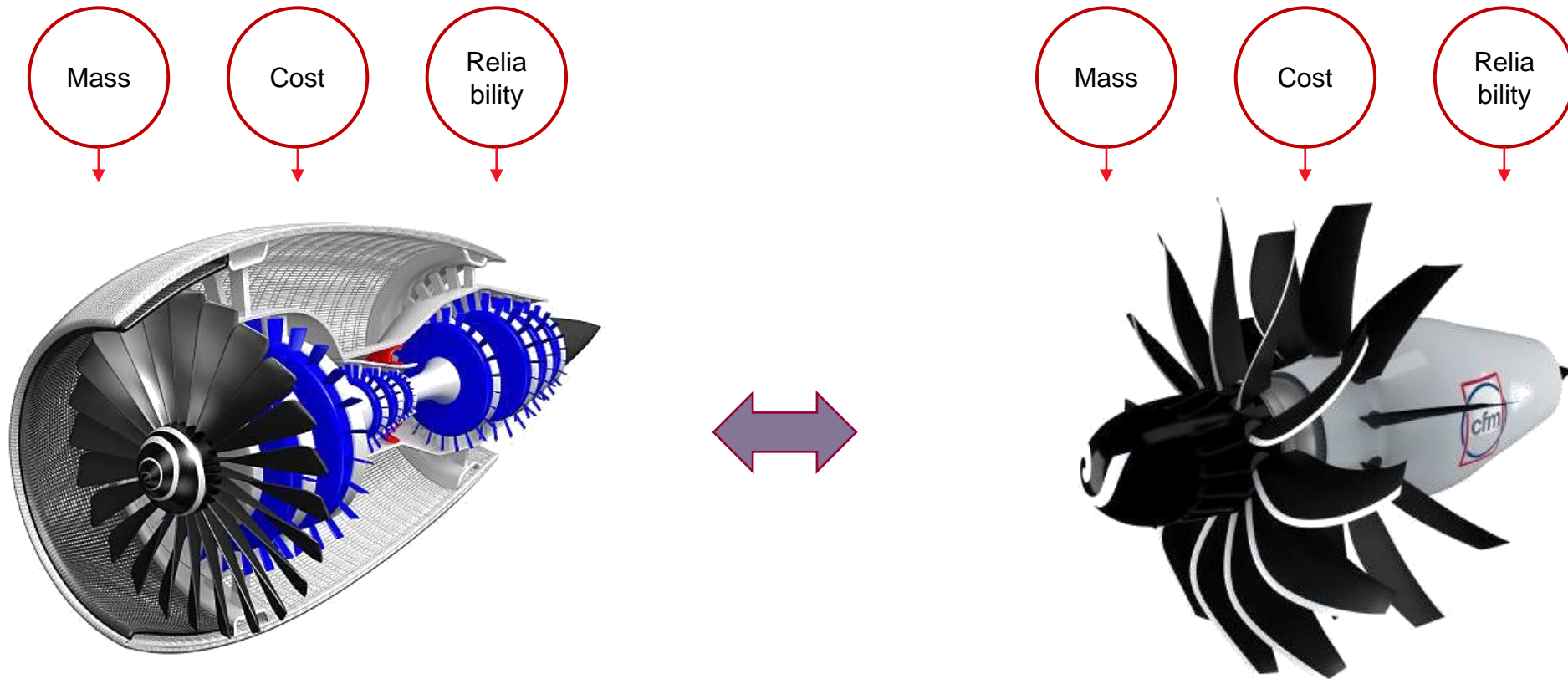
- Any leaf element of the PBS for the system.

Architecture (Crawley's definition)

- An architecture is the allocation of a Functional Breakdown Structure into a Product Breakdown Structure so the allocation of a unique set of function into a unique set a module.
- Experts know that if FBS or either PBS change, the behavior of the system changes so, as a consequence, the way of thinking of the system will change.
- It's why Geeglee is made to carry several architectures.

Geeglee's definition

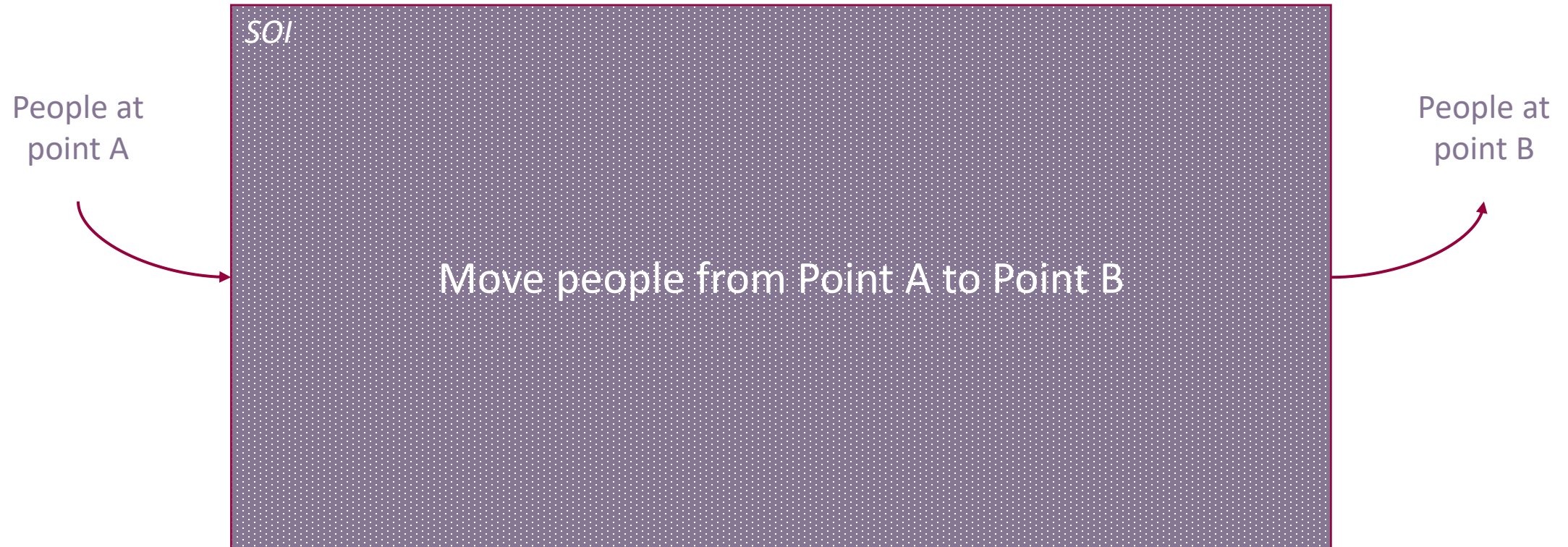
ARCHITECTURE EXAMPLE (1/3)



The way of working of these systems will be different = our way of thinking these systems will be different too

Geeglee's definition

ARCHITECTURE EXAMPLE (2/3)



Geeglee's definition

ARCHITECTURE EXAMPLE (2/3)



The way of working of these systems will be different = our way of thinking these systems will be different too

Geeglee's definition

ARCHITECTURE EXAMPLE (3/3)



It's the same architecture = only one Geeglee Pattern model!

Geeglee's definition

WHITE BOX DEFINITION (6/6)

Architecture (Crawley's definition)

- An architecture is the allocation of a Functional Breakdown Structure into a Product Breakdown Structure so the allocation of a unique set of function into a unique set of a module.
- Experts know that if FBS or either PBS change, the behavior of the system changes so, as a consequence, the way of thinking of the system will change.
- It's why Geeglee is made to carry several architectures.

Patterns

- Any rules you have in mind to explain how your SOI will work (or you believe it will work). Typically, all the formulas you can put in Excel® files.
- Python
 - Any complex algorithm, any connection to external software (take care of calculation time including communication time with the external software). Typically, everything you will put in Excel®'s VBA.

Constante

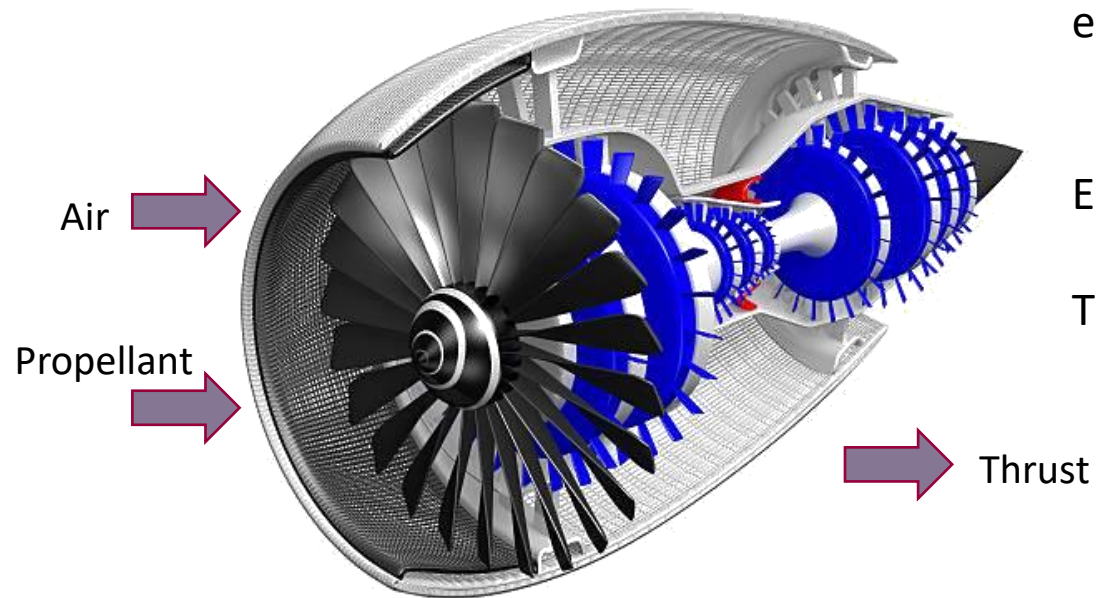
- Any Constante value to use in Patterns

Design Variables

- Any variables you want to test using several values (on which you have the hand)

Geegle's definition

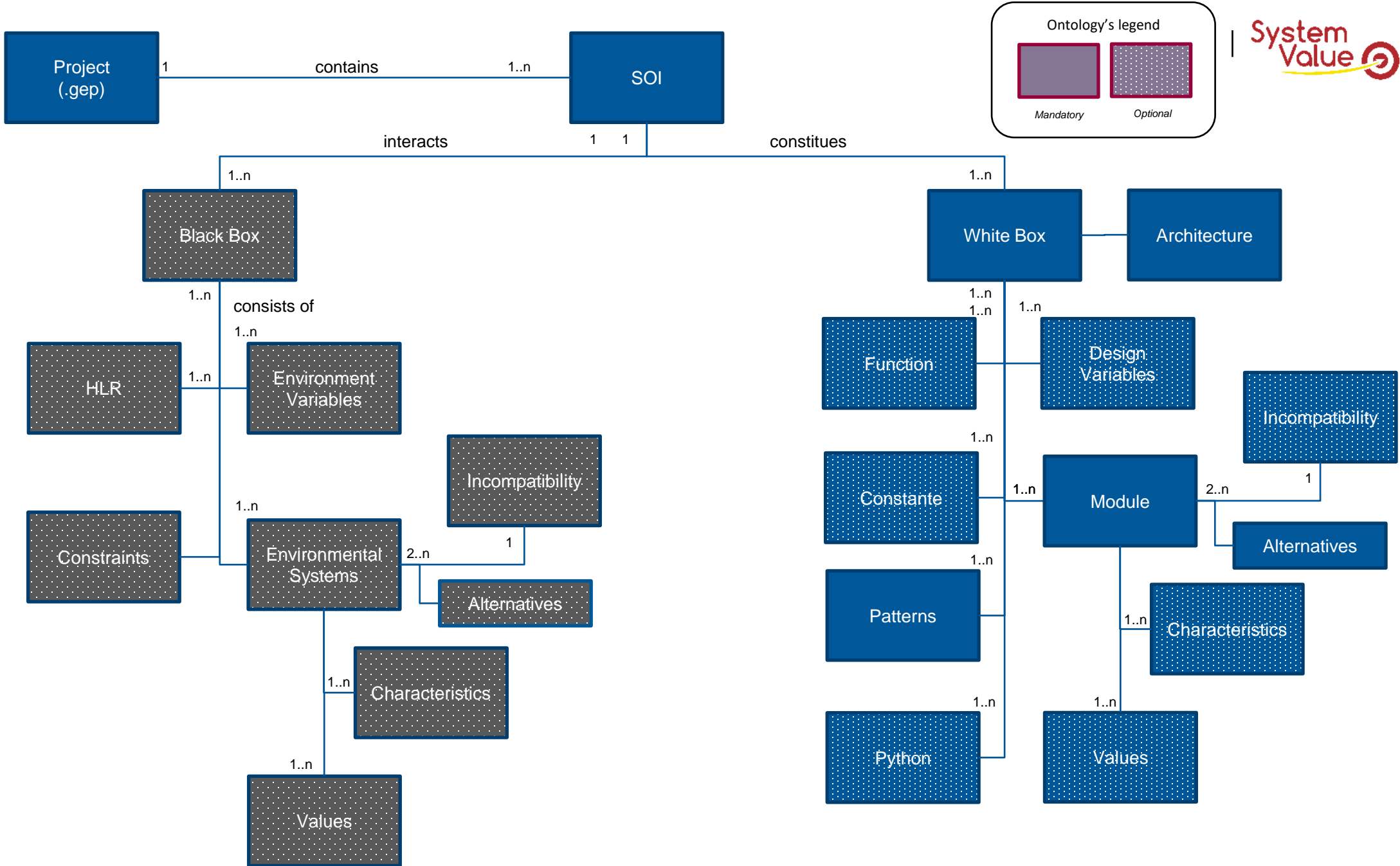
PATTERN EXAMPLE

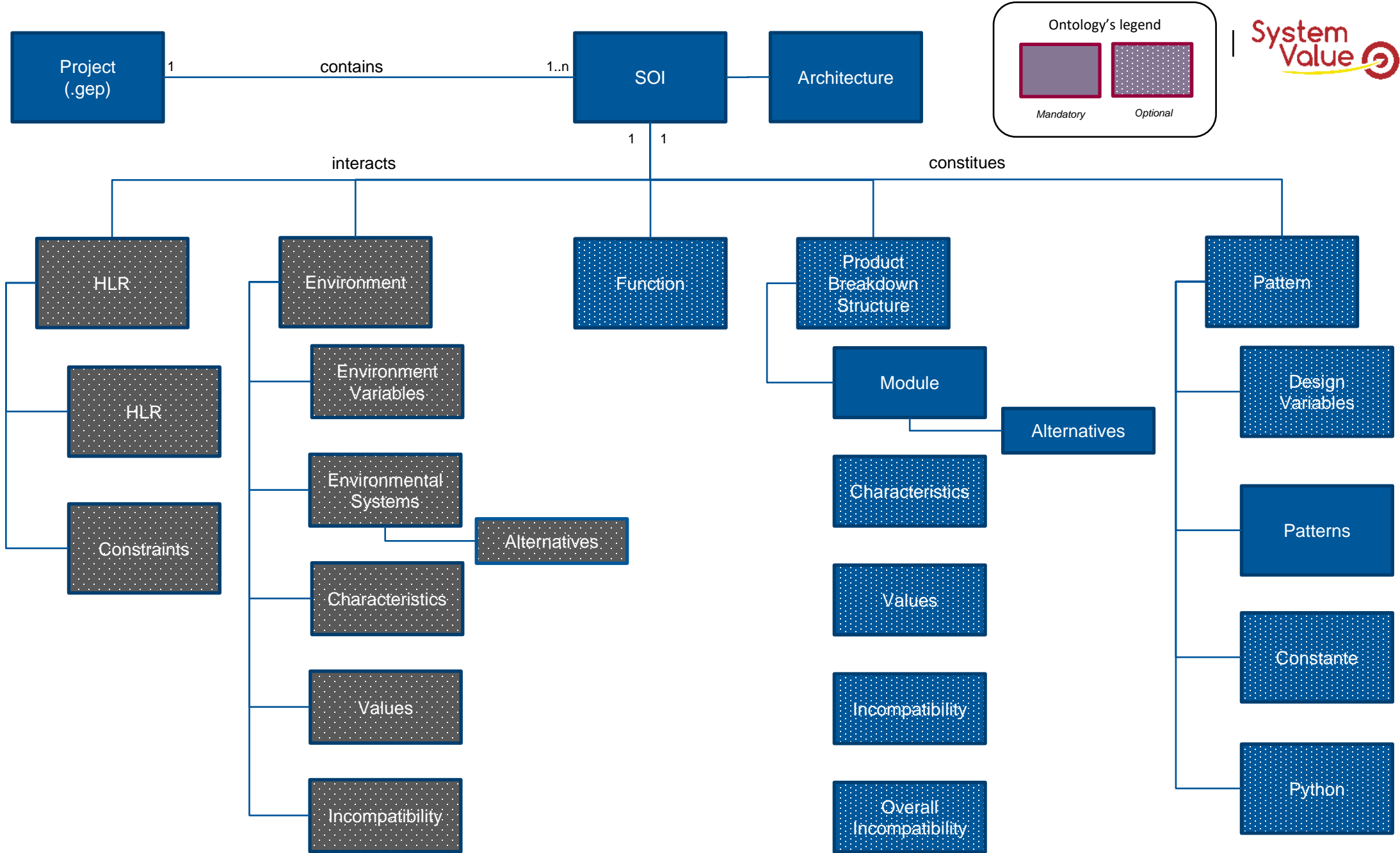


Thanks for vector functions embedded into Geegle, the engine's diameter can be defined as:

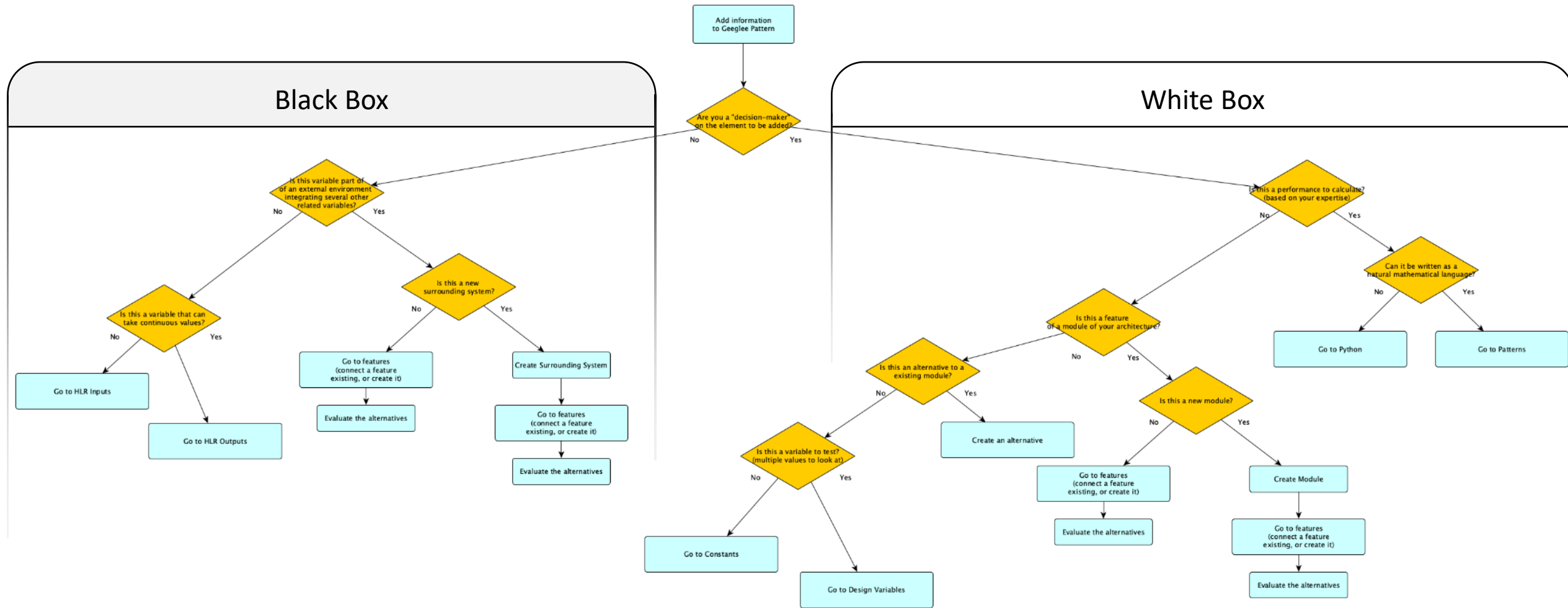
Engine diameter = max(."Diameter of rotating elements")+."Offset"

Then "Offset" must be defined.

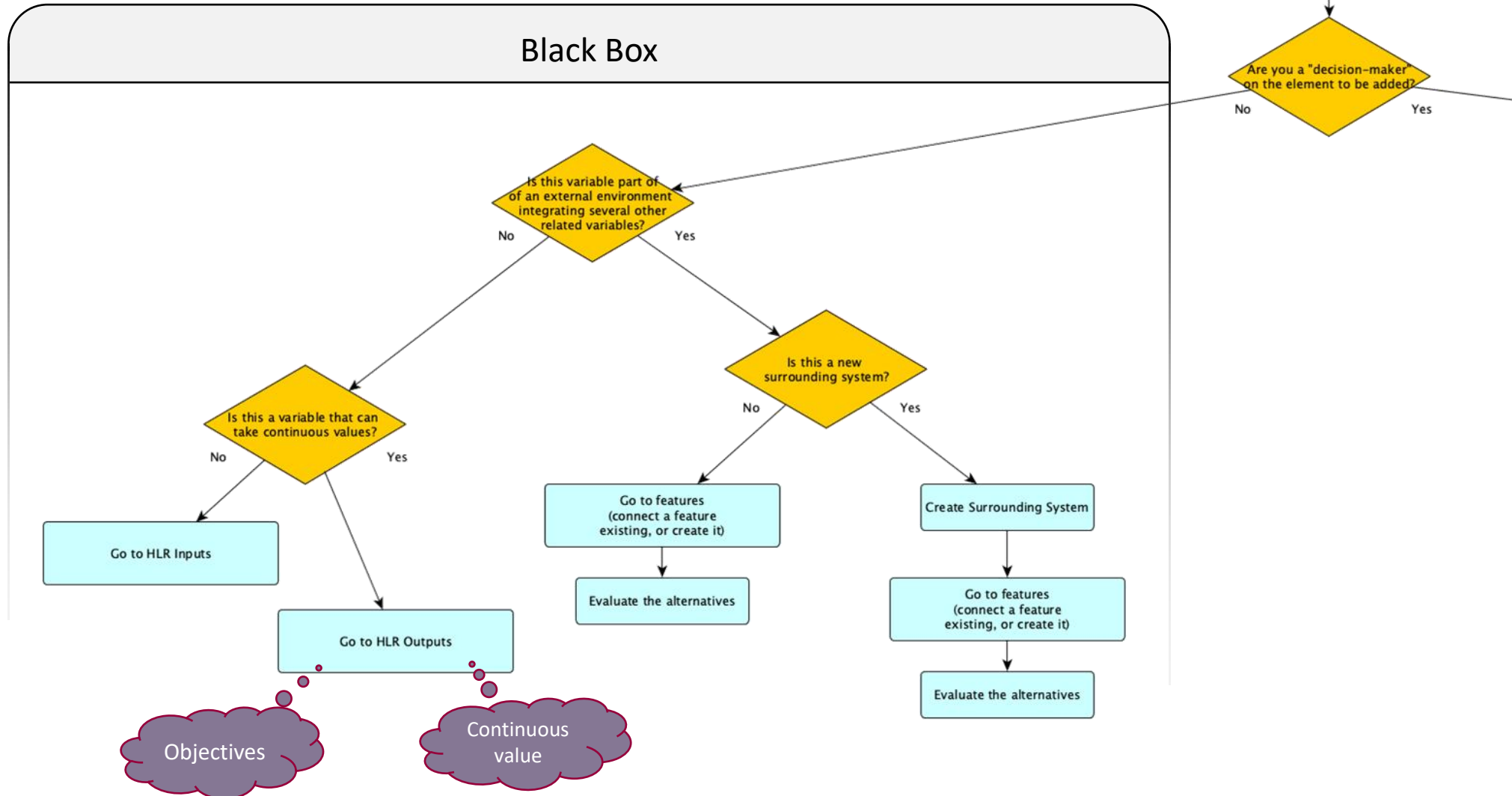




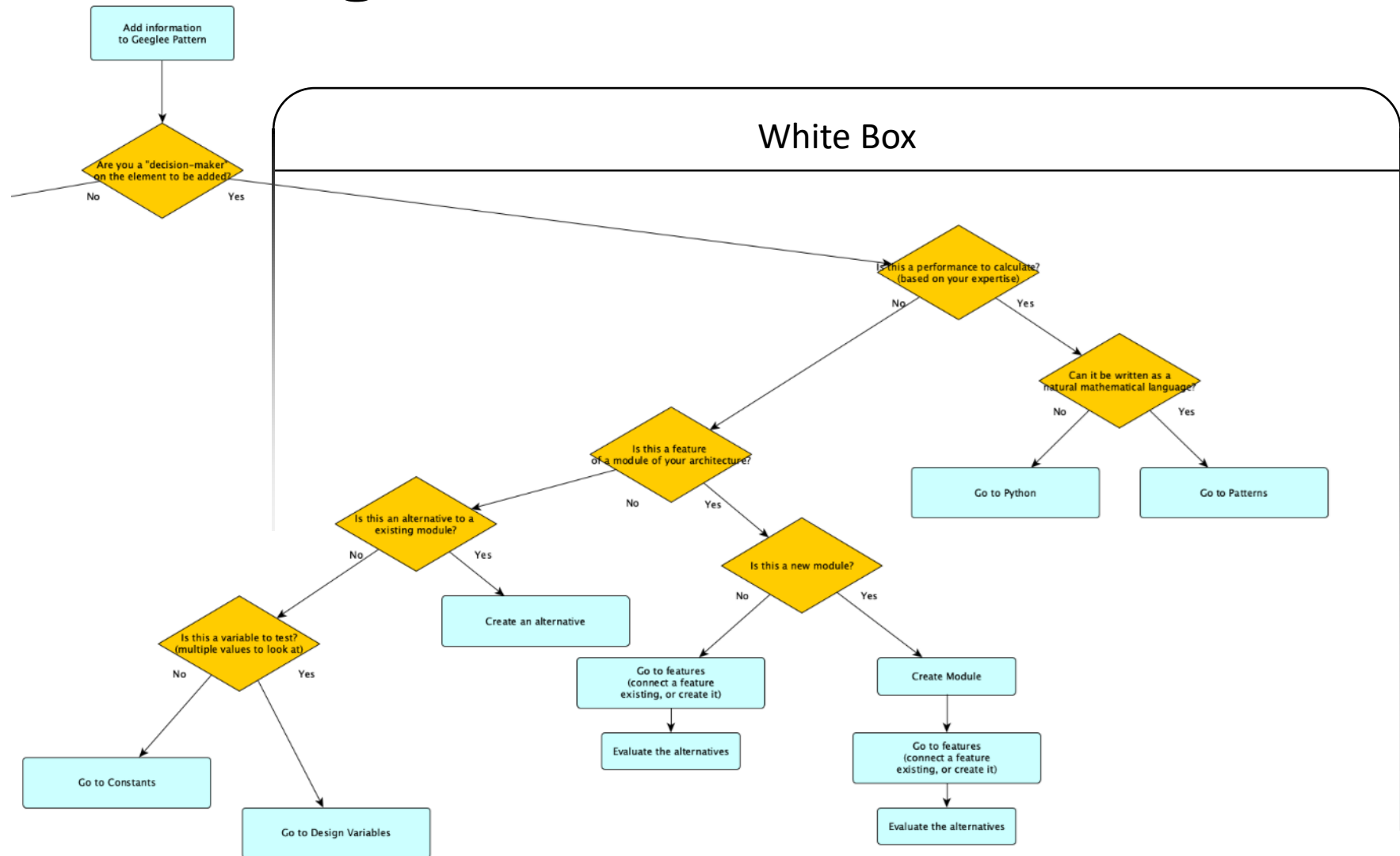
Where to add data in Geeglee?



Where to add data in Geeglee?



Where to add data in Geeglee?



REX of best practices using Geeglee Pattern

RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

1. If needed, rename the software ontology to fit your culture/problem
2. Start by describing an idea you have in mind to solve the problem: how you can do?

You will discover that, thanks to the structure of Geeglee, describing a solution will let you explore hundred or more alternatives

1. Start to describe the solution using Pattern!
 1. Set your first pattern (usually it's a requirement breakdown),
 1. Do not forget units!
 2. Add the group as much as you want to explain your logic (ex: 1.cabinet breakdown; 2.rack breakdown...)

Built your pattern by thinking, first, « width » and, second, in « depth ». For instance:

Total Cost of Ownership (€) = « CAPEX (€) »+« OPEX (€) »

CAPEX (€) = « Engineering CAPEX (€) »+« Manufacturing CAPEX (€) »

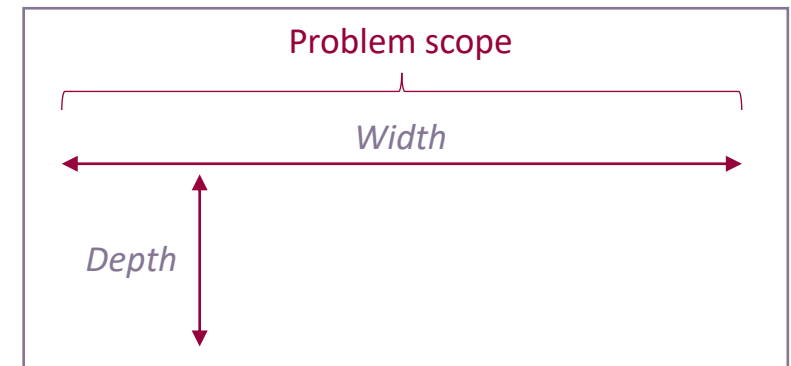
Manufacturing CAPEX (€) = 0 (if you don't know the rule, waiting to find it)

This approach is the right one to help you to consider any aspect of your problem

The following example will help to understand that in more detail

3. Set color status according to your knowledge

This will help you to improve quickly your maturity model
2. Keep going to set pattern until you need (see next step)
2. To know where to put data, follow the following questions



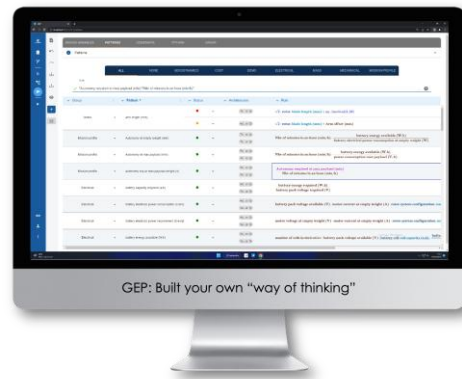
REX of **pitfalls** using Geeglee Pattern

NOT RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

- ❌ It's **not useful** to list all modules, as well as, all characteristics soon at the beginning of the modeling
 - This only leads to maintain a lot of data not useful for the pattern
 - Built pattern and, when you need, add module and characteristics
- ❌ It's **not useful** to list many values at the beginning (for HLR input for an environment variable, or for a design variable)
 - This will lead to improve simulation time and (reduce model improvement agility)
- ❌ It's **not useful** to change several times a reference configuration. Set it and keep it as a reference.
 - This will lead to lost time while analyzing GEP patterns
 - If needed, create a new one(s)!

“

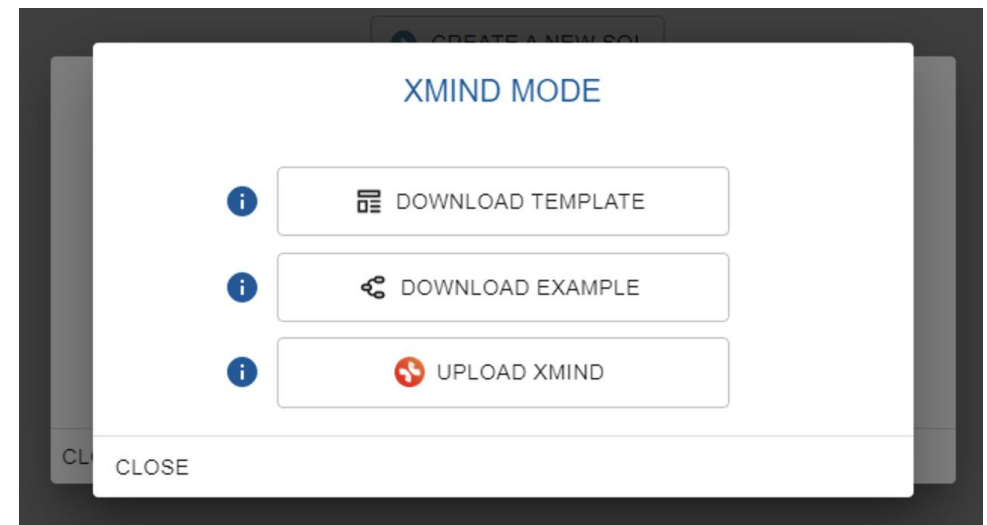
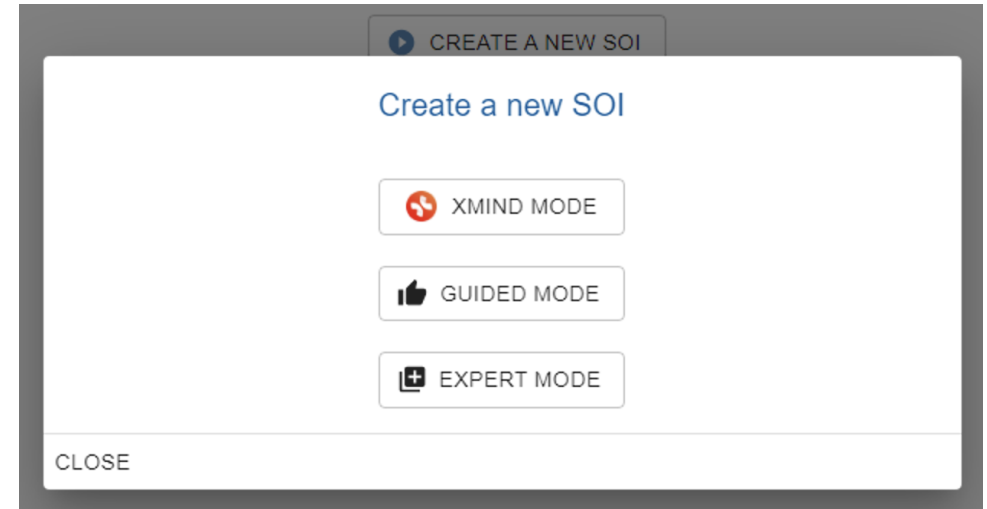
Using a mind map to create a Geeglee project



How to initiate a Geeglee project using a mind map?

FEW STEPS TO FOLLOW

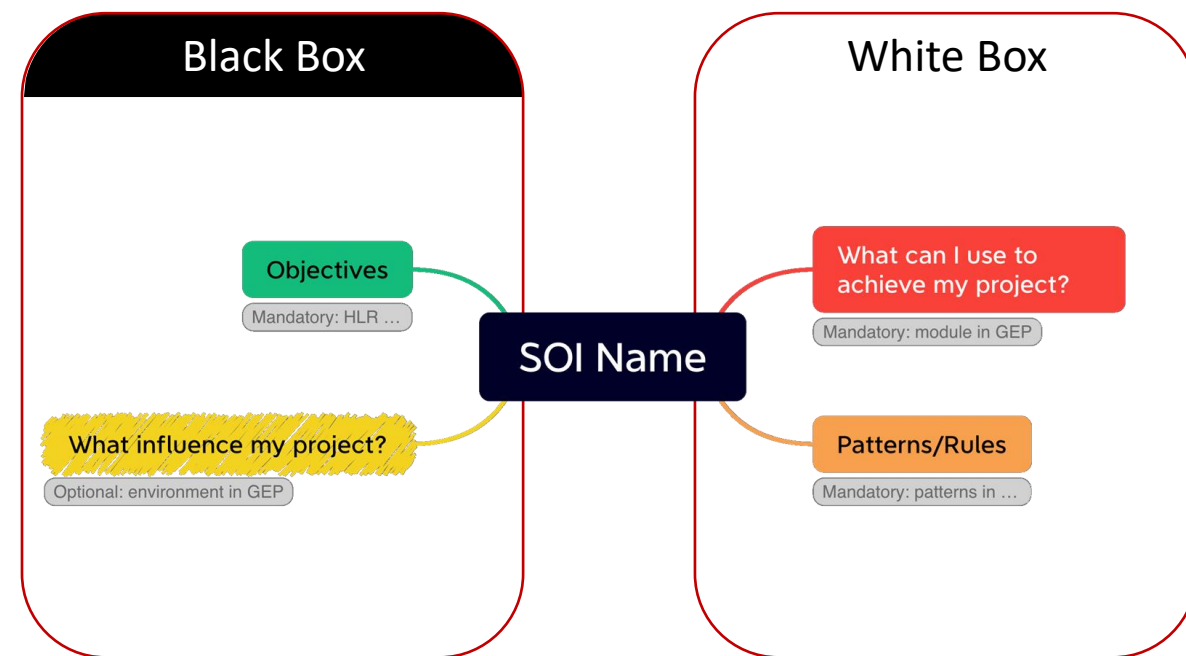
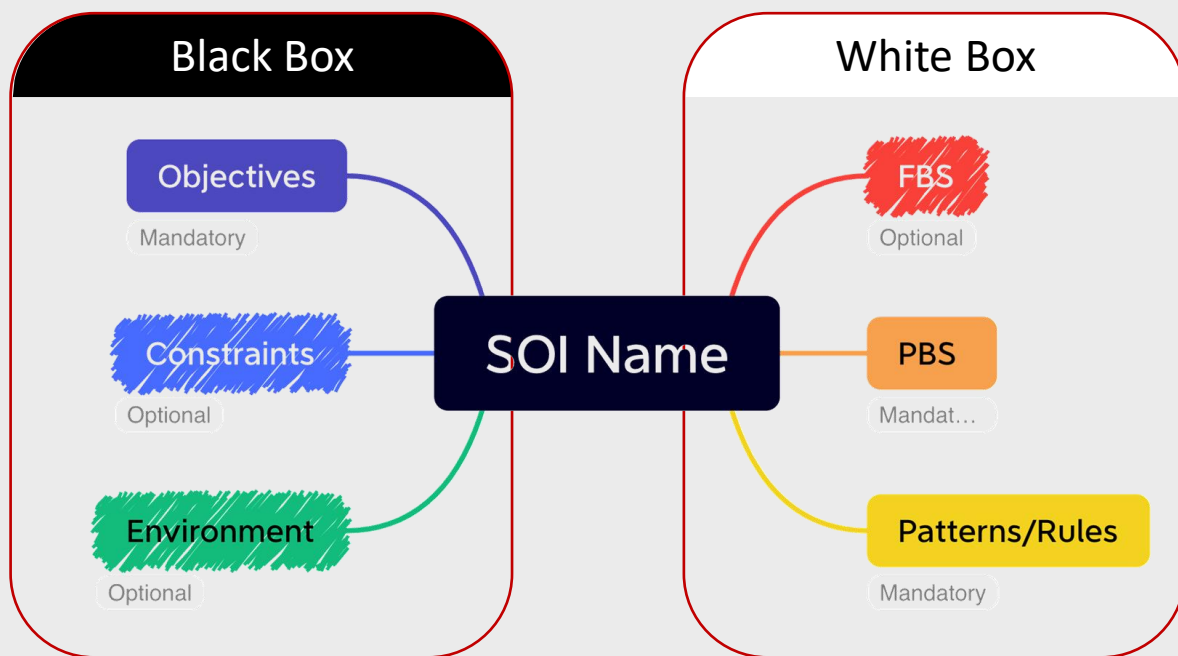
1. Download one of the two available templates
 1. Engineering one or General one
 - Follow these steps:
 - Click on “create a new SOI”, then
 - Click on “XMIND mode”,
 - Click on “Download template”
 - *Remark: you can also “download example”*



How to initiate a Geeglee project using a mind map?

ENGINEERING ONE
(SYSTEM ENGINEERING ONE)

GENERAL ONE



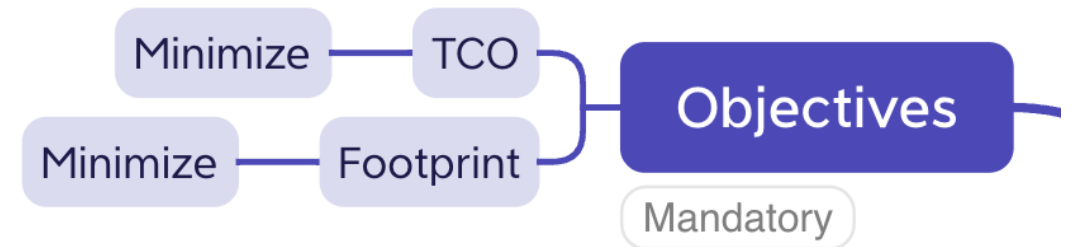
How to initiate a Geeglee project using a mind map?

FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
 2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

OBJECTIVES

Objectives must be listed with their optimization sense: Minimize or Maximize



Then, objectives must be explained, with the same name, in Patterns

How to initiate a Geeglee project using a mind map?

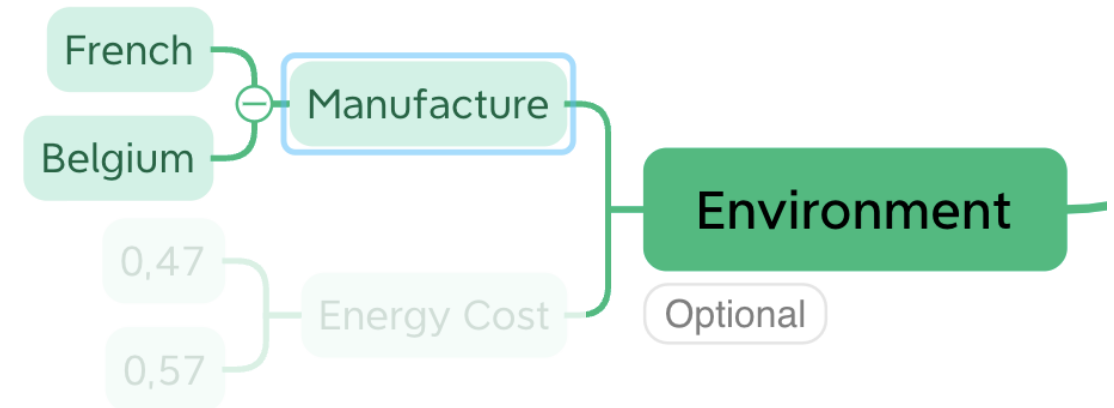
FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
 2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

ENVIRONMENT

Environment system can be set as the Manufacture example, but it can also be breakdown into sub-systems.

- Form is Environment system and their alternative(s)



Characteristics of environment systems will be set directly into Patterns

How to initiate a Geeglee project using a mind map?

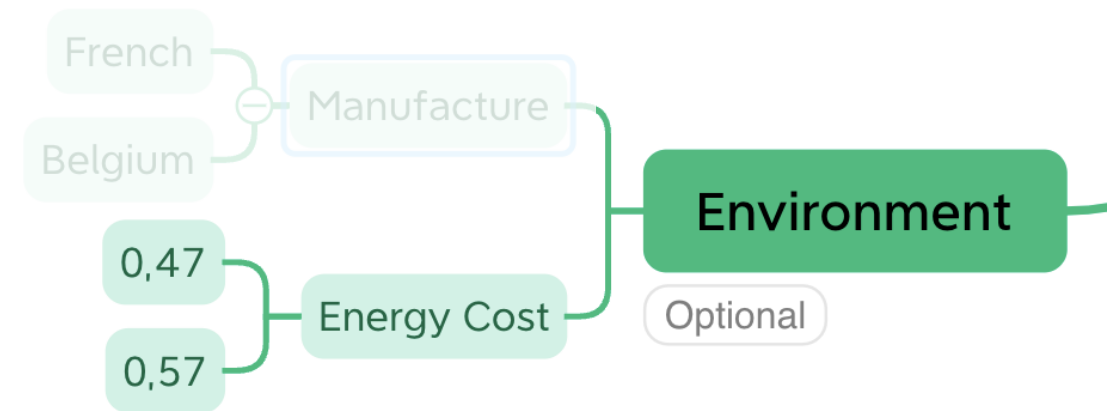
FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
 2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

ENVIRONMENT

Environment variable must be set directly below Environment branch as the Energy Cost example.

- Form is environment variable and their value(s)



Environment variable can be used, with the same name, directly into Patterns

How to initiate a Geeglee project using a mind map?

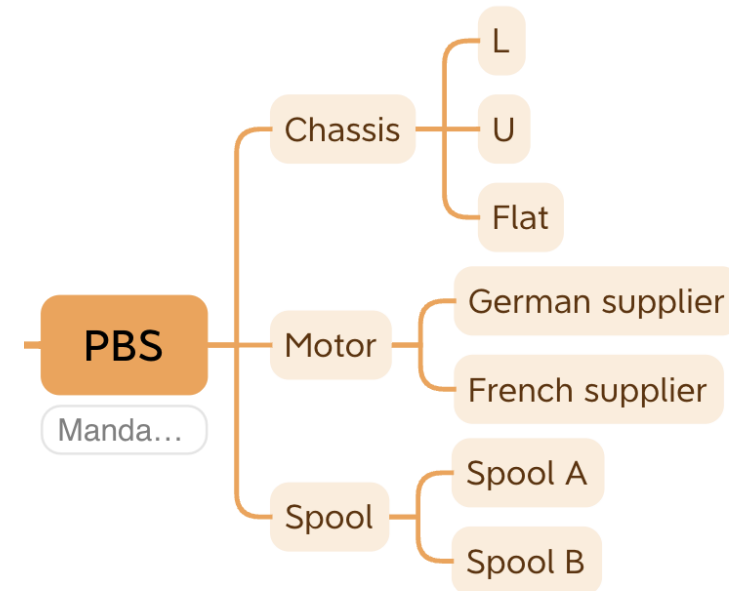
FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

PBS

Module can be set as the below example, it can be breakdown into sub-systems.

- Form is module and their alternative(s)



Characteristics of modules will be set directly into Patterns

How to initiate a Geeglee project using a mind map?

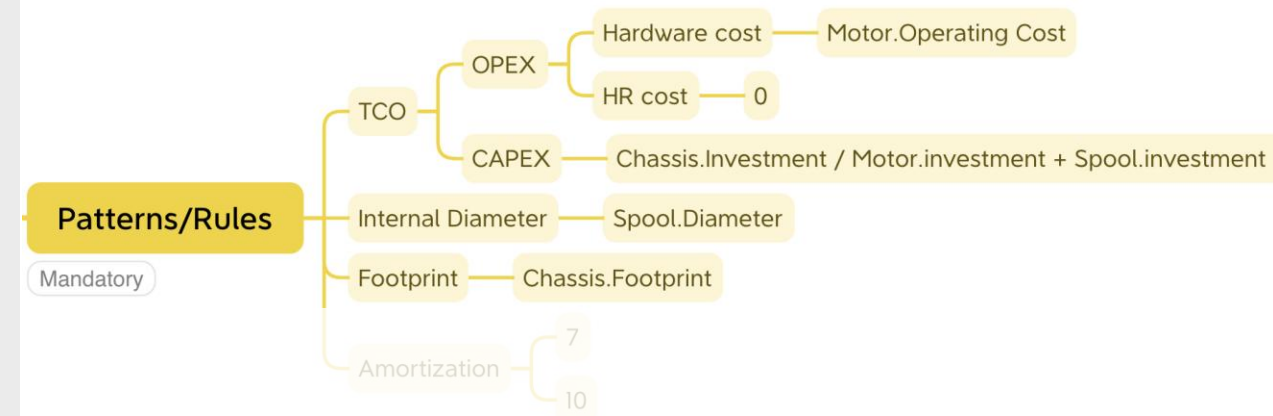
FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
 2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

PATTERNS/RULES

Pattern can be set as the below example (thus it can be breakdown into sub-pattern).

- Form is pattern breakdown into pattern(s) within their rule fully set into last branch
- Rules description used object formalism:
 - Module.Characteristics (as well as Environment System.Characteristics)



How to initiate a Geeglee project using a mind map?

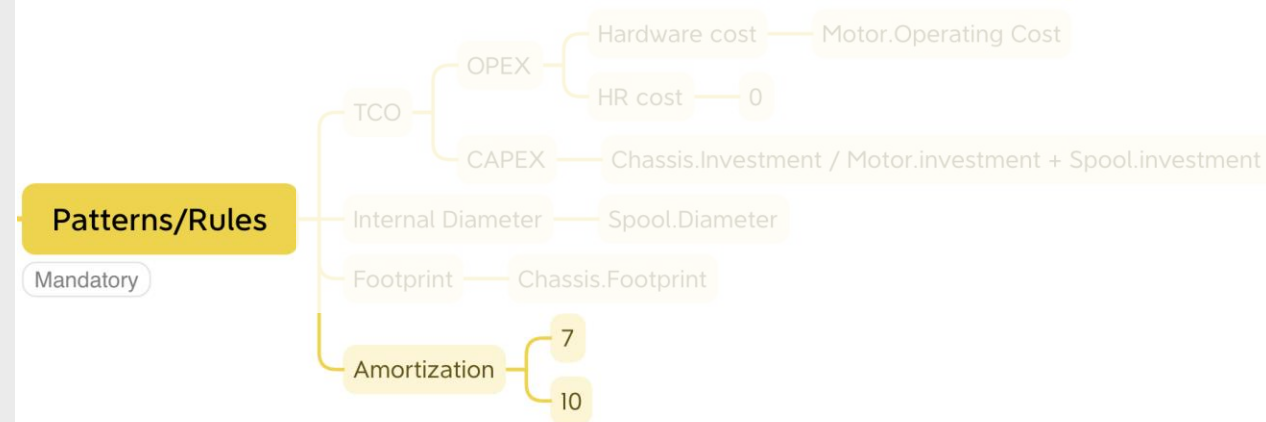
FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
 2. Describes your project
 1. Mandatory items
 2. Optional items
- ✓ Respecting the beside formalism.

PATTERNS/RULES

Design variable must be set directly below Patterns/Rules branch as the Amortization example.

- Form is design variable and their value(s)

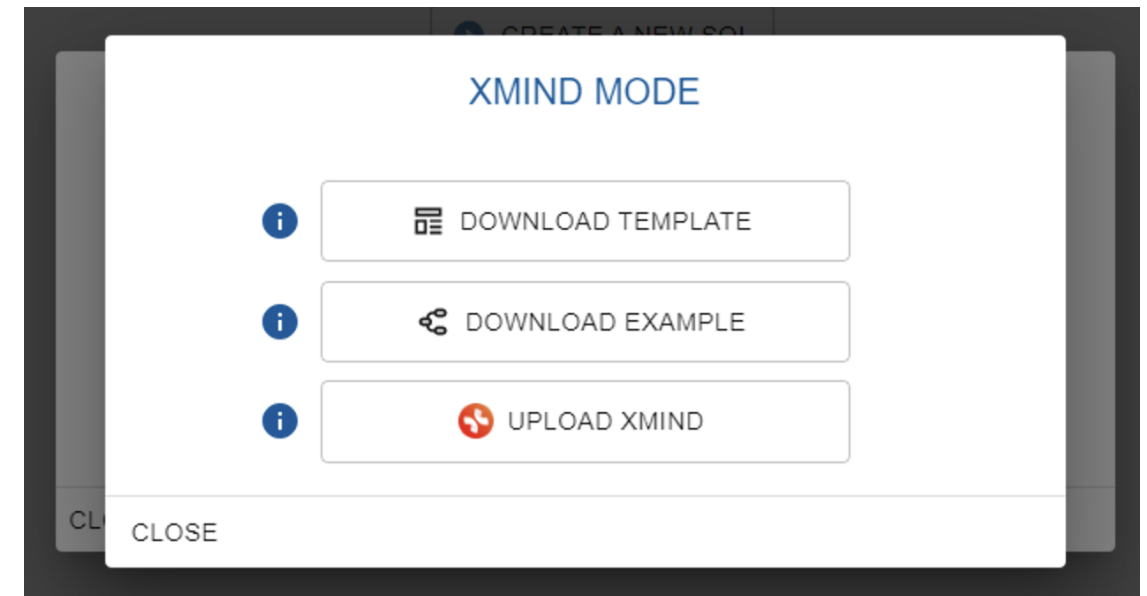


Design variable can be used, with the same name, into Patterns

How to initiate a Geeglee project using a mind map?

FEW STEPS TO FOLLOW

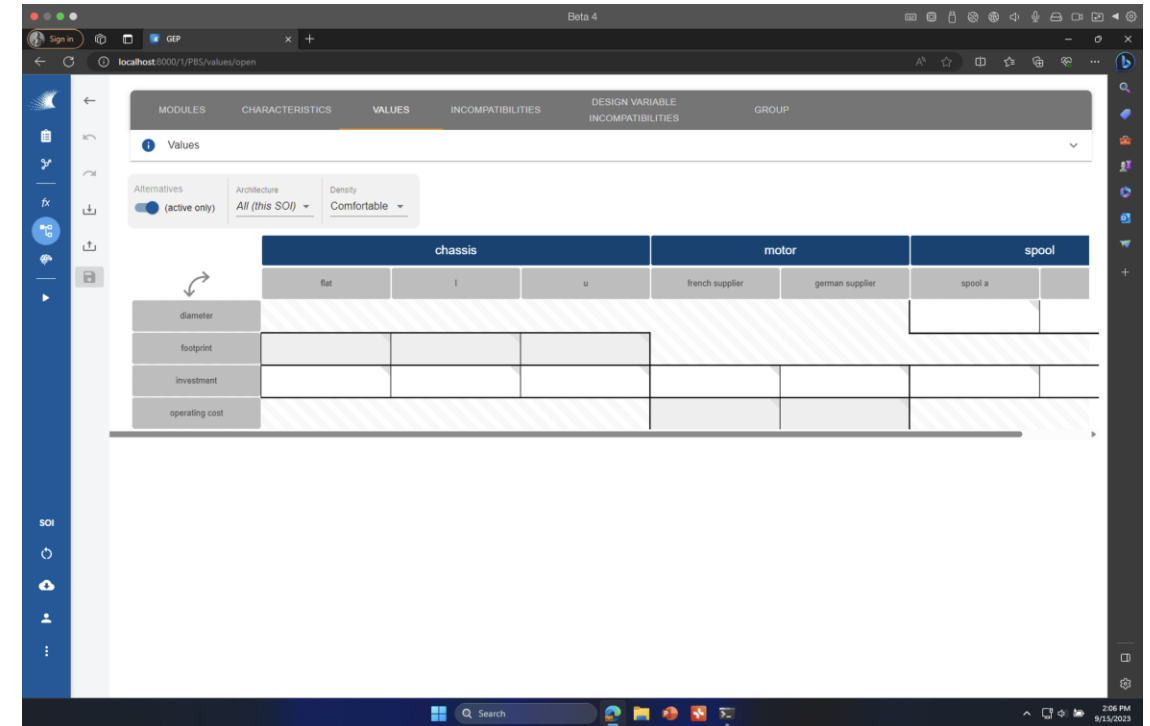
1. Download one of the two available templates
 1. Engineering one or General one
2. Describes your project
 1. Mandatory items
 2. Optional items
3. Launch your project into GEP
 - Click on “Upload Xmind”



How to initiate a Geeglee project using a mind map?

FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
2. Describes your project
 1. Mandatory items
 2. Optional items
3. Launch your project into GEP
4. Filled missing values
 - Modules (mandatory items)
 - Environment systems (optional items)
 - *Tips: after import, GEP automatically open value's module data page*



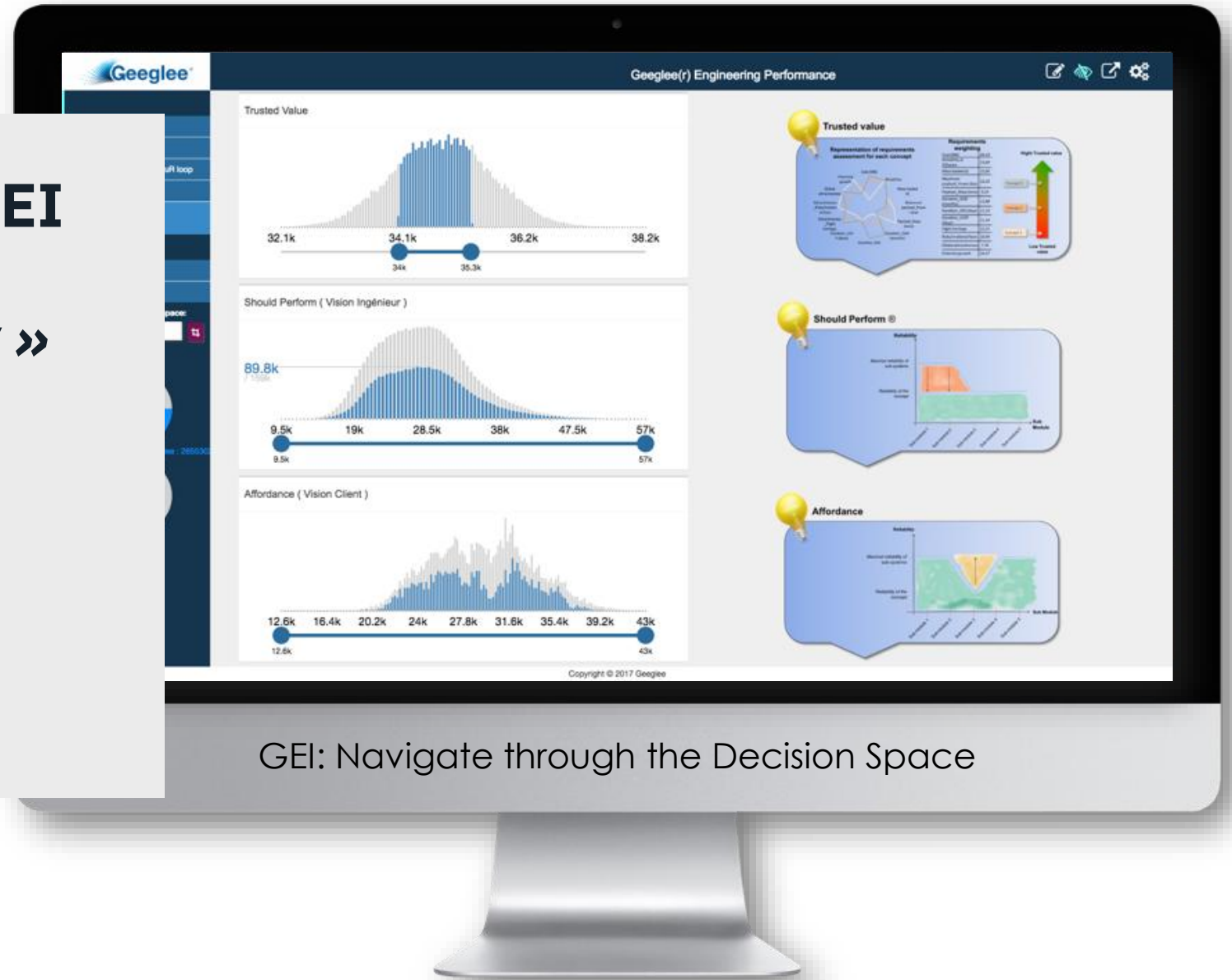
How to initiate a Geeglee project using a mind map?

FEW STEPS TO FOLLOW

1. Download one of the two available templates
 1. Engineering one or General one
2. Describes your project
 1. Mandatory items
 2. Optional items
3. Launch your project into GEP
4. Filled missing values
 - Modules (mandatory items)
 - Environment systems (optional items)
5. Run GEP and enjoy GEI analysis
6. *Improve your model if needed*

02

Link between GEP and GEI « *The Geeglee's workflow* »



GEI: Navigate through the Decision Space

Release of the GEP v3.11

IT'S NOT A REVOLUTION BUT A STRONG ADDED VALUE TO ALL GEEGLEE'S USERS
(AS WELL AS A HUGE TIME SAVING)

- ✓ Building a GEI was difficult and time consuming:
 - ✓ Difficult because the number of scenarios as well as the number of trade-offs to study is often high!
 - ✓ Time consuming because the number of variables you have in your model is often important and takes time to be shown in Geeglee

- ✓ To solve that, and to bring to anyone the best way of thinking while building a GEI application, Geeglee now embedded into GEP: an automatic GEI generation!

- ✓ For sure, all GEI features remain accessible (create a page, add or custom widgets...) but the initial set of data page is now automatically created:
 - ✓ Scenario,
 - ✓ Trade-off, as well as,
 - ✓ All GEP variables are now automatically set in data pages



WHAT CHANGE IN THIS NEW GEP?



- Output files have been reviewed to make things simpler. Two files are now available:
 - “Download All” contains all the files you used in the past: *.h5, report, analysis...
 - One new file calls *.gei
 - This new file contains everything you need for the GEI
- Download the new *.gei files and see the next slide how to use it into Geeglee

The screenshot shows the 'DESIGN SPACE GENERATION' interface. It includes buttons for 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Performance metrics are displayed: Calculation time saturation at 0%, Memory consumption saturation at 14%, Estimated calculation time less than 5 minutes, and Estimated solutions of 2.4 millions.

<input type="checkbox"/>	Name	Identifiant	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	(no_name)	62		No	20 April 2023, 13:17	20 April 2023, 13:18	20 April 2023, 13:26	Finished	
<input type="checkbox"/>	DS45	61	MBOS2.0NEXT#8 - modified IO Cluster Center...	No	6 April 2023, 17:16	6 April 2023, 17:17	6 April 2023		
<input type="checkbox"/>	DS44	60	MBOS2.0NEXT#8 - fixed issues...	No	30 March 2023, 18:34	30 March 2023, 18:35	31 March 2023		

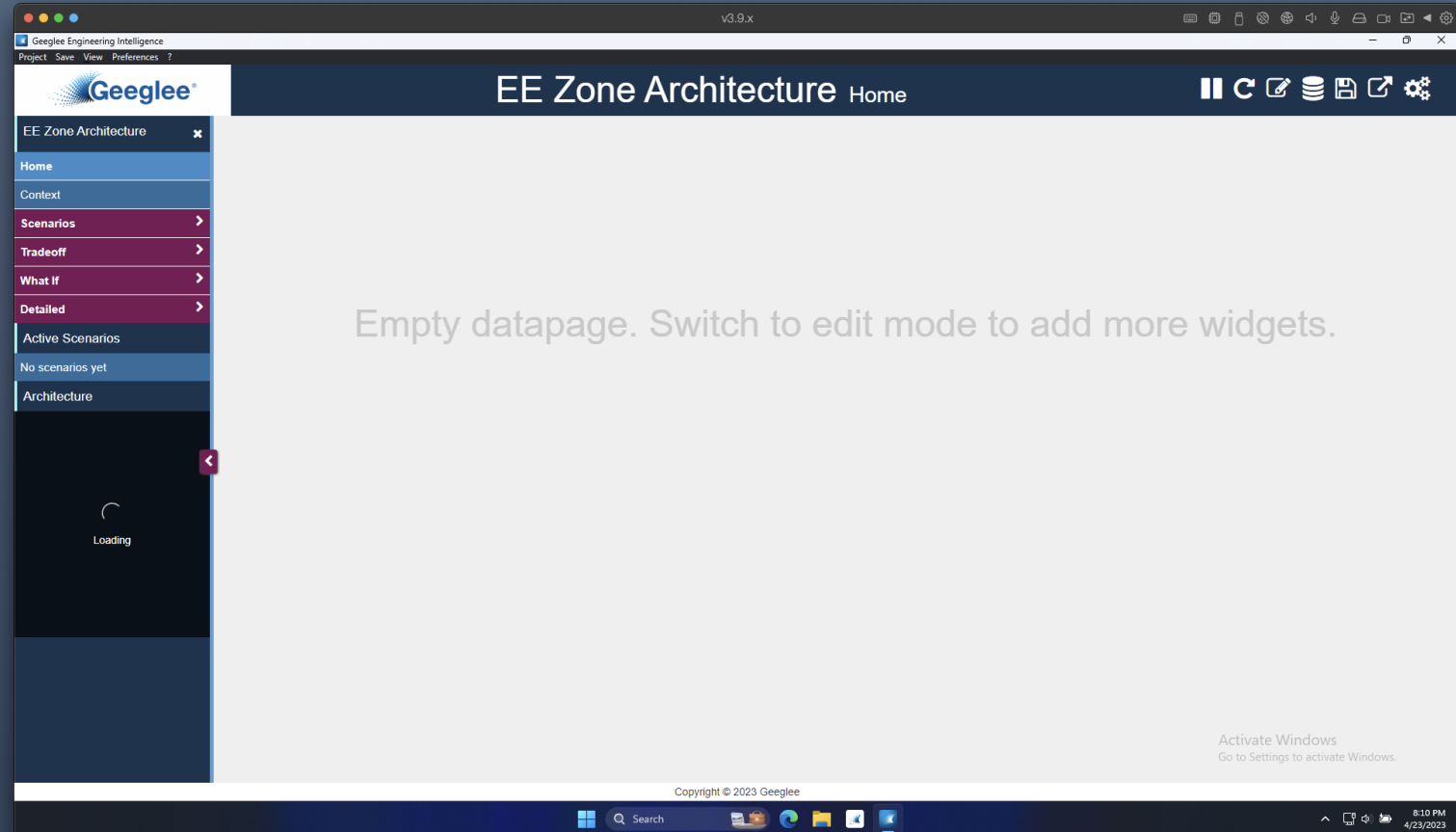
A context menu is open over the 'DS44' row, showing options: 'Download All' (16.8 MB) and 'EE Zone Architecture.gei' (402.7 KB). The 'EE Zone Architecture.gei' option is highlighted with a red box.



WHAT CHANGE IN THIS NEW GEI?



- Use the function "import" (Save>Import) to import *.gei file into GEI
- Then you get what you have in the beside page
 - If you set SOI objectives into GEP!
 - If not, you just have detailed data pages





- Into “scenario” group, you get:
 - Preset data page showing the logic of thinking while optimizing each SOI objectives down to the solution
- Into “tradeoff” group, you get:
 - All tradeoffs to do in your project (with the logic of thinking)

The screenshot displays the Geeglee Engineering Intelligence (v3.9.x) interface for an "EE Zone Architecture" project. The left sidebar contains a navigation menu with options like Home, Context, Scenarios, Average Volume ZC (l), Total Costs Zone Architecture (€), Total Nb IS (#), Total Weight Zone Architecture (kg), Tradeoff, What If, Detailed, Active Scenarios, and Architecture. The main workspace shows three instructional steps:

- Step 1: Select the "optimal" Pareto Front** - A dialog box titled "Pareto front - all objectives" is shown with a dropdown menu containing "Non-optimal" and "Optimal".
- Step 2: Maximize the "Average Volume ZC (l)"** - A bar chart titled "Average Volume ZC (l)" is displayed, showing a distribution of values with a range from 4.07 to 8.56.
- Step 3: Have a look at the solution(s)** - A note at the bottom right says "Activate Windows. Go to Settings to activate Windows."

The bottom of the window shows a Windows taskbar with the date 4/23/2023 and time 8:10 PM.



WHAT CHANGE IN THIS NEW GEI?



- Into “Detailed” group, you get:
 - All variables per GEP’s data page
- You can now directly play scenarios, analyze your model...

The screenshot shows the Geeglee Engineering Intelligence (v3.9.x) interface. The main window is titled "EE Zone Architecture Scenarios/Total Nb IS (#)". The left sidebar contains a navigation menu with categories like "What If", "Detailed", "Environment variables", "Design variables", "SOI objectives", "Constants", "Active Scenarios", "No scenarios yet", and "Architecture".

The main workspace displays three instructional steps:

- Step 1: Select the "optimal" Pareto Front** - A dialog box titled "Pareto front - all objectives" is shown with a dropdown menu containing "Non-optimal" and "Optimal".
- Step 2: Minimize the "Total Nb IS (#)"** - A bar chart titled "Total Nb IS (#)" is displayed. The x-axis has markers at 3 and 5. Three blue bars of increasing height are shown, with the tallest bar at position 5.
- Step 3: Have a look at the solution(s)** - A text instruction at the bottom of the workspace.

At the bottom of the interface, there is a copyright notice "Copyright © 2023 Geeglee" and a Windows taskbar showing the time as 8:11 PM on 4/23/2023.

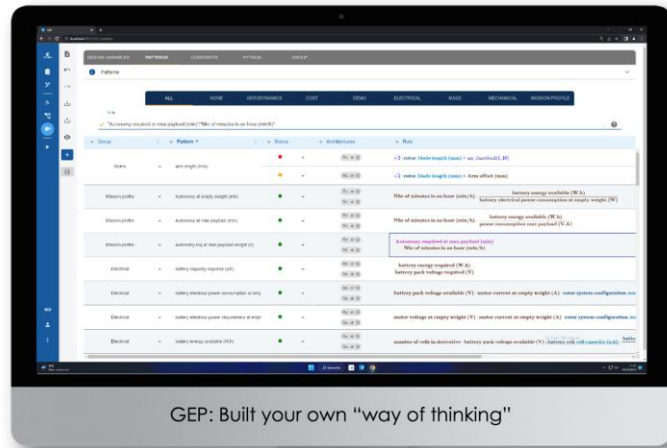
The usual Geeglee workflow



Geeglee Pattern



Geeglee Intelligence



GEP: Built your own "way of thinking"

GEP's simulation results



*.gei

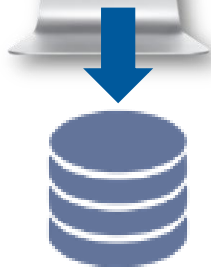


GEI: Navigate through the Decision Space

GEI's Design Space "save"



*.h5



*.gep

Autosave process but manual export from "project management" panel



*.gei

Autosave process but manual export from "save" menu

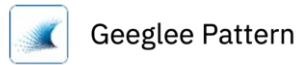
Feed back loop to insure the convergence plan

*The GEI's *.h5 must be imported into GEP on the PBS' page*

The Geeglee workflow for large design space (>1M)

Feed back loop to get an optimal .h5 file

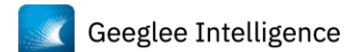
Launch "Explore Design Space"



1
2
5

Autosave process but manual export from "project management" panel
*.gep

Setting GEI.h5 (Light database - easy to manipulate)



3
4

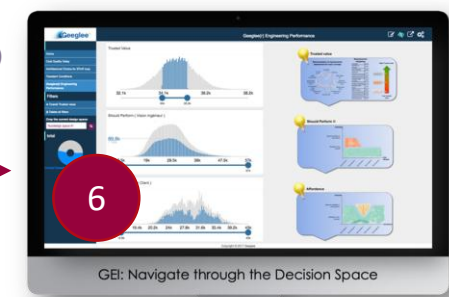
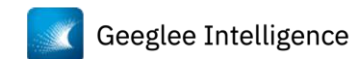
Autosave process but manual export from "save" menu
*.gei

Optim.h5 (Optimised database)



*.h5

*Optim.ggproj (Optimised .ggproj)



6
7

Autosave process but manual export from "save" menu
*.gei

GEI's Design Space "save"

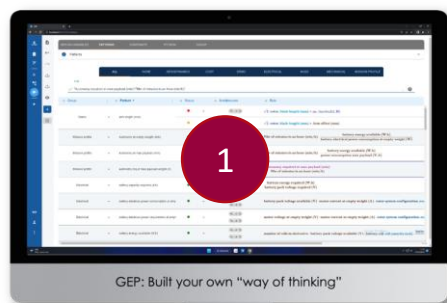


*.h5

Feed back loop to insure the convergence plan

The GEI's *.h5 must be imported into GEP on the PBS's page

1 – Built your GEP model

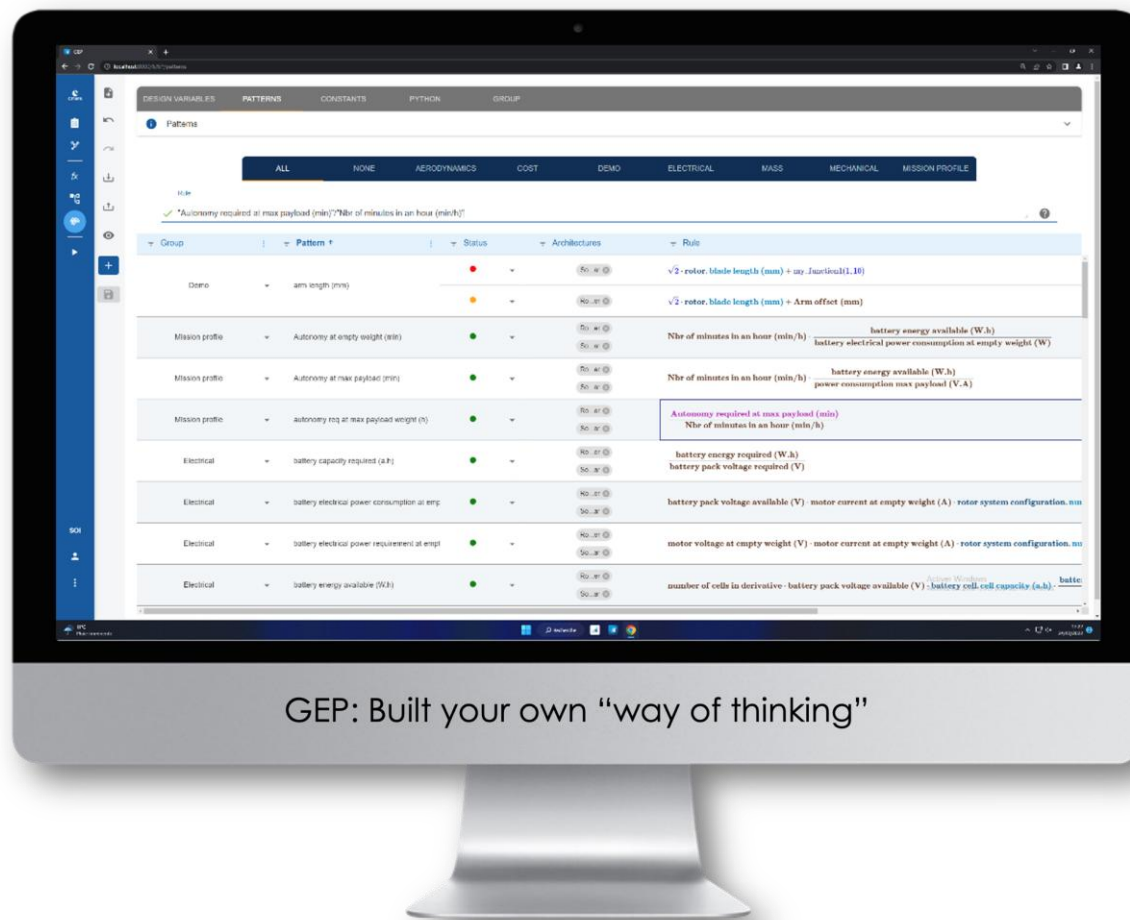


GEP: Built your own "way of thinking"



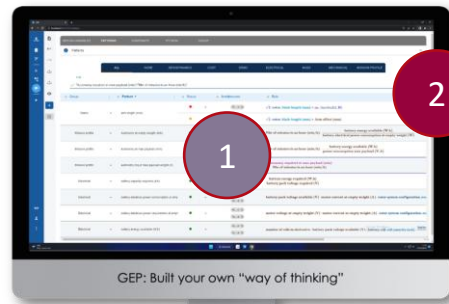
*.gep

*Autosave process
but manual export
from "project
management" panel*



GEP: Built your own "way of thinking"

2 – Export “Setting GEI.h5” file



Setting GEI.h5
(Light database – easy to manipulate)

2

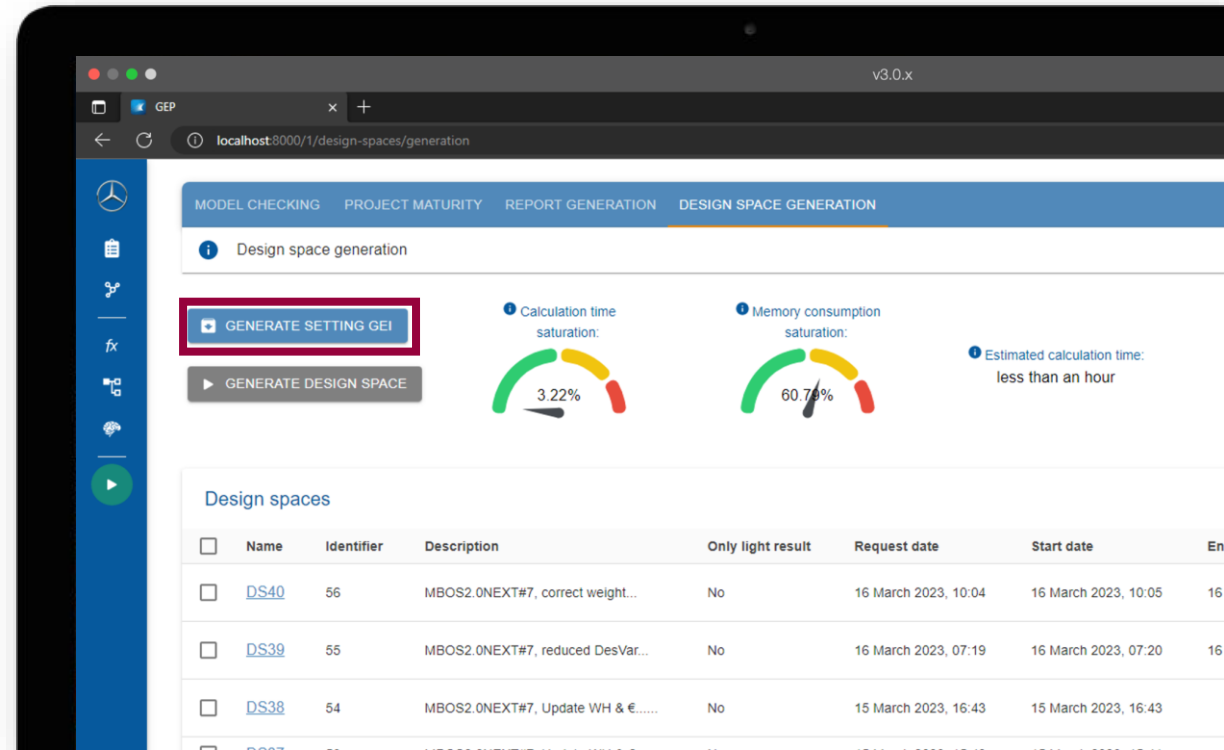


GEP: Built your own “way of thinking”



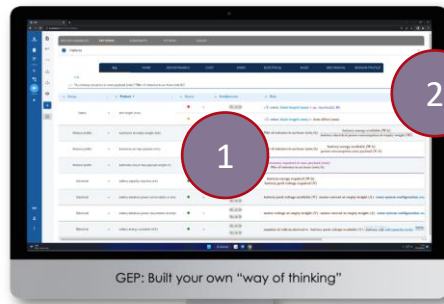
*.gep

Autosave process
but manual export
from “project
management” panel



3 – Built your GEI using “*_setting_GEI.h5” file

Geeglee Pattern



Setting GEI.h5
(Light database – easy to manipulate)

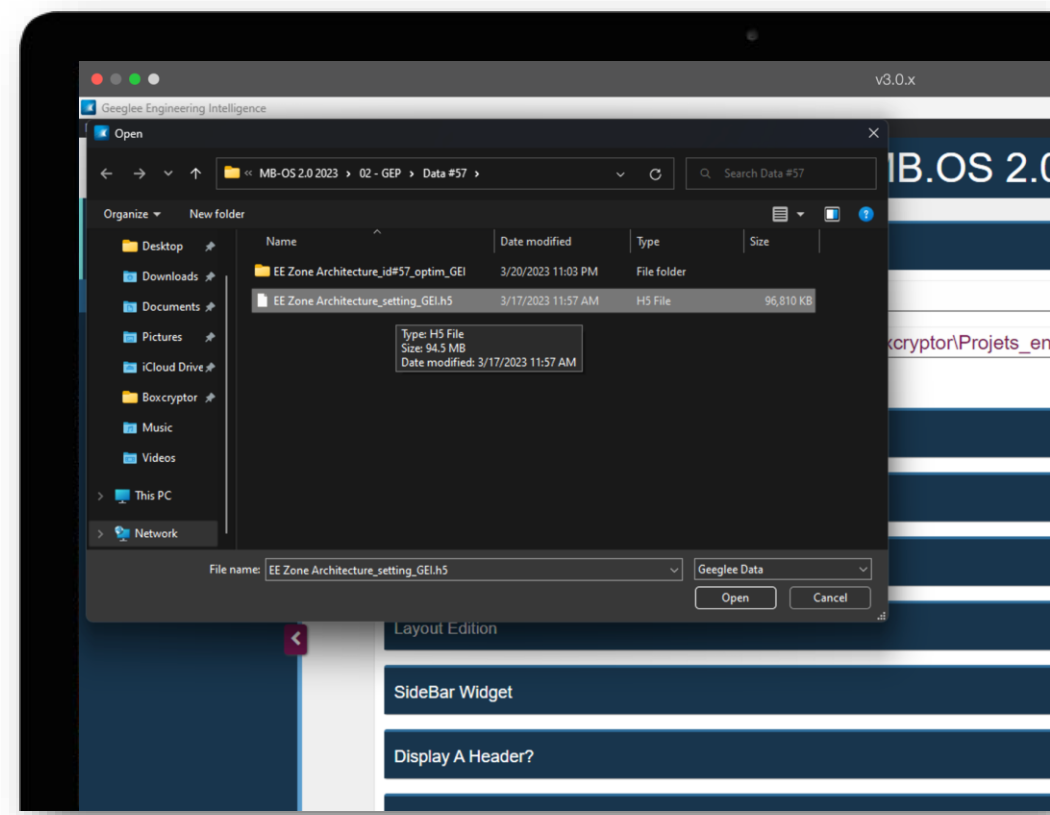
Geeglee Intelligence



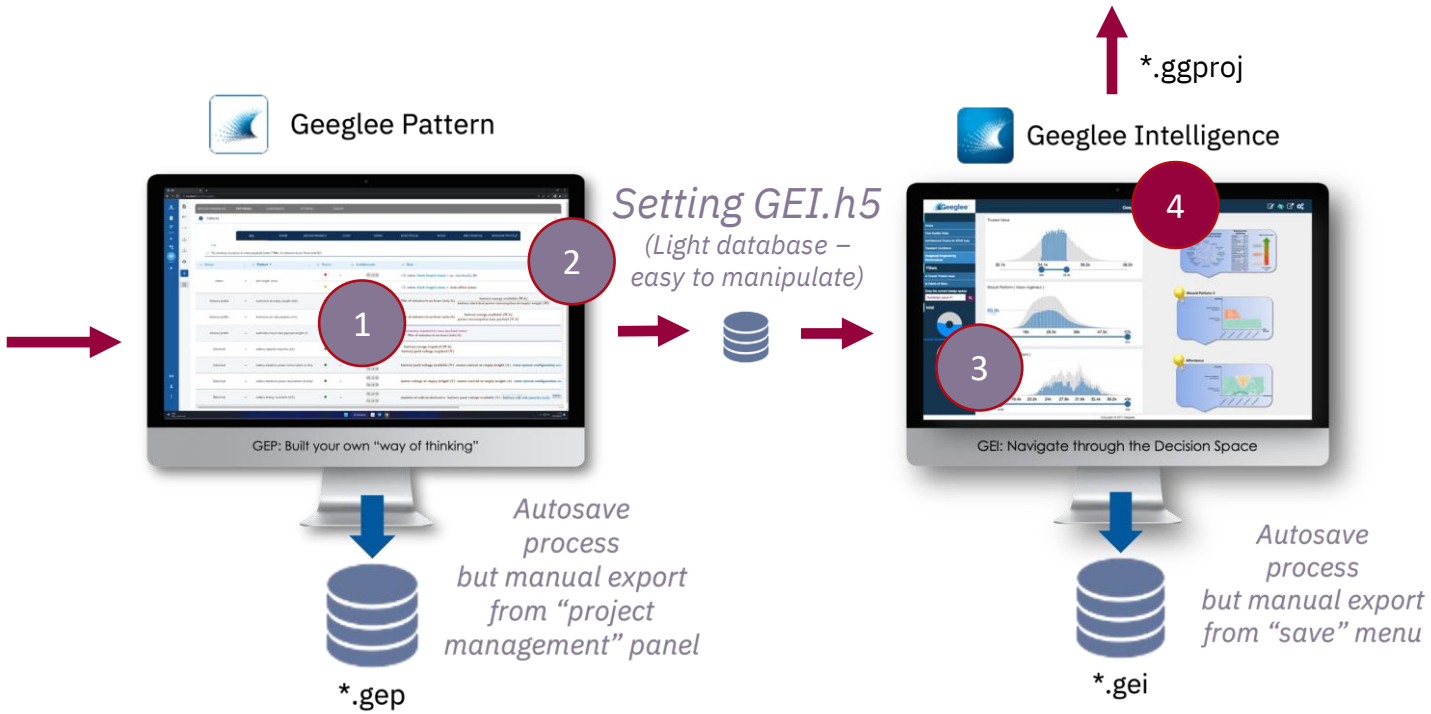
Autosave process but manual export from “project management” panel
*.gep



Autosave process but manual export from “save” menu
*.gei



4 – Get the “*.ggproj” file



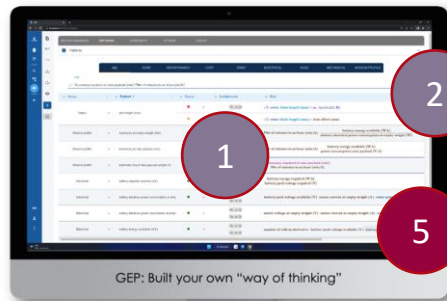
5 – Launch “Design Space Exploration”

Feed back loop to get an optimal .h5 file

Launch “Explore Design Space”



Geeglee Pattern



GEP: Built your own “way of thinking”



*.gep

Autosave process but manual export from “project management” panel

Setting GEI.h5
(Light database – easy to manipulate)



Geeglee Intelligence



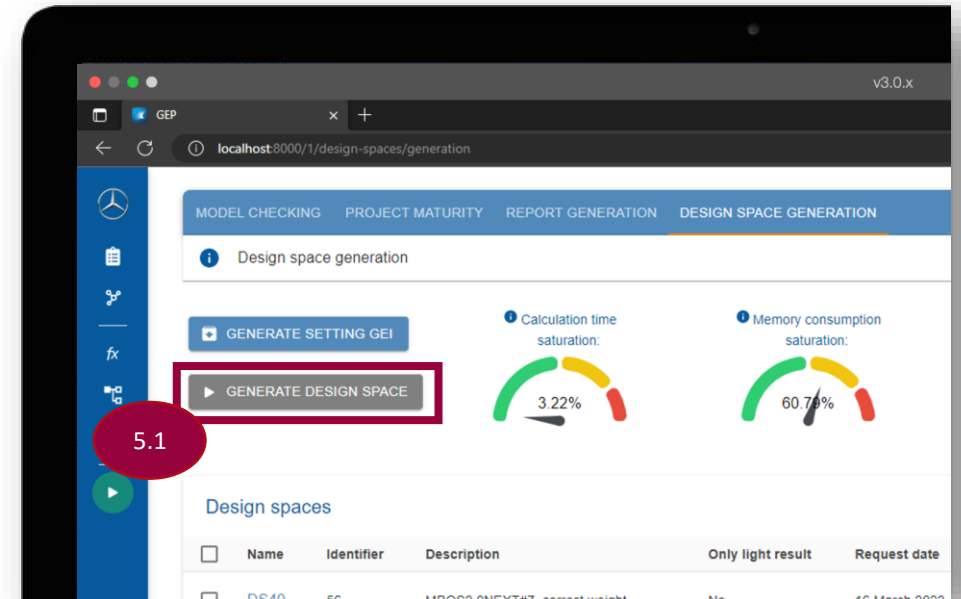
GEI: Navigate through the Decision Space



*.gei

Autosave process but manual export from “save” menu

*.ggproj



5.1

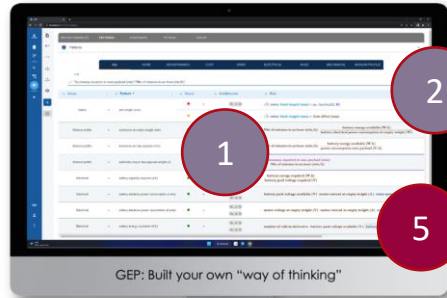
5 – Launch “Design Space Exploration”

Feed back loop to get an optimal .h5 file

Launch “Explore Design Space”



Geeglee Pattern



Setting GEI.h5
(Light database – easy to manipulate)



Geeglee Intelligence



*.ggproj

Autosave process but manual export from “project management” panel

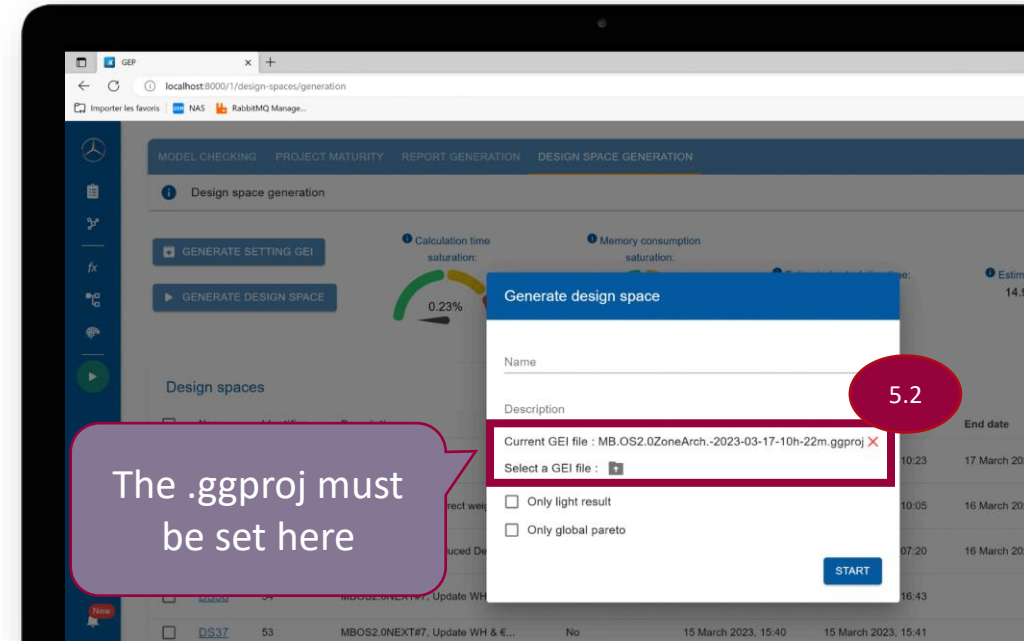


*.gep

Autosave process but manual export from “save” menu



*.gei



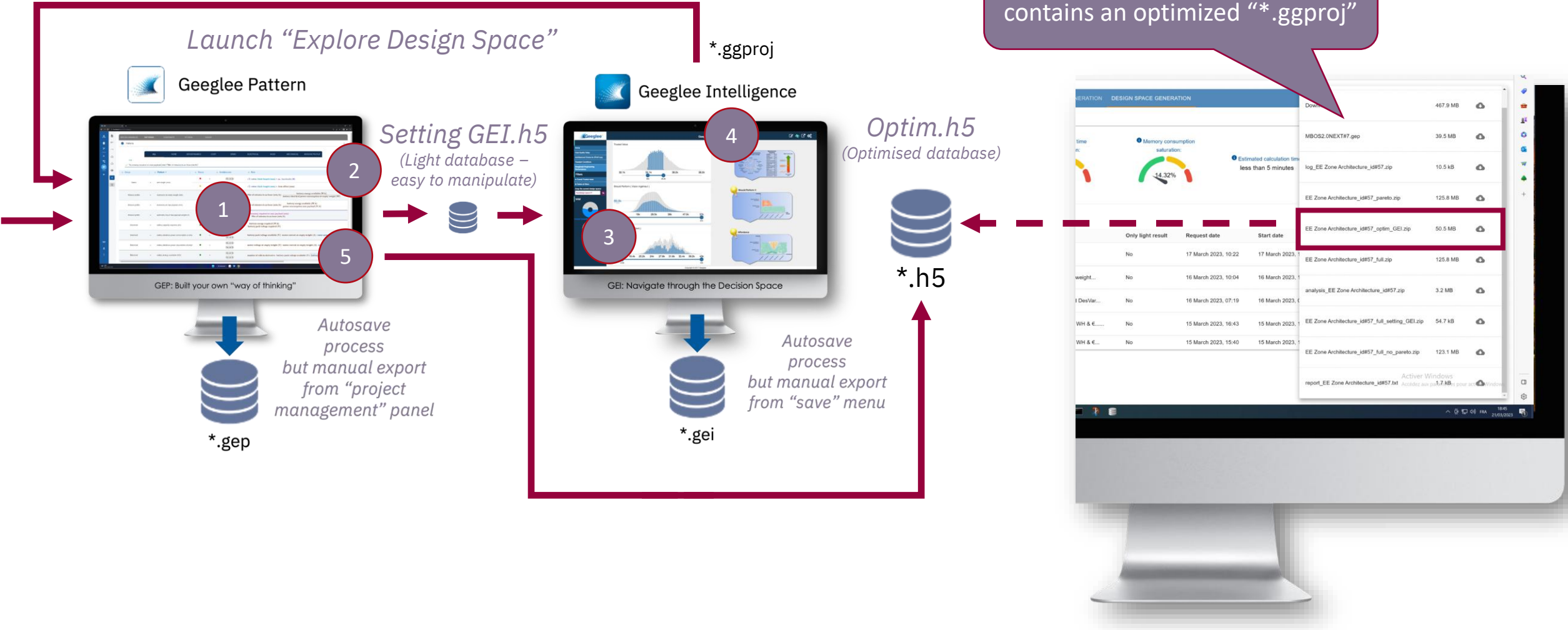
The .ggproj must be set here

5.2

6 – Export “*_Optim.h5” file

Feed back loop to get an optimal .h5 file

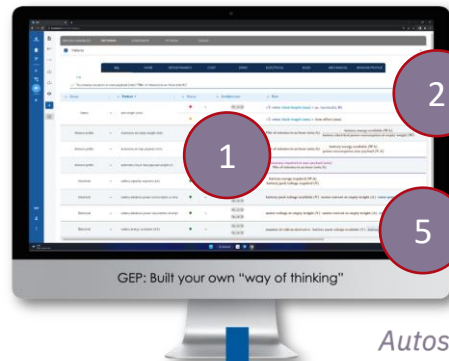
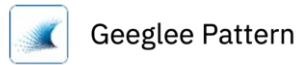
The “*_optim_GEI.zip” also contains an optimized “*.ggproj”



6 – Export “*_Optim.h5” file

Feed back loop to get an optimal .h5 file

Launch “Explore Design Space”



Autosave process but manual export from “project management” panel
*.gep

Setting GEI.h5 (Light database – easy to manipulate)



Autosave process but manual export from “save” menu
*.gei

Optim.h5 (Optimised database)

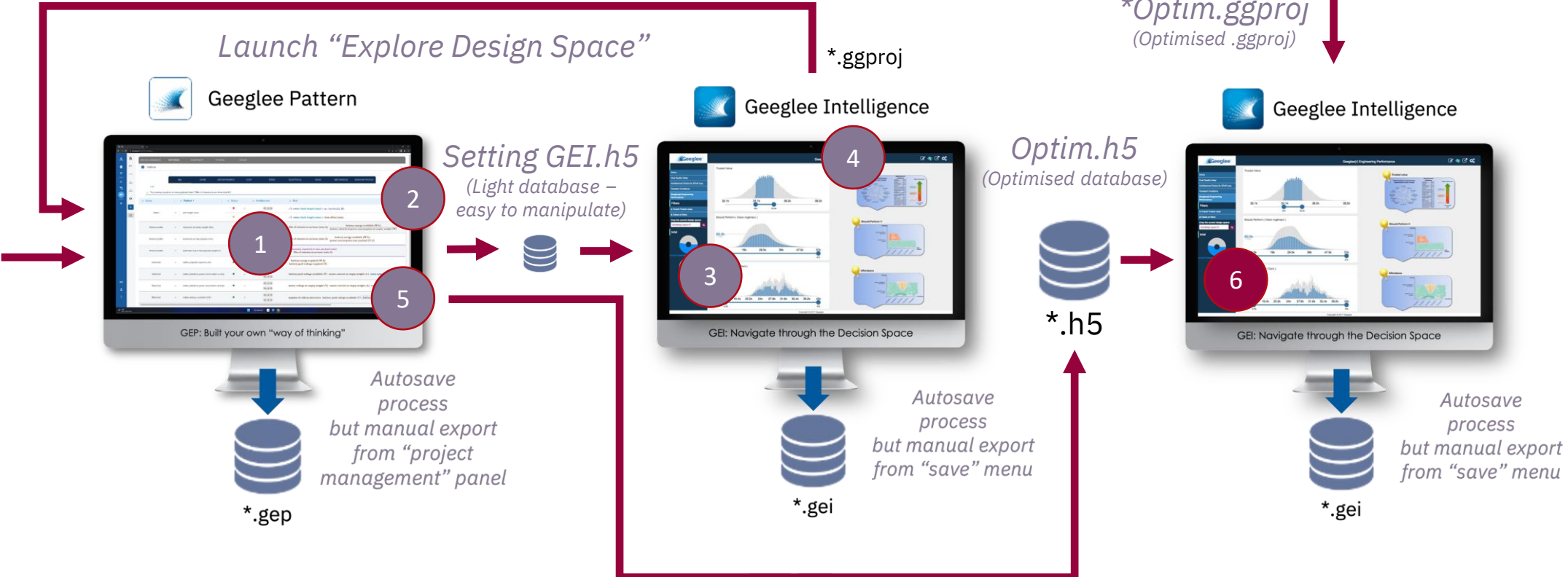


*.h5

*Optim.ggproj (Optimised .ggproj)

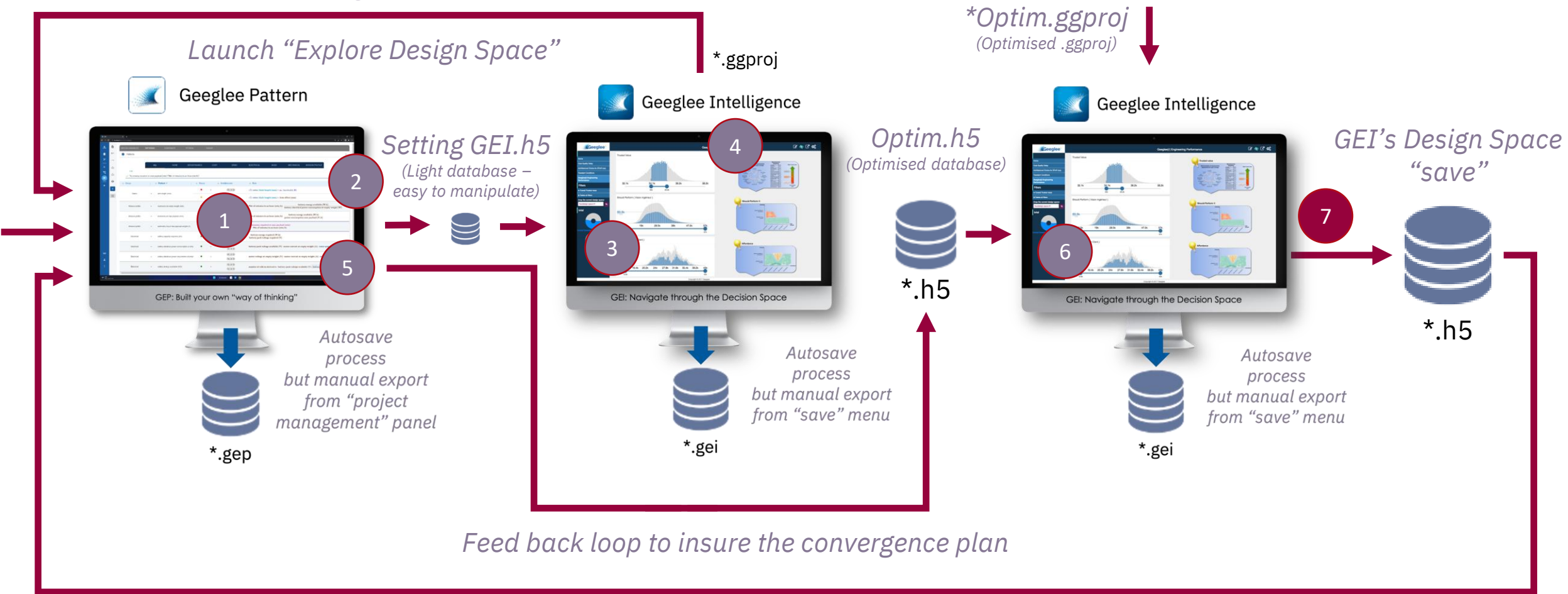


Autosave process but manual export from “save” menu
*.gei



7 – if needed, export the design space to converge

Feed back loop to get an optimal .h5 file

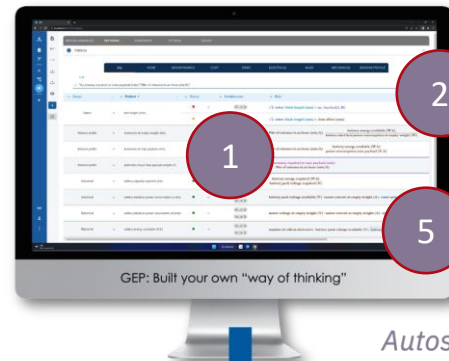


The GEI's *.h5 must be imported into GEP on the PBS's page

The Geeglee workflow for large design space (>1M)

Feed back loop to get an optimal .h5 file

Launch "Explore Design Space"



1
2
5

Autosave process but manual export from "project management" panel
*.gep

Setting GEI.h5 (Light database - easy to manipulate)



3
4

Autosave process but manual export from "save" menu
*.gei

Optim.h5 (Optimised database)



*.h5

*Optim.ggproj (Optimised .ggproj)



6
7

Autosave process but manual export from "save" menu
*.gei

GEI's Design Space "save"



*.h5

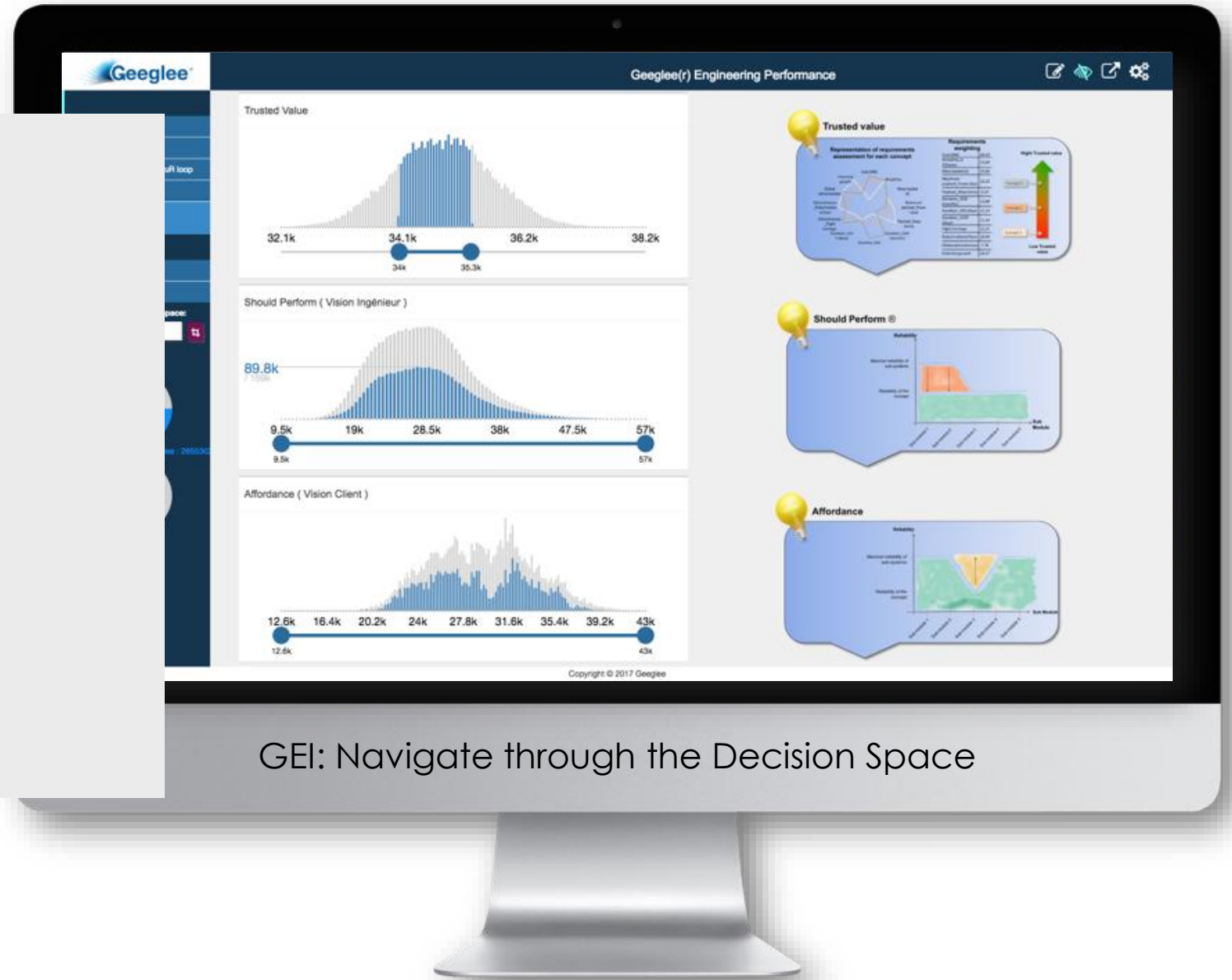
Feed back loop to insure the convergence plan

The GEI's *.h5 must be imported into GEP on the PBS's page

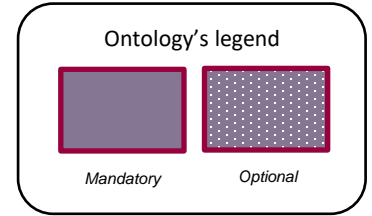
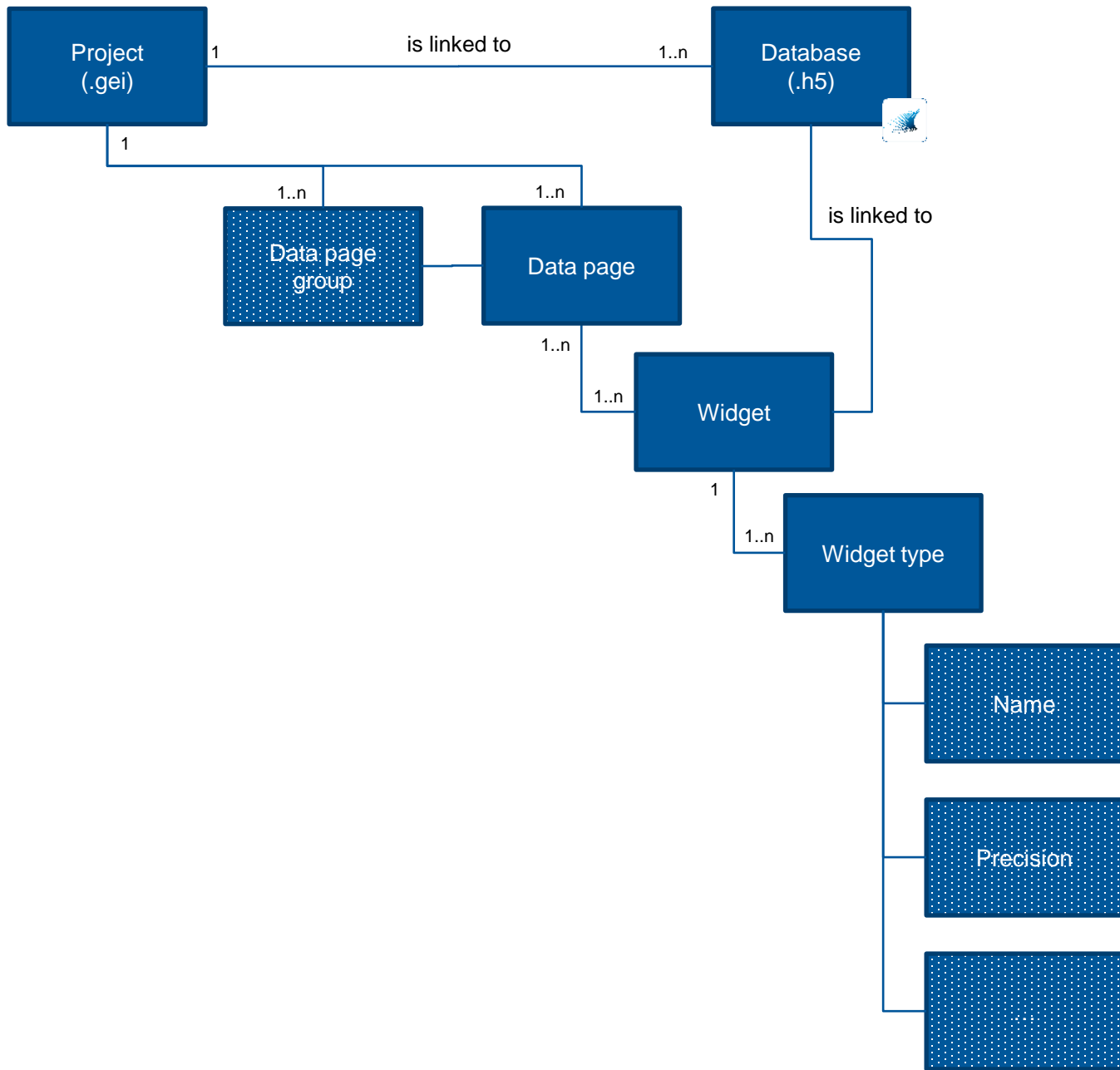
03

Modeling in GEI

« Geeglee Intelligence »



GEI: Navigate through the Decision Space



Geeglee's definition

OVERALL DEFINITION

Project

- It is the GEI analysis, it contains all your data except GEP database.

Database (GEP one)

- It is the data coming from GEP that is used into GEI.

Data page group

- It is a group of data page.

Data page

- Is an analysis page containing widget.

Widget

- It is a dynamic representation of data includes into GEP database

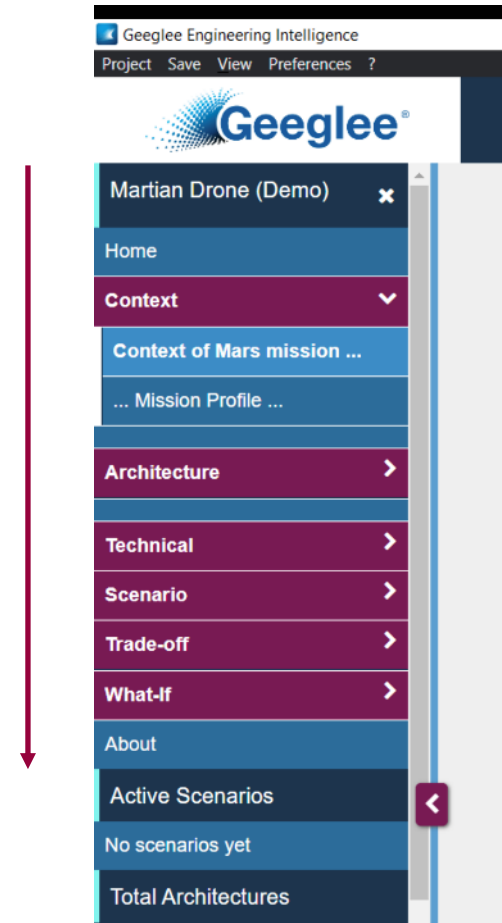
GEI's INTRODUCTION

YOU MUST THINK GEEGLEE INTELLIGENCE AS A DYNAMIC POWERPOINT.

It means that:

- Each data page, on the left of the screen, should be a viewpoint needed to explain your Project context, need setting and architecture of the solution...

Logical approach:
top-down reading

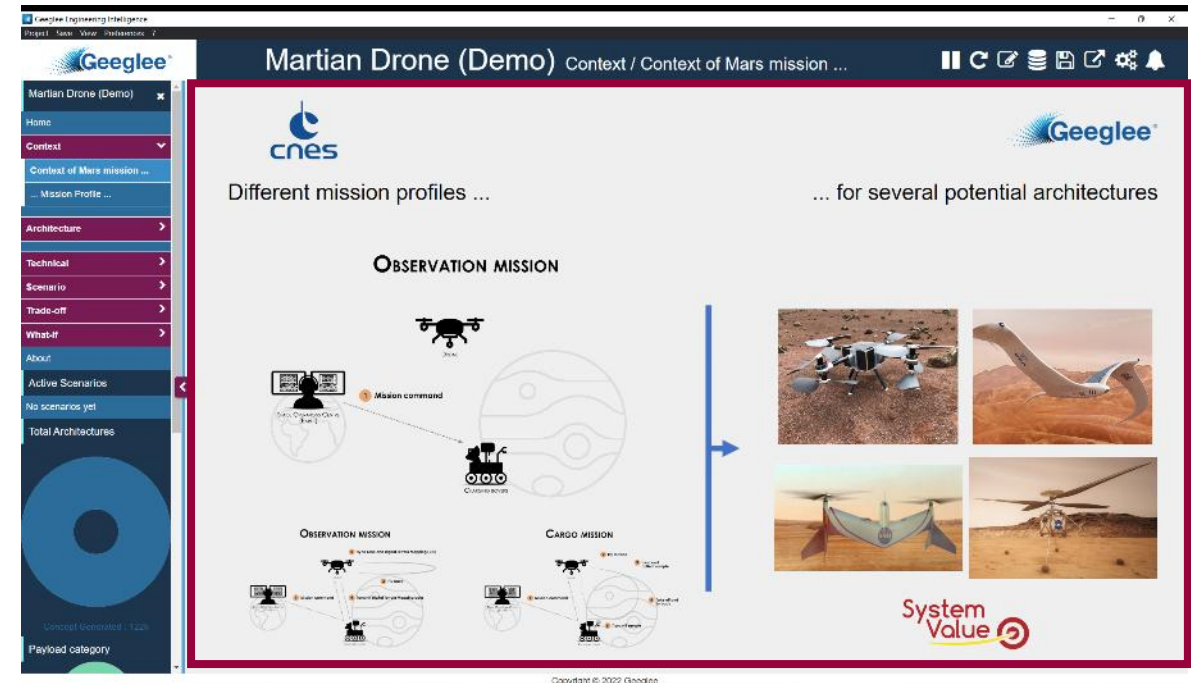


GEI's INTRODUCTION

YOU MUST THINK GEEGLEE INTELLIGENCE AS A DYNAMIC POWERPOINT.

It means that:

- Each data page, on the left of the screen, should be a viewpoint needed to explain your project, your project context, your project needs and your project solution...
- Each data page should be designed as a slidewear



GEI's INTRODUCTION

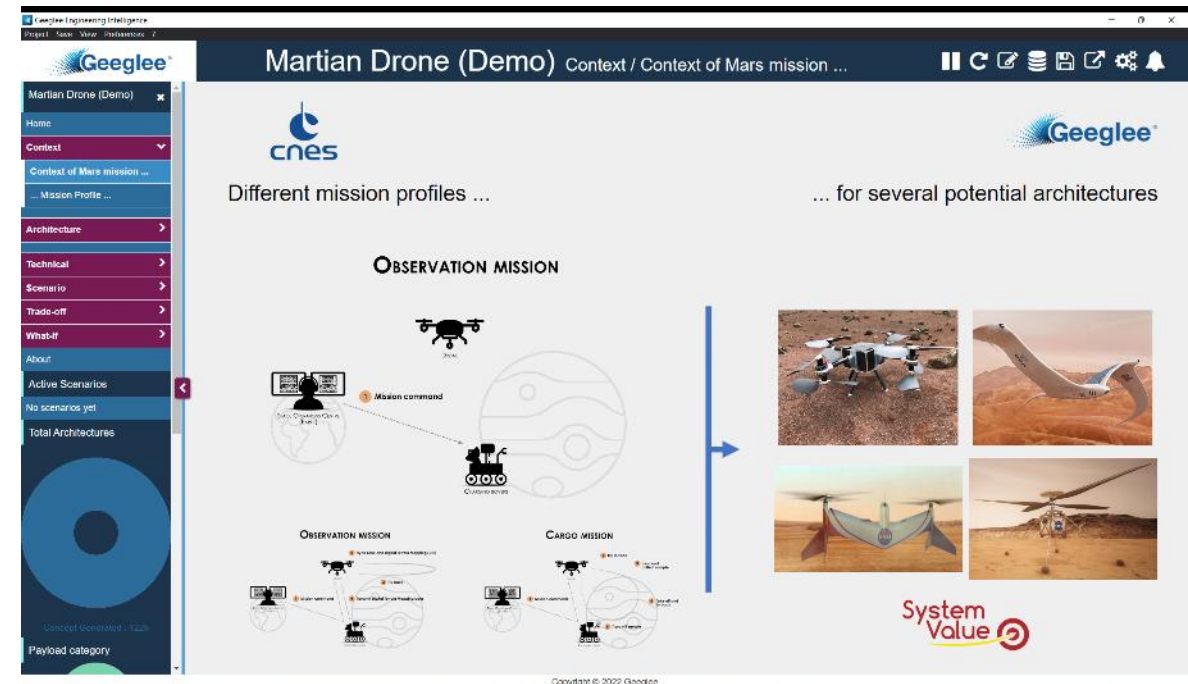
YOU MUST THINK GEEGLEE INTELLIGENCE AS A DYNAMIC POWERPOINT.

It means that:

- Each data page, on the left of the screen, should be a viewpoint needed to explain your project, your project context, your project needs and your project solution...
- Each data page should be designed as a slide wear

It's highly recommended to have:

- A Home page including database versioning,
- Context page, and
- Any data page needed black box variables, white box variables (design variables), scenario, trade-off, what-if, as well as, platforming data page
 - *The building of this data page is explained in the following slides*



REX of best practices using Geeglee Intelligence

RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

1. The first goal of Geeglee Intelligence is to analyze model quality: does it provide the correct/expected results?

By expected results, we expect two things:

1. *Validate results for the best known configuration(s); the one(s) you're most familiar with*
2. *Detect « strange » values by looking at shown data*

First step: create a **detailed** group of data pages

To validate GEP data, you have to start GEI with an analysis data page to add in « detailed » group

1. An analysis data page is, for instance, the cost breakdown of your system. Showing it will let you validate, from the high-level analysis down to low level (low level is the one you need to analyze), that everything is correct.
 2. You have to create as much data page as you need to validate any important data of the model
- ✓ A non-exhaustive list can be to create data pages about:
- Breakdown of any HLR output; the architecture (any module) of your System-of-Interest; ...

TIPS: import a first widget and ask Geeglee to import the breakdown automatically!

REX of best practices using Geeglee Intelligence

RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

2. The final goal of Geeglee Intelligence is to take a decision on your problem!

Second step: create a scenario group of data pages

A scenario is the logic of analysis of your decision space (DS): to choose the right solution, you will set constraints on the DS to converge toward the solution. A scenario is about the sequence of constraints you will apply.

Usually a scenario data page is composed of:

Part 1: Setting the need (usually, Geeglee is used to explore several needs)

Part 2: Setting Pareto optimum (select « optimal » solutions), then if needed to use the « crop » function

Part 3: Setting a constraint on one objective (HLR output), then if needed to use the « green eye » function

Part 4: Have a look at the architecture

Part 5: if you need add any data to converge to one solution!

- ✓ A non-exhaustive list can be to create data pages about:
 - Any HLR output; any key performance for your System-of-Interest; ...

TIPS: Set constraints into any data page of GEI and ask Geeglee to capitalize on your scenario!

REX of best practices using Geeglee Intelligence

RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

2. The final goal of Geeglee Intelligence is to take a decision on your problem!

Third step: create a **trade-off** group of data pages

A trade-off has the same logic of a scenario but instead of considering one performance, you're considering a set of, at least, two performances to choose the right solution.

Usually a scenario data page is composed of:

Part 1: Setting the need (usually, Geeglee is used to explore several needs)

Part 2: Setting Pareto optimum (select « optimal » solutions), then if needed use the « crop » function

Part 3: Setting a trade-off on two objectives (HLR output), then if needed use the « green eye » function

Part 4: Have a look at the architecture

Part 5: if you need add any data to converge to one solution!

✓ A non-exhaustive list can be to create data pages about:

- Any HLR output, that represents a trade-off, two by two; any key performance for your System-of-Interest; ...

TIPS: Set constraints into any data page of GEI and ask Geeglee to capitalize on your scenario!

REX of best practices using Geeglee Intelligence

RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

2. The final goal of Geeglee Intelligence is to take a decision on your problem!

Fourth step: create a **what-if scenario** group of data pages

A trade-off has the same logic of a scenario but instead of considering one performance, you're considering a set of, at least, two performances to choose the right solution.

Usually a scenario data page is composed of:

Part 1: Setting the need (usually, Geeglee is used to explore several needs)

Part 2: Setting Pareto optimum (select « optimal » solutions), then if needed use the « crop » function

Part 3: Setting a trade-off on two objectives (HLR output), then if needed use the « green eye » function

Part 4: Have a look at the architecture

Part 5: if you need add any data to converge to one solution!

✓ A non-exhaustive list can be to create data pages about:

- Any HLR output, that represents a trade-off, two by two; any key performance for your System-of-Interest; ...

TIPS: Set constraints into any data page of GEI and ask Geeglee to capitalize on your scenario!

REX of **pitfalls** using Geeglee Intelligence

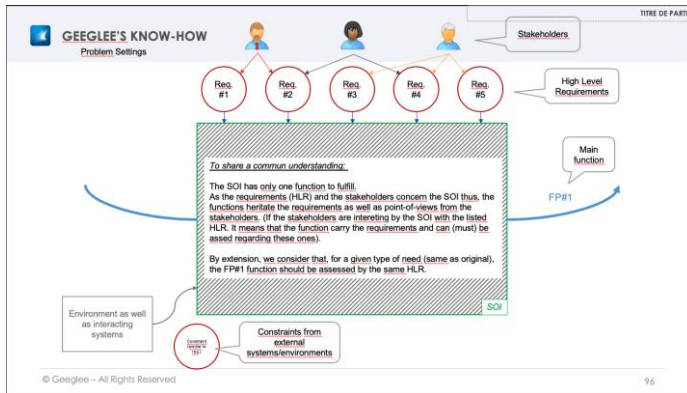
NOT RECOMMENDED STEP (EVEN IF YOU CAN WORK AS YOU WANT!)

- ❌ It's **not faster** to add widgets in an unstructured manner (meaning without a purpose/in disorder in one data page)
 - Because every question you ask yourself at once will be valid at another time when you update your model
 - Doing and undoing is always working, but... it's not an engineer job!



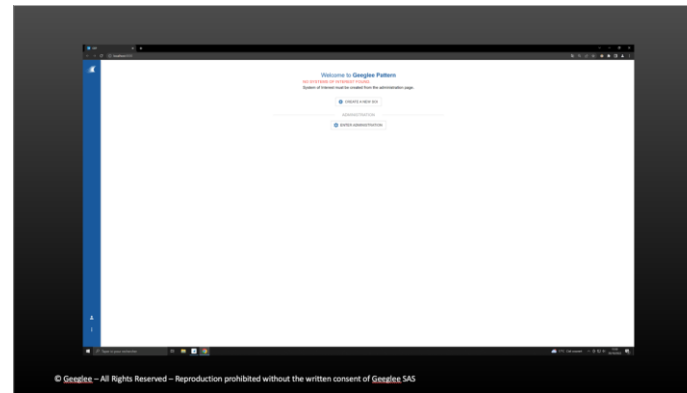
INTRODUCTION: SLIDE'S COLOR CODE

Further explanations



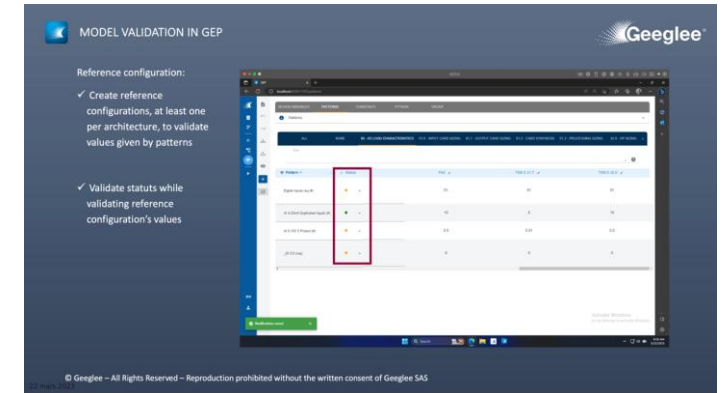
White frame

Geeglee tools handling



Black frame

Best practices



Blue frame

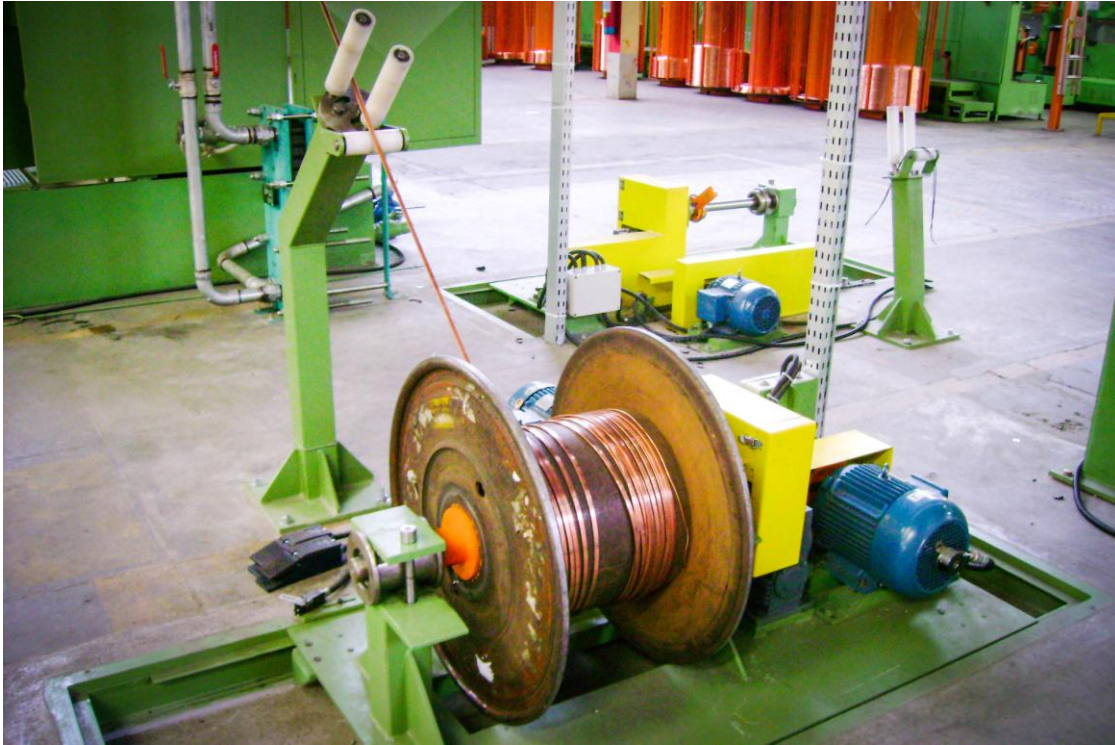


DAY ONE: HOW TO WORK WITH GEEGLEE?

PRAGMATIC TRAINING: ONLY PRACTICE



TRAINING SUBJECTS: THE TAKE UP MACHINE

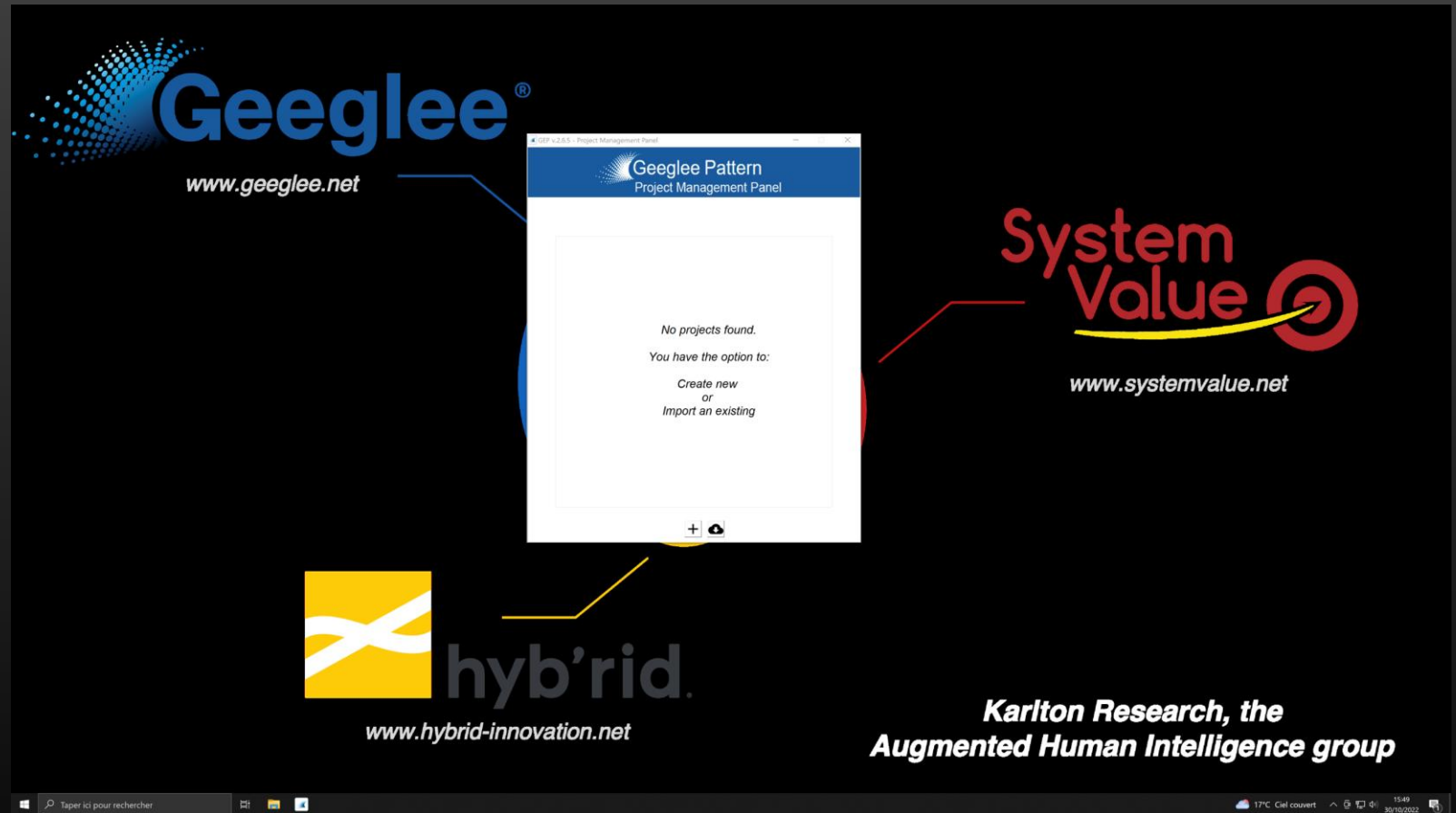




LAUNCH GEEGLE PATTERN



1. Click on the GEP shortcut (the white logo)
2. Geeglee Pattern opens the “Project Management Panel”





The screenshot shows the Geeglee Pattern Project Management Panel. The interface includes the Geeglee logo and website URL (www.geeglee.net) at the top left. The main content area is titled "Geeglee Pattern Project Management Panel" and "SELECT A PROJECT". A list of projects is shown, with "Take-Up Machine" selected and checked. Below the list, the text "current project selected for checkout: Take-Up Machine" is visible. At the bottom of the panel, there is a toolbar with a "+" icon and other symbols. Three callout boxes provide instructions: "1 - Click on « + » switch" points to the "+" icon; "2 - Set project name and press enter" points to the project name "Take-Up Machine"; "3 - Launch project" points to the toolbar area. The background of the screenshot also features the "System Value" logo and website (www.systemvalue.net) on the right, and the "hybrid" logo and website (www.hybrid-innovation.net) at the bottom center. The bottom of the screenshot shows a Windows taskbar with a search bar, task icons, and system tray information including temperature (17°C), weather (Ciel couvert), and date/time (15:49, 30/10/2022).

**Karlton Research, the
Augmented Human Intelligence group**



Welcome to Geeglee Pattern

NO SYSTEMS OF INTEREST FOUND.
System of Interest must be created from the administration page.

CREATE A NEW SOI

ADMINISTRATION

ENTER ADMINISTRATION

1 – Click on « Create a new SOI »





Welcome to Geeglee Pattern
NO SYSTEMS OF INTEREST FOUND.
System of Interest must be created from the administration page.

CREATE A NEW SOI

ADMINISTRATION

ENTER ADMINISTRATION

Create a new Project

Choose a mode Create a SOI Create an architecture Create a module Create an alternative

Name
Take-Up Machine
Please choose a name for your SOI

BACK NEXT

1 - Set a SOI name

2 - Click « Next »



Welcome to Geeglee Pattern
NO SYSTEMS OF INTEREST FOUND.
System of Interest must be created from the administration page.

CREATE A NEW SOI

ADMINISTRATION

ENTER ADMINISTRATION

Create a new Project

Choose a mode Create a SOI Create an architecture Create a module Create an alternative

Name: Ref

Please choose a name for your Architecture

BACK NEXT

1 - Set an architecture name

2 - Click « Next »



Welcome to Geeglee Pattern
NO SYSTEMS OF INTEREST FOUND.
System of Interest must be created from the administration page.

CREATE A NEW SOI

ADMINISTRATION

ENTER ADMINISTRATION

Create a new Project

- Choose a mode
- Create a SOI
- Create an architecture
- Create a module
- Create an alternative

Name: M1

Please choose a name for your Module

BACK NEXT

1 - Set a module name

2 - Click « Next »



Welcome to Geeglee Pattern
NO SYSTEMS OF INTEREST FOUND.
System of Interest must be created from the administration page.

CREATE A NEW SOI

ADMINISTRATION

ENTER ADMINISTRATION

Create a new Project

- Choose a mode
- Create a SOI
- Create an architecture
- Create a module
- Create an alternative**

Name: A1
Please choose a name for your Alternative

BACK FINISH

1 - Set an alternative name

2 - Click « Next »



The screenshot shows a web browser window with the URL localhost:8000. The main page displays a welcome message: "Welcome to Geeglee Pattern" and "NO SYSTEMS OF INTEREST FOUND. System of Interest must be created from the administration page." Below this are two buttons: "CREATE A NEW SOI" and "ENTER ADMINISTRATION".

A modal dialog titled "Create a new Project" is open in the center. It features a progress bar with five steps, each marked with a checkmark: "Choose a mode", "Create a SOI", "Create an architecture", "Create a module", and "Create an alternative". Below the progress bar, it says "Congratulation your project has been created !" and includes a "START" button with a right-pointing arrow. A "BACK" button is located at the bottom left of the modal.

A blue callout box with a white border points to the "START" button, containing the text: "To finish, click on « start »".



USING GUIDED MODE, GEEGLEE START INTO « PATTERN » PAGE



« Patterns » data page is one of the main page of Geeglee Pattern

The screenshot shows a web browser window at localhost:8000/1/EP/patterns. The interface features a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is selected. Below the navigation bar, there is a main working zone with a table header containing columns for Group, Pattern, Status, Architectures, and Rule. A blue callout box points to the navigation tabs, stating: "A data page is composed of « tabs » and sometime « sub-tabs »". Another blue callout box at the bottom of the page states: "A data page is composed of a main working zone".




- Most of the time, the best approach is to start a project by the « pattern ». This will lead to:
 - Reduce time, and effort, to get a first model,
 - Reduce the amount of data to manage,
 - Reduce the maintenance of your model.



INITIATE YOUR MODEL BY ADDING « PATTERN »



Click on the « + » sign

 *This sign is the most important one in GEP:
It is useful for 95% of actions!*



SET YOUR FIRST PATTERN



The screenshot shows a web browser window at localhost:8000/1/EP/patterns. The interface has tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is active, showing a table with columns for Group, Pattern, Status, Architectures, and Rule. A 'NEW PATTERN' modal dialog is open, containing a 'Name' input field with the text 'Total Cost of Ownership (€)', a 'Group' dropdown menu, and three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. A blue callout bubble with the text '1 - Set Pattern name' points to the 'Name' field.



ADVICE



- While setting patterns, promote top-down approach. This will lead to:
 - Increase the maturity of Geeglee's semantic engine for your project,
 - Use dedicated features to accelerate the maturity of your model (for your goal)



SET YOUR FIRST PATTERN



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/patterns`. The application has a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active. Below the navigation bar, there is a 'Patterns' section with a 'Rule' label. A table is displayed with the following columns: 'Group', 'Pattern', 'Status', 'Architectures', and 'Rule'. The table contains one row with the following data:

Group	Pattern	Status	Architectures	Rule
	Total Cost of Ownership (€)	●	Re...f	Not defined

The interface also features a left sidebar with various icons and a search bar at the bottom. The system tray at the bottom right shows the date and time as 15:58 on 30/10/2022.



SET YOUR FIRST PATTERN



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/patterns`. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS (selected), CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a section titled "Patterns" with a sub-section "Rule". A table is displayed with the following columns: Group, Pattern, Status, Architectures, and Rule. The table contains one row with the following data:

Group	Pattern	Status	Architectures	Rule
	Total Cost of Ownership (€)	●	Re...f	Not defined

The bottom of the browser window shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system tray icons for temperature (17°C) and weather (Ciel couvert), and the date/time (15:58, 30/10/2022).



SET YOUR FIRST PATTERN



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/patterns`. The interface has a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is active. Below the navigation bar, there is a search bar with the text `*CAPEX*+*OPEX`. A table below the search bar displays the following data:

Group	Pattern	Status	Architectures	Rule
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

The table has a search icon and a red error message icon above the search bar. The status column shows a yellow dot. The rule column shows the text `CAPEX + OPEX` with red strikethroughs over the words CAPEX and OPEX.



SET YOUR FIRST PATTERN



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/patterns`. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS (selected), CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a section titled "Patterns" with a sub-section "Rule". A text input field contains the rule expression: `^CAPEX+^OPEX`. Below this, a table displays the configuration for the pattern:

Group	Pattern	Status	Architectures	Rule
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

The bottom of the browser window shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system tray icons for temperature (17°C) and weather (Ciel couvert), and the date/time (15:58, 30/10/2022).



SET YOUR FIRST PATTERN



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/patterns`. The interface has a top navigation bar with tabs for `DESIGN VARIABLES`, `PATTERNS` (selected), `CONSTANTS`, `PYTHON`, and `GROUP`. Below the navigation bar, there is a section titled `Patterns` with a sub-section for `Rule`. A rule is defined as `"CAPEX"+"OPEX"`. Below the rule, a table lists the pattern details:

Group	Pattern	Status	Architectures	Rule
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

A green notification box at the bottom left of the interface displays the message `Modifications saved`. The Windows taskbar at the bottom shows the search bar with the text `Taper ici pour rechercher`, the system tray with a temperature of `17°C Ciel couvert`, and the date `30/10/2022`.



CREATE MORE PATTERNS



The screenshot shows a web application interface with a top navigation bar containing tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The main content area is titled "Patterns" and displays a rule: $\text{CAPEX} + \text{OPEX}$. Below the rule is a table with columns: Group, Pattern, Status, Architectures, and Rule. The table contains one entry: "Total Cost of Ownership (€)" with a status of "Re..." and a rule of $\text{CAPEX} + \text{OPEX}$. A modal dialog titled "LIST OF UNKNOWN PATTERNS" is open, showing two entries: "CAPEX" and "OPEX", each with a "CREATE PATTERN" button. The bottom of the screen shows a Windows taskbar with a search bar, task icons, and system tray information including temperature (17°C), weather (Ciel couvert), and date (30/10/2022).



CREATE MORE PATTERNS



The screenshot displays the 'Patterns' management interface. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active. Below the tabs, there is a search bar and a table of patterns. The table has the following columns: Group, Pattern, Status, Architectures, and Rule. The table contains three rows:

Group	Pattern	Status	Architectures	Rule
	CAPEX	●	Re...f	Not defined
	OPEX	●	Re...f	Not defined
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX



CREATE MORE PATTERNS



The screenshot shows a web browser window with the URL localhost:8000/1/EP/patterns. The application has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS (selected), CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a section titled 'Patterns' with a sub-section 'Rule' containing a green checkmark and the number '12'. A table below lists three patterns:

Group	Pattern	Status	Architectures	Rule
	CAPEX	●	Re...f	Not defined
	OPEX	●	Re...f	12
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX



The screenshot shows a web application interface with a navigation bar at the top containing tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is active. Below the navigation bar, there is a section titled 'Patterns' with a sub-section 'Rule' containing a checkmark and the number '12'. A table displays the following data:

Group	Pattern	Status	Architectures	Rule
	CAPEX	●	Re...f	Not defined
	OPEX	●	Re...f	12
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

A modal dialog box is displayed in the center of the screen with the following text:

MODIFICATIONS NOT SAVED
If you continue your navigation, all your unsaved modifications will be lost

Buttons: CONTINUE, CANCEL



CREATE YOUR FIRST DESIGN VARIABLES



The screenshot displays a web browser window with the URL `localhost:8000/1/EP/design-variables`. The application interface features a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'DESIGN VARIABLES' tab is active, showing a table with one row. The table has columns for 'Group', 'Design Variable', and 'Values', and a 'Delete' button. A green notification bar at the bottom of the application area states 'Modifications saved'. The browser's taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with a temperature of 17°C, and the date 30/10/2022.

Group	Design Variable	Values	Delete



CREATE YOUR FIRST DESIGN VARIABLES



The screenshot shows a web browser window at localhost:8000/1/EP/design-variables. The application interface includes a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. Below this is a table with columns for Group, Design Variable, Values, and a Delete button. A modal dialog titled 'NEW DESIGN VARIABLE' is open in the center, containing three input fields: 'Name *', 'Unit', and 'Group'. At the bottom of the dialog are three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. A green notification bar at the bottom left of the application area says 'Modifications saved'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with weather information (17°C Ciel couvert) and the date (30/10/2022).



CREATE YOUR FIRST DESIGN VARIABLES



The screenshot shows a web browser window at localhost:8000/1/EP/design-variables. The interface has a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. Below this is a table with columns for Group, Design Variable, Values, and a Delete button. A modal dialog titled 'NEW DESIGN VARIABLE' is open in the center. It contains three input fields: 'Name' with the value 'Investment', 'Unit' with the value 'M€', and 'Group' with a dropdown arrow. At the bottom of the dialog are three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. The browser's address bar and the Windows taskbar are also visible.



CREATE A DESIGN VARIABLES



The screenshot displays the Geeglee web application interface for managing design variables. The browser address bar shows the URL `localhost:8000/1/EP/design-variables`. The application has a top navigation bar with tabs for `DESIGN VARIABLES`, `PATTERNS`, `CONSTANTS`, `PYTHON`, and `GROUP`. The `DESIGN VARIABLES` tab is active, showing a table with the following structure:

Group	Design Variable	Values	Delete
	Investment (M€)	1	

A modal window titled `NEW DESIGN VARIABLE` is open in the center of the screen. It contains the following fields:

- `Name *` (text input)
- `Unit` (text input)
- `Group` (dropdown menu)

At the bottom of the modal, there are three buttons: `CANCEL`, `ADD & CLOSE`, and `ADD & CONTINUE`.



CREATE A DESIGN VARIABLES



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/design-variables`. The application interface includes a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'DESIGN VARIABLES' tab is active, displaying a table with columns for 'Group', 'Design Variable', 'Values', and 'Delete'. A single row is visible with 'Investment (M€)' under 'Design Variable' and '1' under 'Values'. A modal window titled 'NEW DESIGN VARIABLE' is centered on the screen, containing the following fields:

- Name: Amortization
- Unit: year
- Group: (empty dropdown)

At the bottom of the modal are three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with a temperature of 17°C, and the date 30/10/2022.



The screenshot displays the 'Design Variables' configuration page in a web browser. The browser address bar shows 'localhost:8000/1/EP/design-variables'. The page has a navigation bar with tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'Design Variables' tab is selected, showing a table with the following data:

Group	Design Variable	Values	Delete
	Amortization (year)	1	<input type="checkbox"/>
	Investment (M€)	1	<input type="checkbox"/>



CREATE DESIGN VARIABLES



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/design-variables`. The interface has a top navigation bar with tabs: DESIGN VARIABLES (selected), PATTERNS, CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a section titled "Design Variables" containing a table with the following data:

Group	Design Variable	Values	Delete
	Amortization (year)	1q	<input type="checkbox"/>
	Investment (M€)	1	<input type="checkbox"/>

The interface also features a left sidebar with navigation icons and a bottom Windows taskbar showing the search bar, task icons, and system tray with the date 30/10/2022 and time 15:58.



Group	Design Variable	Values	Delete
	Amortization (year)	20 + 10	<input type="checkbox"/>
	Investment (M€)	+ 1	<input type="checkbox"/>



CREATE DESIGN VARIABLES



The screenshot displays the 'DESIGN VARIABLES' configuration window in the Geeglee software. The window has a dark header with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below the header, there is a table with columns for 'Group', 'Design Variable', and 'Values'. The table contains two rows: 'Amortization (year)' with values 10 and 20, and 'Investment (M€)' with a value of 7. Each row has a 'Delete' button on the right. The interface also includes a left sidebar with navigation icons and a bottom status bar showing system information like temperature and date.

Group	Design Variable	Values	Delete
	Amortization (year)	10 20	<input type="checkbox"/>
	Investment (M€)	7	<input type="checkbox"/>



CREATE DESIGN VARIABLES



The screenshot displays the 'Design Variables' configuration window in the Geeglee software. The window has a dark header with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'DESIGN VARIABLES' tab is active, showing a table with two variables: 'Amortization (year)' and 'Investment (M€)'. Each variable has a range of values defined by a minimum and maximum value, and a 'Delete' button.

Group	Design Variable	Values	Delete
	Amortization (year)	10 - 20	<input type="checkbox"/>
	Investment (M€)	7 - 10	<input type="checkbox"/>



The screenshot shows the 'Patterns' tab in the Geeglee web interface. The main content area displays a table with the following data:

Group	Pattern	Status	Architectures	Rule
	CAPEX	●	Re...f	Not defined
	OPEX	●	Re...f	12
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX



The screenshot shows the 'Patterns' tab in the Geeglee software. The interface includes a sidebar with navigation icons and a main content area with a table of design variables and their associated patterns and rules.

Rule	Pattern	Status	Architectures	Rule
M1	CAPEX	●	Re...f	Not defined
CAPEX	OPEX	●	Re...f	12
OPEX	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX
Total Cost of Ownership (€)	Amortization (year)			
Amortization (year)	Investment (M€)			



DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

Patterns

Rule

🔍 "Investment (M€)?"

	Pattern ↑	Status	Architectures	Rule
M1				
CAPEX	CAPEX	●	Re...f	$\frac{\text{Investment (M€)}}{\text{Amortization (year)}}$
OPEX	OPEX	●	Re...f	12
Total Cost of Ownership (€)	OPEX	●	Re...f	12
Amortization (year)				
Investment (M€)	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

SOI

Taper ici pour rechercher

17°C Ciel couvert 15:59 30/10/2022



SET YOUR FIRST PATTERNS' STATUS



The screenshot shows the 'Patterns' tab in the Geeglee application. The main content area displays a table with the following data:

Group	Pattern	Status	Architectures	Rule
	CAPEX	●	Re...f	Investment (M€) Amortization (year)
	OPEX	●	Re...f	12
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX

A status dropdown menu is open over the 'Status' column, showing a legend with three colored circles (green, yellow, red) and a button labeled 'Approval in progress'.



SET PATTERNS' STATUS



Group	Pattern	Status	Architectures	Rule
	CAPEX	Yellow	Re...f	<u>Investment (M€)</u> <u>Amortization (year)</u>
	OPEX	Red	Re...f	12
	Total Cost of Ownership (€)	Green	Re...f	CAPEX + OPEX



CREATE YOUR FIRST REFERENCE CONFIGURATION



The screenshot shows a web application interface with a 'Patterns' table and a 'NEW REFERENCE CONFIGURATION' dialog box. The table has columns for Group, Pattern, Status, Architectures, and Rule. The dialog box is open, showing fields for Name, Architecture, and Design Variables. The Design Variables section is active, showing 'Amortization (year)' set to 10 and 'Investment (M€)' set to 7. The 'MODULES' section shows 'M1' selected. The dialog box has 'SAVE' and 'CANCEL' buttons at the bottom right.

Group	Pattern	Status	Architectures	Rule
CAPEX				Investment (M€) Amortization (year)
OPEX				
Total Co				PEX + OPEX

NEW REFERENCE CONFIGURATION

Name *

Architecture *

DESIGN VARIABLES **MODULES**

Amortization (year) M1

Investment (M€)

HLR INPUTS ENV. VARIABLES ENV. SYSTEMS

SAVE CANCEL



CREATE YOUR FIRST REFERENCE CONFIGURATION



The screenshot shows a web application interface with a 'Patterns' table and a 'NEW REFERENCE CONFIGURATION' dialog box. The table has columns for Group, Pattern, Status, Architectures, and Rule. The dialog box is open and contains the following information:

DESIGN VARIABLES	MODULES
Amortization (year) 10	M1 A1
Investment (M€) 7	

The dialog box also has tabs for 'HLR INPUTS', 'ENV. VARIABLES', and 'ENV. SYSTEMS', and 'SAVE' and 'CANCEL' buttons.



CREATE YOUR FIRST REFERENCE CONFIGURATION



The screenshot shows a web application interface with a 'Patterns' table and a 'NEW REFERENCE CONFIGURATION' dialog box. The table has columns for Group, Pattern, Status, Architectures, and Rule. The dialog box is open, showing the following fields:

- Name: Ref 20M/7y
- Architecture: Ref.
- DESIGN VARIABLES: Amortization (year) 20, Investment (M€) 7
- MODULES: M1, A1

At the bottom of the dialog, there are tabs for HLR INPUTS, ENV. VARIABLES, and ENV. SYSTEMS, and buttons for SAVE and CANCEL.



CREATE YOUR FIRST REFERENCE CONFIGURATION



The screenshot shows the 'Patterns' configuration page in the Geeglee web interface. The page has a navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'Patterns' tab is active, and the page title is 'Patterns'. Below the title, there is a 'Rule' section with a green checkmark and the text '*Investment (M€)*/Amortization (year)'. A table below this section lists the patterns:

Group	Pattern	Status	Architectures	Rule	Ref 20M/7y
	CAPEX	Yellow dot	Re...f	<u>Investment (M€)</u> <u>Amortization (year)</u>	0.35
	OPEX	Red dot	Re...f	12	12
	Total Cost of Ownership (€)	Green dot	Re...f	CAPEX + OPEX	12.35

A green notification bar at the bottom of the page indicates 'Modifications saved'.



DUPLICATE YOUR REFERENCE CONFIGURATION



The screenshot shows a web browser window displaying the Geeglee interface. The browser address bar shows 'localhost:8000/1/EP/patterns'. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS (selected), CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a 'Patterns' section with a sub-header 'Rule' and a status indicator '✓ "Investment (M€)"/"Amortization (year)"'. A table lists the patterns:

Group	Pattern	Status	Architectures	Rule	Ref 20M7y
	CAPEX	●	Re...f	$\frac{\text{Investment (M€)}}{\text{Amortization (year)}}$	0.35
	OPEX	●	Re...f	12	12
	Total Cost of Ownership (€)	●	Re...f	CAPEX + OPEX	12.35



DUPLICATE YOUR REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. At the top, there are tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'Patterns' tab is active, showing a table with columns for Group, Pattern, Status, Architectures, Rule, and Ref 20M/7y. A modal dialog box titled 'EDIT REFERENCE CONFIGURATION' is open, allowing users to edit the configuration for a specific pattern. The dialog includes fields for Name, Architecture, Design Variables, and Modules, along with buttons for SAVE, CANCEL, DUPLICATE, and DELETE.

Group	Pattern	Status	Architectures	Rule	Ref 20M/7y
CAPEX			Re...	Investment (M€) Amortization (year)	0.35
OPEX					12
Total Cost of Ownership (TCO)					12.35

EDIT REFERENCE CONFIGURATION

Name*
Ref 20M/7y

Architecture*
Ref.

DESIGN VARIABLES MODULES

Amortization (year) M1
20 A1

Investment (M€)
7

HLR INPUTS ENV. VARIABLES ENV. SYSTEMS

SAVE CANCEL DUPLICATE DELETE



DUPLICATE YOUR REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. The main window shows a table of patterns under the 'PATTERNS' tab. The table has columns for Group, Pattern, Status, Architectures, Rule, and numerical values. The 'CAPEX' pattern is selected, and the 'EDIT REFERENCE CONFIGURATION' dialog box is open over it. The dialog box contains the following fields and options:

- Name: Ref 10M/10y
- Architecture: Ref.
- DESIGN VARIABLES: Amortization (year) 10, Investment (M€) 10
- MODULES: M1, A1
- Buttons: SAVE, CANCEL, DUPLICATE, DELETE

Group	Pattern	Status	Architectures	Rule	Ref 20M/7y	Ref 20M/7y-1
CAPEX			Re. 1	Investment (M€) Amortization (year)	0.35	0.35
OPEX					12	12
Total Cost of Ownership (€)					12.35	12.35



DUPLICATE YOUR REFERENCE CONFIGURATION



DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

Patterns

Rule

✓ "Investment (M€)"/"Amortization (year)"

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	●	Re. 1	$\frac{\text{Investment (M€)}}{\text{Amortization (year)}}$	1	0.35
	OPEX	●	Re. 1	12	12	12
	Total Cost of Ownership (€)	●	Re. 1	CAPEX + OPEX	13	12.35

Modifications saved

17°C Ciel couvert 16:02 30/10/2022



USE THE EMBEDDED MODEL CHECK



The screenshot displays the Geeglee Model Checking interface within a web browser. The browser address bar shows the URL `localhost:8000/1/design-spaces/model-checking`. The interface features a top navigation bar with tabs for **MODEL CHECKING**, **PROJECT MATURITY**, **REPORT GENERATION**, and **DESIGN SPACE GENERATION**. Below the navigation bar, the main content area is titled **Model checking** and contains a list of warnings and errors. The list is organized into sections, with the first section titled **Warnings** and a sub-section for **Design space generation**. The items in the list are as follows:

- Internal Incompatibility error (critical)
- Missing values (critical)
- No architecture in this SOI (critical)
- No environment module alternatives (critical)
- No module alternatives for architecture (critical)
- Patterns: Circular Loop (critical)
- HLR Requirement constraints: not used in patterns (high)
- HLR outputs: missing target (high)
- Missing modules for architecture (high)
- No HLR outputs (high)
- There is no GEI file set up (high)
- Unknown elements in patterns (high)
- Patterns: invalid formula (moderate)
- Characteristics: not linked to a module (low)
- Characteristics: not used in patterns (low)
- HLR inputs - Design variables - Environment variables: not used (low)
- Reference configurations: values out of range (low)

The interface also includes a left sidebar with navigation icons and a Windows taskbar at the bottom showing the search bar, task view, and system tray with the date 30/10/2022 and temperature 17°C.



USE THE EMBEDDED MODEL CHECK



The screenshot displays the Geeglee Model Checking interface. The browser address bar shows the URL `localhost:8000/1/design-spaces/model-checking`. The interface has a blue header with navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, and DESIGN SPACE GENERATION. Below the header, a section titled "Model checking" contains a list of warnings and errors. The list is organized into sections: "Warnings" (indicated by a yellow triangle icon) and "Errors" (indicated by a red circle icon). Each item in the list includes a status icon (green checkmark or red circle with '1'), a description, and a severity level (critical, high, or low). A blue "INSPECT" button is visible at the bottom right of the list.

Severity	Message	Level
Warning	Internal Incompatibility error	critical
Warning	Missing values	critical
Warning	No architecture in this SOI	critical
Warning	No environment module alternatives	critical
Warning	No module alternatives for architecture	critical
Warning	Patterns: Circular Loop	critical
Warning	HLR Requirement constraints: not used in patterns	high
Warning	HLR outputs: missing target	high
Warning	Missing modules for architecture	high
Error	No HLR outputs	high
Error	There is no GEI file set up	high
Warning	Unknown elements in patterns	high
Error	Patterns: invalid formula	moderate
There are only constants in the rule : OPEX		
Warning	Characteristics: not linked to a module	low
Warning	Characteristics: not used in patterns	low
Warning	HLR inputs - Design variables - Environment variables: not used	low
Warning	Reference configurations: values out of range	low



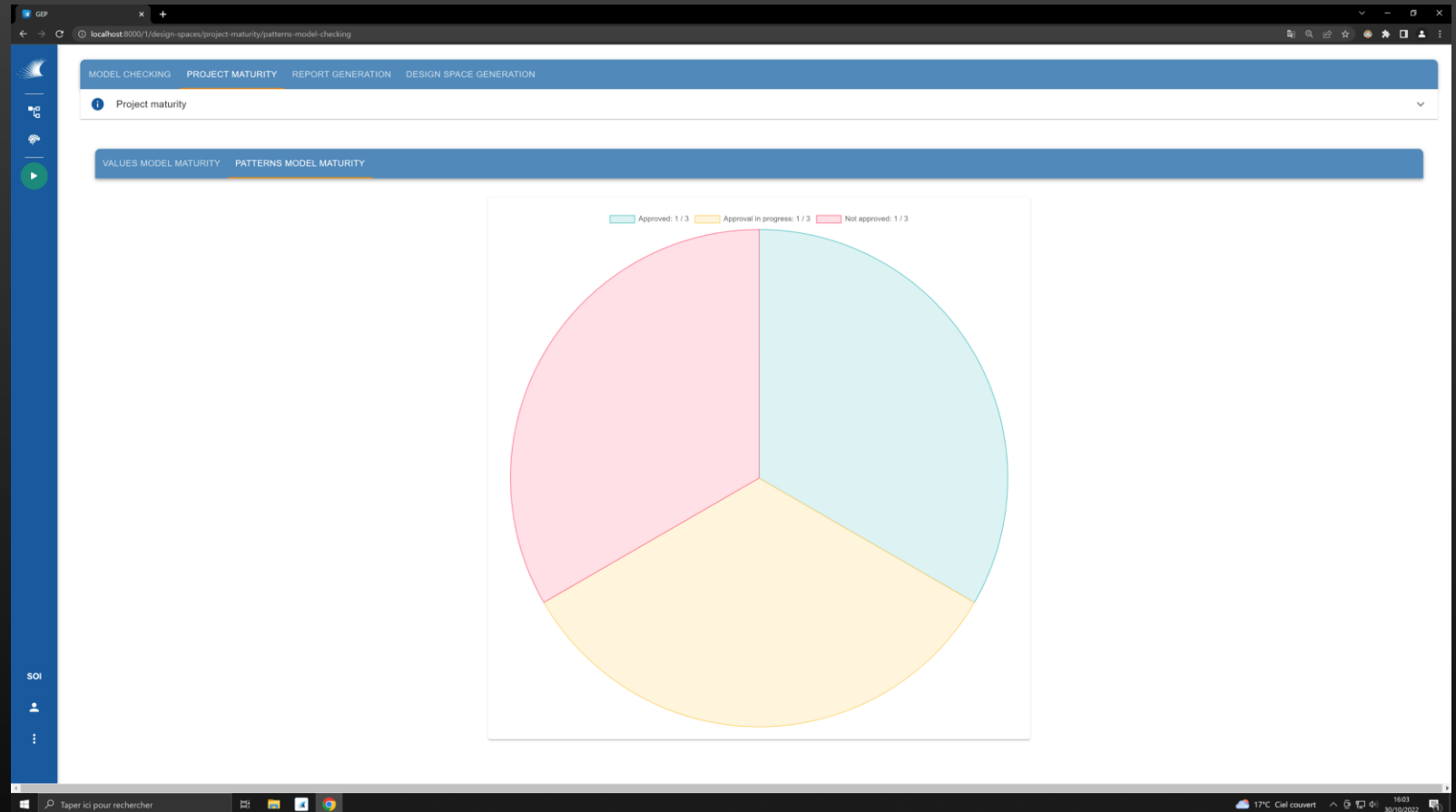
USE THE EMBEDDED MODEL CHECK



The screenshot shows a web browser window displaying the Geeglee interface. The browser address bar shows 'localhost:8000/1/EP/patterns/OPEX&name'. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS (selected), CONSTANTS, PYTHON, and GROUP. Below the navigation bar, there is a 'Patterns' section with a 'Rule' input field. A table below lists design patterns with the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The table contains one row with the following data:

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	OPEX	●	Re...f	12	12	12

The bottom of the browser window shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system tray icons for temperature (17°C Ciel couvert) and date (30/10/2022), and a battery icon.





LAUNCH YOUR FIRST SIMULATION



The screenshot shows a web browser window displaying the 'Design space generation' interface. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, there is a section titled 'Design space generation' with a dropdown arrow. On the left, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 4'. Below this section is a table titled 'Design spaces' with columns: Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table is currently empty. The browser's taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', task icons, and system tray information including '17°C Ciel couvert' and '16:03 30/10/2022'.



The screenshot displays the 'Design space generation' section of the Geeglee web application. The interface includes a navigation bar with tabs for 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The 'DESIGN SPACE GENERATION' tab is active. Below the navigation bar, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons, there are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 4'. Below these indicators is a table titled 'Design spaces' with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table is currently empty. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', the system tray with '17°C Ciel couvert', and the date '16h 35/10/2022'.



The screenshot displays the Geeglee web interface for Design Space Generation. The main content area shows progress indicators for Calculation time saturation (0.01%), Memory consumption saturation (0.01%), Estimated calculation time (less than 5 minutes), and Estimated solutions (4). A modal dialog titled "Generate design space" is open, containing fields for Name and Description, a file selection button, and a checkbox for "Only light result".

Name	Identifier	Description	Only	Start date	End date	Status	Files
------	------------	-------------	------	------------	----------	--------	-------



The screenshot shows a web browser window at localhost:8000/1/design-spaces/generation. The interface has a top navigation bar with tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, and DESIGN SPACE GENERATION. The active tab is DESIGN SPACE GENERATION. Below the navigation bar, there are two buttons: GENERATE SETTING GEI and GENERATE DESIGN SPACE. To the right of these buttons are four circular progress indicators: Calculation time saturation (0.01%), Memory consumption saturation (0.01%), Estimated calculation time (less than 5 minutes), and Estimated solutions (4). Below these indicators is a table titled 'Design spaces' with columns: Name, Identifier, Description, Only, Start date, End date, Status, and Files. A modal dialog titled 'Generate design space' is open, showing a form with the following fields: Name (First Runt), Description (TCO with design variables), Current GEI file (No GEI file selected), Select a GEI file (with a file selection icon), and an 'Only light result' checkbox. A 'START' button is at the bottom right of the modal. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', task icons, and system tray information: 17°C Ciel couvert, 16:04, 30/10/2022.



The screenshot shows a web browser window with the URL `localhost:8000/1/design-spaces/generation`. The interface has a blue header with navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, and DESIGN SPACE GENERATION. The active tab is DESIGN SPACE GENERATION, which contains a sub-header 'Design space generation' and a 'GENERATE SETTING GEI' button. Below this, a progress bar shows 'GENERATING DESIGN SPACE #1'. Two circular progress indicators show '0.01%' for 'Calculation time saturation' and 'Memory consumption saturation'. To the right, text indicates 'Estimated calculation time: less than 5 minutes' and 'Estimated solutions: 4'. A table titled 'Design spaces' is visible below, with one entry:

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04			Pending	



The screenshot shows a web browser window displaying the 'Design space generation' interface. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, there's a 'Design space generation' section with a 'GENERATE SETTING GEI' button and a 'GENERATING DESIGN SPACE #UNDEFINED' progress indicator. Two circular progress indicators show '0.01%' for 'Calculation time saturation' and 'Memory consumption saturation'. To the right, it displays 'Estimated calculation time: less than 5 minutes' and 'Estimated solutions: 4'. Below this is a 'Design spaces' table with columns: Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table contains one entry: 'First Run' with identifier '1' and description 'TCO with design variables...'. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', system tray with '17°C Ciel couvert', and date '30/10/2022'.

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05		2/3	



The screenshot shows a web browser window displaying the 'Design space generation' interface. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 4'. Below these indicators is a table titled 'Design spaces' with the following data:

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



DOWNLOAD YOUR FIRST RESULTS



The screenshot shows the 'Design space generation' interface. At the top, there are navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, and DESIGN SPACE GENERATION. Below these, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. The progress section shows four indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 4'. Below this is a table titled 'Design spaces' with columns: Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. A dropdown menu is open for the 'Files' column of the first row, showing a list of files with their names, sizes, and download icons.

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	<ul style="list-style-type: none">File nameSizeDownloadDownload All (949.8 kB)Take-Up Machine_id#1_full_setting_GEI.zip (7.9 kB)Take-Up Machine_id#1_full.zip (12 kB)Take-Up Machine.gep (925.9 kB)log_Take-Up Machine_id#1.zip (2.4 kB)analysis_Take-Up Machine_id#1.zip (830 B)report_Take-Up Machine_id#1.txt (724 B)



DOWNLOAD YOUR FIRST RESULTS



The screenshot shows the 'Design space generation' interface. At the top, there are navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, and DESIGN SPACE GENERATION. Below the tabs, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. The progress indicators show:

- Calculation time saturation: 0.01%
- Memory consumption saturation: 0.01%
- Estimated calculation time: less than 5 minutes
- Estimated solutions: 4

Below the progress indicators is a table titled 'Design spaces' with the following data:

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	

A dropdown menu is open from the 'Files' column, showing a list of files with their names, sizes, and download icons:

File name	Size	Download
Download All	949.8 kB	
Take-Up Machine_id#1_full_setting_GEI.zip	7.9 kB	
Take-Up Machine_id#1_full.zip	12 kB	
Take-Up Machine.gep	925.9 kB	
log_Take-Up Machine_id#1.zip	2.4 kB	
analysis_Take-Up Machine_id#1.zip	830 B	
report_Take-Up Machine_id#1.txt	724 B	



DOWNLOAD YOUR FIRST RESULTS



The screenshot displays the Geeglee web interface for design space generation. The main content area shows a progress indicator for 'Design space generation' with two sub-indicators: 'Calculation time saturation' and 'Memory consumption saturation'. Below these are buttons for 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. A table on the left lists 'Design spaces' with columns for Name and Identifier. The main area also features a table of results with columns for End date, Status, and Files. A file explorer window is overlaid on the interface, showing the file structure of the generated design space. A download menu is open, listing various files for download.

Name	Identifier
First Run	1

End date	Status	Files
22, 16:05	30 October 2022, 16:05	Finished

File name	Size	Download
Download All	949.8 kB	
Take-Up Machine_id#1_full_setting_GEI.zip	7.9 kB	
Take-Up Machine_id#1_full.zip	12 kB	
Take-Up Machine.gep	925.9 kB	
log_Take-Up Machine_id#1.zip	2.4 kB	
analysis_Take-Up Machine_id#1.zip	830 B	
report_Take-Up Machine_id#1.txt	724 B	



The screenshot displays the Geeglee web interface for design space generation. The main navigation bar includes 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The current view is 'Design space generation', which features buttons for 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. A table on the right shows 'Estimated solutions' with 4 results. A file explorer window is open over the interface, showing a dialog to extract files from a compressed folder. The dialog text reads: 'Sélectionner une destination et extraire les fichiers. Les fichiers seront extraits dans ce dossier: [C:\Users\Averses\Downloads\Take-Up Machine_id#1.zip].'

End date	Status	Files																								
22, 16:05	30 October 2022, 16:05	Finished																								
		<table border="1"><thead><tr><th>File name</th><th>Size</th><th>Download</th></tr></thead><tbody><tr><td>Download All</td><td>949.8 kB</td><td></td></tr><tr><td>Take-Up Machine_id#1_full_setting_GEI.zip</td><td>7.9 kB</td><td></td></tr><tr><td>Take-Up Machine_id#1_full.zip</td><td>12 kB</td><td></td></tr><tr><td>Take-Up Machine.gep</td><td>925.9 kB</td><td></td></tr><tr><td>log_Take-Up Machine_id#1.zip</td><td>2.4 kB</td><td></td></tr><tr><td>analysis_Take-Up Machine_id#1.zip</td><td>830 B</td><td></td></tr><tr><td>report_Take-Up Machine_id#1.txt</td><td>724 B</td><td></td></tr></tbody></table>	File name	Size	Download	Download All	949.8 kB		Take-Up Machine_id#1_full_setting_GEI.zip	7.9 kB		Take-Up Machine_id#1_full.zip	12 kB		Take-Up Machine.gep	925.9 kB		log_Take-Up Machine_id#1.zip	2.4 kB		analysis_Take-Up Machine_id#1.zip	830 B		report_Take-Up Machine_id#1.txt	724 B	
File name	Size	Download																								
Download All	949.8 kB																									
Take-Up Machine_id#1_full_setting_GEI.zip	7.9 kB																									
Take-Up Machine_id#1_full.zip	12 kB																									
Take-Up Machine.gep	925.9 kB																									
log_Take-Up Machine_id#1.zip	2.4 kB																									
analysis_Take-Up Machine_id#1.zip	830 B																									
report_Take-Up Machine_id#1.txt	724 B																									

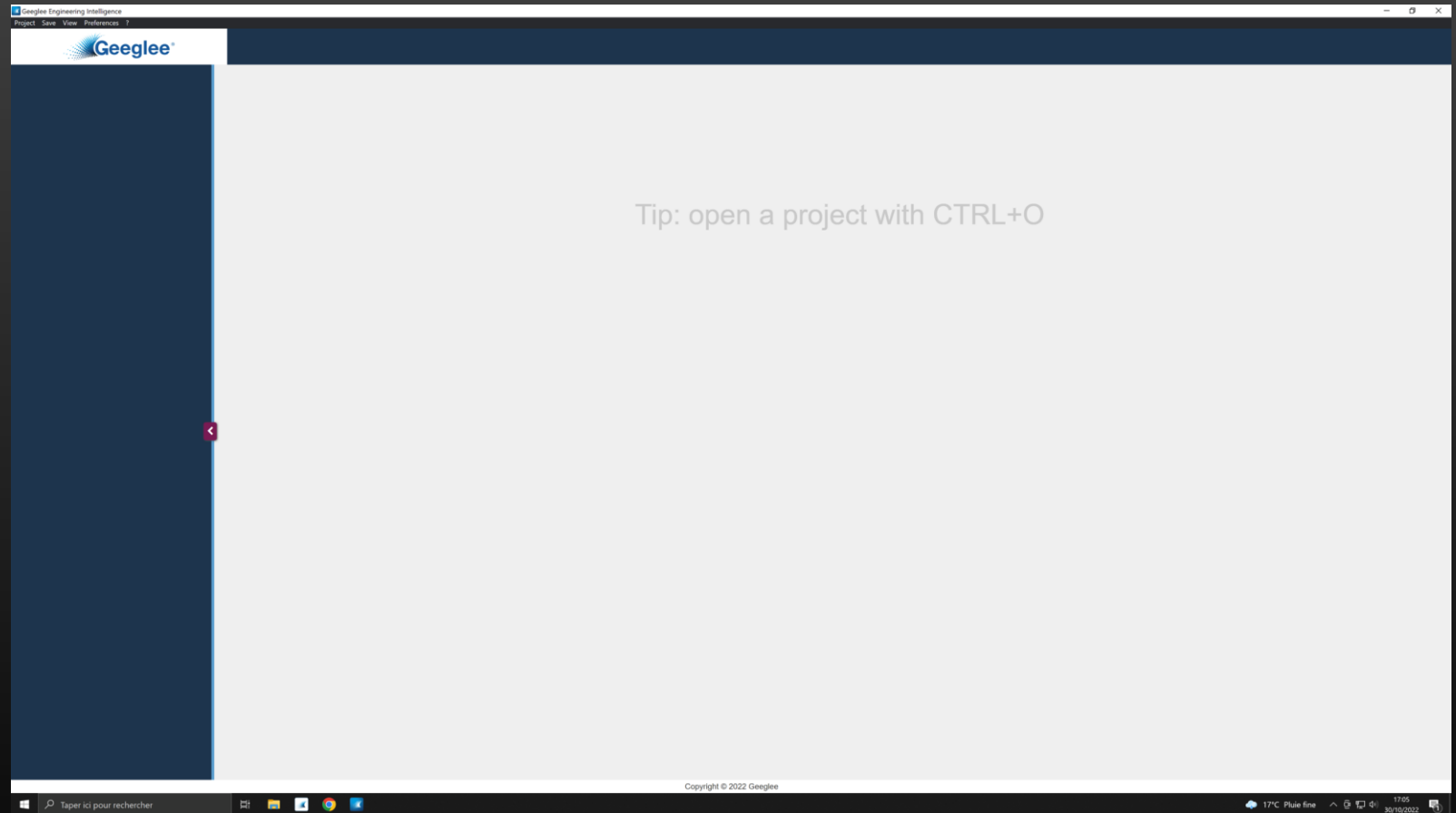


The screenshot displays the Geeglee web interface for design space generation. The main navigation bar includes 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The current view is 'Design space generation', which shows progress indicators for 'Calculation time saturation' and 'Memory consumption saturation'. A table on the right lists 'Estimated solutions' with 4 entries. A file explorer window is open over the interface, showing a dialog to extract files from a compressed folder. The dialog prompts the user to select a destination and extract the files, with the path '\Mac\Home\Downloads' entered. A table on the right side of the interface lists the generated files and their sizes.

File name	Size	Download
Download All	949.8 kB	
Take-Up Machine_id#1_full_setting_GEL.zip	7.9 kB	
Take-Up Machine_id#1_full.zip	12 kB	
Take-Up Machine.gep	925.9 kB	
log_Take-Up Machine_id#1.zip	2.4 kB	
analysis_Take-Up Machine_id#1.zip	830 B	
report_Take-Up Machine_id#1.txt	724 B	

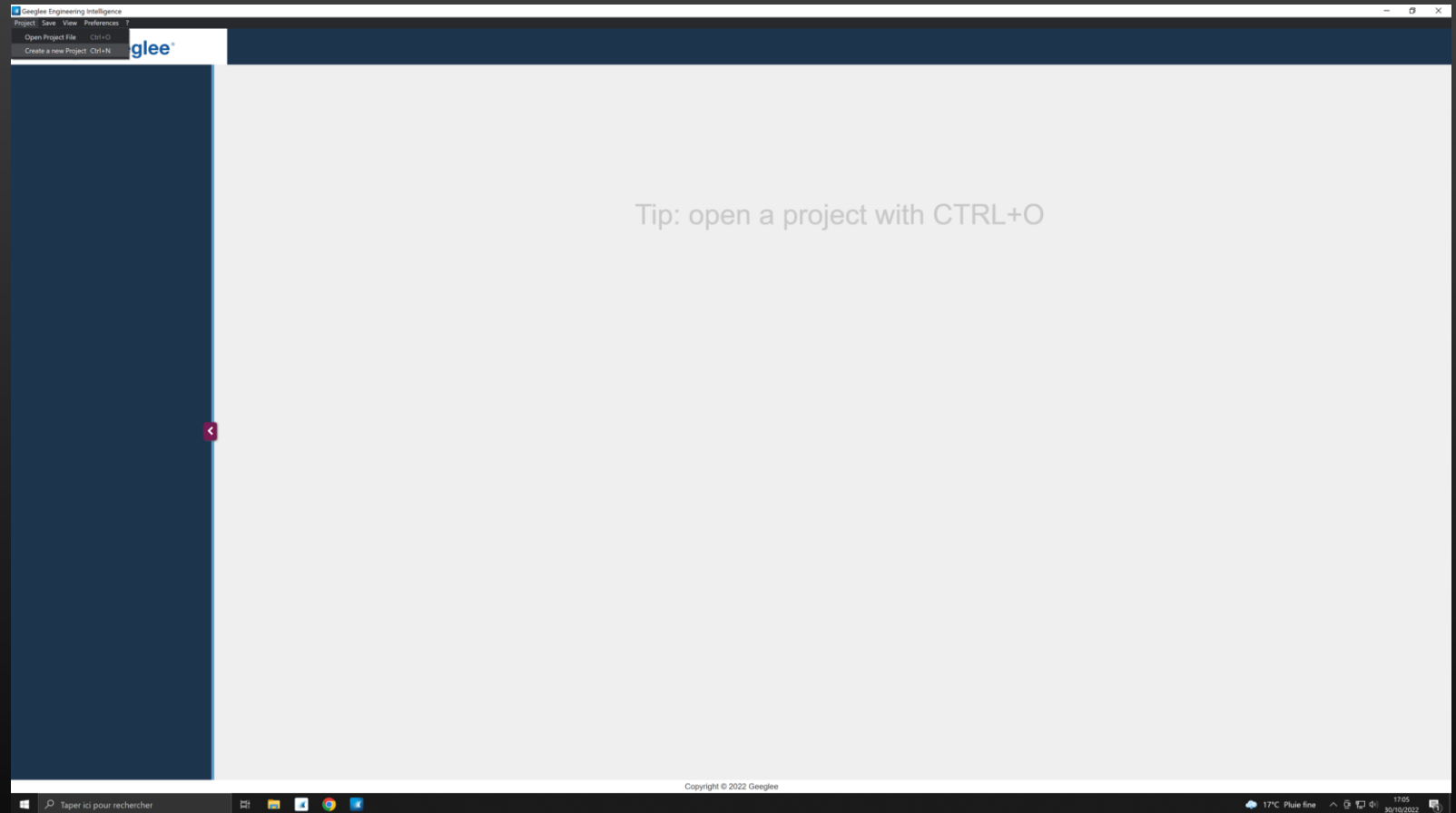


INITIATE YOUR FIRST GEEGLE INTELLIGENCE (GEI)





INITIATE YOUR FIRST GEEGLE INTELLIGENCE (GEI)





INITIATE YOUR FIRST GEEGLE INTELLIGENCE (GEI)



Geeglee Engineering Intelligence
Project Save View Preferences 1

Project editor

Newly created project

Project

Name

File Path

Max Number Of Configurations Loaded

Subsets

Grid Layout

Layout Edition

SideBar Widget

Display A Header?

Display A Footer?

Theme

Copyright © 2022 Geeglee

Taper ici pour rechercher

17°C Pluie fine 30/10/2022





The screenshot shows the 'Project editor - Take-Up Machine' window. On the left is a sidebar with the project name 'Take-Up Machine'. The main area contains a configuration table for the project settings:

Project	
Name	Take-Up Machine
File Path	\\Mac\Home\Downloads\Take-Up Machine_id#1_full.h5
Max Number Of Configurations Loaded	+
Subsets	+
Grid Layout	+
Layout Edition	+
SideBar Widget	+
Display A Header?	+
Display A Footer?	+
Theme	+

At the bottom of the window, there is a copyright notice: 'Copyright © 2022 Geeglee'. The Windows taskbar at the very bottom shows the search bar with the text 'Taper ici pour rechercher', system tray icons for temperature (17°C) and time (30/10/2022), and the Windows Start button.



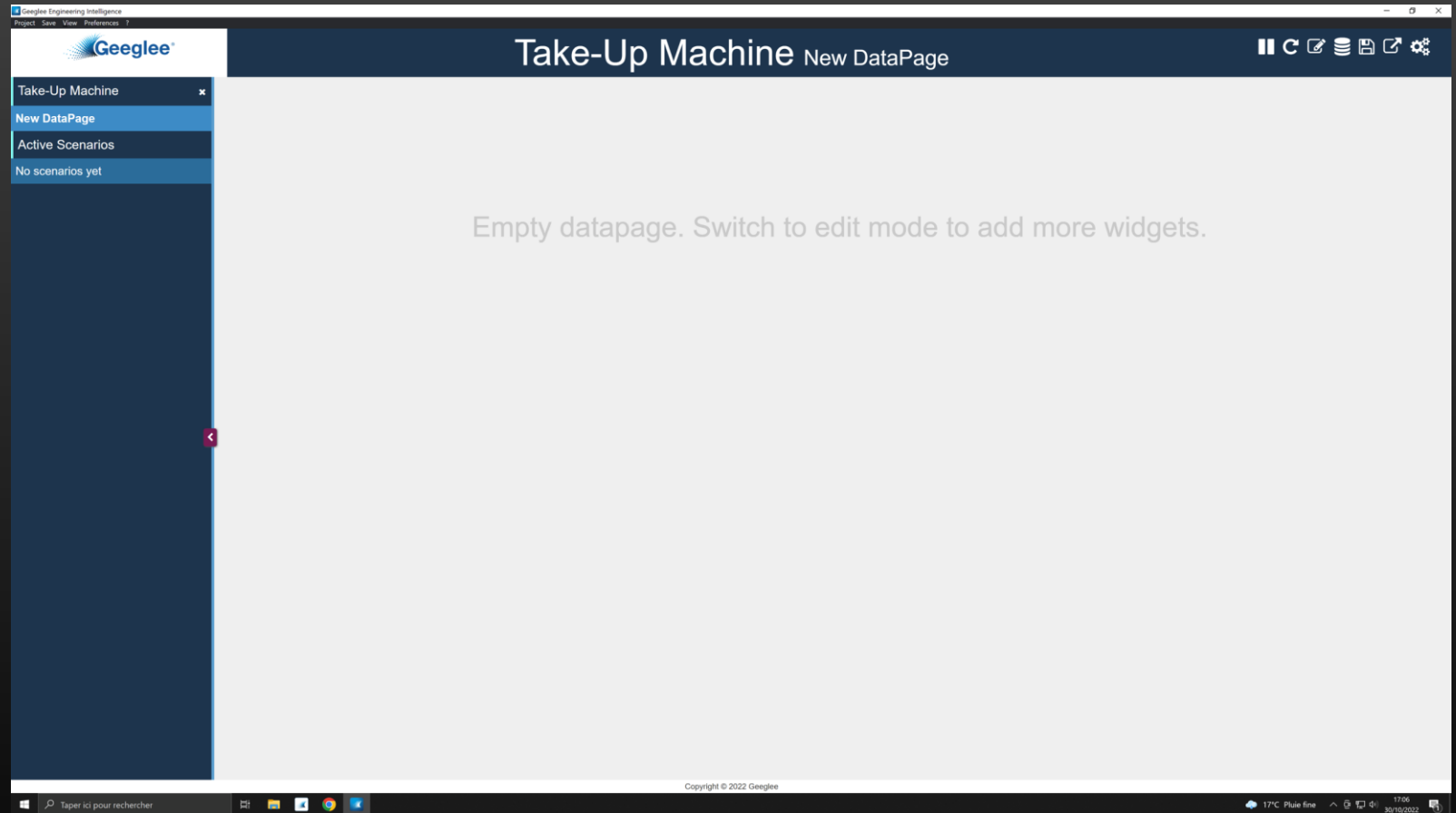
INITIATE YOUR FIRST GEEGLE INTELLIGENCE (GEI)



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Project editor - Take-Up Machine". On the left, a sidebar contains several widgets: "SideBar Widget", "Display A Header?", "Display A Footer?", and "Theme". A file explorer window is open over the interface, showing a file named "Take-Up Machine_id#1_full.h5" with a type of "Geeglee Project". The file explorer has a search bar and a list of files. The main editor area is currently blank. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with the temperature "17°C Pluie fine" and the date "30/10/2022".



INITIATE YOUR FIRST GEEGLE INTELLIGENCE (GEI)





CREATE YOUR FIRST WIDGET



The screenshot displays the Geeglee Engineering Intelligence web application. The browser window title is "Geeglee Engineering Intelligence". The main header shows "Take-Up Machine New DataPage" with a menu icon, a close icon, and a settings icon. Below the header, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The left sidebar contains the following items: "Take-Up Machine" (with a close icon), "New DataPage" (with a refresh icon), "+ Create a new DataPage" (highlighted in red), "Active Scenarios", and "No scenarios yet". The main content area is currently empty. The footer of the application shows "Copyright © 2022 Geeglee". The Windows taskbar at the bottom includes a search bar with the text "Taper ici pour rechercher", several application icons, and system tray information showing "17°C Pluie fine" and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence web application. The main header shows 'Take-Up Machine New DataPage' with navigation options: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. A left sidebar contains a menu with 'Take-Up Machine', 'New DataPage', '+ Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. A 'New widget' dialog box is open in the center, featuring a dropdown for 'Reuse an existing widget' (currently showing '-- No option available --') and an 'Import widget to dataPage' button. Below this, the 'Or create a new widget' section includes a 'Type' dropdown (set to 'Select'), a 'Query' field with 'n°0' entered, a 'Label' field with '7pxgrhzj' entered, and an 'Additional Setting' section with a 'Precisi' field. A 'Create widget' button is located at the bottom right of the dialog. The footer of the application shows 'Copyright © 2022 Geeglee' and system information: 'Coucher du soleil', '17:06', and '30/10/2022'.



The screenshot shows the Geeglee Engineering Intelligence web application. The main header displays 'Take-Up Machine' and 'New DataPage'. A sidebar on the left contains navigation options: 'Take-Up Machine', 'New DataPage', '+ Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area features a 'New widget' dialog box with the following fields and options:

- Reuse an existing widget:** A dropdown menu showing '-- No option available --' and an 'Import widget to dataPage' button.
- Or create a new widget:** A section with a 'Type' dropdown menu set to 'Select'.
- Query:** A text input field containing 'cost' and a dropdown menu showing 'Total Cost of Ownership (€)'.
- Label:** A text input field containing '7x(9xh2)'.
- Additional Setting:** A dark blue header for a section containing a 'Precision' input field.
- Create widget:** A button at the bottom right of the dialog.

The bottom of the screen shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system icons, and the date '30/10/2022'.



The screenshot shows the Geeglee Engineering Intelligence web application. The main header displays 'Take-Up Machine New DataPage' with navigation options: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. A sidebar on the left contains 'Take-Up Machine', 'New DataPage', '+ Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The 'New widget' dialog box is open, allowing users to either reuse an existing widget (currently showing '-- No option available --') or create a new one. The 'Or create a new widget' section includes a 'Type' dropdown set to 'Select', a 'Query' field with 'Total Cost of Ownership (€)', and a 'Label' field with 'Total Cost of Ownership (€)'. Below this is an 'Additional Setting' section with a 'Precision' field. At the bottom, there is an 'Argument widgets' section with a button 'Create 2 argument(s) widgets for query Total Cost of Ownership (€)' and a 'Create widget' button.



CREATE YOUR FIRST WIDGET



The screenshot displays the Geeglee Engineering Intelligence web application. The browser window title is "Geeglee Engineering Intelligence". The main header shows "Take-Up Machine New DataPage" with navigation icons for save, close, share, and settings. Below the header, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings".

The left sidebar menu includes the following items:

- Take-Up Machine (with a close icon)
- New DataPage (with a refresh icon)
- + Create a new DataPage (highlighted in pink)
- Active Scenarios
- No scenarios yet

The main content area features a widget titled "Total Cost of Ownership (€)". The widget contains the text: "New widget", "Load data by clicking on the left menu.", and a small gear icon. A red arrow points to the "New DataPage" menu item in the sidebar.

At the bottom of the browser window, the Windows taskbar is visible with the search bar containing "Taper ici pour rechercher", the system tray showing "Coucher du soleil", and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence web application. The main header shows 'Take-Up Machine New DataPage'. On the left, a navigation menu includes 'Take-Up Machine', 'New DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area features a placeholder for a 'Total Cost of Ownership (€)' widget with the text 'New widget' and 'Load data by clicking on the left menu.' A dialog box titled 'Reload data?' is centered on the screen, with a note: 'Note: You can reload data later by clicking on the project tab in the left menu.' The dialog has 'No' and 'Yes' buttons. The bottom of the screen shows a Windows taskbar with a search bar and system tray icons.



CREATE YOUR FIRST WIDGET



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Geeglee Engineering Intelligence" with a menu bar containing "Project", "Save", "View", and "Preferences". The page header includes the Geeglee logo, the title "Take-Up Machine", and "New DataPage". A sidebar on the left contains a tree view with items: "Take-Up Machine", "New DataPage", "Active Scenarios", and "No scenarios yet". The main content area features a widget titled "Total Cost of Ownership" with a table of values:

Total Cost of Ownership
12.350000381469727
12.5
12.699999809265137
13.0

The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a clock showing 17:07 on 30/10/2022. A copyright notice "Copyright © 2022 Geeglee" is visible at the bottom of the application window.



CREATE YOUR FIRST BREAKDOWN



The screenshot displays the Geeglee Engineering Intelligence web application. The main header shows 'Take-Up Machine New DataPage' with utility icons for save, close, share, and settings. Below the header, there are three buttons: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. On the left, a sidebar contains a menu with 'Take-Up Machine', 'New DataPage', 'Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area features a data widget titled 'Total Cost of Ownership' with a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with the Averses logo, and the date '30/10/2022'.



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled 'Take-Up Machine New DataPage'. On the left, there is a sidebar with options: 'Take-Up Machine', 'New DataPage', 'Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area displays a table with the following data:

Total Cost of Ownership (€)
12.350000381469727
12.5
12.6999998099
13.0

An 'Edit widget' dialog box is open in the foreground, containing the following fields and options:

- Type: Select
- Query: Total Cost of Ownership (€)
- Label: Total Cost of Ownership (€)
- Additional Setting: Precisi
- Argument widgets: Create 2 argument(s) widgets for query Total Cost of Ownership (€)
- Update widget button

The bottom of the window shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system icons, and a clock showing 11:07 on 30/10/2022.



CREATE YOUR FIRST BREAKDOWN



The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". The sidebar on the left contains the following items:

- Take-Up Machine
- New DataPage
- Create a new DataPage
- Active Scenarios
- No scenarios yet

The main content area features three data widgets:

- Total Cost of Ownership (€)**: A widget displaying a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- Total Cost of Ownership (€)**: A widget displaying a single value: 12.5.
- 2:g**: A widget displaying the text "New widget Load data by clicking on the left menu."
- 3:g**: A widget displaying the text "New widget".

At the top of the main content area, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings".

The bottom of the screenshot shows the Windows taskbar with the search bar containing "Taper ici pour rechercher", the system tray with the date "30/10/2022", and the time "17:07".



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". On the left, a sidebar menu includes "Take-Up Machine", "New DataPage", "Active Scenarios", and "No scenarios yet". The main content area displays a widget titled "Total Cost of Ownership (€)" with a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0. Below this, there are two placeholder widgets labeled "2:g" and "3:g", each with the text "New widget" and "Load data by clicking on the left menu." A modal dialog box titled "Reload data?" is centered on the screen, with a note: "Note: You can reload data later by clicking on the project tab in the left menu." The dialog has "No" and "Yes" buttons. The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher" and system icons for Averses, 11:07, and 30/10/2022.



The screenshot displays the Geeglee Engineering Intelligence interface for a project named 'Take-Up Machine'. The main window title is 'Take-Up Machine New DataPage'. On the left, a sidebar menu includes 'Take-Up Machine', 'New DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area shows three data panels:

- Total Cost of Ownership (€)**: A list of values including 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- Total Cost of Ownership (€)**: A heading for a section that is currently empty.
- CAPEX**: A list of values including 0.3499999940395355, 0.5, 0.69999988079071, and 1.0.
- OPEX**: A list of values including 12.0.

The bottom of the interface shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system icons, and a date/time display of 17:07 on 30/10/2022. A copyright notice 'Copyright © 2022 Geeglee' is visible at the bottom of the application window.



The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". The left sidebar contains a menu with the following items: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area features four data widgets:

- Total Cost of Ownership (€)**: A widget displaying a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- Total Cost of Ownership (€)**: A widget displaying a single value: 0.
- CAPEX**: A widget displaying a list of values: 0.3499999940395355, 0.5, 0.699999988079071, and 1.0.
- OPEX**: A widget displaying a single value: 12.0.

At the top of the main content area, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", several application icons, and a system tray with the date "30/10/2022" and time "17:07".



CHANGE WIDGET'S TYPE



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". In the top right corner, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The left sidebar contains a menu with "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area displays several data widgets, including "Total Cost of Ownership (€)", "Total Co Ownership", "CAPEX", and "OPEX". A dialog box titled "Edit widget" is open in the center, allowing the user to change the widget's type. The "Type" dropdown is currently set to "Title". The "Label" dropdown is set to "Addition". The "Font size (px)" field is empty, and the "Alignm" dropdown is set to "Center". An "Update widget" button is located at the bottom right of the dialog box. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the taskbar icons, and the system tray with the date "30/10/2022" and time "11:07".



IMPORT YOUR FIRST LOGO/PICTURE



The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". On the left, a sidebar contains a menu with "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows three data widgets: "Total Cost of Ownership (€)", "Total Cost of Ownership (€)", and "CAPEX". The first widget displays values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0. The second widget is currently empty. The third widget displays values: 0.3499999940395355, 0.5, 0.699999988079071, and 1.0. A fourth widget labeled "OPEX" displays the value 12.0. An "Edit widget" dialog box is open in the center, showing a "Type" dropdown set to "Logo" and an "Add Logo/Image" button. The dialog also includes an "Update widget" button. At the top of the main area, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a clock showing 11:07 on 30/10/2022.



IMPORT YOUR FIRST LOGO/PICTURE



The screenshot displays the Geeglee Engineering Intelligence interface. On the left, a file explorer window shows a directory structure with files like '3 dans 1_vert', 'barrows90', 'barrowsdown', and various 'acc' files. The main area shows a 'Take-Up Machine New DataPage' with a sidebar and a data table. A dialog box titled 'Add Logo/Image' is open, showing a search field with 'Logo' and an 'Update widget' button. The data table contains the following information:

CAPEX
0.3499999940395355
0.5
0.699999988079071
1.0

OPEX
12.0



IMPORT YOUR FIRST LOGO/PICTURE



The screenshot displays the Geeglee Engineering Intelligence interface. A file explorer window is open, showing a directory structure with files like '3 dans 1_vert', 'arrows90', 'arrowsdown', and 'acc_1-3_hor_grey'. A 'Type d'élément: Fichier PNG' tooltip is visible over a file. The main application window shows a 'Take-Up Machine New DataPage' with a sidebar and a main content area. A 'Add widget' dialog box is open, showing a search for 'Logo' and an 'Add Logo/Image' button. The main content area displays a table with CAPEX and OPEX data.

CAPEX
0.3499999940395355
0.5
0.699999988079071
1.0

OPEX
12.0



IMPORT YOUR FIRST LOGO/PICTURE



The screenshot displays the Geeglee Engineering Intelligence interface. A file explorer window is open, showing a directory structure with files like '3 dans 1_vert', 'barrows90', 'barrowsdown', and 'acc_1-2_hor_grey'. A dialog box titled 'Add Logo/Image' is overlaid on the interface, with a search field containing 'Logo' and an 'Update widget' button. The background data page shows a 'Take-Up Machine New DataPage' with various widgets and data points.

Take-Up Machine New DataPage

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

it widget

Logo

Add Logo/Image

Update widget

CAPEX

0.3499999940395355
0.5
0.699999988079071
1.0

OPEX

12.0

Copyright © 2022 Geeglee

Taper ici pour rechercher

Averses 17:08 30/10/2022



CHANGE THE SIZE OF THE WIDGET



The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". The left sidebar contains a menu with the following items: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area features three data widgets:

- Total Cost of Ownership (TCO):** A widget displaying a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- CAPEX:** A widget displaying a list of values: 0.3499999940395355, 0.5, 0.699999988079071, and 1.0.
- OPEX:** A widget displaying a single value: 12.0.

At the top of the main content area, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", several application icons, and a system tray with the date "30/10/2022" and time "17:08".



CHANGE THE SIZE OF THE WIDGET



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' data page. The page title is 'Take-Up Machine New DataPage'. The left sidebar contains a menu with options: 'Take-Up Machine', 'New DataPage', 'Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area features three data widgets: 'Total Cost of Ownership' with values 12.350000381469727, 12.5, 12.699999809265137, and 13.0; 'CAPEX' with values 0.3499999940395355, 0.5, 0.699999988079071, and 1.0; and 'OPEX' with a value of 12.0. A toolbar at the top right of the main area includes buttons for '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with the date '30/10/2022', and the time '17:08'.



CHANGE THE POSITION OF YOUR WIDGET



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main area is titled 'Take-Up Machine New DataPage' and contains three data widgets:

- Total Cost of Ownership:** A widget showing a list of values: 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- CAPEX:** A widget showing a list of values: 0.3499999940395355, 0.5, 0.699999988079071, and 1.0.
- OPEX:** A widget showing a single value: 12.0.

The widgets are arranged in a hierarchical structure where the CAPEX and OPEX widgets are grouped under the Total Cost of Ownership widget. The interface includes a sidebar on the left with navigation options like 'New DataPage', 'Create a new DataPage', and 'Active Scenarios'. At the top of the main area, there are buttons for '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. The bottom of the screen shows a Windows taskbar with a search bar and system tray icons.



CHANGE THE POSITION OF YOUR WIDGET



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is 'Take-Up Machine New DataPage'. The left sidebar contains a menu with the following items: 'Take-Up Machine', 'New DataPage' (highlighted), 'Active Scenarios', and 'No scenarios yet'. The main content area displays three data widgets:

- Total Cost of Ownership (€)**: 12.350000381469727, 12.5, 12.699999809265137, 13.0
- CAPEX**: 0.3499999940395355, 0.5, 0.699999988079071, 1.0
- OPEX**: 12.0

A 'Reload data?' dialog box is overlaid on the CAPEX widget, containing the text: 'Note: You can reload data later by clicking on the project tab in the left menu.' and two buttons: 'No' and 'Yes'.

Copyright © 2022 Geeglee



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main area is titled 'Take-Up Machine New DataPage' and contains three data widgets:

- Total Cost of Ownership:** A widget showing values for four scenarios: 12.350000381469727, 12.5, 12.699999809265137, and 13.0.
- CAPEX:** A widget showing values for four scenarios: 0.3499999940395355, 0.5, 0.699999988079071, and 1.0.
- OPEX:** A widget showing a value of 12.0 for the first scenario.

The widgets are connected by a horizontal line with a bracket, indicating a relationship between the CAPEX and OPEX values and the Total Cost of Ownership. The interface also includes a sidebar with options like 'New DataPage', 'Create a new DataPage', and 'Active Scenarios'. At the bottom, there is a search bar and system tray information.



The screenshot displays the Geeglee Engineering Intelligence web application. The main interface is titled "Take-Up Machine New DataPage". A sidebar on the left contains navigation options: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows a widget for "Total Cost of Ownership (€)" with values 12.350000381469727 and 12.5. An "Edit widget" dialog box is open in the foreground, allowing configuration of the widget. The dialog includes fields for "Type" (set to "Select"), "Query" (set to "Total Cost of Ownership (€)"), and "Label" (set to "Total Cost of Ownership (€)"). It also features an "Additional Setting" section with a "Precision" dropdown and an "Argument widgets" section with a message: "argument widget(s) already created for query Total Cost of Ownership (€)". An "Update widget" button is located at the bottom right of the dialog. The bottom of the screen shows a Windows taskbar with a search bar, system tray icons, and a date/time display of 17:08 on 30/10/2022.



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main area is titled 'Take-Up Machine New DataPage' and contains three widgets:

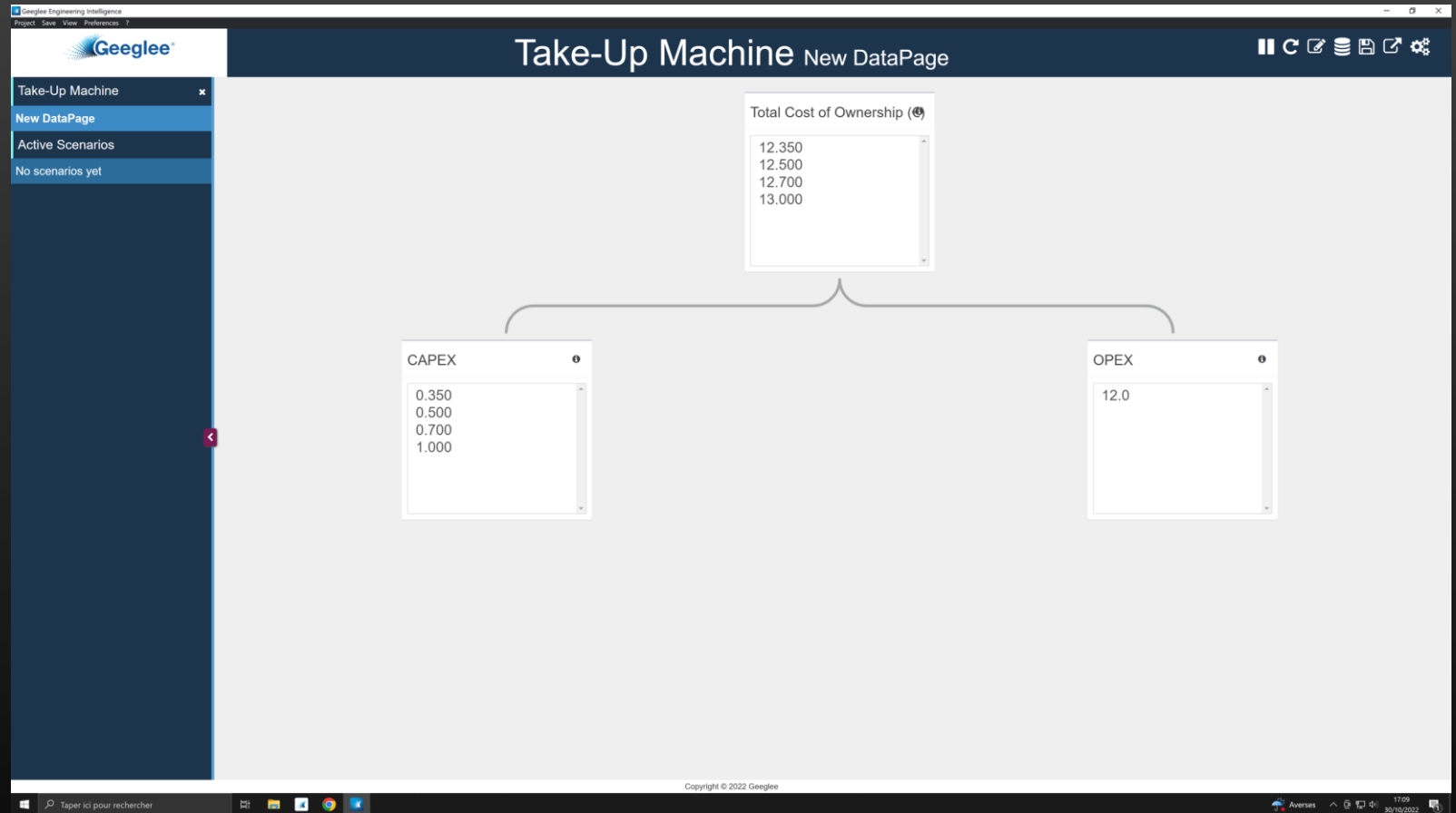
- Total Cost of Ownership:** A widget showing 'Edited widget config' and instructions to 'Reload data by clicking on the left menu.' It is connected to a CAPEX widget and an OPEX widget via a horizontal bar.
- CAPEX:** A widget showing 'Edited widget config' and instructions to 'Reload data by clicking on the left menu.'
- OPEX:** A widget displaying the value '12.0' and 'Edited widget config'.

The left sidebar includes a 'Geeglee' logo, a 'Take-Up Machine' tab, and options for 'New DataPage', 'Create a new DataPage', and 'Active Scenarios'.

At the bottom of the interface, there is a search bar with the text 'Taper ici pour rechercher', a copyright notice 'Copyright © 2022 Geeglee', and system information including 'Averses', '17:09', and '30/10/2022'.



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". On the left, there is a navigation menu with items: "Take-Up Machine", "New DataPage", "Active Scenarios", and "No scenarios yet". The main content area displays a "Total Cost of Ownership" widget with a value of 12.0. A "Reload data?" dialog box is open, asking for confirmation to reload data. The dialog includes a note: "Note: You can reload data later by clicking on the project tab in the left menu." and two buttons: "No" and "Yes".





The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". A sidebar on the left contains navigation options: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area displays a widget for "Total Cost of Ownership (€)" with values 12.350 and 12.500. An "Edit widget" dialog box is open in the foreground, allowing configuration of the widget. The dialog includes fields for "Type" (set to "Select"), "Query" (set to "Total Cost of Ownership (€)"), and "Label" (set to "Total Cost of Ownership (€)"). There is an "Additional Setting" section with a "Precis" field. Below the dialog, it states "Argument widgets" and "argument widget(s) already created for query Total Cost of Ownership (€)". A "Update widget" button is at the bottom right of the dialog. The bottom of the screen shows a Windows taskbar with a search bar, system tray, and date/time (17:11, 30/10/2022).



CREATE YOUR FIRST HISTOGRAM



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled 'Take-Up Machine New DataPage'. A sidebar on the left contains navigation options: 'Take-Up Machine', 'New DataPage', 'Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area displays a widget titled 'Total Cost of Ownership (€)' with values 12.350 and 12.500. An 'Edit widget' dialog box is open in the foreground, showing configuration options for the widget. The dialog includes a 'Type' dropdown menu with options like Pie, Histogram, Module, SmartScatter, Table, Logo, and Tile. The 'Query' field is set to 'n°'. The 'Label' field is 'Total Cost of Ownership (€)'. There is an 'Additional Setting' section with a 'Precis' field set to 3. At the bottom of the dialog, it states 'Argument widgets' and 'argument widget(s) already created for query Total Cost of Ownership (€)'. An 'Update widget' button is located at the bottom right of the dialog. The bottom of the screenshot shows a Windows taskbar with a search bar, system tray, and date/time (17:11, 30/10/2022).



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". A sidebar on the left contains navigation options: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area is partially obscured by an "Edit widget" dialog box. The dialog box has the following fields and sections:

- Type:** A dropdown menu set to "Histogram".
- Query:** A text input field containing "Total Cost of Ownership (€)".
- Label:** A text input field containing "Total Cost of Ownership (€)".
- Additional Setting:** A section with five expandable settings, each with a plus icon:
 - Y Unit
 - X Unit
 - Number Of Ticks
 - Subsets
 - Colors
- Argument widgets:** A section with the text "argument widget(s) already created for query Total Cost of Ownership (€)".
- Update widget:** A button at the bottom right of the dialog.

At the top of the dialog, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The background shows a blurred view of a data visualization with the text "OPEX" and "12.0". The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system icons, and the date "30/10/2022".



CREATE YOUR FIRST HISTOGRAM



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main dashboard area is titled 'Take-Up Machine New DataPage' and contains three primary data widgets:

- Total Cost of Ownership:** A widget with a tooltip that reads 'Edited widget config. Reload data by clicking on the left menu.'
- CAPEX:** A widget displaying a list of values: 0.350, 0.500, 0.700, and 1.000.
- OPEX:** A widget displaying a single value: 12.0.

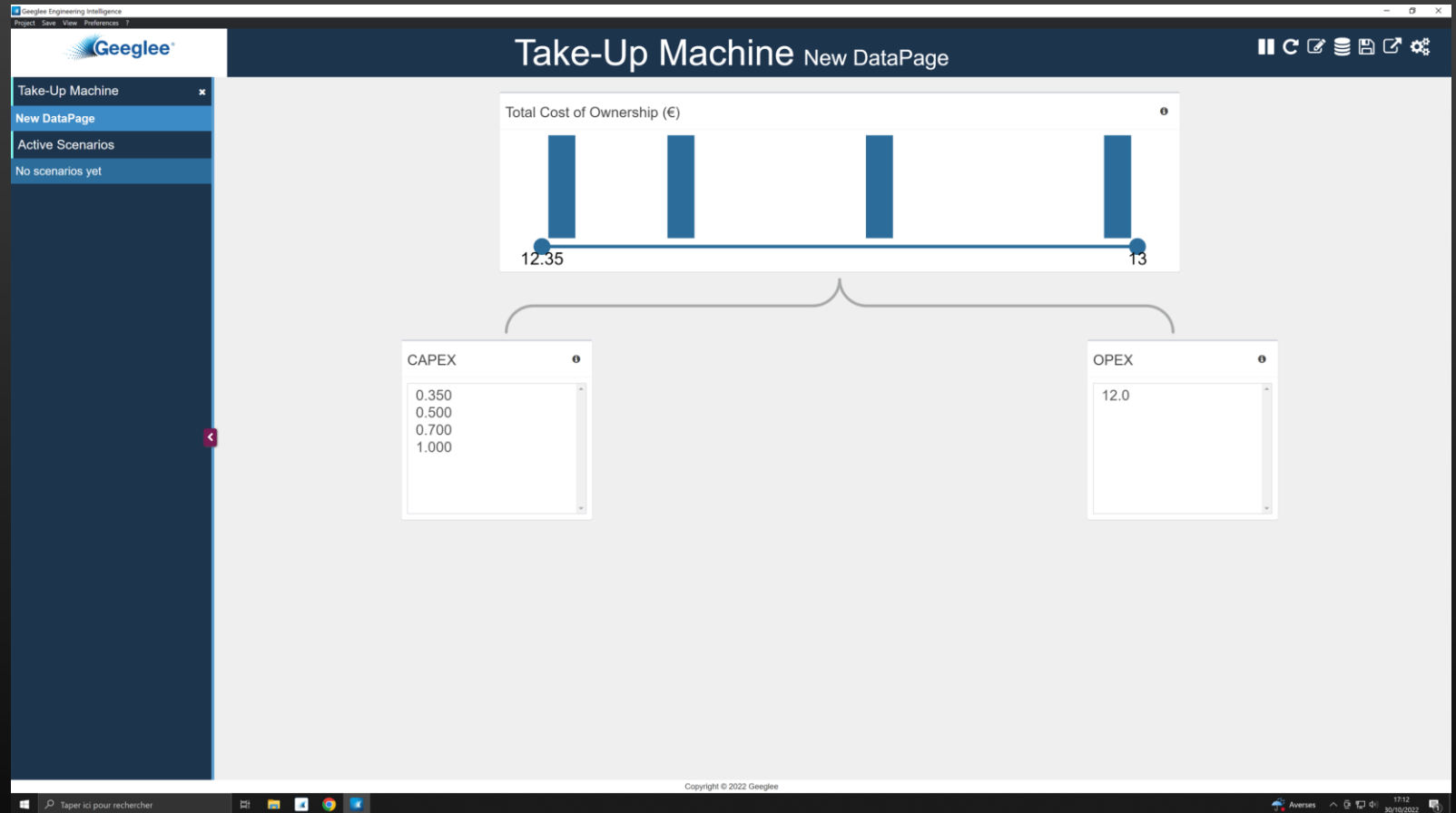
The interface includes a left sidebar with navigation options: 'Take-Up Machine', 'New DataPage', '+ Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. At the top of the dashboard, there are three action buttons: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. The bottom of the screen shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system icons, and a date/time display of 17:11 on 30/10/2022.



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main dashboard area is titled 'Take-Up Machine New DataPage' and includes a sidebar on the left with navigation options: 'Take-Up Machine', 'New DataPage', 'Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main content area features a 'Total Cost of Ownership (€)' widget with a message: 'Edited widget config. Reload data by clicking on the left menu.' Below this are two data widgets: 'CAPEX' with values 0.350, 0.500, 0.700, and 1.000; and 'OPEX' with a value of 12.0. The interface also includes a top navigation bar with options to 'Add widget in dataPage', 'Add widget in sideBar', and 'Edit DataPage settings'. The bottom of the screen shows a Windows taskbar with a search bar and system tray icons.

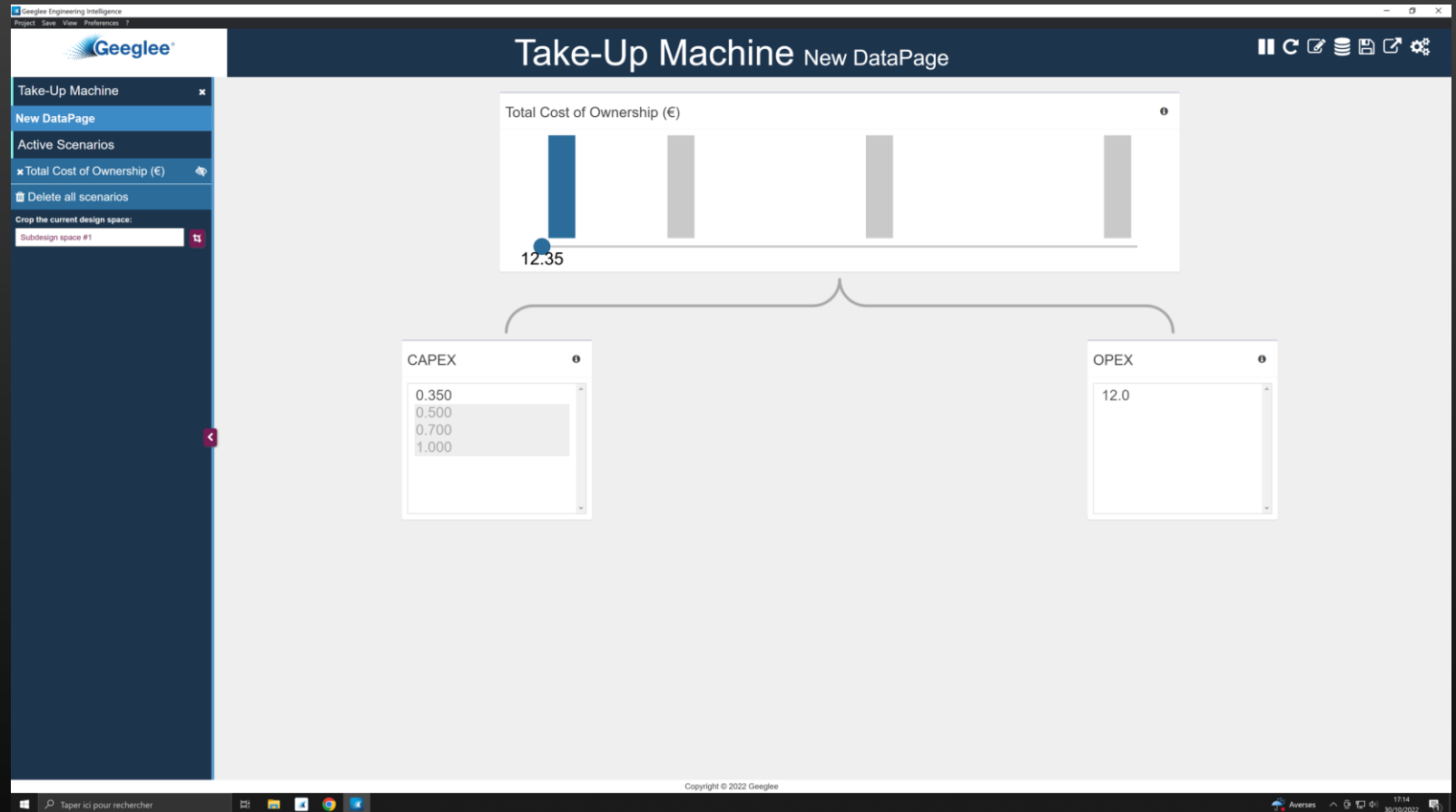


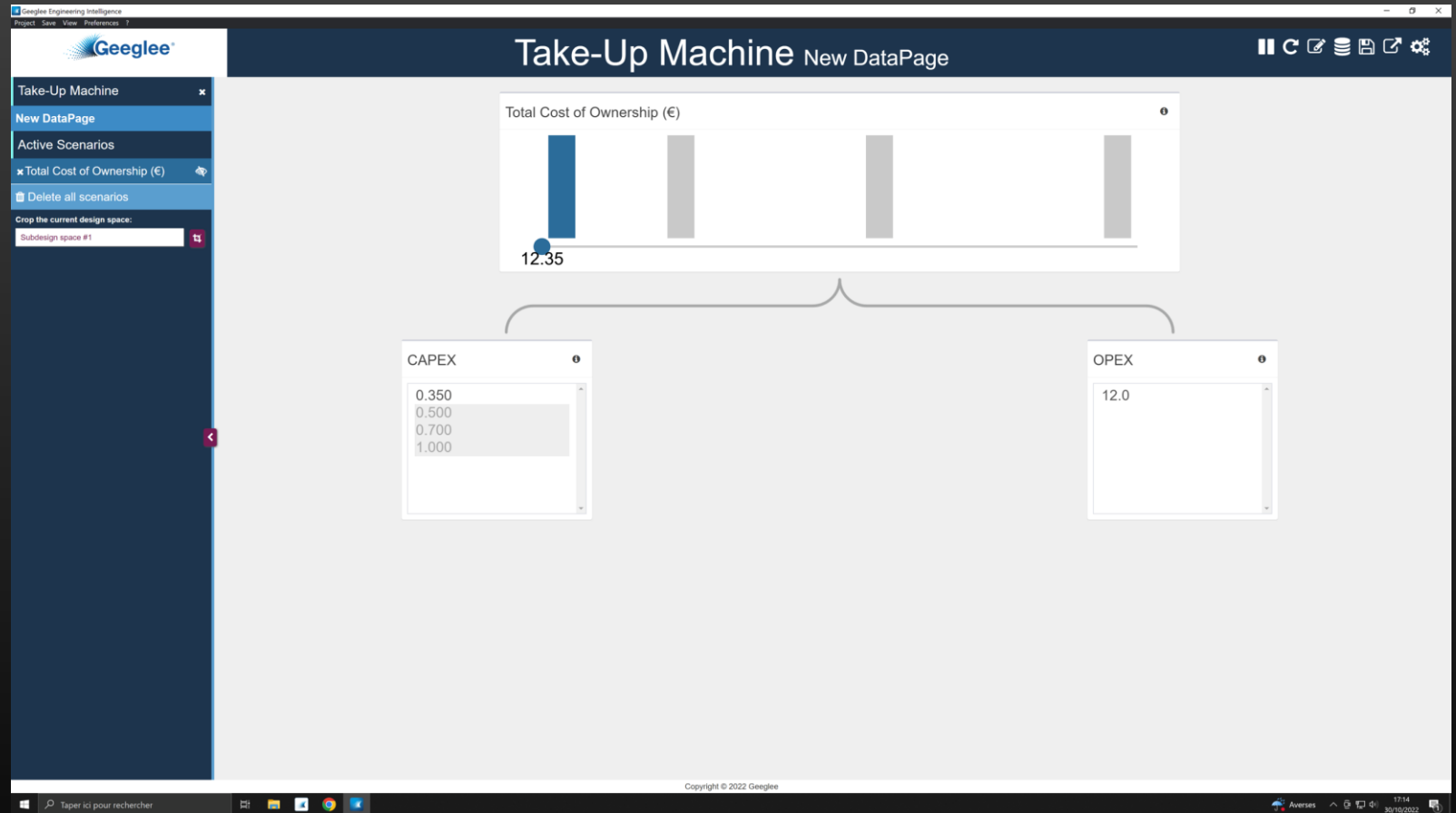
The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine New DataPage". On the left, there is a sidebar menu with the following items: "Take-Up Machine", "New DataPage", "Active Scenarios", and "No scenarios yet". The main content area features a large widget titled "Total Cost of Ownership (€)" which displays the message "Edited widget config" and "Reload data by clicking on the left menu." Below this, there are three smaller widgets: "CAPEX" with values 0.350, 0.500, 0.700, and 1.000; "OPEX" with the value 12.0; and a "Reload data?" dialog box with "No" and "Yes" buttons. A note in the dialog box states: "Note: You can reload data later by clicking on the project tab in the left menu." The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and the date/time "17:12 30/10/2022".





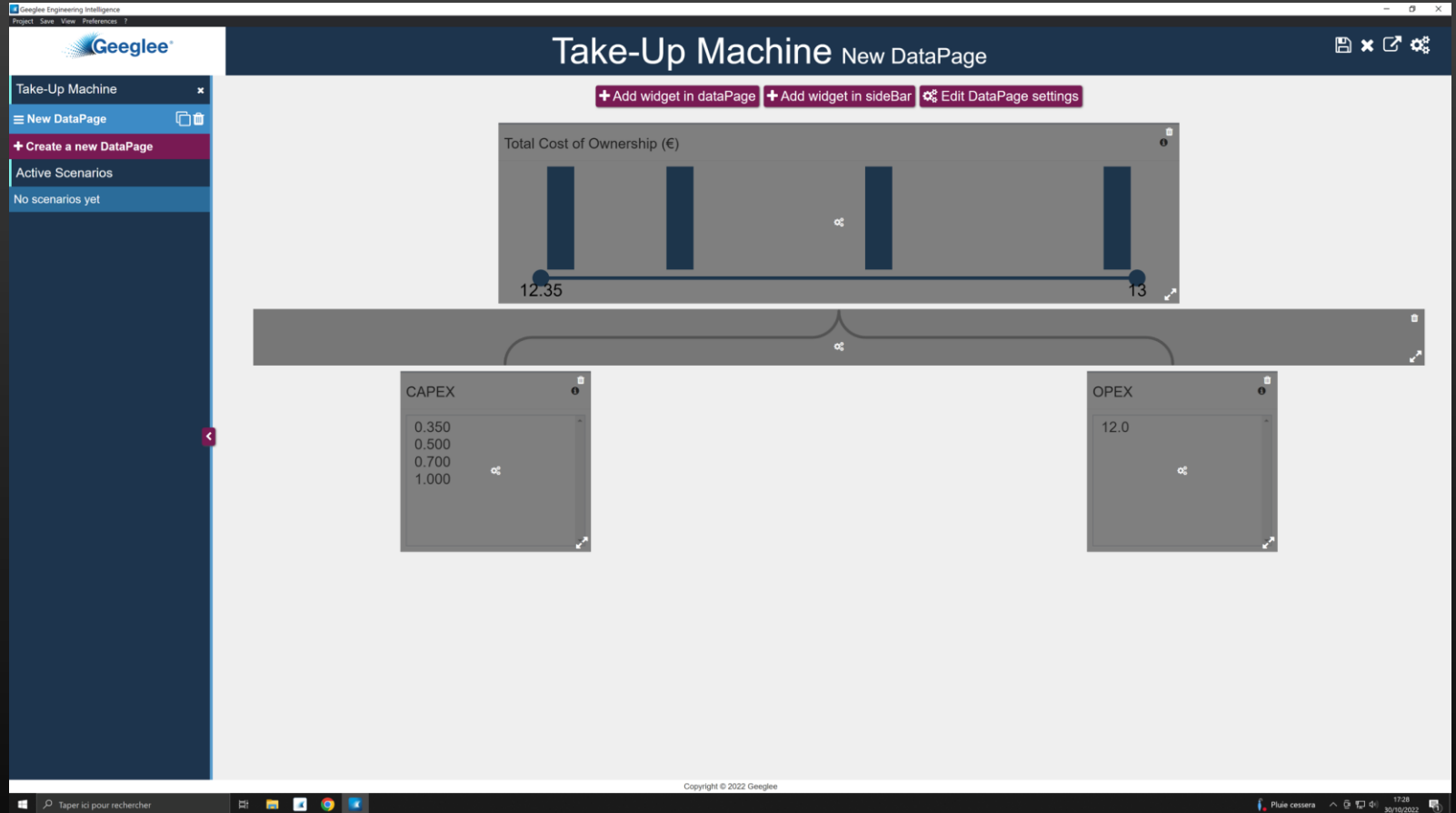
MAKE YOUR FIRST SCENARIO







ADD MORE WIDGETS





ADD MORE WIDGETS



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled 'Take-Up Machine New DataPage'. A 'New widget' dialog box is open in the center, allowing the user to create a new widget. The dialog has the following sections:

- Reuse an existing widget:** A dropdown menu with the text '-- Select an option --' and an 'Import widget to dataPage' button.
- Or create a new widget:** A section with three dropdown menus:
 - Type:** A dropdown menu with the text '-- Select an option --'.
 - Query:** A dropdown menu with options: 'Select', 'Pie', 'Histogram', 'Module', 'SmartScatter', 'Table', 'Logo', and 'Title'. 'Select' is currently selected.
 - Label:** A text input field containing '318xvbmppd'.
- Additional Setting:** A section with a text input field containing 'Precisi'.

At the bottom right of the dialog is a 'Create widget' button. The background shows a data page with a chart titled 'Total Cost of Ownership (€)' and a sidebar with navigation options like 'New DataPage', 'Create a new DataPage', and 'Active Scenarios'.



ADD MORE WIDGETS



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window shows a 'Take-Up Machine New DataPage' with a dark theme. A 'New widget' dialog box is open in the foreground, offering two options: 'Use an existing widget' (with a dropdown menu) and 'Create a new widget'. Under 'Create a new widget', the 'Type' is set to 'Logo', and there is an 'Add Logo/Image' button. The background data page features a bar chart titled 'Ownership (€)' and a table with values: 0.350, 0.500, 0.700, and 1.000. A sidebar on the left contains a file explorer with various folders and files. The bottom of the screen shows a Windows taskbar with the search bar and system tray.



ADD MORE WIDGETS



The screenshot displays the Geeglee Engineering Intelligence interface. In the background, a 'Take-Up Machine New DataPage' is visible with a sidebar containing options: '+ Add widget in dataPage', '+ Add widget in sidebar', and 'Edit DataPage settings'. A 'New widget' dialog box is open in the foreground, offering two paths: 'Use an existing widget' (with a dropdown menu and an 'Import widget to dataPage' button) and 'Create a new widget' (with a 'Type' dropdown set to 'Logo' and an 'Add Logo/Image' button). The background also shows a data visualization with a bar chart and a table of values: 0.350, 0.500, 0.700, and 1.000. The system tray at the bottom indicates the date and time as 30/10/2022, 17:28.



ADD MORE WIDGETS



The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". A "New widget" dialog box is open in the foreground, allowing the user to create a new widget. The dialog has two main sections: "Reuse an existing widget" and "Or create a new widget".

Reuse an existing widget: A dropdown menu shows "-- Select an option --". An "Import widget to dataPage" button is located to the right.

Or create a new widget:

- Type:** A dropdown menu with "Select" as the current value.
- Query:** A text input field containing "Investment (M€)".
- Label:** A text input field containing "Investment (M€)".
- Additional Setting:** A section with a "Precision" label and an input field.

A "Create widget" button is located at the bottom right of the dialog. The background shows a sidebar with "Take-Up Machine", "New DataPage", and "Active Scenarios". The main content area displays a "Total Cost of Ownership (€)" chart.



ADD MORE WIDGETS



The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". A "New widget" dialog box is open in the center, providing options to reuse an existing widget or create a new one. The dialog includes a dropdown for "Reuse an existing widget", a "Type" dropdown, a "Query" field with a dropdown menu, a "Label" field, and an "Additional Setting" section with a "Precision" field. Buttons for "Import widget to dataPage" and "Create widget" are visible. The background shows a sidebar with "Take-Up Machine", "New DataPage", and "Active Scenarios" options. The bottom of the screen shows a Windows taskbar with the search bar and system tray.



ADD MORE WIDGETS



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main dashboard area is titled 'Take-Up Machine New DataPage' and contains several data visualization widgets:

- Total Cost of Ownership (€):** A bar chart showing four bars with values 12.35 and 13. A tooltip above the chart offers options: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'.
- CAPEX:** A list widget showing values: 0.350, 0.500, 0.700, and 1.000.
- OPEX:** A list widget showing the value 12.0.
- Investment (M€):** A placeholder widget with the text 'New widget Load data by clicking on the left menu.'
- Amortization (year):** A placeholder widget with the text 'New widget Load data by clicking on the left menu.'

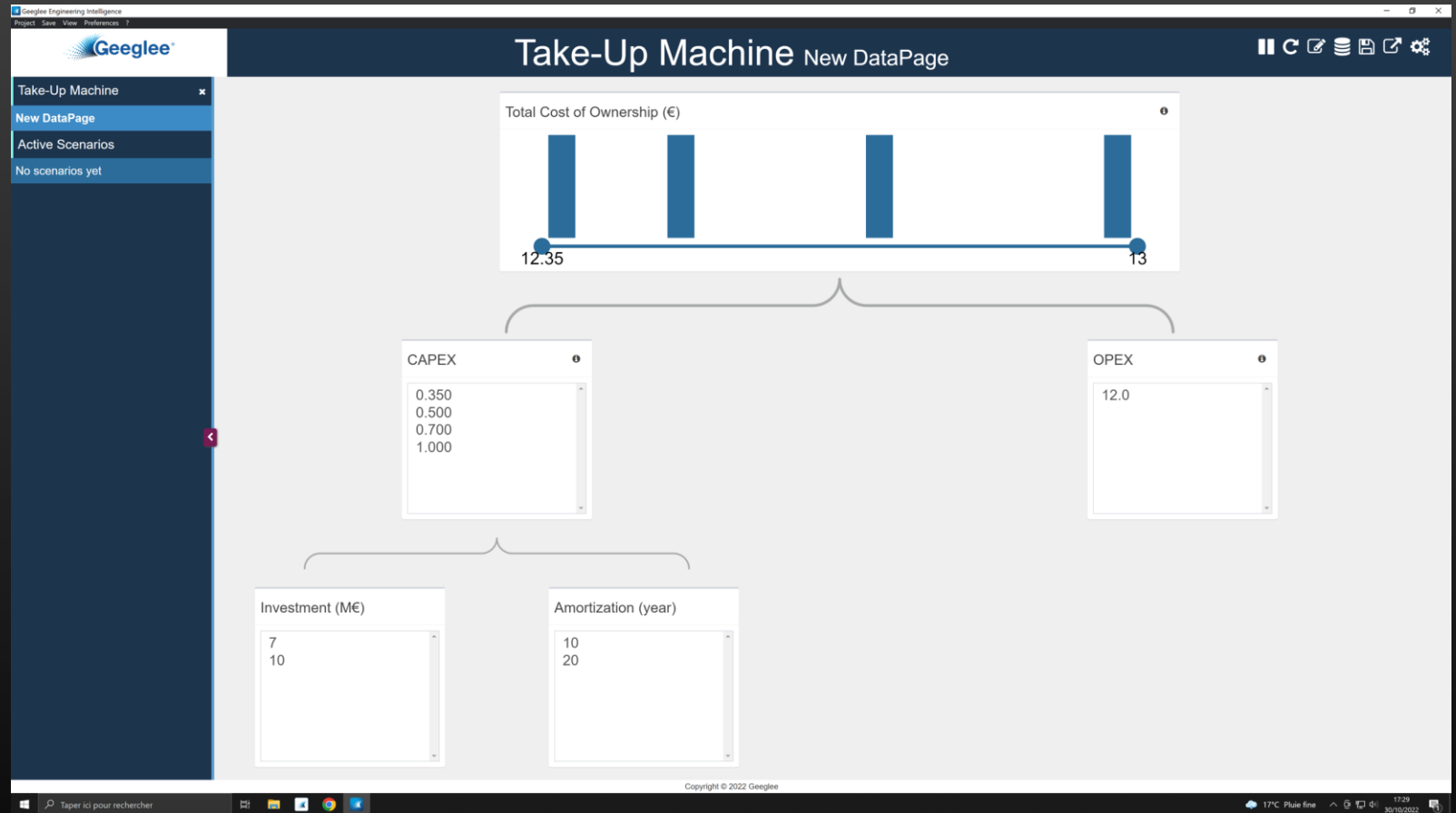
The left sidebar menu includes the following items:

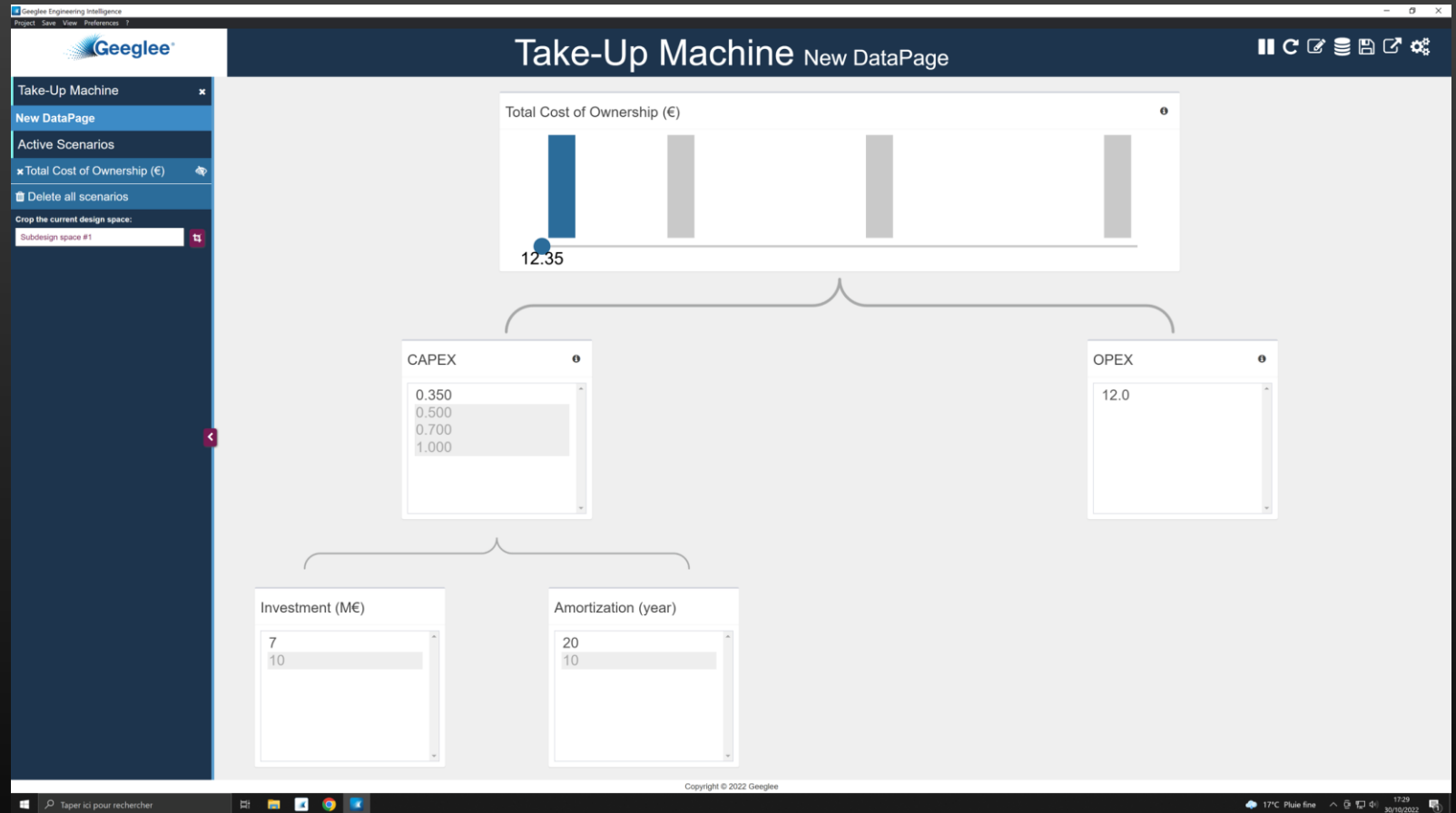
- Take-Up Machine
- New DataPage
- + Create a new DataPage
- Active Scenarios
- No scenarios yet

The bottom of the interface shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system tray icons for temperature (17°C) and time (17:20, 30/10/2022), and a copyright notice: 'Copyright © 2022 Geeglee'.



ADD MORE WIDGETS







MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

Design space generation

GENERATE SETTING GEI

GENERATE DESIGN SPACE

Calculation time saturation: 0.01%

Memory consumption saturation: 0.01%

Estimated calculation time: less than 5 minutes

Estimated solutions: 4

Design spaces

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	+	Re..f. 0	<u>Investment (M€)</u> <u>Amortization (year)</u>	1	0.35
	OPEX	.	Re..f. 0	12	12	12
	Total Cost of Ownership (€)	.	Re..f. 0	CAPEX + OPEX	13	12.35



CREATE YOUR FIRST MODULE



The screenshot shows a web browser window displaying a 'Product Breakdown Structure' interface. The browser address bar shows 'localhost:8000/1/PBS/modules'. The application has a top navigation bar with tabs: 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. The 'MODULES' tab is active. Below the navigation bar, there is a header for 'Product Breakdown Structure'. A table is displayed with the following data:

Module	Alternatives	Ref.
M1	1/1	<input checked="" type="checkbox"/>

The interface also features a left sidebar with a search icon and a 'SOI' label. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with '17°C Pluie fine', and the date '30/10/2022'.



ADD MORE MODULES



The screenshot shows a web browser window displaying a software interface. The browser's address bar shows the URL `localhost:8000/1/PBS/modules`. The application has a top navigation bar with tabs: **MODULES**, **CHARACTERISTICS**, **VALUES**, **INTERNAL INCOMPATIBILITIES**, **ALL INCOMPATIBILITIES**, and **GROUP**. Below the navigation bar, there is a section titled "Product Breakdown Structure" with a dropdown arrow. The main content area contains a table with the following data:

Module	Alternatives	Ref.
Chassis	1/1	<input checked="" type="checkbox"/>
Motor	0/0	<input checked="" type="checkbox"/>
Spool	0/0	<input checked="" type="checkbox"/>

The interface also features a blue sidebar on the left with various icons and a search bar at the bottom of the browser window.



MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

1 Model checking

Warnings

Design space generation	Internal Incompatibility error	critical
✓	Missing values	critical
✓	No architecture in this SOI	critical
✓	No environment module alternatives	critical
2	No module alternatives for architecture	critical
✓	Patterns: Circular Loop	critical
✓	HLR Requirement constraints: not used in patterns	high
✓	HLR outputs: missing target	high
✓	Missing modules for architecture	high
1	No HLR outputs	high
1	There is no GEI file set up	high
✓	Unknown elements in patterns	high
1	Patterns: invalid formula	moderate
✓	Characteristics: not linked to a module	low
✓	Characteristics: not used in patterns	low
✓	HLR inputs - Design variables - Environment variables: not used	low
✓	Reference configurations: values out of range	low



MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

1 Model checking

Warnings

- Internal Incompatibility error **critical**
- Missing values **critical**
- No architecture in this SOI **critical**
- No environment module alternatives **critical**

2 No module alternatives for architecture **critical**

No alternatives of the module 'Motor' are selected for the architecture: 'Ref'.
No alternatives of the module 'Spool' are selected for the architecture: 'Ref'.

[INSPECT](#) [INSPECT](#)

- Patterns: Circular Loop **critical**
- HLR Requirement constraints: not used in patterns **high**
- HLR outputs: missing target **high**
- Missing modules for architecture **high**

1 No HLR outputs **high**

1 There is no GEI file set up **high**

- Unknown elements in patterns **high**

1 Patterns: invalid formula **moderate**

- Characteristics: not linked to a module **low**
- Characteristics: not used in patterns **low**
- HLR inputs - Design variables - Environment variables: not used **low**



The screenshot shows a web application interface for managing product breakdown structures. The browser address bar indicates the URL is localhost:8000/1/PBS/modules/1. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this is a sub-header for 'Product Breakdown Structure'. A secondary navigation bar contains 'CHASSIS', 'MOTOR', and 'SPOOL'. The main content area features a table with the following columns: Alternative, Active, Image, Ref., and Comment. The table contains one data row with the value 'A1' in the 'Alternative' column, and checked boxes in the 'Active' and 'Ref.' columns. A vertical sidebar on the left contains navigation icons and the text 'SOI'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', several application icons, and the system tray with the text 'Plus cessera' and the date '30/10/2022'.

Alternative	Active	Image	Ref.	Comment
A1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	



The screenshot displays a web application interface for managing a Product Breakdown Structure (PDS). The browser address bar shows the URL `localhost:8000/1/PBS/modules/1`. The application has a top navigation bar with tabs: **MODULES**, **CHARACTERISTICS**, **VALUES**, **INTERNAL INCOMPATIBILITIES**, **ALL INCOMPATIBILITIES**, and **GROUP**. Below this, a sub-header indicates the current view is **Product Breakdown Structure**. A secondary navigation bar shows tabs for **CHASSIS**, **MOTOR**, and **SPOOL**, with **CHASSIS** selected. The main content area features a table with the following columns: **Alternative**, **Active**, **Image**, **Ref.**, and **Comment**. A single data row is present with the value **Chassis 1** in the **Alternative** column, and checked boxes in the **Active** and **Ref.** columns. A left sidebar contains navigation icons and the text **SOI**. The Windows taskbar at the bottom shows the search bar with the text `Taper ici pour rechercher`, the system tray with the text `Plus cesser`, and the date `30/10/2022` and time `17:38`.



The screenshot shows a web application interface for managing a Product Breakdown Structure (PDS). The main content area displays a table with columns for Alternative, Active, Image, Ref., and Comment. A modal dialog titled 'CREATE NEW ALTERNATIVE' is open, allowing the user to enter an 'Alternative name' (currently 'Chassis 2') and choose between 'ADD & CLOSE' and 'ADD & CONTINUE' options.

Alternative	Active	Image	Ref.	Comment
Chassis 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

CREATE NEW ALTERNATIVE

Alternative name
Chassis 2



The screenshot shows a web application interface for managing product alternatives. The browser address bar indicates the URL is localhost:8000/1/PBS/modules/1. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this, a breadcrumb trail shows 'Product Breakdown Structure'. A secondary navigation bar contains 'CHASSIS', 'MOTOR', and 'SPOOL', with 'CHASSIS' selected. The main content area displays a table with the following structure:

Alternative ↑	Active	Image	Ref.	Comment
Chassis 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Chassis 2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

The interface also features a left sidebar with navigation icons and a bottom status bar with system information like 'Taper ici pour rechercher', 'Plus cessera', and the date '30/10/2022'.



CP

localhost:8000/1/PBS/modules/1

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

Product Breakdown Structure

CHASSIS MOTOR SPOOL

Alternative ↑	Active	Image	Ref.	Comment
Chassis 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Chassis 2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

SOI

Modifications saved

Taper ici pour rechercher

Plus cesser

17:39 30/10/2022



The screenshot shows a web browser window displaying a 'Product Breakdown Structure' interface. The browser address bar shows 'localhost:8000/1/PBS/modules/2'. The interface has a top navigation bar with tabs: 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. Below this is a section titled 'Product Breakdown Structure' with sub-tabs for 'CHASSIS', 'MOTOR', and 'SPOOL'. A table lists alternatives with columns for 'Alternative', 'Active', 'Image', 'Ref.', and 'Comment'. One row is visible with 'Motor 1' and checked boxes for 'Active' and 'Ref.'. A modal dialog box titled 'CREATE NEW ALTERNATIVE' is centered on the screen, containing an input field for 'Alternative name' and three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', several application icons, and the system tray with the text 'Plus cesser' and the date '30/10/2022'.



The screenshot shows a web application interface for managing product alternatives. The browser address bar indicates the URL is localhost:8000/1/PBS/modules/2. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this, a breadcrumb trail shows 'Product Breakdown Structure'. A secondary navigation bar contains 'CHASSIS', 'MOTOR', and 'SPOOL', with 'MOTOR' selected. The main content area displays a table with the following structure:

Alternative	Active	Image	Ref.	Comment
Motor 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Motor 2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

A green notification box at the bottom left of the application area states 'Modifications saved'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with the time '17:39' and date '30/10/2022', and the text 'Plus cessera'.



The screenshot shows a web application interface for managing product alternatives. The browser address bar indicates the URL is localhost:8000/1/PBS/modules/3. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this, a breadcrumb trail shows 'Product Breakdown Structure'. A secondary navigation bar highlights 'SPOOL' among other options like 'CHASSIS' and 'MOTOR'. The main content area features a table with the following structure:

Alternative	Active	Image	Ref.	Comment
Spool 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
Spool 2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

A green notification box at the bottom left of the application area displays the message 'Modifications saved'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with the time '17:39' and date '30/10/2022', and the text 'Plus cesser'.



ADD A CHARACTERISTICS



The screenshot displays a web application interface for managing characteristics. A modal window titled "NEW CHARACTERISTIC" is open, allowing for the creation of a new entry. The modal contains the following fields and options:

- Name ***: A text input field.
- Group**: A dropdown menu.
- Type ***: A dropdown menu currently set to "Quantitative".
- Comment ***: A text area.
- Chassis**:
- Motor**:
- Spool**:

At the bottom of the modal, there are three buttons: "CANCEL", "ADD & CLOSE", and "ADD & CONTINUE".

The background interface shows a table with the following columns: Group, Characteristic, Type, Comment, Delete, Chassis, Motor, and Spool. The "Characteristics" tab is active, and the table is currently empty.



The screenshot displays a web application interface for managing characteristics. A modal window titled "NEW CHARACTERISTIC" is open, allowing the user to add a new entry. The form contains the following fields and options:

- Name ***: A text input field containing "Investment (M€)".
- Group**: A dropdown menu.
- Type ***: A dropdown menu with "Quantitative" selected.
- Comment ***: A text input field containing "Initial cost (CAPital Expenditure) in M€".
- Chassis**: A checkbox that is checked.
- Motor**: A checkbox that is checked.
- Spool**: A checkbox that is checked.

At the bottom of the modal, there are three buttons: "CANCEL", "ADD & CLOSE", and "ADD & CONTINUE".



The screenshot displays a web application interface for managing characteristics. A modal window titled "NEW CHARACTERISTIC" is open, allowing the user to add a new entry. The modal contains the following fields and options:

- Name ***: A text input field containing "Operational Cost (k€)".
- Group**: A dropdown menu.
- Type ***: A dropdown menu set to "Quantitative".
- Comment ***: A text input field containing "OPERATING Cost in k€".
- Chassis**: A checkbox, currently unchecked.
- Motor**: A checkbox, currently checked.
- Spool**: A checkbox, currently unchecked.

At the bottom of the modal, there are three buttons: "CANCEL", "ADD & CLOSE", and "ADD & CONTINUE".

In the background, a table lists existing characteristics. The visible row is:

Group	Characteristic	Type	Comment	Delete	Chassis	Motor	Spool
	Investment (M€)	Quantitative			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



The screenshot shows a web application interface with a table of characteristics and a modal form for adding a new one. The table has columns for Group, Characteristic, Type, Comment, Delete, Chassis, Motor, and Spool. The modal form has fields for Name, Group, Type, and Comment, and checkboxes for Chassis, Motor, and Spool.

Group	Characteristic	Type	Comment	Delete	Chassis	Motor	Spool
	Investment (M€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NEW CHARACTERISTIC

Name *
Footprint (square meter)

Group

Type *
Quantitative

Comment *
Footprint in square meter

Chassis

Motor

Spool



The screenshot shows a web application interface with a navigation menu on the left and a main content area. The main content area displays a table titled "Characteristics" with the following data:

Group	Characteristic	Type	Comment	Delete	Chassis	Motor	Spool
	Footprint (square meter)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	Quantitative	Internal diameter of the spool in meter. The one for rolling cable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



SET VALUES FOR CHARACTERISTICS



VALUES

SELECT AMONGST THE ELEMENTS BELOW AND

OPEN MATRIX

MODULE	ALTERNATIVE(S)	SELECT
Chassis	2	<input checked="" type="checkbox"/>
Motor	2	<input checked="" type="checkbox"/>
Spool	2	<input checked="" type="checkbox"/>
Rows per page: All		1-1 of 3

GROUP	ASSOCIATED CHARACTERISTICS	SELECT
None	4	<input checked="" type="checkbox"/>
Rows per page: All		1-1 of 1



SET VALUES FOR CHARACTERISTICS



The screenshot shows a web browser window with the URL `localhost:8000/1/PBS/values/open`. The interface has a top navigation bar with tabs: **MODULES**, **CHARACTERISTICS**, **VALUES** (selected), **INTERNAL INCOMPATIBILITIES**, **ALL INCOMPATIBILITIES**, and **GROUP**. Below the navigation bar, there is a section for **Alternatives** with a radio button for **(active only)**, a dropdown for **Architecture** set to *All (this SOI)*, and a dropdown for **Density** set to *Comfortable*. The main area contains a table with columns for **Chassis**, **Motor**, and **Spool**. The **Chassis** column is further divided into **Chassis 1** and **Chassis 2**. The **Motor** column is divided into **Motor 1** and **Motor 2**. The **Spool** column is divided into **Spool 1** and **Spool 2**. The rows represent characteristics: **Footprint (square meter)**, **Internal Diameter (m)**, **Investment (M€)**, and **Operational Cost (M€)**. The cells for **Footprint** and **Operational Cost** are currently empty. A blue sidebar on the left contains navigation icons and the label **SOI**. The Windows taskbar at the bottom shows the search bar with the text *Taper ici pour rechercher*, the system tray with the date **30/10/2022** and time **17:42**, and the text **Plus cesser**.

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)						
Internal Diameter (m)						
Investment (M€)						
Operational Cost (M€)						



SET VALUES FOR CHARACTERISTICS



The screenshot shows a web application interface with a navigation bar at the top containing tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. The 'VALUES' tab is active. Below the navigation bar, there are filters for Alternatives (set to 'active only'), Architecture (set to 'All (this SOI)'), and Density (set to 'Comfortable').

The main content area displays a table with the following structure:

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20				
Internal Diameter (m)					1	1
Investment (M€)	5	3	1	1,5	0,5	0,5
Operational Cost (M€)			600	350		



SET VALUES FOR CHARACTERISTICS



The screenshot shows the 'VALUES' tab in the Geeglee software. The interface includes a navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below the navigation bar, there are filters for Alternatives (active only), Architecture (All (this SOI)), and Density (Comfortable). A 'Save modifications' button is visible on the left. The main content is a table with the following data:

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20				
Internal Diameter (m)					1	1
Investment (M€)	5	3	1	1.5	0.5	0.5
Operational Cost (M€)			600	350		

A green notification bar at the bottom of the interface displays the message: 'Modifications saved'.



SET A STATUS FOR ALTERNATIVES' VALUES



The screenshot displays the 'VALUES' tab in the Geeglee software. The main interface shows a table with columns for 'Chassis', 'Motor', and 'Spool', and rows for 'Footprint (square meter)', 'Internal Diameter (m)', 'Investment (M€)', and 'Operational Cost (M€)'. A dialog box titled 'Edit information' is open, allowing users to set a status for a specific value. The dialog includes a text input for 'Footprint (square meter)', a dropdown for 'Alternative' (set to 'Chassis 1'), a dropdown for 'Status' (set to 'Approval in progress'), and a text area for 'Comments'. The dialog also features 'CANCEL' and 'SAVE' buttons.

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20				
Internal Diameter (m)						
Investment (M€)	5	3				
Operational Cost (M€)						



SET A STATUS FOR ALTERNATIVES' VALUES



The screenshot displays the 'VALUES' tab in the Geeglee software. A table lists values for 'Chassis 1', 'Chassis 2', 'Motor 1', 'Motor 2', 'Spool 1', and 'Spool 2' across various performance metrics. An 'Edit information' dialog box is open, allowing the user to set the status for a specific value.

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20				
Internal Diameter (m)						
Investment (M€)	5	3				
Operational Cost (M€)						

Edit information

Setting and saving one value will give access to additional features, such as changing the validation status and comments.

Performance
Footprint (square meter)

Alternative
Chassis 2

Status
Approval in progress
Not approved
Approval in progress
Approved

CANCEL SAVE



SET A STATUS FOR ALTERNATIVES' VALUES



The screenshot shows the 'VALUES' tab in the Geeglee software. The interface includes a navigation bar at the top with tabs for 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. Below the navigation bar, there are filters for 'Alternatives' (set to '(active only)'), 'Architecture' (set to 'All (this SOI)'), and 'Density' (set to 'Comfortable').

The main content area displays a table with the following structure:

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20				
Internal Diameter (m)					1	1
Investment (M€)	5	3	1	1,5	0,5	0,5
Operational Cost (M€)			600	350		



SET A STATUS FOR ALTERNATIVES' VALUES



The screenshot displays the 'VALUES' tab in the Geeglee software. The interface includes a navigation bar at the top with tabs for 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. Below the navigation bar, there are filters for 'Alternatives' (set to '(active only)'), 'Architecture' (set to 'All (this SOI)'), and 'Density' (set to 'Comfortable').

The main data area is a table with the following structure:

	Chassis		Motor		Spool	
	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20			1	1
Internal Diameter (m)						
Investment (ME)	5	3	1	1.5	0.5	0.5
Operational Cost (ME)			600	350		

A green notification bar at the bottom of the interface states 'Modifications saved'.



The screenshot shows a web application interface with a navigation menu on the left and a main content area. The main content area displays a table of patterns. The table has the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The data rows are as follows:

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	Yellow dot	Re..f. 0	Investment (M€) Amortization (year)	1	0.35
	OPEX	Red dot	Re..f. 0	12	12	12
	Total Cost of Ownership (€)	Green dot	Re..f. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows a web application interface with a table of patterns. The table has the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The 'Rule' column for the 'OPEX' pattern is highlighted with a blue border and contains the value '12'.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	●	Re..f. 0	Investment (M€) Amortization (year)	1	0.35
	OPEX	●	Re..f. 0	12	12	12
	Total Cost of Ownership (€)	●	Re..f. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows a web application interface with a table of patterns. The table has the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The 'Rule' column for the 'OPEX' row is highlighted with a blue border.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	●	Re..I. 0	$\frac{\text{Investment (M€)}}{\text{Amortisation (year)}}$	1	0.35
	OPEX	●	Re..I. 0	1	12	12
	Total Cost of Ownership (€)	●	Re..I. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows a web application interface with a navigation bar at the top containing 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active. Below the navigation bar, there is a search bar with the text 'Mo' and a red error icon. A table is displayed with the following columns: 'Grou', 'Motor', 'Pattern', 'Status', 'Architectures', 'Rule', 'Ref 10M/10y', and 'Ref 20M/7y'. The table contains three rows of data.

Grou	Motor	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
		CAPEX	●	Re..f. 0	Investment (M€) Amortisation (year)	1	0.35
		OPEX	●	Re..f. 0	1	12	12
		Total Cost of Ownership (€)	●	Re..f. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows the 'Patterns' tab in the Geeglee software. A search bar at the top contains the text '"Motor",1'. Below the search bar is a table with columns for Group, Investment (M€), Operational Cost (k€), Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. A dropdown menu is open under the 'Operational Cost (k€)' column, showing 'name'. The table contains three rows: CAPEX, OPEX, and Total Cost of Ownership (€).

Group	Investment (M€)	Operational Cost (k€)	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
			CAPEX	●	Re..I. 0	$\frac{\text{Investment (M€)}}{\text{Amortisation (year)}}$	1	0.35
			OPEX	●	Re..I. 0	Motor. Operational Cost (k€)	12	12
			Total Cost of Ownership (€)	●	Re..I. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows the 'Patterns' tab in the Geeglee software. A table lists various patterns with their associated rules and reference values. The 'Motor' pattern is highlighted, showing its rule as 'Motor. Operational Cost (k€)' and its reference values as 12 for both 10M/10y and 20M/7y.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	Yellow	Re..I. O	Investment (M€) Amortization (year)	1	0.35
	OPEX	Red	Re..I. O	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)	Green	Re..I. O	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot shows a web application interface with a table of patterns. The table has the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The 'Rule' column contains the text 'Amortization (year)'. The 'Status' column shows a yellow dot for CAPEX, a red dot for OPEX, and a green dot for Total Cost of Ownership (€). The 'Architectures' column shows 'Re..I. 0' for each row. The 'Ref 10M/10y' column shows values 1, 12, and 13. The 'Ref 20M/7y' column shows values 0.35, 12, and 12.35.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
CAPEX		●	Re..I. 0	Amortization (year)	1	0.35
OPEX		●	Re..I. 0	Motor. Operational Cost (k€)	12	12
Total Cost of Ownership (€)		●	Re..I. 0	CAPEX + OPEX	13	12.35



CONNECT PATTERN WITH MODULES CHARACTERISTICS



The screenshot displays the 'Patterns' section of the Geeglee software. The interface includes a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active. Below the navigation bar, there is a table with columns for 'Group', 'Pattern', 'Status', 'Architectures', 'Rule', 'Ref 10M/10y', and 'Ref 20M/7y'. The table contains three rows of data:

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	+	Re..I. O	Amortization (year)	1	0.35
	OPEX	.	Re..I. O	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)	.	Re..I. O	CAPEX + OPEX	13	12.35



The screenshot shows the Geeglee software interface with the 'Patterns' tab selected. A help window titled 'Geeglee formula syntax' is open, displaying the following text:

The formula will be interpreted server-side to compute the requirements of each solution of the design space. It must enforce strictly the following syntax.

- Constants
- Arithmetic of numbers
- Generate strings
- Function of numbers
- Other Requirement
- Local performance for a module
- Vector of local performance for all modules
- Arithmetic of vectors
- Function of vectors
- Conditions
- Pattern status
- [Math Processing Error]

In the background, a table is visible with columns for 'Ref 10M/10y' and 'Ref 20M/7y'. The table contains the following data:

	Ref 10M/10y	Ref 20M/7y
ion (year)	1	0.35
rational Cost (k€)	12	12
OPEX	13	12.35



The screenshot shows the Geeglee software interface with a help window open. The main window displays a 'Patterns' section with a tree view containing 'Group', 'CAPEX', 'OPEX', and 'Total Cost of Ownership (€)'. The help window, titled 'Geeglee formula syntax for performance - Google Chrome', lists various functions: 'Function of numbers', 'Other Requirement', 'Local performance for a module', 'Vector of local performance for all modules', 'Arithmetic of vectors', 'Function of vectors', 'Conditions', and 'Pattern status'. The 'Arithmetic of vectors' section is expanded, showing a text description and examples of vector operations.

Arithmetic of vectors

You may perform any classical operations with vectors using +, -, *, /, (and). The operations are computed element-wise. You may also combine numbers and vectors using +, -, *, /, ^, (and)

Examples:

```
sum(2*,"localPerf"+3)
sum(","localPerf"*2)
sum(","localPerf"/,"localPerf2")
```



USE SPECIAL PATTERNS FORM



The screenshot displays the 'Patterns' tab in the Geeglee software interface. At the top, there are navigation tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below these, a 'Rule' section shows a green checkmark and the formula: $\text{sum}(\text{"Investment (M€)"} / \text{"Amortization (year)"})$.

The main area contains a table with the following columns: Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. The table lists three patterns:

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	Yellow dot	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	1	0.35
	OPEX	Red dot	Re..f. 0	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)	Green dot	Re..f. 0	CAPEX + OPEX	13	12.35



localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

Patterns

Rule

✓ `sum("Investment (M€)"/"Amortization (year)")`

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	Footprint (m2)	●	Re..I. O	Not defined	N.A.	N.A.
	CAPEX	●	Re..I. O	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	1	0.35
	OPEX	●	Re..I. O	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)	●	Re..I. O	CAPEX + OPEX	13	12.35

SOI

Taper ici pour rechercher

Plus cesser

17:49 30/10/2022



SET RULES FOR THE PATTERN



The screenshot shows the 'Patterns' tab in the Geeglee software. A table lists various patterns with their associated rules and values. The 'Footprint (m2)' pattern is highlighted with a blue box around its rule definition.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	Footprint (m2)	●	Re..I. O	Chassis. Footprint (square meter)	N.A.	N.A.
	CAPEX	●	Re..I. O	$\sum(\text{Investment (M€)})$ Amortization (year)	1	0.35
	OPEX	●	Re..I. O	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)	●	Re..I. O	CAPEX + OPEX	13	12.35



ADD A PATTERN



The screenshot displays the 'Patterns' management interface. The main window shows a table of patterns with the following data:

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	N.A.	N.A.
	CAPEX	●	Re..f. 0	$\sum((\text{Investment (M€)}) / \text{Amortization (year)})$	1	0.35
	OPEX	●	Re..f. 0	Motor. Operational Cost (k€)	12	12
	Total Cost of Ownership (€)				13	12.35

The 'NEW PATTERN' dialog box is open, showing the following fields:

- Name: Rolling Diameter (m)
- Group: None

Buttons: CANCEL, ADD & CLOSE, ADD & CONTINUE



ADD A PATTERN



The screenshot displays the 'PATTERNS' tab in the Geeglee software. A table lists various patterns with their associated rules and costs. A green notification at the bottom indicates 'Modifications saved'.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
CAPEX		●	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.5	0.25
Footprint (m2)		●	Re..f. 0	Chassis. Footprint (square meter)	10	10
OPEX		●	Re..f. 0	Motor. Operational Cost (kf)	1	1
Rolling Diameter (m)		●	Re..f. 0	Spool. Internal Diameter (m)	1	1
Total Cost of Ownership (€)		●	Re..f. 0	CAPEX + OPEX	1	1



ADD MISSING CONFIGURATION'S DATA TO REFERENCE CONFIGURATION



The screenshot displays the 'Patterns' tab in the Geeglee software. A table lists various configuration patterns with their associated rules and reference values. The table has columns for Group, Pattern, Status, Architectures, Rule, Ref 10M/10y, and Ref 20M/7y. A 'Save modifications' button is visible above the table.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
	CAPEX	●	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.5	0.25
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	10	10
	OPEX	●	Re..f. 0	Motor. Operational Cost (kf)	1	1
	Rolling Diameter (m)	●	Re..f. 0	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (€)	●	Re..f. 0	CAPEX + OPEX	1	1



ADD MISSING CONFIGURATION'S DATA TO REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active, showing a table of configurations. A dialog box titled 'EDIT REFERENCE CONFIGURATION' is open in the foreground, allowing for the modification of a specific configuration.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
CAPEX	Footprint (m2)				10	10
OPEX	Rolling Diameter (m)				1	1
	Total Cost of Ownership (€)				600.65	600.325

EDIT REFERENCE CONFIGURATION

Name*
Ref 10M/10y

Architecture*
Ref.

DESIGN VARIABLES

Amortization (year)
10

Investment (M€)
10

MODULES

Chassis
Chassis 1

Motor
Motor 1

Spool
Spool 1

HLR INPUTS ENV. VARIABLES ENV. SYSTEMS

SAVE CANCEL DUPLICATE DELETE



ADD MISSING CONFIGURATION'S DATA TO REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. At the top, there are tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The main area shows a table of patterns with columns for Group, Pattern, Status, Architectures, Rule, and Ref values. A modal dialog titled "EDIT REFERENCE CONFIGURATION" is open, allowing users to edit the configuration for a specific pattern. The dialog includes fields for Name, Architecture, and Ref, and sections for DESIGN VARIABLES, MODULES, HLR INPUTS, ENV. VARIABLES, and ENV. SYSTEMS. The "Name" field is set to "Ref 111/1d". The "Architecture" field is set to "Ref.". The "DESIGN VARIABLES" section shows "Amortization (year)" set to 10 and "Investment (M€)" set to 10. The "MODULES" section shows "Chassis" set to "Chassis 1", "Motor" set to "Motor 1", and "Spool" set to "Spool 1". The "SAVE", "CANCEL", "DUPLICATE", and "DELETE" buttons are visible at the bottom of the dialog.

Group	Pattern	Status	Architectures	Rule	Ref 10M/10y	Ref 20M/7y
CAPEX	"Spool", "Internal Diameter (m)"	✓			0.65	0.325
Footprint (m2)					10	10
OPEX					600	600
Rolling Diameter (m)					1	1
Total Cost of Ownership (€)					600.65	600.325



ADD MISSING CONFIGURATION'S DATA TO REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active, showing a table of reference configurations. The table has columns for 'Group', 'Pattern', 'Status', 'Architectures', 'Rule', and numerical values. A dialog box titled 'EDIT REFERENCE CONFIGURATION' is open in the foreground, allowing for the modification of a specific reference configuration.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 20M/7y
CAPEX	"Spool", "Internal Diameter (m)"	✓			0.65	0.325
Footprint (m2)					10	10
OPEX					600	600
Rolling Diameter (m)					1	1
Total Cost of Ownership (€)					600.65	600.325

EDIT REFERENCE CONFIGURATION

Name*
Ref 222/20

Architecture*
Ref.

DESIGN VARIABLES

Amortization (year)
20

Investment (M€)
7

MODULES

Chassis
Chassis 2

Motor
Motor 2

Spool
Spool 2

HLR INPUTS ENV. VARIABLES ENV. SYSTEMS

SAVE CANCEL DUPLICATE DELETE



ADD MISSING CONFIGURATION'S DATA TO REFERENCE CONFIGURATION



The screenshot displays the 'Patterns' tab in the Geeglee software. A table lists various configuration patterns and their values for two reference configurations: Ref 111/10 and Ref 222/20. The table includes columns for Group, Pattern, Status, Architectures, Rule, and numerical values. A green notification bar at the bottom indicates 'Modifications saved'.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX	●	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	10	20
	OPEX	●	Re..f. 0	Motor. Operational Cost (kf)	600	350
	Rolling Diameter (m)	●	Re..f. 0	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (€)	●	Re..f. 0	CAPEX + OPEX	600.65	350.25



RENAME PATTERN (ADD UNITS)

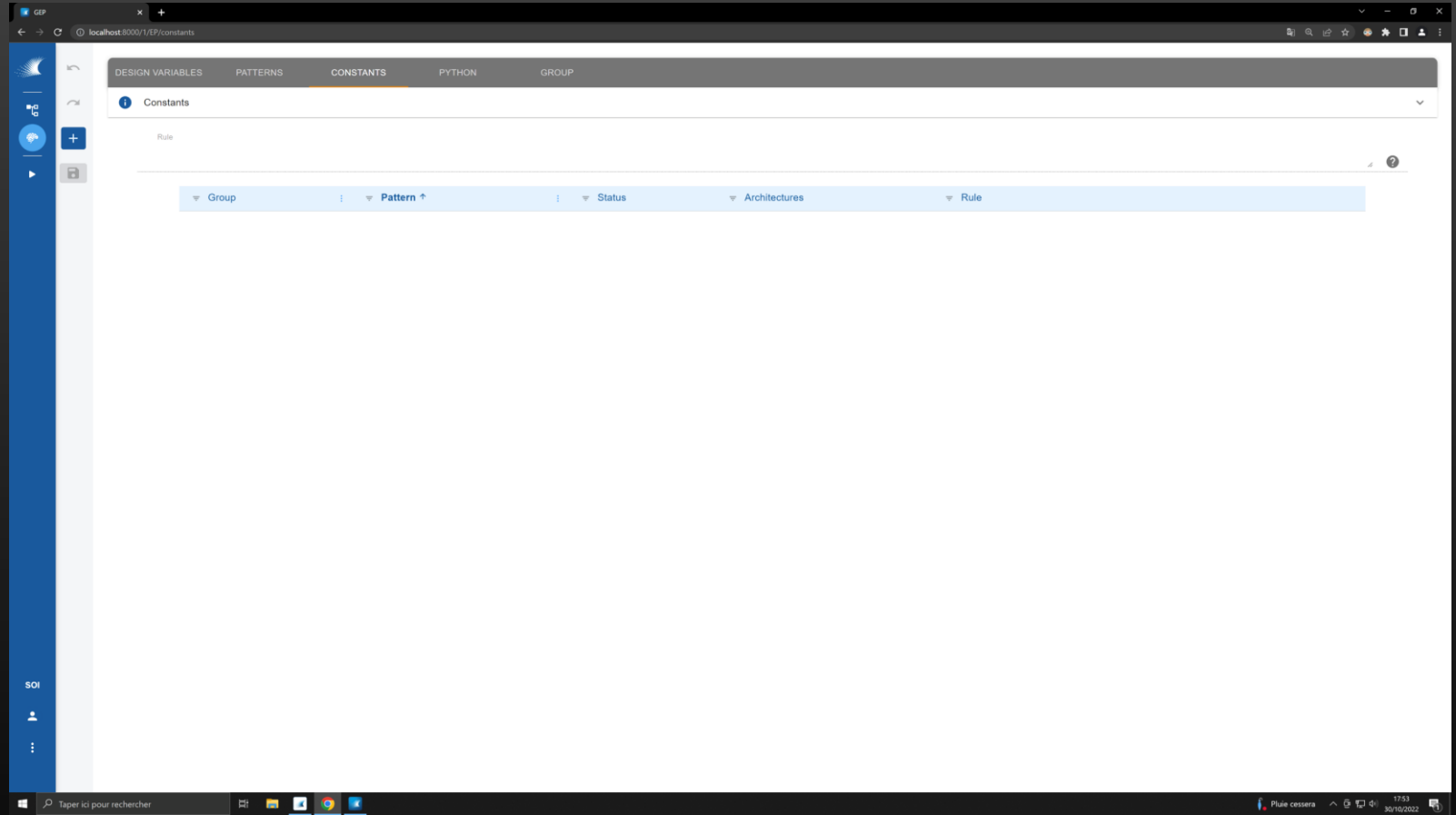


The screenshot shows the 'Patterns' tab in the Geeglee software. A rule is defined as '"Spool", "Internal Diameter (m)"'. Below this, a table lists various patterns with their associated rules and values.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re..I. O	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re..I. O	Chassis. Footprint (square meter)	10	20
	OPEX (M€)	●	Re..I. O	Motor. Operational Cost (kf)	600	350
	Rolling Diameter (m)	●	Re..I. O	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	+	Re..I. O	CAPEX + OPEX	600.65	350.25



CREATE YOUR FIRST CONSTANTS





CREATE YOUR FIRST CONSTANTS



The screenshot shows a web browser window at localhost:8000/1/EP/constants. The application interface includes a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'CONSTANTS' tab is active. Below the navigation bar, there is a 'Rule' section and a table with columns for Group, Pattern, Status, Architectures, and Rule. A 'NEW CONSTANT' dialog box is open in the center, featuring a 'Name' field with the text 'ME to ke', a 'Group' dropdown menu, and three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. The browser's address bar shows the URL, and the Windows taskbar at the bottom displays the search bar and system tray.



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/constants`. The interface has a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'CONSTANTS' tab is active, displaying a 'Constants' section with a 'Rule' field containing '1000'. Below this is a table with columns: Group, Pattern, Status, Architectures, and Rule. The table contains one entry: 'ME to k€' with a status of 'On' (indicated by a yellow dot) and a rule value of '1000'.

Group	Pattern	Status	Architectures	Rule
	ME to k€	On	Re...f	1000



USE CONSTANTS TO PATTERN



The screenshot shows the 'Patterns' tab in the Geeglee software. The interface includes a top navigation bar with 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below this is a table with the following data:

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	10	20
	OPEX (M€)	●	Re..f. 0	Motor. Operational Cost (kf)	600	350
	Rolling Diameter (m)	●	Re..f. 0	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re..f. 0	CAPEX (M€) + OPEX (M€)	600.65	350.25

A green notification bar at the bottom of the interface states 'Modifications saved'.



USE CONSTANTS TO PATTERN



The screenshot displays the 'Patterns' tab in the Geeglee software. A table lists various patterns with their corresponding rules and values. The 'Motor', 'Operational Cost (k€)'/ 'M€ to k€' rule is highlighted with a blue border.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re..f. 0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	10	20
	OPEX (M€)	●	Re..f. 0	Motor. Operational Cost (k€) M€ to k€	0.6	0.35
	Rolling Diameter (m)	●	Re..f. 0	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re..f. 0	CAPEX (M€) + OPEX (M€)	1.25	0.6

A green notification bar at the bottom of the interface reads 'Modifications saved'.



USE MODEL CHECK EVERY TIME BEFORE LAUNCHING A SIMULATION



The screenshot displays the Geeglee Model Checking interface within a web browser. The browser address bar shows the URL `localhost:8000/1/design-spaces/model-checking`. The interface features a top navigation bar with tabs for **MODEL CHECKING**, **PROJECT MATURITY**, **REPORT GENERATION**, and **DESIGN SPACE GENERATION**. The main content area is titled **Model checking** and contains a **Warnings** section. A play button icon is visible on the left side of the interface.

The warnings list includes the following items:

- Internal Incompatibility error (critical)
- Missing values (critical)
- No architecture in this SOI (critical)
- No environment module alternatives (critical)
- No module alternatives for architecture (critical)
- Patterns: Circular Loop (critical)
- HLR Requirement constraints: not used in patterns (high)
- HLR outputs: missing target (high)
- Missing modules for architecture (high)
- No HLR outputs (high)
- There is no GEI file set up (high)
- Unknown elements in patterns (high)
- Patterns: invalid formula (medium)
- Characteristics: not linked to a module (low)
- Characteristics: not used in patterns (low)
- HLR inputs - Design variables - Environment variables: not used (low)
- Reference configurations: values out of range (low)



USE MODEL CHECK EVERY TIME BEFORE LAUNCHING A SIMULATION



The screenshot displays the 'Model checking' interface in a web browser. The browser address bar shows 'localhost:8000/1/design-spaces/model-checking'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, the main content area is titled 'Model checking' and contains a list of warnings and errors. The list is organized into sections: 'Warnings' (indicated by a yellow triangle icon) and 'Errors' (indicated by a red circle icon). Each item in the list includes a status icon (checkmark or error symbol), a description, and a severity level (critical, high, medium, low). The 'Warnings' section includes items like 'Internal Incompatibility error', 'Missing values', 'No architecture in this SOI', 'No environment module alternatives', 'No module alternatives for architecture', 'Patterns: Circular Loop', 'HLR Requirement constraints: not used in patterns', 'HLR outputs: missing target', and 'Missing modules for architecture'. The 'Errors' section includes 'No HLR outputs', 'There is no GEI file set up', 'Unknown elements in patterns', 'Patterns: invalid formula', 'Characteristics: not linked to a module', 'Characteristics: not used in patterns', 'HLR inputs - Design variables - Environment variables: not used', and 'Reference configurations: values out of range'. The bottom of the screenshot shows a Windows taskbar with the search bar containing 'Taper ici pour rechercher' and the system tray showing the date '30/10/2022' and time '17:55'.

Severity	Message
Warning	Internal Incompatibility error
Warning	Missing values
Warning	No architecture in this SOI
Warning	No environment module alternatives
Warning	No module alternatives for architecture
Warning	Patterns: Circular Loop
Warning	HLR Requirement constraints: not used in patterns
Warning	HLR outputs: missing target
Warning	Missing modules for architecture
Error	No HLR outputs
Error	There is no GEI file set up
Warning	Unknown elements in patterns
Warning	Patterns: invalid formula
Warning	Characteristics: not linked to a module
Warning	Characteristics: not used in patterns
Error	HLR inputs - Design variables - Environment variables: not used
Warning	Reference configurations: values out of range



RUN A NEW SIMULATION



The screenshot shows a web browser window displaying the 'Design space generation' interface. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, there is a section titled 'Design space generation' with a dropdown arrow. This section contains two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 16'. Below this is a table titled 'Design spaces' with the following data:

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



RUN A NEW SIMULATION



MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

Design space generation

GENERATE SETTING GEI

GENERATE DESIGN SPACE

Calculation time saturation: 0.01%

Memory consumption saturation: 0.01%

Estimated calculation time: less than 5 minutes

Estimated solutions: 16

Design spaces

Name	Identifier	Description	Only	Start date	End date	Status	Files
First Run	1	TCO with design variables...	No	09 October 2022, 16:05	30 October 2022, 16:05	Finished	

Generate design space

Name: Module connected

Description: Chassis - Motor - Spool

Current GEI file: No GEI file selected

Select a GEI file: [button]

Only light result

START



RUN A NEW SIMULATION



The screenshot shows a web browser window displaying the 'Design space generation' interface. The browser address bar shows 'localhost:8000/1/design-spaces/generation'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. Below the header, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 16'. Below these indicators is a table titled 'Design spaces' with the following data:

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:57	Finished	
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



GET RESULTS



MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

1 Design space generation

GENERATE SETTING GEI

GENERATE DESIGN SPACE

Calculation time saturation: 0.01%

Memory consumption saturation: 0.01%

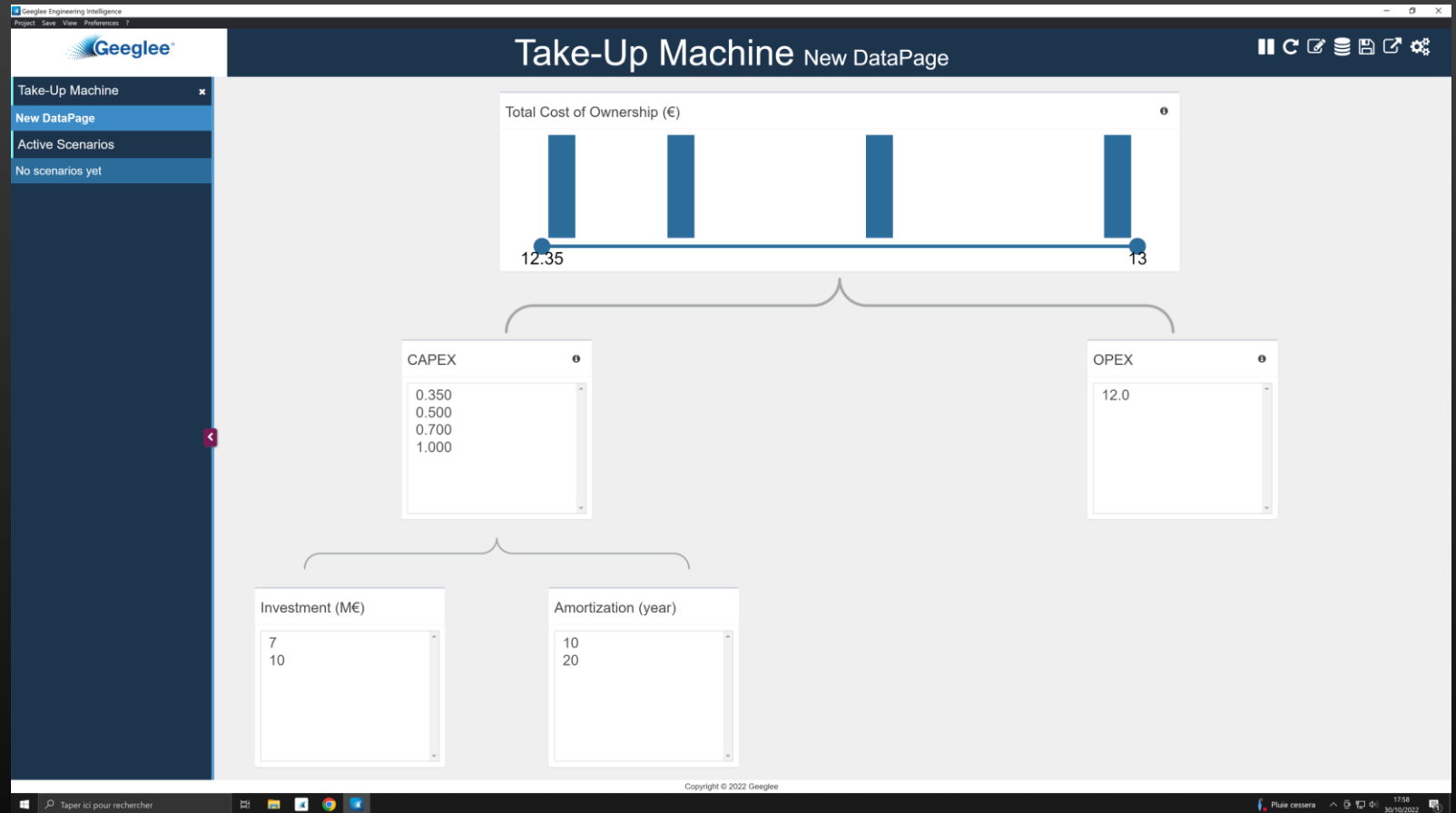
Estimated calculation time: less than 5 minutes

Estimated solutions: 16

Design spaces

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:57	Finished	
<input type="checkbox"/>	First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05	Finished	

File name	Size	Download
Download All	1.1 MB	
Take-Up Machine_id#2_full_setting_GEI.zip	8.9 kB	
Take-Up Machine_id#2_full.zip	19.8 kB	
Take-Up Machine.gep	1.1 MB	
log_Take-Up Machine_id#2.zip	5.7 kB	
analysis_Take-Up Machine_id#2.zip	1.4 kB	
report_Take-Up Machine_id#2.txt	902 B	





The screenshot displays the Geeglee Engineering Intelligence software interface. A file explorer window is open on the left, showing the file structure. The main window is titled "e-Up Machine New DataPage" and contains several data input fields and a chart.

Chart: of Ownership (€)

Category	Value
Ownership 1	0.500
Ownership 2	0.700
Ownership 3	1.000

Input Fields:

- Geeglee Data:** 0.500, 0.700, 1.000
- OPEX:** 12.0
- Investment (M€):** 7, 10
- Amortization (year):** 10, 20

Copyright © 2022 Geeglee



The screenshot displays the Geeglee Engineering Intelligence interface. A file explorer window is open over the 'Take-Up Machine' configuration page. The file explorer shows a list of files in the 'Téléchargements' folder:

Nom	Modifié le	Type	Taille
Aujourd'hui (2)			
Take-Up Machine_id#2_full.xls	30/10/2022 17:56	Fichier XLS	2 287 Ko
Take-Up Machine_id#2_full.xls	30/10/2022 16:05	Fichier XLS	2 186 Ko
Semaine dernière (1)		Type : Fichier HT	Taille : 2,23 Mo
webtransfer_formatio...	18/10/2022 08:14	Dossier de fichiers	

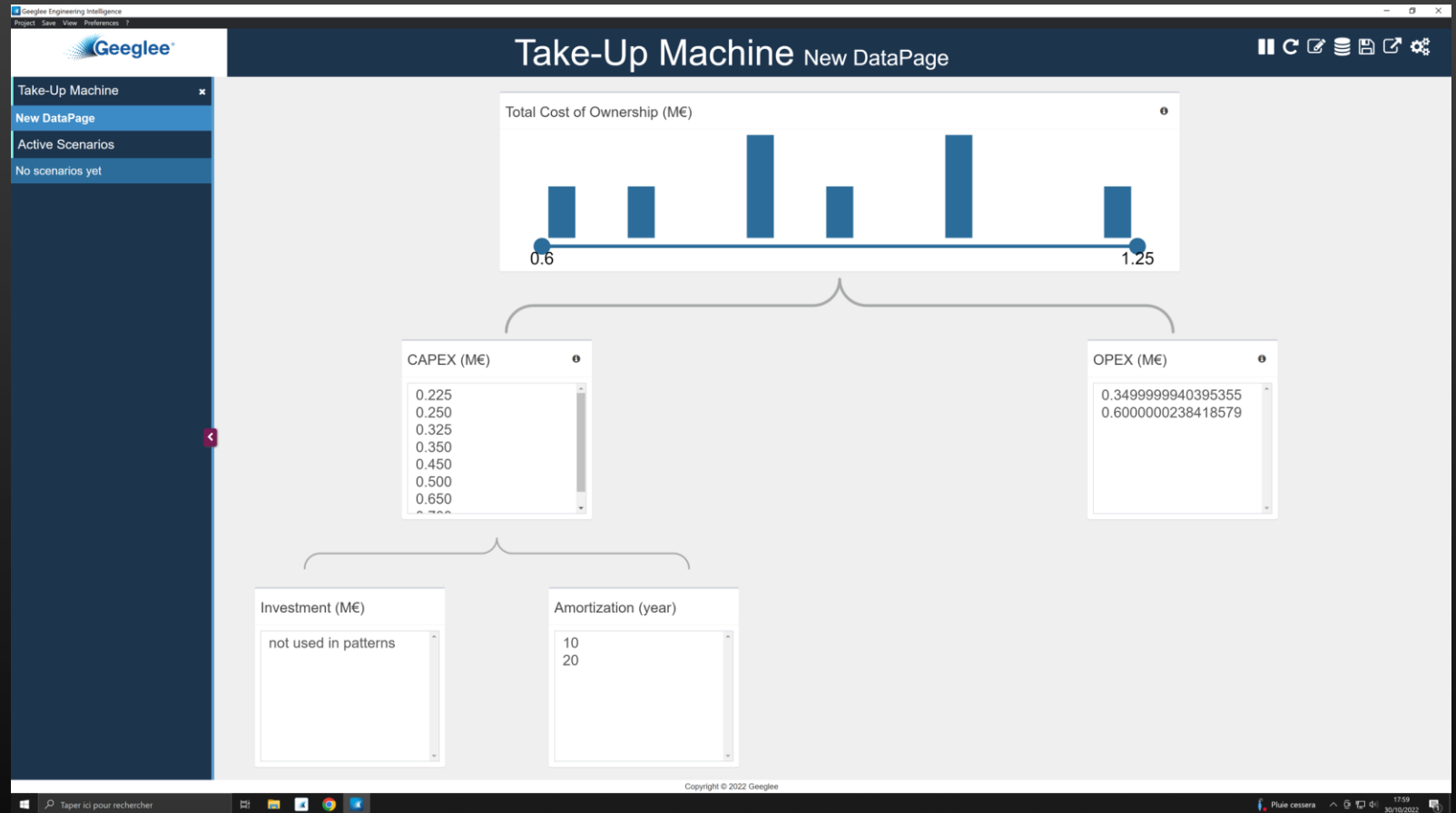
The configuration page for 'Take-Up Machine' includes the following fields:

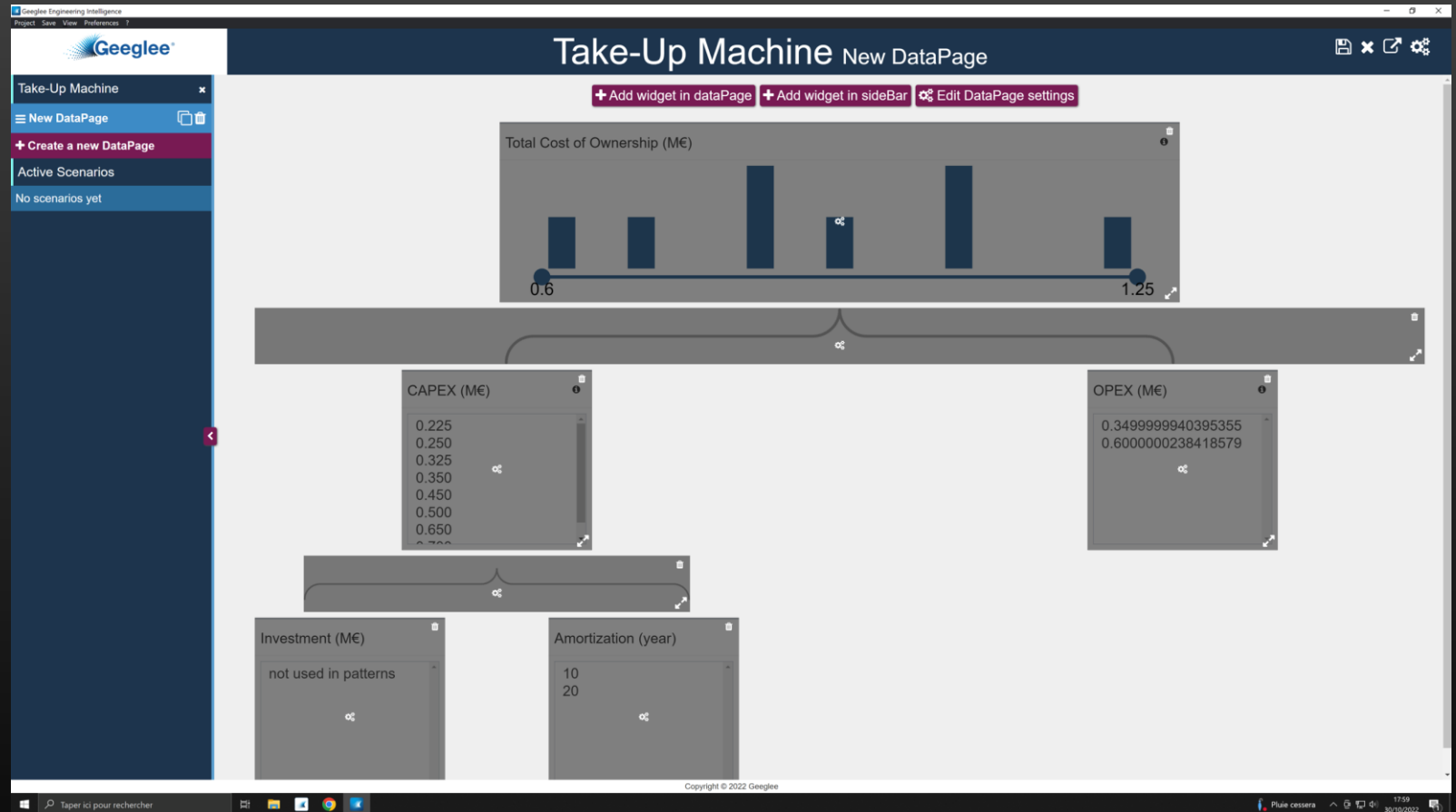
- of Ownership (€)**: A bar chart with three bars and a value of 13.
- OPEX**: A text input field containing the value 12.0.
- Investment (M€)**: A list box with values 7 and 10.
- Amortization (year)**: A list box with values 10 and 20.

The bottom of the screen shows the Windows taskbar with the search bar containing 'Taper ici pour rechercher', the system tray with the date '30/10/2022' and time '17:59', and the copyright notice 'Copyright © 2022 Geeglee'.



The screenshot shows the 'Take-Up Machine' interface in 'New DataPage' mode. The left sidebar contains a menu with 'Take-Up Machine', 'New DataPage', 'Active Scenarios', and 'No scenarios yet'. The main area features a 'Total Cost of Ownership (€)' chart with a value of 12.35. Below the chart are input fields for CAPEX (0.350, 0.500, 0.700, 1.000), OPEX (12.0), Investment (M€) (7, 10), and Amortization (year) (10, 20). A 'Reload data?' dialog box is open in the center, with a note: 'Note: You can reload data later by clicking on the project tab in the left menu.' The dialog has 'No' and 'Yes' buttons. The bottom status bar shows 'Copyright © 2022 Geeglee' and the date '30/10/2022'.



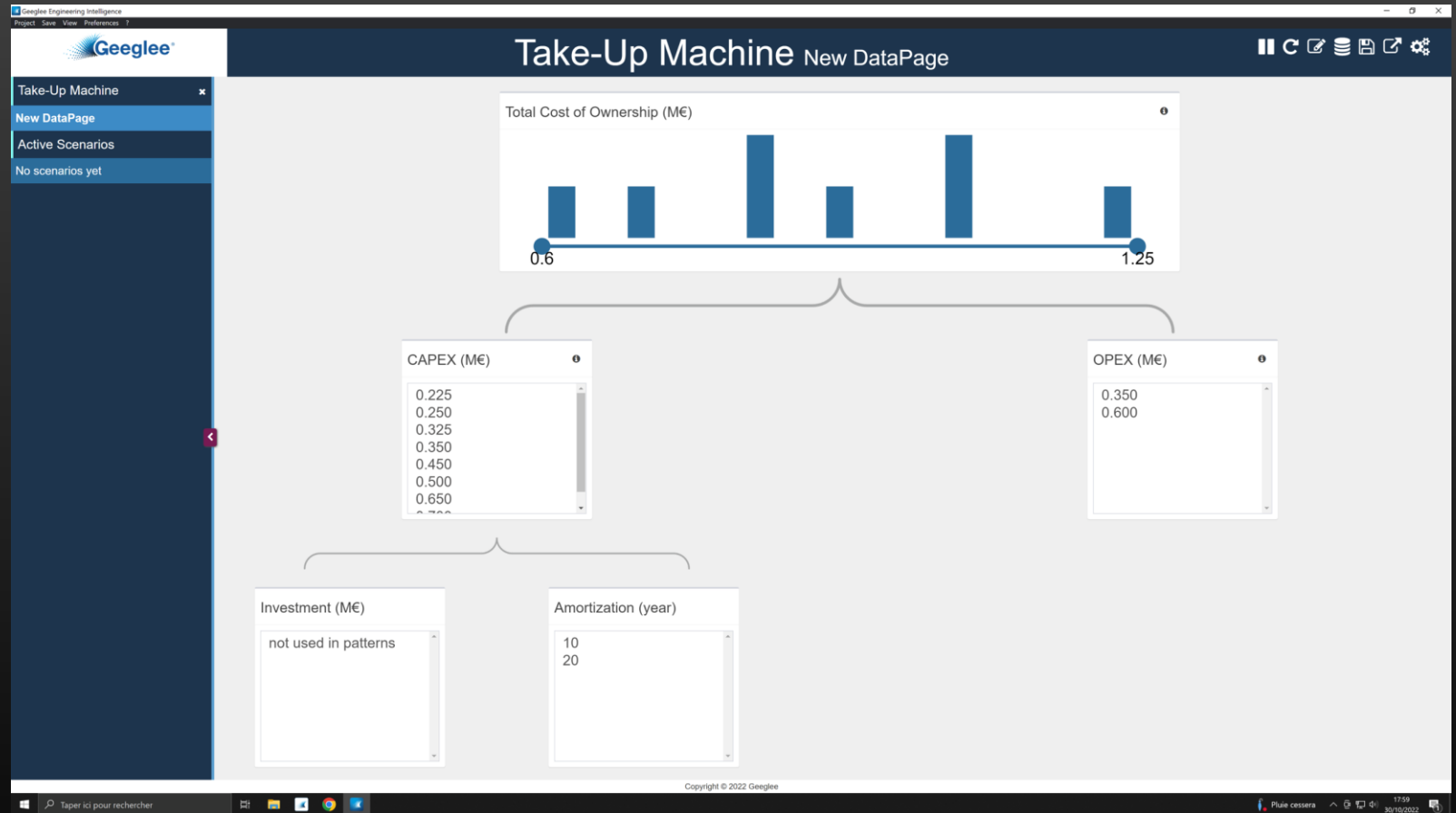


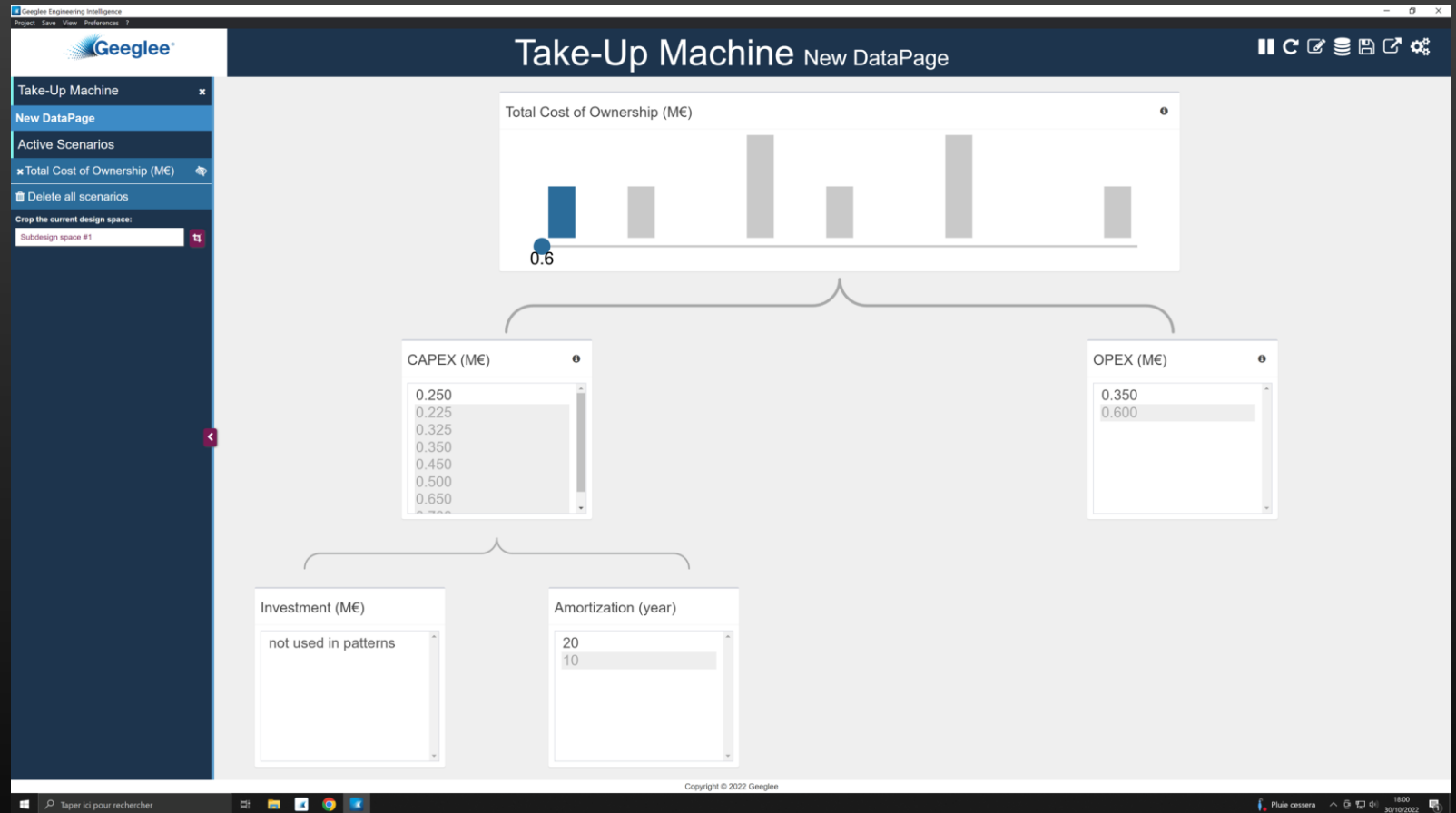


The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine New DataPage". A sidebar on the left contains navigation options: "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows a "Total Cost of Ownership (M€)" widget with a value of 1.25. An "Edit widget" dialog is open, showing the following configuration:

- Type: Select
- Query: OPEX (M€)
- Label: OPEX (M€)
- Additional Setting: Precision (set to 3)
- Argument widgets: Create 1 argument(s) widgets for query OPEX (M€)

The dialog includes "Add widget in dataPage", "Add widget in sidebar", and "Edit DataPage settings" buttons at the top. An "Update widget" button is at the bottom right. The background shows other widgets like "Investment (M€)" and "Amortization (year)". The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system tray icons, and the date/time "17:59 30/10/2022".







RENAME A DATA PAGE



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' project. The main window is titled 'Take-Up Machine New DataPage' and includes a sidebar on the left with navigation options like 'New DataPage', 'Create a new DataPage', and 'Active Scenarios'. The main area contains several data widgets: a 'Total Cost of Ownership (M€)' bar chart, a 'CAPEX (M€)' list, an 'OPEX (M€)' list, an 'Investment (M€)' dropdown, and an 'Amortization (year)' dropdown. A search bar at the bottom left contains the text 'Taper ici pour rechercher'. The bottom right corner shows the system tray with the date '30/10/2022' and the time '18:00'.



RENAME A DATA PAGE



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Take-Up Machine New DataPage". A sidebar on the left contains a navigation menu with options like "Take-Up Machine", "New DataPage", "Create a new DataPage", "Active Scenarios", and "Total Cost of Ownership (M€)".

An "Edit datapage" dialog box is open in the center, allowing for the modification of the data page's appearance. The dialog includes a "Label" field with the text "New DataPage" and a list of options to be added to the page:

- Grid Layout
- Layout Edition
- Widgets
- Widget Groups

Each option has a plus sign icon to its right. At the bottom right of the dialog is an "Update datapage" button. The background shows a data visualization for "Total Cost of Ownership (M€)" with a bar chart and a table of values.

CAPEX (M€)	OPEX (M€)
0.250	0.350
0.225	0.600
0.325	
0.350	
0.400	
0.500	
0.650	

Other visible widgets include "Investment (M€)" with the text "not used in patterns" and "Amortization (year)" with values 20 and 10.



Geeglee Engineering Intelligence

Project Save View Preferences 1

Take-Up Machine TCO Breakdown

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

Total Cost of Ownership (M€)

0.6

CAPEX (M€)

0.250
0.225
0.325
0.350
0.450
0.500
0.650

OPEX (M€)

0.350
0.600

Investment (M€)

not used in patterns

Amortization (year)

20
10

Copyright © 2022 Geeglee

1801 30/10/2022



CREATE A NEW DATA PAGE



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine New DataPage". The left sidebar contains a navigation menu with the following items: "Take-Up Machine", "TCO Breakdown", "New DataPage", "+ Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", "+ New DataPage from scenarios", and "Crop the current design space: Subdesign space #1". The main content area is currently empty, with three red callout boxes at the top: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system tray icons, and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine New DataPage". The left sidebar contains a navigation menu with items: "Take-Up Machine", "TCO Breakdown", "New DataPage", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", "New DataPage from scenarios", and "Crop the current design space: Subdesign space #1". The main content area shows a header with three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". An "Edit datapage" dialog box is open in the center, featuring a "Label" field with the value "New DataPage" and four expandable sections: "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", each with a "+" icon. An "Update datapage" button is located at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", system tray icons, and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine New DataPage". At the top, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". A sidebar on the left contains a menu with items like "Take-Up Machine", "TCO Breakdown", "New DataPage", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", and "New DataPage from scenarios". A "Crop the current design space" section is also visible. In the center, an "Edit datapage" dialog box is open, showing a "Label" field with the text "Architecture". Below the field are four buttons: "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", each with a "+" icon. An "Update datapage" button is located at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with the date "30/10/2022" and time "18:01", and the text "Pluie cessera".



ADD WIDGETS



The screenshot displays the Geeglee Engineering Intelligence software interface. The window title is "Geeglee Engineering Intelligence". The main header area contains the Geeglee logo and the text "Take-Up Machine Architecture". Below the header, there are three prompts: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings".

The left sidebar contains the following elements:

- Take-Up Machine (with a close icon)
- TCO Breakdown (with a refresh icon)
- Architecture (with a refresh icon)
- + Create a new DataPage
- Active Scenarios
- Total Cost of Ownership (M€) (with a refresh icon)
- + New DataPage from scenarios
- Crop the current design space:
 - Subdesign space #1 (with a refresh icon)

The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", several application icons, and a system tray with the text "Plus cessera", a volume icon, and the date "18:01 30/10/2022". A copyright notice "Copyright © 2022 Geeglee" is visible at the bottom center of the application window.



Geeglee Engineering Intelligence

Project Save View Preferences

Geeglee

Take-Up Machine

TCO Breakdown

Architecture

+ Create a new DataPage

Active Scenarios

Total Cost of Ownership (MC)

+ New DataPage from scenarios

Crop the current design space:

Subdesign space #1

Take-Up Machine Architecture

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

New widget

Reuse an existing widget

-- Select an option --

Import widget to dataPage

Or create a new widget

Type

-- Select an option --

Query

Query n°0

SmartScatter

Table

Logo

Title

Label

792rtrbhp

Additional Setting

Precisi

Create widget

Copyright © 2022 Geeglee

Taper ici pour rechercher

Pluie cessera

18:01 30/10/2022



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". A sidebar on the left contains a navigation menu with items like "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", "New DataPage from scenarios", and "Crop the current design space".

A "New widget" dialog box is open in the center, featuring the following fields and options:

- Reuse an existing widget:** A dropdown menu with "-- Select an option --" and an "Import widget to dataPage" button.
- Or create a new widget:** A section with a "Type" dropdown menu set to "Module".
- Query:** A text input field with "n°0" below it.
- Label:** A text input field with "792rtrbhp" below it.
- Additional Setting:** A section with a "Precisi" text input field.
- Create widget:** A button at the bottom right of the dialog.

At the top of the main interface, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the window shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a date/time display of "18:01 30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". A sidebar on the left contains a navigation menu with items like "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", "New DataPage from scenarios", and "Crop the current design space".

A "New widget" dialog box is open in the center, providing options to either reuse an existing widget or create a new one. The "Reuse an existing widget" section has a dropdown menu with "-- Select an option --" and an "Import widget to dataPage" button. The "Or create a new widget" section includes a "Type" dropdown set to "Module", a "Query" field with a dropdown showing "Chassis", and a "Label" field with the text "792rbrbhp". Below these fields is an "Additional Setting" section with a "Precision" field. A "Create widget" button is located at the bottom right of the dialog.

At the top of the main interface, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the window shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a clock showing 18:02 on 30/10/2022.



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Architecture". The left sidebar contains a navigation menu with items like "Take-Up Machine", "TCO Breakdown", "Architecture", and "Active Scenarios". A "New widget" dialog box is open in the center, with the following fields and options:

- Reuse an existing widget:** A dropdown menu with "-- Select an option --" and an "Import widget to dataPage" button.
- Or create a new widget:** A section with a "Type" dropdown set to "Module".
- Query:** A text input field containing "motd" and a dropdown menu showing "Motor".
- Label:** A text input field containing "810gmmozfite".
- Additional Setting:** A section with a "Precisi" label and an input field.
- Create widget:** A button at the bottom right of the dialog.

At the top of the main interface, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher" and system tray icons for "Plus cessera" and the date "18:02 30/10/2022".



The screenshot shows the Geeglee Engineering Intelligence interface. A 'New widget' dialog box is open in the center. The dialog has a title bar with a close button. It contains two main sections: 'Reuse an existing widget' and 'Or create a new widget'. The 'Reuse an existing widget' section has a dropdown menu with '-- Select an option --' and an 'Import widget to dataPage' button. The 'Or create a new widget' section has a 'Type' dropdown set to 'Module', a 'Query' field with 'Spool' entered, a 'Label' field with 'Spool' entered, and an 'Additional Setting' section with a field containing 'Precisi'. A 'Create widget' button is located at the bottom right of the dialog. The background shows a sidebar with navigation options like 'Take-Up Machine', 'TCO Breakdown', and 'Architecture', and a main area with a 'Chassis' diagram.



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". On the left, a sidebar menu includes "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (MC)", "New DataPage from scenarios", and "Crop the current design space: Subdesign space #1". The main workspace contains three widget placeholders: "Spool", "Chassis", and "Motor". Each placeholder contains the text "New widget" and "Load data by clicking on the left menu." Above these placeholders are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a date/time display of "18:02 30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". On the left, a navigation menu includes "Take-Up Machine", "TCO Breakdown", "Architecture", "Active Scenarios", "Total Cost of Ownership (M€)", and "Delete all scenarios". Below the menu, there is a "Crop the current design space:" section with a dropdown menu set to "Subdesign space #1". The main workspace contains three widget containers: "Spool", "Chassis", and "Motor". Each container displays a "New widget" button and the instruction "Load data by clicking on the left menu." A "Reload data?" dialog box is open in the center, with a note: "Note: You can reload data later by clicking on the project tab in the left menu." The dialog has "No" and "Yes" buttons. The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher" and system tray icons including "Plus cessera" and the date "18/02 30/10/2022".



VISUALIZE YOUR ARCHITECTURE



Geeglee Engineering Intelligence
Project Save View Preferences 1

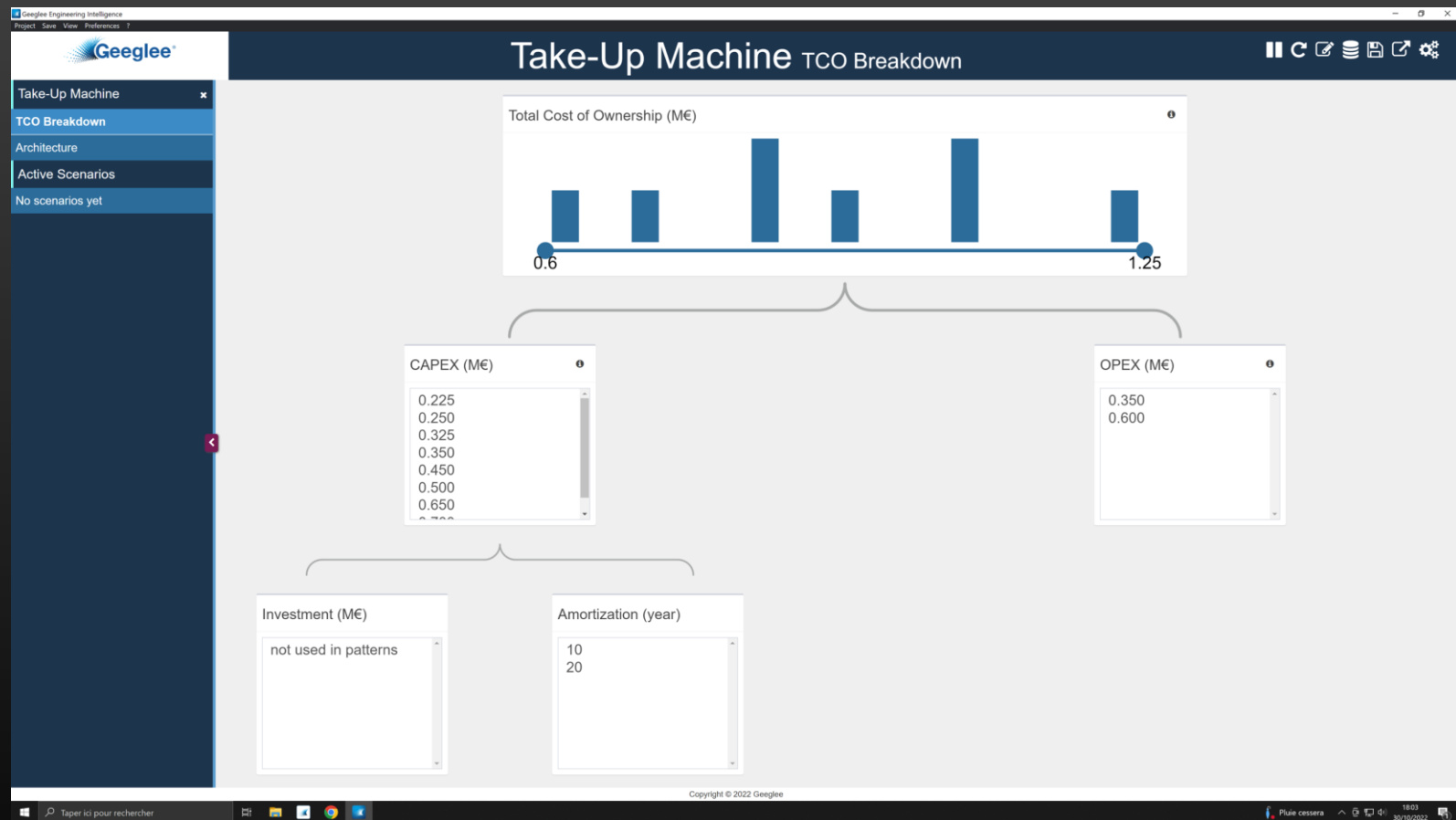
Take-Up Machine Architecture

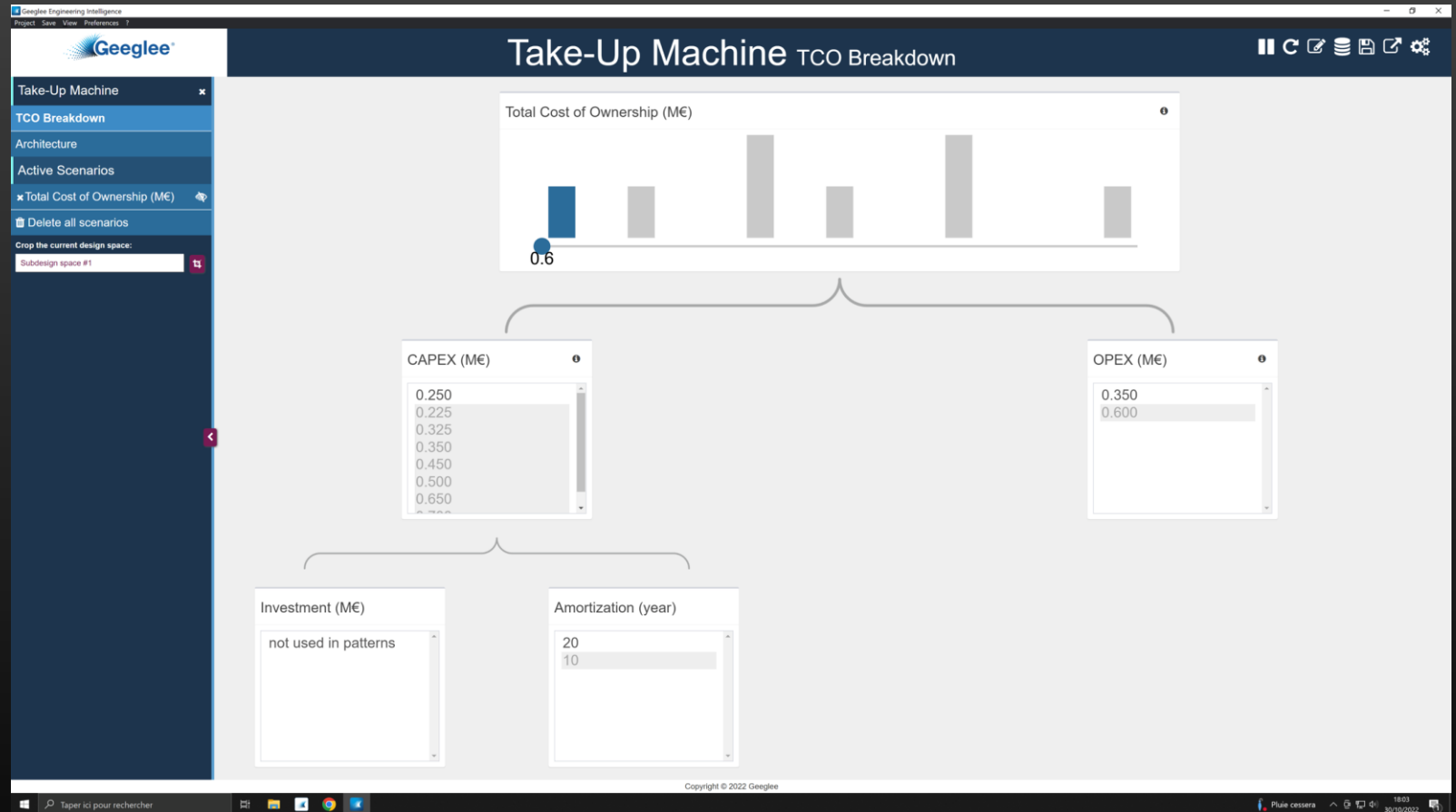
- Take-Up Machine
- TCO Breakdown
- Architecture
- Active Scenarios
- No scenarios yet

Component	Item
Spool	not significant
Chassis	Chassis 1
	Chassis 2
Motor	Motor 1
	Motor 2

Copyright © 2022 Geeglee

Plus cessera 18:02 30/10/2022







THE SCENARIO WILL IMPACT ARCHITECTURE



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". On the left, a sidebar menu includes "Take-Up Machine", "TCO Breakdown", "Architecture", "Active Scenarios", "Total Cost of Ownership (M€)", and "Delete all scenarios". Below the menu, there is a section for "Crop the current design space:" with a dropdown menu set to "Subdesign space #1". The main workspace shows three subdesign spaces: "Spool", "Chassis", and "Motor". Each subdesign space contains a table with two columns: "Subdesign" and "Value". The "Spool" table has one row with "Subdesign #1" and a value of "1". The "Chassis" table has two rows: "Chassis 2" with value "1" and "Chassis 1" with value "1". The "Motor" table has two rows: "Motor 2" with value "1" and "Motor 1" with value "1". The interface includes a top navigation bar with icons for home, refresh, save, print, and settings. The bottom status bar shows the Windows taskbar with a search bar, taskbar icons, and system tray information including the date "30/10/2022" and time "18:01".



UNDERSTAND HOW TO USE THE GREEN EYE



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Architecture". On the left, a sidebar menu includes "Take-Up Machine", "TCO Breakdown", "Architecture", "Active Scenarios", "Total Cost of Ownership (M€)", and "Delete all scenarios". Below the menu, there is a "Crop the current design space:" section with a dropdown menu set to "Subdesign space #1". The main workspace shows three component panels: "Spool" (with a "not significant" label), "Chassis" (with "Chassis 2" and "Chassis 1" labels), and "Motor" (with "Motor 2" and "Motor 1" labels). The bottom status bar indicates "1.g: Total Cost of Ownership (M€)" and shows the date "30/10/2022".



localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

Rule

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re..I. O	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.25
	Footprint (m2)	●	Re..I. O	Chassis. Footprint (square meter)	10	20
	OPEX (M€)	●	Re..I. O	$\frac{Motor. Operational Cost (k€)}{M€ to k€}$	0.6	0.35
	Rolling Diameter (m)	●	Re..I. O	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re..I. O	CAPEX (M€) + OPEX (M€)	1.25	0.6

SOI

Taper ici pour rechercher

Pluie cessera 18:02 30/10/2022



The screenshot shows a web browser window with the URL localhost:8000/1/EP/patterns. The interface has a top navigation bar with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is active. Below the navigation bar, there is a 'Patterns' section with a 'Rule' input field. A table lists various patterns with columns for Group, Pattern, Status, Architectures, Rule, and two reference values (Ref 111/10 and Ref 222/20). A sidebar on the left contains navigation icons and a 'SOI' label. A bottom menu is open, showing 'List of commands' and 'Enter administration'.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re..f. 0	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.25
	Footprint (m2)	●	Re..f. 0	Chassis. Footprint (square meter)	10	20
	OPEX (M€)	●	Re..f. 0	$\frac{Motor. Operational Cost (k€)}{M€ to k€}$	0.6	0.35
	Rolling Diameter (m)	●	Re..f. 0	Spool. Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re..f. 0	CAPEX (M€) + OPEX (M€)	1.25	0.6



The screenshot displays the Geeglee Administration web interface. At the top, there is a navigation bar with the Geeglee logo and the text "Geeglee's Administration". A green notification bar below the header indicates "Calculus requested". The main content area is titled "Site administration" and contains a list of administrative options, each with an "Add" button and a "Change" button:

- PROJECT
- Company logo
- User information
- Translations
- Systems of interest
- Architectures
- Modules
- Interfaces
- Performance Group
- Post-processing: distance to optimum
- Post-processing: pareto front

To the right of this list is a "Recent actions" panel titled "My actions" which shows a list of performed actions:

- Spool Module
- Motor Module
- Characteristic Module

The interface is viewed through a browser window with the address bar showing "localhost:8000/admin/". The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher" and the system tray displaying the date and time as "18:06 30/10/2022".



Select architecture to change

Geeglee's Administration

Home > Project > Architectures

Start typing to filter:

- PROJECT
- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Select architecture to change

Search

Action: Go 0 of 1 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Ref.		Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.

1 architecture

ADD ARCHITECTURE +

FILTER

By active

- All
- Yes
- No

Windows taskbar: Taper ici pour rechercher, Plus cesser, 16:04 30/10/2022



COPY AN ARCHITECTURE



Geeglee's Administration

Home > Project > Architectures

Start typing to filter:

- PROJECT
- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Select architecture to change

Search

Action: [dropdown] Go 1 of 1 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Ref.	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.

1 architecture

ADD ARCHITECTURE +

FILTER

- By active
- All
- Yes
- No

Windows taskbar: Taper ici pour rechercher, Plus cessaera, 16:04 30/10/2022



COPY AN ARCHITECTURE



Geeglee's Administration

Home > Project > Architectures

Start typing to filter:

- PROJECT
- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Select architecture to change

Search

Action: Copy selected architectures Go 1 of 1 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Ref.	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.

1 architecture

ADD ARCHITECTURE +

FILTER

By active

- All
- Yes
- No

Windows taskbar: Taper ici pour rechercher, Plus cessaera, 16:04 30/10/2022



COPY AN ARCHITECTURE



Geeglee's Administration

Home » Project » Architectures

Start typing to filter:

PROJECT

- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Select architecture to change

Search

Action: Copy selected architectures Go 1 of 1 selected

	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
<input checked="" type="checkbox"/> Ref.	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.

1 architecture

ADD ARCHITECTURE +

FILTER

▼ By active

- All
- Yes
- No

Windows taskbar: Taper ici pour rechercher, Plus cesser, 16:04 30/10/2022



RENAME AN ARCHITECTURE



Geeglee's Administration

Home > Project > Architectures

Start typing to filter:

PROJECT

- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Select architecture to change

Search

Action: [dropdown] Go 0 of 2 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Ref.	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.
Ref_copy	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 6:06 p.m.	Oct. 30, 2022, 6:06 p.m.

2 architectures

ADD ARCHITECTURE +

FILTER

- By active
- All
- Yes
- No

Windows taskbar: Taper ici pour rechercher, Plus cessera, 16:04 30/10/2022



RENAME AN ARCHITECTURE



The screenshot displays the 'Geeglee's Administration' web interface. The breadcrumb trail is 'Home > Project > Architectures > Ref_copy - Take-Up Machine'. The main content area is titled 'Change architecture' and shows the details for 'Ref_copy - Take-Up Machine'. A 'Delete' button is visible at the top left of the form. The 'Name' field contains the text 'Merged'. Below the name field, there is a dropdown menu with 'Merged Chassis-Motor' selected. The 'System of interest' is set to 'Take-Up Machine'. There is a checked 'Active' checkbox. At the bottom of the form, there are three buttons: 'Delete', 'Save and add another', and 'Save'. A 'HISTORY' button is located in the top right corner of the form area. On the left side, there is a sidebar menu with categories like 'PROJECT', 'Company logo', 'User information', 'Translations', 'Systems of interest', 'Architectures', 'Modules', 'Interfaces', 'Performance Group', 'Post-processing: distance to optimum', and 'Post-processing: pareto front'. The browser's address bar shows 'localhost:8000/admin/project/architecture/2/change/'. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', several application icons, and the system tray with the date '30/10/2022' and time '16:04'.



RENAME AN ARCHITECTURE



The screenshot displays the 'Geeglee's Administration' interface. The breadcrumb trail is 'Home > Project > Architectures > Ref._copy - Take-Up Machine'. The main content area is titled 'Change architecture' and shows the details for 'Ref._copy - Take-Up Machine'. A 'Name' field contains the text 'Merged CSM'. Below this, the 'Options' section shows 'System of interest: Take-Up Machine' and a checked 'Active' checkbox. The interface includes a left sidebar with a search bar and a list of menu items: PROJECT, Company logo, User information, Translations, Systems of interest, Architectures, Modules, Interfaces, Performance Group, Post-processing: distance to optimum, and Post-processing: pareto front. At the bottom, the Windows taskbar shows the search bar with the text 'Taper ici pour rechercher' and the system tray with the date '30/10/2022' and time '16:04'.



RENAME AN ARCHITECTURE



Geeglee's Administration

Home > Project > Architectures

Start typing to filter:

PROJECT

Company logo + Add

User information + Add

Translations + Add

Systems of interest + Add

Architectures + Add

Modules + Add

Interfaces + Add

Performance Group + Add

Post-processing: distance to optimum + Add

Post-processing: pareto front + Add

WELCOME, USER LOG OUT

The architecture "Merged C&M - Take-Up Machine" was changed successfully.

Select architecture to change

ADD ARCHITECTURE +

SEARCH

Action: Go 0 of 2 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Merged C&M	Yes	Take-Up Machine	Oct. 30, 2022, 6:06 p.m.	Oct. 30, 2022, 6:06 p.m.
Ref.	Yes	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.

2 architectures

FILTER

By active

- All
- Yes
- No

Taper ici pour rechercher

Pluie cessera 16:04 30/10/2022



BACK TO USER MODE



Welcome to Geeglee Pattern
SELECT A SYSTEM OF INTEREST

WHITE BOX				
System-of-Interest	Last update	Product Breakdown Structure	Patterns	Design space generation
Take-Up Machine	30 October 2022, 18:07			

[CREATE A NEW SOI](#)

ADMINISTRATION

[ENTER ADMINISTRATION](#)



MOVE TO PBS



The screenshot shows a web browser window with the URL localhost:8000/1/PBS/modules. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. The 'MODULES' tab is active, displaying a 'Product Breakdown Structure' table. The table has columns for Module, Alternatives, Merged C&M, and Ref. The data rows are Chassis, Motor, and Spool, each with 2/2 alternatives and checked boxes for Merged C&M and Ref. A left sidebar contains navigation icons and the text 'SOI'.

Module	Alternatives	Merged C&M	Ref.
Chassis	2/2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motor	2/2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Spool	2/2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>







ADD MODULE TO ARCHITECTURE



Geeglee's Administration

Home > Project > Modules

Start typing to filter...

PROJECT

- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

ADD MODULE +

SELECT module to change

Search

Action: Go 0 of 4 selected

NAME	CREATION DATE	UPDATE DATE
Chass&Mot	Oct. 30, 2022, 6:07 p.m.	Oct. 30, 2022, 6:07 p.m.
Chassis	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 6:06 p.m.
Motor	Oct. 30, 2022, 5:31 p.m.	Oct. 30, 2022, 6:06 p.m.
Spool	Oct. 30, 2022, 5:37 p.m.	Oct. 30, 2022, 6:06 p.m.

4 modules

FILTER

- By Architecture per SOI
 - All
 - Merged CBM - Take-Up Machine
 - Ref. - Take-Up Machine
- By Black box of the SOI
 - All
 - Take-Up Machine



ADD A NEW ARCHITECTURE



The screenshot displays the 'Add architecture' page in the Geeglee Administration system. The browser address bar shows the URL `localhost:8000/admin/project/architecture/add/`. The page header includes the Geeglee logo and the text 'Geeglee's Administration' with a 'WELCOME, USER' and 'LOG OUT' link. A breadcrumb trail reads 'Home > Project > Architectures > Add architecture'. On the left, a sidebar menu lists various project management options, with 'Architectures' highlighted. The main content area is titled 'Add architecture' and contains a form with the following fields and controls:

- Name:** A text input field containing the value 'Merged CAM'.
- Options:** A section header for configuration options.
- System of interest:** A dropdown menu currently showing a blank space, with edit and add icons to its right.
- Active:** A checked checkbox.

At the top right and bottom right of the form area, there are three buttons: 'Save and add another', 'Save and continue editing', and 'SAVE'.



ADD A NEW ARCHITECTURE



The screenshot displays the 'Add architecture' page in the Geeglee Administration system. The browser address bar shows the URL `localhost:8000/admin/project/architecture/add/`. The page header includes the Geeglee logo and the text 'Geeglee's Administration' with a 'WELCOME, USER' and 'LOG OUT' link. A breadcrumb trail reads 'Home > Project > Architectures > Add architecture'. On the left, a sidebar menu lists various project management options, with 'Architectures' highlighted. The main content area is titled 'Add architecture' and contains a form with the following fields: 'Name' (containing 'Merged CSM'), 'System of interest' (a dropdown menu with 'Take-Up Machine' selected), and a checked 'Active' checkbox. At the top right and bottom right of the form are buttons for 'Save and add another', 'Save and continue editing', and 'SAVE'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher', the system tray with the name 'Pluie cessera', and the date '18:12 30/10/2022'.



ADD A NEW MODULE



Geeglee's Administration

Home > Project > Architectures

Start typing to filter.

PROJECT

- Company logo
- User information + Add
- Translations + Add
- Systems of interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

The architecture "Merged C&M - Take-Up Machine" was added successfully.

Select architecture to change

Search

Action: Go 0 of 3 selected

NAME	ACTIVE	SYSTEM OF INTEREST	CREATION DATE	UPDATE DATE
Merged C&M	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 6:12 p.m.	Oct. 30, 2022, 6:12 p.m.
Ref.	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 5:39 p.m.
Ref. v2.0	<input checked="" type="checkbox"/>	Take-Up Machine	Oct. 30, 2022, 6:11 p.m.	Oct. 30, 2022, 6:12 p.m.

3 architectures

ADD ARCHITECTURE +

FILTER

By active

- All
- Yes
- No



ADD A NEW MODULE



The screenshot displays the 'Geeglee's Administration' interface. The main content area is titled 'Select module to change' and features a search bar and a table of modules. The table has columns for NAME, CREATION DATE, and UPDATE DATE. The modules listed are Chassis, Motor, and Spool. Below the table, it indicates '3 modules'. On the right side, there is a 'FILTER' panel with two sections: 'By Architecture per SOI' and 'By Black box of the SOI'. The sidebar on the left contains various navigation options under the 'PROJECT' heading, including 'Company logo', 'User information', 'Translations', 'Systems of Interest', 'Architectures', 'Modules', 'Interfaces', 'Performance Group', 'Post-processing: distance to optimum', and 'Post-processing: pareto front'. The top right corner of the interface shows 'WELCOME, USER' and a 'LOG OUT' link. The browser address bar shows 'localhost:8000/admin/project/module/'.

NAME	CREATION DATE	UPDATE DATE
Chassis	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 6:11 p.m.
Motor	Oct. 30, 2022, 5:31 p.m.	Oct. 30, 2022, 6:11 p.m.
Spool	Oct. 30, 2022, 5:37 p.m.	Oct. 30, 2022, 6:11 p.m.



The screenshot displays the 'Add module' interface in the Geeglee Administration system. The browser address bar shows the URL `localhost:8000/admin/project/module/add/`. The page title is 'Geeglee's Administration' and the user is logged in as 'USER'. The breadcrumb trail is 'Home > Project > Modules > Add module'.

Navigation Menu (Left Sidebar):

- PROJECT
- Company logo
- User information + Add
- Translations + Add
- Systems of Interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Add module Form:

- Name:** [Text input field]
- Black box of the SOI:** Two columns for selecting SOI black boxes. The left column, 'Available Black box of the SOI', contains a search filter and one item: 'Take-Up Machine'. The right column, 'Chosen Black box of the SOI', is currently empty.
- Architecture per SOI:** Two columns for selecting architectures. The left column, 'Available Architecture per SOI', contains a search filter and three items: 'Merged C&M - Take-Up Machine', 'Ref - Take-Up Machine', and 'Ref. v2.0 - Take-Up Machine'. The right column, 'Chosen Architecture per SOI', is currently empty.

Buttons: 'Save and add another', 'Save and continue editing', and 'SAVE' are located at the top right of the form.

Options: A section at the bottom contains an 'Image:' field with a 'Choisir un fichier' button and the text 'Aucun fichier choisi'.

Windows Taskbar (Bottom): Shows the search bar with the text 'Taper ici pour rechercher', taskbar icons for File Explorer, Edge, and other applications, and the system tray with the date '30/10/2022' and time '18:12'.



Geeglee's Administration

Home > Project > Modules > Add module

Start typing to filter:

- PROJECT
- Company logo
- User information + Add
- Translations + Add
- Systems of interest + Add
- Architectures + Add
- Modules + Add
- Interfaces + Add
- Performance Group + Add
- Post-processing: distance to optimum + Add
- Post-processing: pareto front + Add

Add module

Save and add another Save and continue editing SAVE

Name: CSM merged

Black box of the SOI:

Available Black box of the SOI

- Take-Up Machine

Chosen Black box of the SOI

Choose all Remove all

If you assign this module as an environment module for one or more SOIs, then this module cannot be linked to the corresponding architectures of the chosen SOIs even if these architectures are chosen in the following list. Hold down "Control", or "Command" on a Mac, to select more than one.

Architecture per SOI:

Available Architecture per SOI

- Ref. - Take-Up Machine
- Ref. v2.0 - Take-Up Machine

Chosen Architecture per SOI

- Merged CSM - Take-Up Machine

Choose all Remove all

You can assign this module to one or more architectures if the module was not already assigned as an environmental module to an SOI containing the chosen architecture. Hold down "Control", or "Command" on a Mac, to select more than one.

Options

Image: Choisir un fichier Aucun fichier choisi



ADD A NEW MODULE



The screenshot shows the Geeglee Administration interface. The main content area is titled "Select module to change" and displays a table of modules. A green notification bar at the top indicates "The module 'C&M merged' was added successfully." The table lists the following modules:

NAME	CREATION DATE	UPDATE DATE
C&M merged	Oct. 30, 2022, 6:12 p.m.	Oct. 30, 2022, 6:12 p.m.
Chassis	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 6:11 p.m.
Motor	Oct. 30, 2022, 5:31 p.m.	Oct. 30, 2022, 6:11 p.m.
Spool	Oct. 30, 2022, 5:37 p.m.	Oct. 30, 2022, 6:11 p.m.

Below the table, it indicates "4 modules". On the right side, there is a "FILTER" panel with two sections: "By Architecture per SOI" and "By Black box of the SOI". The "By Architecture per SOI" section is expanded, showing "All", "Merged C&M - Take-Up Machine", "Ref. - Take-Up Machine", and "Ref. v2.0 - Take-Up Machine". The "By Black box of the SOI" section is collapsed, showing "All" and "Take-Up Machine".



BACK TO USER MODE



Welcome to **Geeglee Pattern**
SELECT A SYSTEM OF INTEREST

WHITE BOX				
System-of-Interest	Last update	Product Breakdown Structure	Patterns	Design space generation
Take-Up Machine	30 October 2022, 18:12			

[CREATE A NEW SOI](#)

ADMINISTRATION

[ENTER ADMINISTRATION](#)



The screenshot shows a web browser window displaying a 'Product Breakdown Structure' table. The browser address bar shows 'localhost:8000/1/PBS/modules'. The table has the following data:

Module	Alternatives	Merged C&M	Ref.	Ref. v2.0
C&M merged	0/0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chassis	2/2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Motor	2/2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Spool	2/2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



The screenshot shows a web browser window displaying a 'Product Breakdown Structure' (PBS) management interface. The browser's address bar shows 'localhost:8000/1/PBS/modules/5'. The interface has a top navigation bar with tabs: 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. Below this, a sub-header reads 'Product Breakdown Structure'. A secondary navigation bar contains tabs for 'C&M MERGED', 'CHASSIS', 'MOTOR', and 'SPOOL', with 'C&M MERGED' selected. A table below lists an alternative:

Alternative	Active	Image	Merged C&M	Comment
Alternative ↑	Active			

The interface includes a left sidebar with navigation icons and a bottom Windows taskbar with a search bar and system tray.



Product Breakdown Structure

C&M MERGED CHASSIS MOTOR SPOOL

Alternative ↑	Active	Image	Merged C&M	Comment
C&M 1	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
C&M 2	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	



SETTING CHARACTERISTICS FOR THE NEW MODULE



The screenshot shows a web application interface with a navigation menu on the left and a main content area. The main content area displays a table of characteristics under the 'CHARACTERISTICS' tab. The table has the following columns: Group, Characteristic, Type, Comment, Delete, C&M merg..., Chassis, Motor, and Spool. There are four rows of data, each representing a different characteristic.

Group	Characteristic	Type	Comment	Delete	C&M merg...	Chassis	Motor	Spool
	Footprint (square meter)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



SETTING CHARACTERISTICS FOR THE NEW MODULE



The screenshot shows a web application interface with a navigation menu on the left and a main content area. The main content area displays a table of characteristics for a new module. The table has the following columns: Group, Characteristic, Comment, Delete, C&M merg..., Chassis, Motor, and Spool. The table contains four rows of data.

Group	Characteristic	Comment	Delete	C&M merg...	Chassis	Motor	Spool
	Footprint (square meter)	antitative	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	antitative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)	antitative	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	antitative	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



MODULES CHARACTERISTICS **VALUES** INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

SELECT AMONGST THE ELEMENTS BELOW AND

[OPEN MATRIX](#)

MODULE	ALTERNATIVE(S)	SELECT
C&M merged	2	<input checked="" type="checkbox"/>
Chassis	2	<input checked="" type="checkbox"/>
Motor	2	<input checked="" type="checkbox"/>
Spool	2	<input checked="" type="checkbox"/>
Rows per page: All		1-1 of 4

GROUP	ASSOCIATED CHARACTERISTICS	SELECT
None	4	<input checked="" type="checkbox"/>
Rows per page: All		1-1 of 1

Modifications saved



CPP localhost:8000/1/PBS/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture All (this SOI) Density Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)			10	20				
Internal Diameter (m)							1	1
Investment (M€)			5	3	1	1.5	0.5	0.5
Operational Cost (M€)					600	350		

SOI

Taper ici pour rechercher

Plus cesser 18:14 30/10/2022



localhost:8000/1/P85/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture: All (this SOI) Density: Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20	10	20				
Internal Diameter (m)							1	1
Investment (M€)	5,2	3	5	3	1	1,5	0,5	0,5
Operational Cost (k€)	600	350			600	350		

Save modifications

SOI

Modifications saved

Taper ici pour rechercher

Plus cesser 18:14 30/10/2022



IMPROVING PATTERN FOR NEW ARCHITECTURES



The screenshot shows a web application interface with a navigation bar at the top containing 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active. Below the navigation bar, there is a 'Patterns' section with a search bar and a table. The table has the following columns: Group, Pattern, Status, Architectures, Rule, and two numerical columns (Ref 111/10 and Ref 222/20). The table contains five rows of data.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...1.0 Re...0.0	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.25
	Footprint (m2)	●	Re...1.0 Re...0.0	Chassis.Footprint (square meter)	10	20
	OPEX (M€)	●	Re...1.0 Re...0.0	Motor.Operational Cost (k€) M€ to k€	0.6	0.35
	Rolling Diameter (m)	●	Re...1.0 Re...0.0	Spool.Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re...1.0 Re...0.0	CAPEX (M€) + OPEX (M€)	1.25	0.6



IMPROVING PATTERN FOR NEW ARCHITECTURES



The screenshot shows a web application interface with a 'Patterns' table. The table has the following columns: Group, Pattern, Status, Architectures, Rule, and two numerical columns (Ref 111/10 and Ref 222/20). The rows represent different patterns with their respective rules and values.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...1.0 Re...0.0	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.25
	Footprint (m2)	●	Re...1.0 Re...0.0	Chassis.Footprint (square meter)	10	20
	OPEX (M€)	●	Re...1.0 Re...0.0	Motor.Operational Cost (k€) M€ to k€	0.6	0.35
	Rolling Diameter (m)	●	Re...1.0 Re...0.0	Spool.Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re...1.0 Re...0.0	CAPEX (M€) + OPEX (M€)	1.25	0.6



CREATING A DEDICATED PATTERN



Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...1 Re...0	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.25
	Footprint (m2)	●	Re...1 Re...0	Chassis.Footprint (square meter)	10	20
	OPEX (M€)	●	Re...1 Re...0	Motor.Operational Cost (k€) M€ to k€	0.6	0.35
			Me...ΔM Re...1 Re...0	Not defined	N.A.	N.A.
	Rolling Diameter (m)	●	Re...1 Re...0	Spool.Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re...1 Re...0	CAPEX (M€) + OPEX (M€)	1.25	0.6



CREATING A DEDICATED PATTERN



The screenshot shows the 'Patterns' tab in the Geeglee software. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below the tabs, a rule is defined: $\text{"Motor", "Operational Cost (k€)"/"M€ to k€"} \cdot 0.9$. The main area contains a table with the following data:

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...1 Re...0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re...1 Re...0	Chassis.Footprint (square meter)	10	20
	OPEX (M€)	●	Re...1 Re...0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}}$	0.6	0.35
	Rolling Diameter (m)	●	Me...ΔM Re...1 Re...0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$	0.54	0.315
	Total Cost of Ownership (M€)	●	Re...1 Re...0	Spool.Internal Diameter (m)	1	1
				CAPEX (M€) + OPEX (M€)	1.19	0.565

A green notification bar at the bottom left says 'Modifications saved'. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', the system tray with 'Plume cessera', and the date '30/10/2022'.



CEP localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

Rule

✓ "Motor"."Operational Cost (k€)"/"M€ to k€"*0.9

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...0	$\frac{\sum([\text{Investment (M€)}])}{\text{Amortization (year)}}$	0.65	0.25
	Footprint (m2)	●	Re...0	Chassis.Footprint (square meter)	10	20
	OPEX (M€)	●	Re...0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}}$	0.6	0.35
	Rolling Diameter (m)	●	Re...0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$		
	Total Cost of Ownership (M€)	●	Re...0	Spool.Internal Diameter (m)	1	1
			Re...0	CAPEX (M€) + OPEX (M€)	1.25	0.6

SOI

Modifications saved

Taper ici pour rechercher

Pluie cessera 18:17 30/10/2022



ADDING A REFERENCE CONFIGURATION FOR THE NEW ARCHITECTURE



The screenshot displays the Geeglee software interface. The main window shows a table of patterns with the following columns: Group, Pattern, Status, Architectures, Rule, and numerical values. The 'CAPEX (M€)' row is selected. An 'EDIT REFERENCE CONFIGURATION' dialog box is open, showing the following details:

- Name: Ref 222/20
- Architecture: Ref.
- Ref. (dropdown menu)
- DESIGN VARIABLES: Amortization (year) 20, Investment (M€) 7
- MODULES: Chassis 1, Motor, Motor 1, Spool, Spool 1
- Buttons: SAVE, CANCEL, DUPLICATE, DELETE



ADDING A REFERENCE CONFIGURATION FOR THE NEW ARCHITECTURE



The screenshot displays the 'Patterns' tab in the Geeglee software. A rule is defined as: $\text{"Motor", "Operational Cost (k€)"/"M€ to k€"} \cdot 0.9$. Below this, a table lists various patterns with their associated rules and values.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...0	$\frac{\sum([\text{Investment (M€)}])}{\text{Amortization (year)}}$	0.65	0.325
	Footprint (m2)	●	Re...0	Chassis.Footprint (square meter)	10	10
	OPEX (M€)	●	Re...0	Motor.Operational Cost (k€) M€ to k€	0.6	
		●	Re...0	Motor.Operational Cost (k€) M€ to k€ $\cdot 0.9$		0.54
	Rolling Diameter (m)	●	Re...0	Spool.Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Re...0	CAPEX (M€) + OPEX (M€)	1.25	0.865

A green notification bar at the bottom of the interface states: "Modifications saved".



Group	Pattern	Status	Architectures	Rule
	ME to kE	●	Re...f Re...D	1000



ADDING ARCHITECTURE TO CONSTANTS



The screenshot shows the 'CONSTANTS' tab in the Geeglee application. The interface includes a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below the navigation, there is a 'Rule' section and a table of constants.

Group	Pattern	Status	Architectures	Rule
	ME to k€	●	Re...f Re...D	1000



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/constants`. The interface has a top navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'CONSTANTS' tab is active, displaying a table with the following columns: 'Group', 'Pattern', 'Status', 'Architectures', and 'Rule'. A single row is visible with the pattern 'ME to kE', a status indicator, and a rule value of '1000'. A modal dialog box titled 'ARCHITECTURE MODELS' is open in the center, containing the text 'Select appropriate architectures for current implementation' and a button labeled 'Merged C&M'. A 'CLOSE' button is located at the bottom right of the dialog. The bottom of the browser window shows a Windows taskbar with the search bar containing 'Taper ici pour rechercher' and the system tray showing the time '18:18' and date '30/10/2022'.

Group	Pattern	Status	Architectures	Rule
	ME to kE		Re...1 Re...0	1000



localhost:8000/1/EP/constants

DESIGN VARIABLES PATTERNS **CONSTANTS** PYTHON GROUP

1 Constants

Rule

Group	Pattern	Status	Architectures	Rule
	M€ to k€	●	<input type="button" value="Me_3M"/> <input type="button" value="Re_1"/> <input type="button" value="Re_0"/>	1000

SOI

Modifications saved

Taper ici pour rechercher

Pluie cessera 18:18 30/10/2022



Screenshot of a web application interface showing a table of patterns. The browser address bar shows localhost:8000/1/EP/patterns. The interface includes a sidebar with navigation icons and a main content area with tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. A rule is selected: "C&M merged", "Operational Cost (k€)".

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 222/20
	CAPEX (M€)	●	Re...I Re...0	$\frac{\sum([Investment (M€)])}{Amortization (year)}$	0.65	0.325
	Footprint (m2)	●	Re...I Re...0	Chassis.Footprint (square meter)	10	10
	OPEX (M€)	●	Re...I Re...0	$\frac{Motor.Operational Cost (k€)}{M€ to k€} \cdot 0.9$	0.6	0.54
	Rolling Diameter (m)	●	Me...ΔM Re...I Re...0	C&M merged.Operational Cost (k€)	1	1
	Total Cost of Ownership (M€)	●	Me...ΔM Re...I Re...0	CAPEX (M€) + OPEX (M€)	1.25	0.865

A green notification box at the bottom left says "Modifications saved". The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", task icons, and system tray with "Plume cessera" and "18:18 30/10/2022".



ADDING A REFERENCE CONFIGURATION



The screenshot displays the Geeglee software interface. At the top, there are tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The main area shows a table of patterns with columns for Group, Pattern, Status, Rule, and numerical values. A dialog box titled 'EDIT REFERENCE CONFIGURATION' is open, showing fields for Name, Architecture, Design Variables, and Modules.

Group	Pattern	Status	Rule	Ref 111/10	Ref 111/10-1	Ref 222/20
	CAPEX (M€)		$\sum(\text{Investment (M€)})$	0.65	0.65	0.325
	Footprint (m2)			10	10	10
	OPEX (M€)			0.6	0.6	0.54
	Rolling Diameter (m)			1	1	1
	Total Cost of Ownership (M€)			1.25	1.25	0.885

EDIT REFERENCE CONFIGURATION

Name: Ref 111/10-1

Architecture: Merged C&M

DESIGN VARIABLES: Amortization (year) 10, Investment (M€) 10

MODULES: C&M merged, C&M 1

Buttons: SAVE, CANCEL, DUPLICATE, DELETE



The screenshot shows the 'Patterns' tab in the Geeglee software. A table lists various patterns with their status, rules, and values. The 'Rolling Diameter (m)' pattern has a red status indicator and a tooltip that reads 'Module Spool couldn't be determined'.

Group	Pattern	Status	Rule	Ref 111/10	Ref 111/10-1	Ref 222/20
	CAPEX (M€)	+	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65		0.325
	Footprint (m2)		Chassis.Footprint (square meter)	10		10
	OPEX (M€)		Motor.Operational Cost (k€) M€ to k€	0.6		0.54
			Motor.Operational Cost (k€) M€ to k€		-0.9	0.54
			C&M merged.Operational Cost (k€)			600
	Rolling Diameter (m)		Spool.Internal Diameter (m)	1		1
	Total Cost of Ownership (M€)		CAPEX (M€) + OPEX (M€)	1.25	NaN	0.865



GO TO ADMINISTRATION (ARCHITECT) MODE



The screenshot shows the 'Patterns' tab in the Geeglee software. The table below represents the data shown in the interface:

Group	Pattern	Status	Rule	Ref 111/10	Ref 111/10-1	Ref 222/20
	CAPEX (M€)	●	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65		0.325
	Footprint (m2)	●	Chassis.Footprint (square meter)	10		10
	OPEX (M€)	●	Motor.Operational Cost (k€) M€ to k€	0.6		0.54
		●	Motor.Operational Cost (k€) M€ to k€			0.54
		●	C&M merged. Operational Cost (k€)		600	
	Rolling Diameter (m)	●	Spool.Internal Diameter (m)	1	!	1
	Total Cost of Ownership (M€)	●	CAPEX (M€) + OPEX (M€)	1.25	NaN	0.865

At the bottom left, a tooltip is visible with the following options:

- List of commands
- Enter administration



ADDING SPOOL TO NEW ARCHITECTURE



The screenshot shows the 'Geeglee's Administration' interface. The main content area is titled 'Select module to change' and features a search bar and a table of modules. The table has columns for 'NAME', 'CREATION DATE', and 'UPDATE DATE'. The modules listed are:

NAME	CREATION DATE	UPDATE DATE
C&M merged	Oct. 30, 2022, 6:12 p.m.	Oct. 30, 2022, 6:13 p.m.
Chassis	Oct. 30, 2022, 3:50 p.m.	Oct. 30, 2022, 6:11 p.m.
Motor	Oct. 30, 2022, 5:31 p.m.	Oct. 30, 2022, 6:11 p.m.
Spool	Oct. 30, 2022, 5:37 p.m.	Oct. 30, 2022, 6:11 p.m.

Below the table, it indicates '4 modules'. On the right side, there is a 'FILTER' panel with two sections: 'By Architecture per SOI' and 'By Black box of the SOI'. The 'By Architecture per SOI' section includes 'All', 'Merged CAM - Take-Up Machine', 'Ref. - Take-Up Machine', and 'Ref. v2.0 - Take-Up Machine'. The 'By Black box of the SOI' section includes 'All' and 'Take-Up Machine'.



ADDING SPOOL TO NEW ARCHITECTURE



The screenshot displays the 'Geeglee's Administration' interface. The main content area is titled 'Change module' and shows the configuration for a 'Spool' module. The 'Name' field is set to 'Spool'. There are two main sections for configuration:

- Black box of the SOI:** This section contains two panels. The 'Available Black box of the SOI' panel has a search filter and one item, 'Take-Up Machine'. The 'Chosen Black box of the SOI' panel is currently empty.
- Architecture per SOI:** This section also contains two panels. The 'Available Architecture per SOI' panel has a search filter and is empty. The 'Chosen Architecture per SOI' panel contains three items: 'Ref - Take-Up Machine', 'Ref - v2.0 - Take-Up Machine', and 'Merged C&M - Take-Up Machine'.

Below these sections, there is an 'Options' section with an 'Image' field set to 'Choisir un fichier' (Choose a file).

At the bottom of the interface, there is a search bar with the text 'Taper ici pour rechercher' and a system tray showing the date '30/10/2022' and time '18:19'.



The screenshot shows a web application interface for 'Product Breakdown Structure'. The browser address bar indicates the URL is localhost:8000/1/PBS/modules/3. The interface has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this is a sub-header for 'Product Breakdown Structure'. The main content area features a table with the following columns: C&M MERGED, CHASSIS, MOTOR, SPOOL, Alternative, Active, Image, Merged C&M, Ref., Ref. v2.0, and Comment. Two rows are visible: 'Spool 1' and 'Spool 2'. Both rows have checked boxes in the 'MOTOR' and 'SPOOL' columns, and 'Ref.' and 'Ref. v2.0' columns. The 'Alternative' column for 'Spool 1' is expanded to show 'Spool 1'. The 'Active' column for 'Spool 1' is expanded to show 'Active'. The 'Image' column for 'Spool 1' contains an image icon. The 'Merged C&M' column for 'Spool 1' contains an unchecked checkbox. The 'Ref.' column for 'Spool 1' contains a checked checkbox. The 'Ref. v2.0' column for 'Spool 1' contains a checked checkbox. The 'Comment' column for 'Spool 1' is empty. The 'Spool 2' row has a checked box in the 'MOTOR' column, an image icon in the 'Image' column, an unchecked checkbox in the 'Merged C&M' column, a checked checkbox in the 'Ref.' column, and a checked checkbox in the 'Ref. v2.0' column. The 'Comment' column for 'Spool 2' is empty. The interface also includes a left sidebar with navigation icons and a bottom status bar with a search bar and system tray icons.

C&M MERGED	CHASSIS	MOTOR	SPOOL	Alternative	Active	Image	Merged C&M	Ref.	Ref. v2.0	Comment
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Spool 1	Active		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Spool 2			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	



The screenshot shows a web application interface for managing a Product Breakdown Structure (PDS). The browser address bar indicates the URL is localhost:8000/1/PBS/modules/3. The application has a top navigation bar with tabs: MODULES, CHARACTERISTICS, VALUES, INTERNAL INCOMPATIBILITIES, ALL INCOMPATIBILITIES, and GROUP. Below this, a section titled 'Product Breakdown Structure' is active. A table is displayed with the following columns: C&M MERGED, CHASSIS, MOTOR, SPOOL, Image, Merged C&M, Ref., Ref. v2.0, and Comment. The table contains two rows: 'Spool 1' and 'Spool 2'. Both rows have checkmarks in the 'MOTOR' and 'SPOOL' columns. A 'Save modifications' button is located below the table. A green notification box at the bottom of the interface states 'Modifications saved'. The Windows taskbar at the bottom shows the search bar with the text 'Taper ici pour rechercher' and the system tray with the date '30/10/2022' and time '18:20'.

C&M MERGED	CHASSIS	MOTOR	SPOOL	Image	Merged C&M	Ref.	Ref. v2.0	Comment
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			

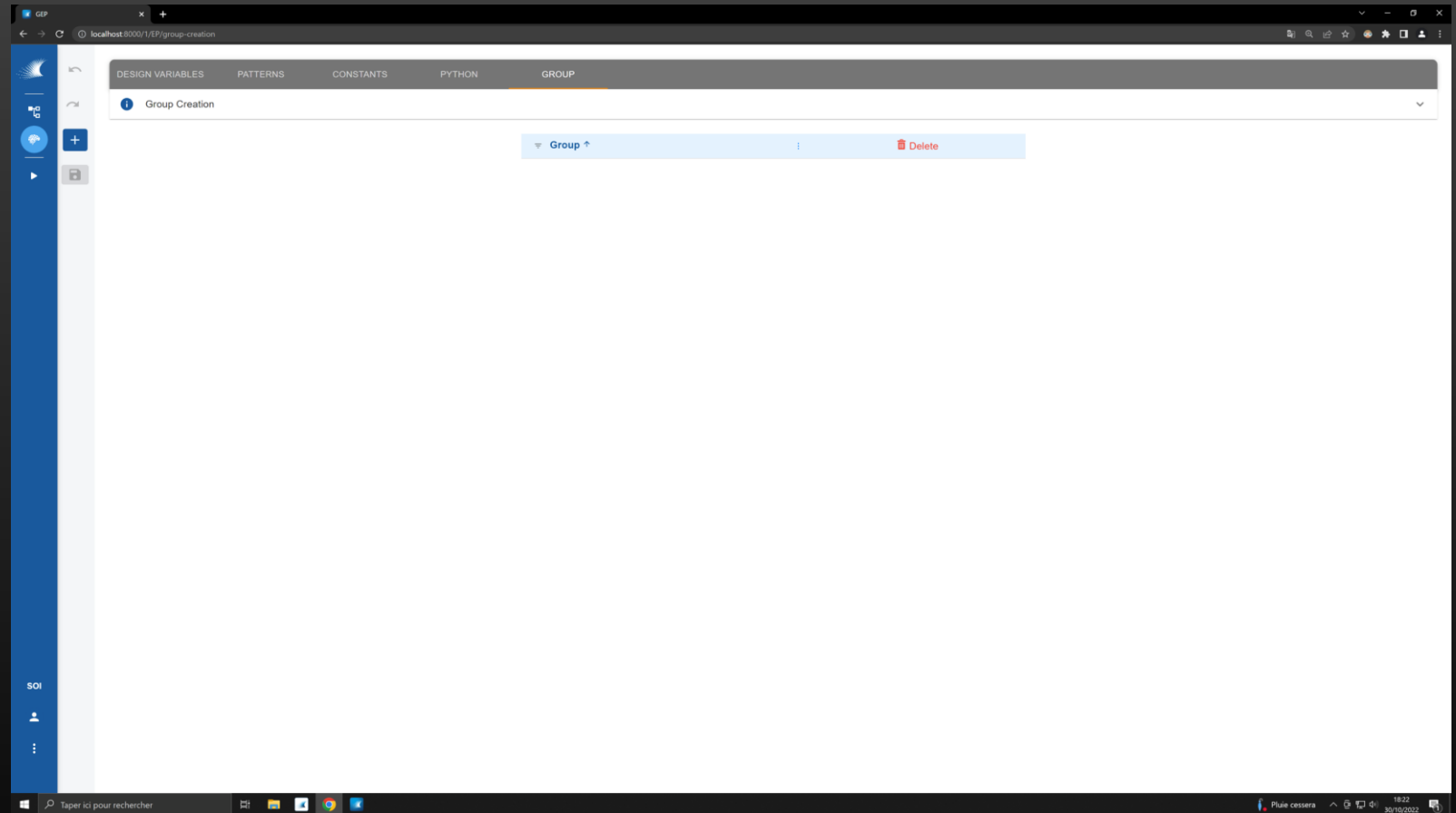


Geeglee interface showing a table of Patterns. The table has columns for Group, Pattern, Status, Rule, and numerical values. A green notification bar at the bottom indicates "Modifications saved".

Group	Pattern	Status	Rule	Ref 111/10	Ref 111/10-1	Ref 222/20
	CAPEX (M€)	●	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65		0.325
	Footprint (m2)	●	Chassis. Footprint (square meter)	10		10
	OPEX (M€)	●	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}}$	0.6		0.54
		●	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$			
		●	C&M merged. Operational Cost (k€)		600	
	Rolling Diameter (m)	●	Spool. Internal Diameter (m)	1	1	1
	Total Cost of Ownership (M€)	●	CAPEX (M€) + OPEX (M€)	1.25	NaN	0.865



ADDING GROUP





The screenshot displays the Geeglee web application interface. At the top, there are navigation tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'GROUP' tab is currently selected. Below the tabs, the main content area shows a 'Group Creation' section with a single group entry labeled 'Group' and a 'Delete' button. A modal dialog box titled 'ADD NEW GROUP' is open in the center. It features a text input field labeled 'Group name *' containing the text 'Cost'. At the bottom of the dialog, there are three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'. The browser's address bar shows 'localhost:8000/EP/group-creation'. The Windows taskbar at the bottom indicates the time is 18:22 on 30/10/2022.



ADDING MORE GROUP



The screenshot displays the 'GROUP' tab in the Geeglee application. The main area shows a table with one group named 'Cost'. A modal dialog titled 'ADD NEW GROUP' is open, with the following details:

- Group name *: Footprint
- Buttons: CANCEL, ADD & CLOSE, ADD & CONTINUE

Group	Delete
Cost	<input type="checkbox"/>



ADDING MORE GROUP



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/group-creation`. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The GROUP tab is active. Below the navigation bar, there is a section titled "Group Creation" with a dropdown arrow. A table is displayed with the following content:

Group	Delete
Cost	<input type="checkbox"/>
Footprint	<input type="checkbox"/>

The table has a blue header row and two data rows. The first data row is highlighted in light blue. The "Delete" column contains red square checkboxes.



USING GROUP TO ORGANIZE PATTERNS



The screenshot shows the 'Patterns' tab in the Geeglee software. The interface includes a top navigation bar with 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below this is a 'Patterns' section with a search bar and a table of patterns. The table has columns for Group, Pattern, Status, Architectures, Rule, and Ref values. The patterns are organized into groups: CAPEX (M€), Footprint (m2), OPEX (M€), Rolling Diameter (m), and Total Cost of Ownership (M€). Each pattern row includes a status indicator (green, orange, or red dot), a dropdown for architectures (Me_ΔM, Re_ΔM, Re_I, Re_0), a rule description, and numerical values for 'Ref 111/10' and 'Ref 111/10-1'.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 111/10-1
CAPEX (M€)		●	Me_ΔM Re_ΔM Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.65	0.57
	Footprint (m2)	●	Re_I Re_0	Chassis. Footprint (square meter)	10	
		●	Me_ΔM	C&M merged. Footprint (square meter)		10
OPEX (M€)		●	Re_I	Motor. Operational Cost (k€) M€ to k€	0.6	
		●	Re_0	Motor. Operational Cost (k€) · 0.9 M€ to k€		
		●	Me_ΔM	C&M merged. Operational Cost (k€)		600
Rolling Diameter (m)		●	Me_ΔM Re_I Re_0	Spool. Internal Diameter (m)	1	1
Total Cost of Ownership (M€)		●	Me_ΔM Re_I Re_0	CAPEX (M€) + OPEX (M€)	1.25	600.57



USING GROUP TO ORGANIZE PATTERNS



Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 111/10-1
(None)	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.65	0.57
	Footprint (m2)	●	Re_1 Re_0	Chassis.Footprint (square meter)	10	
		●	Me_ΔM	C&M merged.Footprint (square meter)		10
	OPEX (M€)	●	Re_1 Re_0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}}$	0.6	
		●	Re_0	$\frac{\text{Motor.Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$		
		●	Me_ΔM	C&M merged.Operational Cost (k€)		600
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool.Internal Diameter (m)	1	1
	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.25	600.57



USING GROUP TO ORGANIZE PATTERNS



The screenshot shows the 'Patterns' tab in the Geeglee software. The interface includes a sidebar on the left with navigation icons and a main table area. The table is organized into groups, with columns for Group, Pattern, Status, Architectures, Rule, and numerical values. The patterns are categorized into 'Cost', 'Footprint', and 'Rolling Diameter' groups.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 111/10-1
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.65	0.57
	Footprint	●	Re_1 Re_0	Chassis. Footprint (square meter)	10	
			Me_ΔM	C&M merged. Footprint (square meter)		10
Cost	OPEX (M€)	●	Re_1 Re_0	Motor. Operational Cost (k€) M€ to k€	0.6	
		●	Re_0	Motor. Operational Cost (k€) · 0.9 M€ to k€		
		●	Me_ΔM	C&M merged. Operational Cost (k€)		600
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.25	600.57



USING GROUP TO ORGANIZE PATTERNS



The screenshot shows the Geeglee Patterns interface. At the top, there are tabs for DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The PATTERNS tab is active. Below the tabs, there are filter buttons for ALL, NONE, COST, and FOOTPRINT. A table lists various patterns, each with a Group, Pattern name, Status, Architectures, Rule, and Ref values.

Group	Pattern	Status	Architectures	Rule	Ref 111/10	Ref 111/10-1
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.57
Footprint	Footprint (m2)	●	Re_1 Re_0	Chassis. Footprint (square meter)	10	
		●	Me_ΔM	C&M merged. Footprint (square meter)		10
Cost	OPEX (M€)	●	Re_1 Re_0	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}}$	0.6	
		●	Me_ΔM	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$		600
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.25	600.57

A green notification box at the bottom left says "Modifications saved".



USING GROUP TO ORGANIZE PATTERNS



The screenshot shows the 'Patterns' section of the Geeglee software. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below the tabs, there are filter buttons for 'ALL', 'NONE', 'COST', and 'FOOTPRINT'. The main area contains a table with the following data:

Pattern	Status	Architectures	Rule	Ref 111/10	Ref 111/10-1	Ref 222/20
CAPEX (M€)	●	Me_&M Re_f Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortization (year)}}$	0.65	0.57	0.325
OPEX (M€)	●	Re_f	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}}$	0.6		
	●	Re_0	$\frac{\text{Motor. Operational Cost (k€)}}{\text{M€ to k€}} \cdot 0.9$			0.54
	●	Me_&M	C&M merged. Operational Cost (k€)		600	
Total Cost of Ownership (M€)	●	Me_&M Re_f Re_0	CAPEX (M€) + OPEX (M€)	1.25	600.57	0.865





The screenshot shows a web browser window at localhost:8000/1/design-spaces/generation. The interface includes a top navigation bar with tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main content area is titled 'Design space generation' and features two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Performance metrics are displayed as circular gauges: 'Calculation time saturation' at 0.01%, 'Memory consumption saturation' at 0.01%, 'Estimated calculation time' as 'less than 5 minutes', and 'Estimated solutions' as '24'. A 'Design spaces' table is visible with columns for Name, Identifier, Description, Start date, End date, Status, and Files. A modal dialog titled 'Generate design space' is open, showing a 'Name' field with '3 architectures', a 'Description' field, a message 'Current GEI file : No GEI file selected', a 'Select a GEI file' button, and an 'Only light result' checkbox. A 'START' button is at the bottom right of the modal. The Windows taskbar at the bottom shows the search bar with 'Taper ici pour rechercher', task icons, and system tray information including 'Plus cessera' and the date '30/10/2022'.

Name	Identifier	Description	Start date	End date	Status	Files
Module connected	2	Chassis - Motor - Spool...	30 October 2022, 17:56	30 October 2022, 17:57	Finished	
First Run	1	TCO with design variables...	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



WAITING FOR RESULTS TO BE DOWNLOAD (FROM LOCAL SERVER)



The screenshot shows the Geeglee web interface for design space generation. The top navigation bar includes: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main section is titled "Design space generation" and contains two buttons: "GENERATE SETTING GEI" and "GENERATE DESIGN SPACE".

Key performance indicators are displayed as follows:

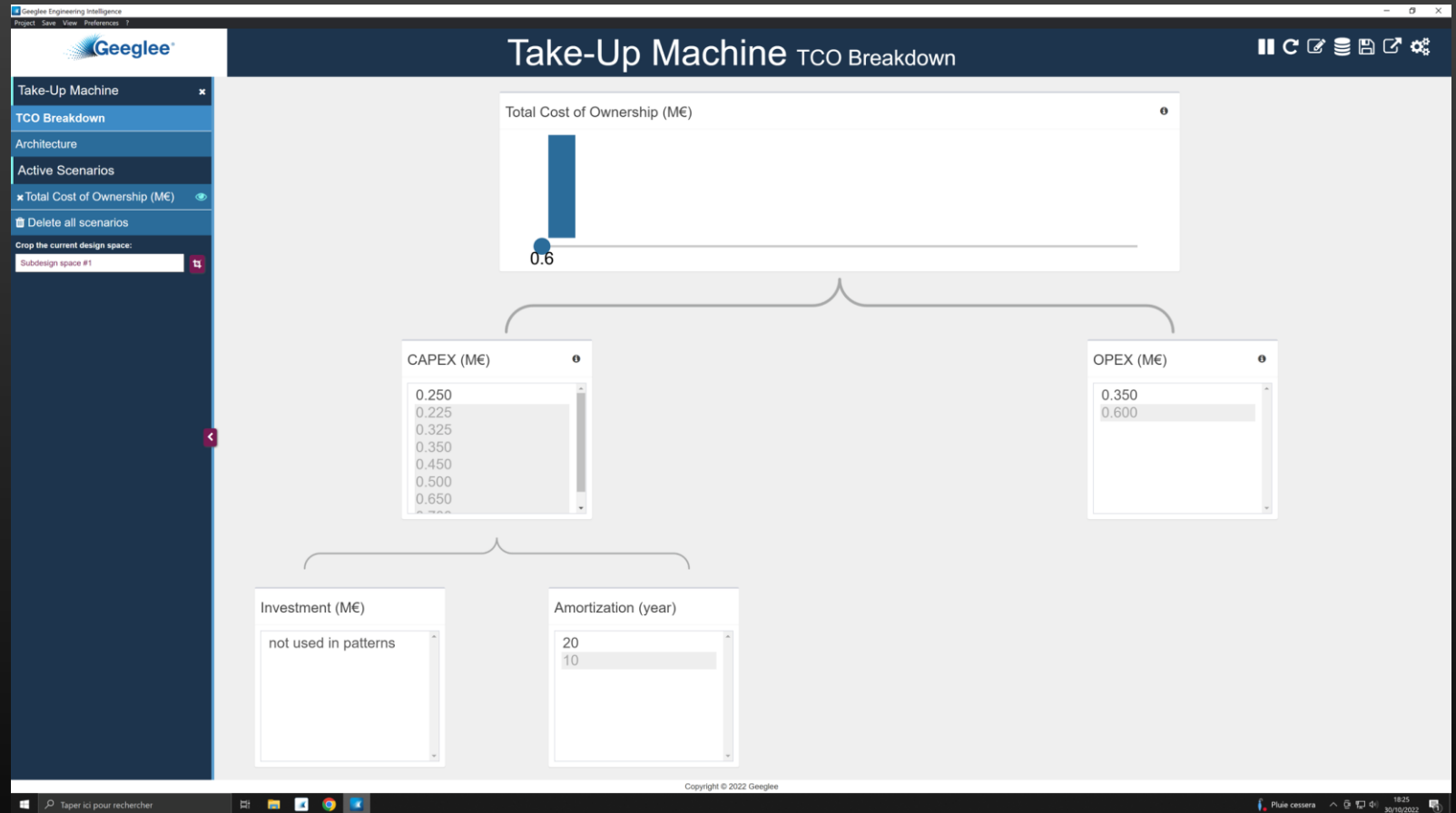
- Calculation time saturation: 0.01%
- Memory consumption saturation: 0.01%
- Estimated calculation time: less than 5 minutes
- Estimated solutions: 24

A table titled "Design spaces" lists the following entries:

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
3.architectures	3		No	30 October 2022, 18:23	30 October 2022, 18:24	30 October 2022, 18:25	Finished	
Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:56		
First Run	1	TCO with design variables...	No	30 October 2022, 16:04	30 October 2022, 16:05	30 October 2022, 16:05		

A file download menu is open, showing the following files:

- Take-Up Machine_id#3_full.zip (0 B) - Not available yet
- Take-Up Machine.gep (1.1 MB)
- log_Take-Up Machine_id#3.zip (7.7 kB)
- report_Take-Up Machine_id#3.txt (2.6 kB)





Take-Up Machine TCO Breakdown

Cost of Ownership (M€)

1.25

OPEX (M€)

0.350
0.600

Investment (M€)

not used in patterns

Amortization (year)

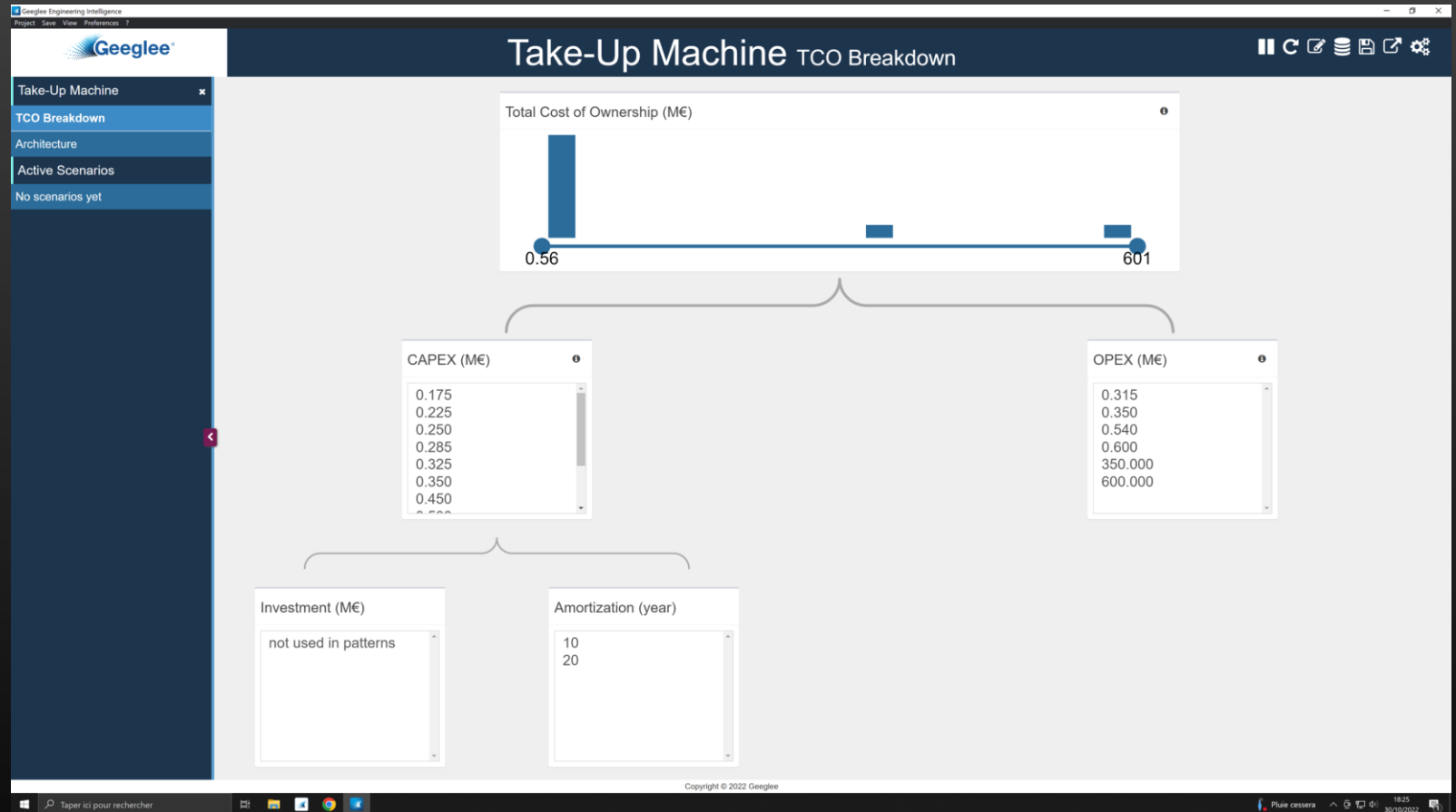
10
20

Nom	Modifié le	Type	Taille
Aujourd'hui (0)			
Take-Up Machine_id#3_fullHS	30/10/2022 18:24	Fichier HS	2 225 Ko
Take-Up Machine_id#2_fullHS	30/10/2022 17:56	Fichier HS	2 287 Ko
Take-Up Machine_id#1_fullHS	30/10/2022 16:05	Fichier HS	2 188 Ko
Semaine dernière (1)			
webmaster_formation-des-dingars-de-club-d...	18/10/2022 08:14	Dossier de fichiers	

Geegles Data

0.225
0.250
0.325
0.350
0.450
0.500
0.650

Copyright © 2022 Geeglee





CORRECTING OPEX PATTERN



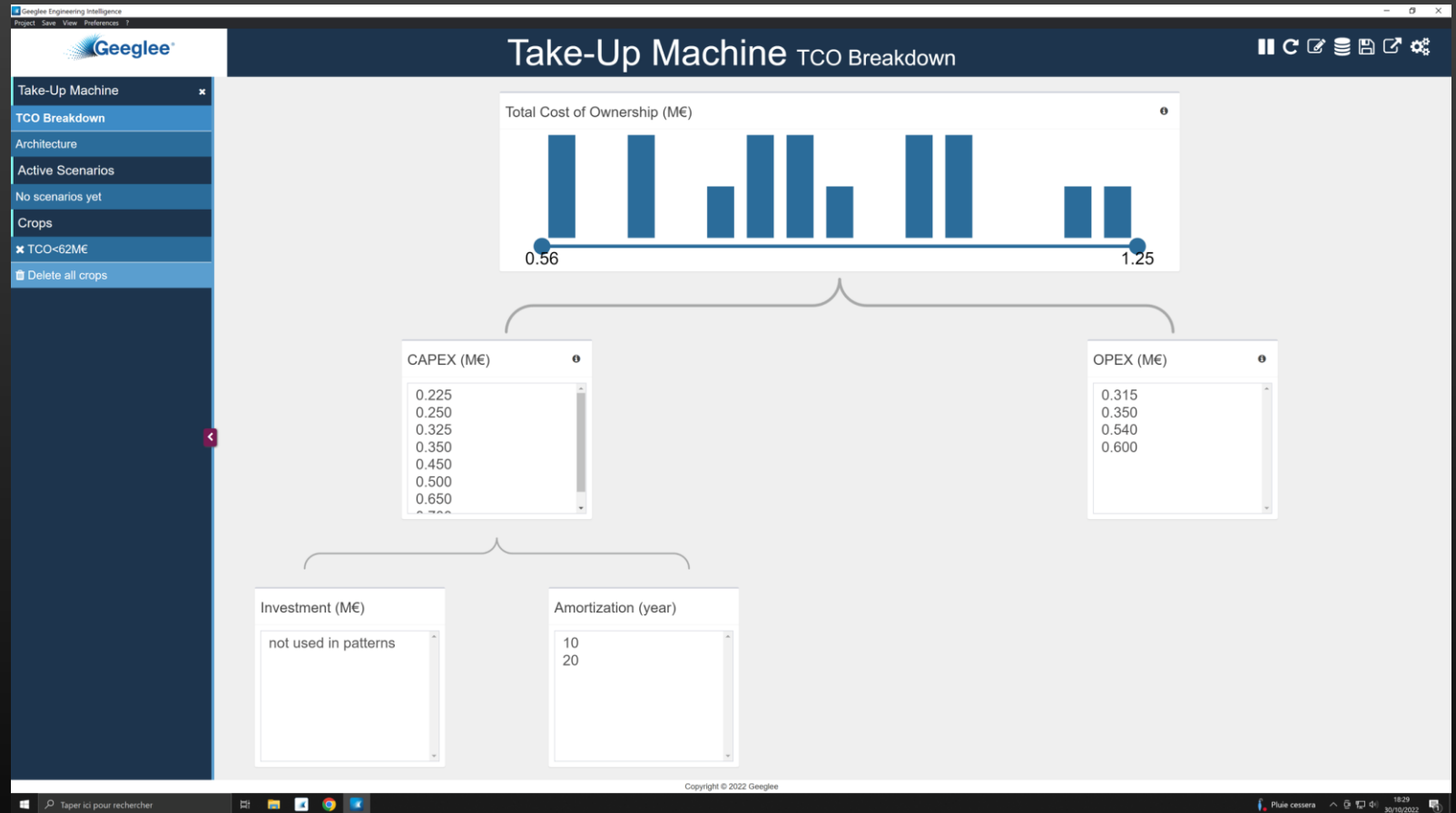
The screenshot shows the 'Patterns' management interface in Geeglee. The interface includes a navigation bar with tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below the navigation bar, there are filter buttons for 'ALL', 'NONE', 'COST', and 'FOOTPRINT'. A rule is displayed: "C&M merged", "Operational Cost (k€)" "M€ to k€".

Group	Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.57	0.65
Footprint	Footprint (m2)	●	Re_1 Re_0	Chassis. Footprint (square meter)		10
		●	Me_ΔM	C&M merged. Footprint (square meter)	10	
Cost	OPEX (M€)	●	Re_1 Re_0	Motor. Operational Cost (kf) M€ to kf		0.6
		●	Re_0	Motor. Operational Cost (kf) M€ to kf	-0.9	
		●	Me_ΔM	C&M merged. Operational Cost (kf) M€ to kf	0.6	
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.17	1.25

Modifications saved

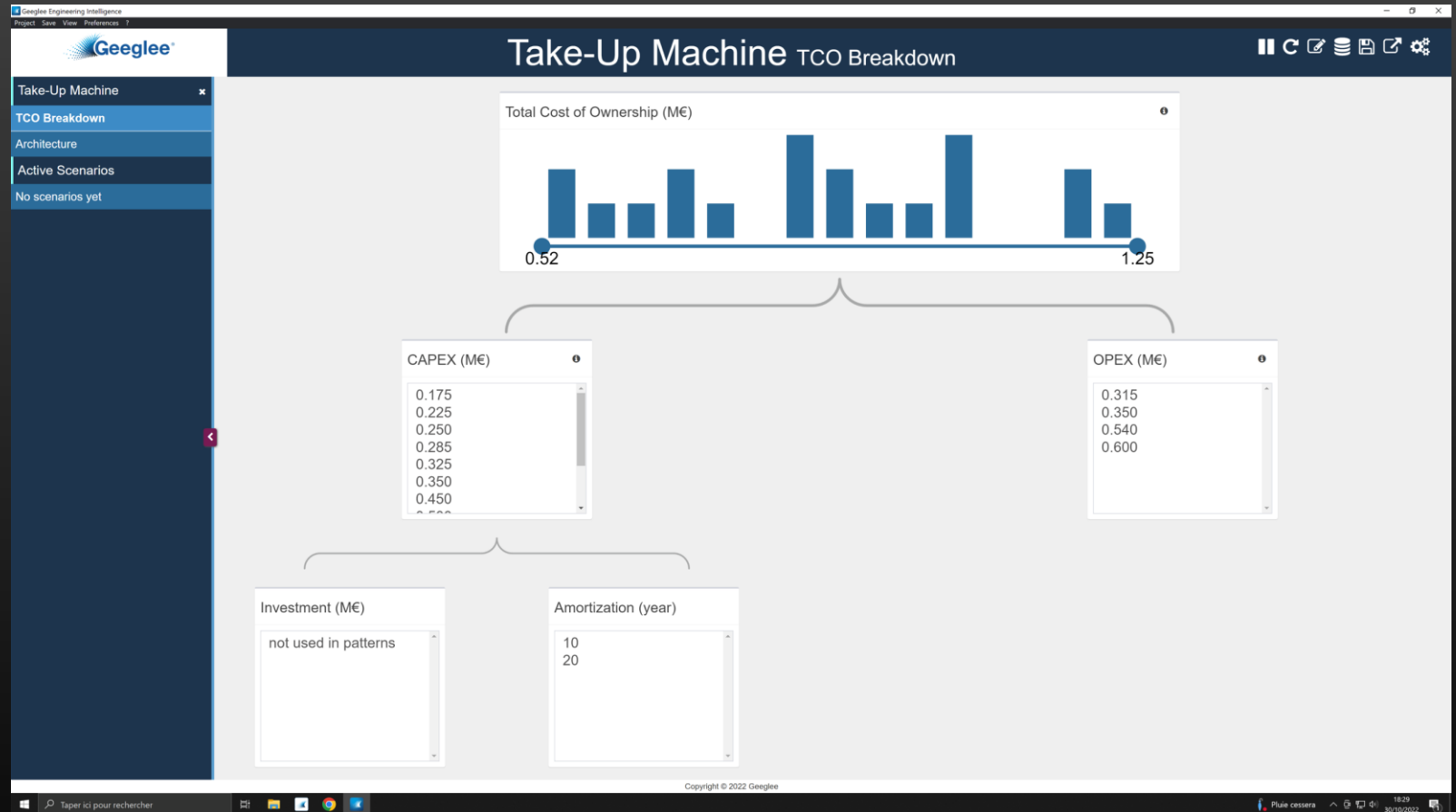


RUNNING, CONNECTING NEW DB... THEN SAVE AND RELOAD





LOOKS BETTER ;-)





Geeglee Engineering Intelligence

Project Save View Preferences 1

Take-Up Machine Architecture

Take-Up Machine x

TCO Breakdown

Architecture

Active Scenarios

No scenarios yet

Spool

not significant

Chassis

Chassis 1

Chassis 2

Motor

Motor 1

Motor 2

Copyright © 2022 Geeglee

Taper ici pour rechercher

Plus cesser

18:30 30/10/2022



The screenshot displays the Geeglee Engineering Intelligence (GEI) interface. The main window title is "Geeglee Engineering Intelligence" and the current data page is "Take-Up Machine Architecture". The left sidebar contains navigation options: "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows a diagram with components "Spool", "Chassis", and "Motor". A "New widget" dialog box is open, allowing the user to either reuse an existing widget or create a new one. The "Reuse an existing widget" section has a dropdown menu with "-- Select an option --" and an "Import widget to dataPage" button. The "Or create a new widget" section includes a "Type" dropdown set to "Module", a "Query" field with "n°0", a "Label" field with "048ydbfvrk", and an "Additional Setting" section with a "Precisi" field. A "Create widget" button is at the bottom right of the dialog. The bottom status bar shows "Copyright © 2022 Geeglee", system tray icons, and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence (GEI) interface. The main window title is "Take-Up Machine Architecture". The left sidebar contains a navigation menu with items: "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows a diagram with components labeled "Spool", "Chassis", and "Motor". A "New widget" dialog box is open in the foreground, providing options to reuse an existing widget or create a new one. The "Or create a new widget" section includes a "Type" dropdown set to "Module", a "Query" field with "atich" and "Architecture" suggestions, and a "Label" field with "94Bytdlfrk". Below this is an "Additional Setting" section with a "Precisi" field. A "Create widget" button is located at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with the date "30/10/2022" and time "18:30", and the copyright notice "Copyright © 2022 Geeglee".



The screenshot displays the Geeglee Engineering Intelligence (GEI) interface. The main window title is "Take-Up Machine Architecture". The left sidebar contains a navigation menu with items: "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area shows a 3D model of a machine with components labeled "Spool", "Chassis", and "Motor". A "New widget" dialog box is open in the foreground, allowing the user to create a new widget. The dialog has two main sections: "Reuse an existing widget" with a dropdown menu and an "Import widget to dataPage" button, and "Or create a new widget" with fields for "Type" (set to "Module"), "Query" (with a sub-label "Query n°0" and value "CAM merged"), and "Label" (with value "CAM merged"). Below these is an "Additional Setting" section with a field for "Precisi...". A "Create widget" button is located at the bottom right of the dialog. The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system tray icons, and the date "30/10/2022".



ADDING NEW ARCHITECTURE TO GEI



The screenshot displays the Geeglee Engineering Intelligence (GEI) interface. The main dashboard is titled "Take-Up Machine Architecture" and features a sidebar on the left with navigation options: "Take-Up Machine", "TCO Breakdown", "Architecture", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main area contains several widgets: "Spool", "Chassis", "Motor", and "C&M merged". A "New widget" dialog box is open in the center, providing options to "Reuse an existing widget" (with a dropdown menu) or "Or create a new widget" (with a "Type" dropdown set to "Logo"). Below this, there is an "Add Logo/Image" section with a small icon and the text "Add Logo/Image n°0". A "Create widget" button is located at the bottom right of the dialog. The top of the dashboard has action buttons: "+ Add widget in dataPage", "+ Add widget in sidebar", and "Edit DataPage settings". The bottom of the screen shows a Windows taskbar with a search bar, system tray, and date/time (18:30, 30/10/2022).



ADDING NEW ARCHITECTURE TO GEI



Geeglee Engineering Intelligence

Project Save View Preferences 1

Take-Up Machine Architecture

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

Spool

Chassis

Motor

C&M merged

Architecture

New widget
Load data by clicking on the left menu.

Copyright © 2022 Geeglee

Taper ici pour rechercher

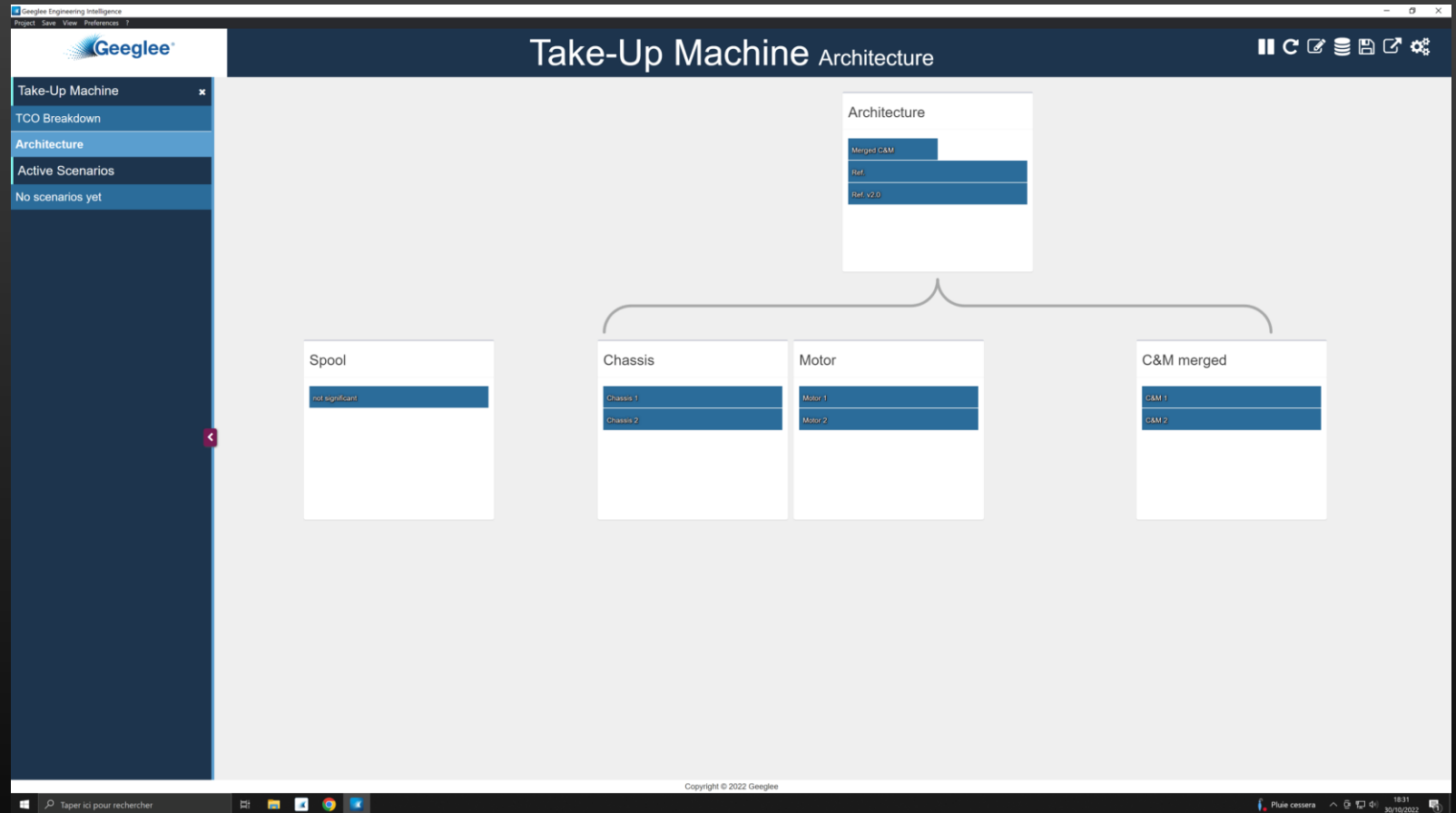
Plus cesser 18:30 30/10/2022

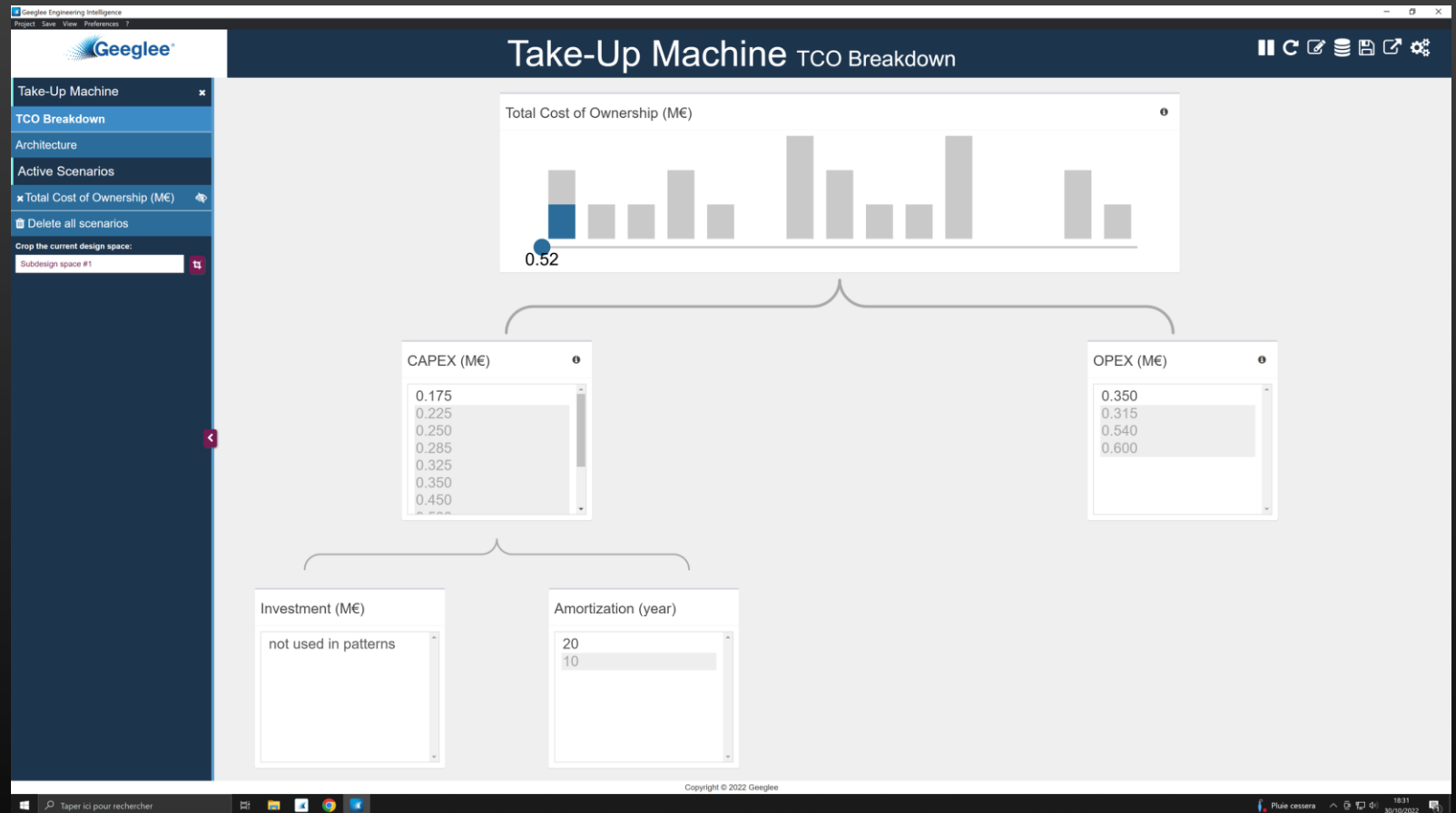


ADDING NEW ARCHITECTURE TO GEI



The screenshot displays the Geeglee Engineering Intelligence (GEI) interface for a 'Take-Up Machine Architecture'. The interface includes a left sidebar with navigation options: 'Take-Up Machine', 'TCO Breakdown', 'Architecture', '+ Create a new DataPage', 'Active Scenarios', and 'No scenarios yet'. The main workspace shows a hierarchical diagram with a root 'Architecture' widget and four child widgets: 'Spool', 'Chassis', 'Motor', and 'C&M merged'. Each widget contains data tables. The 'Spool' widget has one row with the value 'not significant'. The 'Chassis' widget has two rows: 'Chassis 1' and 'Chassis 2'. The 'Motor' widget has two rows: 'Motor 1' and 'Motor 2'. The 'C&M merged' widget is currently empty and contains a 'New widget' placeholder. At the top of the workspace, there are three buttons: '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. The bottom of the interface shows a Windows taskbar with a search bar containing 'Taper ici pour rechercher', system icons, and the date '30/10/2022'.







PLAY A COST EFFECTIVE SCENARIO



The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Architecture". On the left, a sidebar contains a navigation menu with the following items: "Take-Up Machine", "TCO Breakdown", "Architecture", "Active Scenarios", "Total Cost of Ownership (M€)", and "Delete all scenarios". Below the menu, there is a section for "Crop the current design space:" with a dropdown menu set to "Subdesign space #1".

The central workspace shows a hierarchical tree diagram. At the top is the "Architecture" node, which branches into three main components: "Spool", "Chassis", and "C&M merged".

- Spool**: Contains one sub-item, "Spoolcase".
- Chassis**: Contains two sub-items, "Chassis 1" and "Chassis 2".
- Motor**: Contains two sub-items, "Motor 1" and "Motor 2".
- C&M merged**: Contains three sub-items, "CAM 2", "CAM 1", and "CAM 3".

The "Architecture" node and the "CAM 2" sub-item are highlighted with a blue selection bar. The interface includes standard Windows taskbar elements at the bottom, such as a search bar, task icons, and system tray information (date: 30/10/2022, time: 18:31).



PLAY A COST EFFECTIVE SCENARIO

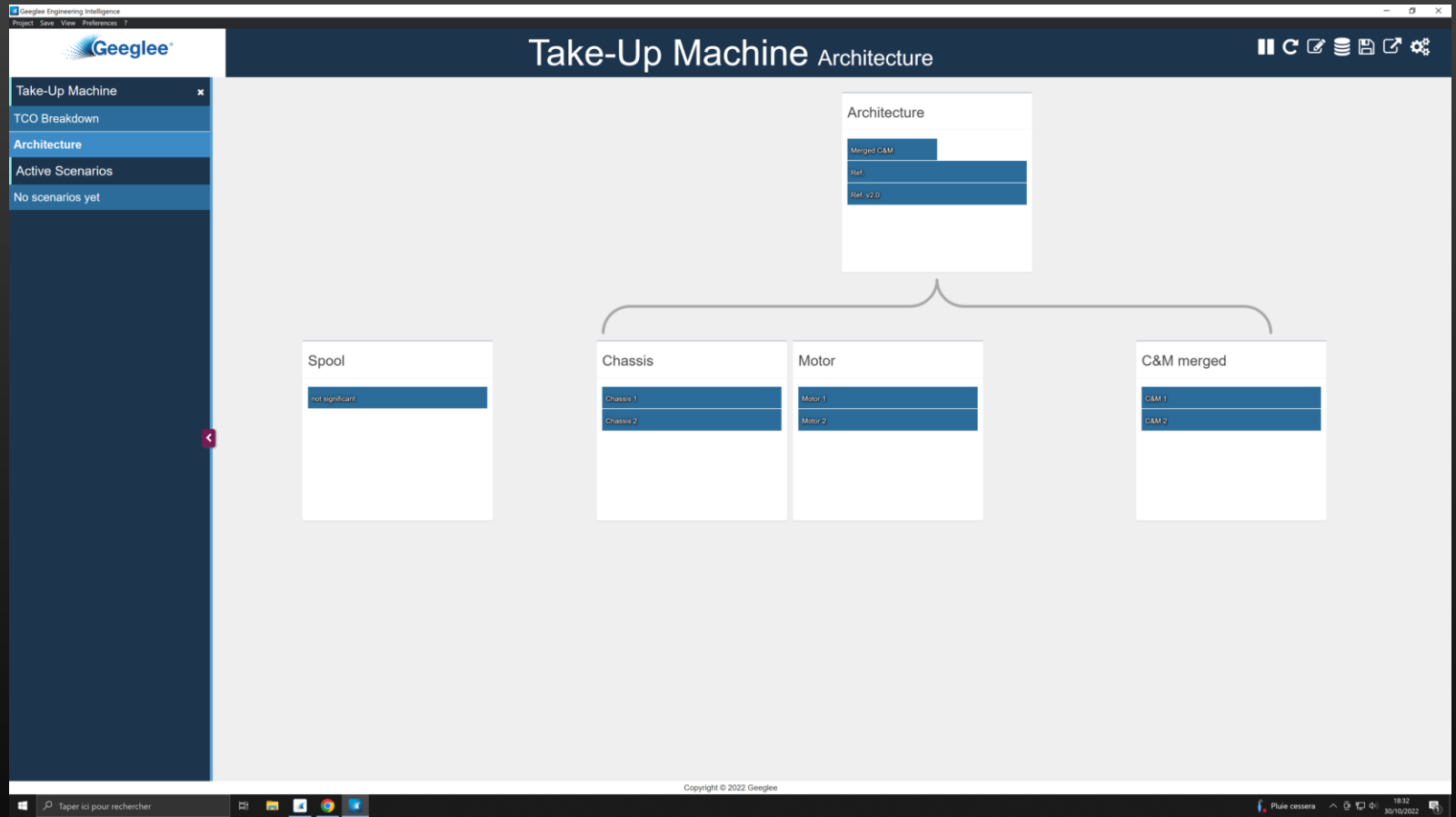


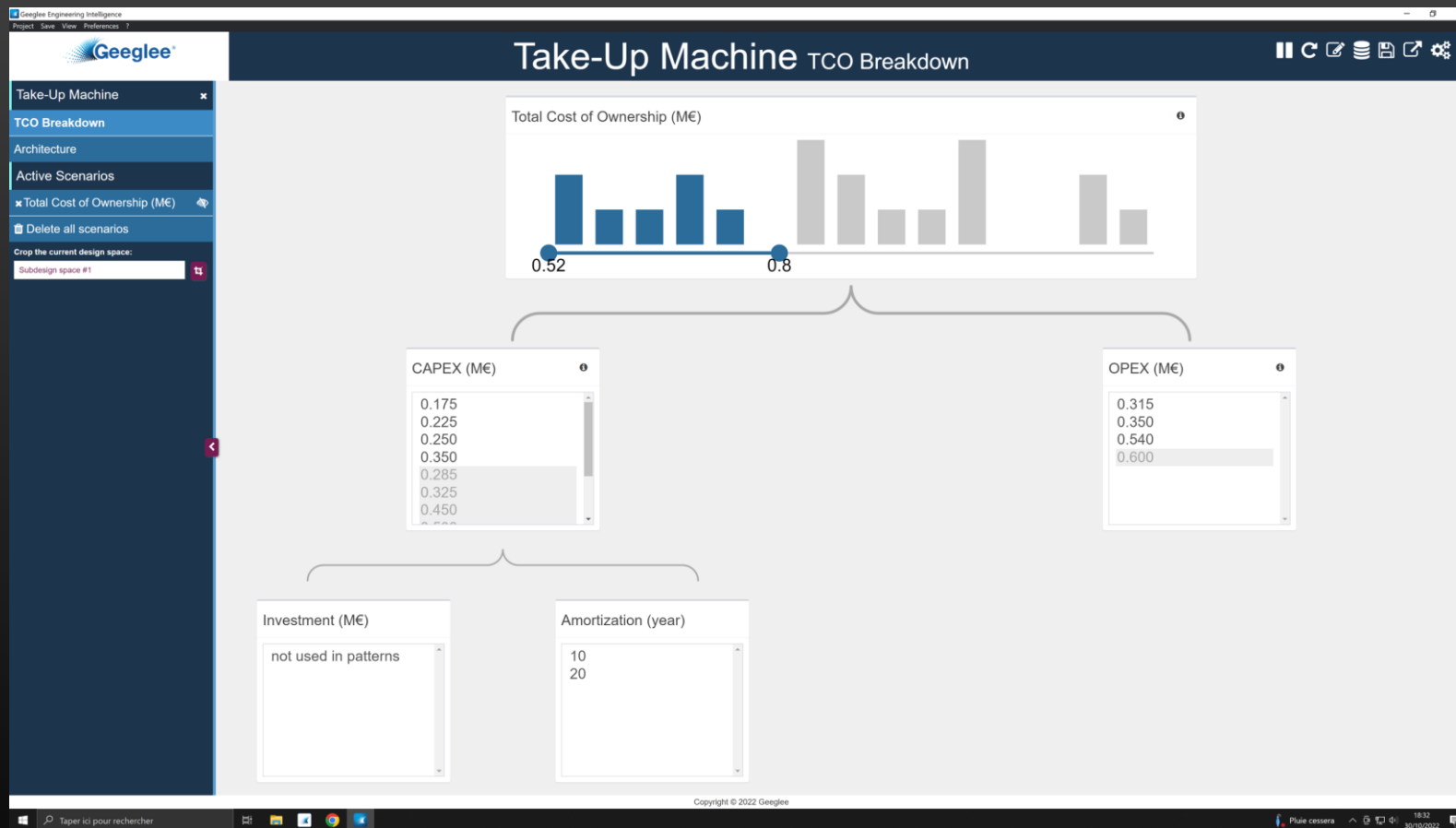
The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Architecture". On the left, a sidebar contains a navigation menu with items: "Take-Up Machine", "TCO Breakdown", "Architecture", "Active Scenarios", "Total Cost of Ownership (M€)", and "Delete all scenarios". Below the menu, there is a section for "Crop the current design space:" with a dropdown menu set to "Subdesign space #1".

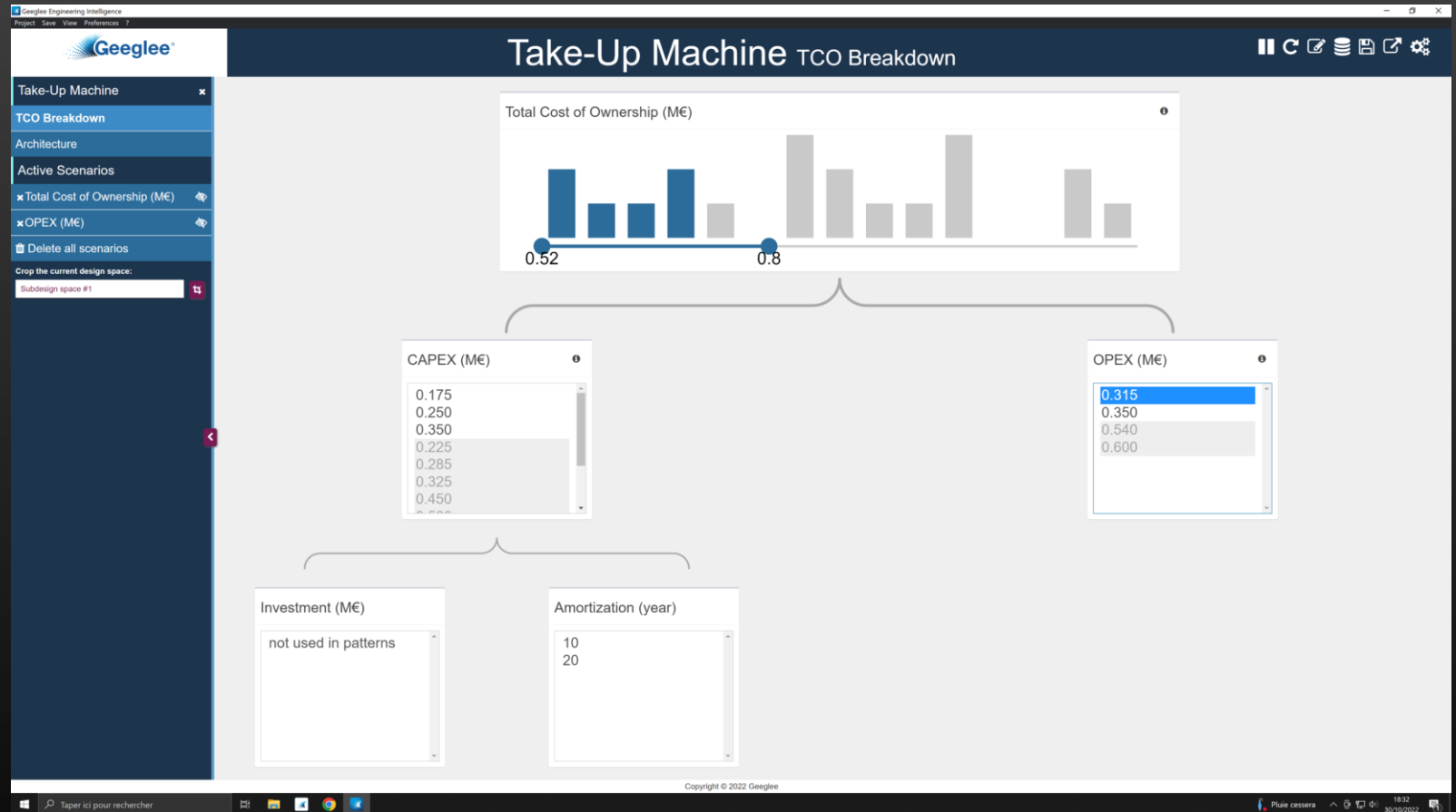
The central area shows a hierarchical tree diagram. At the top is a box labeled "Architecture" containing "Merged C&M", "Ref.", and "Ref. v2.0". A bracket connects this to three sub-components: "Spool", "Chassis", and "Motor".

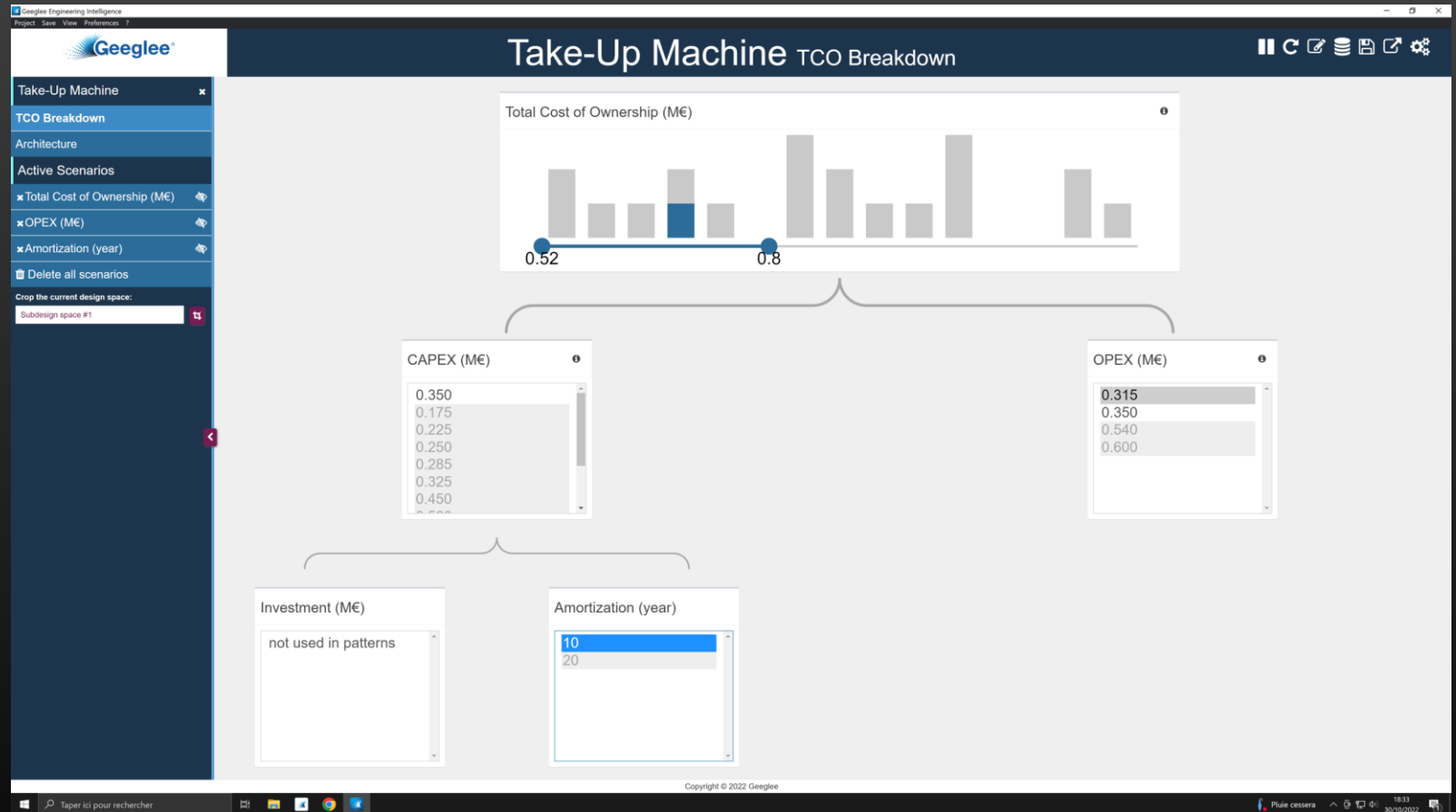
- Spool**: Contains "not significant".
- Chassis**: Contains "Chassis 1" and "Chassis 2".
- Motor**: Contains "Motor 1" and "Motor 2".
- C&M merged**: Contains "C&M 2" and "C&M 1".

At the bottom of the interface, a status bar shows "1.g: Total Cost of Ownership (M€)" and a search bar with the text "Taper ici pour rechercher". The system tray at the bottom right shows the time "18:31" and date "30/10/2022".



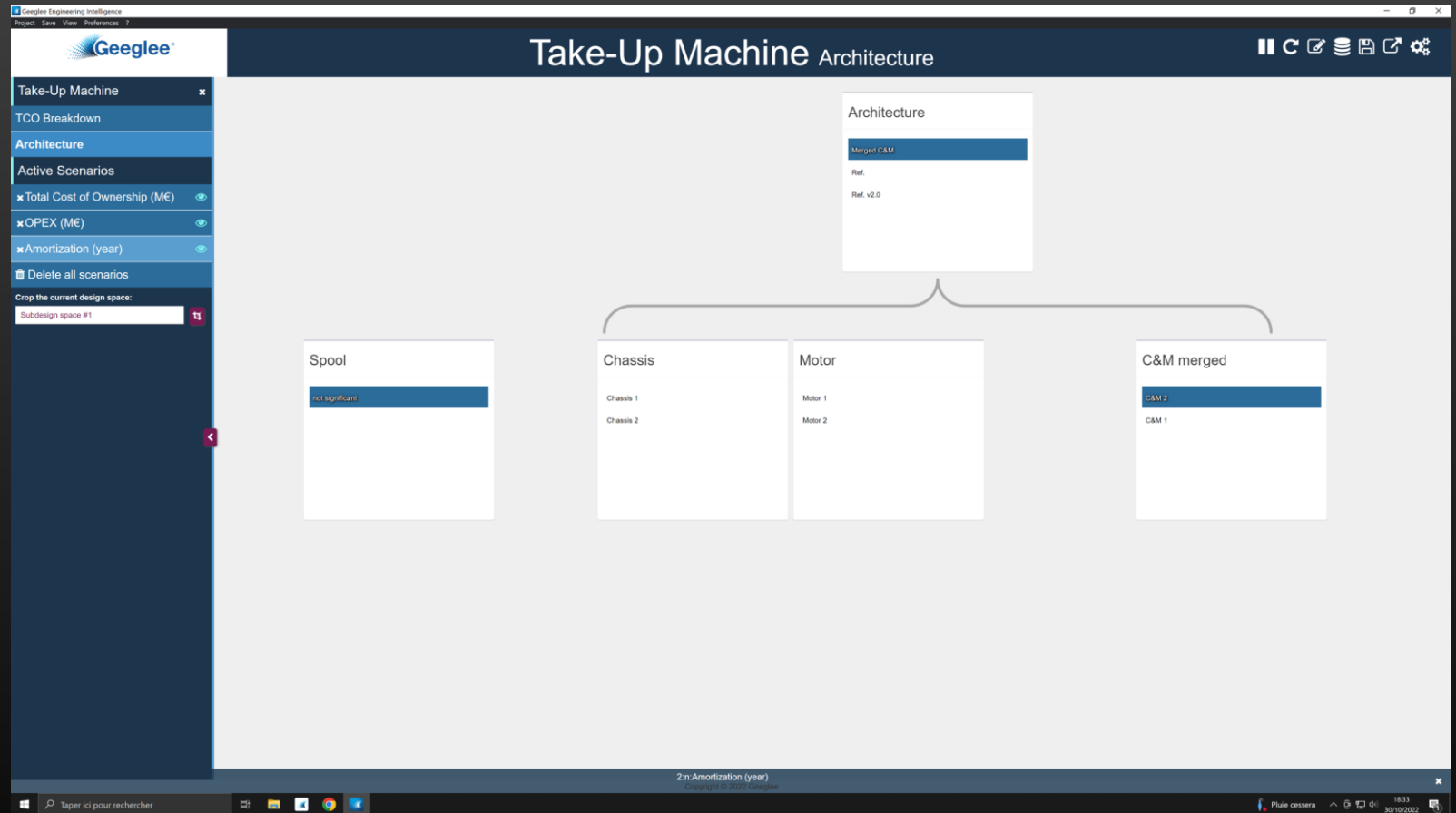








PLAY A MORE COMPLEX SCENARIO





The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine Architecture' project. On the left, a sidebar provides navigation through various views: 'Take-Up Machine', 'TCO Breakdown', 'Architecture', and 'Active Scenarios'. The 'Active Scenarios' section lists 'Total Cost of Ownership (M€)', 'OPEX (M€)', and 'Amortization (year)'. Below this, there is an option to '+ New DataPage from scenarios' with a 'Crop the current design space' section containing a 'Subdesign space #1' input field. The main workspace shows a hierarchical tree diagram. At the top is the 'Architecture' node, which contains a 'Merged C&M' sub-section. Below it is a large horizontal bar representing a parent component. This bar branches into four child components: 'Spool', 'Chassis', 'Motor', and 'C&M merged'. Each component has its own data page with specific details: 'Spool' (not significant), 'Chassis' (Chassis 1, Chassis 2), 'Motor' (Motor 1, Motor 2), and 'C&M merged' (C&M 2, C&M 1). A top navigation bar includes buttons for '+ Add widget in dataPage', '+ Add widget in sideBar', and 'Edit DataPage settings'. The bottom of the screen shows a Windows taskbar with a search bar, system tray, and date/time (18:31 30/10/2022).



Geeglee Engineering Intelligence

Project Save View Preferences 1

Take-Up Machine Architecture

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

- Take-Up Machine
- TCO Breakdown
- Architecture
- + Create a new DataPage
- Active Scenarios
 - Total Cost of Ownership (M€)
 - OPEX (M€)
 - Amortization (year)
- + New DataPage from scenarios
 - Crop the current design space:
 - Subdesign space #1

Architecture

- Merged C&M
 - Ref.
 - Ref. v2.0
- Spool
 - not significant
- Chassis
 - Chassis 1
 - Chassis 2
- Motor
 - Motor 1
 - Motor 2
- C&M merged
 - C&M 2
 - C&M 1

Copyright © 2022 Geeglee

Taper ici pour rechercher

Plus cesser 18:31 30/10/2022



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' scenario. The main window title is 'Take-Up Machine New DataPage from scenarios'. The left sidebar contains a navigation menu with the following items: 'Take-Up Machine', 'TCO Breakdown', 'Architecture', 'New DataPage from scenarios', '+ Create a new DataPage', 'Active Scenarios', 'Total Cost of Ownership (M€)', 'OPEX (M€)', 'Amortization (year)', and '+ New DataPage from scenarios'. Below the menu is a 'Crop the current design space' section with a text input field containing 'Subdesign space #1'. The main workspace features three data widgets: 'Total Cost of Ownership (M€)' with a slider between 0.52 and 0.8; 'OPEX (M€)' with a list of values (0.315, 0.350, 0.540, 0.600); and 'Amortization (year)' with a list of values (10, 20). At the top of the workspace, there are three buttons: '+ Add widget in dataPage', '+ Add widget in sidebar', and 'Edit DataPage settings'. The bottom status bar shows 'Copyright © 2022 Geeglee', a search bar with 'Taper ici pour rechercher', and system icons for 'Plume cessera', '18:31', and '30/10/2022'.



The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine" and "New DataPage from scenarios". A sidebar on the left contains a navigation menu with items like "Take-Up Machine", "TCO Breakdown", "Architecture", and "New DataPage from scenarios". The main area shows three data widgets: "Total Cost of Ownership (M€)" with a chart and values 0.52 and 0.8; "OPEX (M€)" with a list of values (0.315, 0.350, 0.540, 0.600); and "Amortization (year)" with values 10 and 20. An "Edit datapage" dialog box is open, showing a label "Convergence Process N°1" and options for "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups". The bottom of the screen shows a Windows taskbar with the search bar containing "Taper ici pour rechercher" and the system tray showing the time 18:31 on 30/10/2022.



The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine TCO Breakdown". On the left, a sidebar lists various components: "Take-Up Machine", "TCO Breakdown", "Architecture", "Convergence Process N°1", and options to "Create a new DataPage" and "New DataPage from scenarios". The main area shows a dashboard with several data widgets: "Total Cost of Ownership (M€)", "CAPEX (M€)", "Investment (M€)", "Amortization (year)", and "OPEX (M€)". A dialog box titled "Edit datapage" is open in the center, allowing configuration of the "TCO Breakdown" widget. The dialog includes a "Label" field set to "TCO Breakdown" and four options: "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", each with a plus sign. An "Update datapage" button is at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system icons, and the date "30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine TCO Breakdown" and features a sidebar on the left with a navigation menu. The menu includes "Take-Up Machine", "TCO Breakdown", "Architecture", "Convergence Process N°1", "Create a new DataPage", "Active Scenarios", "Total Cost of Ownership (M€)", "OPEX (M€)", "Amortization (year)", and "New DataPage from scenarios". The main area shows a dashboard with several data widgets: "Total Cost of Ownership (M€)", "CAPEX (M€)", "Investment (M€)", "Amortization (year)", and "OPEX (M€)". An "Edit datapage" dialog box is open in the center, allowing users to modify the layout. The dialog has a "Label" field set to "Detailed TCO Breakdown" and four options: "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", each with a plus sign. An "Update datapage" button is at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with the date "30/10/2022" and time "18:36", and the copyright notice "Copyright © 2022 Geeglee".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Take-Up Machine Architecture" and features a sidebar on the left with a navigation menu. The menu includes items like "Take-Up Machine", "Detailed/TCO Breakdown", "Architecture", and "Convergence Process N°1". Below the menu, there are options to "Create a new DataPage", "Active Scenarios", and "New DataPage from scenarios". The main workspace shows a design page with several widgets, including "Architecture", "Spool", and "C&M merged". An "Edit datapage" dialog box is open in the center, allowing users to modify the page's label and layout. The dialog box contains a "Label" field with the text "Detailed/Architecture" and four options: "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", each with a plus sign icon. An "Update datapage" button is located at the bottom right of the dialog box. The bottom of the screen shows a Windows taskbar with a search bar, system tray, and date/time information (18:37, 30/10/2022).



The screenshot displays the Geeglee Engineering Intelligence interface for a project titled "Take-Up Machine" under the "Convergence Process N°1". The interface includes a sidebar with navigation options such as "Detailed/TCO Breakdown", "Detailed/Architecture", and "Convergence Process N°1". A central area contains three data widgets: "Total Cost of Ownership (M€)" with a slider between 0.52 and 0.8, "OPEX (M€)" with a list of values (0.315, 0.350, 0.540, 0.600), and "Amortization (year)" with a list of values (10, 20). An "Edit datapage" dialog box is open, showing a label "ScenarioConvergence Process N°1" and options for "Grid Layout", "Layout Edition", "Widgets", and "Widget Groups", with an "Update datapage" button at the bottom right. The bottom of the screen shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons for temperature (16°C), location (Nuaigeux), and time (18:37, 30/10/2022).



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

Take-Up Machine
Detailed
Scenario
Convergence Process N°1
Active Scenarios
Total Cost of Ownership (M€)
OPEX (M€)
Amortization (year)
Delete all scenarios
Crop the current design space:
Subdesign space #1

Total Cost of Ownership (M€)
0.52 0.8

OPEX (M€)
0.315
0.350
0.540
0.600

Amortization (year)
10
20

Reload data?
Note: You can reload data later by clicking on the project tab in the left menu.
No Yes

Copyright © 2022 Geeglee

Taper ici pour rechercher 16°C Nuageux 18:37 30/10/2022



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

Take-Up Machine
Detailed
TCO Breakdown
Architecture
Scenario
Convergence Process N°1
Active Scenarios
Total Cost of Ownership (M€)
OPEX (M€)
Amortization (year)
Delete all scenarios
Crop the current design space:
Subdesign space #1

Total Cost of Ownership (M€)
0.52 0.8

OPEX (M€)
0.315
0.350
0.540
0.600

Amortization (year)
10
20

Copyright © 2022 Geeglee

Taper ici pour rechercher

16°C Nuageux 18:37 30/10/2022



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

Take-Up Machine x
Detailed v
TCO Breakdown
Architecture
Scenario v
Convergence Process N°1
Active Scenarios
No scenarios yet

Total Cost of Ownership (M€)

OPEX (M€)

- 0.315
- 0.350
- 0.540
- 0.600

Amortization (year)

- 10
- 20

Copyright © 2022 Geeglee

16°C Nuageux 18:37 30/10/2022



The screenshot displays the Geeglee Engineering Intelligence interface. The main dashboard is titled "Take-Up Machine Scenario/Convergence Process N°1" and features several data visualization widgets. A "New widget" dialog box is open in the foreground, allowing users to either reuse an existing widget or create a new one. The dialog includes fields for "Type" (set to "Title") and "Label" (set to "1 - Set the maximum TCO"). Under the "Additional Setting" section, there are fields for "Font size (px)" and "Alignm" (set to "-- Select an option --"). The background dashboard shows a "Total Cost of Ownership (M€)" bar chart with a value of 0.52 and an "OPEX (M€)" list with values 0.315, 0.350, 0.540, and 0.600. The interface also includes a sidebar with navigation options like "Detailed/TCO Breakdown" and "Detailed/Architecture", and a top navigation bar with options to "Add widget in dataPage", "Add widget in sideBar", and "Edit DataPage settings".



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

1 - Set the maximum TCO

Total Cost of Ownership (M€)

OPEX (M€)

Amortization (year)

Copyright © 2022 Geeglee

Taper ici pour rechercher

16°C Nuageux 18:38 30/10/2022



Geeglee Engineering Intelligence

Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

1 - Set the maximum TCO

Total Cost of Ownership (M€)

Value
0.52
1.25

2 - Set the maximum OPEX

OPEX (M€)

Value
0.315
0.350
0.540
0.600

3 - Set the number of year of amortization

Amortization (year)

Value
10
20

Copyright © 2022 Geeglee

Taper ici pour rechercher

16°C Nuageux 18:39 30/10/2022



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

1 - Set the maximum TCO

Total Cost of Ownership (M€)

Scenario	TCO (M€)
1	0.52
2	0.65
3	0.70
4	0.80
5	0.90
6	1.00
7	1.10
8	1.20
9	1.25

2 - Set the maximum OPEX

OPEX (M€)

0.315
0.350
0.540
0.600

3 - Set the number of year of amortization

Amortization (year)

10
20

Copyright © 2022 Geeglee

16°C Nuageux 18:39 30/10/2022



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

1 - Set the maximum TCO

2 - Set the maximum OPEX

OPEX (M€)

- 0.315
- 0.350
- 0.540
- 0.600

3 - Set the number of year of amortization

Amortization (year)

- 10
- 20

Copyright © 2022 Geeglee

16°C Nuageux 18:39 30/10/2022



localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT

Group	Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum([Investment (M€)])}{Amortisation (year)}$	0.57	0.65
Footprint	Footprint (m2)	●	Re_1 Re_0	Chassis. Footprint (square meter)		10
		●	Me_ΔM	C&M merged. Footprint (square meter)	10	
Cost	OPEX (M€)	●	Re_1 Re_0	Motor. Operational Cost (k€) M€ to k€		0.6
		●	Re_0	Motor. Operational Cost (k€) M€ to k€	-0.9	
		●	Me_ΔM	C&M merged. Operational Cost (k€) M€ to k€	0.6	
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.17	1.25

SOI

User Settings

Expert mode : Off

Taper ici pour rechercher

16°C Nuageux 18:40 30/10/2022



localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT

Group	Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.57	0.65
Footprint	Footprint (m2)	●	Re_1 Re_0	Chassis. Footprint (square meter)		10
		●	Me_ΔM	C&M merged. Footprint (square meter)	10	
Cost	OPEX (M€)	●	Re_1	Motor. Operational Cost (k€) M€ to k€		0.6
		●	Re_0	Motor. Operational Cost (k€) M€ to k€	-0.9	
		●	Me_ΔM	C&M merged. Operational Cost (k€) M€ to k€	0.6	
	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.17	1.25

SOI

Taper ici pour rechercher

16°C Nuageux 18:40 30/10/2022



Welcome to Geeglee Pattern
SELECT A SYSTEM OF INTEREST

System-of-Interest	Last update	BLACK BOX		WHITE BOX			Design space generation
		High level requirements	Environment	Functional Breakdown Structure	Product Breakdown Structure	Patterns	
Take-Up Machine	30 October 2022, 18:19			fx			

[CREATE A NEW SOI](#)

ADMINISTRATION

[ENTER ADMINISTRATION](#)



The screenshot shows a web browser window with the URL `localhost:8000/1/HLR/outputs`. The application has a dark header with four tabs: `HLR INPUTS`, `REQUIREMENT CONSTRAINTS`, `HLR OUTPUTS` (which is active), and `GROUP`. Below the header, there is a sub-header `HLR Outputs`. The main content area is mostly empty, with a single light blue header row containing the following elements from left to right: a dropdown arrow, the text `Group`, a separator, a dropdown arrow, the text `HLR Output`, a separator, a dropdown arrow, the text `Comment`, a separator, the text `Details`, a separator, a dropdown arrow, the text `Target`, a separator, and the text `HLR`. On the left side of the browser, there is a vertical blue sidebar with various icons and the text `SOI` at the bottom. The Windows taskbar is visible at the bottom of the screen, showing the search bar with the text `Taper ici pour rechercher`, several application icons, and the system tray with weather information (`16°C Nuageux`) and the date `30/10/2022`.



The screenshot shows a web application interface for setting objectives. The browser address bar displays `localhost:8000/1/HLR/outputs`. The application has a top navigation bar with tabs for `HLR INPUTS`, `REQUIREMENT CONSTRAINTS`, `HLR OUTPUTS`, and `GROUP`. Below the navigation bar, there is a header for `HLR Outputs` and a table with columns: `Group`, `HLR Output`, `Comment`, `Details`, `Target`, and `HLR`. A modal window titled `NEW HLR OUTPUT` is open in the center, containing a form with the following fields and buttons:

- `Name *`: A text input field.
- `Group`: A dropdown menu.
- `Target`: A dropdown menu.
- `CANCEL`: A button.
- `ADD & CLOSE`: A button.
- `ADD & CONTINUE`: A button.



The screenshot shows a web browser window with the address bar displaying `localhost:8000/1/HLR/outputs`. The application interface includes a top navigation bar with tabs for `HLR INPUTS`, `REQUIREMENT CONSTRAINTS`, `HLR OUTPUTS`, and `GROUP`. Below this, a sub-header indicates the current view is `HLR Outputs`. A table header is visible with columns for `Group`, `HLR Output`, `Comment`, `Details`, `Target`, and `HLR`. A modal dialog titled `NEW HLR OUTPUT` is centered on the screen. The modal contains the following fields and controls:

- `Name *`: A text input field.
- `Footprint (m2)`: A text input field.
- `Group`: A dropdown menu with `Footprint` selected.
- `Target`: A dropdown menu.
- Buttons: `CANCEL`, `ADD & CLOSE`, and `ADD & CONTINUE`.

The Windows taskbar at the bottom shows the search bar with the text `Taper ici pour rechercher`, system icons for weather (16°C, Nuageux) and date (30/10/2022), and the time (18:40).



The screenshot displays a web browser window with the URL `localhost:8000/1/HLR/outputs`. The application interface includes a top navigation bar with tabs for 'HLR INPUTS', 'REQUIREMENT CONSTRAINTS', 'HLR OUTPUTS', and 'GROUP'. Below this is a sub-header 'HLR Outputs' and a table with columns: 'Group', 'HLR Output', 'Comment', 'Details', 'Target', and 'HLR'. The table contains one row with 'Footprint' in the 'Group' column and 'Footprint (m2)' in the 'HLR Output' column. A modal dialog box titled 'NEW HLR OUTPUT' is open in the center, containing the following fields and options:

- Name ***: Text input field containing 'To'
- Group**: Dropdown menu with 'Footprint' selected
- Target**: Dropdown menu with 'ME to KE' selected
- Total Cost of Ownership (ME)**: Text input field
- Add "To"**: Text input field
- ADD & CLOSE**: Button
- ADD & CONTINUE**: Button



Group	HLR Output	Comment	Details	HLR
Cost	Total Cost of Ownership (M€)			<input checked="" type="checkbox"/>
Footprint	Footprint (m2)			<input checked="" type="checkbox"/>



The screenshot shows a web browser window with the URL localhost:8000/1/HLR/outputs. The application interface includes a top navigation bar with tabs for HLR INPUTS, REQUIREMENT CONSTRAINTS, HLR OUTPUTS (selected), and GROUP. Below the navigation, there is a section titled "HLR Outputs" containing a table with the following data:

Group	HLR Output	Comment	Details	Target	HLR
Cost	Total Cost of Ownership (M€)			Minimize	<input checked="" type="checkbox"/>
Footprint	Footprint (m2)			Minimize	<input checked="" type="checkbox"/>

A green notification box at the bottom left of the application area displays the message "Modifications saved". The browser's taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with weather information (16°C, Nuageux) and the date (30/10/2022).



MODEL CHECK CHANGED!



The screenshot shows a web application interface for model checking. The navigation bar at the top contains the following tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main content area is titled "Model checking" and displays a list of warnings and errors. The list is organized into sections: "Warnings" (indicated by a yellow triangle icon) and "Errors" (indicated by a red circle icon). Each item in the list includes a green checkmark icon, a description of the issue, and a severity level in a colored box.

Severity	Issue Description	Severity Level
Warning	Internal Incompatibility error	critical
Warning	Missing values	critical
Warning	No architecture in this SOI	critical
Warning	No environment module alternatives	critical
Warning	No module alternatives for architecture	critical
Warning	Patterns: Circular Loop	critical
Warning	HLR Requirement constraints: not used in patterns	high
Warning	HLR outputs: missing target	high
Warning	Missing modules for architecture	high
Warning	No HLR outputs	high
Error	There is no GEI file set up	high
Warning	Unknown elements in patterns	high
Warning	Patterns: invalid formula	medium
Warning	Characteristics: not linked to a module	low
Warning	Characteristics: not used in patterns	low
Error	HLR inputs - Design variables - Environment variables: not used	low
Warning	Reference configurations: values out of range	low



The screenshot shows the 'Design space generation' interface in a web browser. At the top, there are navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main area features two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Below these are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 24'. A table titled 'Design spaces' lists several entries with columns for Name, Identifier, Description, Start date, End date, Status, and Files. A modal window titled 'Generate design space' is open, showing a form with fields for Name (filled with 'Output set!') and Description. It also includes a section for 'Current GEI file' with a dropdown menu and a checkbox for 'Only light result'. A tooltip explains that the 'Only light result' option will simulate the design space but keep a limited number of information.

Name	Identifier	Description	Start date	End date	Status	Files
Corrected_MK in merced4	4		30 October 2022, 18:27	30 October 2022, 18:27	Finished	
3_architectures	3		30 October 2022, 18:24	30 October 2022, 18:25	Finished	
Module connected	2	Chassis - Motor - Spool...	30 October 2022, 17:56	30 October 2022, 17:57	Finished	
First Run	1	TCO with design variables...	30 October 2022, 16:05	30 October 2022, 16:05	Finished	



Machine Scenario/Convergence Process N°1

Total Cost of Ownership (M€)

Year	Value (M€)
1	0.52
2	0.65
3	0.70
4	0.85
5	0.95
6	1.10
7	1.20
8	1.25

OPEX (M€)

0.315
0.350
0.540
0.600

Amortization (year)

10
20

3 - Set the number of year of amortization

Copyright © 2022 Geeglee



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Scenario/Convergence Process N°1

1 - Set the maximum TCO

2 - Set the maximum OPEX

OPEX (M€)

- 0.315
- 0.350
- 0.540
- 0.600

3 - Set the number of year of amortization

Amortization (year)

- 10
- 20

Copyright © 2022 Geeglee

16°C Nuageux 18:54 30/09/2022



The screenshot displays the Geeglee Engineering Intelligence interface for a 'Take-Up Machine' scenario. The left sidebar contains a navigation menu with options like 'Scenario/Convergence Process N°1', 'Detailed/TCO Breakdown', and 'Detailed/Architecture'. The main area is titled 'Take-Up Machine Scenario/Convergence Process N°1' and features three configuration steps:

- 1 - Set the maximum TCO:** A bar chart titled 'Total Cost of Ownership (M€)' is shown with a range from 0.52 to 1.25.
- 2 - Set the maximum OPEX:** A vertical slider control for 'OPEX (M€)' is shown with values ranging from 0.315 to 0.600.
- 3 - Set the number of year of amortization:** A vertical slider control for 'Amortization (year)' is shown with values ranging from 10 to 20.

At the bottom of the interface, there is a search bar with the text 'Taper ici pour rechercher', a copyright notice 'Copyright © 2022 Geeglee', and system information including '16°C Nuageux' and the date '30/10/2022'.



ADD SMART SCATTER WIDGET



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Take-Up Machine New DataPage". A sidebar on the left contains a navigation menu with items: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "New DataPage", "Create a new DataPage", and "Active Scenarios". The "Active Scenarios" section shows "No scenarios yet".

In the center, an "Edit datapage" dialog box is open. It features a "Label" field containing the text "Trade-off/TCO vs Footprint". Below the label field are four options, each with a plus sign icon to its right:

- Grid Layout
- Layout Edition
- Widgets
- Widget Groups

An "Update datapage" button is located at the bottom right of the dialog box.

At the top of the main window, there are three action buttons: "+ Add widget in dataPage", "+ Add widget in sidebar", and "Edit DataPage settings".

The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a clock showing 16:54 on 30/10/2022. The copyright notice "Copyright © 2022 Geeglee" is visible at the bottom center of the application window.



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". The left sidebar contains a navigation menu with items: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "Trade-off/TCO vs Footprint", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main content area displays a "New widget" dialog box with the following fields:

- Reuse an existing widget:** A dropdown menu with "-- Select an option --" and an "Import widget to dataPage" button.
- Or create a new widget:** A section with three sub-sections:
 - Type:** A dropdown menu with "-- Select an option --", "Pie", "Histogram", "Module", "Select", and "SmartScatter" (highlighted).
 - Query:** A text input field with "n°0" below it.
 - Label:** A text input field with "1876eikddip" below it.
- Additional Setting:** A section with a "Precisi" text input field.

At the bottom right of the dialog box is a "Create widget" button. The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system tray icons, and the date/time "18:55 30/10/2022".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a navigation menu with items like "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A "New widget" dialog box is open in the center, allowing the user to configure a "SmartScatter" widget. The dialog includes a dropdown to "Reuse an existing widget", a "Query" section with fields for "Query x" (Total Cost of Ownership (ME)) and "Query y" (Footprint (m2)), and an "Additional Setting" section with fields for "Y Unit", "X Unit", and "Max Nb Of Points For The Scatter". A "Create widget" button is located at the bottom right of the dialog. The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", system icons, and the date/time "18:55 30/10/2022".



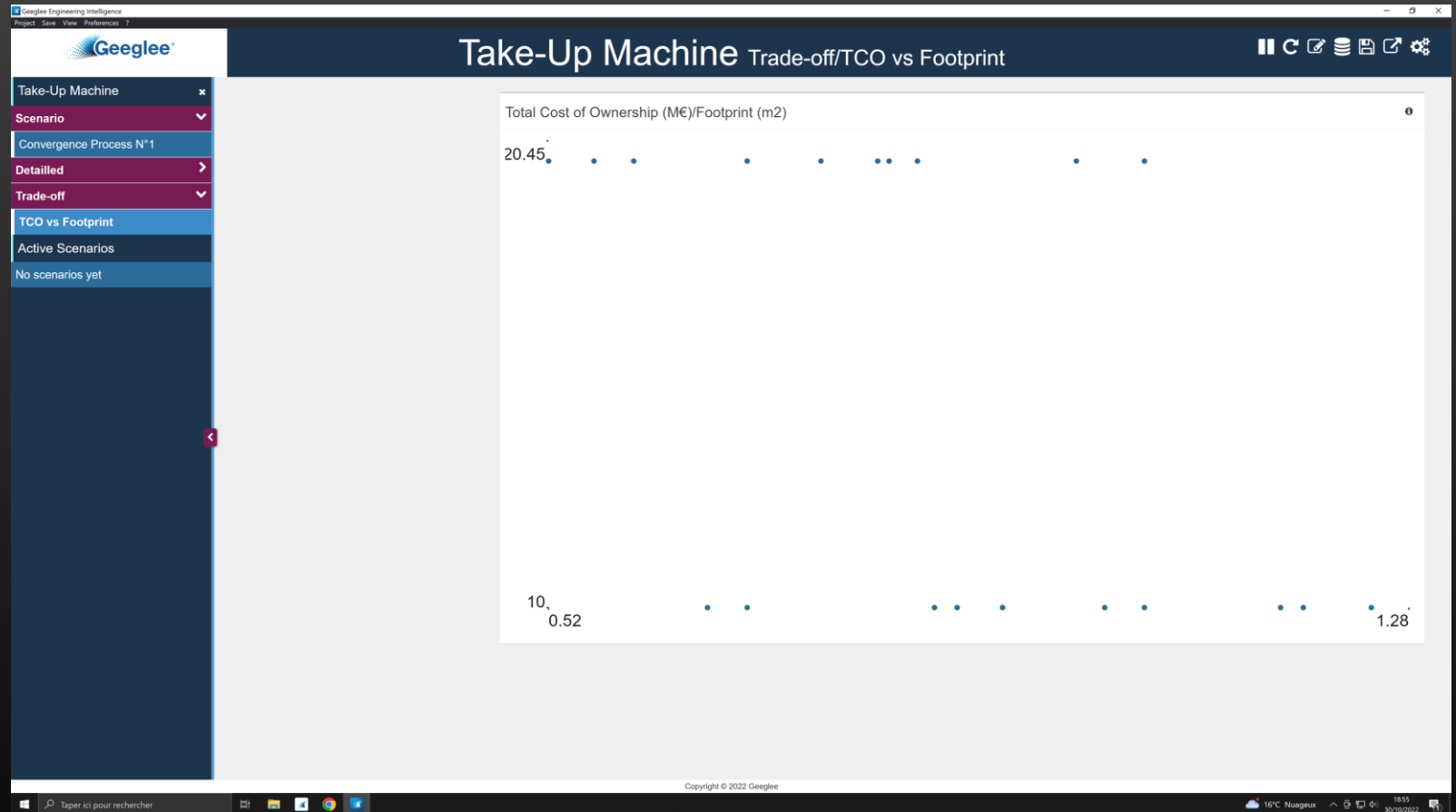
ADD SMART SCATTER WIDGET



The screenshot displays the Geeglee Engineering Intelligence software interface. The window title is "Geeglee Engineering Intelligence". The main header shows the project name "Take-Up Machine" and the subtitle "Trade-off/TCO vs Footprint". The sidebar menu on the left includes the following items: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "Trade-off/TCO vs Footprint", and a highlighted "Create a new DataPage" button. Below the menu, it indicates "Active Scenarios" and "No scenarios yet". The main content area is titled "Total Cost of Ownership (M€)/Footprint (m2)" and contains a large dark grey rectangle with the text "New widget" and "Load data by clicking on the left menu." Above this rectangle are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", the system tray with weather information (16°C, Nuageux) and the date (30/10/2022).



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". On the left, a navigation menu includes "Take-Up Machine", "Scenario", "Detailed", "Trade-off", "TCO vs Footprint", "Active Scenarios", and "No scenarios yet". The central area is a large grey rectangle with the text "New widget" and "Load data by clicking on the left menu." The top right corner of the interface contains icons for refresh, save, and settings. The bottom of the screenshot shows a Windows taskbar with a search bar and system tray icons.





The screenshot displays the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". The sidebar on the left contains a menu with the following items: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "Trade-off/TCO vs Footprint", "+ Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main plot area is titled "Total Cost of Ownership (ME)/Footprint (m2)" and shows a scatter plot with data points. The y-axis has labels 10, 0.52, and 20.45. The x-axis has labels 0.52 and 1.28. At the top of the plot area, there are three buttons: "+ Add widget in dataPage", "+ Add widget in sideBar", and "Edit DataPage settings". The Windows taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", system tray icons for weather (16°C, Nuageux) and time (18:56, 30/10/2022), and the copyright notice "Copyright © 2022 Geeglee".



The screenshot displays the Geeglee Engineering Intelligence software interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a navigation menu with items like "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A "New widget" dialog box is open in the center, allowing the user to reuse an existing widget or create a new one. The dialog includes a dropdown menu for selecting an existing widget, a "Query" field with a list of available queries, a "Label" field, and an "Additional Setting" section with a "Precision" input field. A "Create widget" button is located at the bottom right of the dialog. The background shows a plot area with the title "Total Cost of Ownership (M€)/Footprint (m2)" and some data points.



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a navigation menu with items like "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A "New widget" dialog box is open in the center, allowing the user to reuse an existing widget. The dialog has sections for "Reuse an existing widget", "Or create a new widget", "Query", "Label", and "Additional Setting".

New widget

Reuse an existing widget

-- Select an option --

1 - Set the maximum TCO - Title
2 - Set the maximum OPEX - Title
3 - Set the number of year of amortization - Title
Amortization (year) - Select
Architecture - Module
CAM merged - Module
C:\Users\geeglee\AppData\Local\Programs\geeglee-design-space\resources\GEEGLEE_LIB\imageDatabase\acc_1-2_hor_grey.png - Logo
C:\Users\geeglee\AppData\Local\Programs\geeglee-design-space\resources\GEEGLEE_LIB\imageDatabase\acc_1-2_hor_grey.png - Logo
CAPEX (M€) - Select
Chassis - Module
Investment (M€) - Select
Motor - Module
OPEX (M€) - Select
Spool - Module

Or create a new widget

Type

Query

Query n°0
Total Cost of Ownership (M€) - Histogram
Total Cost of Ownership (M€)/Footprint (m2) - SmartScatter
Total Cost of Ownership (€) - Logo

Label

1909\autobright

Additional Setting

Precisi

Create widget



Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Trade-off/TCO vs Footprint

+ Add widget in dataPage + Add widget in sidebar ⚙ Edit DataPage settings

Total Cost of Ownership (M€)

Total Cost of Ownership (M€)/Footprint (m2)

Active Scenarios
No scenarios yet

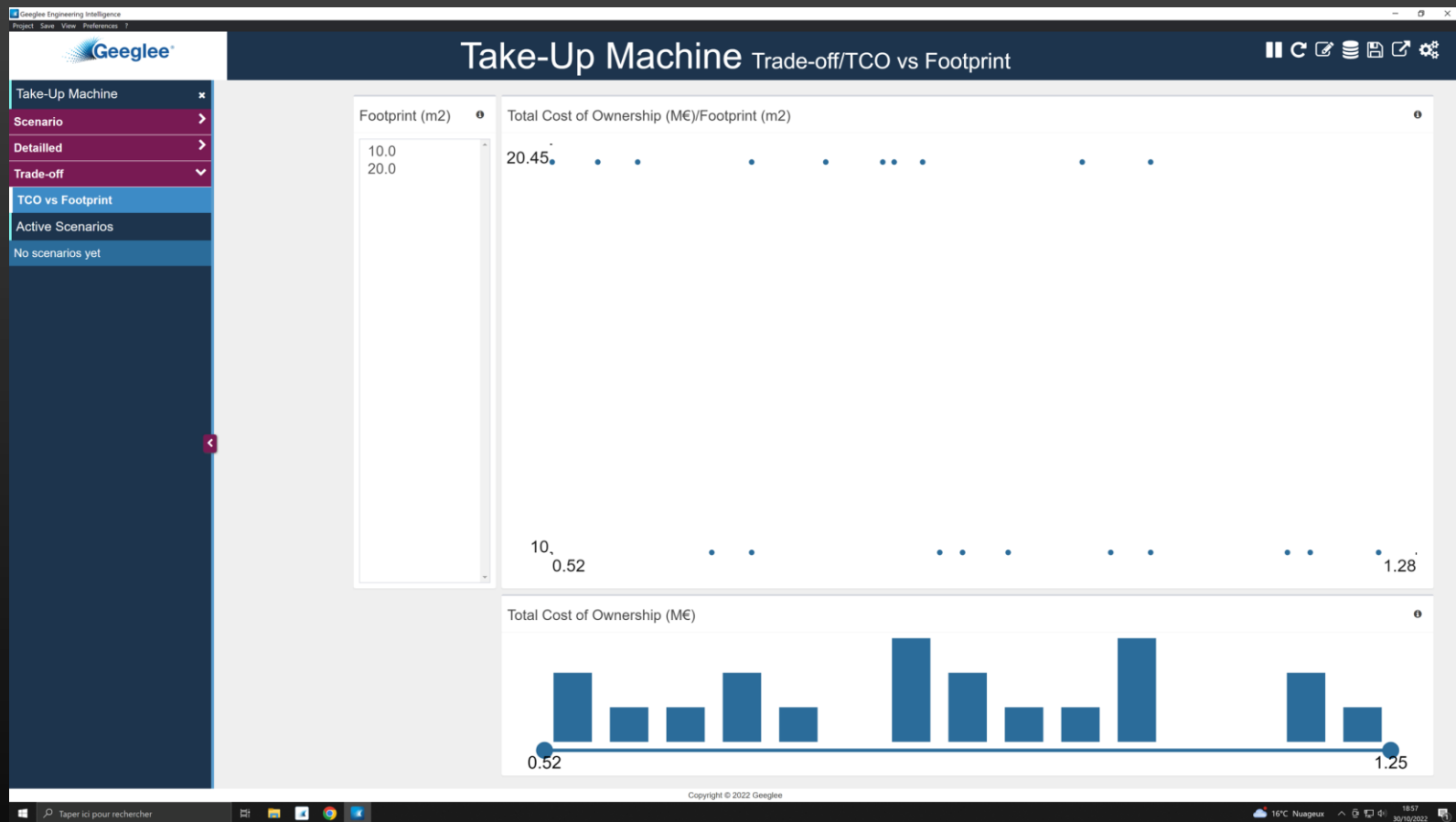
Copyright © 2022 Geeglee

Taper ici pour rechercher

16°C Nuageux 18:56 30/10/2022



The screenshot displays the Geeglee Engineering Intelligence interface. The main dashboard is titled "Take-Up Machine Trade-off/TCO vs Footprint" and features a sidebar with navigation options: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A "New widget" dialog box is open in the foreground, allowing the user to create a new widget. The dialog has two main sections: "Reuse an existing widget" with a dropdown menu and an "Import widget to dataPage" button, and "Or create a new widget" with a "Type" dropdown, a "Query" field containing "Footprint (m2)", a "Label" field containing "Footprint (m2)", and an "Additional Setting" section with a "Precision" field. A "Create widget" button is located at the bottom right of the dialog. The background dashboard shows a bar chart titled "Total Cost of Ownership (M€)/Footprint (m2)" with a value of 1.28. The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system icons, and the date/time "18:56 30/10/2022".





The screenshot shows the Geeglee Engineering Intelligence interface. The main dashboard is titled "Take-Up Machine Trade-off/TCO vs Footprint". It features a sidebar on the left with navigation options: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "Trade-off/TCO vs Footprint", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". The main area displays two charts: "Footprint (m2)" and "Total Cost of Ownership (M€)/Footprint (m2)". A "New widget" dialog box is open in the center, allowing users to "Reuse an existing widget" (with a dropdown menu) or "Create a new widget". The "Create a new widget" section includes a "Type" dropdown, a "Query" field (containing "n°0"), a "Label" field (containing "2013wsmoymfj"), an "Additional Setting" section with a "Precisi" field, and a "Create widget" button. The bottom of the interface shows a Windows taskbar with the search bar containing "Taper ici pour rechercher", system icons, and the date/time "18:57 30/10/2022".



The screenshot shows the Geeglee Engineering Intelligence interface. The main window title is "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a menu with items: "Take-Up Machine", "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", "Trade-off/TCO vs Footprint", "Create a new DataPage", "Active Scenarios", and "No scenarios yet". A "New widget" dialog box is open in the center, with the following fields and options:

- Reuse an existing widget: -- Select an option -- (with an "Import widget to dataPage" button)
- Or create a new widget:
- Type: Select (dropdown menu)
- Query: "Pareto" (input field), "Pareto front - Footprint (m2), Total Cost of Ownership (M€)" (dropdown menu)
- Label: "2013wardmoyfej" (input field)
- Additional Setting: "Precisi" (input field)
- "Create widget" button

The background shows a chart titled "Footprint (m2) Total Cost of Ownership (M€)/Footprint (m2)" with a bar chart and a value of 1.28. The Windows taskbar at the bottom shows the search bar with "Taper ici pour rechercher", system tray icons, and the date "30/10/2022".



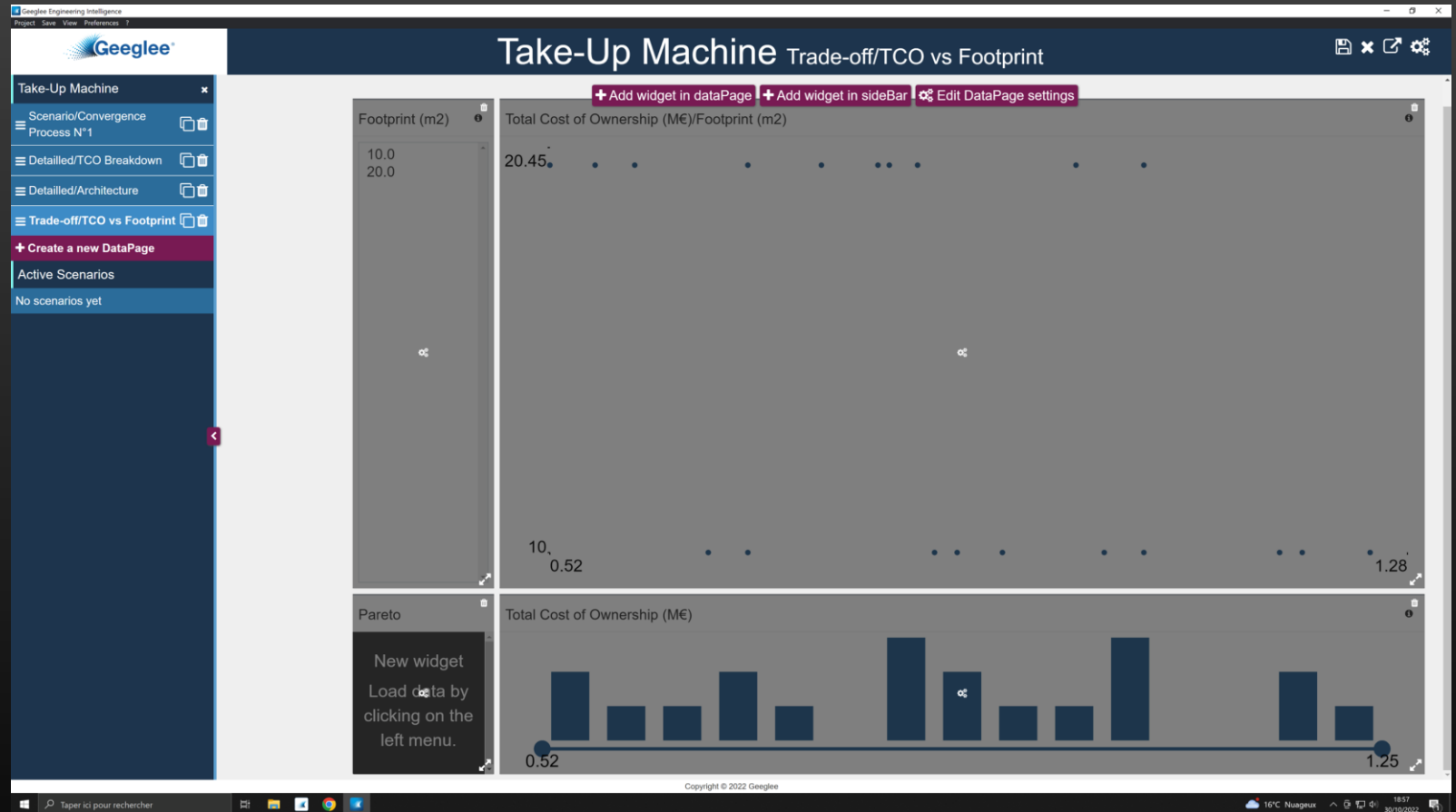
The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a menu with options like "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A central "Edit widget" dialog box is open, allowing configuration of a Pareto chart. The dialog includes fields for "Type" (set to "Select"), "Query" (set to "Pareto front - Footprint (m2), Total Cost of Ownership (M€)"), and "Label" (set to "Pareto front - Footprint (m2), Total Cost of Ownership (M€)"). There is also an "Additional Setting" section with a "Precision" field. The background shows a data visualization area with a table and a bar chart. The table has columns for "Footprint (m2)" and "Total Cost of Ownership (M€)/Footprint (m2)". The bar chart shows the Pareto front with values ranging from 0.52 to 1.25. The bottom of the screen shows a Windows taskbar with a search bar and system tray icons.

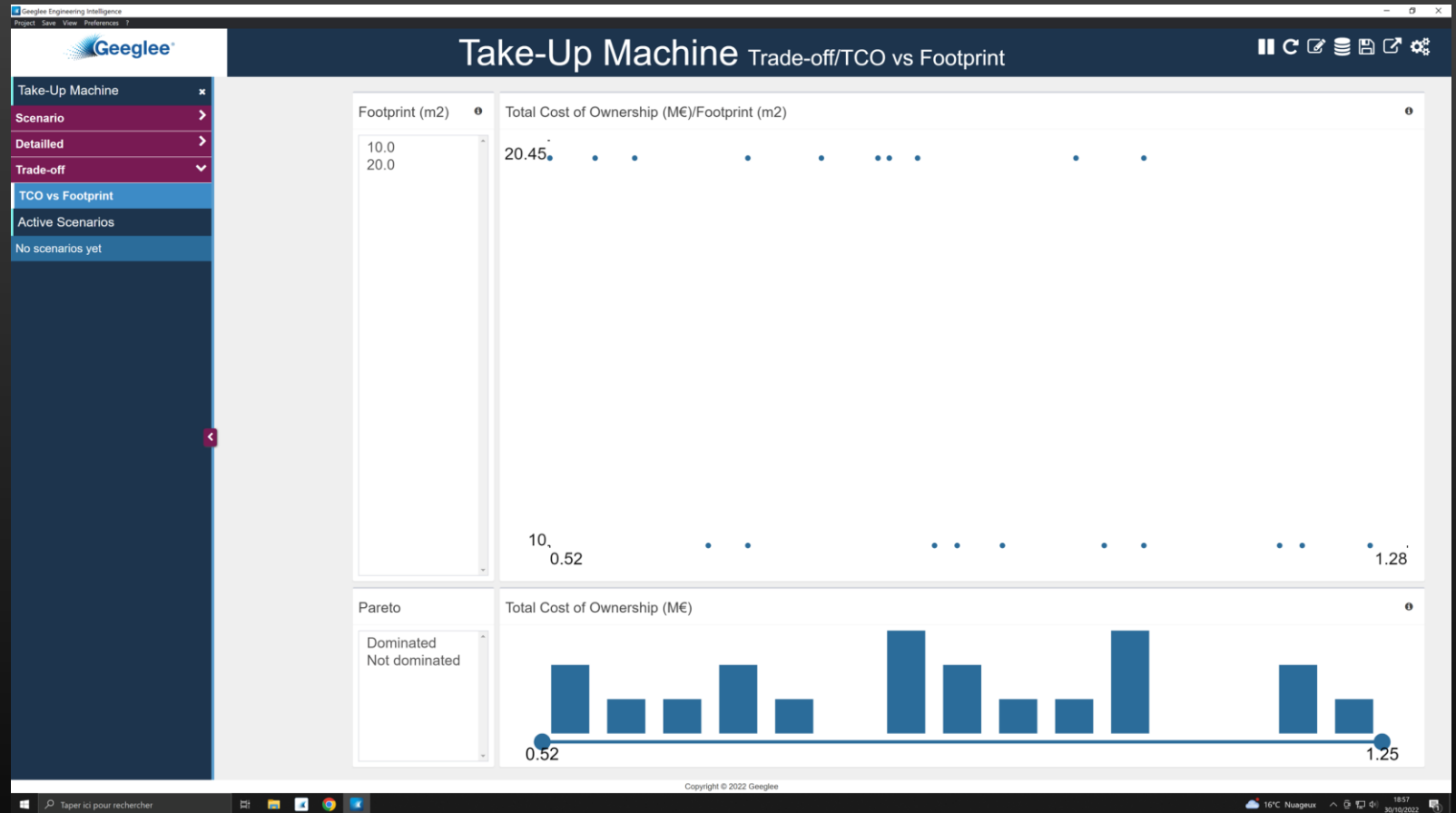


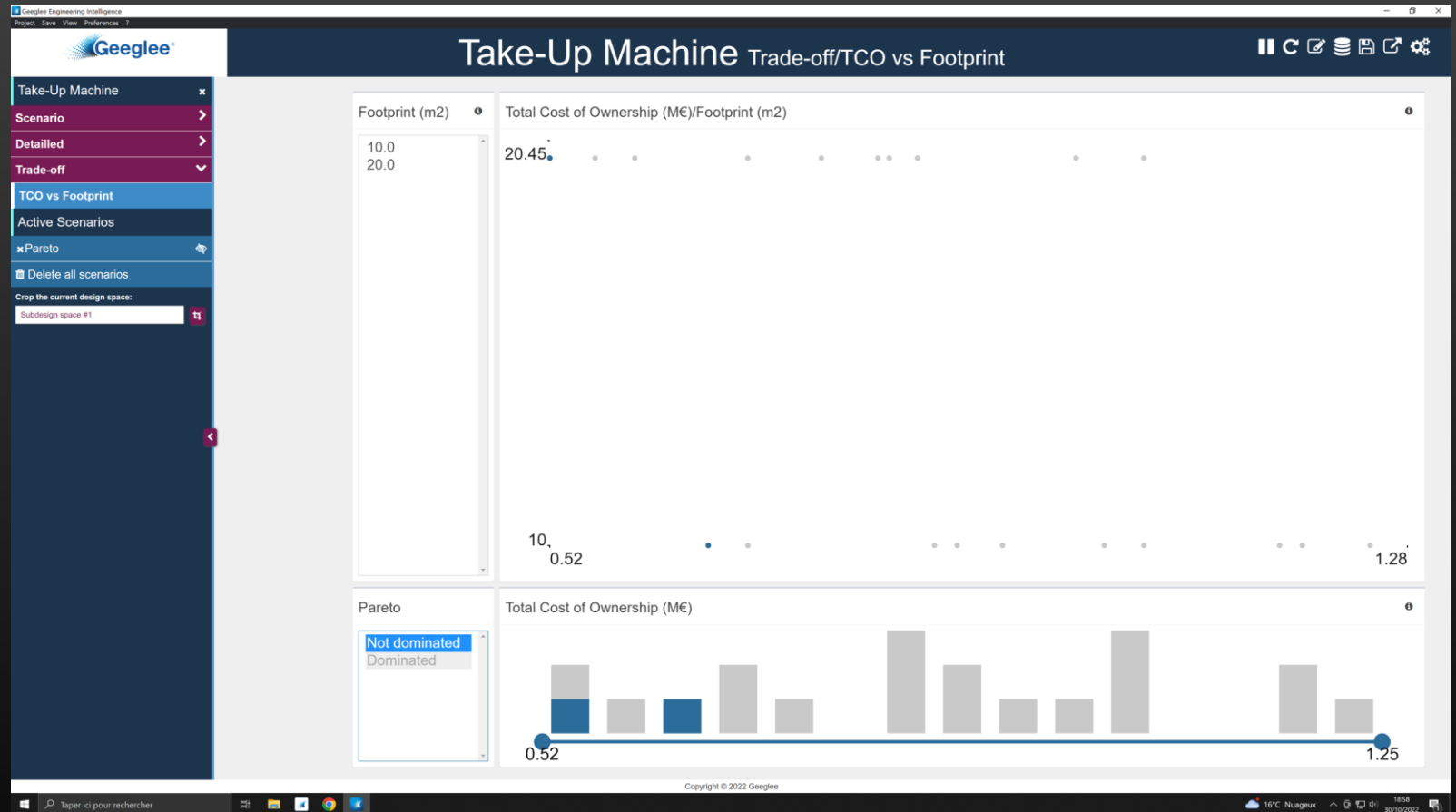
The screenshot shows the Geeglee Engineering Intelligence interface. The main window is titled "Take-Up Machine Trade-off/TCO vs Footprint". A sidebar on the left contains a menu with items like "Scenario/Convergence Process N°1", "Detailed/TCO Breakdown", "Detailed/Architecture", and "Trade-off/TCO vs Footprint". A central panel displays a Pareto chart with "Footprint (m2)" on the x-axis and "Total Cost of Ownership (M€)/Footprint (m2)" on the y-axis. A dialog box titled "Edit widget" is open, showing the following fields:

- Type: Select
- Query: Pareto front - Footprint (m2), Total Cost of Ownership (M€)
- Label: Pareto
- Additional Setting: Precisi

Buttons for "Add widget in dataPage", "Add widget in sideBar", and "Edit DataPage settings" are visible at the top of the main panel. An "Update widget" button is at the bottom right of the dialog. The bottom of the interface shows a Windows taskbar with a search bar containing "Taper ici pour rechercher", system icons, and a date/time display of 16:57 on 30/10/2022.

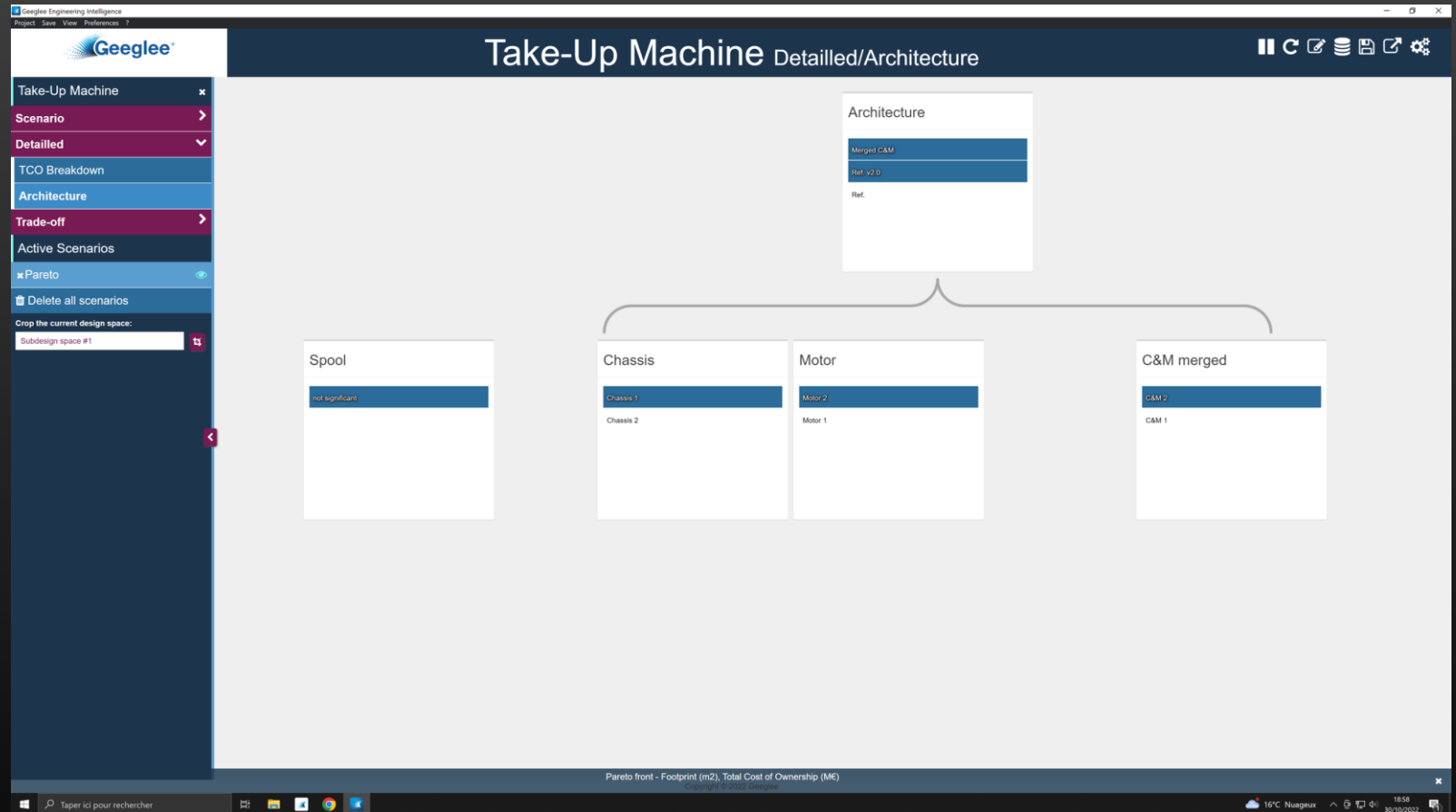






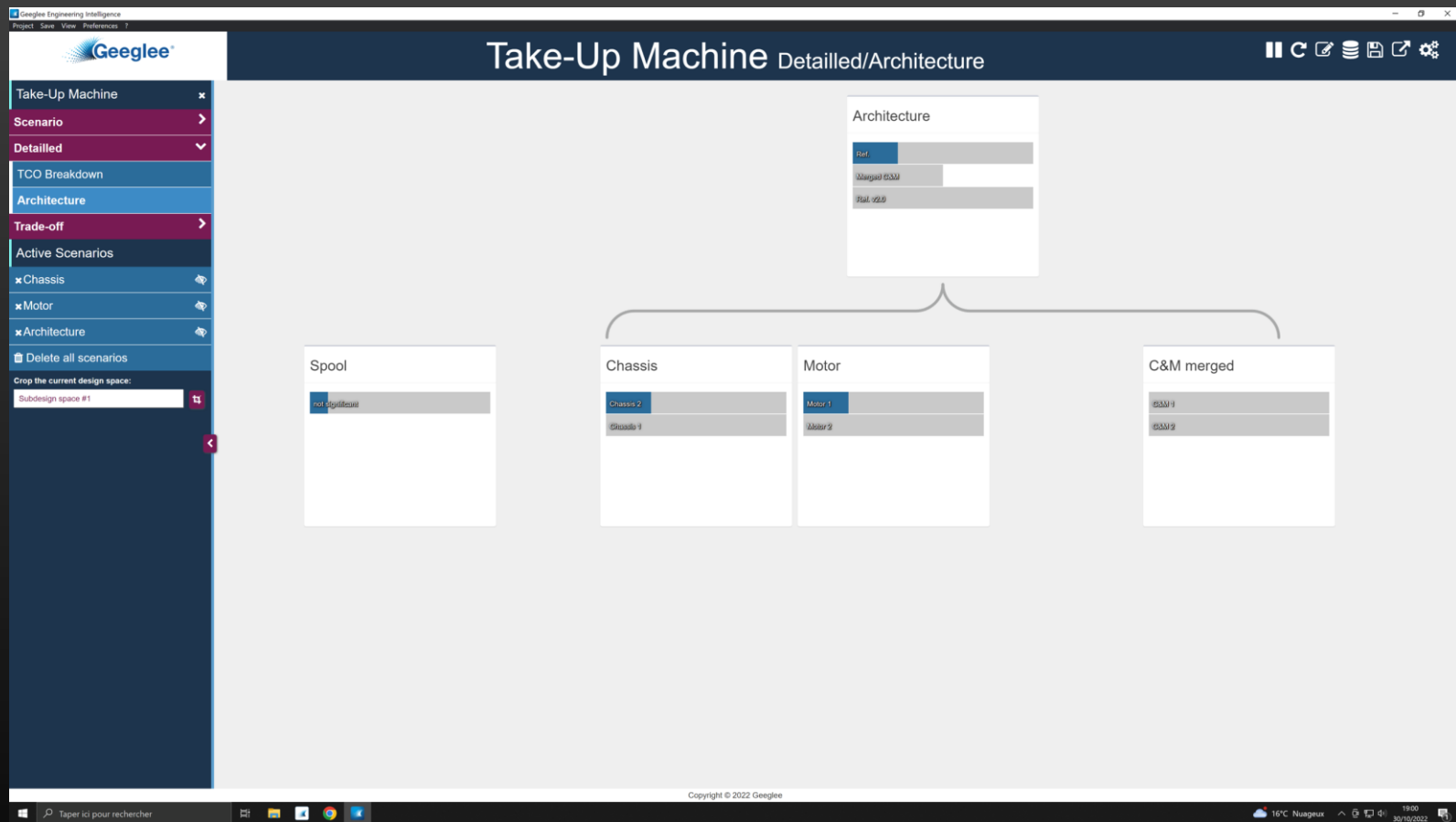


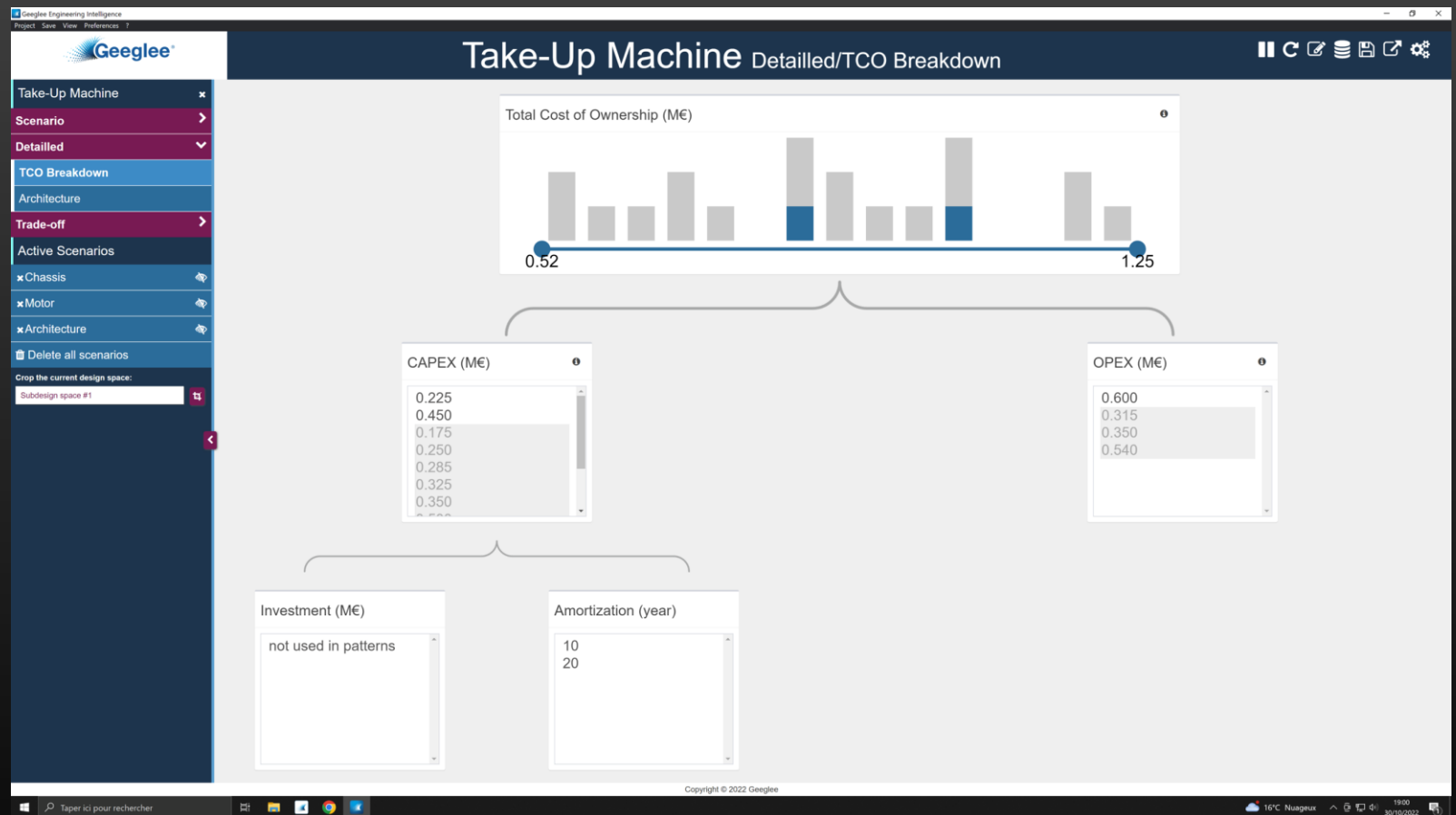
HAVE A LOOK AT BEST SOLUTIONS' ARCHITECTURE

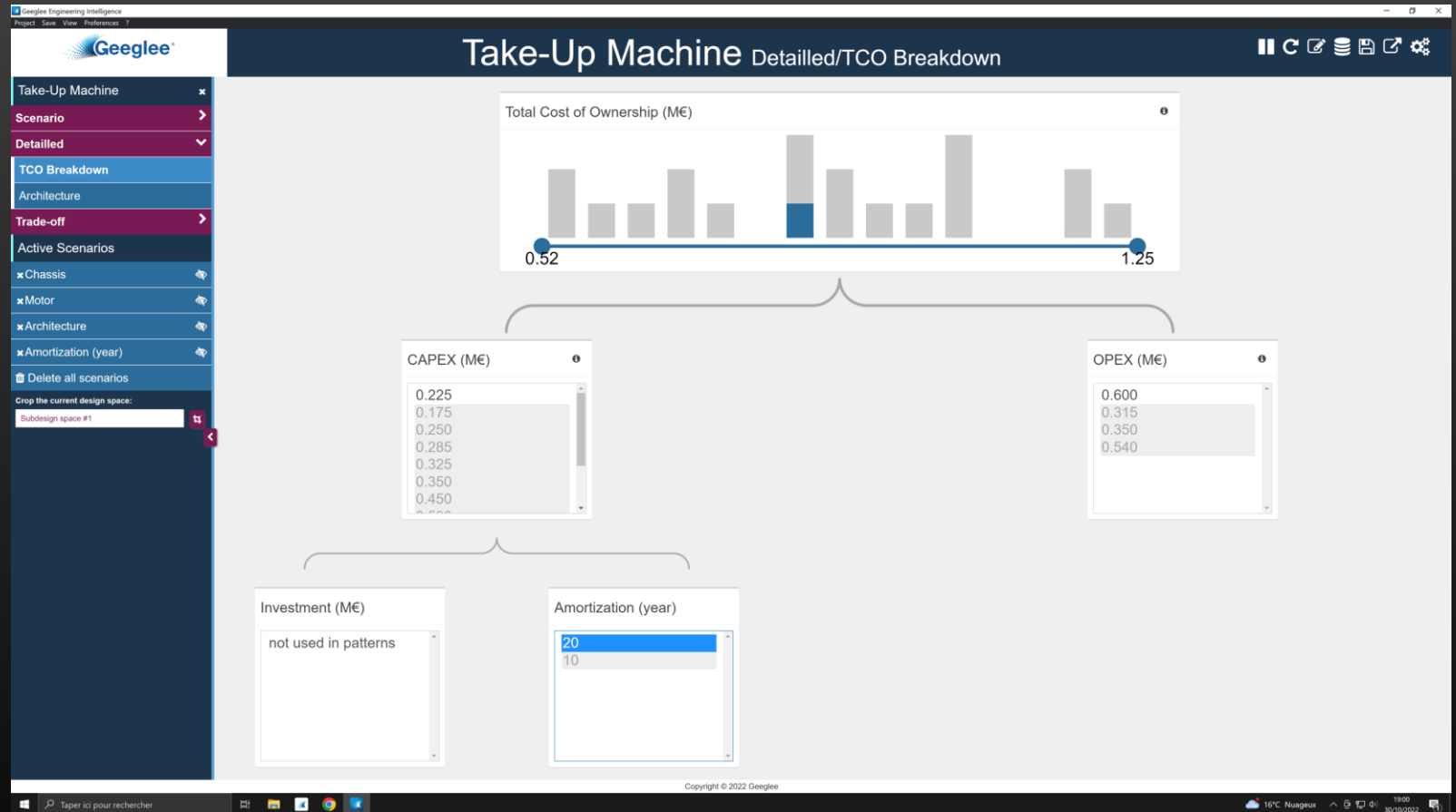




HAVE A LOOK AT BEST SOLUTIONS' ARCHITECTURE









The screenshot shows the Geeglee web interface for Design Space Generation. The top navigation bar includes: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main content area is titled "Design space generation" and features two buttons: "GENERATE SETTING GEI" and "GENERATE DESIGN SPACE".

Key performance indicators are displayed in green circles:

- Calculation time saturation: 0.01%
- Memory consumption saturation: 0.01%
- Estimated calculation time: less than 5 minutes
- Estimated solutions: 24

Below these metrics is a table titled "Design spaces" with the following columns: Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table contains five rows of data:

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
Constante not in one archi	6		No	30 October 2022, 19:04	30 October 2022, 19:05	30 October 2022, 19:05	Finished	
Output set!	5		No	30 October 2022, 18:41	30 October 2022, 18:42	30 October 2022, 18:42	Finished	
Corrected M6 in merged4	4		No	30 October 2022, 18:26	30 October 2022, 18:27	30 October 2022, 18:27	Finished	
3 architectures	3		No	30 October 2022, 18:23	30 October 2022, 18:24	30 October 2022, 18:25	Finished	
Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:57	Finished	



The screenshot shows the Geeglee Design Space Generation interface. At the top, there are navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. The main area displays 'Design space generation' with two progress indicators for 'Calculation time saturation' and 'Memory consumption saturation', both at 0.01%. It also shows 'Estimated calculation time: less than 5 minutes' and 'Estimated solutions: 24'. Below this is a table of 'Design spaces' with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. A 'Design space log' dialog box is open, displaying a warning message: 'WARNING - Some performances were not calculated. Please check the creation log for more details. If you are unable to solve your problem send the log files to Geeglee support team at support@geeglee.net'. The dialog box has an 'OK' button.

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
Constante not in one archi	6		No	30 October 2022, 19:04	30 October 2022, 19:05	30 October 2022, 19:05	Finished	
Output set1	5				October 2022, 18:42	30 October 2022, 18:42	Finished	
Corrected_MF in merged1	4				October 2022, 18:27	30 October 2022, 18:27	Finished	
3 architectures	3				October 2022, 18:24	30 October 2022, 18:25	Finished	
Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:57	Finished	



The screenshot shows the 'Design space generation' interface. At the top, there are navigation tabs: MODEL CHECKING, PROJECT MATURITY, REPORT GENERATION, DESIGN SPACE SIZE ANALYSIS, and DESIGN SPACE GENERATION. Below these, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. To the right of these buttons are four circular progress indicators: 'Calculation time saturation: 0.01%', 'Memory consumption saturation: 0.01%', 'Estimated calculation time: less than 5 minutes', and 'Estimated solutions: 24'. Below this is a table titled 'Design spaces' with columns: Name, Identifier, Description, Only light result, Request date, Start date, End date, File name, Size, and Download. A dropdown menu is open over the 'Download' column, showing a list of files for download.

Name	Identifier	Description	Only light result	Request date	Start date	End date	File name	Size	Download
Constante not in one archi	6		No	30 October 2022, 19:04	30 October 2022, 19:05	30 October 2022, 19:05	Download All	2.3 MB	
Output set!	5		No	30 October 2022, 18:41	30 October 2022, 18:42	30 October 2022, 18:42	Take-Up Machine_id#6_pareto.zip	18.6 kB	
Corrected M6 in merged4	4		No	30 October 2022, 18:26	30 October 2022, 18:27	30 October 2022, 18:27	Take-Up Machine_id#6_full.zip	18.7 kB	
3 architectures	3		No	30 October 2022, 18:23	30 October 2022, 18:24	30 October 2022, 18:24	Take-Up Machine gep	1.2 MB	
Module connected	2	Chassis - Motor - Spool...	No	30 October 2022, 17:56	30 October 2022, 17:56	30 October 2022, 17:56	log_Take-Up Machine_id#6.zip	12.7 kB	
							analysis_Take-Up Machine_id#6.zip	1 MB	
							Take-Up Machine_id#6_full_setting_GEI.zip	9.4 kB	
							Take-Up Machine_id#6_full_no_pareto.zip	16.4 kB	
							report_Take-Up Machine_id#6.txt	2.6 kB	



localhost:8000/1/design-spaces/generation

MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE SIZE ANALYSIS DESIGN SPACE GENERATION

1 Design space generation

GENERATE SETTING GEI
GENERATE DESIGN SPACE

Design spaces

- Name
- [Constante not in one archi](#)
- [Output set!](#)
- [Corrected M6 in merged4](#)
- [3 architectures](#)
- [Module connected](#)

Calculation time saturation: ● Memory consumption saturation: ●

Estimated solutions: 24

File name	Size	Download
Download All	2.3 MB	
Take-Up Machine_id#6_pareto.zip	18.6 kB	
Take-Up Machine_id#6_full.zip	18.7 kB	
Take-Up Machine.gep	1.2 MB	
log_Take-Up Machine_id#6.zip	12.7 kB	
analysis_Take-Up Machine_id#6.zip	1 MB	
Take-Up Machine_id#6_full_setting_GEI.zip	9.4 kB	
Take-Up Machine_id#6_full_no_pareto.zip	16.4 kB	
report_Take-Up Machine_id#6.txt	2.6 kB	

End date

log_Take-Up Machi... zip

Taper ici pour rechercher

16°C Nuageux 19:09 30/10/2022



HAVE A LOOK AT CREATION LOG (ERROR)



```
CU:\Users\geeglee\AppData\Local\Temp\Temp1_log_Take-Up_Machine_cdf@log_30-10-2022_1550_creation.log - Notepad++
Fichier Edition Recherche Affichage Encodage Langage Paramètres Outils Macro Exécution Modules d'extension Documents ?
log_30-10-2022_1550_creation.log
1 19:05:17 - Job.Creation - ERROR - error while computing performance id 6: MC to k€
2 reason(s):
3 the global performance is not related to this architecture (Merged C&M)
4
5 19:05:17 - Job.Creation - ERROR - failed performance name: OPEX (MC)
6 19:05:17 - Job.Creation - ERROR - equation of failed performance: "5:m:C&M merged"."2:l:Operational Cost (k€)"/"6:g:MC to k€"
7 19:05:17 - Job.Creation - ERROR - operation within equation that failed: "6:g:MC to k€"
8 19:05:17 - Job.Creation - ERROR - python error type: KeyError
9 19:05:17 - Job.Creation - ERROR - reason: the pattern for this performance is missing or dependance performance could not be calculated
10 19:05:17 - Job.Creation - ERROR - function: make_globalPerf
11
12 19:05:17 - Job.Creation - ERROR - failed performance name: Total Cost of Ownership (MC)
13 19:05:17 - Job.Creation - ERROR - equation of failed performance: "2:g:CAPEX"+"3:g:OPEX"
14 19:05:17 - Job.Creation - ERROR - operation within equation that failed: "3:g:OPEX"
15 19:05:17 - Job.Creation - ERROR - python error type: KeyError
16 19:05:17 - Job.Creation - ERROR - reason: the pattern for this performance is missing or dependance performance could not be calculated
17 19:05:17 - Job.Creation - ERROR - function: make_globalPerf
18
19 19:05:17 - Job.Creation - WARNING - 2 performance(s) were not computed due to errors in their calculation process:
20 19:05:17 - Job.Creation - WARNING - Total Cost of Ownership (MC)
21 19:05:17 - Job.Creation - WARNING - OPEX (MC)
22
```



CORRECTING THE ERROR (MISSING ARCHITECTURE)



The screenshot shows the Geeglee software interface. At the top, there are tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'CONSTANTS' tab is active, displaying a table with the following columns: Group, Pattern, Status, Architectures, and Rule. A single row is visible with the following data: Group (ME to kE), Pattern (ME to kE), Status (yellow dot), Architectures (Re...I and Re...D), and Rule (1000). A dialog box titled 'ARCHITECTURE MODELS' is open in the center, with the text 'Select appropriate architectures for current implementation' and a button labeled 'Merged C&M'. A 'CLOSE' button is also present in the dialog box. The bottom of the screen shows a Windows taskbar with a search bar and system tray icons.



localhost:8000/1/EP/group-creation

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

Group Creation

Group	Delete
Cost	<input type="checkbox"/>
Footprint	<input type="checkbox"/>

ADD NEW GROUP

Group name *

CANCEL ADD & CLOSE ADD & CONTINUE

Taper ici pour rechercher

15°C Nuageux 19:18 30/10/2022



The screenshot shows a web browser window with the URL `localhost:8000/1/EP/group-creation`. The interface has a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The GROUP tab is active. Below the navigation bar, there is a section titled "Group Creation" with a dropdown arrow. A table is displayed with the following content:

Group	Delete
Cost	<input type="checkbox"/>
Footprint	<input type="checkbox"/>
Rolling capacity	<input type="checkbox"/>

The browser's taskbar at the bottom shows the search bar with the text "Taper ici pour rechercher", several application icons, and system information including "15°C Nuageux" and the date "30/10/2022".



localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT

Rule

Group	Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Cost	CAPEX (M€)	●	Me_ΔM Re_1 Re_0	$\frac{\sum(\text{Investment (M€)})}{\text{Amortisation (year)}}$	0.57	0.65
Footprint	Footprint (m2)	●	Re_1 Re_0	Chassis. Footprint (square meter)		10
		●	Me_ΔM	C&M merged. Footprint (square meter)	10	
Cost	OPEX (M€)	●	Re_1	Motor. Operational Cost (k€) M€ to k€		0.6
		●	Re_0	Motor. Operational Cost (k€) M€ to k€	-0.9	
		●	Me_ΔM	C&M merged. Operational Cost (k€) M€ to k€	0.6	
Rolling capacity	Rolling Diameter (m)	●	Me_ΔM Re_1 Re_0	Spool. Internal Diameter (m)	1	1
Cost	Total Cost of Ownership (M€)	●	Me_ΔM Re_1 Re_0	CAPEX (M€) + OPEX (M€)	1.17	1.25

SOI

Taper ici pour rechercher

15°C Nuageux 19:18 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_3M Re_1 Re...0	Spool Internal Diameter (m)	1	1	1

SOI

Modifications saved

Taper ici pour rechercher

15°C Nuageux 19:18 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Product Breakdown Structure Rule

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_3M Re_1 Re...0	Spool Internal Diameter (m)	1	1	1

SOI

Taper ici pour rechercher

15°C Nuageux 19:19 30/10/2022



CPD localhost:8000/1/PBS/characteristics

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

Characteristics

Group	Characteristic	Type	Comment	Delete	C&M merg...	Chassis	Motor	Spool
	Footprint (square meter)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SOI

Taper ici pour rechercher

15°C Nuageux 19:19 30/10/2022



localhost:8000/1/PBS/characteristics

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Characteristics

Group	Characteristic	Type	Comment	Delete	C&M merg...	Chassis	Motor	Spool
	Footprint (square meter)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

NEW CHARACTERISTIC

Name *
RPM (rpm)

Group

Type *
Quantitative

Comment *
Motor speed in rpm

C&M merged

Chassis

Motor

Spool

CANCEL ADD & CLOSE ADD & CONTINUE

SOI

Taper ici pour rechercher

15°C Nuageux 19:19 30/10/2022



CP

localhost:8000/1/P85/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture All (this SOI) Density Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20	10	20				
Internal Diameter (m)							1	1
Investment (M€)	5.2	3	5	3	1	1.5	0.5	0.5
Operational Cost (M€)	600	350			600	350		
RPM (rpm)								

SOI

Modifications saved

Taper ici pour rechercher

15°C Nuageux 19:19 30/10/2022



CPD localhost:8000/1/PBS/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture All (this SOI) Density Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20	10	20				
Internal Diameter (m)							1	1
Investment (M€)	5.2	3	5	3	1	1.5	0.5	0.5
Operational Cost (M€)	600	350			600	350		
RPM (rpm)					1000	4000		

SOI

Taper ici pour rechercher

15°C Nuageux 19:22 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_3M Re_1 Re...0	Spool Internal Diameter (m)	1	1	1

SOI

Taper ici pour rechercher

15°C Nuageux 19:22 30/10/2022



localhost:8000/1/EP/constants

DESIGN VARIABLES PATTERNS **CONSTANTS** PYTHON GROUP

1 Constants

Rule

Group	Pattern	Status	Architectures	Rule
	M€ to k€	●	Me_3M Re_1 Re_0	1000

SOI

Taper ici pour rechercher

15°C Nuageux 19:22 30/10/2022



The screenshot displays the Geeglee web application interface. At the top, there are navigation tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS (selected), PYTHON, and GROUP. Below the tabs, the main content area shows a table of constants. A modal dialog box titled 'NEW CONSTANT' is open in the center, with the following fields:

- Name: km to m
- Group: (empty)

At the bottom of the dialog, there are three buttons: CANCEL, ADD & CLOSE, and ADD & CONTINUE.

Group	Pattern	Status	Architectures	Rule
	M€ to k€		Me_ΔM Re_Δ Re_0	1000



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_3M Re_1 Re...0	Spool Internal Diameter (m)	1	1	1

SOI

Taper ici pour rechercher

15°C Nuageux 19:24 30/10/2022



The screenshot shows the Geeglee web application interface. At the top, there are navigation tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'PATTERNS' tab is active. Below the tabs, there are filter buttons: ALL, NONE, COST, FOOTPRINT, and ROLLING CAPACITY. The main area displays a table of patterns. A 'NEW PATTERN' dialog box is open in the foreground, containing a 'Name*' input field, a 'Group' dropdown menu (currently set to 'Rolling capacity'), and three buttons: 'CANCEL', 'ADD & CLOSE', and 'ADD & CONTINUE'.

Pattern	Status	Architectures	Rule	Merged	Ref	Ref
Rolling Diameter (m)	●	Me...MM Re... Re...0	Spool Internal Diameter (m)	1	1	1



Geeglee interface showing the 'Patterns' section. The browser address bar shows 'localhost:8000/1/EP/patterns'. The main content area displays a table of patterns with columns for Pattern, Status, Architectures, Rule, Merged, Ref 111/10, and Ref 222/20.

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_ΔM Re_Γ Re_0	Spool Internal Diameter (m)	1	1	1
Rolling distance per day (km/day)	●	Me_ΔM Re_Γ Re_0	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Nber of working minutes per day}$	0.42	0.42	0.42



Geeglee interface showing a table of patterns. The browser address bar shows localhost:8000/1/EP/patterns. The interface includes a sidebar with navigation icons and a top navigation bar with tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. A filter bar above the table includes buttons for ALL, NONE, COST, FOOTPRINT, and ROLLING CAPACITY. The table has columns for Pattern, Status, Architectures, Rule, Merged, Ref 111/10, and Ref 222/20.

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10	Ref 222/20
Rolling Diameter (m)	●	Me_ΔM Re_ΔI Re_ΔD	Spool Internal Diameter (m)	1	1	1
Rolling distance per day (km/day)	●	Me_ΔM Re_ΔI Re_ΔD	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Nber of working minutes per day (min/day)}$	0.42	0.42	0.42

Modifications saved



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

✓ "Rolling Diameter (m)"/"km to m""Nber of working minutes per day (min/day)""Motor"."RPM (rpm)"

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Rolling Diameter (m)	●	Me_ΔM Re_ΔI Re_ΔD	Spool.Internal Diameter (m)	1	1
Rolling distance per day (km/day)	●	Me_ΔM Re_ΔI Re_ΔD	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Nber of working minutes per day (min/day)} \cdot \text{Motor.RPM (rpm)}$	1	420

SOI

Taper ici pour rechercher

15°C Nuageux 19:28 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

✓ "Rolling Diameter (m)"/"km to m""C&M merged"."RPM (rpm)""Nber of working minutes per day (min/day)"

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/11
Rolling Diameter (m)	●	Me_ΔM Re_Δ Re_0	Spool Internal Diameter (m)	1	1
Rolling distance per day (km/day)	●	Re_Δ Re_0	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Motor RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$		420
	●	Me_ΔM	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{C\&M merged RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$		

Modifications saved

Taper ici pour rechercher

15°C Nuageux 19:30 30/10/2022



CPM localhost:8000/1/PBS/characteristics

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

Characteristics

Group	Characteristic	Type	Comment	Delete	C&M merg...	Chassis	Motor	Spool
	Footprint (square meter)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Internal Diameter (m)	Quantitative		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Investment (M€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Operational Cost (k€)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	RPM (rpm)	Quantitative		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SOI

Modifications saved

Taper ici pour rechercher

15°C Nuageux 19:30 30/10/2022



CPD localhost:8000/1/PBS/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture All (this SOI) Density Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20	10	20	Motor 1			
Internal Diameter (m)							1	1
Investment (M€)	5.2	3	5	3	1	1.5	0.5	0.5
Operational Cost (M€)	600	350			600	350		
RPM (rpm)					1000	4000		

SOI

Taper ici pour rechercher

15°C Nuageux 19:30 30/10/2022



CP

localhost:8000/1/PBS/values/open

MODULES CHARACTERISTICS VALUES INTERNAL INCOMPATIBILITIES ALL INCOMPATIBILITIES GROUP

1 Values

Alternatives (active only) Architecture All (this SOI) Density Comfortable

	C&M merged		Chassis		Motor		Spool	
	C&M 1	C&M 2	Chassis 1	Chassis 2	Motor 1	Motor 2	Spool 1	Spool 2
Footprint (square meter)	10	20	10	20				
Internal Diameter (m)							1	1
Investment (M€)	5.2	3	5	3	1	1.5	0.5	0.5
Operational Cost (M€)	600	350			600	350		
RPM (rpm)	1000	4000			1000	4000		

SOI

Taper ici pour rechercher

15°C Nuageux 19:30 30/10/2022



Geeglee interface showing the 'Patterns' tab. The interface includes a navigation bar with 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. A filter bar at the top right shows 'ALL', 'NONE', 'COST', 'FOOTPRINT', and 'ROLLING CAPACITY'. The main content area displays a table of patterns with columns for 'Pattern', 'Status', 'Architectures', 'Rule', 'Merged', and 'Ref'.

Pattern	Status	Architectures	Rule	Merged	Ref
Rolling Diameter (m)	●	Me_&M Re_1 Re_0	Spool Internal Diameter (m)	1	1
Rolling distance per day (km/day)	●	Re_1 Re_0	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Motor RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$		420
	●	Me_&M	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{C\&M merged RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$	420	



The screenshot shows a web browser window with the URL `localhost:8000/1/HLR/inputs`. The application has a dark header with navigation tabs: **HLR INPUTS**, **REQUIREMENT CONSTRAINTS**, **HLR OUTPUTS**, and **GROUP**. Below the header, there is a section titled "HLR Inputs" containing a table with the following structure:

Group	HLR Input	Comment	Values	Delete
	Length to roll per day (km/day)		400 1000	

The table has a single row with the input "Length to roll per day (km/day)". The "Values" column shows two input fields with values 400 and 1000. A "Delete" button is present in the last column. The interface includes a left sidebar with various icons and a Windows taskbar at the bottom showing the date 30/10/2022 and time 19:31.



The screenshot shows the Geeglee web application interface. At the top, there are navigation tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'PATTERNS' tab is active. Below the tabs, there are filter buttons: ALL, NONE, COST, FOOTPRINT, and ROLLING CAPACITY. A table of patterns is displayed with columns for Pattern, Status, Architectures, Rule, Merged, and Ref. A 'NEW PATTERN' dialog box is open in the foreground, containing the following fields:

- Name*
- Nber of set in parallel (#)
- Group (Rolling capacity)

Buttons at the bottom of the dialog are CANCEL, ADD & CLOSE, and ADD & CONTINUE.

Pattern	Status	Architectures	Rule	Merged	Ref
Rolling Diameter (m)	●	Me...SM	Spool Internal Diameter (m)	1	1
Rolling distance per day (km/day)	●	Re...f	working minutes per day (min/day)		420
	●	Re...0	Nber of working minutes per day (min/day)		420



The screenshot shows the Geeglee web application interface. At the top, there are navigation tabs: DESIGN VARIABLES, PATTERNS, CONSTANTS, PYTHON, and GROUP. The 'PATTERNS' tab is active. Below the tabs, there are filter buttons: ALL, NONE, COST, FOOTPRINT, and ROLLING CAPACITY. The main area displays a table of patterns with columns for Pattern, Status, Architectures, Rule, Merged, and Ref. A 'NEW PATTERN' dialog box is open in the foreground, containing a 'Name' field with the text 'Nber of machine in parallel (#)', a 'Group' dropdown menu set to 'Rolling capacity', and three buttons: CANCEL, ADD & CLOSE, and ADD & CONTINUE.

Pattern	Status	Architectures	Rule	Merged	Ref
Rolling Diameter (m)	●	Me...SM	Spool Internal Diameter (m)	1	1
Rolling distance per day (km/day)	●	Re...f	working minutes per day (min/day)		420
	●	Re...0	Nber of working minutes per day (min/day)		420



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule

✓ $\text{ceil}(\text{Length to roll per day (km/day)} / \text{Rolling distance per machine per day (km/machine/day)})$

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Nber of machine in parallel (#)	●	Me_ΔM Re_ΔI Re_ΔO	$\frac{\text{Length to roll per day (km/day)}}{\text{Rolling distance per machine per day (km/machine/day)}}$	1	1
Rolling Diameter (m)	●	Me_ΔM Re_ΔI Re_ΔO	Spool Internal Diameter (m)	1	1
Rolling distance per machine per day (km/machine)	●	Re_ΔI Re_ΔO	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Motor RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$		420
	●	Me_ΔM	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{C\&M merged RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$	420	

Modifications saved

Taper ici pour rechercher

15°C Nuageux 19:32 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

Rule
✓ $\text{ceil}(\text{Length to roll per day (km/day)}/\text{Rolling distance per machine per day (km/machine/day)})$

Pattern	Status	Merged 1/10	Ref 111/10
Nber of machine in parallel (#)	●	1	1
Rolling Diameter (m)	●	1	1
Rolling distance per machine per day (km/machine)	●		
			420
			420

EDIT REFERENCE CONFIGURATION

Name *
Ref 111/10

Architecture *
Ref.

DESIGN VARIABLES	MODULES
Amortization (year) 10	Chassis Chassis 1
Investment (M€) 10	Motor Motor 1
	Spool Spool 1

HLR INPUTS ENV. VARIABLES ENV. SYSTEMS

Length to roll per d...
1

SAVE CANCEL DUPLICATE DELETE

SOI

Taper ici pour rechercher

15°C Nuageux 19:32 30/10/2022



GP

localhost:8000/1/EP/patterns

DESIGN VARIABLES PATTERNS CONSTANTS PYTHON GROUP

1 Patterns

ALL NONE COST FOOTPRINT ROLLING CAPACITY

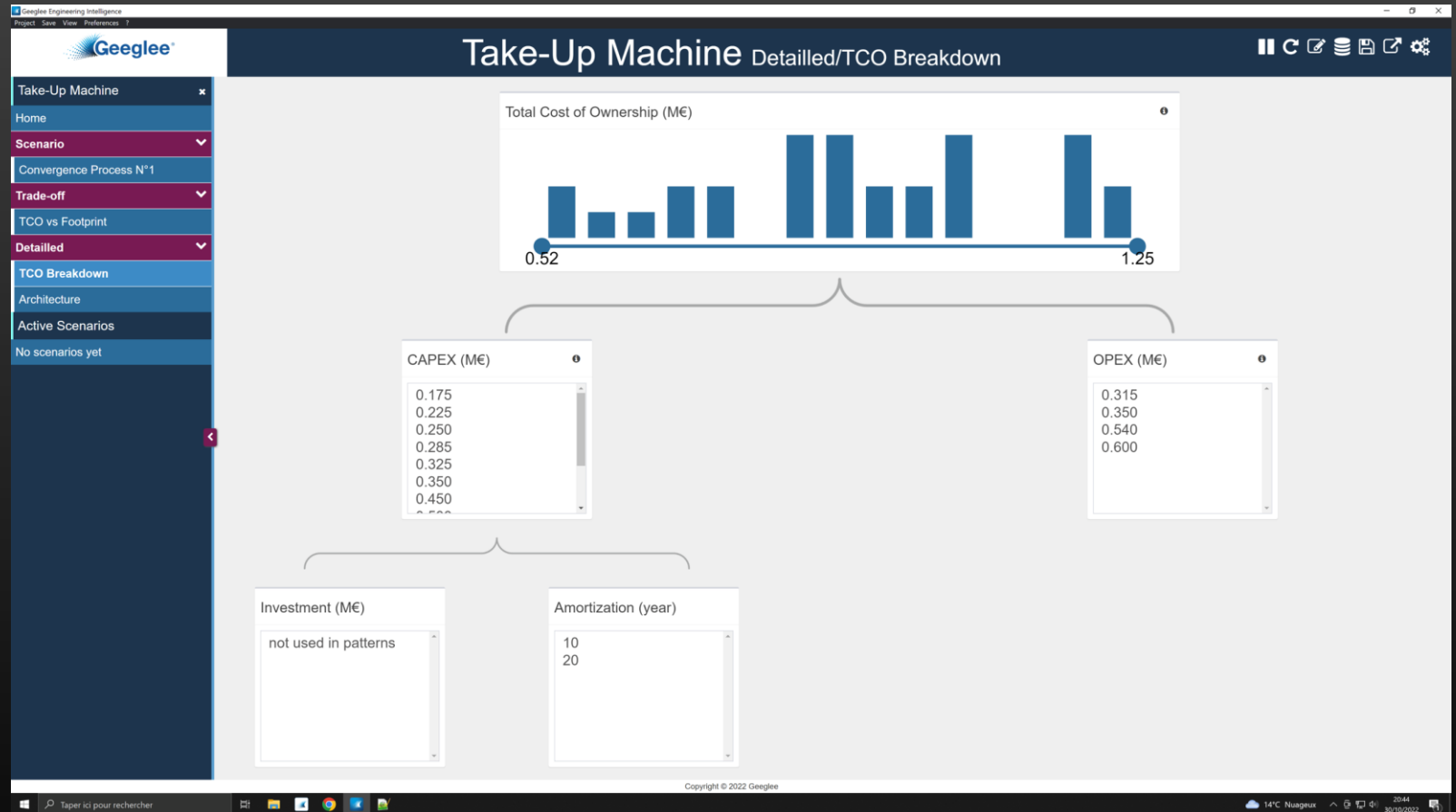
Rule

Pattern	Status	Architectures	Rule	Merged 1/10	Ref 111/10
Nber of machine in parallel (#)	●	Me_ΔM Re_Δ Re_0	$\frac{\text{Length to roll per day (km/day)}}{\text{Rolling distance per machine per day (km/machine/day)}}$	1	3
Rolling Diameter (m)	●	Me_ΔM Re_Δ Re_0	Spool_Internal Diameter (m)	1	1
Rolling distance per machine per day (km/machine)	●	Re_Δ Re_0	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{Motor_RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$		420
	●	Me_ΔM	$\frac{\text{Rolling Diameter (m)}}{\text{km to m}} \cdot \text{C\&M merged_RPM (rpm)} \cdot \text{Nber of working minutes per day (min/day)}$	420	

SOI

Taper ici pour rechercher

15°C Nuageux 19:31 30/10/2022





Geeglee Engineering Intelligence
Project Save View Preferences 1

Take-Up Machine Inputs

+ Add widget in dataPage + Add widget in sideBar Edit DataPage settings

- Take-Up Machine x
- Home
- Inputs
- Scenario/Convergence Process N°1
- Trade-off/TCO vs Footprint
- Detailed/TCO Breakdown
- Detailed/Architecture
- + Create a new DataPage
- Active Scenarios
- No scenarios yet

Copyright © 2022 Geeglee

Taper ici pour rechercher

14°C Nuageux 20h 30/10/2022



MODEL VALIDATION IN GEP



Geeglee has complementary validation methods:

1. Reference configuration

✓ Used to analyze, live, pattern results

2. Model check

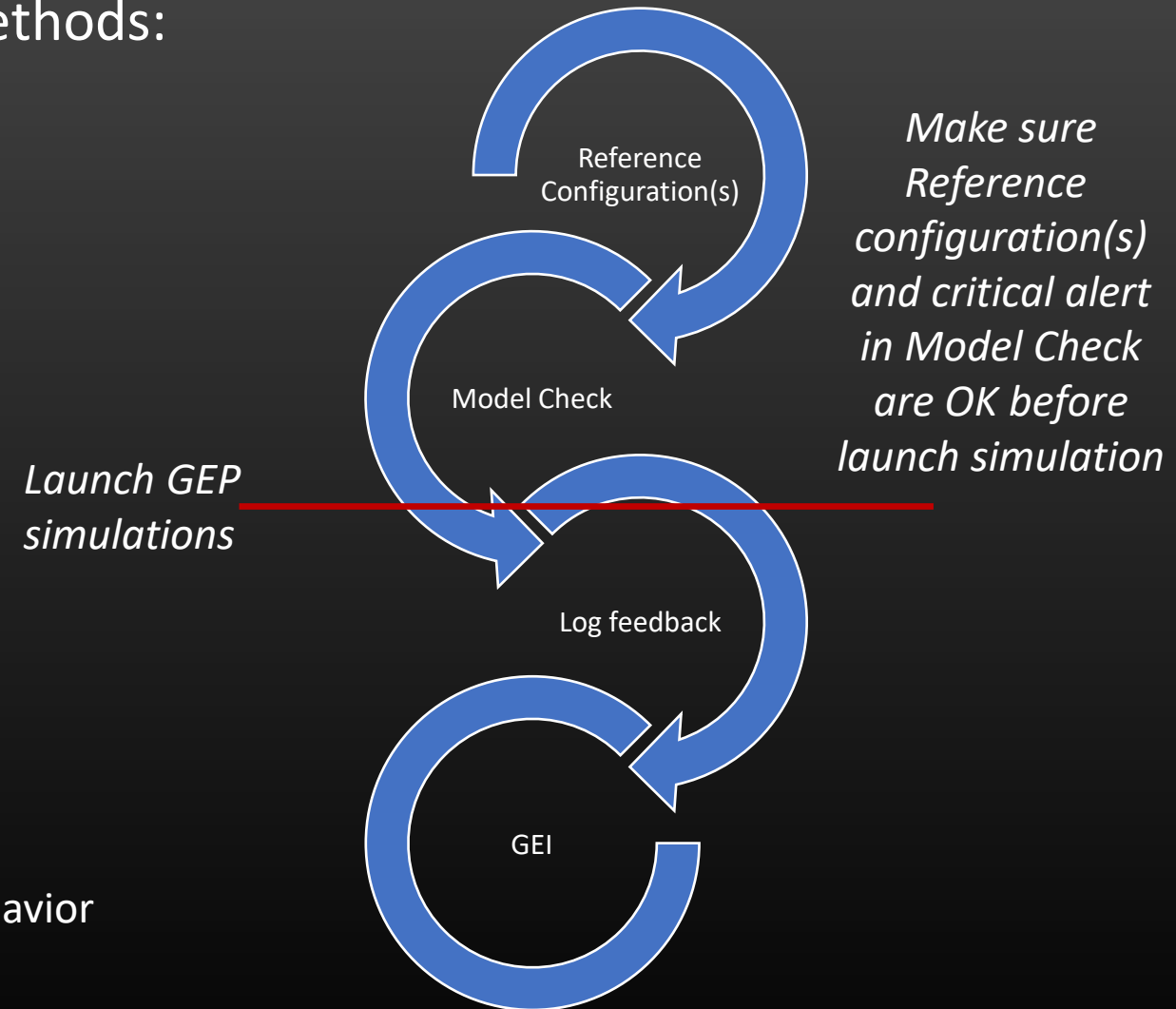
✓ Used to analyze overall model

3. Log feedback

✓ Used to analyze simulation problem

4. Geeglee Intelligence (GEI)

✓ Used to analyze threshold and exploration behavior





Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns

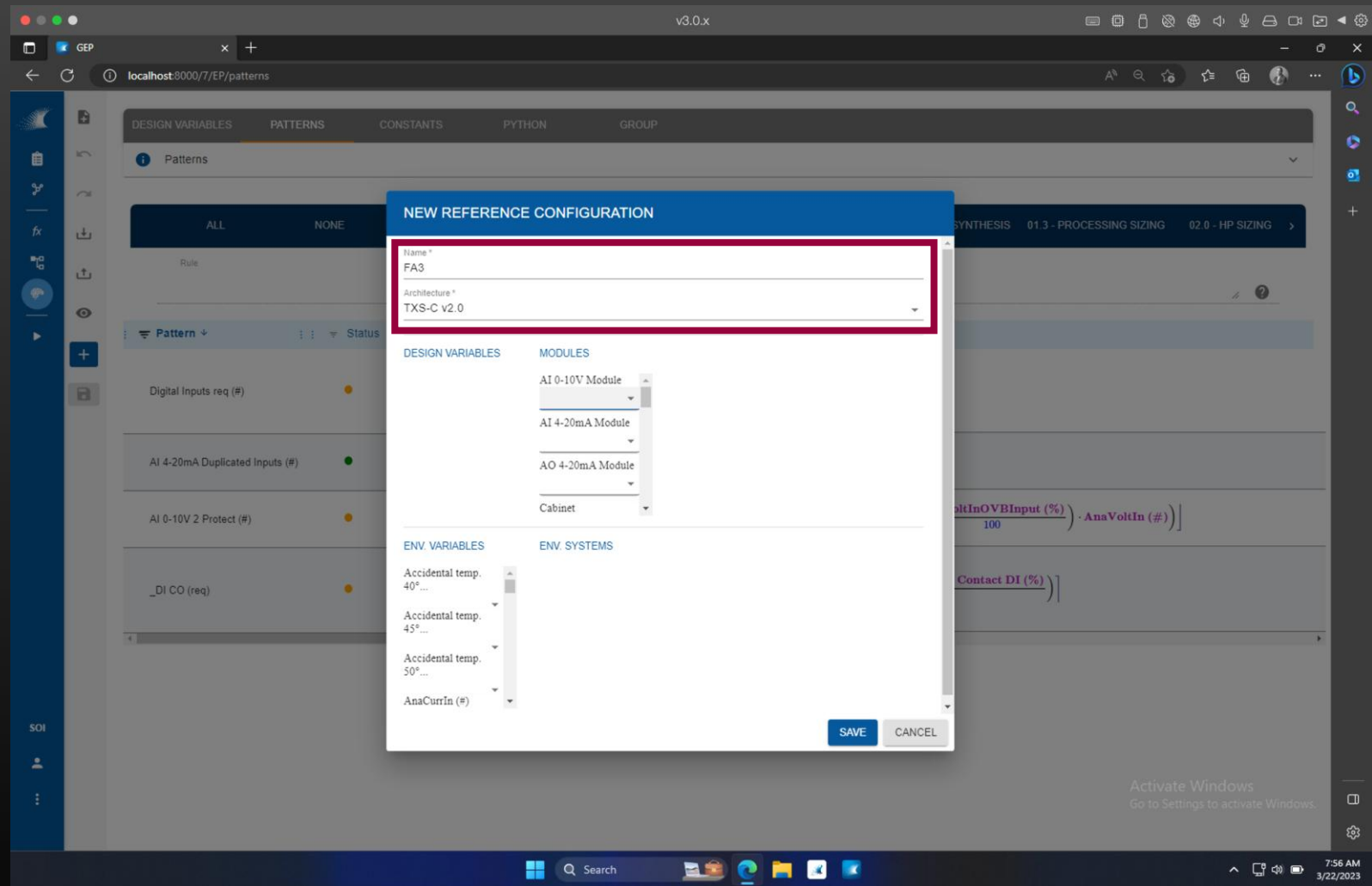
The screenshot shows the GEP web interface for pattern configuration. The browser address bar indicates the URL is localhost:3000/7/EP/patterns. The interface has a top navigation bar with tabs for 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. Below this is a sub-navigation bar with various categories like 'ALL', 'NONE', and '00 - I/O LOAD CHARACTERISTICS'. The main content area displays a table of patterns with columns for 'Pattern', 'Status', 'Architectures', and 'Rule'. A red box highlights the '+ Add a reference configuration' button in the top left corner of the interface.

Pattern	Status	Architectures	Rule
Digital Inputs req (#)	●	TX...1 TX...T TX...0	$[BinSingleIn (\#) + BinCOIn (\#)]$
AI 4-20mA Duplicated Inputs (#)	●	TX...T TX...0	$[AnaCurrIn (\#) \cdot \frac{AnaCurrInDuplicationPercent (\%)}{100}]$
AI 0-10V 2 Protect (#)	●	TX...T TX...0	$\left(\left(\frac{AnaVoltInOVInput (\%)}{100} \right) \cdot AnaVoltIn (\#) \right) - \left[\left(\left(\frac{AnaVoltInOVInput (\%)}{100} \right) \cdot AnaVoltIn (\#) \right) \right]$
_DI CO (req)	●	TX...1 TX...T TX...0	$[_Nb\ of\ I/O - Digital\ Inputs\ (DI) \cdot \left(\frac{_-Nb\ of\ I/O - Change\ Over\ Contact\ DI (\%)}{100} \right)]$



Reference configuration:

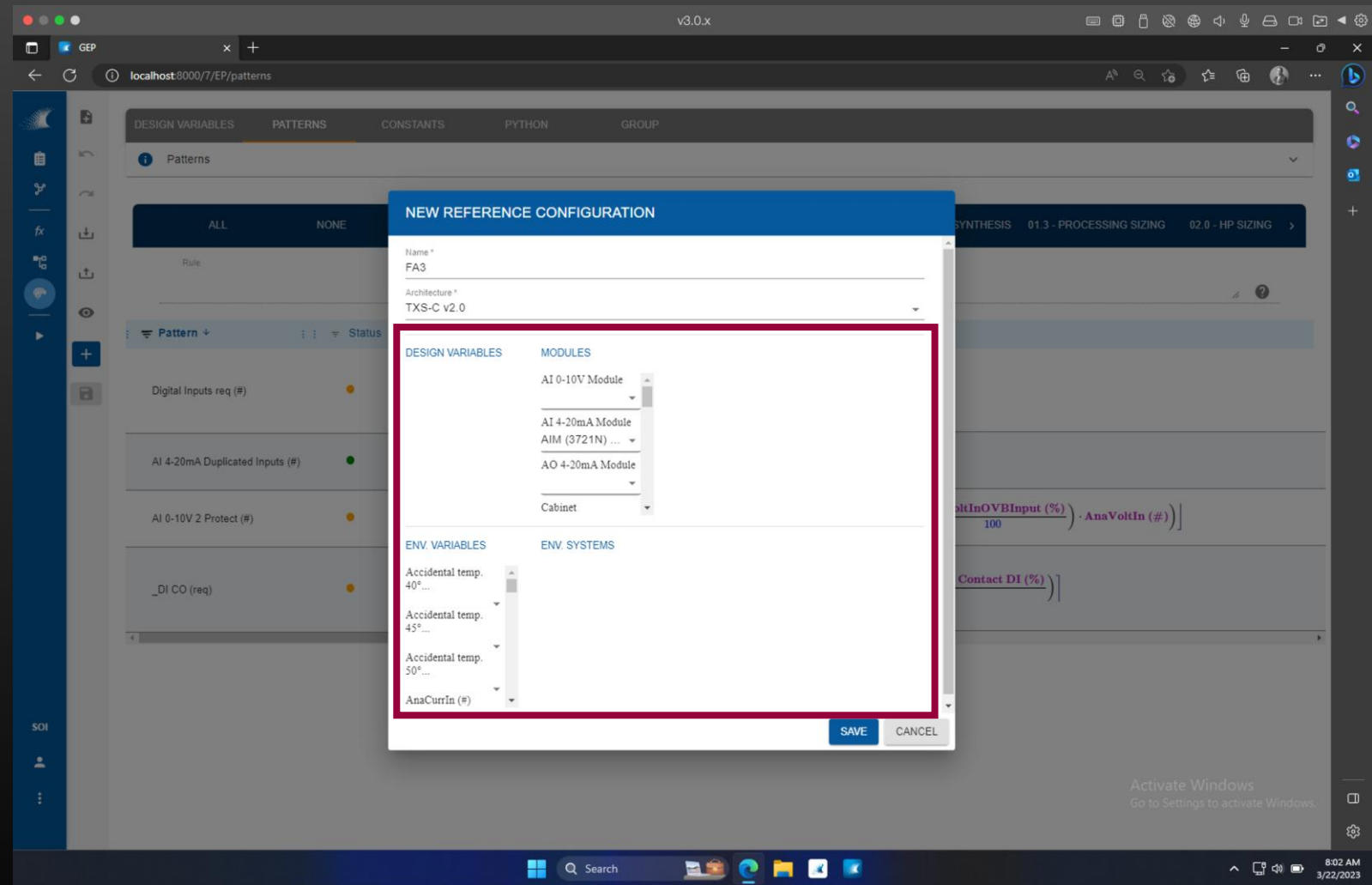
- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ Set reference name as well as choose an architecture





Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ Set reference name as well as choose an architecture
- ✓ Set reference configuration value or leave it free!
 - ✓ You can leave it empty: in this case GEP will use the value available in the list. It works only if the list contain only one value, if not, it will return an error.
 - ✓ Best thing is to set value for the named reference configuration (here FA3).
 - ✓ Value available on the list are only the one set in GEP





Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ Set reference name as well as choose an architecture
- ✓ Set reference configuration value or leave it free!
 - ✓ You can leave it empty: in this case GEP will use the value available in the list. It works only if the list contain only one value, if not, it will return an error.
 - ✓ Best thing is to set value for the named reference configuration (here FA3).
 - ✓ Value available on the list are only the one set in GEP
- ✓ Then you get, at the right of the screen, value calculated for each pattern

The screenshot shows the GEP web interface with a table of pattern values. The table is titled 'Patterns' and has columns for 'Pattern', 'Status', and three architectures: 'FA3', 'TXS-C v1.T', and 'TXS-C v2.0'. The rows represent different patterns with their respective values for each architecture.

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Digital Inputs req (#)	●	51	51	51
AI 4-20mA Duplicated Inputs (#)	●	10	5	10
AI 0-10V 2 Protect (#)	●	0.5	0.51	0.5
_DI CO (req)	●	0	0	0



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ Validate status while validating reference configuration's values

The screenshot shows the GEP web interface with a table of patterns. A red box highlights the 'Status' column for the first four rows. The table has columns for 'Pattern', 'Status', 'FA3', 'TXS-C v1.T', and 'TXS-C v2.0'. The 'Status' column contains colored circles and dropdown arrows.

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Digital Inputs req (#)	Yellow circle	51	51	51
AI 4-20mA Duplicated Inputs (#)	Green circle	10	5	10
AI 0-10V 2 Protect (#)	Yellow circle	0.5	0.51	0.5
_DI CO (req)	Yellow circle	0	0	0



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ Validate status while validating reference configuration's values
- ✓ If you use a logical group structuration follow then to validate pattern's values (from the left to the right)

The screenshot shows the GEP Patterns configuration interface. The 'PATTERNS' tab is active, and the '00 - I/O LOAD CHARACTERISTICS' pattern is selected. The table below displays the values for various parameters across three configurations: FA3, TXS-C v1.T, and TXS-C v2.0.

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Digital Inputs req (#)	●	51	51	51
AI 4-20mA Duplicated Inputs (#)	●	10	5	10
AI 0-10V 2 Protect (#)	●	0.5	0.51	0.5
_DI CO (req)	●	0	0	0



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Assembling duration for Rail DIN (h)	●	1	1	!
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenanc	●			!
Assembling duration for impulse coi	●	5	5	5 ✓
Assembling duration for Extra PM ci	●	!	!	!
Assembling duration for Analog Out	●	1.25	2.5	!
Assembling duration (h)	●	NaN	NaN	!
AI Card Assembling Duration (h)	●	5.5	5.55	2.95



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn’t be calculated” means that one sub-pattern composing the rule couldn’t be calculated
 - ✓ “* couldn’t be determined” means that one value from the reference configuration is not set (and that several options is available)

The screenshot shows the 'Patterns' tab in the Geeglee interface. The table lists various patterns with their roles and formulas. The following table represents the data visible in the screenshot:

Pattern	Status	Formula
Assembling duration for Rail DIN (h)	●	Labour Duration (h)
Assembling duration for Rack (h)	●	Nbr of Racks (#) · Rack.Labour Duration (h)
Assembling duration for maintenance ca	●	Maintenance Cards (#) · Maintenance Module.Labour Duration (h)
Assembling duration for impulse counter	●	0186_Impulse counter cards (#) · Impulse counter cards.Labour Duration (h)
Assembling duration for Extra PM cards	●	PM Cards 4 Communication (#) · PM cards.Labour Duration (h)
Assembling duration for Analog Output c	●	0110 Ana 4-20mA Output Cards (#) · AO 4-20mA Module.Labour Duration (h)
Assembling duration (h)	●	Assembling duration for Cabinet (h) + Assembling duration for Rack (h) + AI Card Assembling Duration (h) + Assembl
AI Card Assembling Duration (h)	●	0110 AI 0-10V cards (#) · AI 0-10V Module.Labour Duration (h) + 0120 AI 4-20mA cards (#) · AI 4-20mA Module.Labour
		0190 Total Input cards (#) · AI 0-10V Module.Labour Duration (h)

A red box highlights the row for 'Assembling duration for maintenance ca', which has a '+' icon and a red dot in the status column. A speech bubble points to this row with the text: "In this case, check architecture allocation".



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Assembling duration for Rail DIN (h)	●	1	1	1
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenanc	●			
Assembling duration for impulse coi	●	5	5	5
Assembling duration for Extra PM ci	●	!	!	!
Assembling duration for Analog Out	●	1.25	2.5	!
Assembling duration (h)	●	NaN	NaN	!
AI Card Assembling Duration (h)	●	5.5	5.55	2.95



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

The screenshot shows the 'Patterns' section of the Geeglee interface. The table below represents the data shown in the interface:

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Assembling duration for Rail DIN (h)	●	1	1	!
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenanc	●			
Assembling duration for impulse coi	●	5	5	5
Assembling duration for Extra PM ci	●	!	!	! ✘
Assembling duration for Analog Out	●	1.25	2.5	!
Assembling duration (h)	●	NaN	NaN	!
AI Card Assembling Duration (h)	●	5.5	5.55	2.95



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Assembling duration for Rail DIN (h)	●	1	1	●
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenance ca	●			
Assembling duration for impulse counter	●	5	5	5
Assembling duration for Extra PM cards	●	●	●	●
Assembling duration for Analog Output c	●	1.25	2.5	●
Assembling duration (h) counter cards (h)	●	NaN	NaN	●
AI Card Assembling Duration (h)	●	5.5	5.55	2.95

Tooltip: Requirement PM Cards 4 Communication (#) couldn't be calculated



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

The screenshot shows the Geeglee web interface for pattern validation. The browser address bar shows 'localhost:8000/EP/patterns'. The interface has tabs for 'DESIGN VARIABLES', 'PATTERNS', 'CONSTANTS', 'PYTHON', and 'GROUP'. The 'PATTERNS' tab is active, displaying a table of patterns. A callout box with a purple background and white text says: "For the three previous cases, have a look at details to solve it". The callout points to a 'Details' icon (a document with a magnifying glass) next to the 'Assembling duration for Extra PM cards' row. The table columns are 'Pattern', 'Status', 'Architectures', and 'Rule'. The 'Status' column shows yellow dots for most patterns and a red dot for 'Assembling duration (h)'. The 'Rule' column contains mathematical expressions for calculating labour duration.

Pattern	Status	Architectures	Rule
Assembling duration for Rail DIN (h)	●	TX...T TX...0	..Nb of Rail DIN · Rail DIN. Labour Duration (h)
		TX...T TX...0	Nbr of Racks (#) · Rack. Labour Duration (h)
		+	Maintenance Cards (#) · Maintenance Module. Labour Duration (h)
		TX...T TX...0	0186_Impulse counter cards (#) · Impulse counter cards. Labour Duration (h)
Assembling duration for Extra PM cards	●	TX...T TX...0	PM Cards 4 Communication (#) · PM cards. Labour Duration (h)
Assembling duration for Analog Output c	●	TX...T TX...0	0110 Ana 4-20mA Output Cards (#) · AO 4-20mA Module. Labour Duration (h)
Assembling duration (h)	●	TX...T TX...0	Assembling duration for Cabinet (h) + Assembling duration for Rack (h) + AI Card Assembling Duration (h) + Assembl
	●	TX...T TX...0	0110 AI 0-10V cards (#) · AI 0-10V Module. Labour Duration (h) + 0120 AI 4-20mA cards (#) · AI 4-20mA Module. Labo
AI Card Assembling Duration (h)	●	TX...1	0190 Total Input cards (#) · AI 0-10V Module. Labour Duration (h)



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

The screenshot shows the 'Patterns' section of the Geeglee interface. The main title is 'Assembling duration for Extra PM cards (h)'. Below this, there are sections for 'Detailed properties', 'Formulas', and a table of rules. The table has columns for 'Group', 'Rule', 'Status', and 'Architecture'. A red box highlights a red exclamation mark icon in the 'Status' column for the rule '11 - Assembling Duration'. A callout bubble points to this icon with the text 'Do it until you find where the problem come from'. Below the table, there are sections for 'High level requirements' and 'Inputs and module performance'.

Group	Rule	Status	Architecture
11 - Assembling Duration	Assembling duration for Extra PM cards	!	TXS-C v1.T
03.1 - Card Sizing	PM Cards 4 Communication (#)	!	TXS-C v2.0



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), **but no:**
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn’t be calculated” means that one sub-pattern composing the rule couldn’t be calculated
 - ✓ “* couldn’t be determined” means that one value from the reference configuration is not set (and that several options is available)

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2.0
Assembling duration for Rail DIN (h)	●	1	1	●
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenance ca	●			
Assembling duration for impulse counter	●	5	5	5
Assembling duration for Extra PM cards	●	●	●	●
Assembling duration for Analog Output c	●	1.25	2.5	●
Assembling duration (h) counter cards (h)	●	NaN	NaN	●
AI Card Assembling Duration (h)	●	5.5	5.55	2.95

Tooltip: * Value Labour Duration (h) for alternative SAOF3-# couldn't be determined



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn’t be calculated” means that one sub-pattern composing the rule couldn’t be calculated
 - ✓ “* couldn’t be determined” means that one value from the reference configuration is not set (and that several options is available)

The screenshot shows the 'Patterns' section of the Geeglee web application. The table displays the following data:

Pattern	Status	FA3	TXS-C v1.T	TXS-C v2
Assembling duration for Rail DIN (h)	●	1	1	1
Assembling duration for Rack (h)	●	NaN	NaN	NaN
Assembling duration for maintenance ca	●			
Assembling duration for impulse counter	●	5	5	5
Assembling duration for Extra PM cards	●	!	!	!
Assembling duration for Analog Output c	●	1.25	2.5	!
Assembling duration (h) counter cards (h)	●	NaN	NaN	!
AI Card Assembling Duration (h)	●	5.5	5.55	2.95

A callout box with the text "Edit reference configuration to filled missing data" points to the 'Edit' button in the 'TXS-C v2' row.



Reference configuration:

- ✓ Create reference configurations, at least one per architecture, to validate values given by patterns
- ✓ You should have a value for each pattern (respectively for their architecture), but no:
 - ✓ “NaN”: Not a Number – meaning it’s an error!
 - ✓ No Red sign – meaning Geeglee cannot calculate the value for 2 mains reasons:
 - ✓ “* couldn't be calculated” means that one sub-pattern composing the rule couldn't be calculated
 - ✓ “* couldn't be determined” means that one value from the reference configuration is not set (and that several options is available)

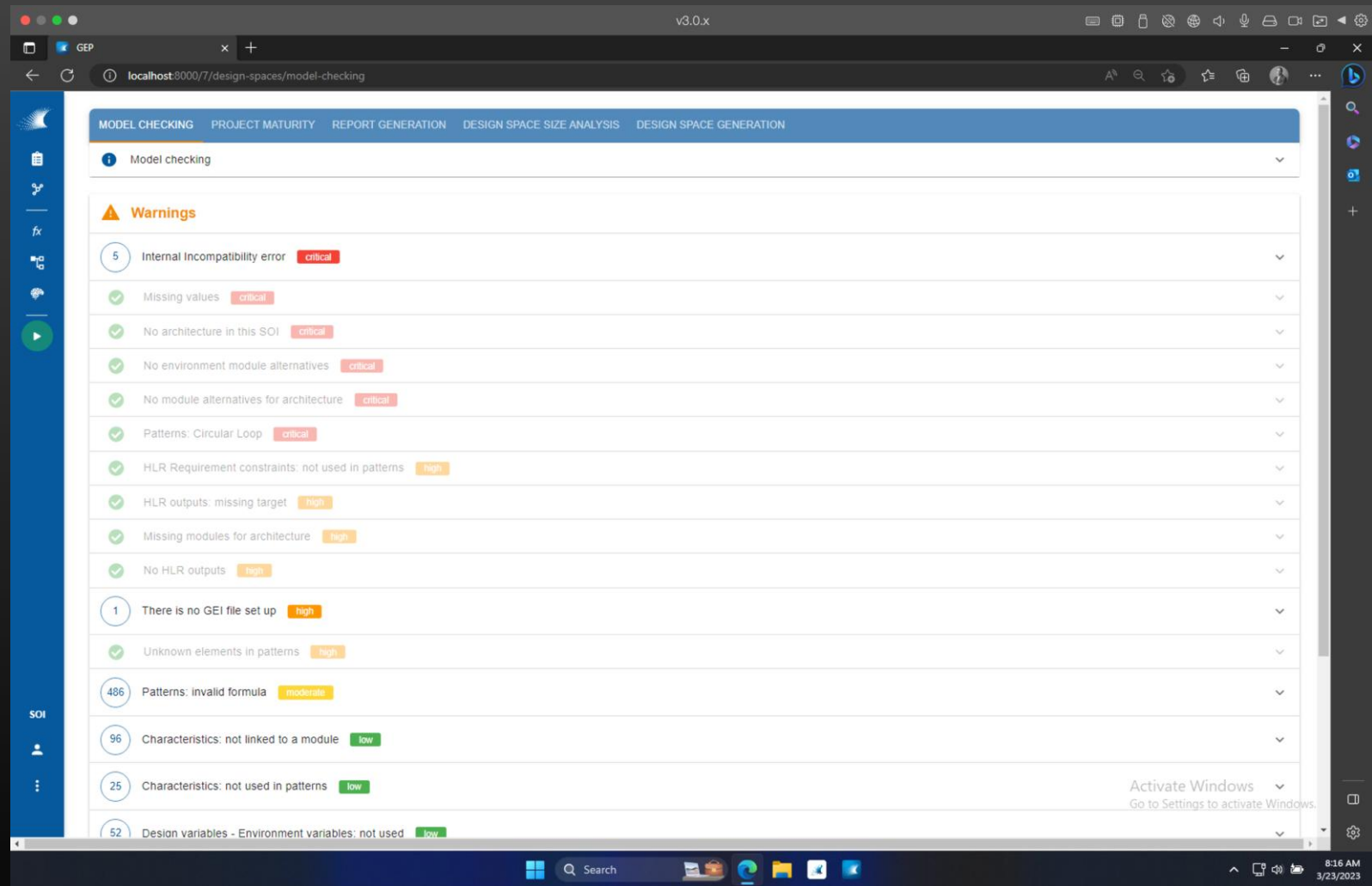
The screenshot shows the GEP web interface with a table of patterns. The table has columns for Pattern, Status, Architectures, and Rule. The patterns listed are:

Pattern	Status	Architectures	Rule
Digital Inputs req (#)	Yellow dot	TX...1 TX...T TX...0	$[BinSingleIn (\#) + BinCOIn (\#)]$
AI 4-20mA Duplicated Inputs (#)	Green dot	TX...T TX...0	$[AnaCurrIn (\#) \cdot \frac{AnaCurrInDuplicationPercent (\%)}{100}]$
AI 0-10V 2 Protect (#)	Yellow dot	TX...T TX...0	$(((\frac{AnaVoltInOVInput (\%)}{100}) \cdot AnaVoltIn (\#)) - [((\frac{AnaVoltInOVInput (\%)}{100}) \cdot AnaVoltIn (\#))])$
_DI CO (req)	Yellow dot	TX...1 TX...T TX...0	$[_Nb\ of\ I/O - Digital\ Inputs\ (DI) \cdot (\frac{-Nb\ of\ I/O - Change\ Over\ Contact\ DI (\%)}{100})]$



Model Check:

- ✓ It analyse the inconsistencies of your model within 4 categories:
 - ✓ **Critical**
 - ✓ Will block simulations
 - ✓ **High**
 - ✓ Will greatly improve the quality of exploration
 - ✓ **Moderate**
 - ✓ Not rigorous things: make your model more robust
 - ✓ **Low**
 - ✓ Ignore objects in your model





Model Check:

- ✓ It analyse the inconsistencies of your model within 4 categories
- ✓ By clicking into a category, you have much more details: have a look

The screenshot displays the 'Model checking' interface in a web browser. The page title is 'MODEL CHECKING' and it includes navigation tabs for 'PROJECT MATURITY', 'REPORT GENERATION', 'DESIGN SPACE SIZE ANALYSIS', and 'DESIGN SPACE GENERATION'. The main content area is titled 'Model checking' and shows a list of warnings and errors. The first section is 'Warnings' with a yellow triangle icon. Below it, there are several items, each with a circular icon indicating the count of items in that category and a severity label (critical, high, moderate, low). The items are:

- 6 Internal Incompatibility error (critical)
- 1 Missing values (critical) - No value defined for characteristic : 'Optical ComPORTs (#)' of module 'PM cards' 'PM with Optical ComPORTs (Cyclone 5) 6U' in the VODD. (INSPECT button)
- 1 No architecture in this SOI (critical)
- 1 No environment module alternatives (critical)
- 1 No module alternatives for architecture (critical)
- 1 Patterns: Circular Loop (critical)
- 1 HLR Requirement constraints: not used in patterns (high)
- 1 HLR outputs: missing target (high)
- 1 Missing modules for architecture (high)
- 1 No HLR outputs (high)
- 1 There is no GEI file set up (high)
- 1 Unknown elements in patterns (high)
- 485 Patterns: invalid formula (moderate)
- 96 Characteristics: not linked to a module (low)

The interface also features a left sidebar with navigation icons and a bottom taskbar with system information like '12°C Nuageux' and '08:42 23/03/2023'.



Model Check:

- ✓ It analyse the inconsistencies of your model within 4 categories
- ✓ By clicking into a category, you have much more details: have a look
- ✓ Click on “inspect”
 - ✓ The software will bring you to the problem

The screenshot shows the 'Values' section of the GEP software. The interface includes a navigation menu on the left, a top navigation bar with tabs for 'MODULES', 'CHARACTERISTICS', 'VALUES', 'INTERNAL INCOMPATIBILITIES', 'ALL INCOMPATIBILITIES', and 'GROUP'. The 'VALUES' tab is active, displaying a table with columns for 'impulse count...', 'Input Protection', 'Maintenance ...', 'PM cards', 'Rail DIN', and 'Supply Module'. A callout box points to a yellow cell in the 'PM cards' column, labeled 'Missing value (used in Patterns)'. The table also shows various sub-categories like '01.3 - Processi...', '03.0 - Rack Si...', and '05.0 - Dissipati...' with associated numerical values.

Category	impulse count...	Input Protection	Maintenance ...	PM cards	Rail DIN	Supply Module
01.3 - Processi...	impulse counter	SOB-input	SMDF1	PM with Optical Comp...	PM with Optical Comp...	Rack 3 U FPGA
01.3 - Processi...	CPU load/IO coeff. fro...			0.001	0.001	
	Optical ComPORTs (#)			4		
	Contribution to IOC O...	1				
	Contribution to Input ...	1				
03.0 - Rack Si...	Available HP for Gatew...				1	
	Available HP for IO car...				18	
	Available HP for Maint...				1	
	Available HP for PM ca...				4	
	Available HP for Suppl...				2	
05.0 - Dissipati...	_Nb of Pins (#)					24
	Max Power Dissipation...	1	0.81	6	6	13.5
	Nom Power Dissipatio...	1	0.6	6	6	13.5
	Logic power consump...	1				
	Max field power cons...	1				
Typical field power co...	1					



Model Check:

- ✓ It analyse the inconsistencies of your model within 4 categories
- ✓ By clicking into a category, you have much more details: have a look

The screenshot displays the 'Model checking' interface in a web browser. The browser address bar shows 'localhost:8000/7/design-spaces/model-checking'. The interface has a blue header with navigation tabs: 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', 'DESIGN SPACE SIZE ANALYSIS', and 'DESIGN SPACE GENERATION'. Below the header, there is a section titled 'Warnings' with a warning icon. The main content area lists several items, each with a status icon and a severity label:

- 6 Internal Incompatibility error **critical**:
 - There is an error in internal incompatibility for this alternative : PM with Optical ComPORTS (Cyclone 5) 3U
 - There is an error in internal incompatibility for this alternative : PM with Optical ComPORTS (Cyclone 5) 6U
 - There is an error in internal incompatibility for this alternative : Profibus
 - There is an error in internal incompatibility for this alternative : SE11
 - There is an error in internal incompatibility for this alternative : SL22
 - There is an error in internal incompatibility for this alternative : SLM2
- Missing values **critical**
- No architecture in this SOI **critical**
- No environment module alternatives **critical**
- No module alternatives for architecture **critical**
- Patterns: Circular Loop **critical**
- HLR Requirement constraints: not used in patterns **high**
- HLR outputs: missing target **high**
- Missing modules for architecture **high**
- No HLR outputs **high**
- 1 There is no GEI file set up **high**
- Unknown elements in patterns **low**

Each item has an 'INSPECT' button to the right. The interface also includes a sidebar on the left with navigation icons and a Windows taskbar at the bottom showing the search bar, task icons, and system tray with the date 23/03/2023 and time 08:46.



Model Check:

- ✓ It analyse the inconsistencies of your model within 4 categories
- ✓ By clicking into a category, you have much more details: have a look
- ✓ Click on “inspect”
 - ✓ The software will bring you to the problem

The screenshot shows the 'INTERNAL INCOMPATIBILITIES' view in the GEP software. The table displays various modules and their associated incompatibilities. A red box highlights a section of the table with 'Incomp.' entries. Two callout boxes provide instructions on how to resolve the incompatibilities.

MODULES	CHARACTERISTICS	VALUES	INTERNAL INCOMPATIBILITIES	ALL INCOMPATIBILITIES	GROUP
Interfaces					
Alternatives: (active only) Architecture: All (this SOI) Density: Cozy					
		impulse count...	Input Protection	Maintenance ...	PM cards
		impulse counter	SOB-input	SMDF1	PM with Optical CompP...
AO 4-20mA M...	MPIOF1-Analog Outpu...				PM with Optical CompP...
	SAOF3-9				TXS subrack 3 U FPGA
Cabinet	TXS cabinet 2G				Free 3U Position FPGA
	TXS cabinet 3G				SPS21
Comm. cards f...	P2P				12TK-6PT100
	P2P + SE1			Incomp.	
Communicatio...	Profibus int.			Incomp.	
	Profibus			Incomp.	
	SE11			Incomp.	
	SL22			Incomp.	
DI Module	SLM2			Incomp.	
	MPIOF1-Binary Inputs ...				
	SDIF1-10 ISO				
	SDIF1-12 ISO				
	SDIF1-12 ISO				
	SDIF1-16				
	SDIF1-20				
	SDIF1-8 ISO				
	MPIOF1-Binary Output...				

Callout 1: Incompatibilities has been set for all alternatives of PM cards for all alternatives of communication cards: so no solution exist!

Callout 2: To resolve that, add more alternatives (that might be not incompatibles!)



Log feedback:

- ✓ Get the summary of simulation log

The screenshot shows the GEP web interface. On the left, there's a sidebar with navigation icons. The main area is titled 'Design space generation' and includes a progress indicator showing '0.41%' saturation. Below this is a table of design spaces:

Name	Identifier	Description
(no_name)	571	
100 I/O	569	but AO = 0...
10 I/O	567	but AO = 0...
Gros_besoin	566	
Moyen_besoin	565	

The 'Design space simulation log' is displayed in a central panel, listing various error messages such as:

- HLR output "Total Cost of Ownership (UC) " cannot be calculated because one or more of its dependencies are missing a pattern.
- HLR output "Overall margin (%)" cannot be calculated because one or more of its dependencies are missing a pattern.
- HLR output "Maximum temperature at the top of cabinet (Text=50C) " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "Cabinet Maximal heat dissipation (Expert) (W)?"
- performance "AI Card Assembling Duration (h) " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "0190 Total Input cards (#)"
- performance "Assembling cost for Cabinet (UC) " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "046 Nbr of cabinets (#)"
- performance "Available capacity for IO modules (slots) " cannot be calculated because one or more of its dependencies are missing a pattern.
- performance "Average cabinet filling in terms of slot (%)" is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "0150 DI cards (#)", "0186_Impulse counter cards (#)", "046 Nbr of cabinets (#)", "0120 DO cards (#)", "HP 4 Analog Output Cards (HP)", "HP 4 Analog Input Cards (HP)"
- performance "Average rack filling in terms of slots (%)" cannot be calculated because one or more of its dependencies are missing a pattern.
- performance "Average total rack filling in terms of slots (%)" is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "0150 DI cards (#)", "0186_Impulse counter cards (#)", "Nbr of Racks (#)", "0120 DO cards (#)", "Nb of slot available from Rack (slots)", "HP 4 Analog Output Cards (HP)", "HP 4 Analog Input Cards (HP)"
- performance "Cabinets (per div.) " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "046 Nbr of cabinets (#)"
- performance "HP 4 Input Protection Cards " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "0190 Total Input Protection Channels (#)"
- performance "HP 4 Output Protection Cards " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "0150 Total Output Protection Channels (#)"
- performance "Maintenance cards (per div.) " is not valid for architecture "TXS-C v1.1" because one or more of its dependencies (see list) are also invalid for this architecture: "Maintenance Cards (#)"

On the right side of the interface, there's a table of 'Estimated solutions' with columns for 'End date', 'Status', and 'Files'. A purple callout bubble points to a bell icon in the top right corner of this table, with the text 'Click on the bell to get error message'.



Log feedback:

✓ Get the summary of simulation log

✓ Get log details

The screenshot shows the GEP web interface for design space generation. It includes progress indicators for calculation time (0.41% saturation) and memory consumption (100% saturation). A table lists design spaces with columns for Name, Identifier, Description, Only light result, Request date, and Start date. A download menu is open, showing a list of files for download, with 'log_Processing_id#571.zip' highlighted.

Click on download to get full log

Name	Identifier	Description	Only light result	Request date	Start date
(no_name)	571		No	23 March 2023, 09:25	23 March 2023, 09:26
100 I/Q	569	but AO = 0...	Yes	29 March 2022, 21:28	29 March 2022, 21:29
10 I/Q	567	but AO = 0...	Yes	29 March 2022, 21:20	29 March 2022, 21:21
Gros besoin	566		Yes	27 March 2022, 19:49	27 March 2022, 19:50
Moyen besoin	565		Yes	27 March 2022, 19:47	27 March 2022, 19:48

File name	Size	Download
log_Processing_id#571 (1).zip		Download
log_Processing_id#571.zip		Download
Download All	52.4 MB	Download
log_Processing_id#571.zip	18 kB	Download
analysis_Processing_id#571.zip	856 kB	Download
Processing_id#571_pareto.zip	1.1 MB	Download
Processing_id#571_full.zip	1.1 MB	Download
report_Processing_id#571.txt	1.9 kB	Download
Processing_id#571_full_setting_GEI.zip	161 kB	Download
Processing_id#571_full_no_pareto.zip	1 MB	Download



Log feedback:

✓ Get the summary of simulation log

✓ Get log details

The screenshot shows a web browser window displaying the 'Design space generation' interface. The interface includes a navigation bar with options like 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', 'DESIGN SPACE SIZE ANALYSIS', and 'DESIGN SPACE'. Below this, there are buttons for 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. A sidebar on the left lists 'Design spaces' with entries like '(no_name)', '100 I/O', '10 I/O', 'Gros besoin', and 'Moyen besoin'. A Windows File Explorer window is open over the browser, showing the 'log_Processing_id#571' folder. A red box highlights a table of files within this folder:

Nom	Type	Taille compressée	Protégé pa...	Taille	Ratio	Modifié le
log_23-03-2023 0912_creation	Document texte	5 Ko	Non	96 Ko	96 %	23/03/2023 09:35
log_23-03-2023 0912_executor	Document texte	6 Ko	Non	57 Ko	91 %	23/03/2023 09:36
log_23-03-2023 0912_scheduler	Document texte	8 Ko	Non	78 Ko	91 %	23/03/2023 09:36

A callout box with the text 'Open log file' points to the File Explorer window. In the background, a download window shows several zip files, including 'log_Processing_id#571(1).zip' and 'log_Processing_id#571.zip'. A taskbar at the bottom shows the search bar and system tray with the date '23/03/2023' and time '10:47'.



Log feedback:

✓ Get the summary of simulation log

✓ Get log details

The screenshot shows a web browser interface for a simulation tool. A callout bubble points to a file named `*_creation.txt`. A red box highlights a section of the log containing the following text:

```

09:28:52 - Job.Creation - ERROR - failed performance name: Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - equation of failed performance: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO coeff. fr
09:28:52 - Job.Creation - ERROR - operation within equation that failed: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO co
09:28:52 - Job.Creation - ERROR - python error type: TypeError
09:28:52 - Job.Creation - ERROR - reason: invalid operations detected in formula
09:28:52 - Job.Creation - ERROR - function: make_addition

09:28:52 - Job.Creation - WARNING - 1 performance(s) were not computed due to errors in their calculation process:
09:28:52 - Job.Creation - WARNING - Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - failed performance name: Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - equation of failed performance: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO coeff. fr
09:28:52 - Job.Creation - ERROR - operation within equation that failed: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO co
09:28:52 - Job.Creation - ERROR - python error type: TypeError
09:28:52 - Job.Creation - ERROR - reason: invalid operations detected in formula
09:28:52 - Job.Creation - ERROR - function: make_addition

09:28:52 - Job.Creation - WARNING - 1 performance(s) were not computed due to errors in their calculation process:
09:28:52 - Job.Creation - WARNING - Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - failed performance name: Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - equation of failed performance: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO coeff. fr
09:28:52 - Job.Creation - ERROR - operation within equation that failed: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO co
09:28:52 - Job.Creation - ERROR - python error type: TypeError
09:28:52 - Job.Creation - ERROR - reason: invalid operations detected in formula
09:28:52 - Job.Creation - ERROR - function: make_addition

09:28:52 - Job.Creation - WARNING - 1 performance(s) were not computed due to errors in their calculation process:
09:28:52 - Job.Creation - WARNING - Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - failed performance name: Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - equation of failed performance: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO coeff. fr
09:28:52 - Job.Creation - ERROR - operation within equation that failed: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO co
09:28:52 - Job.Creation - ERROR - python error type: TypeError
09:28:52 - Job.Creation - ERROR - reason: invalid operations detected in formula
09:28:52 - Job.Creation - ERROR - function: make_addition

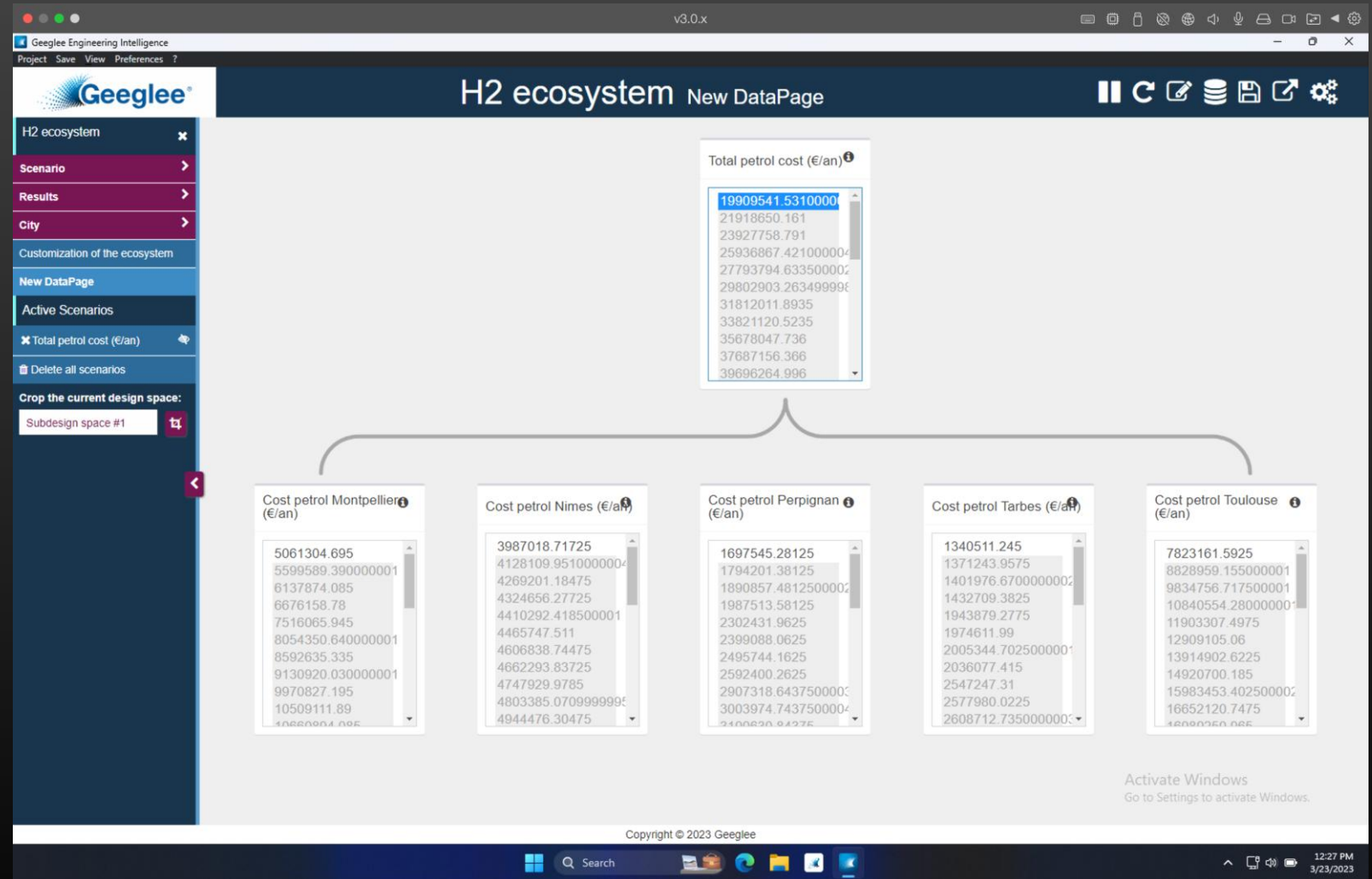
09:28:52 - Job.Creation - WARNING - 1 performance(s) were not computed due to errors in their calculation process:
09:28:52 - Job.Creation - WARNING - Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - failed performance name: Nb of I/O for PM incrementation
09:28:52 - Job.Creation - ERROR - equation of failed performance: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO coeff. fr
09:28:52 - Job.Creation - ERROR - operation within equation that failed: (100/"227:n:PM load limit (%)"*939:g:Nb of main PM cards"-0.27)/"12:m:PM cards"."127:1:CPU load/IO co
09:28:52 - Job.Creation - ERROR - python error type: TypeError
09:28:52 - Job.Creation - ERROR - reason: invalid operations detected in formula
09:28:52 - Job.Creation - ERROR - function: make_addition

```



GEI:

- ✓ First goal of Geeglee Intelligence is to validate model
- ✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance:
 - ✓ Selecting a top expectation (SOI objectives) you can see what composing it





GEI:

- ✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance
- ✓ Add a widget
 - ✓ If it contains an « i » on the top corner, you can request to break it down

The screenshot displays the Geeglee Engineering Intelligence (GEI) web application interface. The browser title is 'Geeglee Engineering Intelligence' and the page title is 'H2 ecosystem New DataPage'. The interface includes a sidebar with navigation options: 'H2 ecosystem', 'Scenario', 'Results', 'City', 'Customization of the ecosystem', 'New DataPage', 'Active Scenarios', and 'No scenarios yet'. A data table is displayed in the main area, titled 'Total petrol cost (€/an)'. The table contains the following data:

Total petrol cost (€/an)
19909541.531000000
21918650.161
23927758.791
25936867.421000000
27793794.633500000
29802903.263499999
31812011.8935
33821120.5235
35678047.736
37687156.366
39696264.996

The interface also features a Windows taskbar at the bottom with the time 12:19 PM on 3/23/2023. An 'Activate Windows' watermark is visible in the bottom right corner of the application area.



GEI:

- ✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance
- ✓ Edit the widget, and
- ✓ Click on « Create X argument(s) widgets for * »

The screenshot shows the Geeglee Engineering Intelligence v3.0.x interface. The main window displays a 'New DataPage' for the 'H2 ecosystem' project. A sidebar on the left lists various scenarios and widgets. The 'Edit widget' dialog is open, showing the following configuration:

- Widget Name:** Total petrol cost
- Occurrences:** 1 in page "Results/Cost and CO2 footprint" (id: 832rtfxphtzhb), 1 in page "New DataPage" (id: 72zmcusu)
- How occurrences should be handled?:** Edit all instances of this widget
- Type:** Select
- Query:** Total petrol cost (€/an)
- Label:** Total petrol cost (€/an)
- Additional Setting:** Precision (empty field)
- Argument widgets:** Create 5 argument(s) widgets for query Total petrol cost (€/an)
- Buttons:** Update widget

The background shows a data table with columns for 'Total petrol cost' and values ranging from 19909541.5 to 39696264.9. The interface also includes a top navigation bar with 'Project Save View Preferences ?' and a bottom taskbar with system icons and the date/time (12:20 PM 3/23/2023).



GEI:

- ✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance
- ✓ Geeglee add automatically the argument used to calculate the Pattern

The screenshot displays the Geeglee Engineering Intelligence (v3.0.x) interface. The main window title is "H2 ecosystem New DataPage". The interface includes a sidebar with a list of scenarios and data pages, such as "Scenario/Total Demand of H2", "Scenario/Total Green h2 offer in Occitanie", and "New DataPage". The main content area shows a "Total petrol cost (€/an)" widget with a list of values: 19909541.53100000, 21918650.161, 23927758.791, 25936867.42100000, 27793794.33500000, 29802903.26349999, 31812011.8935, 33821120.5235, 35678047.736, 37687156.366, and 39696264.996. A message at the top of the main area states "HEADER is hidden for this page. Edit the DataPage config to reenale it." The bottom of the interface shows a Windows taskbar with the date and time 12:20 PM 3/23/2023.



GEI:

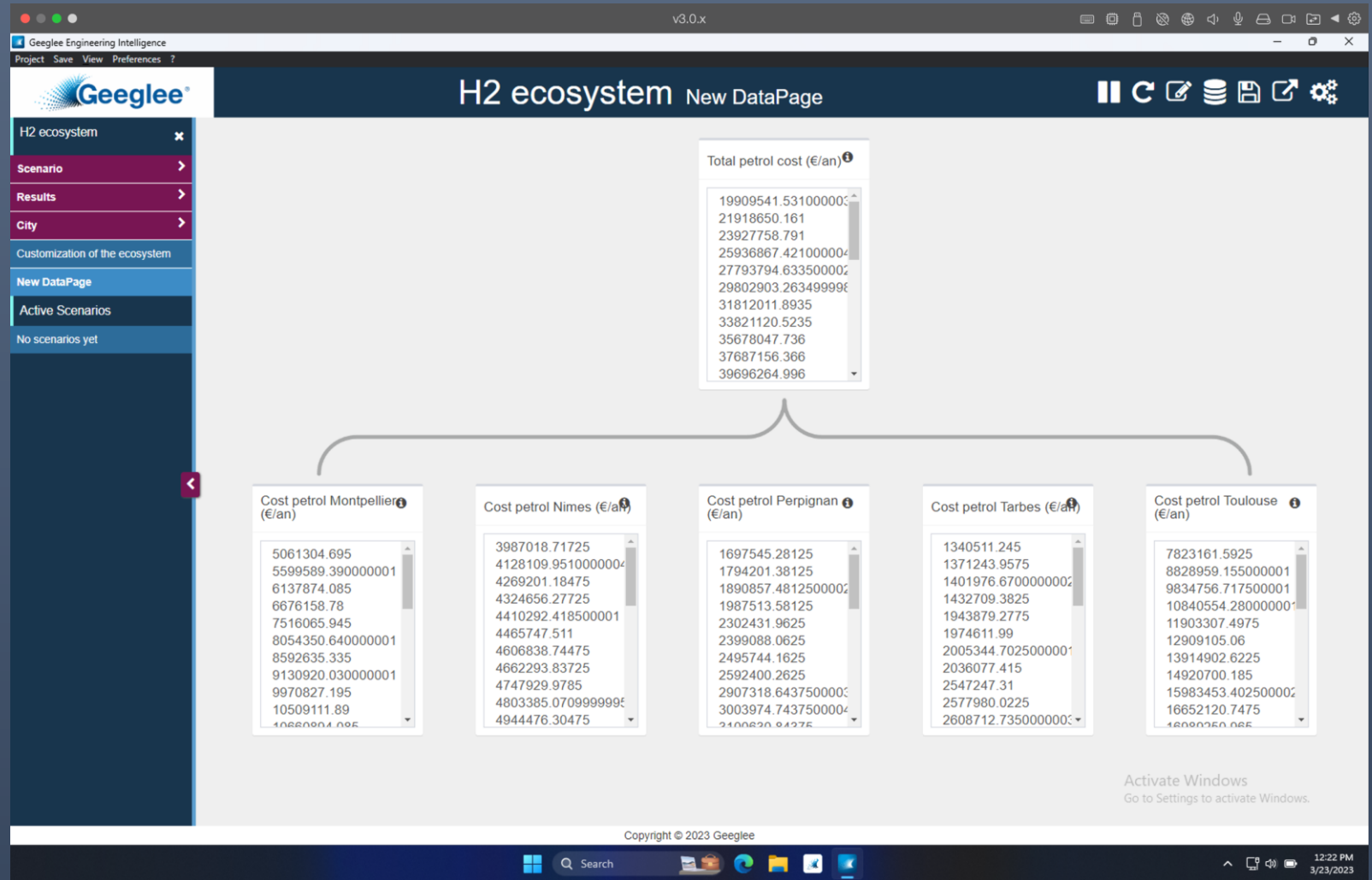
✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance

✓ Save and reload data,



GEI:

- ✓ GEI contains solutions to breakdown any pattern in order to understand the calculated performance
- ✓ You can reorganised the added widgets, and
- ✓ Test





FUNCTIONALITY WHILE LAUNCHING GEP
EXPLORATION OF DESIGN SPACE



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Launching GEP exploration, several data and options are available

The screenshot displays the 'DESIGN SPACE GENERATION' section of the Geeglee web application. It features a navigation bar with tabs for 'HOME', 'EL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The main content area includes two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Below these are two progress indicators: 'Calculation time saturation: 1.54%' and 'Memory consumption saturation: 87.85%'. To the right, it shows 'Estimated calculation time: less than an hour' and 'Estimated solutions: 92.1 millions'. A table titled 'Design spaces' lists various configurations with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files.

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
<input type="checkbox"/>	Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
<input type="checkbox"/>	Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
<input type="checkbox"/>	Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
<input type="checkbox"/>	DS35	51	MBOS2.ONEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



- Launching GEP exploration, several data and options are available
- Graphs monitor the saturation of your computer capacities regarding the complexity of your exploration

The screenshot displays the 'Design space generation' page in a web browser. The page features a navigation bar with 'DESIGN SPACE GENERATION' selected. Below the navigation bar, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Two gauge charts are highlighted with a red box: 'Calculation time saturation' at 1.54% and 'Memory consumption saturation' at 87.85%. To the right, there are two more metrics: 'Estimated calculation time: less than an hour' and 'Estimated solutions: 92.1 millions'. Below these metrics is a table titled 'Design spaces' with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table contains five rows of data.

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
<input type="checkbox"/>	Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
<input type="checkbox"/>	Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
<input type="checkbox"/>	Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
<input type="checkbox"/>	DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Graphs monitor the saturation of your computer capacities regarding the complexity of your exploration
- Right data assess:
 - The calculation time needed to explore the DS
 - The number of solutions to study (The end feasible solutions might be lower if you have constraints)

The screenshot displays the Geeglee web interface for design space generation. The main content area shows two progress indicators: 'Calculation time saturation' at 1.54% and 'Memory consumption saturation' at 87.85%. A red box highlights the estimated calculation time of 'less than an hour' and the estimated number of solutions, '92.1 millions'. Below this, a table lists several design spaces with their respective identifiers, descriptions, request dates, start and end dates, and statuses.

Name	Identifiant	Description	Only light result	Request date	Start date	End date	Status	Files
Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Right data assess:
 - The calculation time needed to explore the DS
 - The number of solutions to study (The end feasible solutions might be lower if you have constraints)
- Following your computer power, result files might be difficult to open (due to DS size and the among of data to monitor into GEP)
- To avoid that Geeglee assume a “smart” file management system

The screenshot displays the Geeglee web interface for design space generation. The main navigation bar includes 'Homepage', 'CEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The 'DESIGN SPACE GENERATION' section is active, showing a 'Design space generation' header with a dropdown menu. Below this, there are two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE', both highlighted with a red box. To the right of these buttons are two gauge charts: 'Calculation time saturation' at 1.54% and 'Memory consumption saturation' at 87.85%. Further right, there are two informational cards: 'Estimated calculation time: less than an hour' and 'Estimated solutions: 92.1 millions'. Below these is a table titled 'Design spaces' with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. The table contains five rows of data.

<input type="checkbox"/>	Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
<input type="checkbox"/>	Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
<input type="checkbox"/>	Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
<input type="checkbox"/>	Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
<input type="checkbox"/>	DS35	51	MBOS2.ONEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Right data assess:
 - The calculation time needed to explore the DS
 - The number of solutions to study (The end feasible solutions might be lower if you have constraints)

- Launch simulations:
 - Generate setting GEI
Generate setting GEI is a file useful to set, or improve, GEI setting to analyze the results
 - Generate Design Space
Launch the exploration of the DS!

The screenshot shows the Geeglee web interface for design space generation. The main dashboard displays two progress indicators: 'Calculation time saturation' at 1.54% and 'Memory consumption saturation' at 87.85%. Below these, it shows 'Estimated calculation time: less than an hour' and 'Estimated solutions: 92.1 millions'. A table titled 'Design spaces' lists several entries with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files.

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Launch simulations:
 - Generate Design Space
Launch the exploration of the DS!
- On the pop-up, you can:
 - Name the run (opt.),
 - Add a description (opt.),
 - Add a GEI file (opt.), this will lead to have:
 - An optimal .h5 result file
 - An optimization of your .ggproj file
 - Select only light result:
 - Useful if your computer is running slow on GEI
 - Select to run only global Pareto:
 - Useful if your computer have memory problem while running GEP

The screenshot shows the Geeglee web interface for 'Design space generation'. The main page has a progress indicator at 1.54% and a table of design spaces. A pop-up dialog titled 'Generate design space' is open, allowing users to name the run, add a description, and select options for 'Only light result' and 'Only global pareto'. The background interface includes buttons for 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE', and a table with columns for Name, Identifier, Description, End date, Status, and Files.

Name	Identifier	Description	End date	Status	Files			
Full global Pareto	57		17:30	9 March 2023, 00:37	Finished			
Full	56		16:46	Aborted by user				
Full	55		10:52	8 March 2023, 11:14	Finished			
Light	54		18:08	7 March 2023, 18:27	Finished			
DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Panel of ongoing calculation, as well as, previous calculation:
 - Run name (opt.)
 - Simulation unique ID
 - Description (opt.)
 - Does the user request light result?
 - Simulation request date
 - When you request an exploration
 - Simulation start
 - When simulation started (after memory loading)
 - Simulation end
 - When simulations ended
 - Status
 - Files
 - Alert(s)

The screenshot shows the Geeglee web interface for design space generation. The top navigation bar includes 'Homepage', 'CEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The main content area displays 'Design space generation' with two buttons: 'GENERATE SETTING GEI' and 'GENERATE DESIGN SPACE'. Two progress indicators are shown: 'Calculation time saturation: 1.54%' and 'Memory consumption saturation: 87.85%'. Below these, it states 'Estimated calculation time: less than an hour' and 'Estimated solutions: 92.1 millions'. A table titled 'Design spaces' is highlighted with a red border, listing various simulation runs with their identifiers, descriptions, request dates, start/end dates, and statuses.

<input type="checkbox"/>	Name	Identifiant	Description	Only light result	Request date	Start date	End date	Status	Files
<input type="checkbox"/>	Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30	9 March 2023, 00:37	Finished	
<input type="checkbox"/>	Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46		Aborted by user	
<input type="checkbox"/>	Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52	8 March 2023, 11:14	Finished	
<input type="checkbox"/>	Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08	7 March 2023, 18:27	Finished	
<input type="checkbox"/>	DS35	51	MBOS2.ONEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28	6 March 2023, 16:28	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Clicking on the file icon, for an “only light result” simulation, you’ve got:
 - Download All,
 - All the below files
 - *.gep,
 - The backup of the model simulated to get these results
 - Log_*.zip,
 - Log of simulation
 - *_trim.zip,
 - The result file to open as database in GEI
 - Analysis_*.zip
 - Report_*.txt
 - Report of simulation

MODEL CHECKING PROJECT MATURITY REPORT GENERATION DESIGN SPACE GENERATION

Design space generation

GENERATE SETTING GEI

GENERATE DESIGN SPACE

Calculation time saturation: 1.54%

Memory consumption saturation: 87.85%

Estimated calculation time: less than an hour

Estimated solutions: 92.1 millions

Design spaces

<input type="checkbox"/>	Name	Identifiant	Description	Only light result	Request date	Start date
<input type="checkbox"/>	Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:30
<input type="checkbox"/>	Full	56		No	8 March 2023, 16:45	8 March 2023, 16:46
<input type="checkbox"/>	Full	55		No	8 March 2023, 10:51	8 March 2023, 10:52
<input type="checkbox"/>	Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08
<input type="checkbox"/>	DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:28

File name	Size	Download
Download All	35.6 MB	
MBOS2.0NEXT#7-2.gep	35.4 MB	
log_EE Zone Architecture_id#54.zip	18.4 kB	
EE Zone Architecture_id#54_trim.zip	153.7 kB	
analysis_EE Zone Architecture_id#54.zip	44.8 kB	
report_EE Zone Architecture_id#54.txt	2.2 kB	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Clicking on the file icon, for an “only light result” simulation, you’ve got:
 - Download All,
 - *.gep,
 - Log_*.zip,
 - *_Pareto.zip
 - The result file containing only pareto solution to open as database in GEI
 - *_optim_GEI.zip
 - The result file containing only the data needed for the GEI file given while launching simulation to open as database in GEI
 - *_full.zip,
 - The full result file containing all the GEP data to open as database in GEI
 - *_full_no_pareto.zip
 - The full without pareto fronts result file containing all the GEP data to open as database in GEI
 - Analysis_*.zip
 - Report_*.txt

The screenshot shows the GEI web interface for design space generation. It includes progress indicators for calculation time (1.54% saturation) and memory consumption (87.85% saturation). A table lists design spaces with columns for Name, Identifier, Description, Only light result, Request date, and Start date. A red box highlights the 'Only light result' column, and another red box highlights a list of files available for download, including 'Download All' (687.2 MB) and various simulation result files.

Name	Identifier	Description	Only light result	Request date	Start date
Full global Pareto	57		No	8 March 2023, 17:29	8 March 2023, 17:29
Full	56		No	8 March 2023, 16:45	8 March 2023, 16:45
Full	55		No	8 March 2023, 10:51	8 March 2023, 10:51
Light	54		Yes	7 March 2023, 18:08	7 March 2023, 18:08
DS35	51	MBOS2.0NEXT#7...	No	6 March 2023, 16:27	6 March 2023, 16:27

*As long as you can, it's recommended to use the “*_full.zip” one*



- The model check give you an information about problem that can be detected before simulations, but some problems can be detected only after simulations
- If exist, clicking on the alert icon will give you these information:
 - Some performance were not calculated. Please check the creation log for more details

The screenshot displays the Geeglee web interface for design space generation. The main dashboard shows progress indicators for 'Calculation time saturation' at 0.01% and 'Memory consumption saturation' at 0.1%. It also displays 'Estimated calculation time: less than 5 minutes' and 'Estimated solutions: 288'. A table lists design spaces with columns for Name, Identifier, Description, Only light result, Request date, Start date, End date, Status, and Files. A modal dialog box titled 'Design space simulation log' is open, showing a warning message: 'WARNING - Some performances were not calculated. Please check the creation log for more details. If you are unable to solve your problem send the log files to Geeglee support team at support@geeglee.net'. The background table shows a row for 'Percentage OK' with a status of 0% and an alert icon.

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
Percentage OK	24					21:34	0%	
Idem	23	Old python				18:59	12 March 2023, 20:29	Finished
New excels_new python	20					16:36	12 March 2023, 16:40	Finished
V25	19			10 March 2023, 17:44	10 March 2023, 17:45	10 March 2023, 19:14	Finished	
3_stations	18		No	9 March 2023, 16:25	9 March 2023, 16:26	9 March 2023, 17:57	Finished	



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Download it by clicking on the link

The screenshot shows the Geeglee web interface for design space generation. The top navigation bar includes 'MODEL CHECKING', 'PROJECT MATURITY', 'REPORT GENERATION', and 'DESIGN SPACE GENERATION'. The main content area displays 'Design space generation' with a progress indicator at 0.01% and 'Estimated calculation time: less than 5 minutes'. Below this is a table of design spaces:

Name	Identifier	Description	Only light result	Request date	Start date	End date	Status	Files
Percentage OK	24		No	12 March 2023, 21:33	12 March 2023, 21:34			
Idem	23	Old python...	No	12 March 2023, 18:58	12 March 2023, 18:59			
New excels_new_python	20		No	12 March 2023, 16:35	12 March 2023, 16:36			
V25	19		No	10 March 2023, 17:44	10 March 2023, 17:45			
3_stations	18		No	9 March 2023, 16:25	9 March 2023, 16:26			

A dropdown menu is open for the '3_stations' design space, showing a list of files for download:

- Station du futur (2025 30)_id#20_full_setting_GEI.zip (93.3 kB)
- Station du futur (2025 30)_id#20_full.zip (113.7 kB)
- SIPLEC v2.8.25.gep (55.9 MB)
- log_Station du futur (2025 30)_id#20.zip (6.9 kB) - **Highlighted with a red box**
- analysis_Station du futur (2025 30)_id#20.zip (7.7 kB)
- report_Station du futur (2025 30)_id#20.txt (840 B)



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Open the zip file, and
- Open "log_*_creation"

The screenshot displays the Geeglee web application interface for design space generation. The main content area shows a progress bar at 0.01% and a table of design spaces. A file explorer window is open over the 'Téléchargements' folder, showing a list of files including log files for creation, execution, and scheduling.

Design Space Name	Identifiant	Description
Percentage OK	24	
Idem	23	Old
New excels_new_python	20	
V25	19	
3_stations	18	

Nom	Type	Taille compressée	Protégé pa...	Taille	Ratio	Modifié le
log_12-03-2023_1655_creation	Document texte	5 Ko	Non	94 Ko	96 %	12/03/2023 16:40
log_12-03-2023_1655_executor	Document texte	1 Ko	Non	3 Ko	77 %	12/03/2023 16:40
log_12-03-2023_1655_scheduler	Document texte	2 Ko	Non	7 Ko	82 %	12/03/2023 16:40



FUNCTIONALITY WHILE LAUNCHING GEP EXPLORATION OF DESIGN SPACE



- Have a look about problem(s)
- Problems are order by arrival while simulating. It means that, correcting the first one can be enough to correct all problems!
- Each “block” give you information about the error

The screenshot displays the Geeglee software interface during a design space generation process. The main window shows a log of errors, with a red box highlighting a specific error message: "failed performance name: Volume loc essence data 2030 (km3)". The log shows multiple instances of this error, each with a timestamp of 16:36:43. The error details include the equation name, the function used (get_value_from_excel), and the reason for failure (FileNotFoundError). The interface also shows a table of design space elements and a file explorer window in the background.

Timestamp	Job	Creation	Error
16:36:43	Job	Creation	ERROR - failed performance name: Volume loc essence data 2030 (km3)
16:36:43	Job	Creation	ERROR - equation of failed performance: get_value_from_excel("324:g:Local Data Path", "326:g:Data Source", "327:g:code_ville", "325:g:Nom de l'adhérent")
16:36:43	Job	Creation	ERROR - operation within equation that failed: get_value_from_excel("324:g:Local Data Path", "326:g:Data Source", "327:g:code_ville", "325:g:Nom de l'ad
16:36:43	Job	Creation	ERROR - python error type: FileNotFoundError
16:36:43	Job	Creation	ERROR - arguments: C:\Users\Geeglee\AppData\Local\Geeglee\Custom\SIPLEC v2.8.24\code\Conso locale v13 Geeglee.xlsm\Geeglee_data\code_ville\DIGOIN/Ess
16:36:43	Job	Creation	ERROR - reason: [Errno 2] No such file or directory: 'C:\Users\Geeglee\AppData\Local\Geeglee\Custom\SIPLEC v2.8.24\code\Conso locale v13 Ge
16:36:43	Job	Creation	ERROR - function: make_function



- “Report_*.txt” give you data about:
 - Number of calculated performance,
 - Per architecture:
 - Overall number of solutions,
 - Number of solutions after incompatibilities,
 - Number of solutions after constraints,
 - And the number of solutions deleted per each constraint,
 - Overall number of solutions

```
C:\Users\Geeglee\Downloads\report_EE_Zone Architecture_id#57 (1).txt - Notepad++
Fichier Edition Recherche Affichage Encodage Langage Paramètres Outils Macro Exécution Modules d'extension Documents ?
report_EE_Zone Architecture_id#57 (1).txt
1 Number of calculated performances: 279
2
3 Number of solutions per Architecture
4
5 Architecture: MB.EA-L Var 1
6 No PCDDM/constraints: 92121172
7
8 After Internal Incompatibilities: 92121172 solution(s) remain
9 removed: no solutions removed
10
11 After Constraints: 2539592 solution(s) remain
12 removed: 89581580 or 97.2432% of design space
13 1967020 from "Fit in Effective Height in I88"
14 3980620 from "Fit in Effective Height in I84"
15 16199264 from "Fit in Volume in IS1"
16 1620236 from "Fit in Effective Height in IS7"
17 1671196 from "Fit in Effective Height in IS6"
18 4858004 from "Fit in Volume in IS4"
19 2296532 from "Fit in Effective Height in IS1"
20 2817760 from "Fit in Volume in IS6"
21 724280 from "Fit in Volume in IS9"
22 39736 from "Fit in Effective Height in IS5"
23 10098472 from "Fit in Volume in IS2"
24 19749856 from "Fit in Effective Height in IS9"
25 20949552 from "Fit in Effective Height in IS13"
26 700404 from "Fit in Volume in IS7"
27 1909248 from "Fit in Effective Height in IS2"
28
29 Final DS: 2539592 solution(s) remain
30 removed: 89581580 or 97.2432% of design space
31
```

Normal text file length: 2 067 lines: 31 Ln: 16 Col: 87 Pos: 920 Windows (CR LF) UTF-8 INS

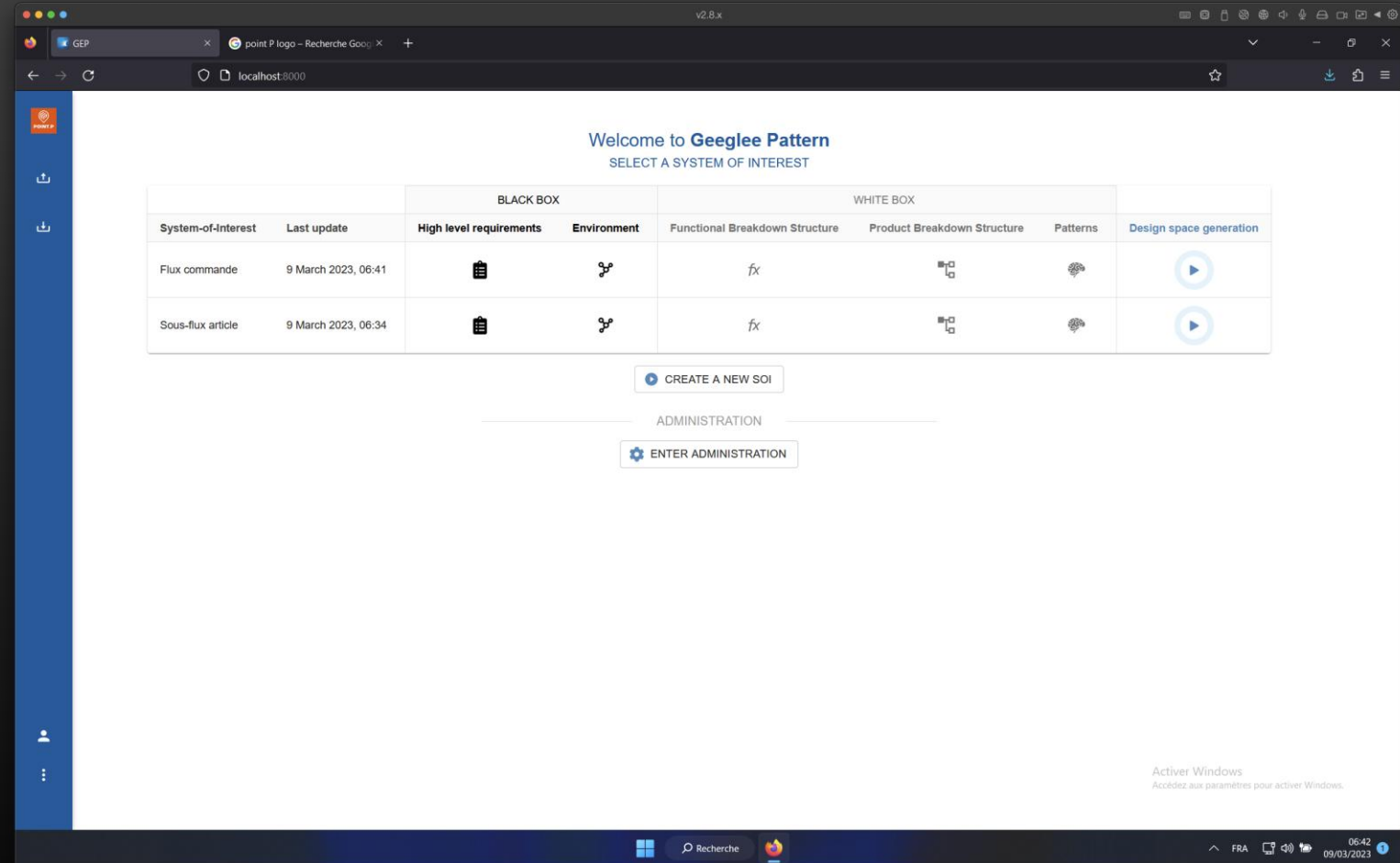
2202 12/03/2023



EXPORT AND MERGE A PROJECT



- When people are collaborating on a project, they might need to do some staff “offline” (in remote from a server version for instance)
- Export and import functions has been created to fulfill this need





- Have a look at the two icons at the top left side of the home page
- The first one let you to export your project (*.db)
- The second one let you to import your project (*.db)

The screenshot shows the Geeglee Pattern web interface. The top navigation bar includes a 'GEP' tab and a user profile icon. The main content area is titled 'Welcome to Geeglee Pattern' and 'SELECT A SYSTEM OF INTEREST'. Below this is a table with columns for 'BLACK BOX' (requirements, Environment) and 'WHITE BOX' (Functional Breakdown Structure, Product Breakdown Structure, Patterns, Design space generation). A modal dialog is open, showing two options: 'Export current database' and 'Import database to the current project'. The 'Export current database' option is highlighted with a red box. The 'Import database to the current project' option is also highlighted with a red box. Below the table, there are buttons for 'CREATE A NEW SOI', 'ADMINISTRATION', and 'ENTER ADMINISTRATION'.

		BLACK BOX		WHITE BOX			
system-of-interest	Last update	requirements	Environment	Functional Breakdown Structure	Product Breakdown Structure	Patterns	Design space generation
Flux commande	9 March 2023, 06:43			fx			
Sous-flux article	9 March 2023, 06:34			fx			



- As a consequence, each discipline can work on their own domain and a merge of all database can be done to ensure a system level view

Welcome to **Geeglee Pattern**
SELECT A SYSTEM OF INTEREST

System-of-Interest	Last update	BLACK BOX		WHITE BOX			Design space generation
		High level requirements	Environment	Functional Breakdown Structure	Product Breakdown Structure	Patterns	
Battery	9 March 2023, 06:52			fx			
Martian drone	9 March 2023, 06:52			fx			
Martian drone propeller	9 March 2023, 06:52			fx			
Power Charging System	9 March 2023, 06:52			fx			

[CREATE A NEW SOI](#)

ADMINISTRATION

[ENTER ADMINISTRATION](#)

Activer Windows
Accédez aux paramètres pour activer Windows.

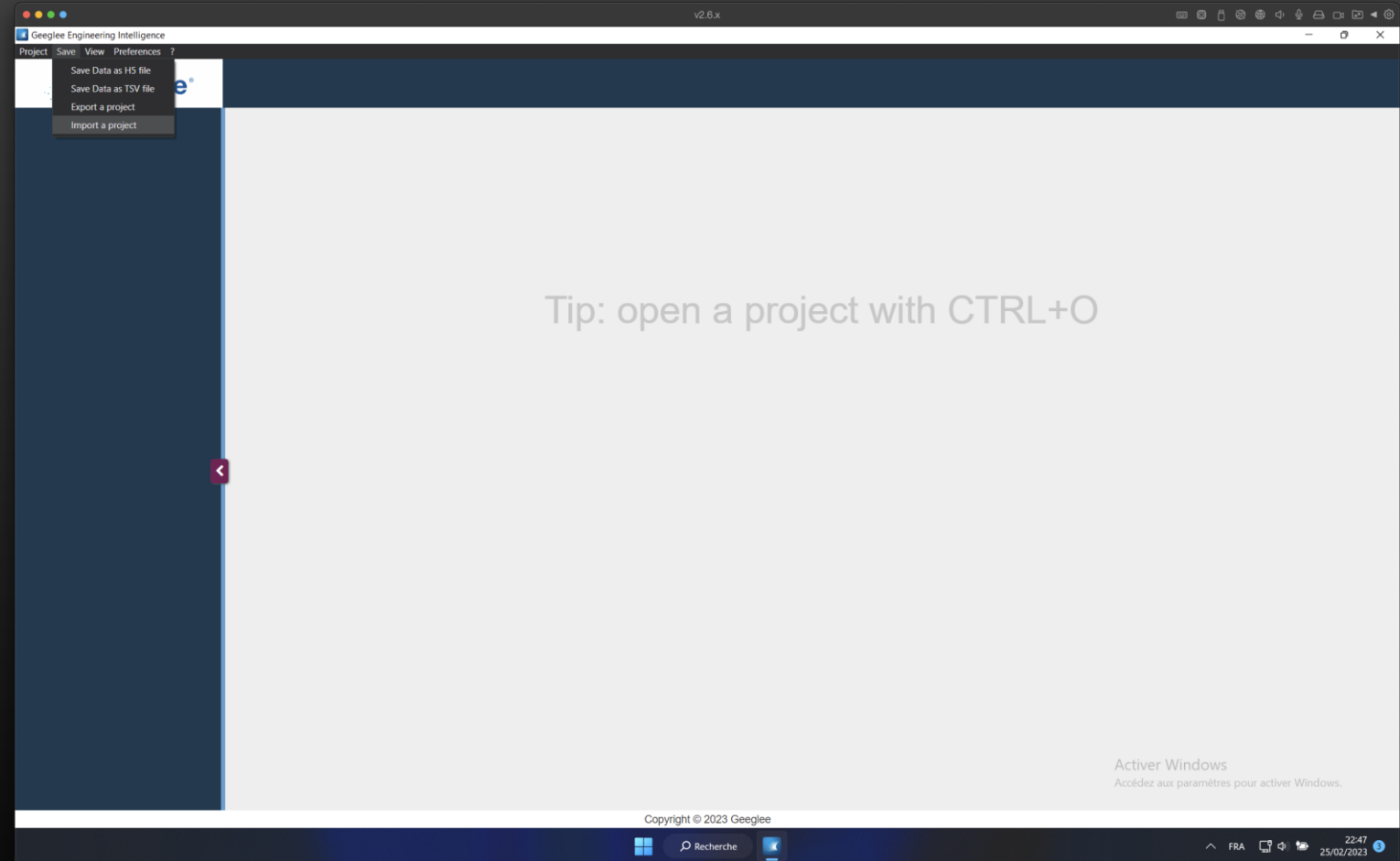


IMPORT A GEI PROJECT



HOW TO IMPORT A PROJECT?

1. Click on “save” menu
2. Click on “Import a project”
3. Select the project (.zip or .gei file)
4. Select a folder to import your project
5. Select the file to open (.ggproj or .gei file)





MAIN TROUBLE SHOOTING IN GEI



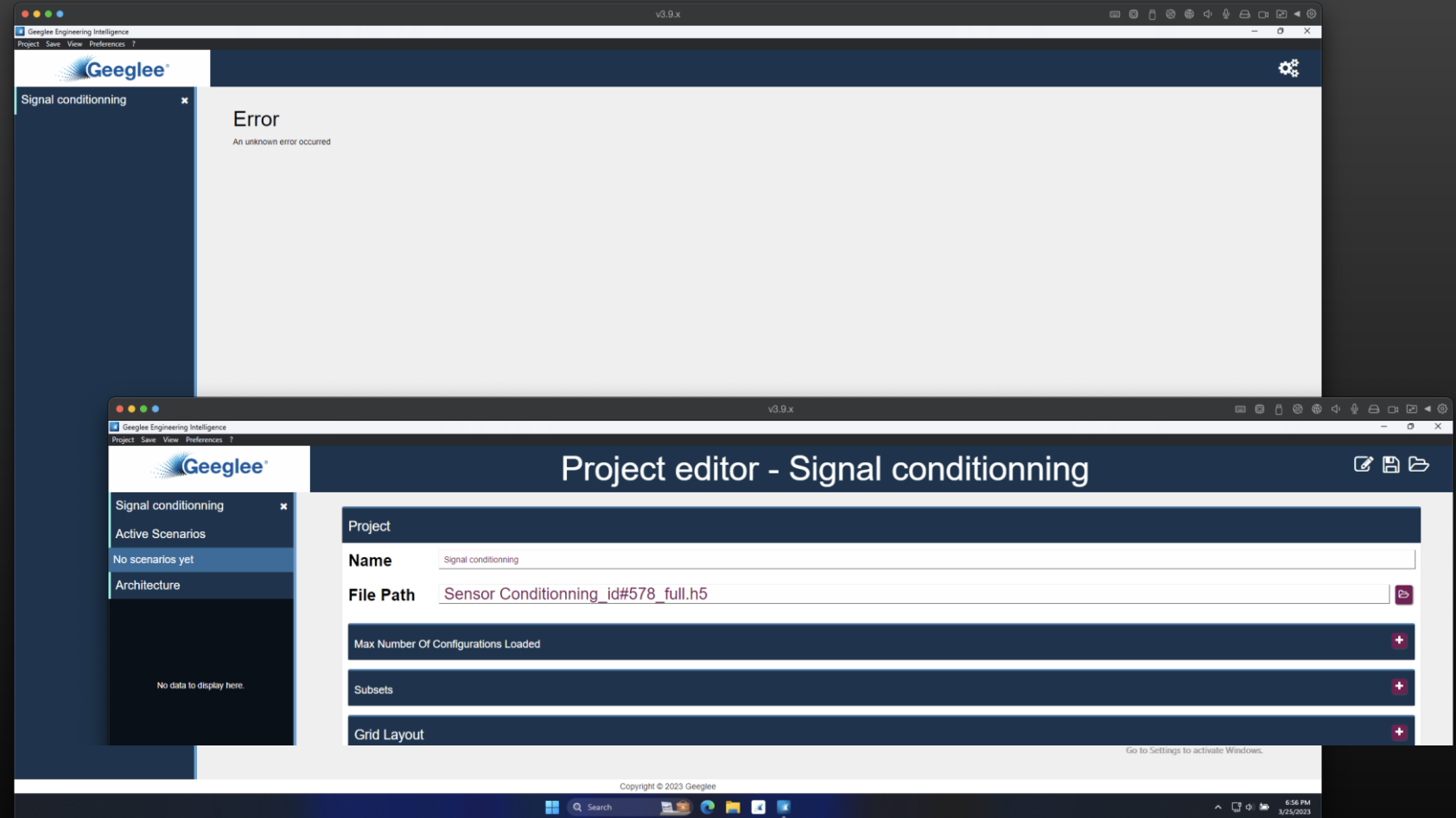
MAIN TROUBLE SHOOTING IN GEI: « ERROR »



- Database connection error...

To resolve that:

- ✓ Click on the little gear (top right)
- ✓ Link again the database “file path”





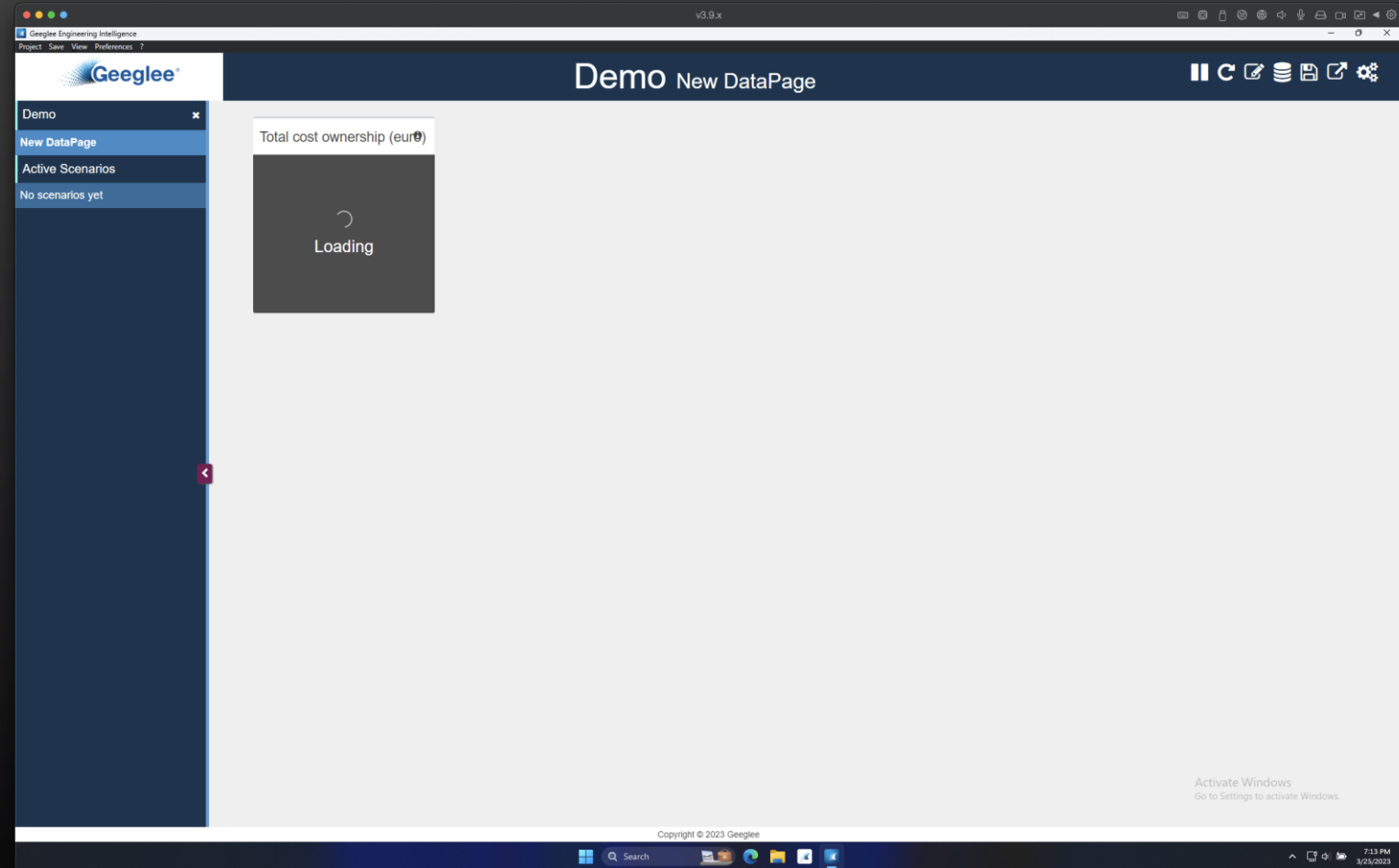
MAIN TROUBLE SHOOTING IN GEI: « STILL LOADING »



- Memory stuck while loading...

To resolve that:

- ✓ The most efficient way to solve this issue is to close the GEI and to open it again
- ✓ It append only when you have only few widgets





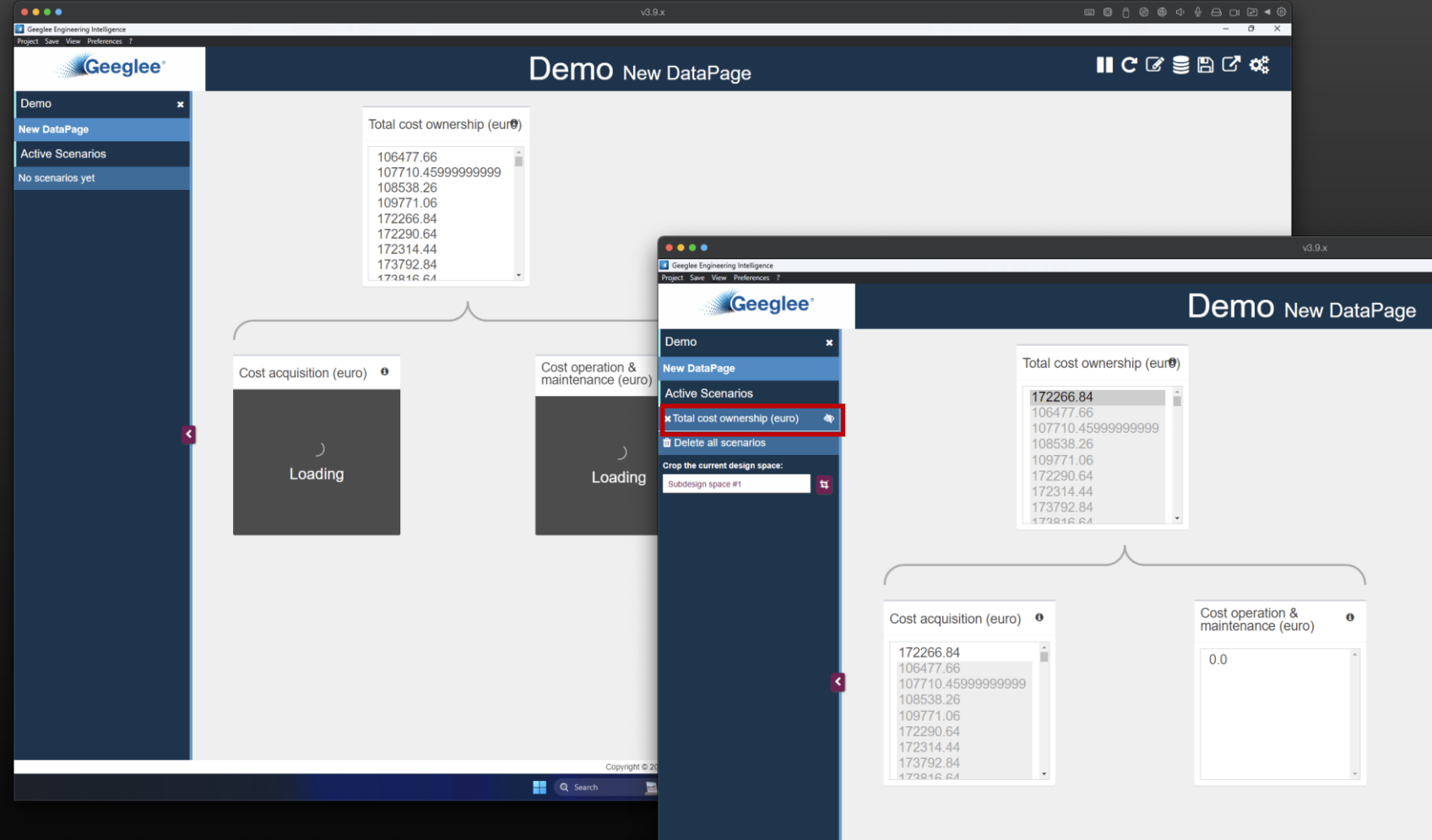
MAIN TROUBLE SHOOTING IN GEI: « FEW WIDGETS STILL LOADING »



- Memory stuck while loading...

To resolve that:

- ✓ Click on a value of a working widget
- ✓ Then delete the active scenario you just click on





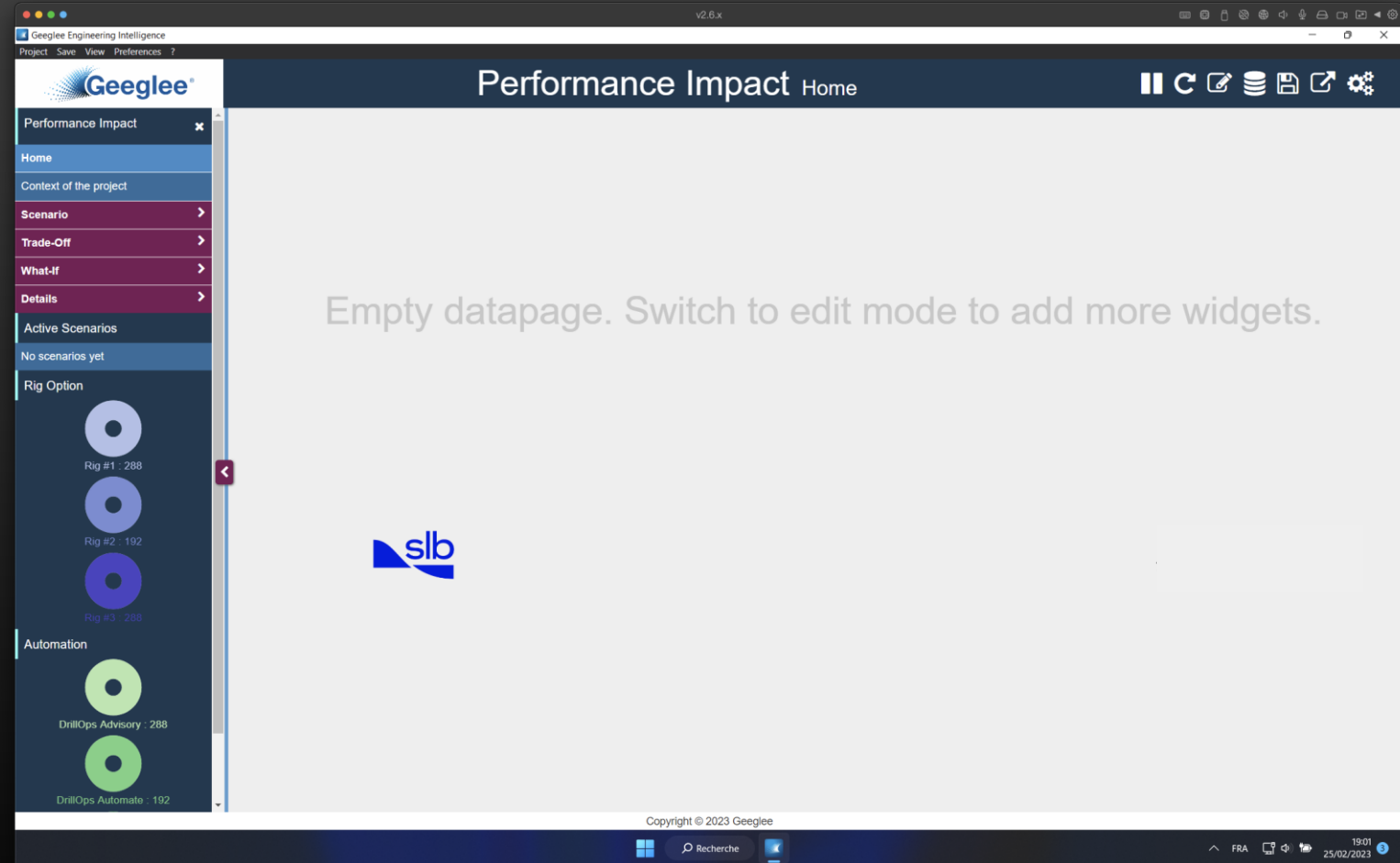
CREATE HEADER AND FOOTER IN GEI



HOW TO SET HEADER AND FOOTER TO YOUR PROJECT?



1. Edit your GEI project (click on the top right gears)





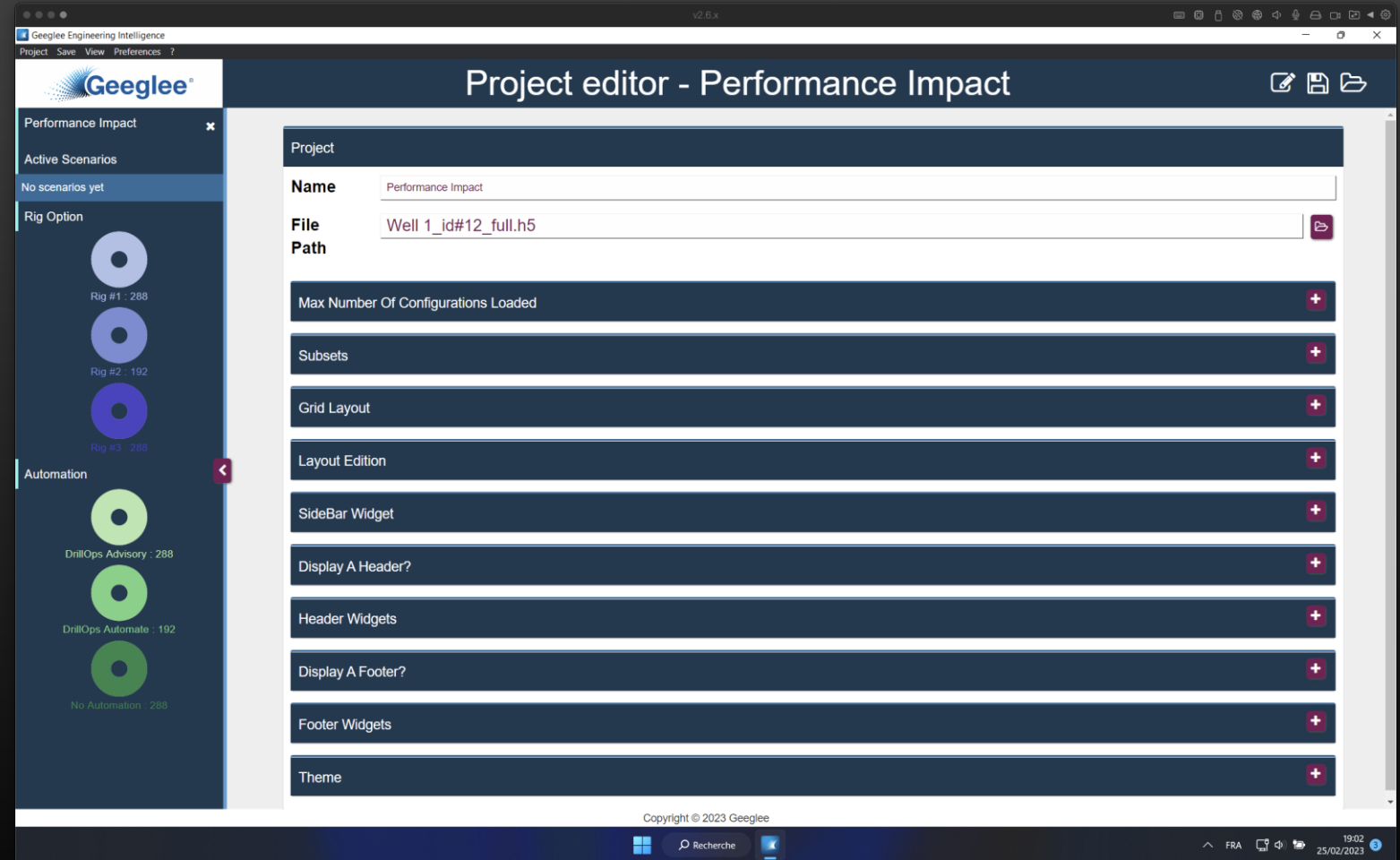
HOW TO SET HEADER AND FOOTER TO YOUR PROJECT?



1. Edit your GEI project (click on the top right gears)

2. Have a look on:

- « Display a Header? », and
- « Display a Footer? » tabs



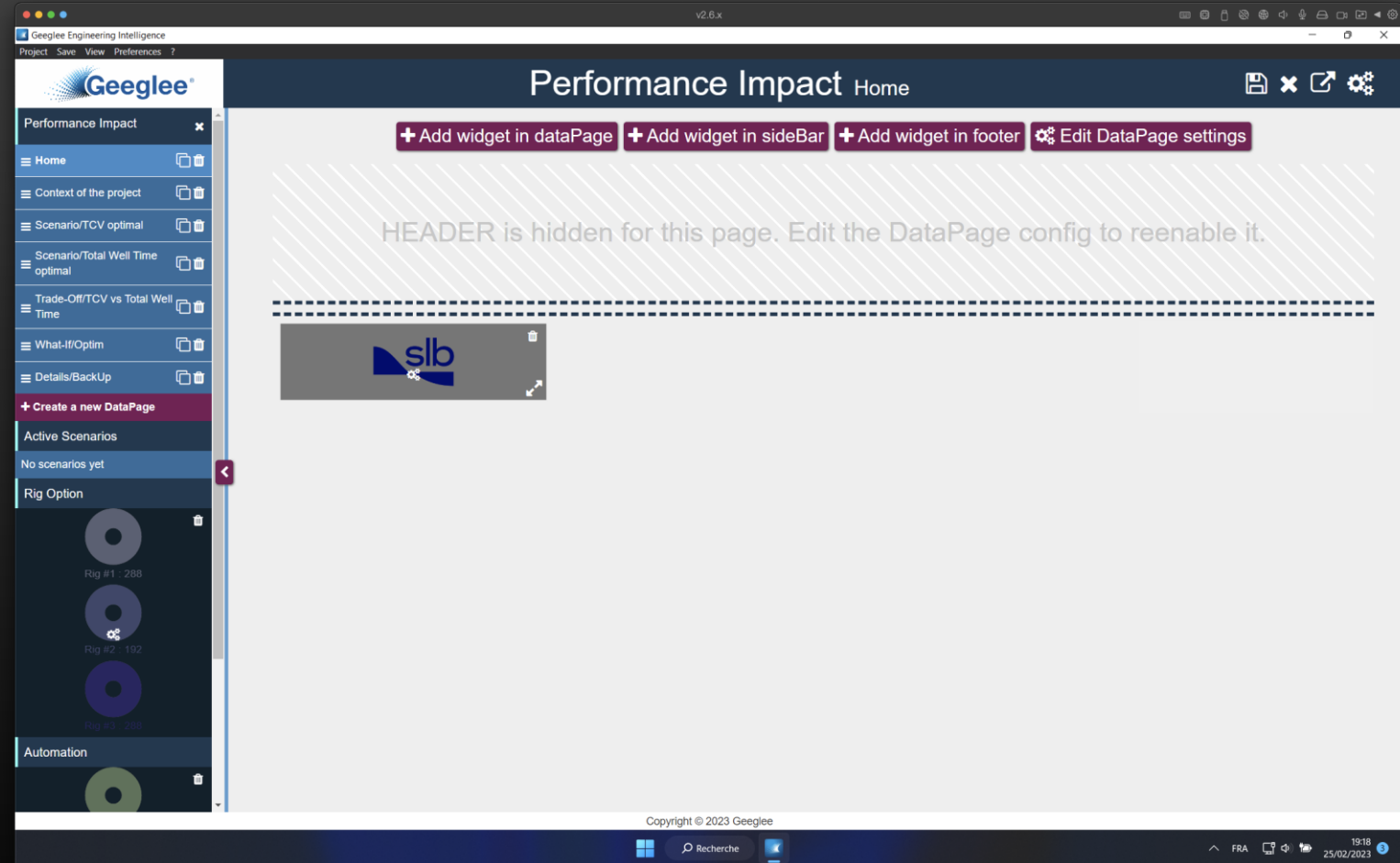


HOW TO HIDE HEADER AND FOOTER TO ONE DATA PAGE?



- On some data page, it can be interesting to hide header or footer:

1. Edit your data page (the little stilus)
2. Click on « Edit data page settings »

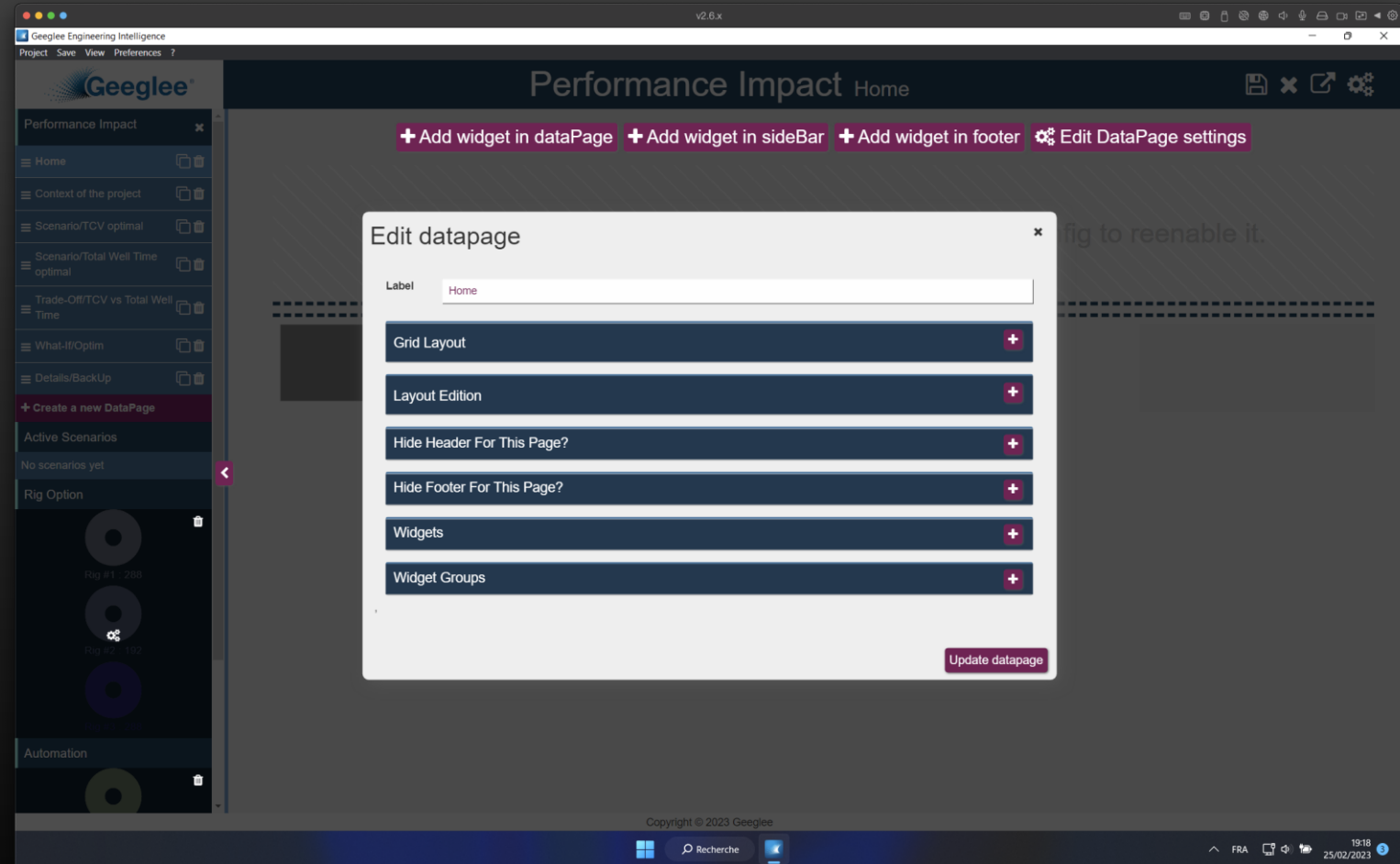




HOW TO HIDE HEADER AND FOOTER TO ONE DATA PAGE?

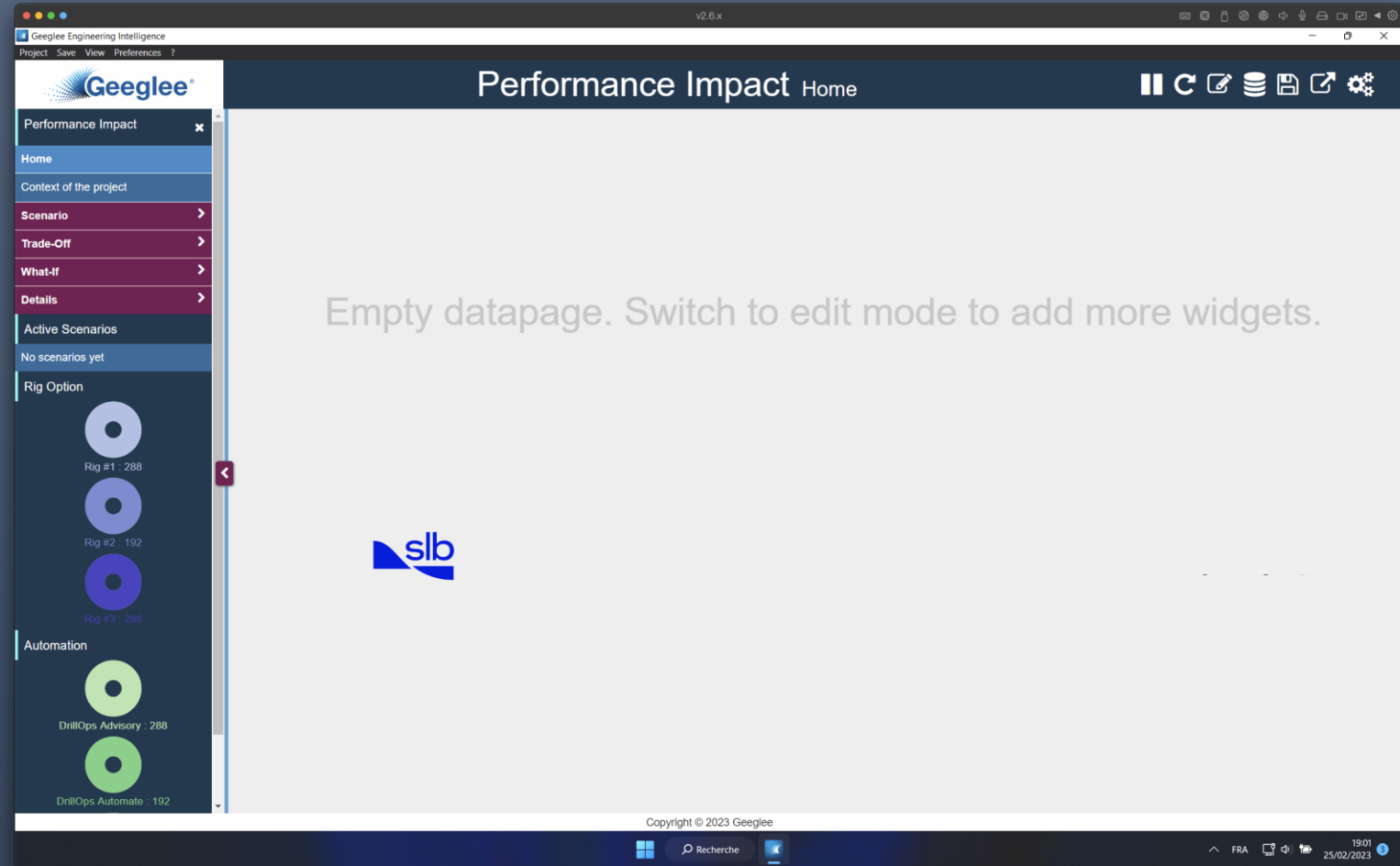


1. Edit your data page (the little stilus)
2. Click on « Edit data page settings »
3. Have a look on:
 - « Hide Header for this page? », and
 - « Hide Footer for this page? » tabs



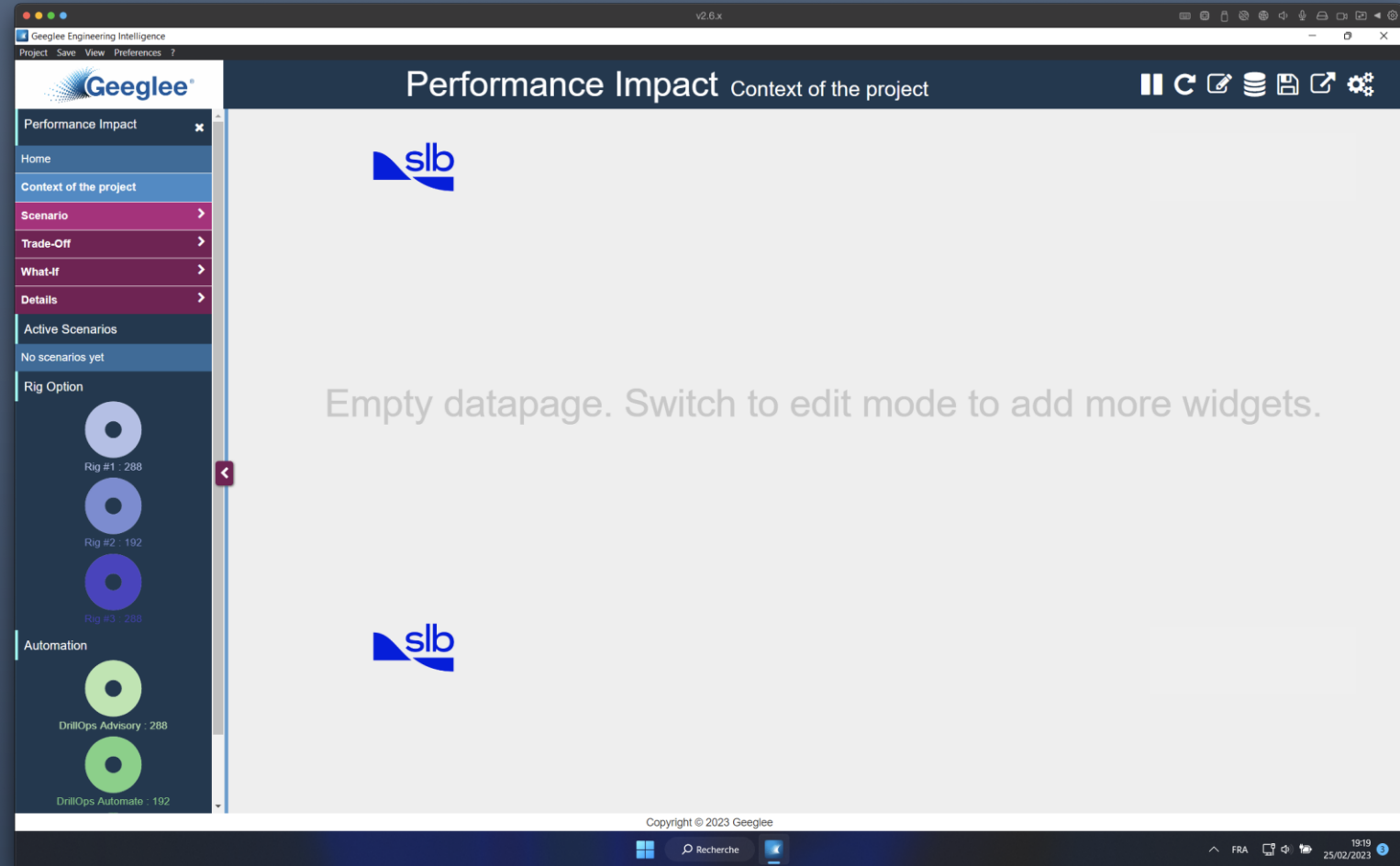


- I create a home page to have a welcome page while opening your project (Geeglee project still opening on the first page)
- Please fill it with an image (that can be the first page of a PowerPoint presentation)



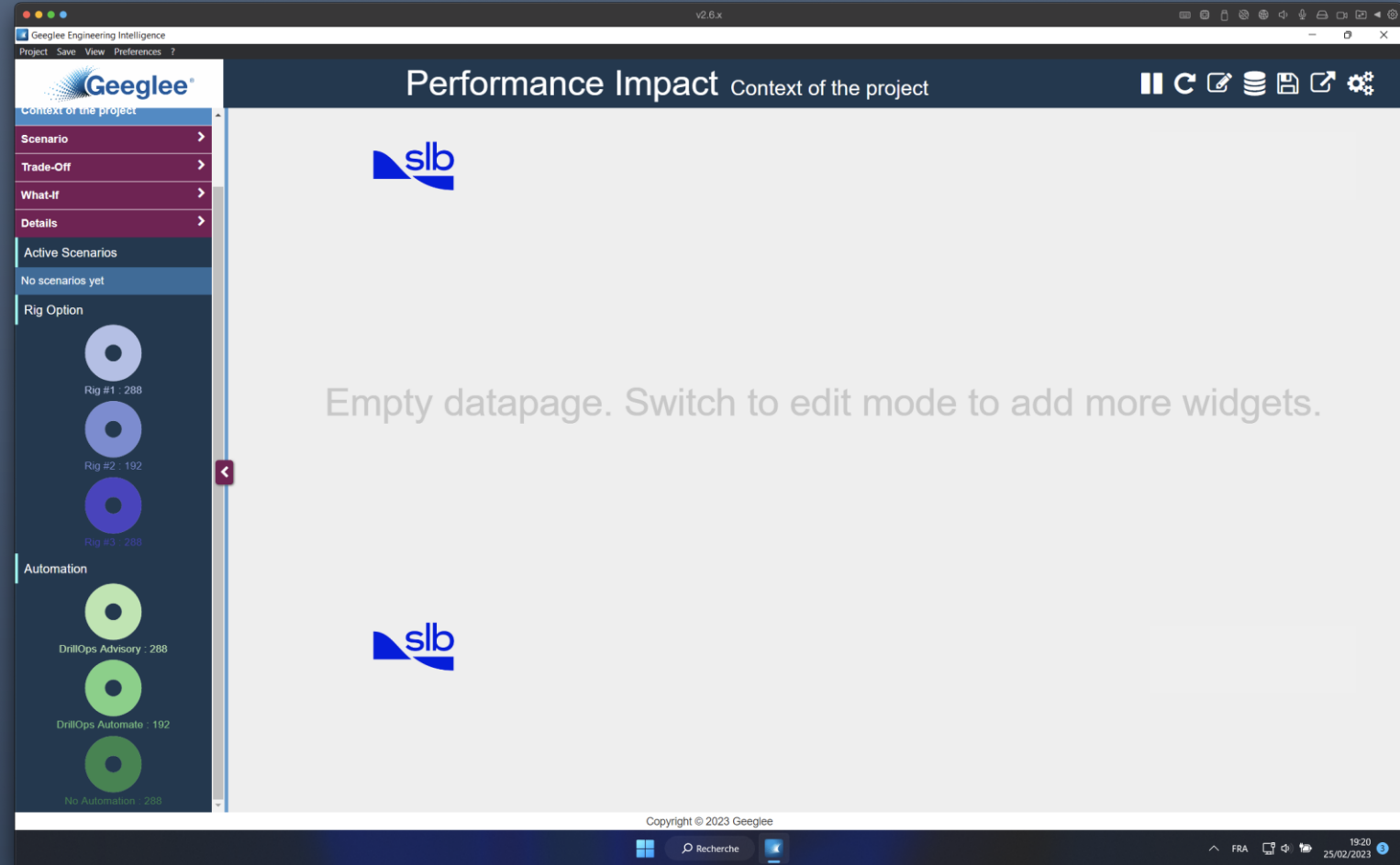


- I create a context page to explain your project
- *If you do not need it*
- *Then please delete it!*
- *Else please fill it with image(s) (that can be an extract of few slides from a PowerPoint presentation)*





- I created subsets and pie widgets in the sidebar to still have a look about « Rig Option » and « Automation » choices
- *You can scroll the side bar as the main page*

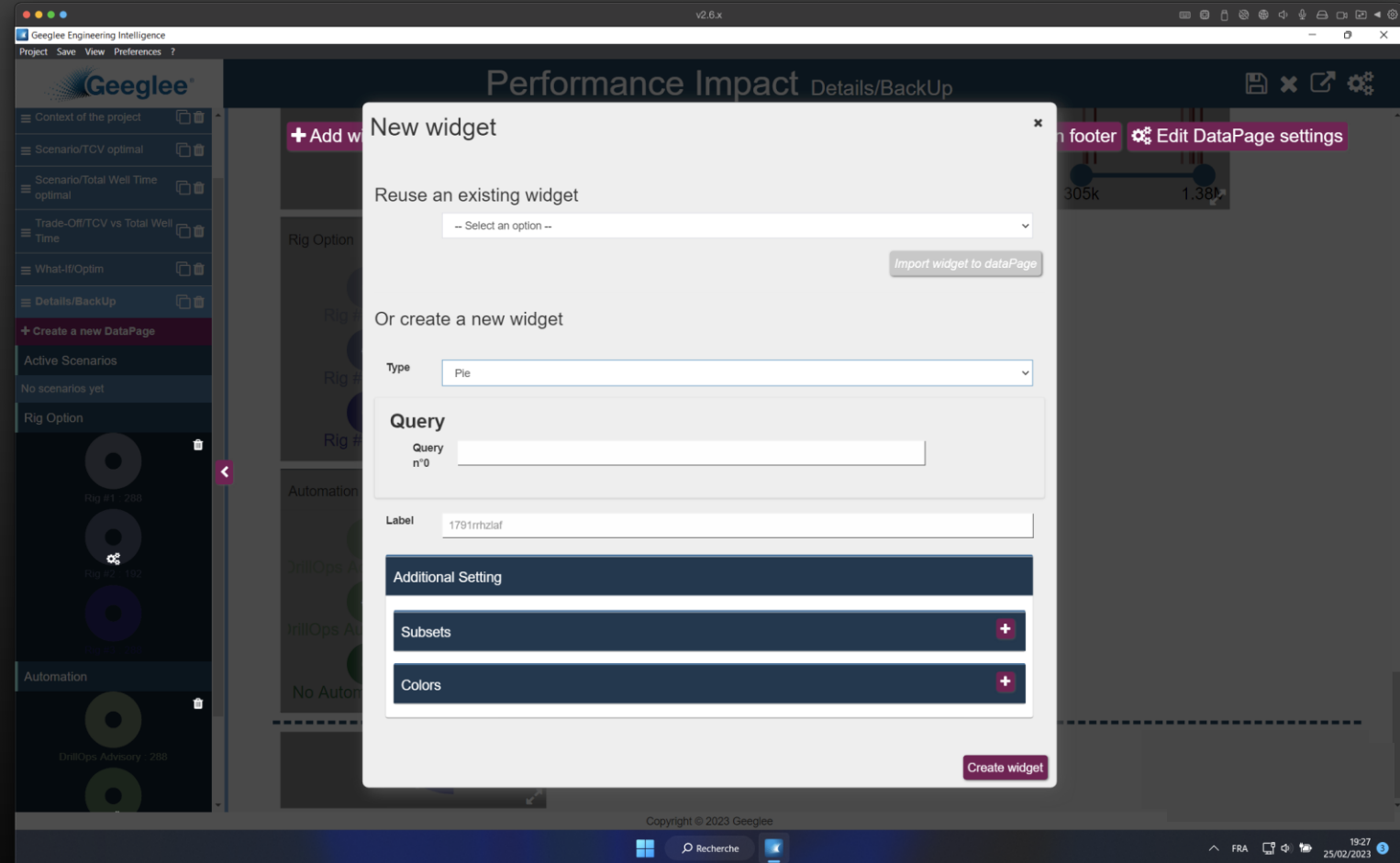




HOW TO SET PIE WIDGET IN SIDEBAR?



1. First, create a pie widget for the expected query in a data page

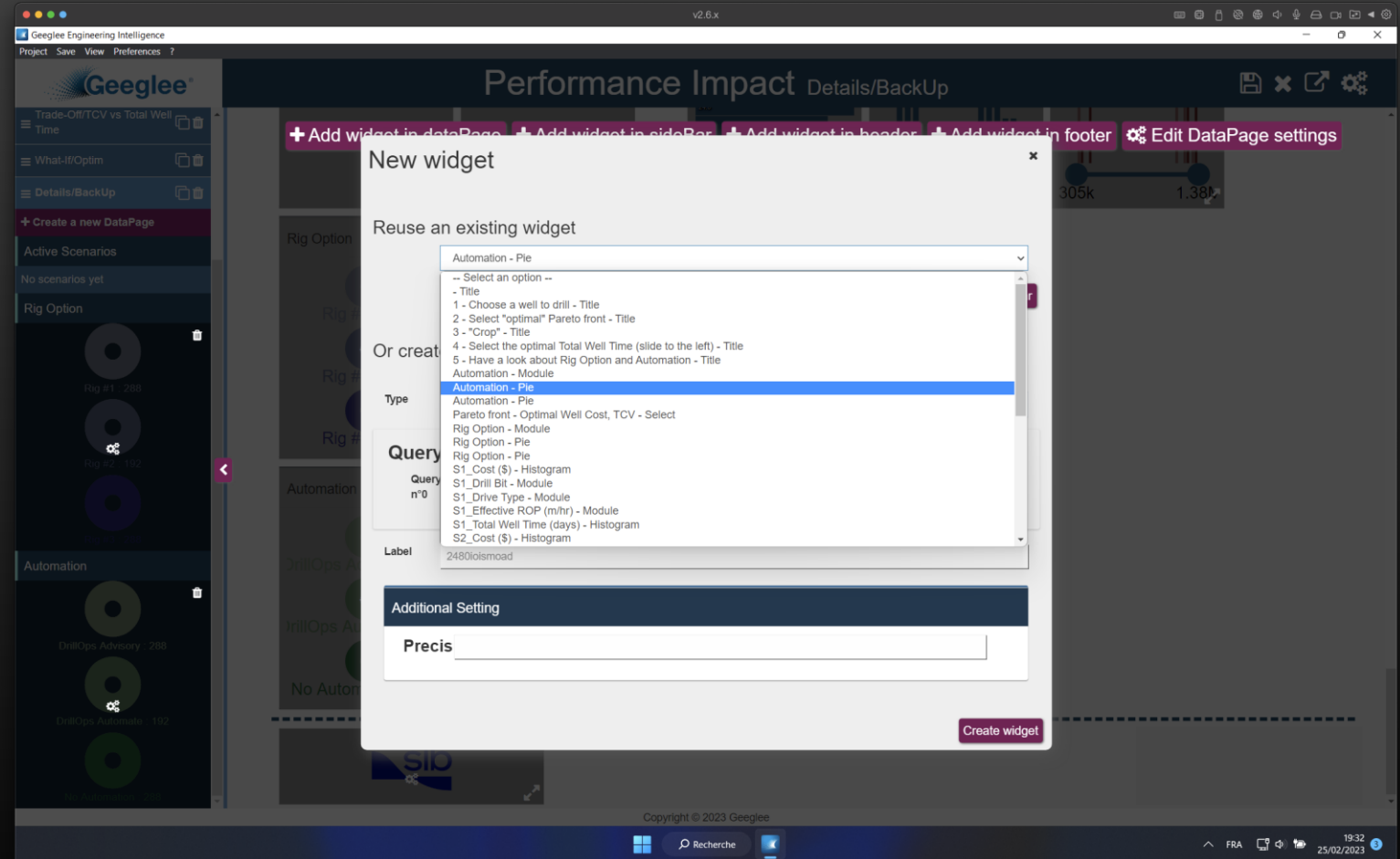




HOW TO SET PIE WIDGET IN SIDEBAR?

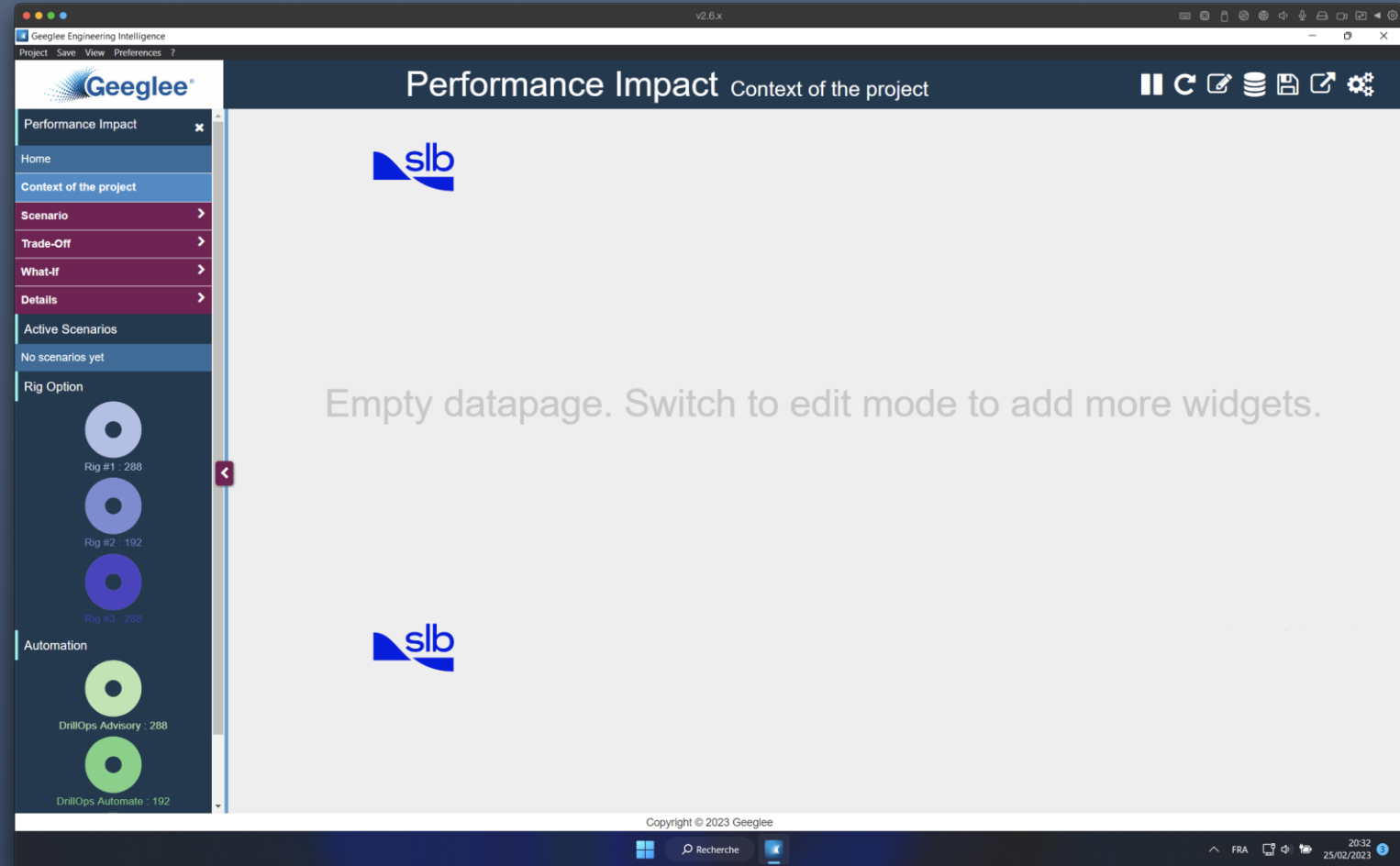


1. First, create a pie widget for the expected query in a data page
2. Second, create a sidebar widget by « reuse an existing widget » ('query name' – pie)





- I created the recommended group of data page:
 - Scenario
 - Trade-off
 - What-if
 - Details





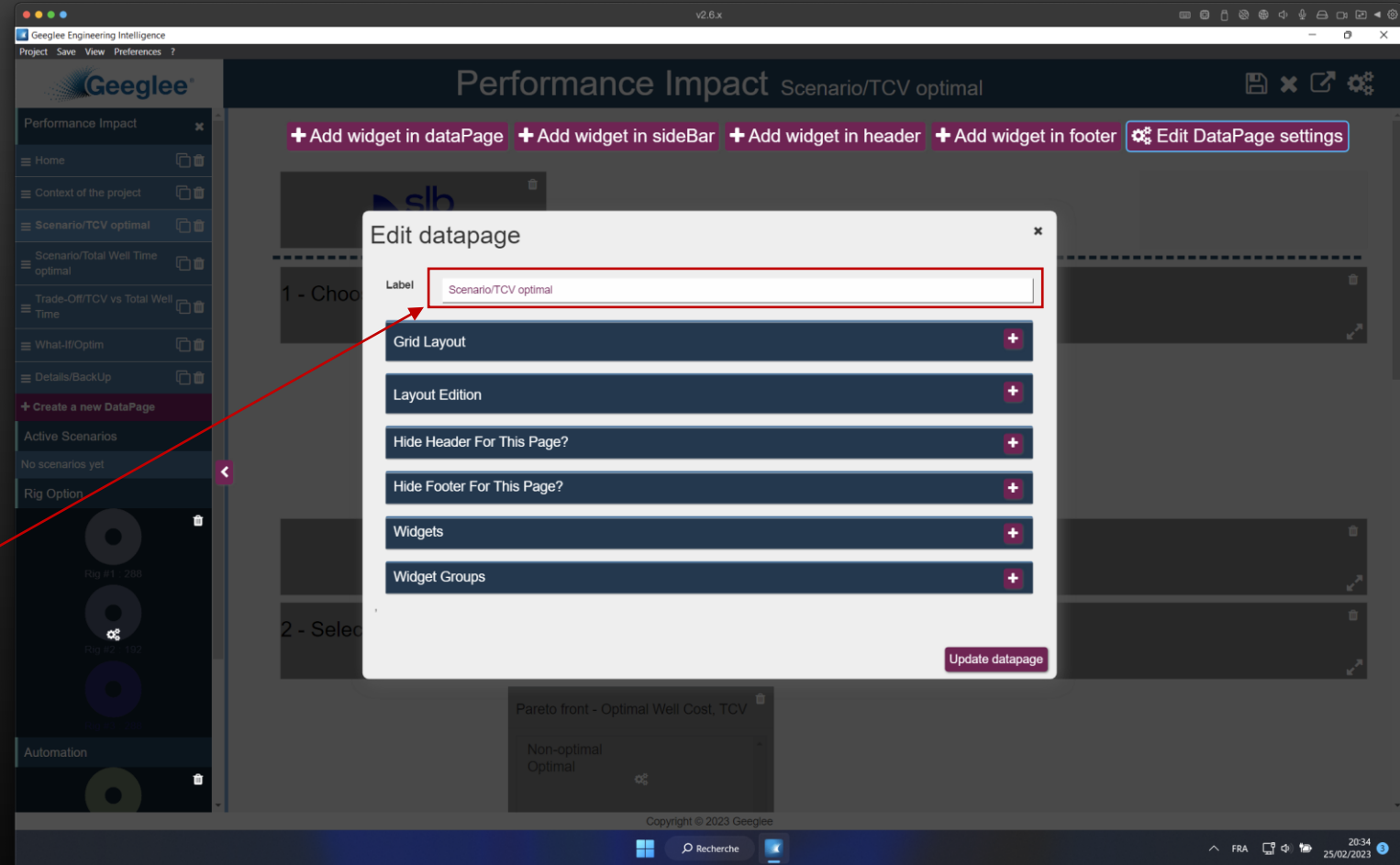
HOW TO CREATE A GROUP OF DATA PAGE?



1. Select one data page
2. Click on: “Edit data page settings”
3. Label it with the form:

‘group name’/’data page name’

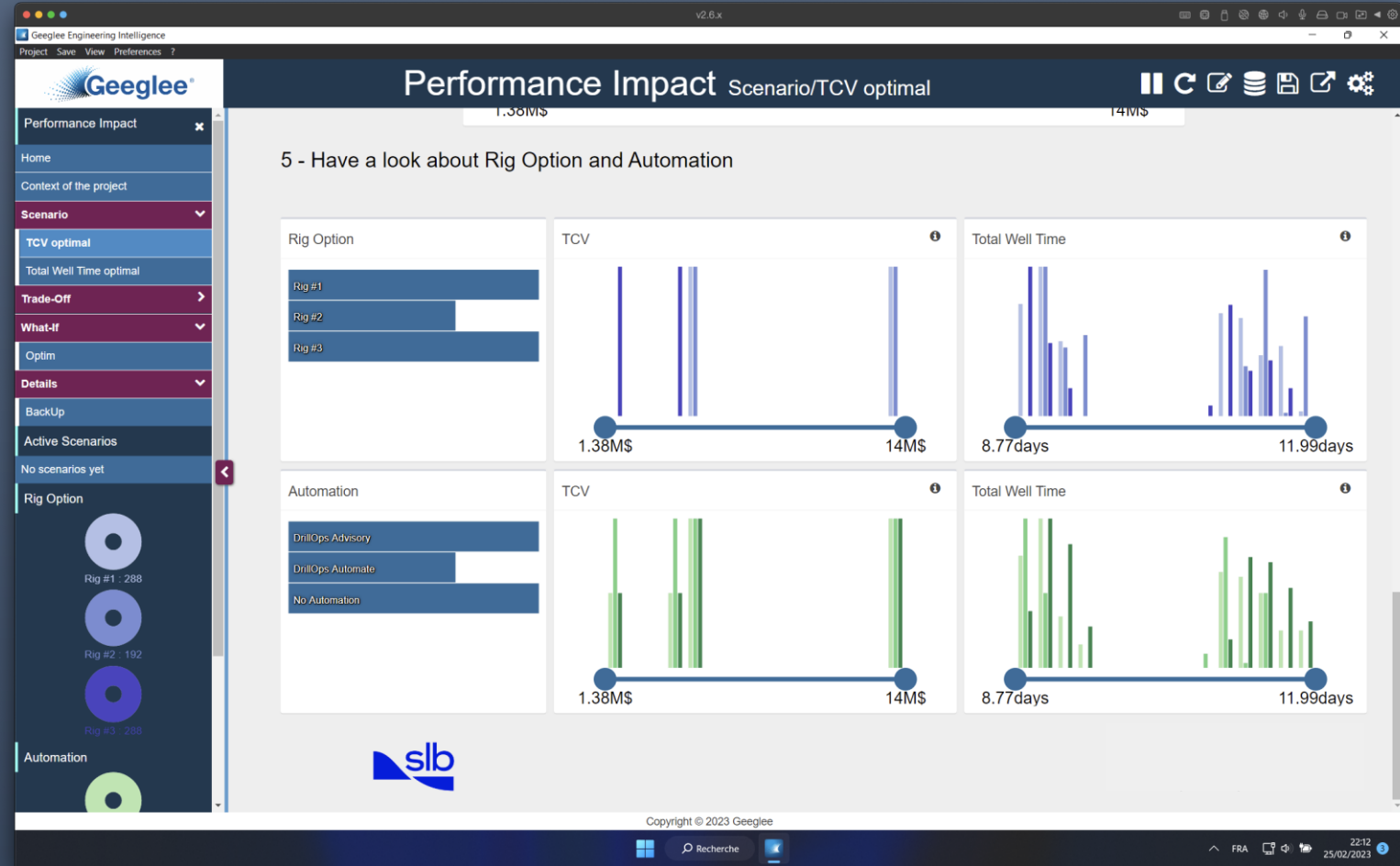
4. Click on “Update data page”





- data pages into scenario group have the same structure:

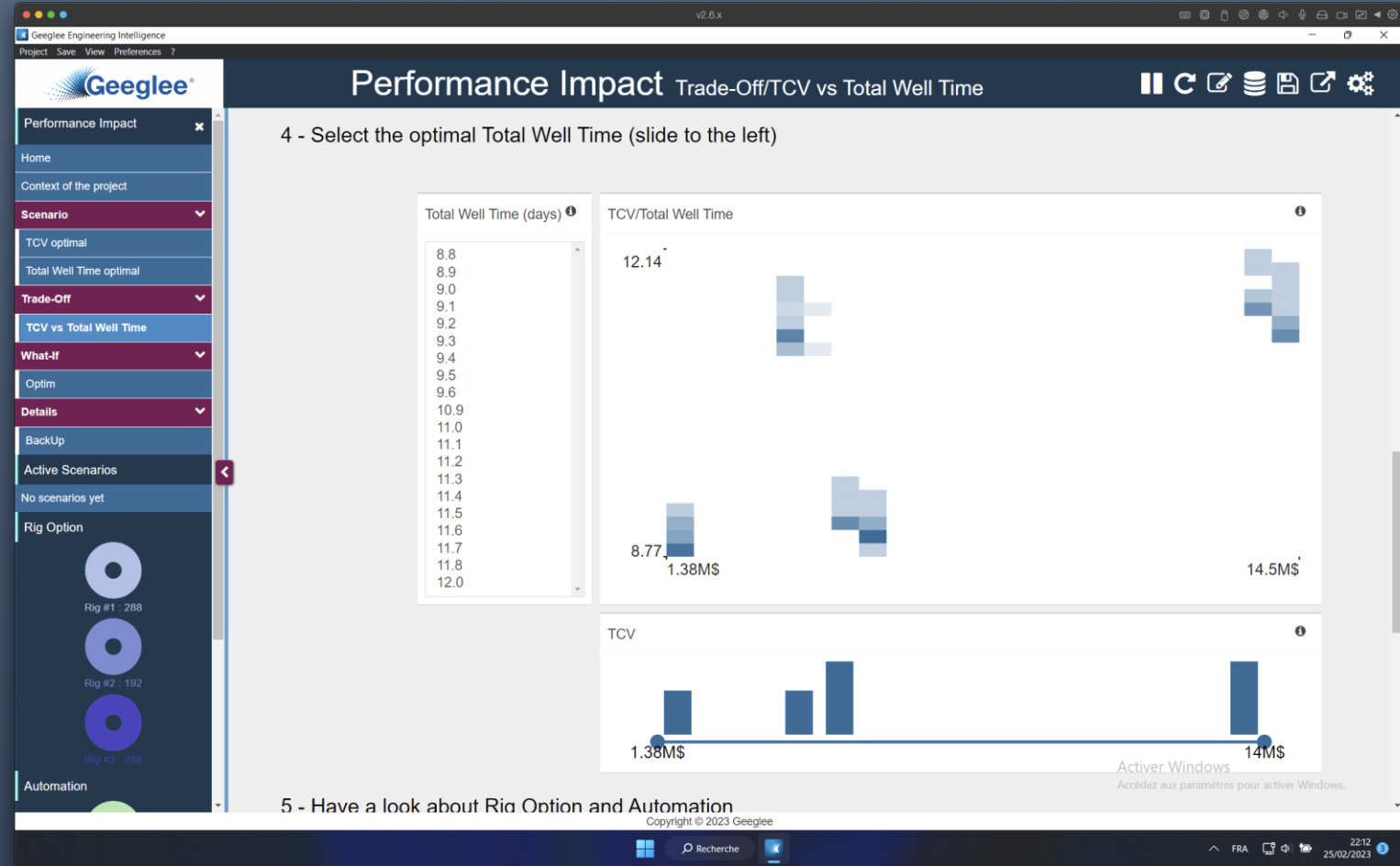
1. Choose a well to drill
2. Select “optimal” solution(s)
4. Optimize the expected performance:
 - ✓ TCV, or
 - ✓ Total Well Time
5. Have a look at “Rig option” & “Automation”





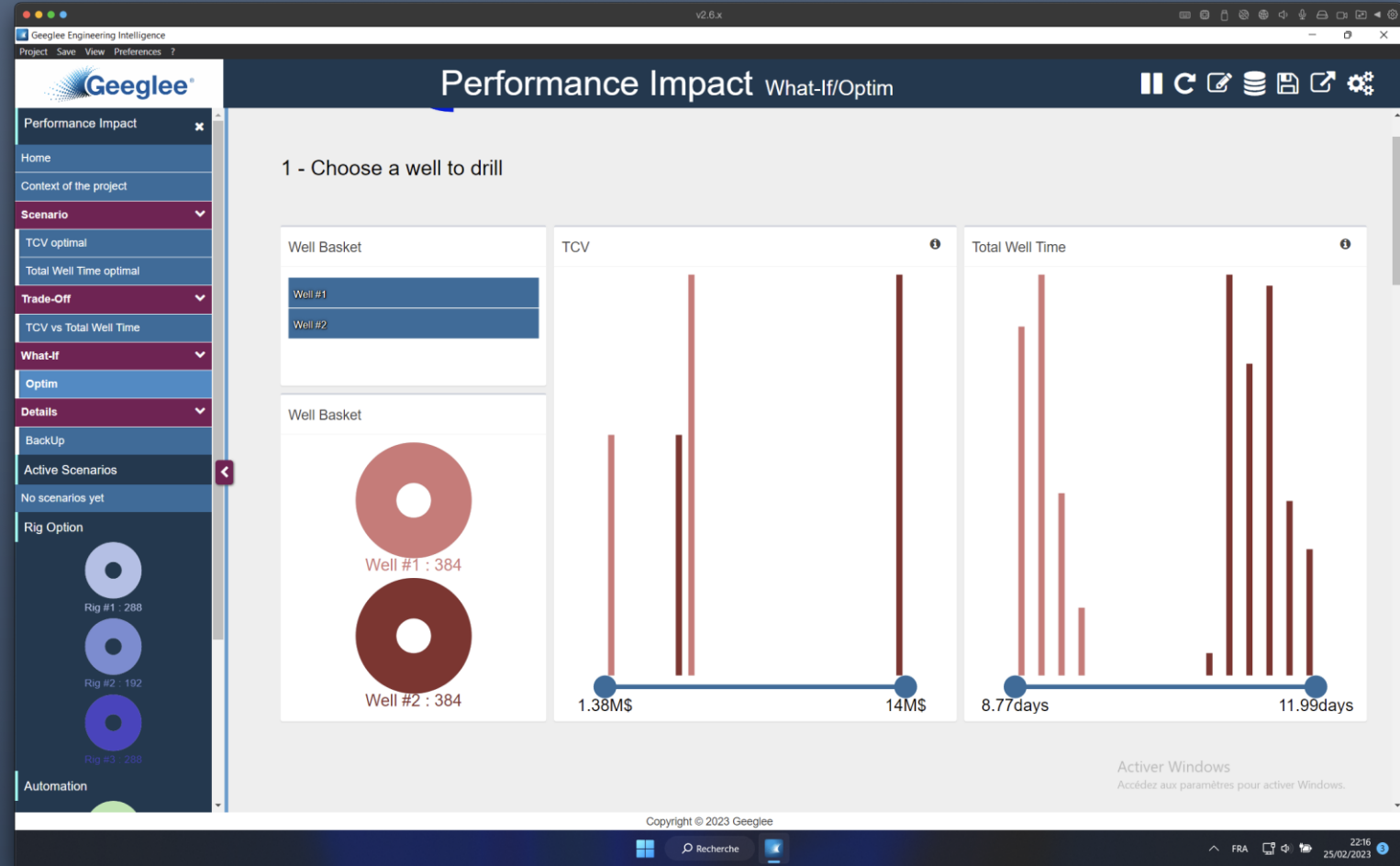
- data pages into trade-off group have the same structure:

1. Choose a well to drill
2. Select “optimal” solution(s)
3. Optimize the trade-off performance:
 - ✓ TCV, and
 - ✓ Total Well Time
4. Optimize the trade-off performance:
5. Have a look at “Rig option” & “Automation”



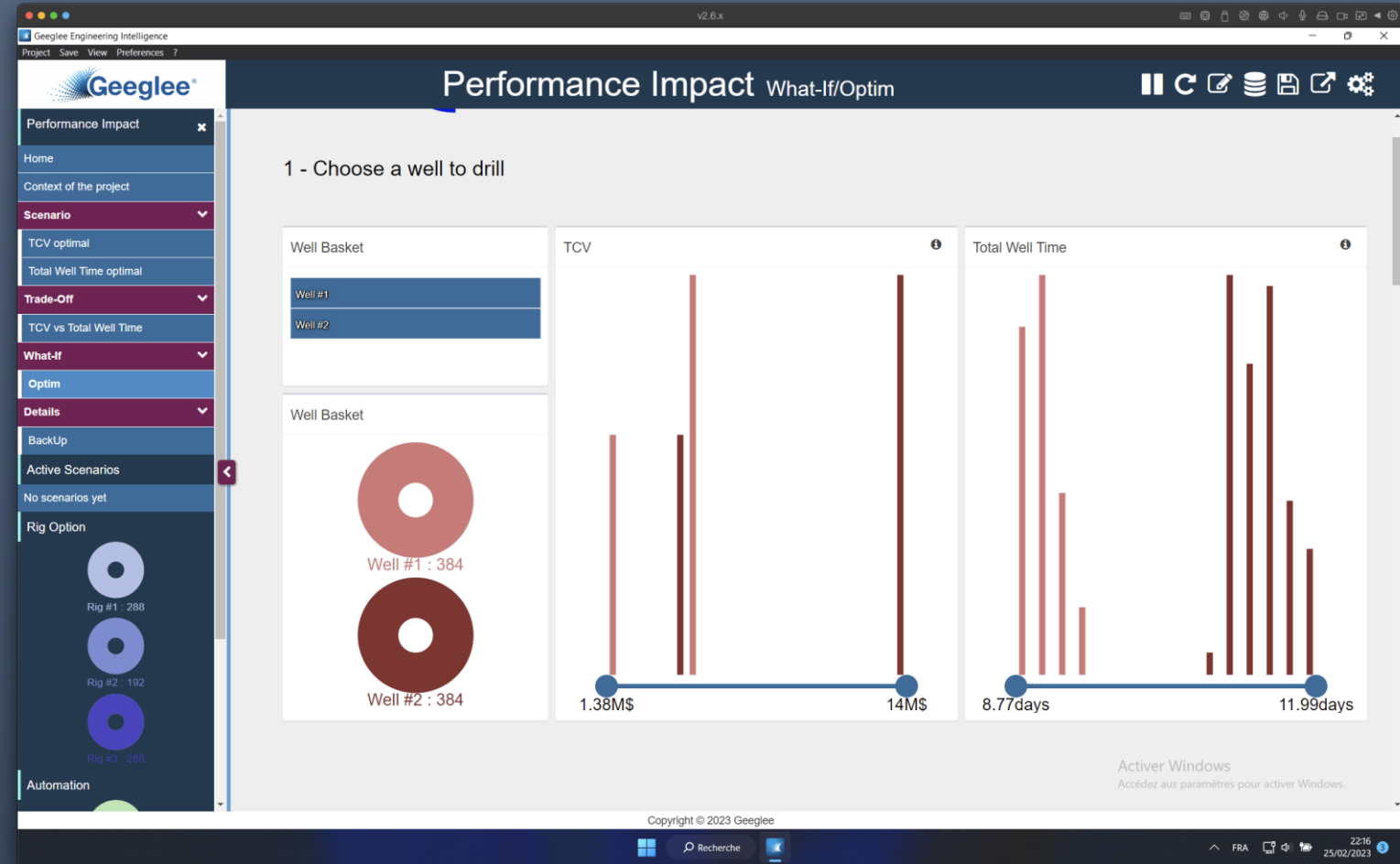


- data pages into What-if group must be defined!





- data pages into Details group must be defined!
- At least, one page for the breakdown of:
 - TCV,
 - Total Well Time





1. Click on “save” menu
2. Click on “Export a project”
3. Select a folder to export your project
4. When done, you get a message

The screenshot displays the Geeglee Engineering Intelligence software interface. The main window is titled "Performance Impact Details/BackUp". On the left, a sidebar menu shows various options like "Home", "Context of the project", "Scenario", "TCV optimal", "Total Well Time optimal", "Trade-Off", "What-If", "Details", "BackUp", "Active Scenarios", "No scenarios yet", "Rig Option", and "Automation". The main content area shows a "1 - Choose a well to drill" section with a "Well Basket" table and two bar charts. The "Well Basket" table lists "Well #1" and "Well #2". The "TCV" chart shows two bars with values 1.38MS and 14MS. The "Total Well Time" chart shows two bars with values 8.77days and 11.99days. A message box titled "Design Space exported" is overlaid on the charts, stating "Design Space was exported successfully in the following directory : Y:\Downloads" and has an "OK" button. The bottom of the window shows the Windows taskbar with the date 25/02/2023 and time 22:29.



HOW TO ADD SUBSETS TO HISTOGRAM?



Geeglee Engineering Intelligence v2.6.x

ORD Scenarios/Minimize Power Consumption

Optimize all the criteria like cost, power consumption, embedded systems volume etc. in order to balance the solutions

Minimize $f(x)$

Step 3: Minimize Power consumption

Total Power Consumption (W)

10.5W 48.4W

Step 4: Have a look at the architecture of the solution(s)

All combinations of cameras (+lens) that cover the area and these combinations can be from one to five cameras

Architecture
Copyright © 2023 Geeglee

19:00 22/02/2023



Geeglee Engineering Intelligence v2.6.x

ORD Scenarios/Minimize Power Consumption

+ Add widget in dataPage + Add widget in sideBar + Add widget in header + Add widget in footer Edit DataPage settings

systems volume etc. in order to balance the solutions

Step 3: Minimize Power consumption

Total Power Consumption (W)

Total Power Consumption (W)
10.5
15.5
18.300460815429688
18.300899505615234
18.30105972290039
20.3999999618530273
21.300460815429688
21.300899505615234
21.30105972290039
23.0
24.3000000618530273

Step 4: Have a look at the architecture of the solution(s)

All combinations of cameras (+lens) that cover the area and these combinations can be from one to five cameras

Architecture

Copyright © 2023 Geeglee



Geeglee Engineering Intelligence v2.6.x

Project Save View Preferences ?

Edit widget

Type: Histogram

Query: Total Power Consumption (W)

Label: Total Power Consumption (W)

Additional Setting

- Y Unit
- X Unit
- Number Of Ticks
- Subsets
- Colors

Argument widgets

Create 5 argument(s) widgets for query Total Power Consumption (W)

Update widget



Geeglee Engineering Intelligence v2.6.x

Project Save View Preferences ?

Edit widget

Additional Setting

- Y Unit +
- X Unit +
- Number Of Ticks +

Subsets -

Subsets

Subs	Value	Action
n°0	2Hybrid	x
n°1	Hybrid	x
n°2	Industrial Camera	x
n°3	-- Select an option --	

Colors +

Argument widgets

Update widget



Geeglee Engineering Intelligence v2.6.x

ORD Scenarios/Minimize Power Consumption

+ Add widget in dataPage + Add widget in sideBar + Add widget in header + Add widget in footer Edit DataPage settings

systems volume etc. in order to balance the solutions

Step 3: Minimize Power consumption

Total Power Consumption (W)

Edited widget config
Reload data by clicking on the left menu.

10.5
15.5
18.300460815429688
18.300899505615234
18.30105972290039
20.399999618530273
21.300460815429688
21.300899505615234
21.30105972290039
23.0
24.300000618530273

Step 4: Have a look at the architecture of the solution(s)

All combinations of cameras (+lens) that cover the area and these combinations can be from one to five cameras

Architecture

Copyright © 2023 Geeglee

Recherche 19:01 22/02/2023



Geeglee Engineering Intelligence v2.6.x

Project Save View Preferences ?

ORD Scenarios/Minimize Power Consumption

Optimize all the criteria like cost, power consumption, embedded systems volume etc. in order to balance the solutions

Minimize $f(x)$

Step 3: Minimize Power consumption

Total Power Consumption (W)

Reload data?

Note: You can reload data later by clicking on the project tab in the left menu.

No Yes

Total Power Consumption (W)

10.5
15.5
18.300460815429688
18.300899505615234
18.30105972290039
20.399999618530273
21.300460815429688
21.300899505615234
21.30105972290039
23.0
24.399999618530273

Step 4: Have a look at the architecture of the solution(s)

All combinations of cameras (+lens) that cover the area and these combinations can be from one to five cameras

Architecture
Copyright © 2023 Geeglee



Geeglee Engineering Intelligence v2.6.x

ORD Scenarios/Minimize Power Consumption

Optimize all the criteria like cost, power consumption, embedded systems volume etc. in order to balance the solutions

Step 3: Minimize Power consumption

Total Power Consumption (W)

Step 4: Have a look at the architecture of the solution(s)

All combinations of cameras (+lens) that cover the area and these combinations can be from one to five cameras

Architecture
Copyright © 2023 Geeglee



Questions?