twiinIT
Collaborative Design Software

A multi functional digital twin to support complex systems robust and innovative pre design

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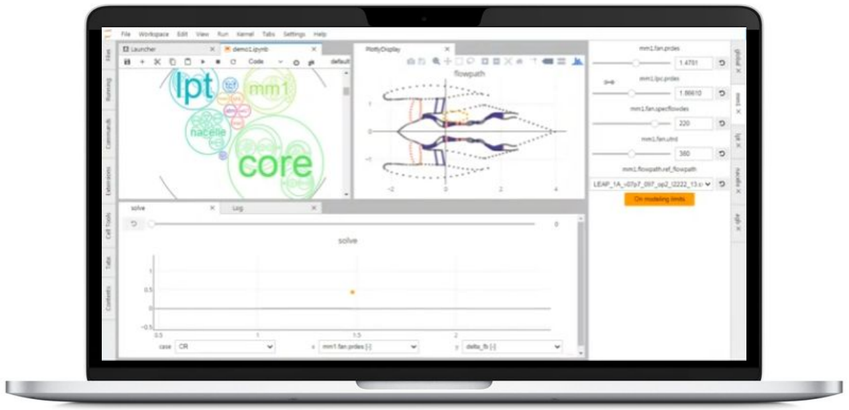
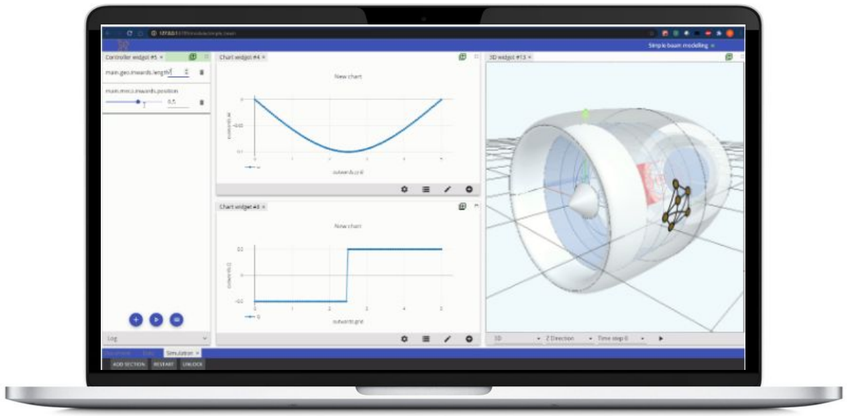


Aircraft engine model ©Safran (2019)



Aircraft engine model ©twiinIT (2022)

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The team

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Prof. Olivier BARAIS, CTA
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Transforming the aviation industry

Aeronautical engineers want to find the keys to sustainable aviation…

… to explore a multitude of new concepts much faster, they need tools and methodologies

Complex system design

General view

Decide of thousands of parameters that

Comply the needs and requirements

Respect feasibility and knowledge

Maximise value(s)

Find the target !

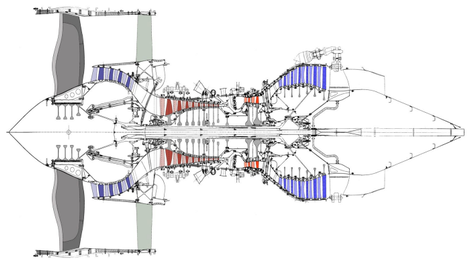
Design major steps

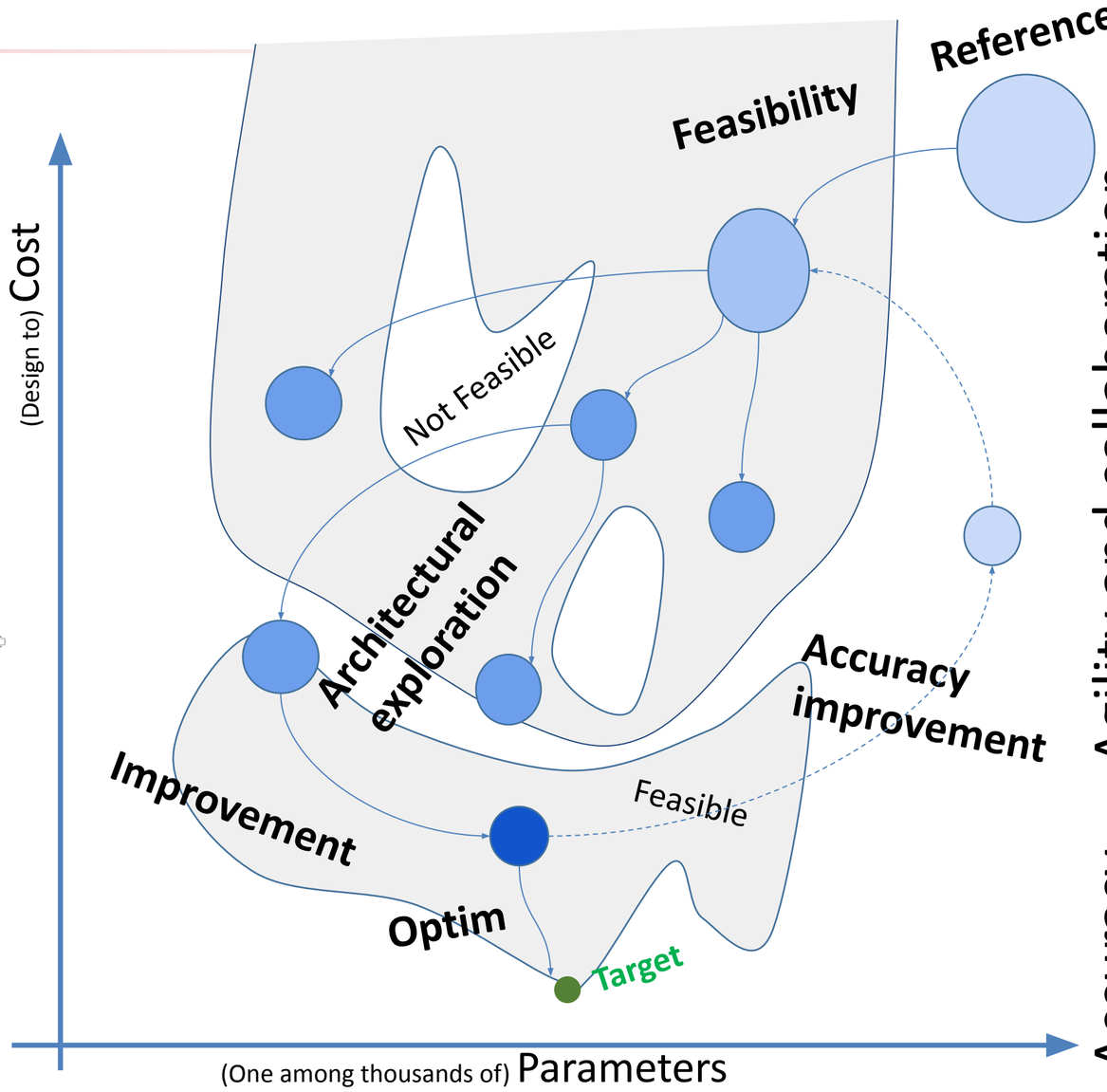
Feasibility studies

Concept studies

Detailed studies (improvement, optim)

Validation & verification

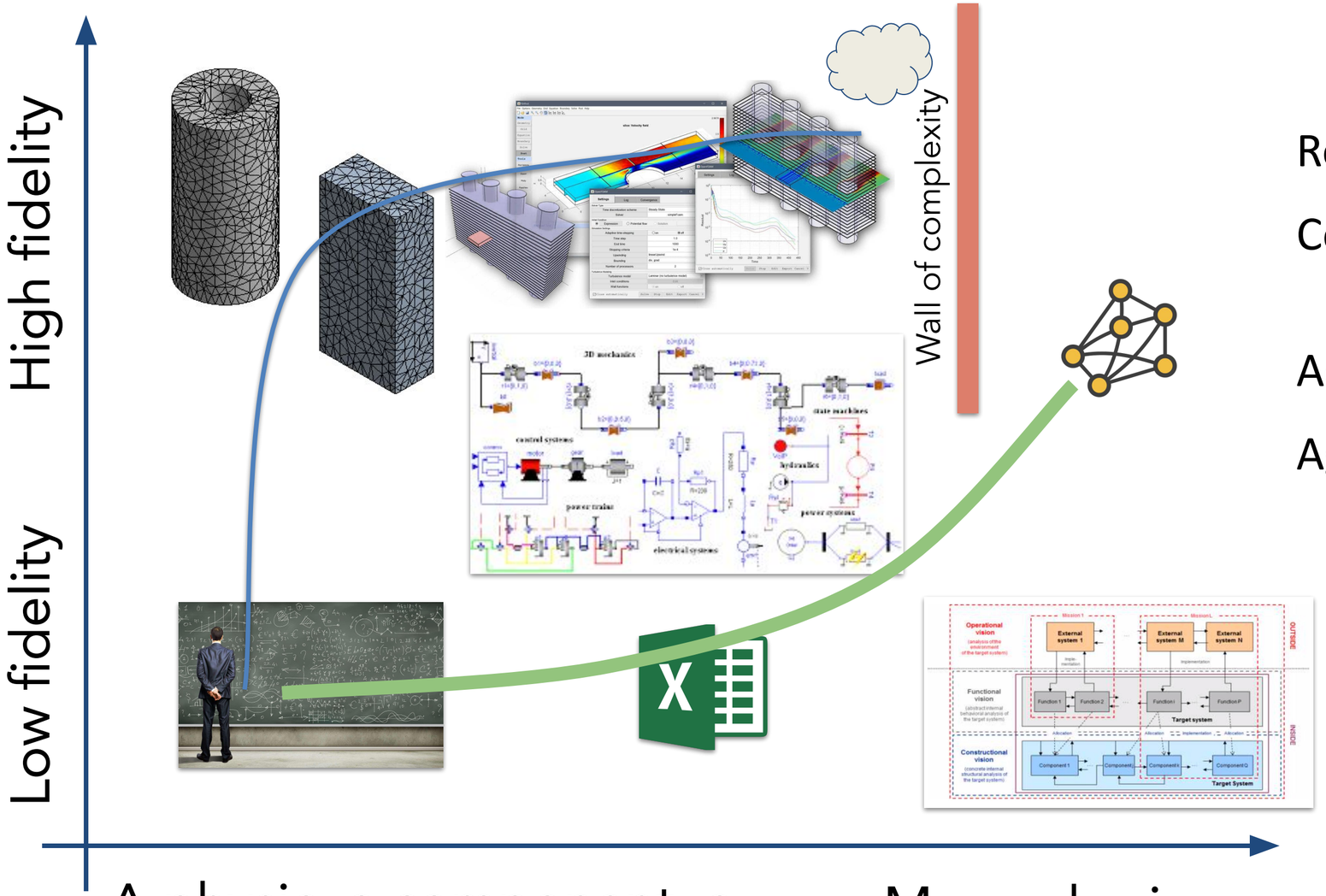




Agility and accuracy adapted to design phase

Complex system design

Scientific tools



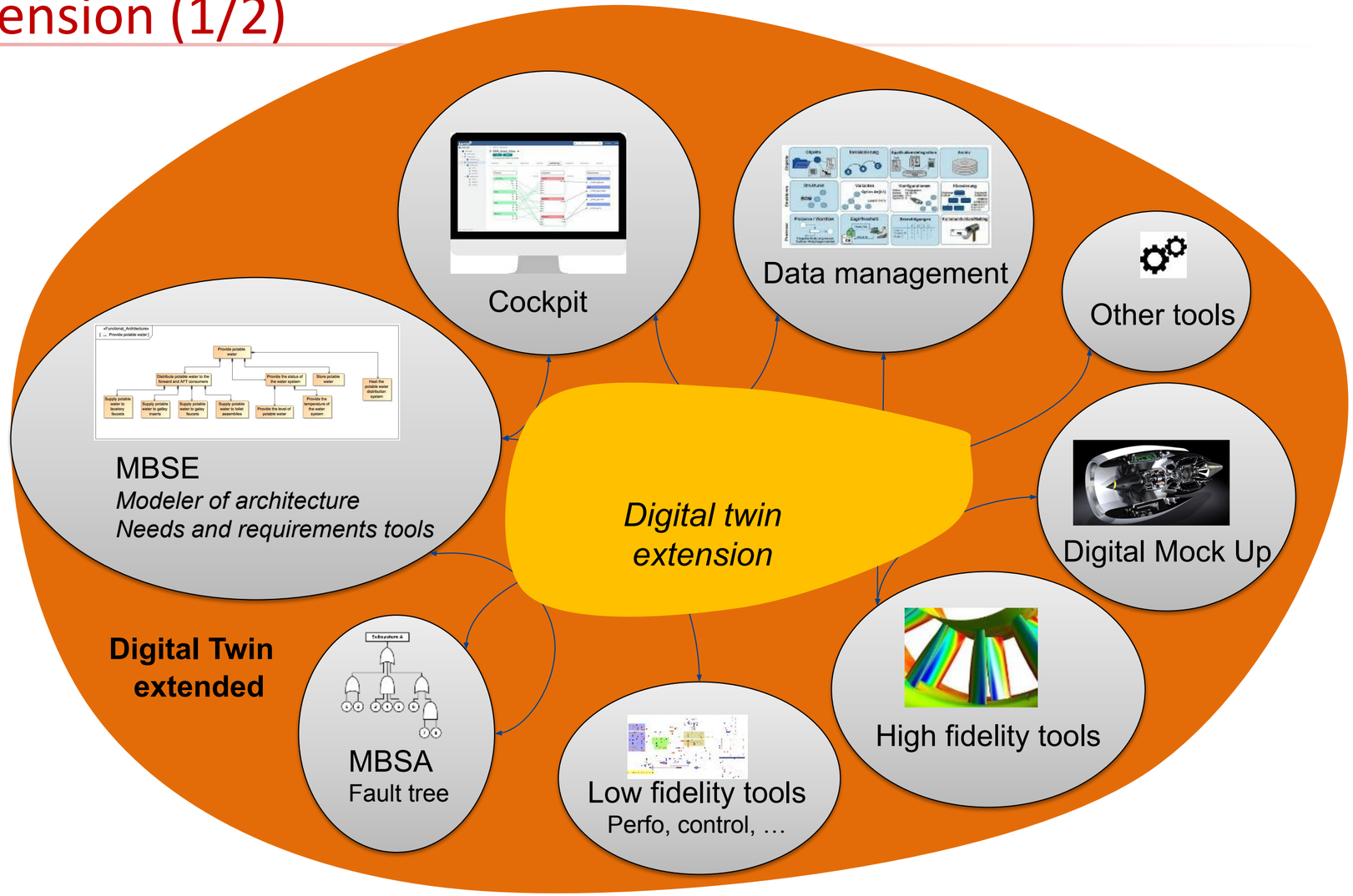
- Represent product behavior
- Continuity of use from design to operation
- Accuracy as needed
- Agility and modularity

A physic, a component, a use case

Many physics,
a complex system, many use cases

Complex system design

Digital twin extension (1/2)

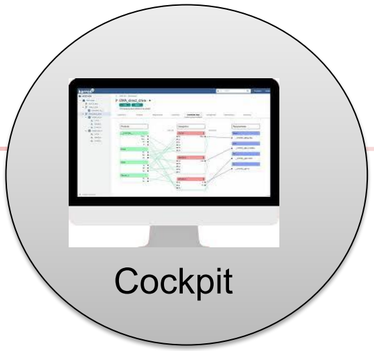


Digital twin extended to connect the digital twin components

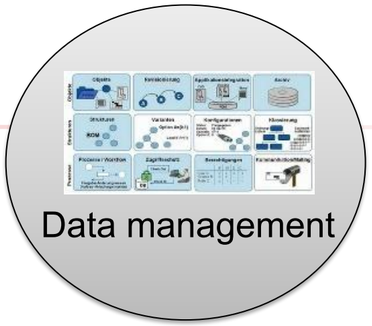
6

Complex system design

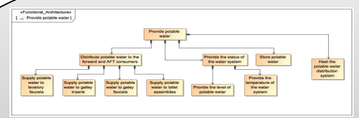
Digital twin extension (2/2)



Cockpit



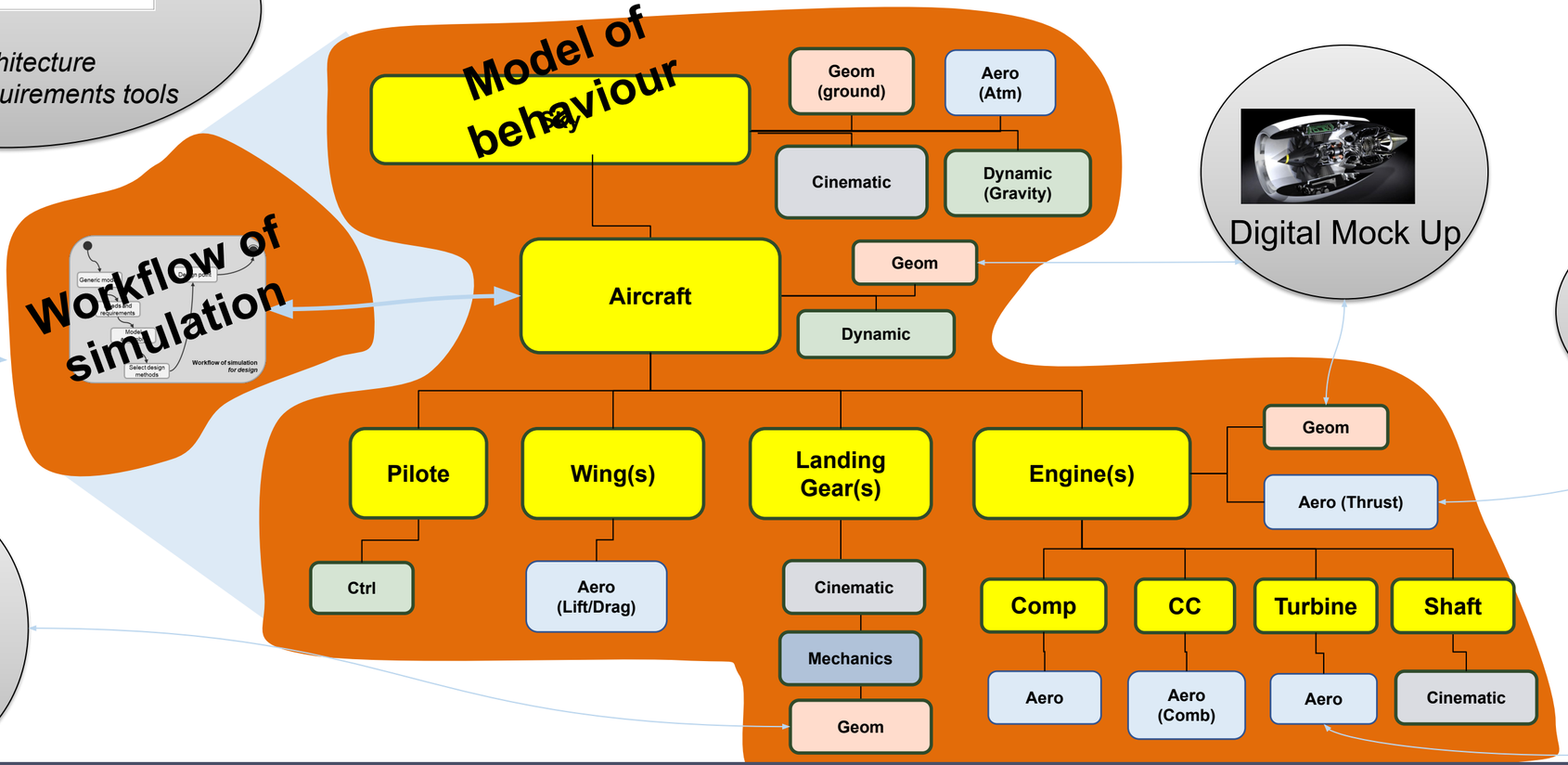
Data management



MBSE

Modeler of architecture

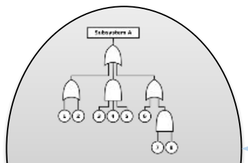
Needs and requirements tools



Digital Mock Up

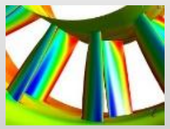
Low fidelity tools

Perfo, control, dynamics …



MBSA

Fault tree

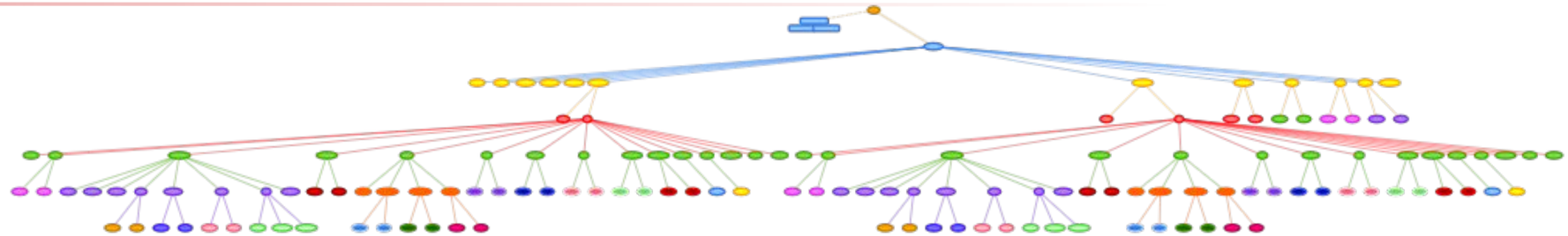


High fidelity tools

A device made to simulate and design a complex system is a complex system …

Complex system design

An Aircraft

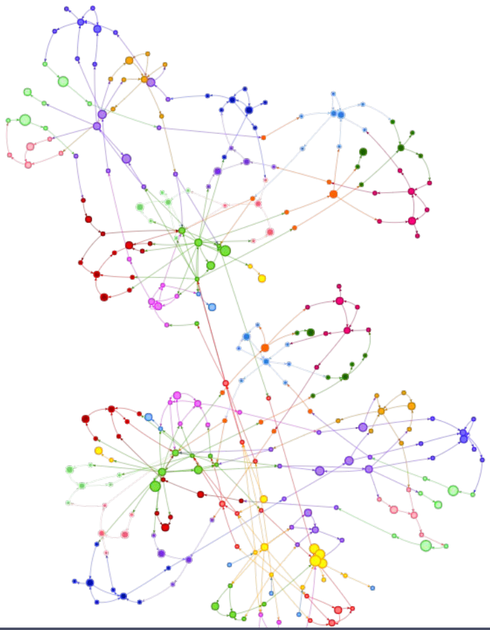


Description

- Airbus A320 type
  - geometry, ctrl, cinematics
  - performances

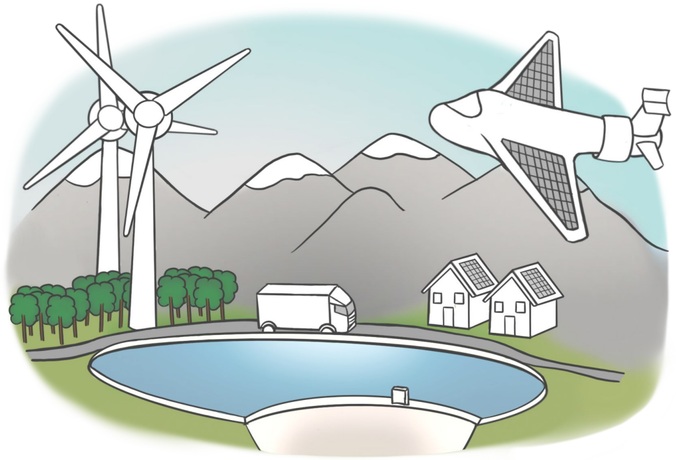
Fonctionnalities

- Sizing under constraints
  - specifications
  - state of the art
- Optimization
- Functioning
  - assignment
  - wear
- Robustness

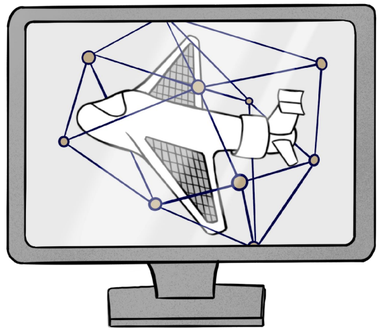


3 weeks to design the model, 20’’ to simulate a flight

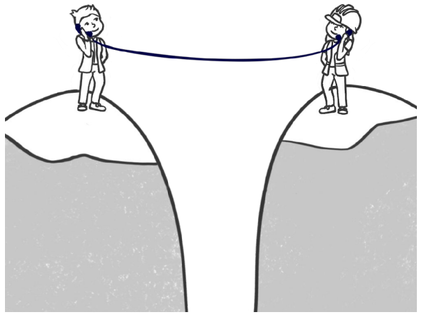
Nowadays products are gaining in **complexity**, operated in **various environments** with increasing interactions and **multiple** use cases.



Our multi-field adaptive modeling technology offers you an **innovative digital representation** of your product



Comprehensive view from design to maintenance



Efficient collaboration between expertise fields

Efforts focused in the right place

Our digital twin solution is made of **open-source** modules **compatible** with your existing tools.

Quicker and smarter design

Reduced operating costs

Assessed maintenance costs

Developed by a **highly skilled team** led by :

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Collaborative Design Software

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Contact us to get your first module now !