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OpenLEGO demonstration

A link between AGILE and OpenMDAO

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OpenLEGO demonstration

A link between AGILE and OpenMDAO

Daniël de Vries, Imco van Gent (speaker)

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Simon Binder (Airbus)

Session: Link CMDOWS to OpenMDAO
13th of October 2017, 10:00-10:30h

First European OpenMDAO Workshop
12-13 October 2017, Toulouse, France



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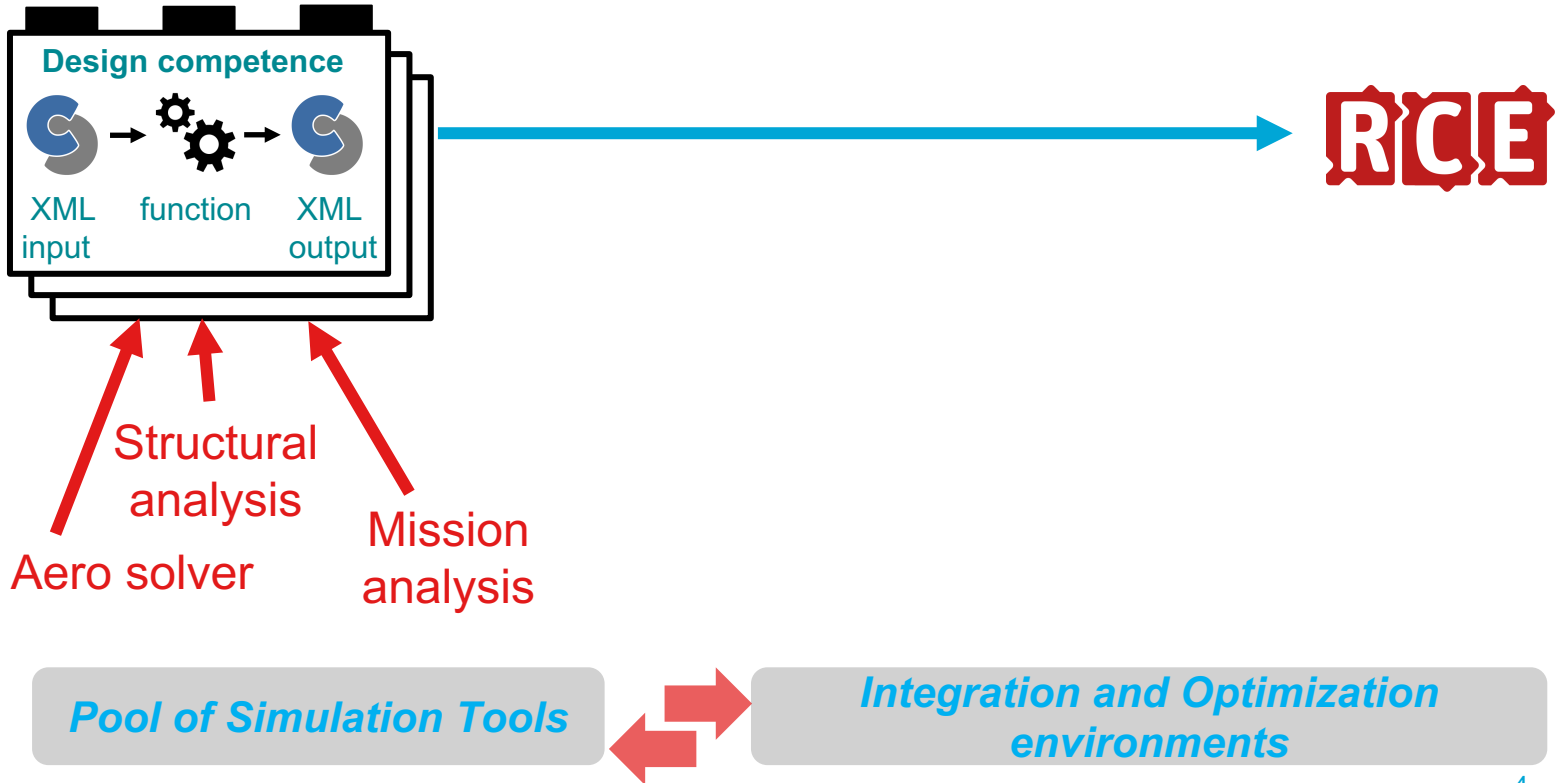
The big picture



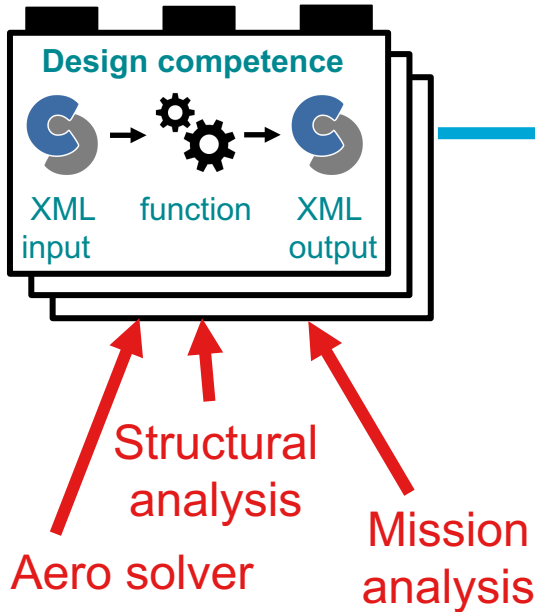
Pool of Simulation Tools

Integration and Optimization environments

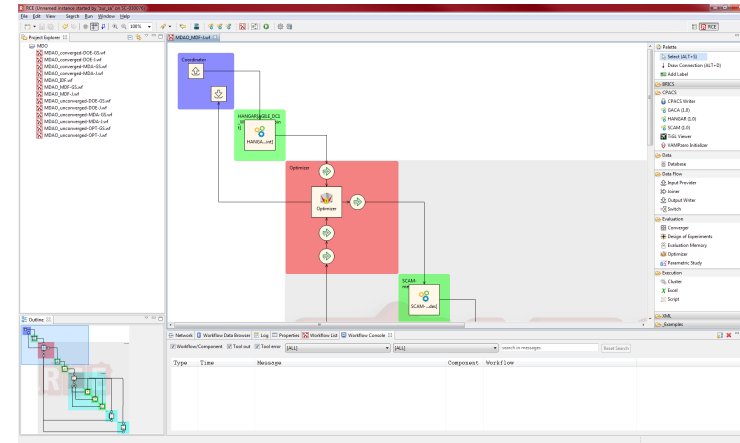
The big picture



The big picture



RCE



Pool of Simulation Tools

Integration and Optimization environments

The big picture

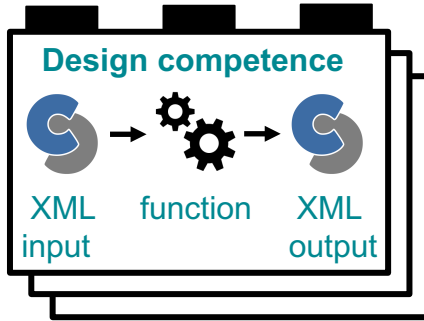


Instead of making **running** optimizations cheap and easy,

we want to:

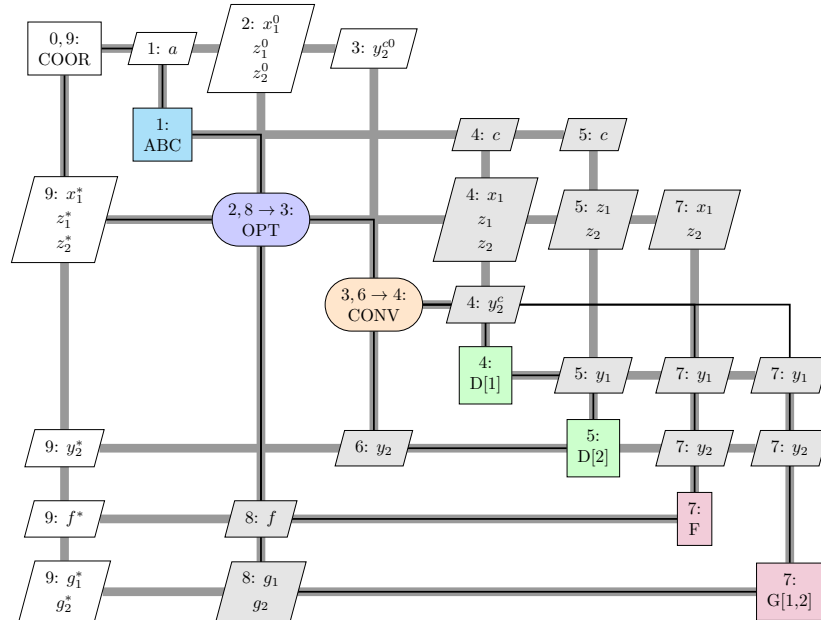
make **setting up** collaborative optimizations cheap and easy.

The big picture

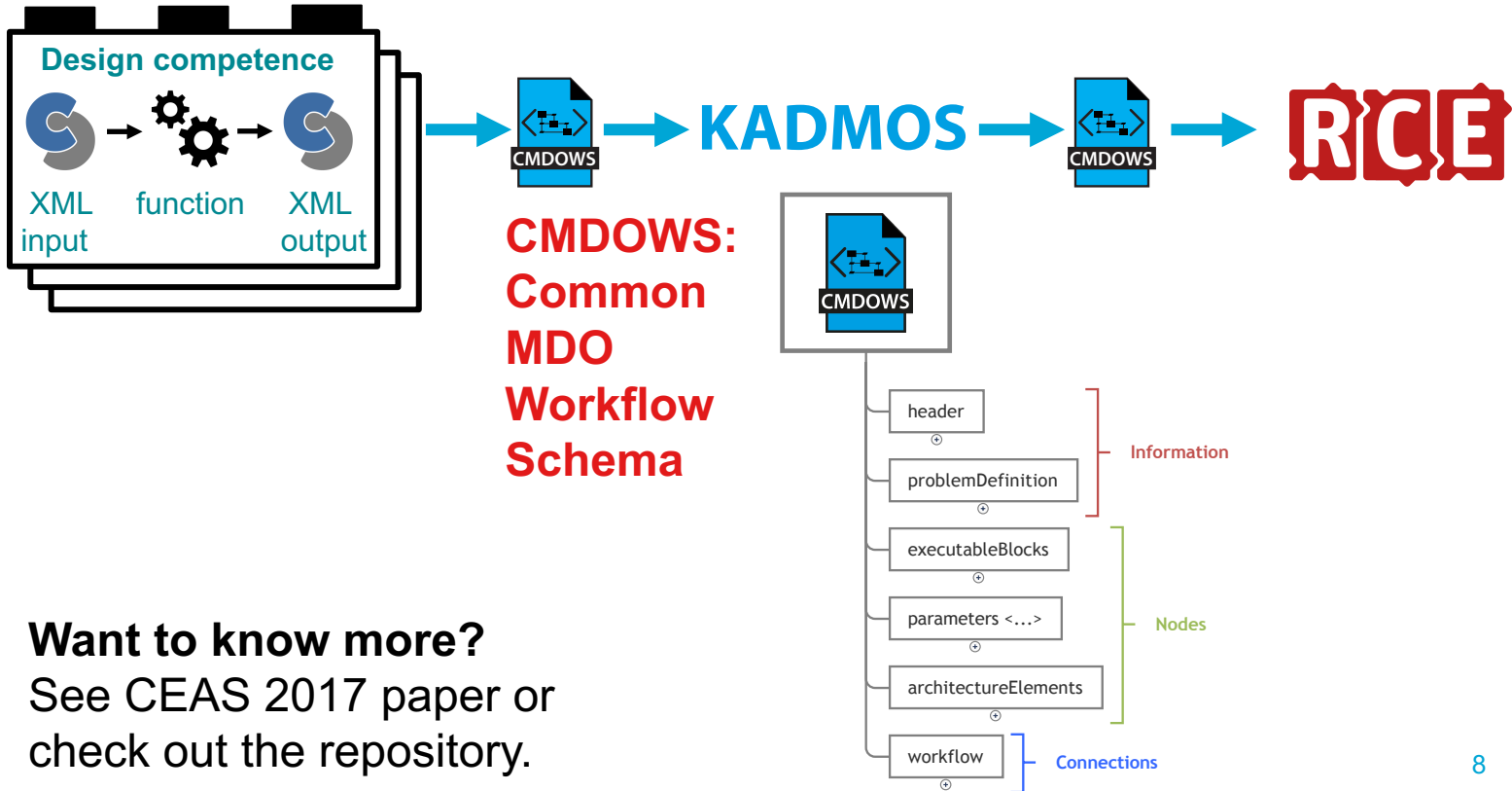


KADMOS

RCE



The big picture



Want to know more?
See CEAS 2017 paper or
check out the repository.

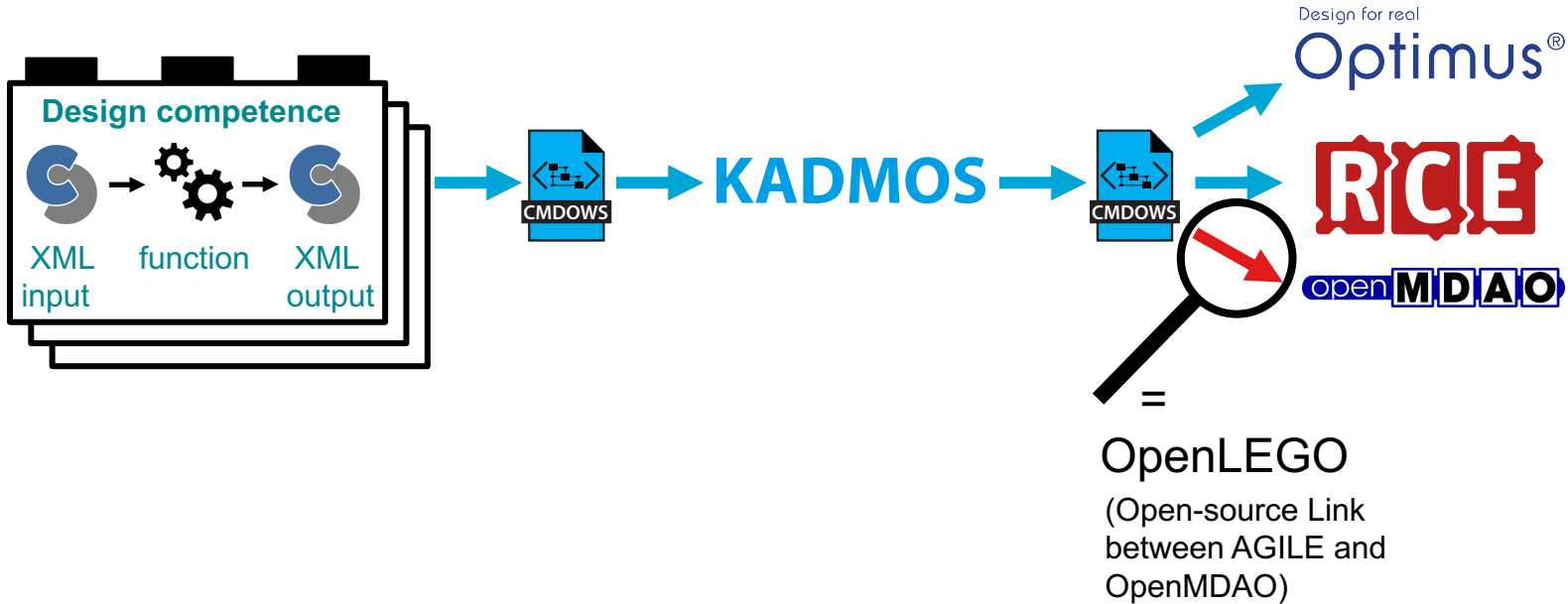
The big picture



The big picture



The big picture



The big picture



Made by
Daniel de Vries

OpenLEGO
(Open-source Link
between AGILE and
OpenMDAO)

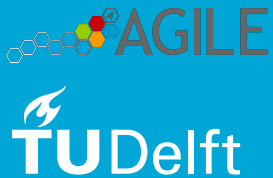
Demo time!



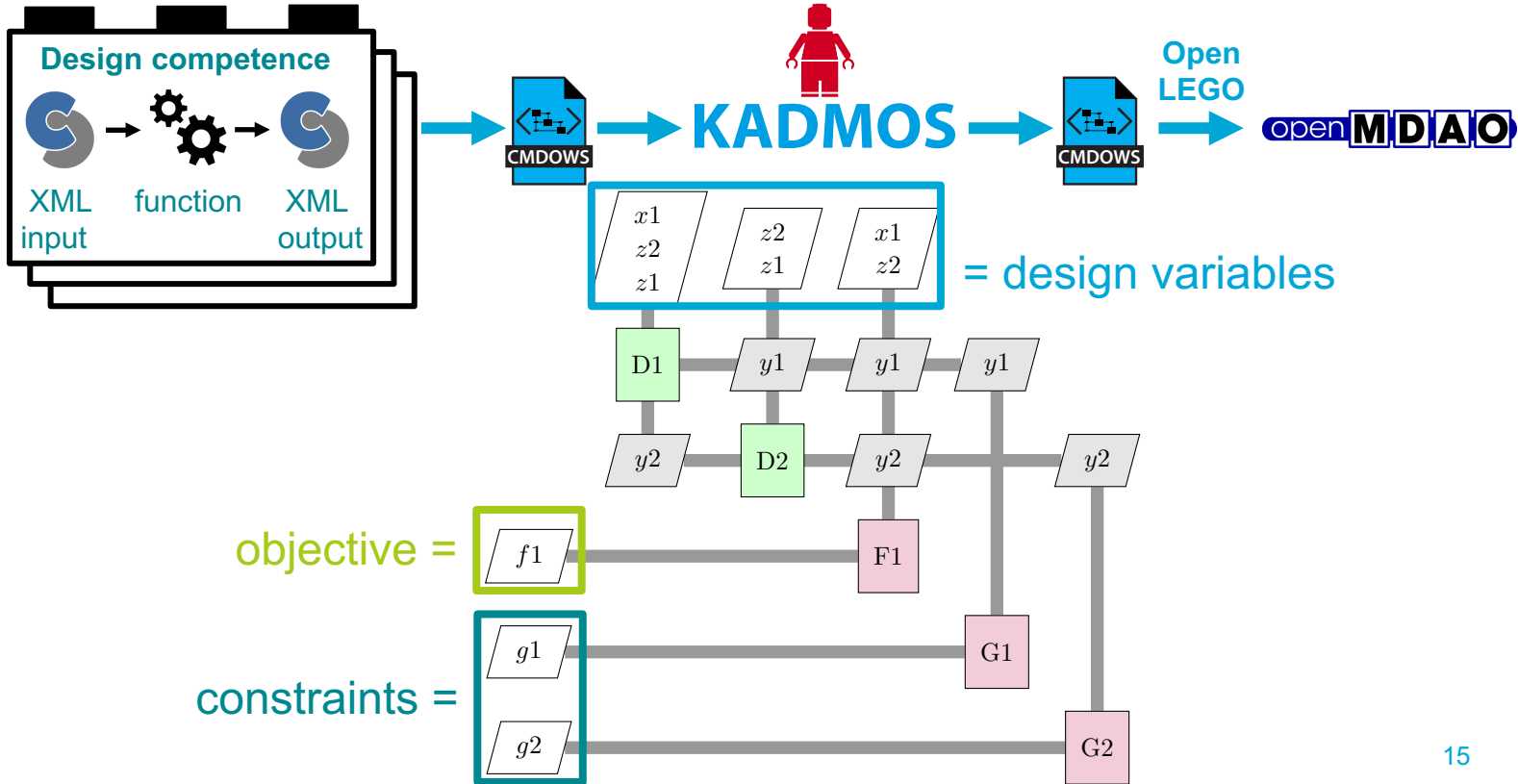
▼ seller_OpenMDAO_workshop

- __init__.py
- D1.py
- D2.py
- D3.py
- D4.py
- F1.py
- F2.py
- G1.py
- G2.py
- G3.py
- seller.xsd

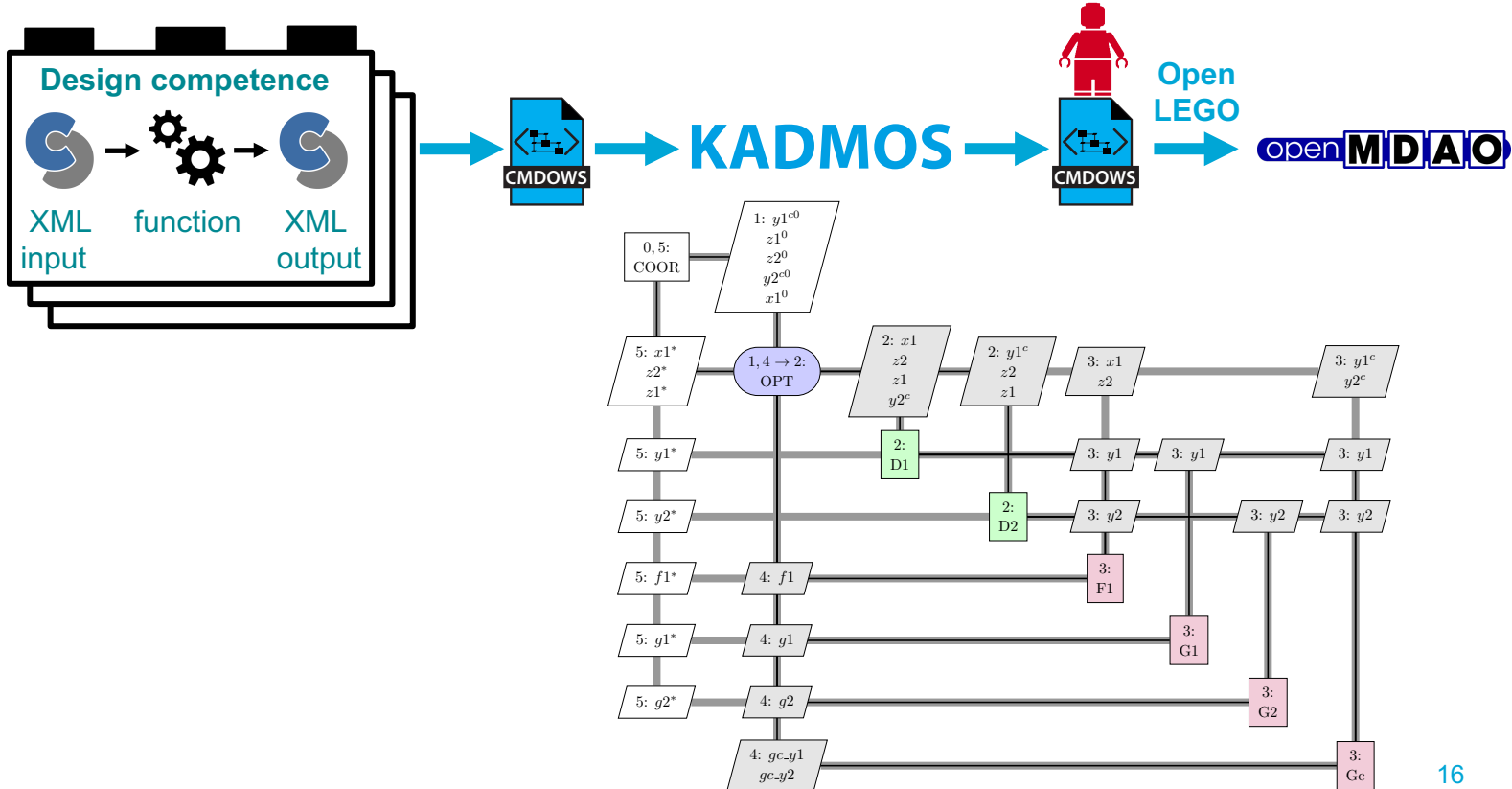
The diagram illustrates the process of Design competence. It features a central white box with a black border. At the top, the text "Design competence" is written in a teal, sans-serif font. Below this, the process is shown as a sequence: a blue and grey interlocking circular icon labeled "XML input" in teal, followed by a black arrow pointing to two interlocking black gears labeled "function" in teal, and another black arrow pointing to a second blue and grey interlocking circular icon labeled "XML output" in teal. The entire diagram is set against a background of three overlapping white rectangles with black borders, suggesting a layered or multi-step process.



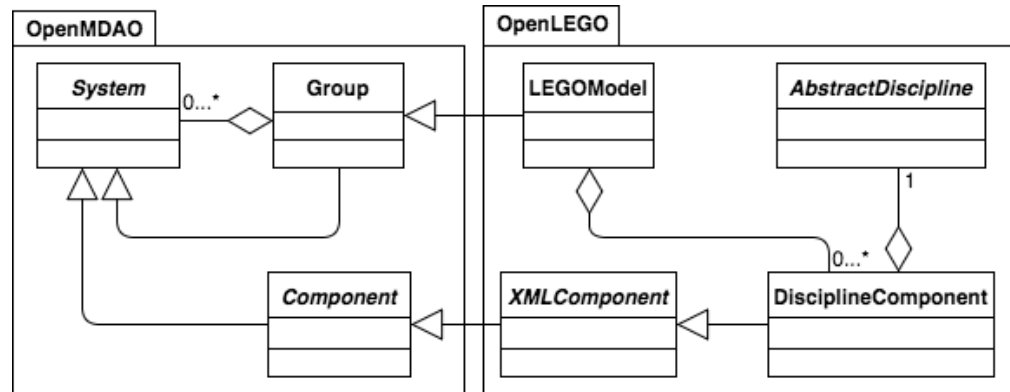
Demo time!



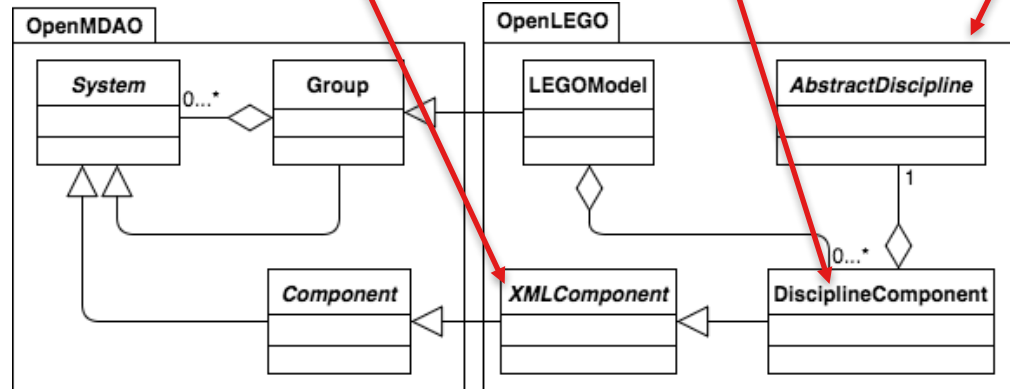
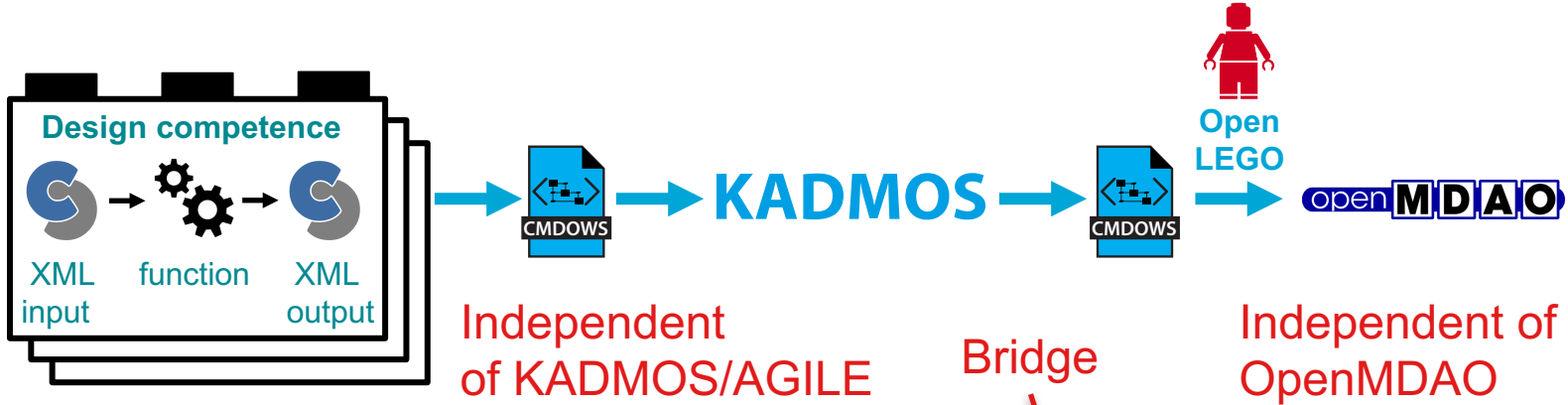
Demo time!



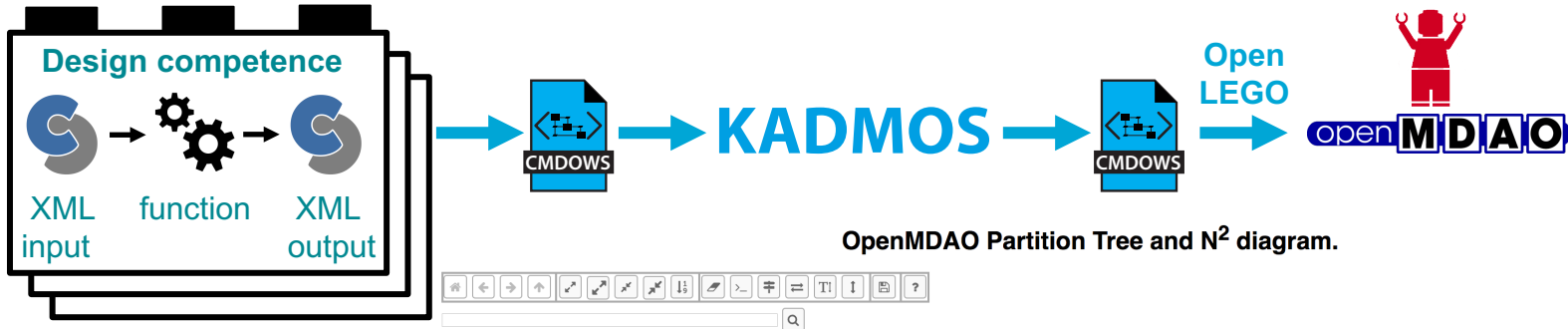
Demo time!



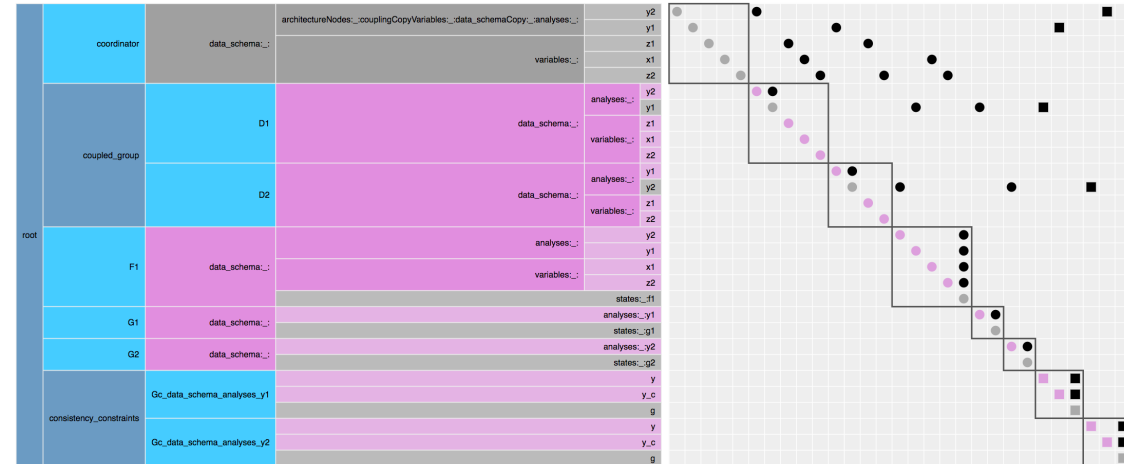
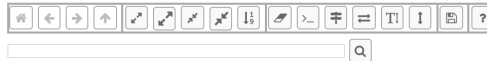
Demo time!



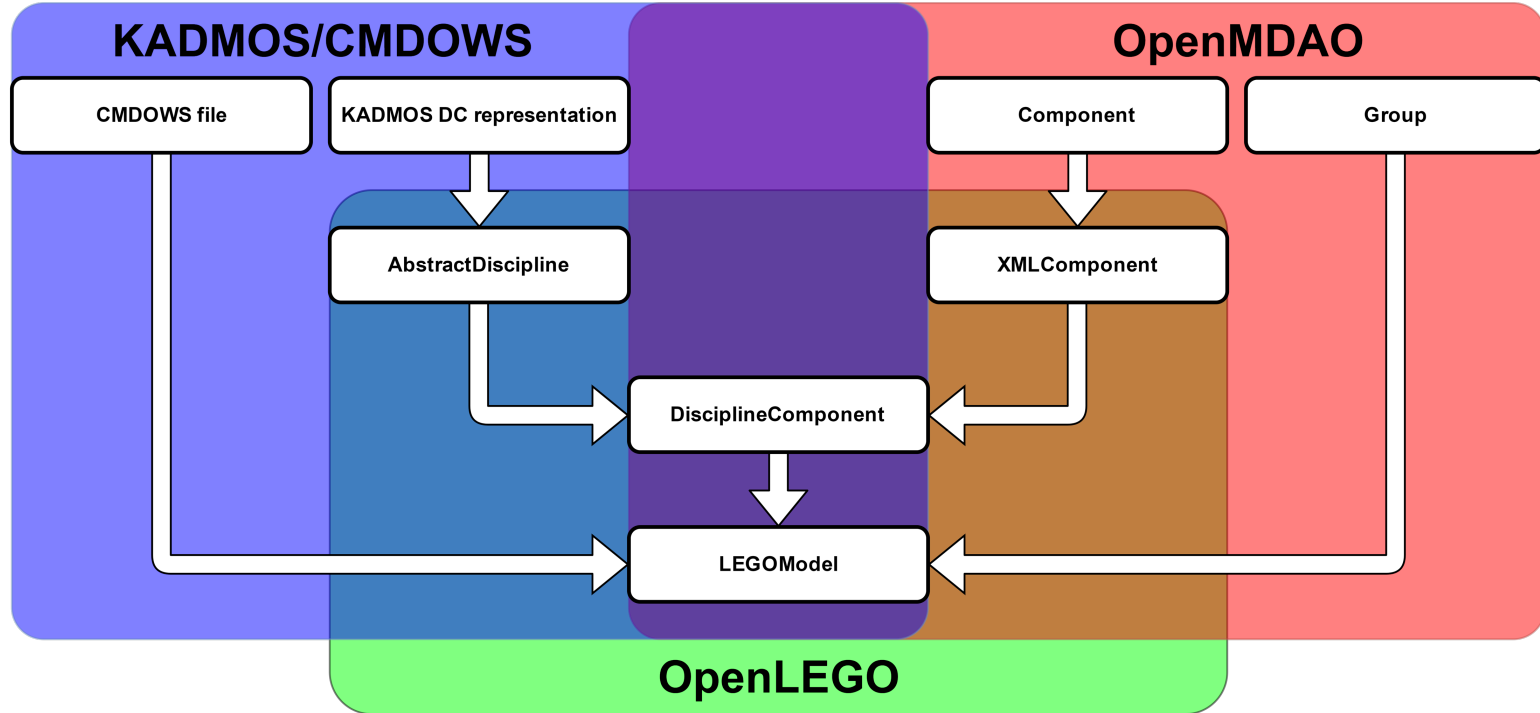
Demo time!



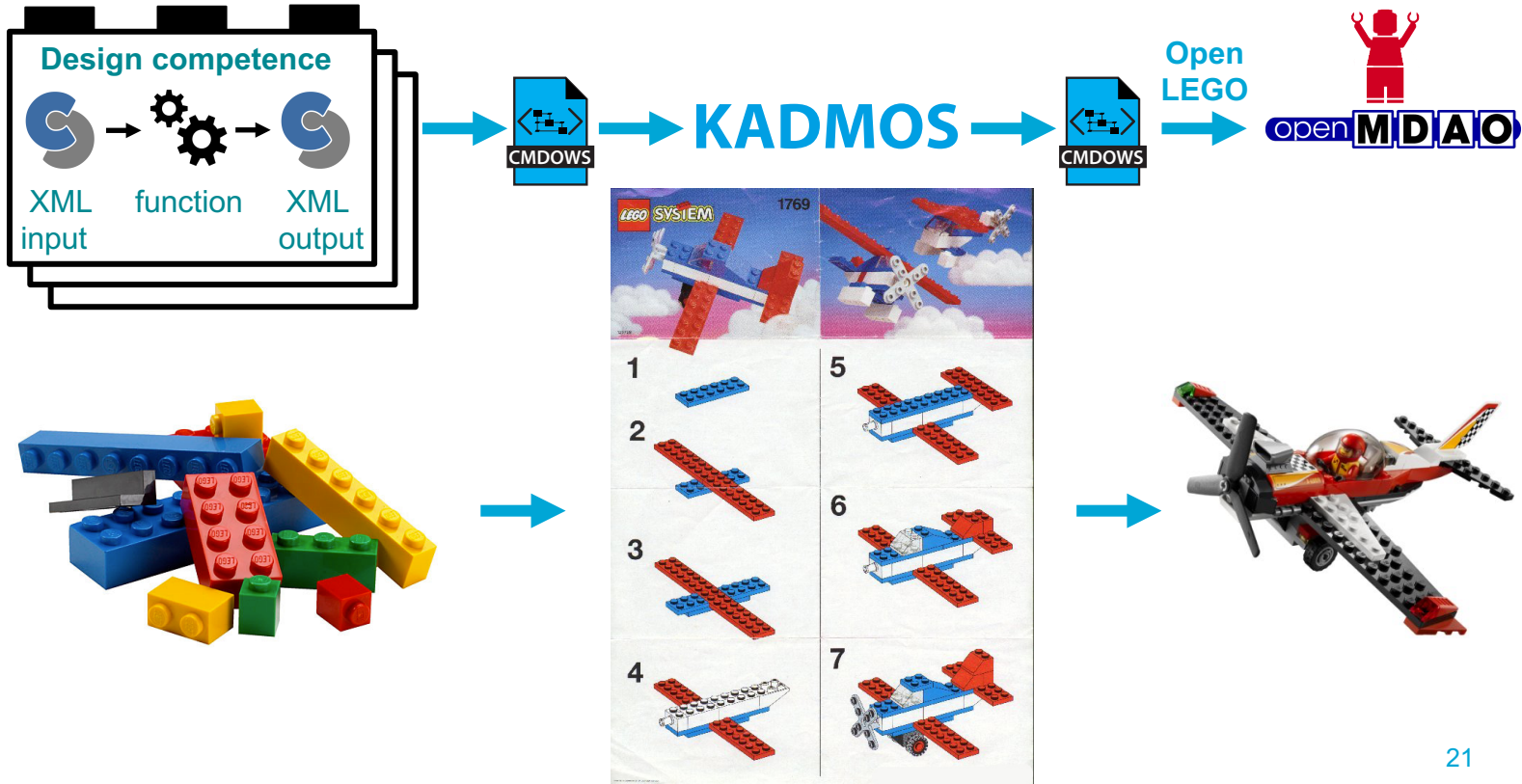
OpenMDAO Partition Tree and N^2 diagram.



Demo time!



Recap



Recap



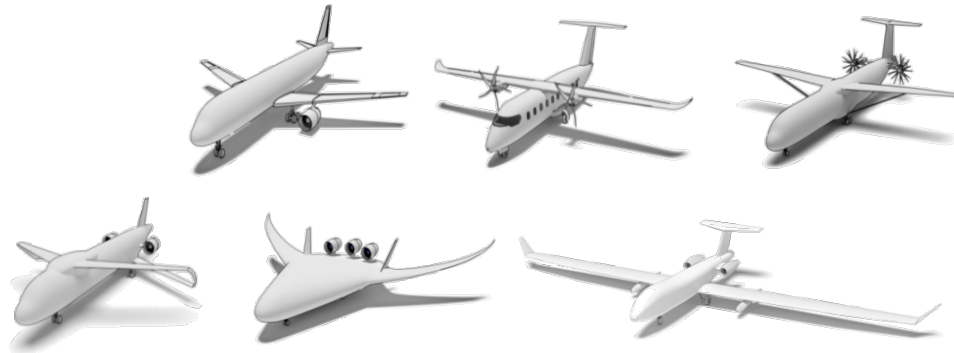
Benefits:

- High level of reconfigurability and agility
- Scalable in different directions
- CMDOWS modularizes the problem formulation process
- CMDOWS parsers could be an OpenMDAO plug-in

Recap



AGILE Configurations



Questions?



Open-source softwares:

- OpenLEGO:
<https://github.com/daniel-de-vries/OpenLEGO>
- CMDOWS:
<http://cmdows-repo.agile-project.eu/>
- KADMOS:
<https://bitbucket.org/imcovangent/kadmos>
- OpenMDAO:
<https://github.com/OpenMDAO>

Acknowledgements

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Back-up slide: OpenMDAO 1.7.3

