

# PHAROS

## Physical Architecture Optimization System

[cordis.europa.eu/project/id/865044](https://cordis.europa.eu/project/id/865044)

**AIRBUS**



**noesis**  
a Cybernet Group Company



**University of Stuttgart**



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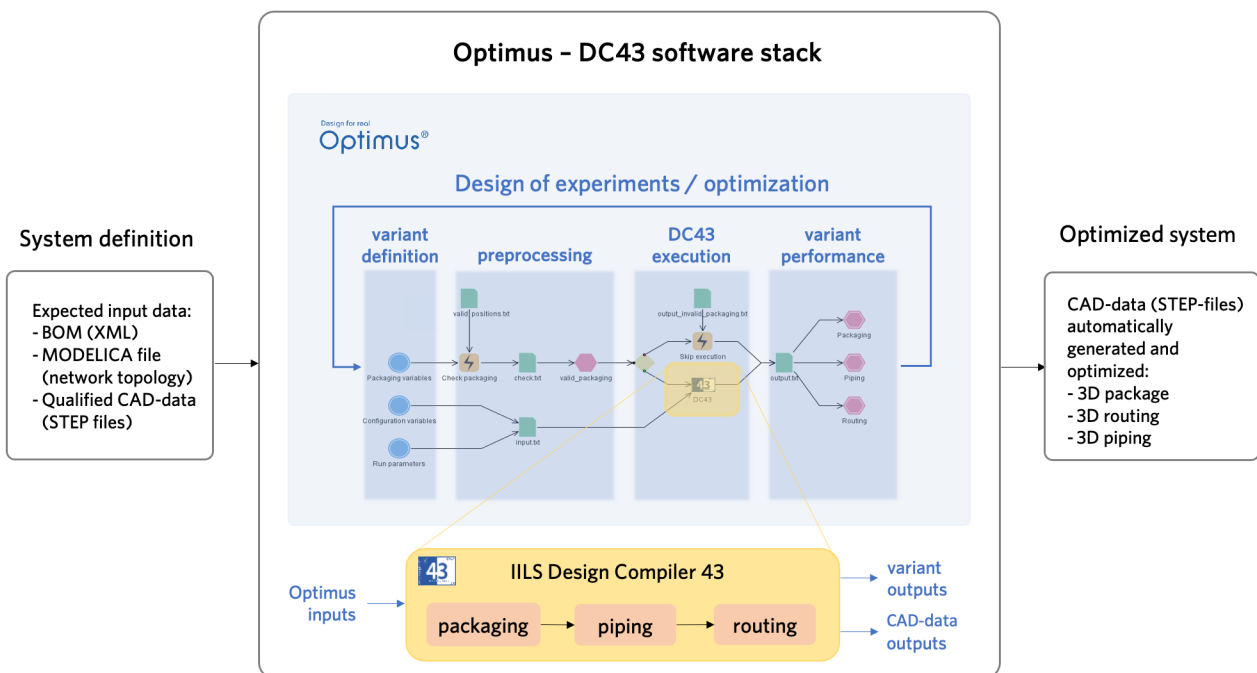
# Automation and optimization of MBSE design processes

## Project objectives

The aim of the PHAROS project is the development, implementation, and demonstration of a **fully instrumented, automated, and simulation-enabled engineering software platform** capable to automate the whole manual model-based systems engineering (MBSE) design process for physical systems architecture generation and optimization.

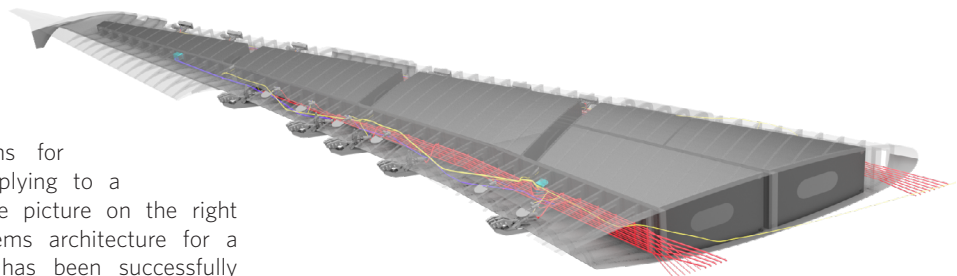
## Solution approach

Graph-based design languages in UML (Unified Modeling Language) are used to develop an automated, algorithmic implementation of interoperable engineering services for packaging, piping, and routing. Design languages are executable in the software platform **Design Compiler 43®** from ILS and are coupled for optimization purposes with the PIDO platform **Optimus®** from Noesis Solutions.



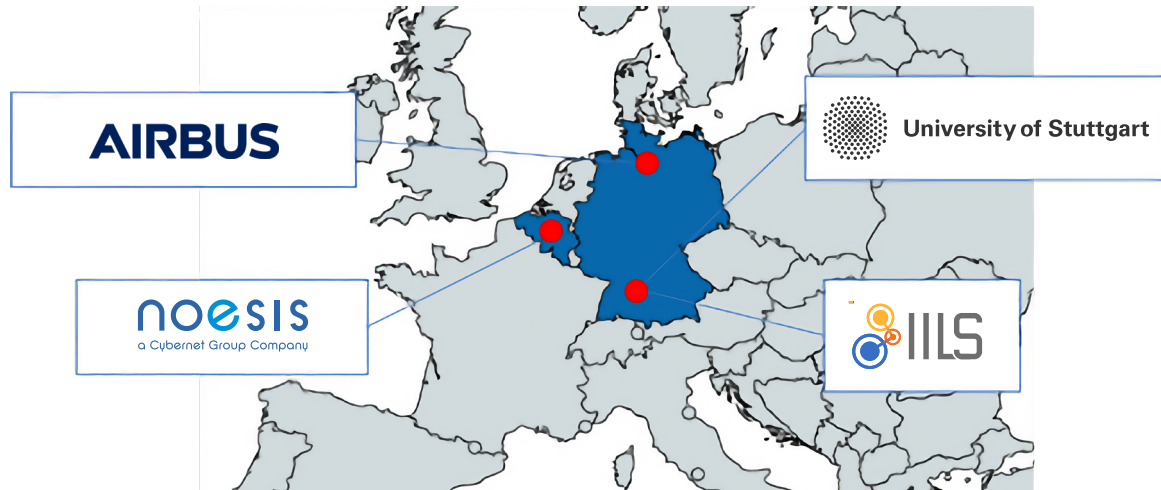
## The use case

The proposed approach is applied to the automated generation of optimal packaging, piping and routing solutions for an aircraft wing section assembly, complying to a given set of engineering constraints. The picture on the right shows an automatically generated systems architecture for a public demonstrator. The methodology has been successfully applied also to an industrial demonstrator provided by Airbus.



## The team

PHAROS is coordinated by the University of Stuttgart. The consortium is made up of four companies from two countries, including a university, two independent software vendors and an OEM in the aerospace sector.



## Want to know more

The **PHAROS software stack** consists of different **industry-proven** modules, seamlessly integrated into a unique solution with a **high technology readiness level**.

Its applications are not limited to aircraft wing design but can potentially cover a broad spectrum of engineering design problems that can be empowered by automation and optimization capabilities.

We are impatient to learn how the PHAROS software stack can help to **streamline the automatic generation and optimization of your physical architecture**.

For more information, feel free to contact us at one of the following channels.

## Contacts

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