

# Cobot for operations of assembly

ASIMOV project

IRT  
JULES  
VERNE

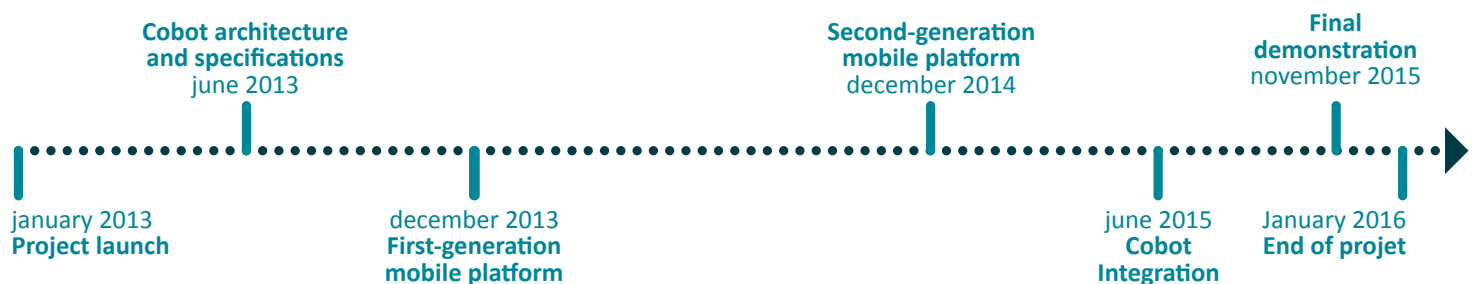
The project goal is to develop a prototype for an industrial collaborative robot, or cobot, with the capability to carry out assembly operations inside an aircraft structure in order to assist the other workers with their low-added-value tasks.

## Technical and economic impacts

- ▶ Increases the degree of automation
- ▶ Reduces cycle time for certain operations by 20%
- ▶ Lowers the incidence of musculoskeletal disorders

## Keywords

Cobotics // Robotics  
Mobile platform // Handling  
Robotic hand // 3D perception



## INDUSTRIAL CONTEXT

Now that safety standards have improved and the latest generations of lightweight, intrinsically safe robots are on the market, we can now consider robotizing certain operations that require highly coordinated activities with the operators. Solutions exist, although a number of technological bottlenecks still need to be resolved.

## INNOVATIVE FEATURES

- ▶ Development of a mobile industrial platform with the capability to operate independently within an aircraft structure that is being assembled
- ▶ Development of a multi-sensor package along with its algorithms for 3D obstacle detection and identification
- ▶ Development of a solution for robotic right-hand handling of a large range of small, complex-shape parts, along with portable hand tools
- ▶ Development of a multi-sensor robot for accurate positioning of parts in confined environments

## INDUSTRIAL APPLICATIONS

The Asimov project is intended to boost the technological maturation process and thereby accelerate access to assembly-line production of the first industrial cobot. The mobile platform and multi-sensor package will be rolled out during production to work with the operators on certain operations. The work on handling aspects will require additional research before reaching the production stage.



## Partners

- ▶ IRT JULES VERNE
- ▶ AIRBUS
- ▶ AIRBUS GROUPE INNOVATIONS
- ▶ BA SYSTEMS
- ▶ CENTRALE NANTES (IRCCYN)

## Equipments

- ▶ Mobile platforms
- ▶ Kuka LWR arm
- ▶ Schunk 5-finger robotic hand

## Budget

- ▶ 1 973 k€

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