

Prototyping & Demonstrators Integration (PRODEMI)

Type of Infrastructure

The unit is supported by three infrastructures:

- the **Electronics Laboratory**
- the **Mechanical Laboratory**
- the **Open area**

The **Electronics Lab.** is an area dedicated to the design, manufacturing, troubleshooting and characterization of electronics equipment and units as well as to support their integration and testing into larger (sub)systems.

The **Mechanical Lab.** is an area dedicated to the design of complex demonstrators and manufacturing of small mechanical parts and interfaces to support demonstrator integration, integration of test articles in the testing facilities as well as test set-up modifications.

The **Open area** is the place where the operating integration and testing of large demonstrators takes place.

Main technical features

The areas above described represent "generic" structures and not dedicated to specific types of tests. For this reason, this particular section of the document is not applicable. For general characteristics, see the following paragraph "*Main measuring instruments/techniques*".

Application Domains

Referring to the ACARE document "Strategic Research Agenda", the application domains that can be "directly" supported by the **Electronics Lab.** are the following:

- Aircraft avionics, Systems & Equipment
- Navigation/Flight Management/Autoland
- Communication System
- Electronics for on-board systems

However, it should be added that besides of aeronautical issues, the lab has been widely used to support space programs.

The **Mechanical Lab.**, on the other hand, focuses its activities mainly on the design and integration of complex demonstrators, test articles and test rigs.

Main measuring instruments/techniques

The **Electronics Lab.** is equipped with instrumentation, simulation tools and equipment for the design of analog, digital and microcontroller-based boards. The instrumentation covers the characterization of both baseband and radiofrequency units up to the maximum frequency of 6GHz. The tools and equipment enable the *model-based* development of baseband modules of communication systems. The laboratory is also equipped for the development of high-level software for data acquisition and test automation as well as for the development of microcontroller software and configuration of Programmable Logic Devices.

At the moment the **Mechanical Lab.** is equipped with computers with Computer Aided Design SW tools such as CATIA and AUTOCAD for the design of models and mechanical/electrical/pneumatic interfaces.

Operational Status

The whole Unit is operating and expansion of the area dedicated to the **Mechanical Lab.** is under development and will be available in mid-2026.