8.b Develop the virtual prototypes in the real environment also thanks to physical computing tools

Functional Area: IT/R&D

Pre-Requisites:

Develop the virtual prototypes in the real environment also thanks to physical computing tools

Fundamentals of High-Level Programming

Fundamentals of Mechanism Dynamic

Assessment criteria	**Knowledge**
LO8b.1. Executes and verifies the operations of adjustment, configuration and programming of automatic devices, based on the technical design and using software tools and hardware required. Same evaluation process of module B but with the following added points: • Considering Dynamics of the system • The user interface will be not composed by simple components (buttons, knobs) but by a digital dashboard on a PC/Mobile • The prototype has to be controlled also using network communication.	• All the module of Module A r • Knowledge of application of dynamics laws • Knowledge user interfaces • Knowledge on high level programming for user interaction • Fundamentals of PID control • • Remote control (Master – Client) of a prototype (network connection)
	Skills
	• All the skills in Module A • Ability to formulate the simplified dynamic model (linear) • Applicate a PID control to a real case and estimate the coefficient models • Design a User Interface • Program the Digital User Interface (control the prototype by a dashboard on PC or Mobiles) • Ability to create a remote connection between master and client in order to remotely control a prototype

	Transferable skills
	• Ability communicate in a symbolic way (user interfaces2)