



**Unlock  
your  
innovation  
potential**

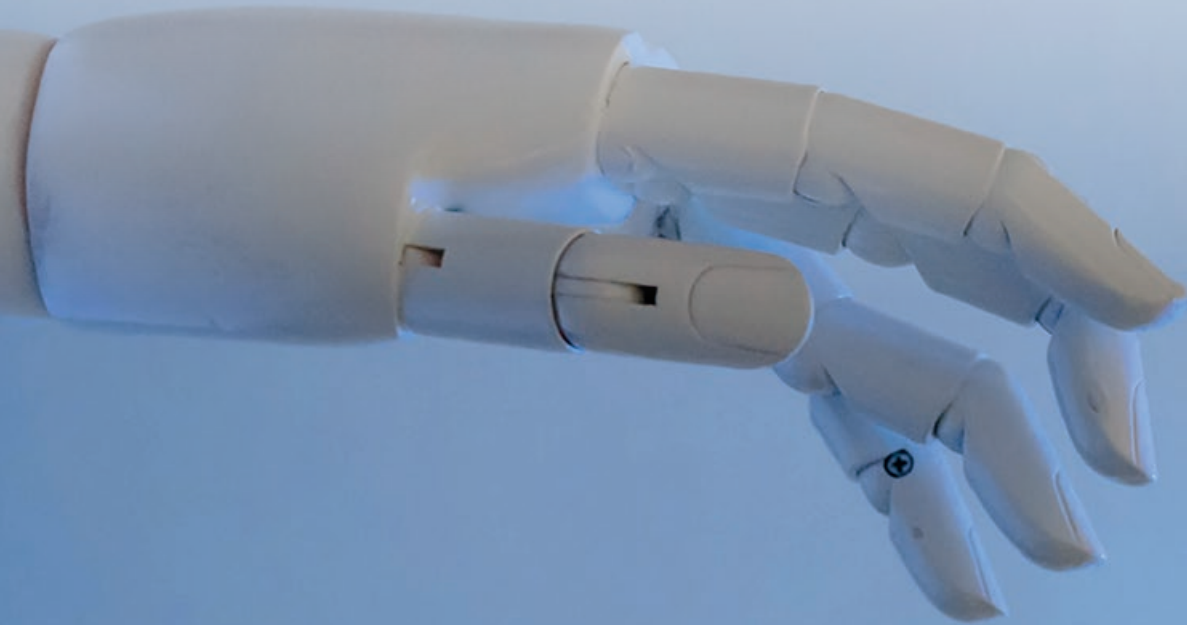
[www.cubitlab.com](http://www.cubitlab.com)



A company of



UNIVERSITÀ DI PISA



**Cubit** provides the best experts in **IoT and Digital Twin technologies** to **transform ideas into innovative products**, offering support to companies in the creation of strategies, products and services, to bring highly innovative solutions to the market, also through the **creation of startup**.

Cubit was founded in 2007 by the **University of Pisa**, the **Navacchio Technological Park** and some Italian ICT companies to create a **unique suite of technological services** in a constantly evolving market.

We collaborate daily with universities, public and private research centers and companies, to offer **creative and tailor-made solutions** to our customers, through our **IoT and Fluid Dynamics Divisions**.

In our operating model, technological research and industrial experience are integrated in a **continuous process of innovation and technology transfer**, to really increase competitiveness of businesses. We offer ourselves as a qualified partner, able to **lead companies through the digital transformation process**, helping them build new and better products, solutions, and business models.

## how we work



### DESIGN

We evaluate the innovative potential of the idea and the feasibility of the project.



### PROTOTYPING and SIMULATION

We develop a first prototype, the Digital Twin, in order to quickly authenticate functioning, performance and market potential.



### INTEGRATION

We incorporate the product into the business strategy and provide the necessary consulting, skills and training.



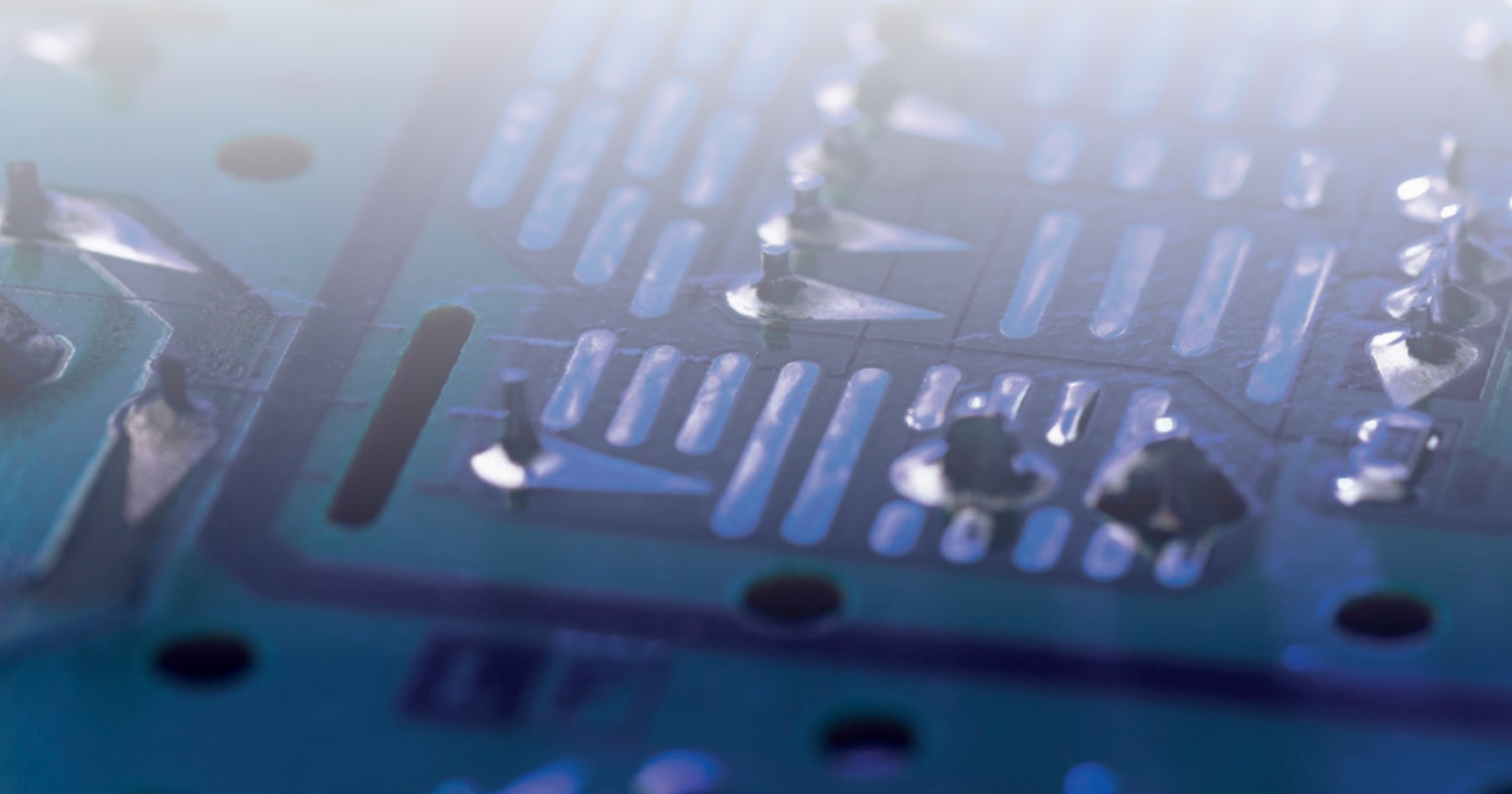
# IoT DIVISION

**Cubit** develops **customized IoT solutions** for its customers, designing advanced devices, which are connected via a wide range of technologies, and integrated into modern cloud platforms.

We create **complete IoT solutions**, thanks to our solid, more than ten-year experience in the field of the Internet of Things in various application areas: from peripheral devices to back-end and front-end cloud, thus covering **the design and development of hardware up to data analysis**.

We guarantee **rapid developing and prototyping**, assisting the customer up to the **final engineering** stages, and providing support in the **certification** phase if required.

The IoT devices and solutions we create can be used to **collect and transfer data**, to process it in real time, and for the implementation, both remotely or independently, of commands in diverse application sectors, from industrial automation to smart cities, from environmental monitoring to wearable devices, from tracking people and materials, to smart energy and building automation.



# OUR EXPERTISE IN IOT

## ELECTRONIC DESIGN

**PCB design and development**, managing the EMC aspects, selection of components and prototyping, up to CE and FCC certifications; integration of different types of **sensors and microcontrollers**, development of testing and application **firmware**.

## M2M CONNECTIVITY

Integration of the most common communication standards for residential and industrial applications, including the implementation of proprietary protocols.

## IOT AND CLOUD SOLUTIONS

Development of customized IoT cloud platforms based on FIWARE, AWS IoT, Azure IoT.

## INTELLIGENT AUTOMATION

Definition and integration of **AI algorithms** in embedded devices with limited resources.

## INDUSTRIAL CYBER SECURITY

Design of secure infrastructures, as well as tutoring and training services.



# Fluid Dynamics DIVISION

**Cubit** implements cutting-edge procedures in the field of **fluid dynamics design, numerical simulations, optimization e experimental activities**, using **a cluster of 9216 cores** which is owned by the company.

We work in close collaboration with professors and researchers from the **Department of Aerospace Engineering of the University of Pisa**, providing the customers with the skills gained in diverse fields of application.

Our clients can have **our experts on site**, and we also offer the possibility of allocating full-time resources at the customer's premises for specific projects or **training activities**, customizable to include topics of particular interest.

Following this philosophy, **a branch office was founded in Maranello (MO)**, with a 100% dedicated team of engineers to accomplish the needs of an important customer in the automotive sector.



# OUR EXPERTISE IN FLUID DYNAMICS

## CFD CONSULTANCY

**Multiphase** and **multiphysics** *RANS* and *DES* analysis for **simple fluxes**, by means of **HPC**, definition of innovative methodologies and numerical-experimental correlation.

## EXPERIMENTAL CONSULTANCY

Definition and execution of experimental campaigns in **wind tunnels** and **naval tanks**, such as the Wind Tunnel of the University of Pisa.

## NUMERICAL OPTIMIZATION

Automated procedures for **multi-objective** and **multi-disciplinary** problems focused on **performance** and **time-to-market**.

## FLUID-STRUCTURE INTERACTION

Study of unstable **dynamic phenomena**, such as flutter, buffeting and galloping as well as **static verifications**.

## DATA SERVICE

We offer **partitions of our 9216 cores cluster** complete with software licenses, to streamline business processes.

## ON-SITE EXPERTS

Support from our consultants at the customers' premises to **boost their competitiveness** and increase their know-how.





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