IEEE 1451 - IEEE Standard for a Smart Transducer Interface for Sensors and Actuators
Hands-on Lab

Sponser: IEEE IES Technical Committee on Standards

Venue: Sheraton Grand Chicago

The IEEE1451 family of standards ensures seamless integration and interoperability of devices within the same ecosystem addressing IoT and CPS needs. The standard is the focus of the hands-on lab that includes theoretical and experimental sessions.

05/11/2024 – at 9h – Conceptual Background – 1 hour

- Introduction and Motivation
- IEEE 1451 Family Reference Model
- Transducer Electronic Data Sheets
- TIM TransducerChannels Structure and Organization
- TransducerChannels Attributes and operating modes
- Triggering, Synchronization and Status
- Message Structures and Commands TIM/NCAP
- How to use the IEEE 1451 in my product

05/11/2024 – at 10h – Hands-on Application Lab – 2 hours

The laboratory explores how to develop a Transducer Interface Module (TIM). A Low-Power Temperature Smart Sensor's source code is provided to be executed in a MSP430.
First, the TIM internal structure is explored. Afterwards, the attendees will be guided in adding a new transducer channel.

Registration and additional information at:
https://iml.ubi.pt/ieee1451handsonlab/
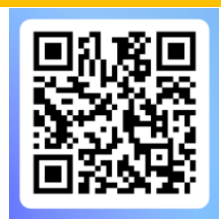
Free Support Documentation

- PowerPoint used in the two lectures
- TIM source code (MSP430 version)
- Access to online tools
- Laboratorial protocol