



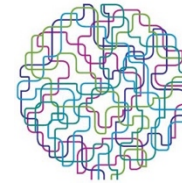
***Computer Embedded System Laboratory (CES-Lab)  
National Engineering School- Sfax (ENIS)  
University of Sfax, Tunisia***

***Mohamed Abid, Pr.***  
***[mohamed.abid@enis.rnu.tn](mailto:mohamed.abid@enis.rnu.tn)***  
***[mohamed.abid\\_ces@yahoo.fr](mailto:mohamed.abid_ces@yahoo.fr)***

**This presentation is for**

**Workshop 4: internet of Things**

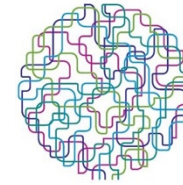
# Description of “**Computer Embedded System**” **Laboratory (CES-Lab)**



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- CES-Lab: founded since 2006 a **public research laboratory** at National Engineering School- Sfax (ENIS), University of Sfax, Tunisia
- CES-Lab promotes **interdisciplinary R&D activities** of **embedded systems** design for **real-life applications** in basic **advanced technologies**
- **Aim** : stimulate **synergic cooperation** with other several partners at national and international levels: **innovation activities in the areas of embedded systems**
- Contribution of developing **innovative and effective teaching** embedded systems to undergraduate students and training through research of postgraduate researchers
- **Active participant** in several national and international **collective activities** related to the embedded systems
- Capacity for contribution of **developing research proposals** and **seeking research funding** demonstrating team **working skills** with high level of **cooperation**
- **Industrial experience** in the field of embedded systems and an **expertise** for many national and international institutions
- **Served as co-organizer of many international conferences and collective activities**

# Research interest of *CES-Lab*



- **Target markets: industrial and real applications**

Embedded Systems, Wireless Sensors Networks, **Internet of Things**, Biometrics, Video processing, telesurveillance, etc.

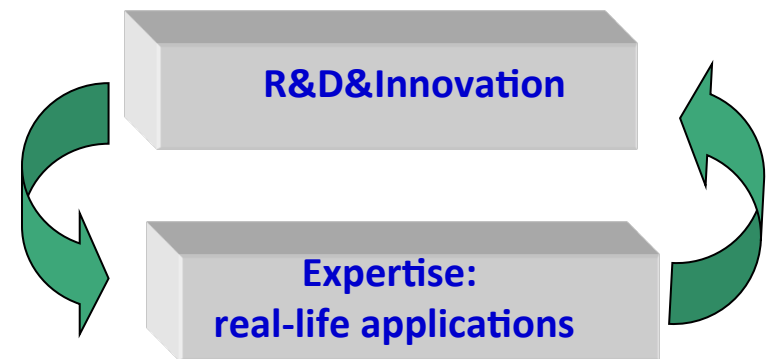
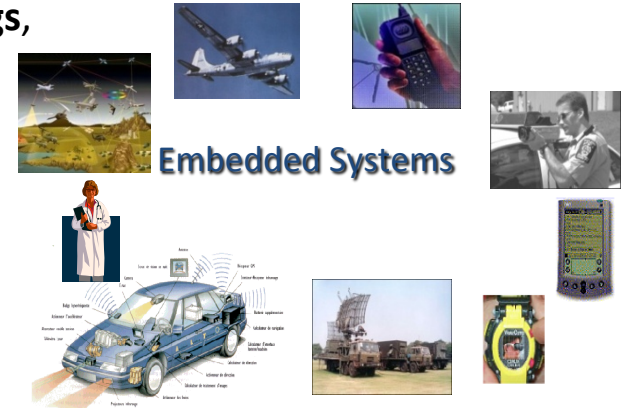
- **Several requirements:** High performance, Real-Time, Low cost, Low power, Security, Ease of use, Flexibility, etc.

- **Architectures and Platforms:**

Advanced Architectures, System on Chip, **Reconfigurable System**, Architectures Low Power, **Open source plateformes**, Prototyping, etc.

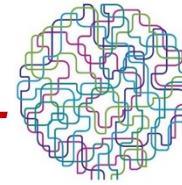
- **Software issues:**

High level design, **RTOS**, **Model-based approaches**, architectural exploration, **Optimisation**, etc.



## H2020 Target Call : *ICT-05-2017*

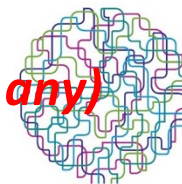
Project Idea title: *Adaptive sensor and security for IoT*



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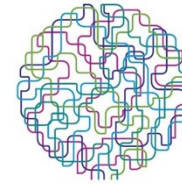
- **Objectives: for the context of IoT**
  - Adaptive sensor node low power: architecture reconfigurable
  - Many privacy and security issues : Securing the sensor Device Layer and -Securing the Gateway Layer
- **Requirements:**
  - Gateways support a complete IPv6 protocol stack that ensures interoperability
  - Platform: a secure end-to-end operation, integration with existing authentication and authorization s
  - adaptive sensors make IoT system able to deal with IoT data
  - low power to extend lifetime and save cost with making sensor operate as long as possible
- **Two level of security :**
  - Securing the sensor Device Layer
  - -Securing the Gateway Layer
- **Platform for simulation and performance evaluation: CONTIKI (open source operating system)**
  - Provides powerful low-power internet communication
  - supports fully standard IPv6 and IPv4
- **Scenarios:**
  - Water pipeline monitoring based on WSNs while maintaining low power consumption: demonsrater
  - Fire forest detection: detection of different parameters using temperature and Carbon monoxide sensors

# Consortium - profile of known partners *(if any)*

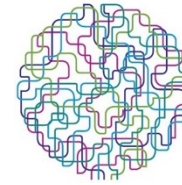


No	Partner Name	Type	Country	Role in the Project
01	SIT: <a href="#">Society, Innovation, Technology</a>	Consulting	Belgium	CONSULTANCY, CONSORTIA CREATION, PROPOSAL WRITING AND TRAINING FOR EU FINANCED PROJECTS (H2020, COSME..)
02	ARDIC Technology	SME	Turkey	Platform provider
03	INSAT	University	Tunisia	Partner
04	IT Consult GmbH	SME	Germany	Management
...				

# Consortium - required partners



No	Expertise	Type	Country	Role in the project
01	Consulting	SME/ RTD	Belgium/ Turkey	CONSULTANCY FOR EU FINANCED PROJECTS
02	Management	SME/ RTD	-	MANAGEMENT
03	Integrator	IND/ SME	-	INTEGRATOR
04	Expertise on the topics of the project	RTD/ SME/ IND	-	Collaboration
...				



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# Mohamed Abid

Professor

Computer Embedded System Laboratory (CES-Lab)  
National Engineering School- Sfax (ENIS)  
University of Sfax  
Tunisia

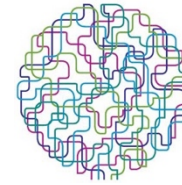
+216 97588722

[mohamed.abid@enis.rnu.tn](mailto:mohamed.abid@enis.rnu.tn)

[mohamed.abid\\_ces@yahoo.fr](mailto:mohamed.abid_ces@yahoo.fr)

<http://www.ceslab.org>

# Recommendations



- The presentation **has to** last up to **4 minutes (maximum)**
- Do not overload your slides
- Provide weblinks to additional material
- Slides should be in English
- Do not use videos etc. – they might be not supported by the Infoday IT system
- Send your presentation in PDF or PPTX format to: [ICT@turkeyinH2020.eu](mailto:ICT@turkeyinH2020.eu)  
**before November 21, 2016.**