EuWireless Project and SME experience in FIRE

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Experimentation “value chain”

Current solutions
- Specialized software or hardware targeting one element of the above value chain; expensive
- Home-made / open-source solutions with no support

Problems
- Lack of complete, flexible environments for R&D on 4G/5G RAN
- Lack of user-friendly open-source solutions
- Lack of affordable implemented standard references

Moreover
- Need to focus on novelty
- Lack of time to prepare and setup experimentation environments
**Title:** Flexible PHY experiments using Remote Radio and cloud processing

**Objectives:** Provide a cloud-based solution that enables remote hardware-in-the-loop experimentation and LTE/LTE-A RAN modeling & validate LTE PHY Lab SaaS in multiple-nodes environment

**Start date:** 15.11.2017 – 30.04.2018
Experience in FIRE: summary

• **Strengths**
  – Possibility to validate some concepts at no cost (e.g., subsidized)
  – Access to resources which would not be easily available otherwise
  – Synergy with large FP7/H2020 projects (networking / dissemination / research)

• **Weaknesses**
  – Various legal grounds
  – Some require certain level of bureaucracy - reports / accounting
  – Typically best effort labs / no QoS / often not working / not ready
EuWireless: H2020 INFRADEV project

• The need
  – Extend lab capabilities to real network with real traffic
  – Offer shared experimental resources to multiple user

• The vision
  – Pan-European test operator
EuWireless: the challenges

• How do we evolve from contemporary lab-based testing?
• Are all functionalities testable in the same way?
• How do we handle the spectrum?
• How do we handle multitenancy?
• How do we handle test network customers?
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EU-funded projects

**EU Wireless**
Development and long-term sustainability of new pan-European research infrastructures

**5G Essence**
Architectural Approach for the Provision of Enhanced 5G Network Facilities

**eWINE**
Elastic Wireless Networking Experimentation

**SOLDER**
Spectrum OverLay through aggregation of heterogeneous DispERsed Bands

**5NOW**
5th Generation Non-Orthogonal Waveforms for Asynchronous Signalling
09.2012-02.2015, FP7, budget: 3.5M EUR
Example partners

Alcatel-Lucent  
THALES  
OTE  
WIND  
NEC

intel  
SEQUANS COMMUNICATIONS  
NATIONAL INSTRUMENTS  
Atos  
ATHONET

VTT  
cea  
leti  
ITALTEL  
BRITISH APCO  
KING'S College LONDON

Trinity College Dublin  
CREATE-NET  
UNIVERSIDAD DE MALAGA  
Fraunhofer Heinrich Hertz Institute  
Jožef Stefan Institute

CapriTech  
EURECOM  
ORION  
i2cat  
TECHNISCHE UNIVERSITAT DRESDEN

UPC  
Universidad del País Vasco  
Euskal Herriko Unibertsitatea  
TECHNISCHE UNIVERSITAT DRESDEN  
Demokritos National Centre for Scientific Research
Example customers