Smart Energy Systems
Drive European ICT innovation for future energy systems

Background
Meeting EU’s climate change and energy policy objectives for 2020 and beyond will require a major transformation of our electricity infrastructure.

- We face a paradigmatic change from the fully controllable power plants in the classical power grid to the distributed area sources of renewable energy.
- There is a need of new qualities in the system-wide capture, aggregation and processing of basic data.
- The power grid becomes ICT-integrated and networks become energy-aware.

Innovation area
Smart Energy Systems focuses on ICT as the key enabler for Smart Grid innovation and mobilizes a strong network of European partners from industry and academia to innovate on user involvement, business models and ICT enabled technical infrastructures.

EIT ICT Labs adds value to Smart Energy Systems by coupling test-beds and experience labs and by celebrating the outcomes of joint experiments in large-scale projects in seven European countries. Furthermore, the surplus of the network is characterized by effective business modeling and support for implementation of products and services as well as knowledge transfer. And by an excellent knowledge transfer to students.

Strategic Scope
- Integrate an increasing amount of renewable energy generation
- Realize energy savings and efficiency
- Enhance grid security
- Develop the internal energy market

Focus
Smart Energy Systems wants to deploy ICT technologies in the energy domain enabling the future smart energy infrastructures and to accelerate implementation of results in daily life. Furthermore, we aim to involve smart users to make life easier and come up with technologies for optimizing energy efficiency.

Immediate application of results
An example of immediate deployment of research results is a project in Stockholm Royal Seaport in Sweden, where we contributed by driving improvement for micro grid management.
**OUR ACTIVITIES**

**User involvement**
We connect smart energy experience labs in Europe to study experimental use cases and market mechanisms for smart energy prosumers.
- User involvement and interaction of heterogeneous smart grid nodes
- Enable communication between labs and demonstrators
- Further development of international standards

**European Virtual Smart Grid Lab**
The unique pan-European facility Virtual Smart Grid Lab is a network of European partners in education, research and business for joint experiments and application of results in large scale projects.
- Physical excellence network of Smart Grid labs and demonstrators
- Location for technical testing of new ideas and business models
- Invitations to potential entrepreneurs to run proof of concept experiments

**Summer School**
A two-week annual summer school engages innovators of tomorrow.
- Excellent European PhD students and industry participants with multidisciplinary background
- Lectures from university partners and industry and joint project work

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**Our partners**

| Ericsson       | Telecom Italia |
| Fortiss        | TNO            |
| Fraunhofer Institut | TU Berlin    |
| Inria          | TU Darmstadt   |
| Karlsruhe Institut of Technology | TU Delft    |
| KTH Royal Institute of Technology | TU Eindhoven |
| SAP AG         | TU München    |
| Siemens        | Université Paris-Sud |
| Swedish Institute of Computer Science | VTT Technical Research Centre of Finland |

**About EIT ICT Labs**
EIT ICT Labs is one of the first Knowledge and Innovation Communities set up by the European Institute of Innovation and Technology, as an initiative of the European Union. EIT ICT Labs’ mission is to drive European leadership in ICT innovation for economic growth and quality of life. Since 2010, EIT ICT Labs has consistently brought together researchers, academics and business people. By linking education, research and business, EIT ICT Labs empowers ICT top talents for the future and brings ICT innovations to life. EIT ICT Labs’ partners represent global companies, leading research centres and top ranked universities in the field of ICT. For more information, visit www.eitictlabs.eu.

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