Best of Celtic-Plus Projects
Celtic-Plus Awards 2016
Celtic-Plus Event
Stockholm, 28 April 2016
# Excellence Award

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HFCC/G.fast (2013-2014)

Hybrid Fibre-Copper connectivity using G.fast
Main achievement
With the new ITU “G.fast” Standard, telecoms providers can achieve a **throughput of nearly 1Gbps at 100m**, and up to 170 Mbps at 480m over standard copper lines.

Demos (selection)
- GPON G.fast Integration TELNET
- Reverse Powering

9 participating countries
Austria, France, Germany, Hungary, Israel, Netherlands, Spain, Sweden, UK
HFCC/G.fast Consortium

- ADTRAN GmbH, Germany
- BT, Great Britain
- Dension Broadband Systems Kft., Hungary
- **Ericsson AB, Sweden**  **Co-ordinator: Per Ola Börjesson**
- EUR AB, Sweden
- FTW, The Telecommunications Research Center Vienna, Austria
- Fundacion Tecnalia Research & Innovation, Spain
- Lund University, Sweden
- Marvell Hispania S.L., Spain
- Orange SA, France
- Sckipio Technologies, Israel
- Telefónica I+D, Spain
- Telnet Redes Inteligentes SA, Spain
- TNO, Netherlands

Optimising Power Efficiency in mobile RAdio Networks 2

Energy efficiency at **Component and Equipment level**

Energy efficiency at **Site level**

Energy efficiency at **Network level**
OPERA-Net2 Achievements

Main achievement
OPERA-Net2 developed solutions which considerably improve the **energy and material efficiency** of mobile radio networks, including new energy-efficient power amplifier transmitter hardware.

Demos (selection)
- Hybrid energy site powering
- Water cooling, air cooling, and passive cooling
- New power amplification > increased efficiency (27%)

4 participating countries
Belgium, France, Finland, UK
OPERA-Net2 Consortium

- Alcatel-Lucent Bell Labs, France
- Alpha Technologies SA, Belgium
- Arelis Broadcast, France
- EFORE PLC, Finland
- Freescale, France
- Institut Telecom - Télécom Bretagne, France
- Nokia Oy, Finland
- Orange SA, France  Co-ordinator: Marc Aubrée
- Université de Caen, France
- University of Cardiff, UK
- VTT Technical Research Centre of Finland, Finland
SASER (2012-2015)

Safe and Secure European Routing

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SASER (2012-2015)

Safe and Secure European Routing

- SASER-SaveNet
- SASER-SIEGFRIED
- SASER-ADVAntage-NET
- SASER-Horizontal
SASER Achievements

Main achievements (selection)
SASER has contributed to making communications networks in Europe faster, more cost-effective, safer and more secure.

SASER-SaveNet
- 400 Gb/s optical transponder prototype
- Forward Error Correction (FEC)

SASER-SIEGFRIED
- "Super Cleaner Tool" for improved network security

SASER-ADVAntage-Net
- 400G+ DCI prototype platform for flexible and secure Data Center Interconnects
SASER Achievements

Field trials/demos (selection)
Record-breaking transmission field trial of 38.4 Tbps over 762 kilometers Lyon-Marseille-Lyon fiber optic link

4 participating countries
Germany, France, Finland, Denmark

Budget: 80 million euro
More than 60 partners
SASER-SaveNet Consortium

- Alcatel THALES III-V Lab, France
- Alcatel-Lucent Bell Labs, France
- Alcatel-Lucent Deutschland AG, Germany  Co-ordinator: Eugen Lach
- AMO GmbH, Germany
- Atesio GmbH, Germany
- Commissariat à l'Energie Atomique et aux énergies alternatives (CEA-LETI), France
- Docomo Eurolabs, Germany
- Finisar Germany GmbH, Germany
- Finisar UK Ltd., United Kingdom
- Fraunhofer Gesellschaft Heinrich Hertz Institut (HHI), Germany
- Fujitsu Semiconductor Europe GMBH, United Kingdom
- IHP GmbH, Germany
- Institut Telecom - Telecom SudParis (IT-TSP), France
- Institut Telecom - Telecom Bretagne (IT-TB), France
- Kylia, France
- Orange SA, France
- RWTH - Technische Hochschule Aachen, Germany
SASER-SaveNet Consortium

> Continued

• Socionext, Germany
• Technical University Berlin, Germany
• Universität Kassel, Germany
• University of Stuttgart – IKR, Germany
• University of Stuttgart – INT, Germany
• University Paris Sud, France
• University Rennes 1, France
• UPMC-LKB (LKB), France
• VectraWave, France
SASER-SIEGFRIED Consortium

- 2NS - Second Nature Security Oy, Finland
- Coriant R&D GmbH, Germany
- Ekinops, France
- EXFO Oy, Finland
- FH Potsdam, IDL-Interaction Design Lab, Germany
- Fraunhofer AISEC, Germany
- Fraunhofer Gesellschaft Heinrich Hertz Institut (HHI), Germany
- Institut Mines Télecom, France
- Keopsys, France
- Konrad-Zuse-Institut Berlin (ZIB), Germany
- Leibniz-Rechenzentrum der Bayerischen Akademie der Wissenschaften, Germany
- Mikkelin Puhelin Oy, Finland
- **Nokia, Germany** Coordinator: Marco Hoffmann
- Orange SA, France
- Photline Technologies SA, France
- Ruhr Universität Bochum, Germany
SASER-SIEGFRIED Consortium

> Continued

- Stonesoft, A McAfee Group Company, Finland
- Technical University Munich, Germany
- Technical University of Denmark, Denmark
- Technische Universität Dortmund, Germany
- Universität Kassel, Germany
- Universität Tübingen, Germany
- Universität Würzburg, Germany
- VTT Technical Research Centre of Finland Ltd., Finland
SASER-ADVAntage-NET Consortium

• ADVA SE, Germany  Co-ordinator: Michael Eiselt
• Fraunhofer Gesellschaft Heinrich Hertz Institut (HHI), Germany
• Helmut-Schmidt-University Hamburg, Germany
• University Dortmund, Germany
• University of Kiel - Christian Albrecht University, Germany
• University Ulm, Germany
• VPIphotonics GmbH, Germany

Horizontal activity

SASER-Horizontal was led by Deutsche Telekom
Seed4C (2012-2014)

Secured Embedded Element for Cloud

Isolated Security

Coordinated Security

NoSEE
Seed4C Achievements

Main achievement
Seed4C developed a cloud security concept based on secure hardware elements, such as smart chips. This could contribute to implementing geographical control of data flows also known as Schengen Routing.

Trials/Demos (selection)
• Airport management system
• Data residency control in the cloud
• Security Monitoring in a cloud environment

4 participating countries
Finland, France, Korea, Spain
Seed4C Consortium

- Alcatel-Lucent Bell Labs, France Co-ordinator: Stéphane Betgé-Brezetz
- IKUSI (Ángel Iglesias, S.A.), Spain
- BISCAYTIK, Spain
- Cygate, Finland
- ENSIB, France
- Finceptum Oy (Novell Suomi), Finland
- Fundación Vicomtech, Spain
- Gemalto SA, France
- Innovalia Association, Spain
- INRIA, France
- Mikkelin Puhelin Oy, Finland
- Nextel S.A, Spain
- Nokia, Finland
- Software Quality Systems (SQS), Spain
- SOLACIA, Korea
- VTT Technical Research Centre of Finland, Finland
- Wallix, France
Excellence Award: Network Technologies
Excellence Award:
Network Technologies
## Excellence Award

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CoMoSeF (2012-2015)
Co-operative Mobility Services of the Future
Main achievement
Cost-effective, co-operative mobility solutions to be deployed in different vehicles and traffic environments

Demos (selection)
Exchange of traffic information between traffic authorities and road participants as well as between drivers of taxi fleets in Finland and buses in Turkey

7 participating countries
Finland, France, Korea, Luxembourg, Romania, Spain, Turkey
CoMoSeF Consortium

• Ángel Iglesias, S.A. (IKUSI), Spain
• AROBS Transilvania Software, Romania
• CBT, Communication & Multimdia, S.L- Spain
• Centre Henri Tudor, Luxembourg Centria, Finland
• Entreprise des Postes et Télé-communications, Luxembourg
• Finnish Meteorological Institute, Finland
• HITEC, Luxembourg
• Infotripla Oy, Finland
• INNOVALIA (Asosacion de Empresas Tecnologicas), Spain
• ISBAK A.S., Turkey KocSistem A.S., Turkey
• Mobisoft Oy, Finland | Co-ordinator: Pekka Eloranta
• Taipale Telematics, Finland
• Technical University of Cluj-Napoca, Romania
• Thales Communications & Security, France
• Ubridge Co Ltd, Korea
  UTC CNRS Heudiasyc, France
• Viveris Technologies, France
• VTT Technical Research Centre of Finland, Finland

HEVC Hybrid Broadcast Video Services
Main achievement
H2B2VS developed a solution for hybrid distribution of TV programs where the main video is broadcast as usual and enriched with Internet services using HEVC compression.

Demos (selection)
- Terrestrial demonstrator in France
- Cable and mobile demonstrator in Finland
- Satellite demonstrators in Spain and Turkey

5 participating countries
Finland, France, Switzerland, Spain, Turkey
H2B2VS Consortium

- Thomson Video Networks, France  Coordinator: Raoul Monnier
- INSA de Rennes (IETR), France
- TDF SAS, France
- SmartJog SAS, France
- NexGuard France Labs S.A.S., France
- NAGRA France, France
- Télécom ParisTech, France
- VTT Technical Research Centre of Finland, Finland
- TUT-Tampere University of Technology, Finland
- Neusoft Mobile Solutions Oy, Finland
- Teleste Corporation, Finland
- Alcatel-Lucent España SA, Spain
- HISPASAT, Spain
- Nagravision, Switzerland
- EPFL, Ecole Polytechnique Fédérale Lausanne, Switzerland
- HES-SO Yverdon, Switzerland
- Argela, Turkey
- Basari Mobile, Turkey
- Vestel Electronics, Turkey
Magician (2012-2015)

Semantic Based Intelligent Entertainment Activity Planner
Magician Achievements

Main achievement
Magician has built a semantic based intelligent recommender system to improve the end users’ leisure and entertainment experience. The system makes intelligent recommendations based on user profiles.

Demo
• Recommendation application integration

2 participating countries
Hungary, Spain
Magician Consortium

- Gravity R&D Kft, Hungary
- ITAIINOVA, Spain
- Ingeniera y Control Electrónico, S.A., Spain

Co-ordinator: Marcos Rubio
QuEEN (2011-2014)

Quality of Experience Estimators in Networks

User
- Human
- Context
- Interface

Application

Resource

QoE

human physiology

context of use

interface device

application

resource (network, ...)

user expectation, history, state, ...

Celtic-Plus
QuEEN Achievements

Main achievement
QuEEN developed a new quality-of-experience (QoE) agent, which can flexibly aggregate QoE components. The project created a powerful quality assessment tool that adapts to various communications technologies.

Demos (selection)

- Snow removal scenario: communication management of a fleet of snow ploughs
- EMO-Tracker: eye tracking & facial reading tech to build automatic visualizations of human moods

8 participating countries
Austria, Belgium, Croatia, Finland, France, Germany, Spain, Sweden
QuEEN Consortium

- Acreo AB, Sweden
- BTH - Blekinge Institute of Technology, Sweden
- Embou, Spain
- Ericsson AB, Sweden
- EXFO Nethawk, Finland
- **France Telecom, France**  **Co-ordinator: Frédéric Guyard**
- FTW - Telecommunications Research Center Vienna, Austria
- Hiberus TECNOLOGÍA, Spain
- IBBT (now iMinds), Belgium
- INDRA sistemas, Spain
- Info24, Sweden
- INRIA, Institut National de Recherche en Informatique et en Automatique, France
- Instituto Tecnológico de Aragón, Spain
- IP-Label Newtest, France
- Mobisoft Oy, Finland
- PPO Yhtiöt Oy, Finland
- Rugged Tooling Oy, Finland
- Technical University Berlin, Germany
- Telnet Redes Inteligentes, Spain
- University of Zagreb - Faculty of EE and Computing, Croatia
- VTT, Technical Research Center of Finland, Finland
Excellence Award: Services and Applications
Excellence Award: Services and Applications

QuEEN
Quality of Experience Estimators in Networks
TILAS (2013-2015)

Technology improvements for large scale smart cities deployments
Main achievement
TILAS enhance the already deployed infrastructure in Santander’s Smart City with its over 1,200 sensors. It provided solutions ranging from node testing, node packaging, latency reduction to over the air programming.

Demos (selection)
- Traffic pattern monitoring
- Water management & monitoring
- Video surveillance with security features

4 participating countries
France, Korea, Spain, Turkey
TILAS Consortium

- Argela, Turkey
- Bankoi, Spain
- Commissariat à l'Energie Atomique et aux énergies alternatives, France
- Gemalto SA, France
- Pangaea, South Korea
- TST Sistemas, Spain
  **Co-ordinators: Aránzazu Sanz & Javier Valiño**
- TTI Norte, S.L., Spain
- University Paris-Est Creteil, France
- Webdyn, France
Excellence Award: Smart Cities
Excellence Award: Smart Cities
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HIPERMED (2010-2013)

High Performance Telemedicine platform
HIPERMED Achievements

Main achievement
Hipermmed implemented a High Performance Telemedicine Platform based on a unified Service Oriented Architecture, which provides media over IP.

Trials/Demos (selection)
Five healthcare scenarios (professional-to-professional and professional-to-patient) have been implemented on the platform and were validated by medical doctors.

Impact (selection)
• New products: 7
• Improved products: 5
• New companies: 1 – VIDEOCAFE
• new permanent employees: 20
HIPERMED Consortium

5 participating countries: France, Poland, Spain, Sweden, Turkey

- Androme Iberica, Spain
- Borderlight, Sweden
- Innova, Turkey
- Informatica El Corte Inglés, Spain
- Karolinska Institutet, Sweden
- **Merkum Energética, Spain**
  Co-ordinators: Miguel Angel Palencia and Oscar Chabrera
- Other Side Mirror S.L.U. (OSM), Spain
- Planet Media Studios S.L., Spain
- Poznan Supercomputing and Networking Center, Poland
- Royal Institute of Technology, Sweden
- Université de Lorraine, France
- Vestel Electronics, Turkey
- Vitec Multimedia, France
IPNQSIS (2010-2013)

IP Network monitoring for Quality of Service Intelligent Support
Main achievement
IPNQSIS developed mechanisms that allow monitoring and managing service quality of IPTV, Mobile TV, VoIP and videoconferencing. These mechanisms enable optimizing the customers’ Quality of Experience.

Trials/Demos (selection)
• IPTV QoE monitoring
• Service optimisation (ALK/PRO/ACR/VTT)

Impact (selection)
• 10 new products
• 16 improved products
• 1 new company created: Naudit Ingeniería (2011)
• 8 new permanent employees hired
IPNQSIS Consortium

4 participating countries:
Sweden, Spain, France, Finland

- Acreo Swedish ICT AB, Sweden
- Alcatel-Lucent España SA, Spain
- Alkit Communications, Sweden
- Broadcom Networks Spain S.L, Spain
- Diseños y Consulting de Electrónica y comunicaciones, S.A., Spain
- Ericsson AB, Sweden
- **Indra Sistemas, S.A., Spain** Co-ordinator: Antonio Cuadra-Sánchez
- Institut Telecom, France
- IP-Label Newtest, France
- Lund University, Sweden
- Naudit High Performance Computing and Networking, S.L., Spain
- NetHawk Oyi, Finland
- Net Technology, Finland
IPNQSIS Consortium

> continued

- PPO-Yhtiöt Oy, Finland
- Procera Networks, Sweden
- Softtelecom, Spain
- Vierling Communication, France
- Technical Research Center of Finland, Finland
- University Paris-Est Créteil, France
Innovation Award
Innovation Award
Innovation Award

IPN@SIS