

Transnational Access Opportunities in ERIGrid Project



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The ERIGrid TA opportunity: Free of Charge Access to Best European Smart Grid Research Infrastructures

- The ERIGrid project **invites scientists** from research, academia and industry to apply for the transnational access to the research infrastructure of top European organisations active in different fields of Smart Grids.
- Successful applicants will be provided with **free of charge** access to the requested ERIGrid research facilities, including all laboratory installations.



SmartEST Laboratory at AIT



Smart Metering communication platform in TECNALIA

- The expenses, including travel and accommodation will be reimbursed under ERIGrid conditions.
- Calls for transnational access will open **every 6 months** till December 2019.
- The current/upcoming call is/will open from 15/09/2016 till 15/12/2016.

Targeted Topics

- Development of **Smart Grid concepts and configurations** supported by validation methods and tools following a holistic approach
- Integration of higher shares of **fluctuating renewable energy, distributed energy resources** at all voltage levels, **active prosumers, electrical vehicles, demand side management** programmes, etc.
- **Power system components** like the grid infrastructure, storage, generation units, loads, etc.
- **ICT, cyber-security, markets, regulation**, etc. related to Smart Grids

Special consideration will be given to those proposals contributing to the improvement of the services provided by the infrastructures, the harmonisation and optimization of methodologies and the reinforcement of partnerships.

Provided Smart Grids Research Infrastructures

Research Infrastructures provide various testing and research possibilities such as:

- DER/Power system components characterization and evaluation
- Smart Grid ICT / Automation validation
- Co-simulation
- Real-time simulation and Power/Controller HIL



Austrian Institute of Technology
(AIT)



Commissariat à
l'énergie atomique et
aux énergies
alternatives (CEA)



Centre for Renewable Energy
Sources and Saving (CRES)



DNV GL



Technical University
of Denmark (DTU)



Grenoble Institute of
Technology (GINP)



Institute of Communication and
Computer Systems - National
Technical University of Athens
(ICCS)



Fraunhofer IWES
(IWES)



Ormazabal Corporate
Technology, A.I.E. (OCT)



Institute for Information
Technology (OFFIS)



Ricerca sul Sistema
Energetico (RSE)



SINTEF Energy Research
(SINTEF)



TECNALIA Research &
Innovation (TECNALIA)



Delft University of
Technology (TU Delft)



University of Strathclyde



VTT Technical Research Centre
of Finland (VTT)

An Example of High Class Laboratories

SysTec in Fraunhofer IWES – Kassel, Germany

Offers the following services for transnational access:

- Examination of distributed generators (PV inverter, CHP units, diesel gen-sets etc.) in accordance with different grid connection guidelines (low voltage, medium voltage)
- Field and laboratory tests of hybrid systems, small wind power plants and individual smart grid components as well as tests with hardware emulations under defined operating profiles
- Real time distribution grid simulations to test control centres and the grid integration of distributed generators, electric vehicles and power storage (hardware-in-the-loop)
- Investigation of operating performance strategies for individual plants and hybrid systems (e.g. photovoltaic, storage facilities, heat pumps, combined heat and power)
- Metrological examination of performance (tripping characteristic) of protection devices
- Measurements of power quality and analysis of performance



Who Can Apply?

- Primarily researchers from organizations located in an EU member state (including SMEs and larger industries).
- Limited access is also available to applicants from non-EU countries (third countries: Albania, Bosnia & Herzegovina, Faroe Islands, Former Yugoslav Republic of Macedonia, Georgia, Iceland, Israel, Moldova, Montenegro, Norway, Serbia, Switzerland –partial association-, Tunisia, Turkey, Ukraine and other developing countries*).
- Researchers from industrialised countries from non-EU or associated countries can use the TA possibility but travel and subsistence expenses will not be reimbursed.

Funding is for “transnational access” i.e. other country than the country of origin of the user.

*http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016-2017/annexes/h2020-wp1617-annex-a-countries-rules_en.pdf

How to Apply?

- User Group (UG) has to fill out the application template available on ERIGrid website → <https://erigrid.eu/transnational-access/> and send it to the specified email address → erigrid-ta@list.ait.ac.at
- User group should provide:
 - *Summary of the proposed research*
 - *State-of-the-art*
 - *Detailed description of the proposed project (objectives, expected outcomes, impact, etc.)*
 - *Synergy with ongoing research*
 - *Proposed host research infrastructures/installations*
 - *Measures of dissemination and exploitation of the results*
 - *Time schedule*
 - *Description of the research team*

Support for filling out an application can be asked to the targeted RIs.

TA calls are launched every 6 months. The next upcoming call will open on 15/09/2016.

Evaluation criteria can be found on the project website.

The current/upcoming call is/will open from 15/09/2016 till 15/12/2016

Rules for Access to the Research Infrastructures

Before submitting an application, UG must note the specific transnational access conditions for the considered RIs. These conditions which are mentioned in each RI description besides "ERIGrid TA Procedure and Rules" can be found at <https://erigrid.eu/transnational-access/>

After a proposal is accepted:

- UG and the host infrastructure must agree on estimated access period, technical details and administrative issues.
- A contract must be signed between the host infrastructure and the UG (template is available on ERIGrid website).
- Host research infrastructure will nominate a responsible person for each accepted project.

Rules for Access to the Research Infrastructures

At the end of a stay at a Research Infrastructure:

- UG must declare the use of the installations by signing a specific form attached to the contract.

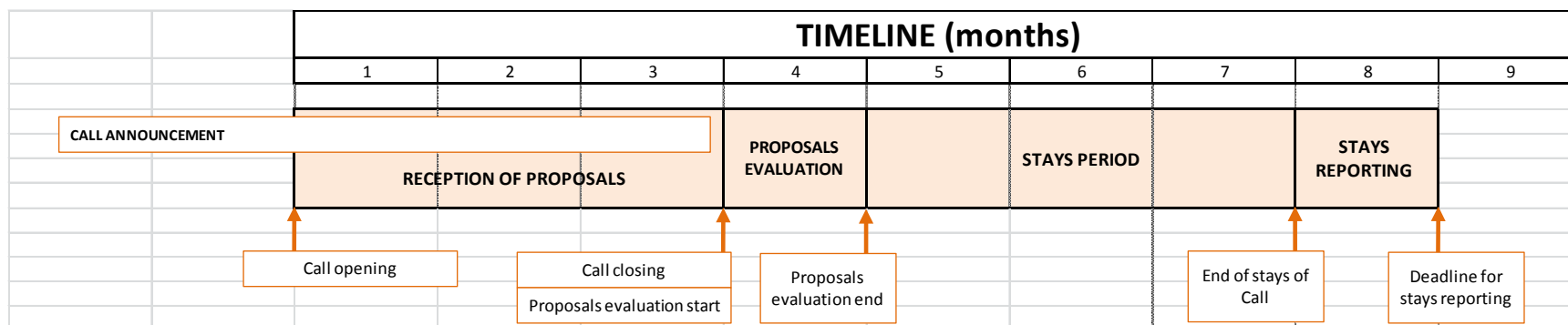
One month after the end of a stay UG must provide:

- Questionnaire on feedback on the access and the stay at the infrastructure
- Project Fact Sheet (extended abstract)
- Technical Report: objectives, experiments and obtained results and conclusions

UG are also encouraged to participate in a dedicated workshop on user projects organised by ERIGrid

Note: The UG is obliged to give detailed information to the ERIGrid TA manager about future reports, papers, conference presentations etc. based on the project results.

Procedure Timeline



- Step1: Publication of the call for proposals
- Step2: Submission of the proposals
- Step3: Evaluation of the proposals
- Step4: Selection of the proposal and notification to the UG
- Step5: Access to the Research Infrastructure
- Step6: Dissemination and publication of the project results

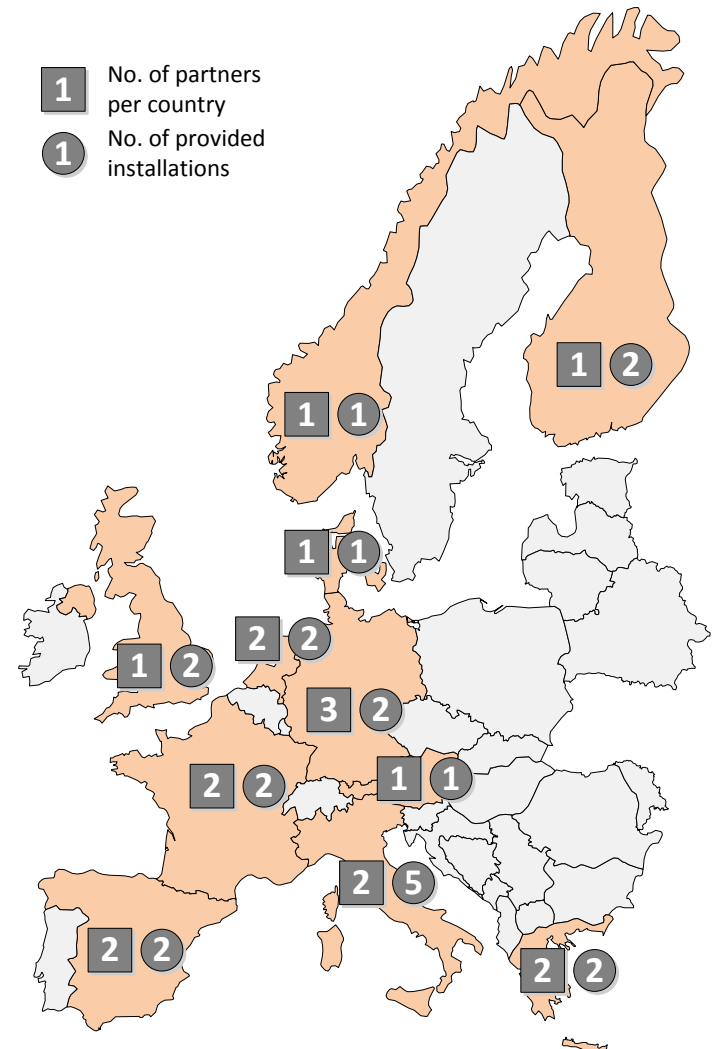
European Research Infrastructure supporting Smart Grid Systems Technology Development, Validation and Roll Out

Project Overview and
Trans-national Access Possibilities

Thomas Strasser / AIT Energy
(Project Coordinator)

Project Fact Sheet

- H2020 call
 - INFRAIA-1-2014/2015:
Integrating and opening existing
national and regional research
infrastructures of European interest
- Funding instrument
 - Research and Innovation Actions (RIA)
Integrating Activity (IA)
- 18 Partners from 11 European Countries
+ 3 Third Parties involved
- Involvement of 21 first class Smart Grid labs
- 10 Mio Euro Funding from the EC
- ~1000 Person Month

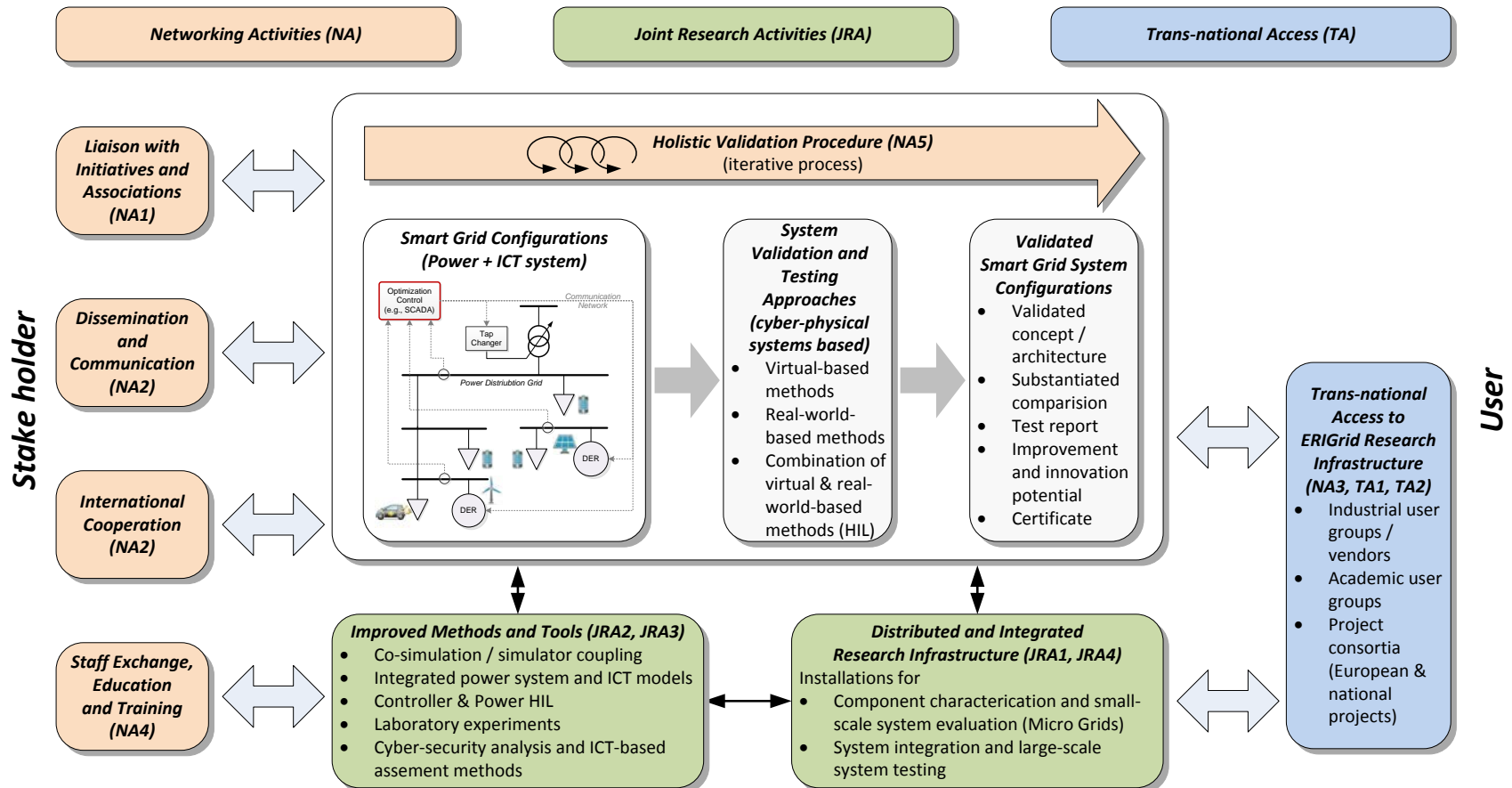


Main Goals

- Supporting the technology development as well as the roll out of Smart Grid approaches, solutions and concepts in Europe with a holistic, cyber-physical systems approach
- Integrating the major European research centres with a considerable, outstanding Smart Grid research infrastructure to jointly develop common methods, concepts, and procedures.
- Integrating and enhancing the necessary research services for analysing, validating and testing Smart Grid configuration.
- System level support and education for industrial and academic researchers in Smart Grid research and technology development is provided to foster future innovation
- Strengthening the technical leadership of the European Research Area in the energy domain

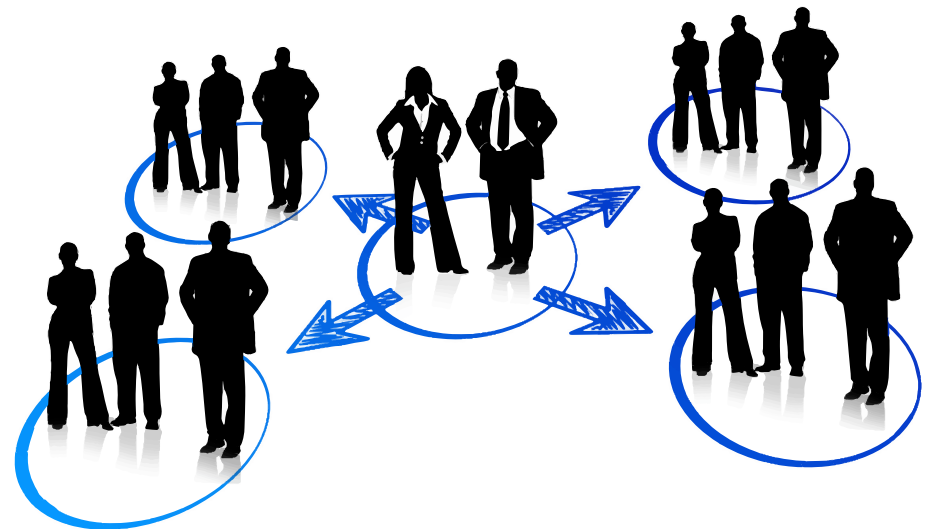
Overview ERIGrid Approach

- Leading research infrastructure in Europe for the domain of Smart Grids



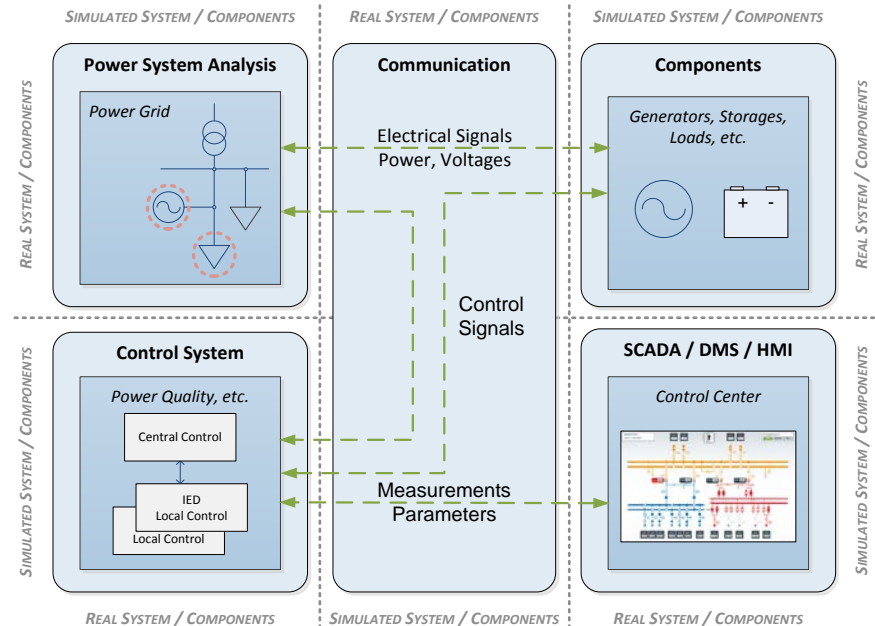
Networking Objectives (NO)

- NO1: Integrated European Smart Grid research infrastructure
- NO2: Reinforced collaboration of key research institutions and industry / utilities fostering innovative Smart Grid solutions
- NO3: Staff exchange of researchers, technicians and research infrastructure managers
- NO4: Training / education of power system and ICT professionals
- NO5: International collaboration



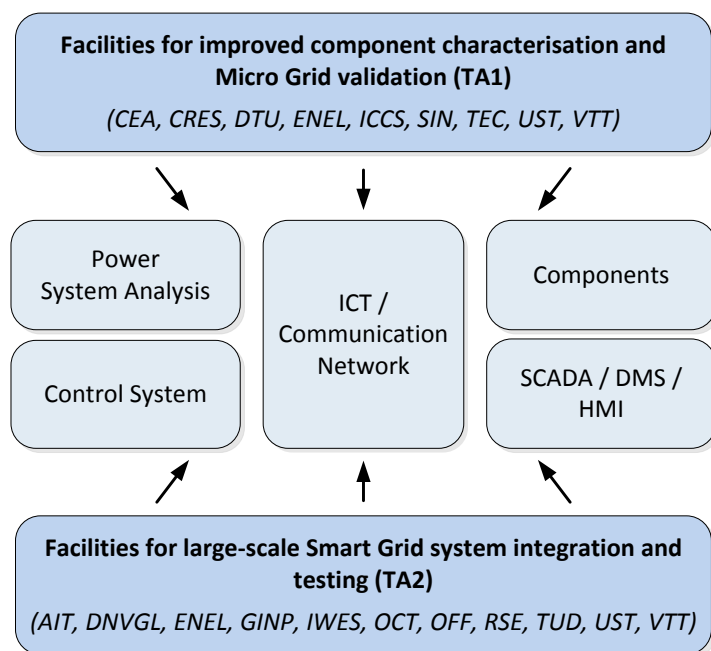
Joint Research Objectives (JRO)

- JRO1: Technology development and roll out support
- JRO2: Development of advanced system validation method and tools
- JRO3: Common models, harmonized validation and deployment procedures
- JRO4: Implementation of advanced services in the integrated research infrastructure



Trans-national Access Obj. (TAO)

- TAO1: Provision of user access to research infrastructure of the main players in the Smart Grids European Research Area
- TAO2: Attracting industry-related user projects



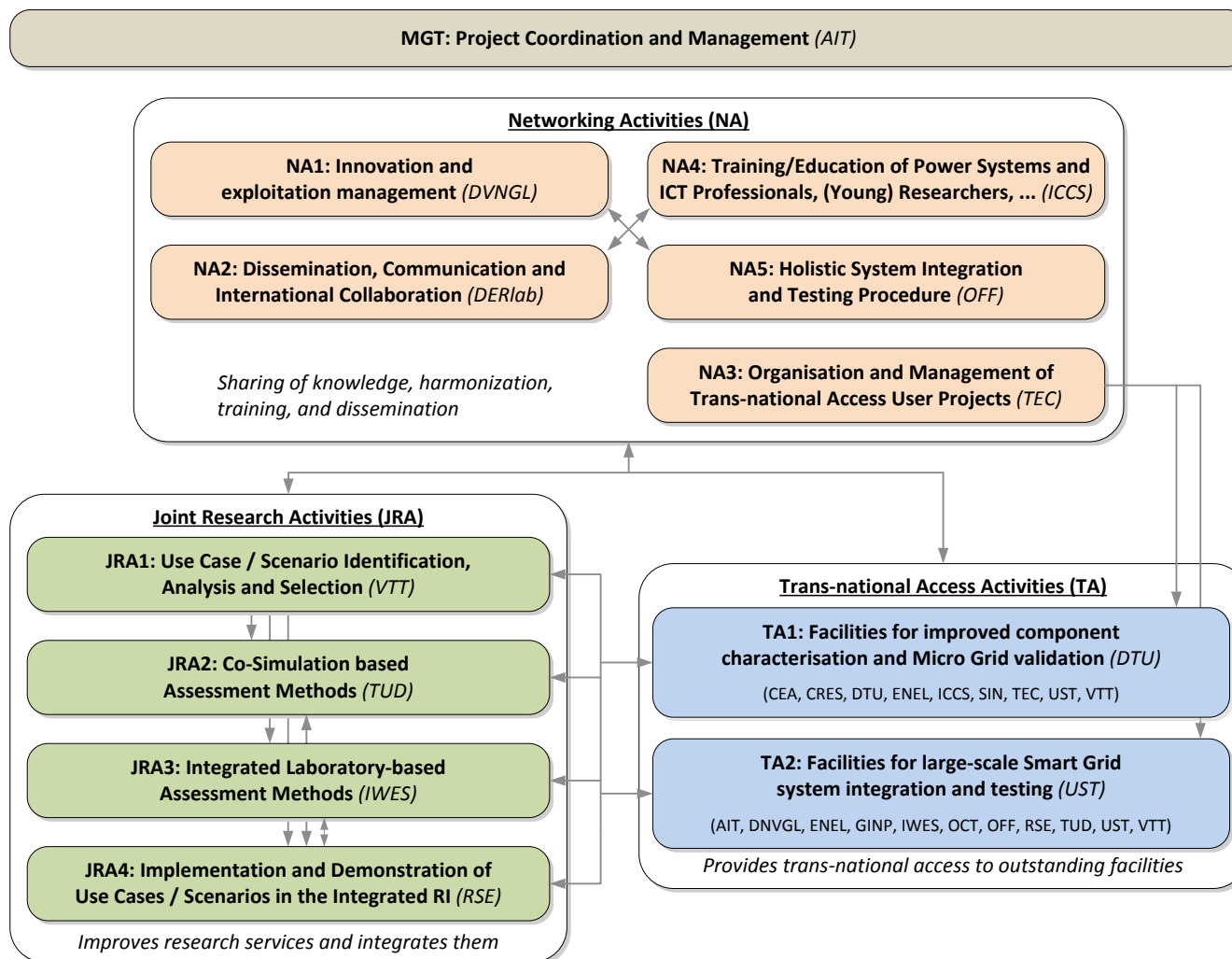
R&D topic	Provided services to external users
DER components	<ul style="list-style-type: none"> PV-inverter tests (component, integration) Storage, charging devices test (component, integration) ...
Development of new network components	<ul style="list-style-type: none"> Test of new component concepts Validation of advanced control methods for components ...
Smart Grid ICT / Automation	<ul style="list-style-type: none"> Validation of controller implementation and integration Validation of communication protocols Test of SCADA system developments and integration Cyber-security assessment ...
Co-simulation	<ul style="list-style-type: none"> Co-simulation tests power grid ↔ communication network Co-simulation tests power grid ↔ components ↔ communication network ...
Real-time simulation and HIL	<ul style="list-style-type: none"> Integration tests for inverter-based devices Validation of new power electronic component topologies ...
...	...

Long-Term Cooperation

■ Advanced Community

Activity	Involved partners	Covered topics	Input for ERIGrid
FP7 DERri	AIT, CEA, CRES, DERlab, DNVGL, DTU, ICCS, IWES, RSE, TEC, UST, VTT	Research infrastructure supporting DER topics	HIL testing methods for DER, lab-procedures for testing DER, experiences from TA projects
FP7 SOPHIA	AIT, CEA, CRES, DERlab, DTU, IWES, OFF, RSE, SIN, TEC, UST, VTT	Research infrastructure supporting PV components and systems	Lab-procedures for testing PV systems and components, experiences from TA projects
FP7 ELECTRA IRP	AIT, CEA, CRES, DERlab, DNVGL, DTU, ENEL, GINP, ICCS, IWES, RSE, TEC, UST, VTT	Architecture and concept of the future European electricity system	Requirements for operating future Smart Grids, Smart Grid concepts, inputs for roll out scenarios
FP7 COTEVOS	AIT, DERlab, DTU, IWES, RSE, TEC	Concepts, capacities and methods for testing EV systems	Experiences for testing EV systems (incl. charging stations)
FP7 STAR-GRID	DERlab, IWES, RSE, TEC	CSA analysing standardization activities for Smart Grids	Comprehensive overview of Smart Grid standardization activities
FP7 GRID+	AIT, RSE, SIN	CSA providing operational support for the development of EEGI	Industrial perspective on future Smart Grid developments, requirements for roll out scenarios
IEA ISGAN / SIRFN	AIT, DERlab, GINP, IWES, RSE, DNVGL, TEC, UST, VTT	International Smart Grid research facility network	International activities related to Smart Grid research facilities (incl. requirements and concepts)

Project Plan



Strong Stakeholder Group Support

- 35 support letters received
 - National, European and international networks
 - Technology platforms
 - Industry (manufacturers, vendors – power & ICT system)
 - Utilities / grid operators
 - Standardization bodies
 - Research institutes
 - Public bodies / national authorities



Further information is available on the project website:

WWW.ERIGrid.EU

Contact:

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