Session "Facilitating Effective Laboratory Testing by Lab Users"

Overview of Achievements of the ERIGrid Trans-national Access Programme

Virtual ERIGrid Final Conference

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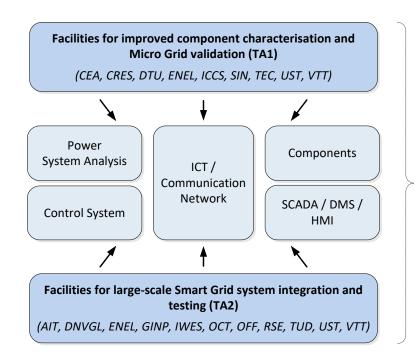# 1. TRANS-NATIONAL ACCESS (TA): *WHAT IS IT?*

- **CORE ACTIVITY in ERIGrid:**
  - Provision of **access to research infrastructures** to individual researchers and research groups involved in the **development of smart grid concepts and configurations**
  - Availability of a range of **testing and simulation facilities** within the ERIGrid Consortium
  - Provision of **technical support and expertise**
  - **Promotion** of the experimental **research results** through ERIGrid

- Costs of **lab operation** and support of the hosting staff are **free of charge**
- Users' **travel expenses, subsistence and accommodation costs** will be **reimbursed**, subject to ERIGrid rules and regulations

1. TRANS-NATIONAL ACCESS (TA): *WHAT IS IT? – OBJECTIVES*

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

R&D topic	Provided services to external users
DER components	• PV-inverter tests (component, integration) • Storage, charging devices test (component, integration) • …
Development of new network components	• Test of new component concepts • Validation of advanced control methods for components • …
Smart Grid ICT / Automation	• Valdiation of controller implementation and integration • Validation of communication protocols • Test of SCADA system developments and integration • Cyber-security assessment • …
Co-simulation	• Co-simulation tests power grid ↔ communication network • Co-simulation tests power grid ↔ components ↔ communication network • …
Real-time simulation and HIL	• Integration tests for inverter-based • Validation of new power el topologies • …
…	…

Facilities for improved component characterisation and Micro Grid validation (TA1)
(CEA, CRES, DTU, ENEL, ICCS, SIN, TEC, UST, VTT)

Power System Analysis

Control System

ICT / Communication Network

Components

SCADA / DMS / HMI

Facilities for large-scale Smart Grid system integration and testing (TA2)
(AIT, DNVGL, ENEL, GINP, IWES, OCT, OFF, RSE, TUD, UST, VTT)

"Joint Infrastructure": Integrated approach with distributed installations
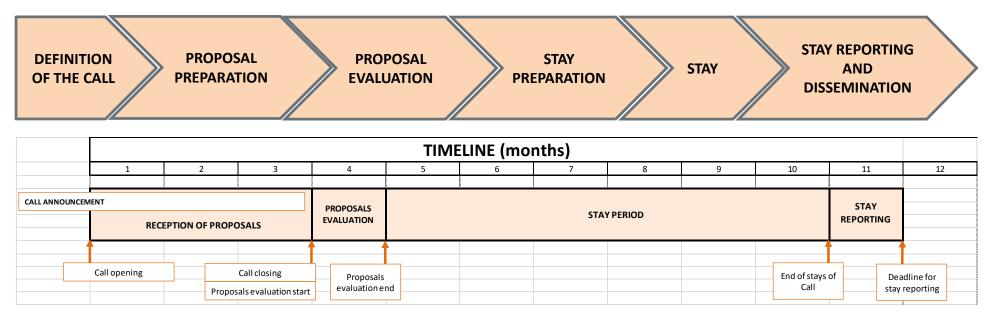
1. TRANS-NATIONAL ACCESS (TA): *WHAT IS IT? – USER GROUPS*

- **Elegibility of the User Groups**:

  - One or more researchers

  - **Universities, Research Centres, SMEs, large industries,...**

  - User organizations from the **EU Member States** and **Associated Countries;** however:

    - **Limited access** (20% of total ERIGrid access) for applicants from non-EU countries **("third countries")**

  - Able to **publicly disseminate** the TA project results

  - Country of the RI must be **different** than the country of the user institution ("trans-national")

2. TRANS-NATIONAL ACCESS (TA): *PROCESS AND TIMELINE*

DEFINITION OF THE CALL	PROPOSAL PREPARATION	PROPOSAL EVALUATION	STAY PREPARATION	STAY	STAY REPORTING AND DISSEMINATION

TIMELINE (months)

1	2	3	4	5	6	7	8	9	10	11	12

CALL ANNOUNCEMENT

RECEPTION OF PROPOSALS

PROPOSALS EVALUATION

STAY PERIOD

STAY REPORTING

Call opening

Call closing

Proposals evaluation start

Proposals evaluation end

End of stays of Call

Deadline for stay reporting

- Call for TA proposals remains open for **3 months**
- Starting time and length of the user projects (accepted proposals) are **flexible**:
  - Maximum access duration: **3 months** (typical stay: **1 month**)
  - Access can be splitted into 2 phases, if needed
- Access reporting: results publicly available (except SMEs): on-line EC questionnaire, Fact Sheet, Technical Report

2. TRANS-NATIONAL ACCESS (TA): *PROPOSAL EVALUATION*

- Phase 1: **PRESCREENING**:

    - **First assessment of technical-economical feasibility** of user project by the infratructures selected by the users in the proposal

    - If the project is not feasible in the three selected RIs, the proposal will be circulated to the **rest of RIs for prescreening**

- Phase 2: **USER SELECTION PANEL (USP)**:

    - **Full evaluation** (independent peer-review) of positive prescreened user proposals: 3 experts/proposal

    - **Evaluation criteria**: General quality of the proposal, Scientific/Technical merit, Improve know-how/capacity of the RI, Compliance with EU policies and priorities

    - USP will issue a brief **evaluation report** (including scores, comments, potential improvements, etc.)

55 = 40 external experts + 15 internal experts

EXTERNAL EXPERTS					
Reinhilde d'Hulst	VITO	Belgium	Damien Picault	ENEDIS	France
Sami Repo	Tampere University of Technology	Finland	Sebastian Rohjans	Hamburg University of Applied Sciences	Germany
Haris Patsios	University of Newcastle	UK	Mathias Noe	KIT (Technical University of Karlsruhe)	Germany
Stamatis Karnouskos	SAP	Germany	Jörn Geisbüsch	KIT (Technical University of Karlsruhe)	Germany
João Francisco Alves Martins	Universidade Nova de Lisboa	Portugal	Dominique Roggo	HES-SO (University of Applied Sciences Western Switzerland)	Switzerland
Luca Ferrarini	Politecnico di Milano	Italy	Jan Desmet	UGHENT	Belgium
Petr Kadera	CVUT	Czech Republic	Joseph Mutale	University of Manchester	UK
Valeriy Vyatkin	Alto University	Finland	Metody G Georgiev	TU Sofia	Bulgaria
Andrea Benigni	University of South Carolina	USA	Rad Stanev	TU Sofia	Bulgaria
Pierluigi Siano	University of Salerno	Italy	Jürgen Sachau	Luxembourg Univeristy	Luxembourg
Pierluigi Mancarella	University of Manchester / University of Melbourne	UK / Australia	Irena Wasiak	TU Lodz	Poland
Amro M. Farid	Dartmouth University	USA	Carlos Moreira	INESC TEC	Portugal
Konstantina Mentesidi	GIZ GR	Greece	David Rua	INESC TEC	Portugal
Alessandra Parisio	University of Manchester	UK	Mihaela Albu	MicroDERlab	Romania
Spyros Skarvelis-Kazakos	University of Sussex	UK	George E. Georghiou	FOSS Cyprus	Cyprus
Panayiotis Moutis	Carnegie Mellon University	USA	Jay Johnson	Sandia National Laboratories	USA
Ulf Häger	Technische Universität Dortmund	Germany	Luis Arribas de Paz	CIEMAT	Spain
Carlos Veganzones	Technical University of Madrid (UPM)	Spain	José M. Maza-Ortega	University of Sevilla	Spain
Sergio Martínez	Technical University of Madrid (UPM)	Spain	Alvaro Luna Alloza	Research center of Renewable Energy Systems (UPC)	Spain
Giri Venkataramanan	University of Wisconsin-Madison	USA	Anna M. ...	...O	The Netherlands

INTERNAL EXPERTS					
Roland Bründlinger	AIT Austrian Institute of Technology	Austria	Diana Strauss-Mincu	DERlab	Germany
Filip Pröstl Andrén	AIT Austrian Institute of Technology	Austria	Henrik Bindner	DTU	Denmark
Mihai Calin	AIT Austrian Institute of Technology	Austria	Panos Kotsampopoulos	ICCS-NTUA	Greece
Eduardo Zabala	TECNALIA	Spain	Van Hoa NGUYEN	CEA	France
Salvador Ceballos	TECNALIA	Spain	Davood Babazadeh	OFFIS	Germany
Julia Merino	TECNALIA	Spain	Ian Gilbert	Ormazabal Corporate Technology	Spain
Andrei Morch	SINTEF Energy Research	Norway	Kari Mäki	VTT	Finland
			Anna Kulmala	VTT	Finland

3. TRANS-NATIONAL ACCESS (TA): *CALLS AND RECEIVED PROPOSALS*

TA User Group Workshop 1:
Vienna, 16 Oct 2018
IRED 2018 Side Event

TA User Group Workshop 2 (on-line final event)

No	WP / Task Name	Lead	Year 1												Year 2												Year 3												Year 4												Year 5					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
NA3	**Organisation and Management of Trans-national ...**	**TEC**																																																					
NA3.1	Management of Trans-national Access	AIT																																																						
NA3.2	Specification of Access Rules, Evaluation and Selection ...	TEC																																																						
NA3.3	Evaluation of User Project Results and Lessons Learned	TEC																																																						

1 **15/09/2016 15/12/2016** **14 proposals**

2 **15/03/2017 15/06/2017** **13 proposals**

3 **15/08/2017 15/11/2017** **8 proposals**

4 **15/02/2018 15/05/2018** **26 proposals**

5 **15/08/2018 15/11/2018** **24 proposals**

6 **15/02/2019 15/05/2019** **12 proposals**

Received proposals: 97

3. TRANS-NATIONAL ACCESS (TA): *CALLS AND RECEIVED PROPOSALS*

TOTAL: **97 proposals**

- ■ REJECTED PROPOSALS (8.2%)
- ■ ACCEPTED PROPOSALS (91.8%)

4. TA PROVISION: PROJECTS AND KPIs

6 TA Calls launched

97 proposals received

8 proposals rejected by USP (8.2%)

89 proposals accepted (91.8%)

73 projects completed (75.3%)

20 industrial projects (27.4% < 30%)
Industry leader (14) or member of user group (6)

4 projects on-hold (4.1%)

10 projects withdrawn by the users (10.3%)

2 projects cancelled by COVID-19 (2.1%)

4. TA PROVISION: PROJECTS AND KPIs

73 projects completed → **1032 access days** [objective: 1090] | **95%**

14 non-EU projects → **206 access days** | **20%**

8 internal-TA projects → **111 access days** | **10.8%**

4 multi-site projects

1 project implemented in 4 ERIGrid installations

3 projects implemented in 2 ERIGrid installations

5. CONCLUSIONS

1. **ERIGrid TA Programme implemented:**

   Process defined, rules established, supporting documentation available, USP consolidated, TA opportunity promoted, user results publicly available,…

2. **Excellent results:**

   - 6 TA Calls launched, 97 proposals received
   - 73 projects completed in the lab (20 industrial projects), 171 users
   - Provision of 1032 access days (initial objective almost accomplished: 95%)

3. **Remarkable support provided to the Research Community,** mainly in Europe but also outside (20% of the total access)

4. **User Groups very satisfied. Many success stories and good results**

5. **ERIGrid acknowledged by the European Commission**

6. WHAT'S NEXT?

- **ERIGrid 2.0**:

  - Even **more challenging**: more calls, higher number of access days compromised (increase of 55%)

  - **Virtual Access**

- **Improvements of the TA Programme**:

  - <u>Simplification</u> of administrative issues (fewer and simpler documents, if possible)

  - <u>Automation</u> of (part of) the process: submission and evaluation of the proposals

THANK YOU!

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