



CROSSBOW Regional Operation Centre Balancing Cockpit acknowledged by the European Commission's Innovation Radar

CROSSBOW Regional Operation Centre Balancing Cockpit (ROC-BC) has been acknowledged by the European Commission's Innovation Radar under the Innovation Topic "Smart & Sustainable Society". Institute of Communication and Computer Systems (ICCS - Greece), Security Coordination Centre (SCC -Serbia), Elektroenergien Sistemen Operator (ESO - Bulgaria) have been identified as "key innovators" of this distinguished product. The developed set of tools for regional management and operation that will build on/enhance existing Regional Security Coordinator (RSC) initiatives include Individual / Common Grid Model (IGM/CGM) validation, cross-border congestion evaluation, dynamic line rating forecast of overhead lines, probabilistic regional adequacy assessment, cross-border sizing and sharing of frequency restoration reserves (FRR), resilience support and over/under-frequency real-time control.

CROSSBOW Regional Operation Centre Balancing Cockpit (ROC-BC) makes part of the many great EU-funded innovations identified by the Innovation Radar – and the innovators behind them.

Innovation Radar captures the different maturity levels of innovations towards commercialisation, and the high potential ROC-BC technological innovation was identified as "Exploring", meaning that this tool is considered in the early phase of technological readiness, but already shows high commitment levels from the organisations developing it. Its commercialisation requires efforts in transforming technology into marketable products.

"This recognition is of paramount importance not only for the hard work and commitment of all contributing partners but also for the realisation of the green deal in the region of South East Europe, since regional coordination is the key for high RES penetration and thus for the transition to a sustainable, secure and energy efficient future. The technical advantages gained through the CROSSBOW project will foster all involved parties to bring forward the target of a unified market framework with harmonised market rules for all the countries of the SEE region in order to realise the advantages derived from regional coordination." states CROSSBOW key innovators.

RSCs represent the main beneficiaries of this product. Their role is of major importance for the realization of regional coordination since RSCs represent the coordinators among different countries' TSOs. As a coordinator of the cross-border power exchanges, the RSCs are responsible for validating the required data which are exchanged from the participating TSOs and thus make the necessary calculations in advance for the optimum utilization of the cross-border corridors under all operating scenarios. RSCs' objectives are usually aligned with the interests of the TSOs who are their main shareholders, since both aim at maintaining the balance of power systems and the security of supply at regional level. Furthermore, policy makers and regulatory bodies will be monitoring the appliance of the network codes in the region in order to foster competitiveness through a unified market framework among the participating countries, thus ensuring that the operation adopts principles of sustainability, reliability and high-quality of the supply into account.



The Innovation Radar

The [EU Innovation Radar](#) is an initiative by the European Commission to highlight innovations with excellent potential from EU-funded research and innovation projects. For the Innovation Radar, independent experts are engaged to evaluate ongoing R&I projects funded by the EU (under Horizon 2020, Framework Programme 7 (FP7) or the Competitiveness and Innovation Programme (CIP)). Because of their inherent neutrality, these experts can provide objective opinions about the relevance of the innovations in the projects and their market potential.

Its goal is to allow every citizen, public official, professional, and businessperson to discover the outputs of EU innovation funding and give them a chance to seek out innovators.

By means of an [intricate methodology](#) to categorise the innovations under assessment, four different maturity levels are then bestowed on each respective innovation. From Market-Ready to Tech-Ready, and from Business-Ready to Exploring, these maturity levels indicate how far along these products are on their path towards commercialisation.

CROSSBOW project: a step forward to foster cross-border management of variable renewable energies and storage units

In total, the 9 CROSSBOW products have been acknowledged by the Innovation Radar in different maturity levels. Those aim to help the Regional Coordination Center in the South Eastern Europe regions to facilitate higher RES penetration, whilst reducing operational costs for individual operators – both at transmission and distribution layers. The CROSSBOW results are being evaluated successfully by 8 TSOs in South Eastern Europe.

The project started in November 2017 and will conclude in April 2022 and is made up of a multidisciplinary team of 24 partners from 13 European countries participate among which there are 8 national Transmission System Operators.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement N° 773430.

<http://crossbowproject.eu/>

About the Key Innovators:

ICCS (Institute of Communication and Computer Systems) is associated with the Department of Electrical and Computer Engineering of the National Technical University of Athens (NTUA). ICCS has been established in 1989 in order to carry research and development activities in engineering, control systems and biomedical engineering. Smart RUE is one of the Research Groups of the Institute of Communication and Computer Systems (ICCS). It belongs to the Electric Energy Systems Laboratory (EESL) of the School of Electrical and Computer Engineering of the National Technical University of Athens. It is composed of Professors, post-doctoral scientists, postgraduate students and highly specialized researchers and collaborators. It is technically and administratively supported by the personnel of EESL. Smart RUE has coordinated and participated in a large number of European and



national R&D projects and studies. It has organized several international Conferences, Seminars and workshops and it has published numerous papers in international journals and conference proceedings.

<https://www.iccs.gr/>

SCC (Security Coordination Centre Ltd Belgrade) is the third established Regional Security Coordinator (RSC) in the Continental Europe region, and first in the region of South East Europe. Founders and owners of SCC are Transmission System Operators (TSOs) of Serbia – EMS, of Montenegro – CGES and of Bosnia and Herzegovina – NOSBiH. Developed as a company, SCC's main objective is to develop necessary services defined by ENTSO-E's (European Network of Transmission System Operators for Electricity) Policy Paper "Future TSO Coordination for Europe" and by Multilateral Agreement on Participation in Regional Security Coordination Initiatives (former name used for RSCs) in order to fulfil operational planning standards which will be defined by European Network Codes/Guidelines. Main services that RSCs should provide to TSOs are validation and merging of individual grid models, security analysis including remedial actions, coordinated capacity calculation (CCC), outage planning coordination (OPC) and short and medium term adequacy (SMTA) forecast.

<https://www.scc-rsci.com/>

ESO (Elektroenergien Systemen Operator EAD) is responsible for the common operational planning, coordination and control of the Bulgarian power system and its parallel synchronous operation with neighbouring systems. Its purviews also include transmission grid operation, maintenance and reliable functioning, auxiliary network servicing, as well as maintenance and repair services in the energy sector. It also manages the power transmission through the national grid and administrates the electricity market. In performing parallel synchronous operation with ENTSO-E, ESO, being a key partner in the Balkan region, constantly strives to achieve higher transmission efficiency and asset management performance by introducing and using the innovative methods of planning, maintenance and monitoring. The company has deployed an asset management system (SAP/R3), Supervisory Control and Data Acquisition System (SCADA), and Geographic Information System (GIS). ESO is certified as an Independent Transmission Operator.

<http://www.eso.bg/>

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