

OneNet Open Days

TSO-DSO-Consumer Cooperation in the OneNet Southern Cluster

Markos Asprou and the partners from the Greek Demo



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 957739



- Overview of the Cypriot demonstration
- TSO-DSO-Consumer collaboration in the Cyprus demonstration
- Overview of the Greek demonstration
- TSO-DSO-Consumer collaboration in the Greek demonstration

Partners

- KIOS Center of Excellence/University of Cyprus-**Demo Leader**
- Transmission System Operator Cyprus
- Electricity Authority of Cyprus/Distribution System Operator Cyprus
- Cintech Solutions
- **WiseWire (OneNet Cascading funding)**



GENEET one network for Europe **Cyprus Demonstration**

University of Cyprus

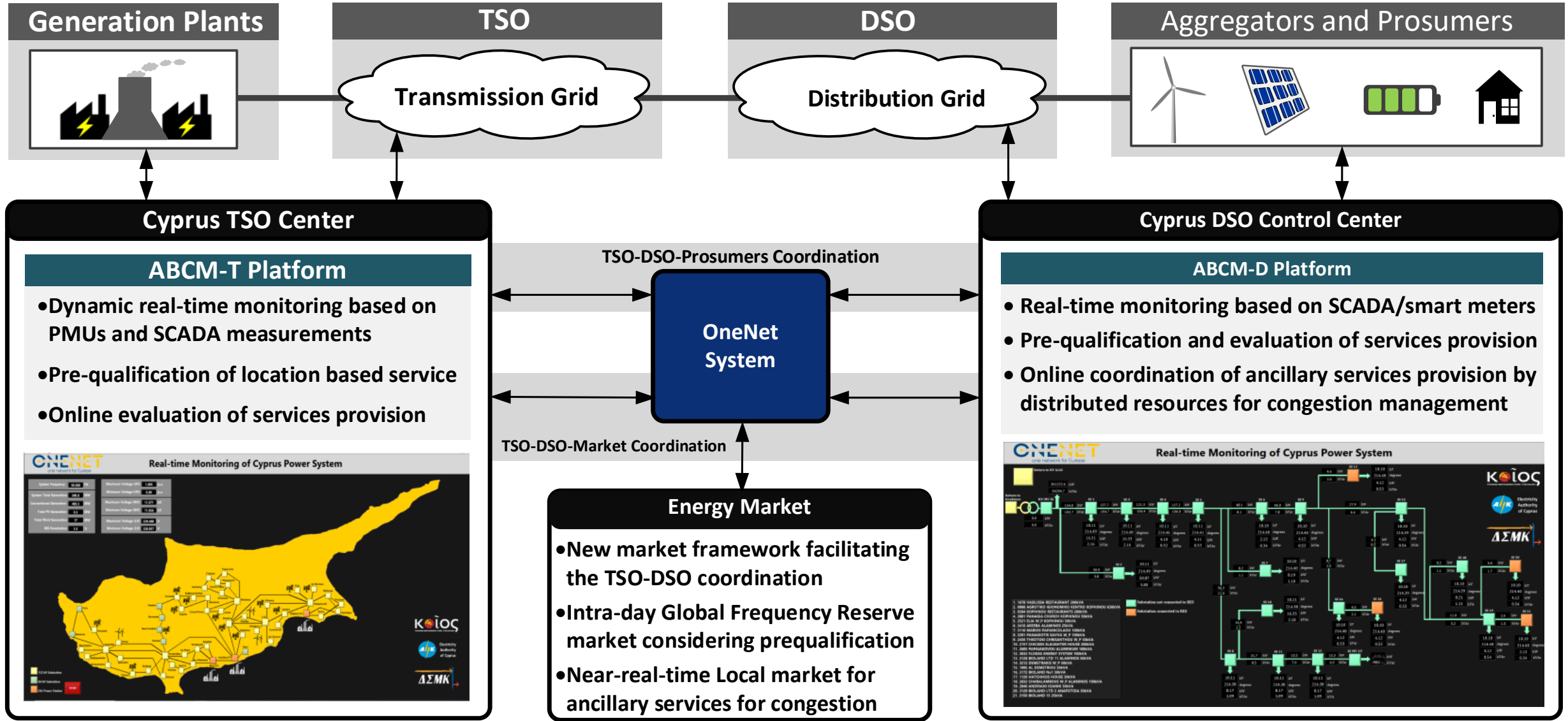
ΚΙΟΛΟΣ Research and Innovation Center of Excellence

ΔΣΜΚ Διοίκησης Συστήματος Μεταφοράς Κύπρου
Transmission System Operator - Cyprus

Electricity Authority of Cyprus

WiseWire Energy Solutions

CINTECH SOLUTIONS

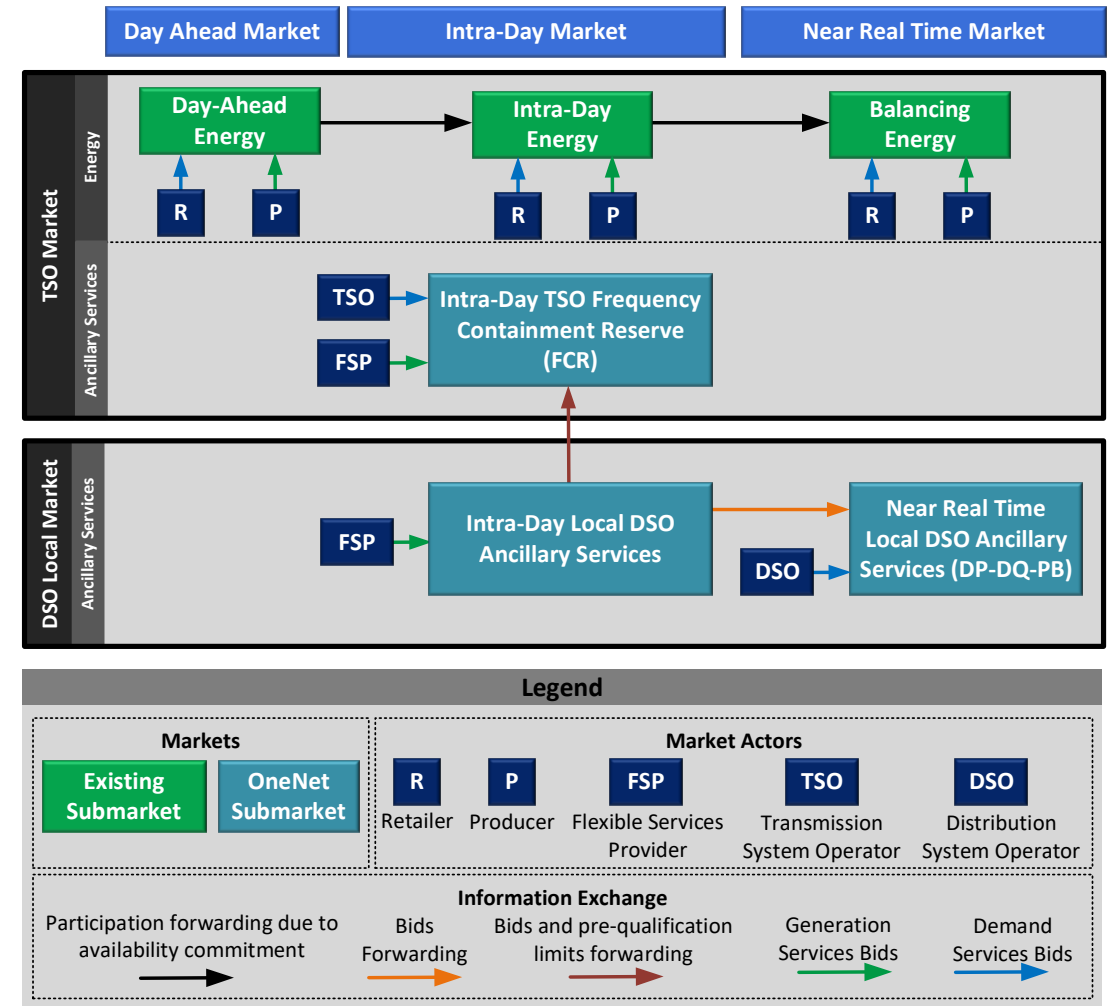




Collaboration Enablers

■ New electricity market framework

- TSO and DSO collaboration for the secure operation of the grid
- DSO and prosumer collaboration for the provision of ancillary services to the distribution grid
- Enable the distributed resources to provide frequency support services to the TSO

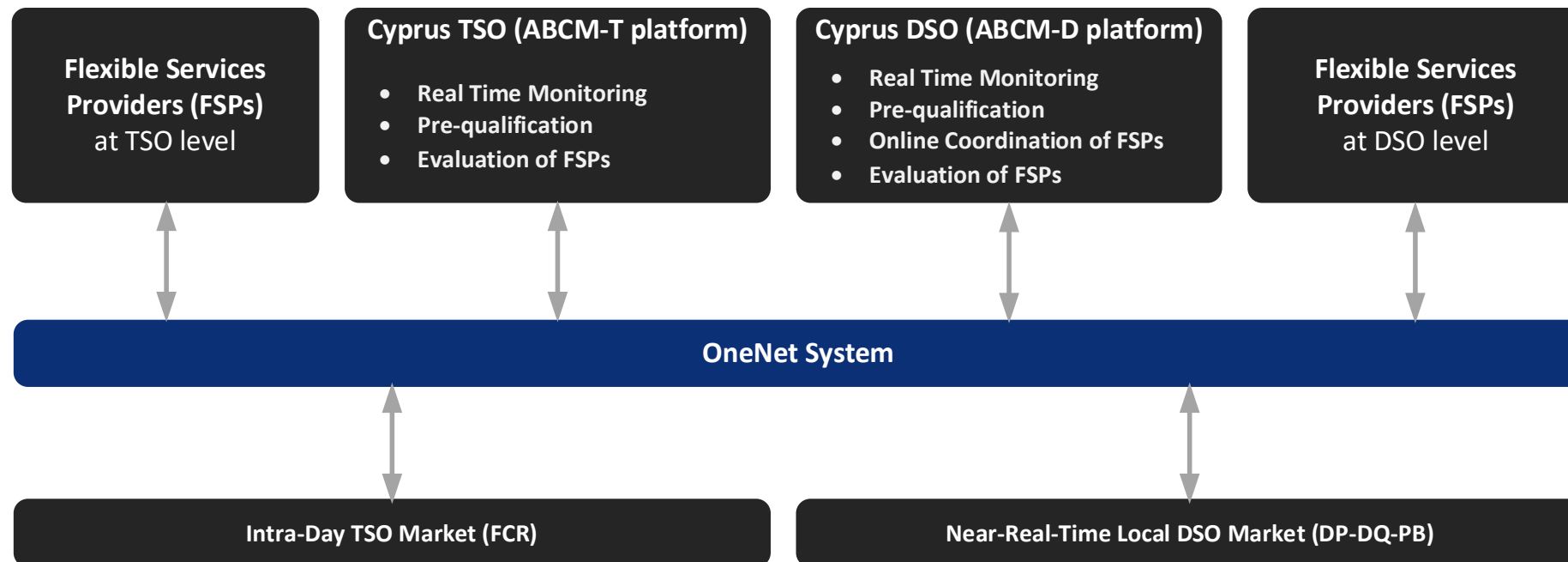




Collaboration Enablers

■ OneNet System

- Enable the information exchange between the TSO-DSO and flexible consumers
- Common information is available to all the stakeholders through the OneNet system
- Consistent and structured exchange of information between the stakeholders

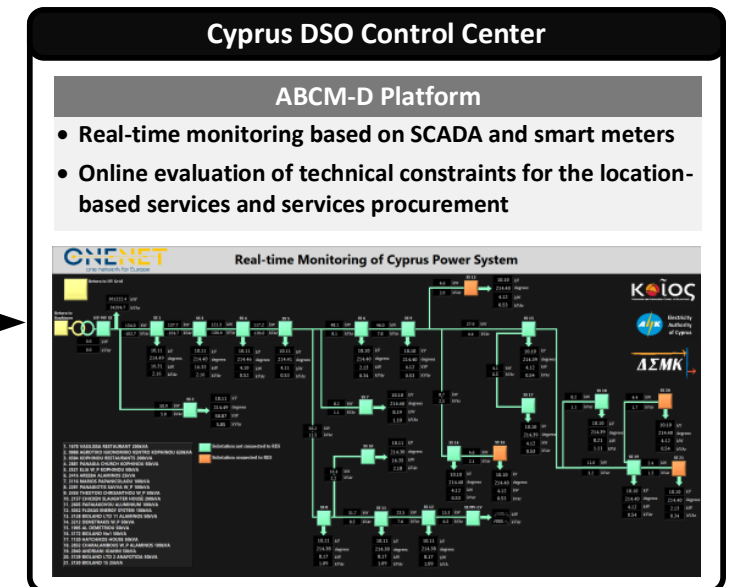
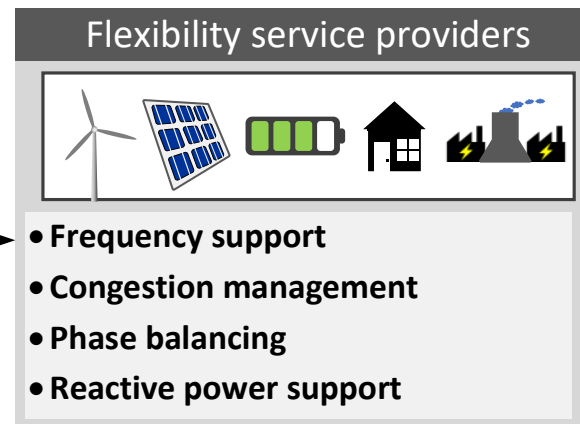
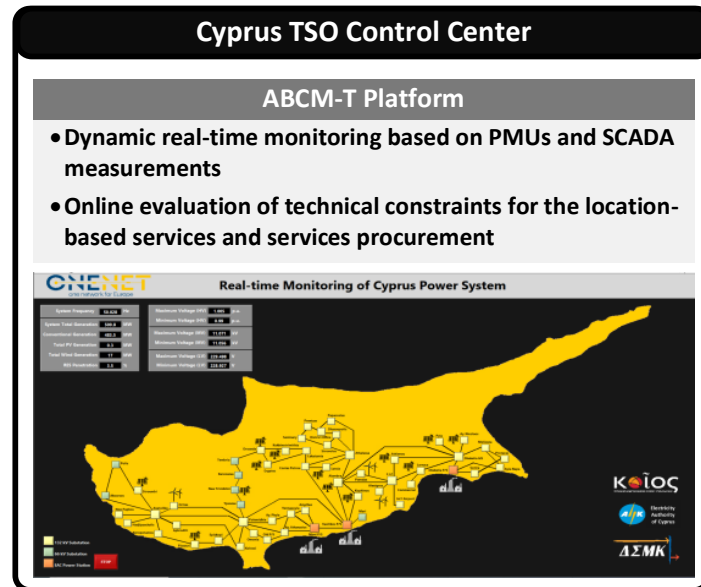




Collaboration Enablers

■ Innovative monitoring and control tools

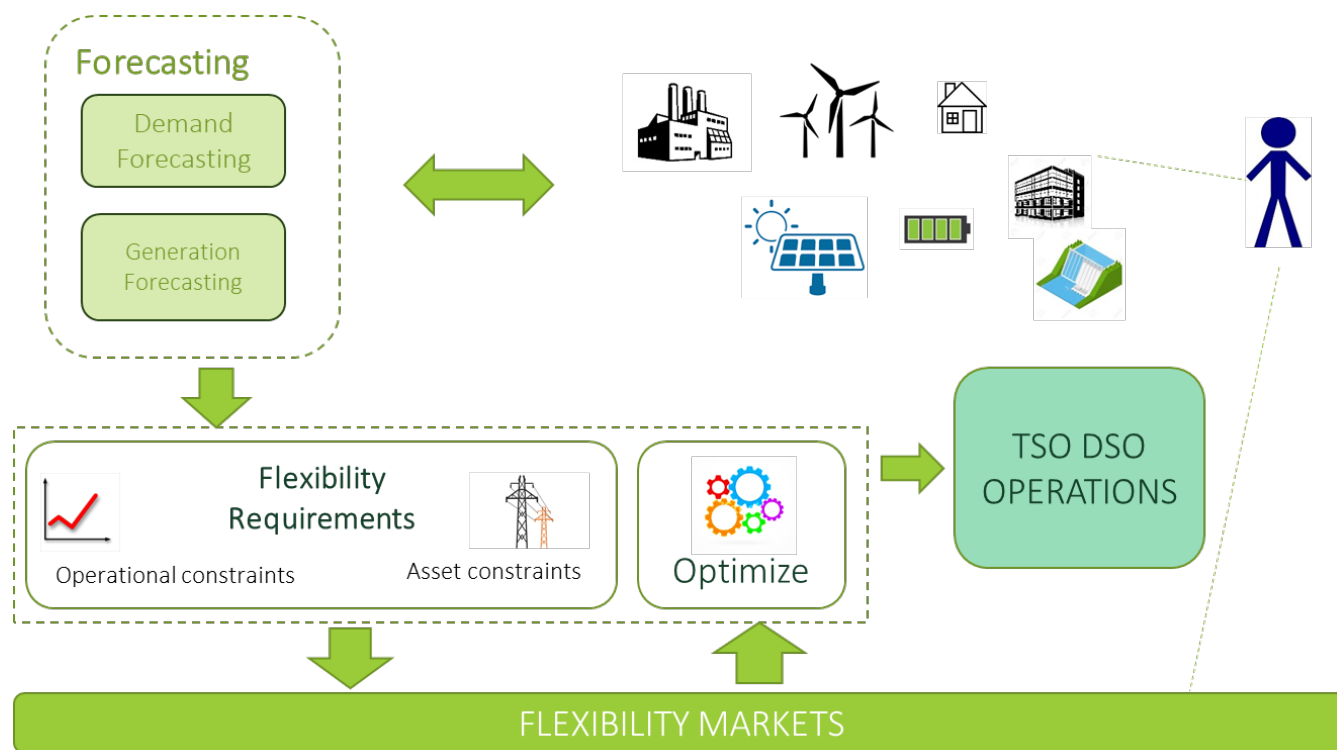
- Novel monitoring schemes that enhances the situational awareness of the operators
- Ground-breaking control solution, mainly for distribution system operator, to enable the provision and coordination of distributed resources and prosumers
- Provision of new ancillary services



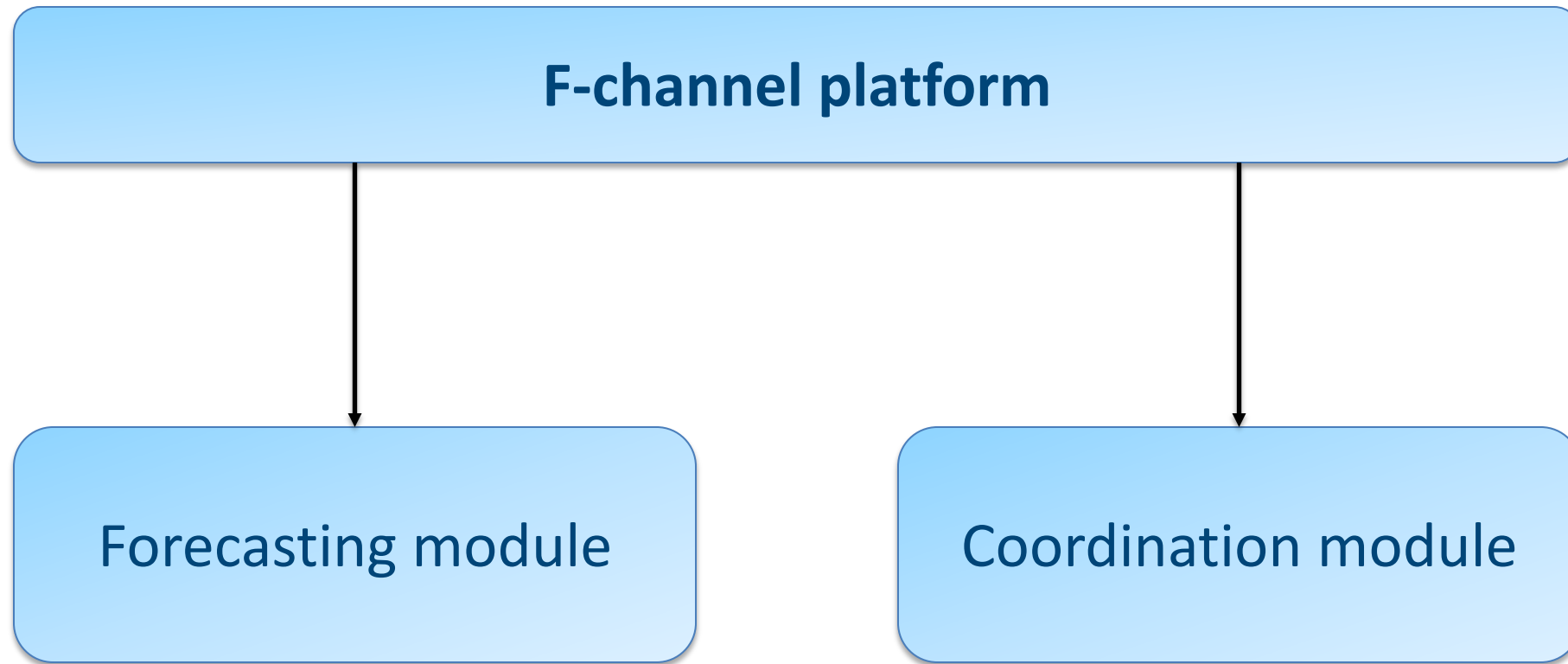
Overview



- **“F-channel” platform** represents the web based, client server application for TSO-DSO coordination.
- It will utilize high resolution weather forecast, AI methods, map based GUI and cloud calculation engines.
- **“F-channel” platform** will implement a set of common functionalities for the system operators.



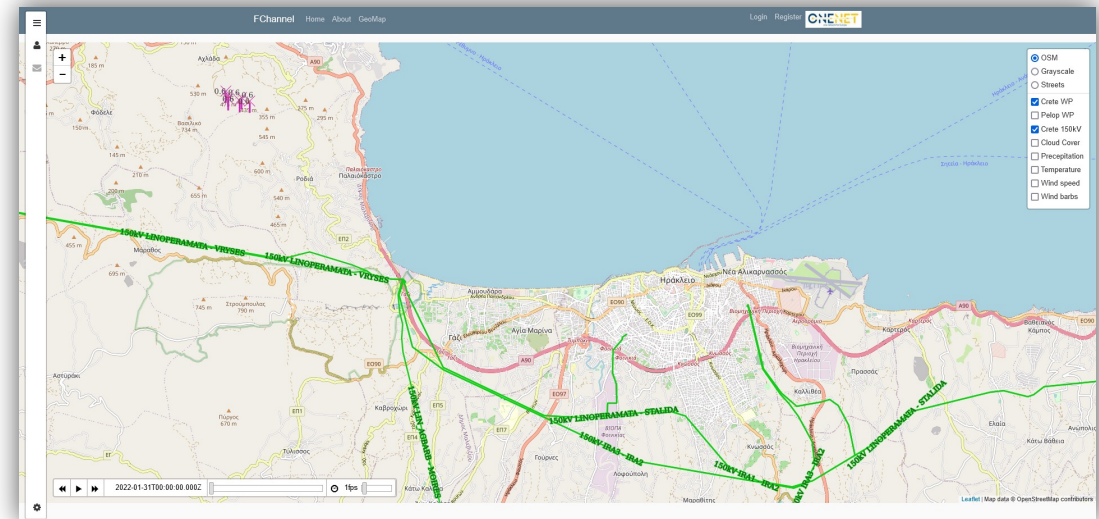
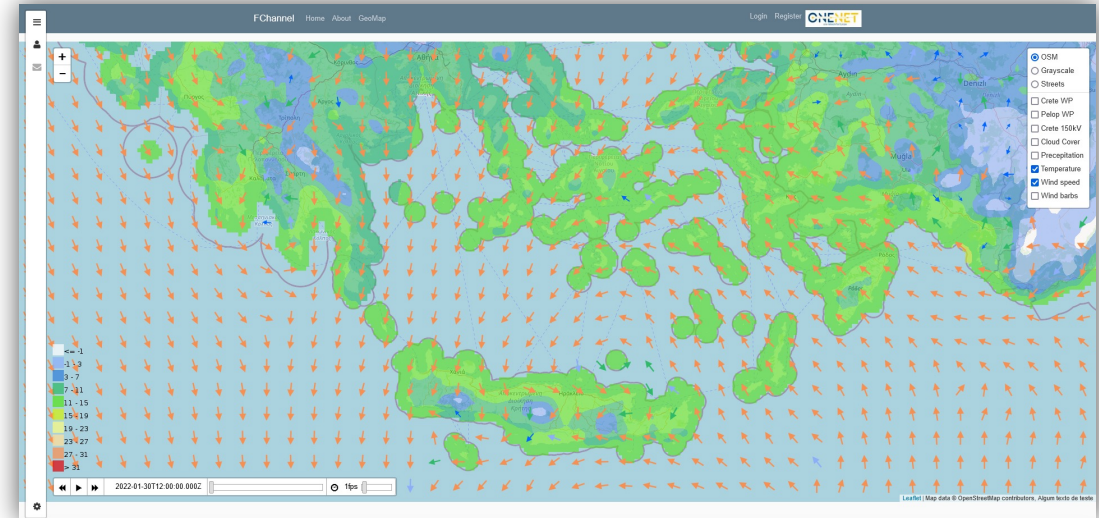
Modules of the platform



Forecasting module



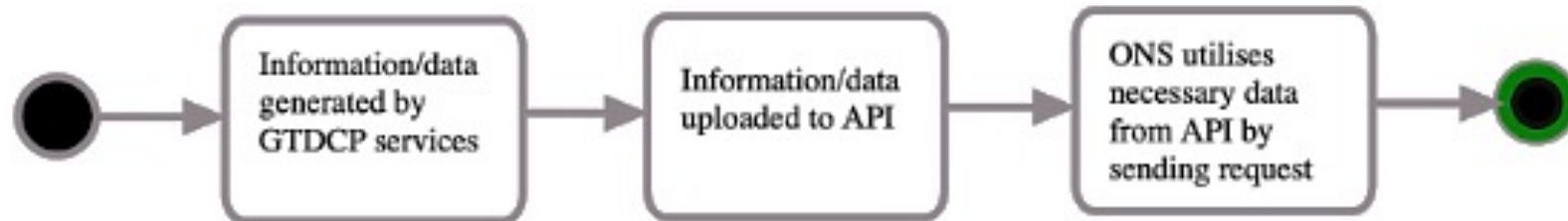
- This module, equipped with an appropriate GUI based on the georeferenced map presentation, ensures the reliable predictions of both the RES generation and demand.
- F-channel's forecasting module is able to identify flexibility resources precisely and simultaneously for both DSO and TSO grid levels.
- This module mainly focuses on the lower voltage level prosumers and determination of the power system needs for the flexibility services.



Coordination module



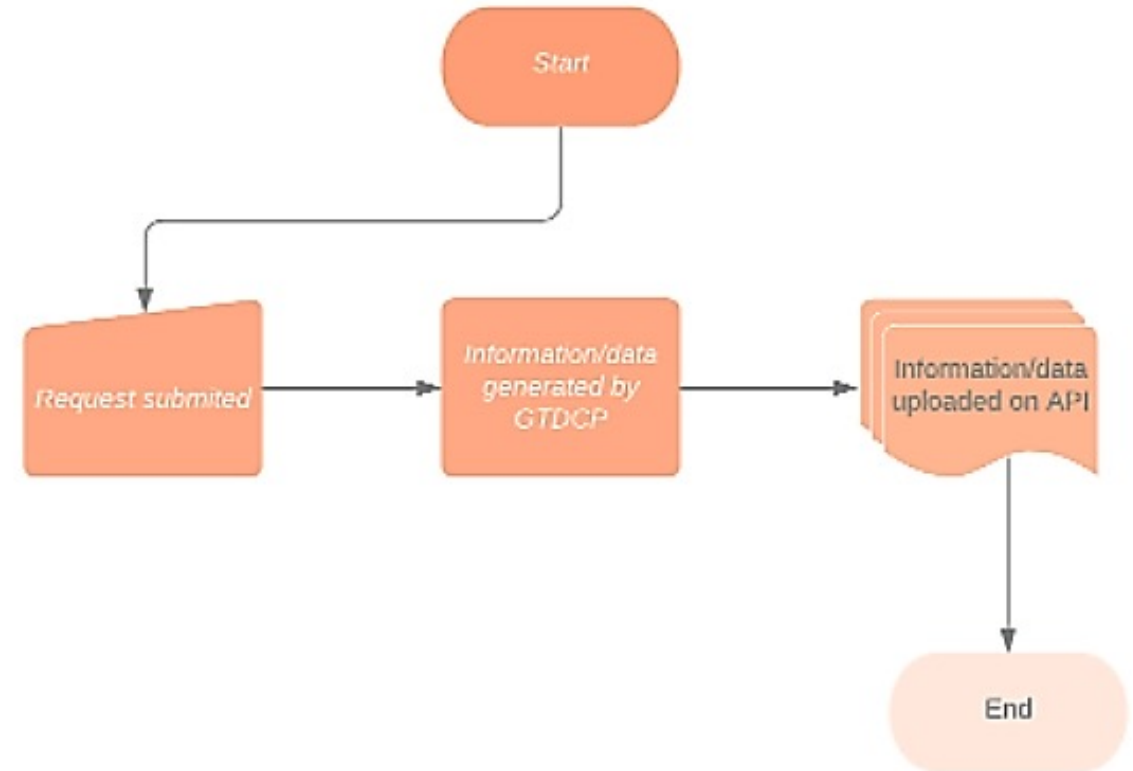
- This module is mainly intended for providing grid services (frequency and non-frequency), with the focus on the balancing and congestion management challenges.
- Operators will have interfaces towards Flexibility Register and TSO-DSO Coordination Platform.
- These two systems would then have interfaces towards FSPs, market operators, metering data administrators and consent administrators.
- Common, centralized Flexibility Register and TSO-DSO Coordination Platform will be introduced through F-channel.



Coordination module



- Grid data should be shared directly between TSO and DSO in order to meet the requirements related to the existing practice.
- Along with that, TSO and DSO will also be able to share information related to:
 - future flexibility needs;
 - calls for flexibility tenders;
 - flexibility purchase offers;
 - flexibility requirements...



Next steps



- Development of the market framework;
- Testing and validation of the forecasting module;
- Further development of the coordination module and integration within OneNet system and its services;
- Consumer Engagement in Greek Demo;
- Demonstration and validation of the Greek demo.



Thank You

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