



- IDE4L project overview and ANM concept
- Aggregator concept
- Developed functionalities
- Distributed automation system
- Demonstrations
- Conclusions





# How IDE4L will change business of DSO?

## • **Technical approach for ANM**

- Design and operational changes
  - Non-firm connection capacity increase remarkably network hosting capacity for RESs and DERs
  - DERs participate indirectly in ANM (Market approach)
  - Complexity of system increases
- Decentralized and standard based automation
  - Monitoring and control of whole grid (scalability)
- Technical solutions for ANM
  - Real-time monitoring (New sensors: smart meters, PMU, ... and New functionalities: state estimation)
  - Reliability enhancement (Decentralized FLISR and microgrids)
  - RES hosting capacity (Congestion management)





# How IDE4L will change business of DSO?

- **Market based approach for ANM**

- DSO enables flexibility services to participate in different markets
  - DERs are merged by CAs which have the roles of retailer and balance responsible party (participation to wholesale market, balancing market and portfolio optimization)
  - DSO/TSO maintain a market for constraints management (local market)
  - DSO/TSO validates flexibility service requests
- DSO may buy flexibility services (e.g. SRP and CRP) from CA to solve congestion in the network

