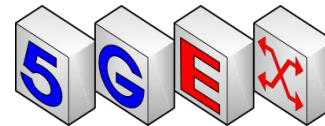


5G EXCHANGE (5GEX) - MULTI-DOMAIN ORCHESTRATION FOR SOFTWARE DEFINED INFRASTRUCTURES

Riccardo Guerzoni (Huawei ERC)



The 5GEx Project (5G-PPP P16) – facts sheet

- 5GEx: 5G Exchange (Innovation Action)
- EC Contribution: 7.921.095 €
- Duration: **Oct. 2015** – Mar. 2018
- Effort: 1039 PMs

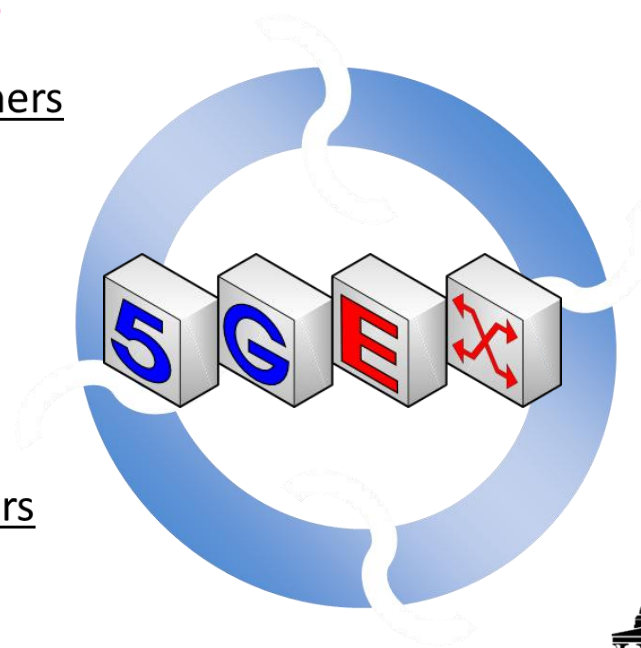


Operator partners



Vendor partners

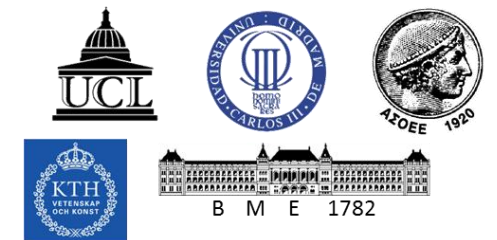
- Ericsson HU (PM)
- UC3M (TM)
- ATOS
- AUEB
- BISDN
- BME
- DT
- EICT
- HP
- HWDU
- KTH
- ORANGE
- REDZINC
- Ericsson IT
- TI
- TID
- TNO
- UCL



SME partners

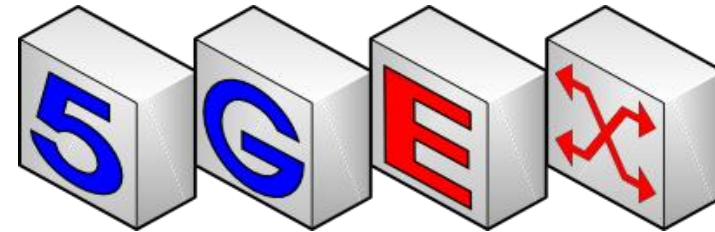


Academic partners



Outline

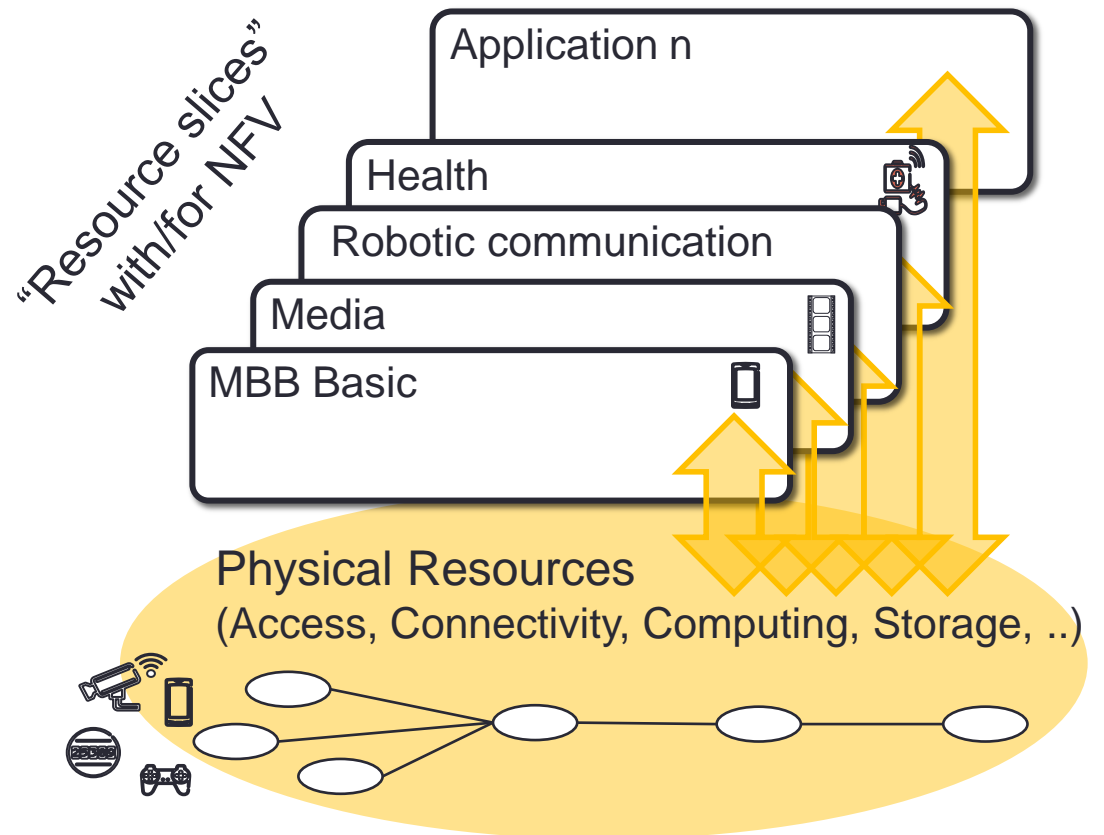
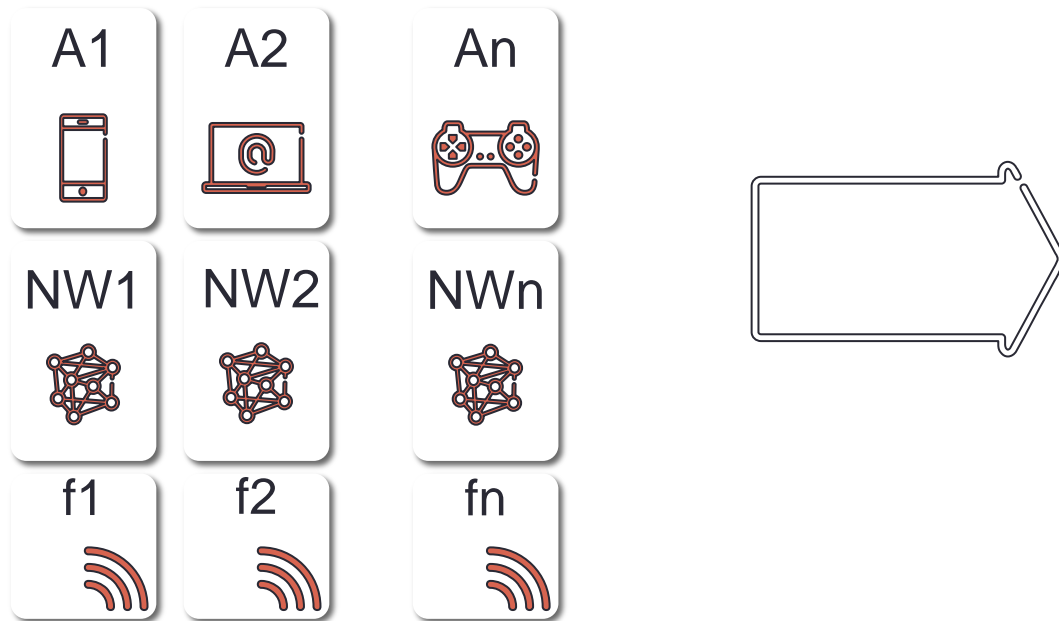
- 5GEx for 5G
- The 5GEx's approach
- Expected outcome
 - The sandbox 5G exchange
- Project plan



5GEx in 5G: One Network – Multiple Industries

From dedicated physical networks and resources for different applications...

...to a “network factory” where **resources are traded** and new architectures are “manufactured by SW”



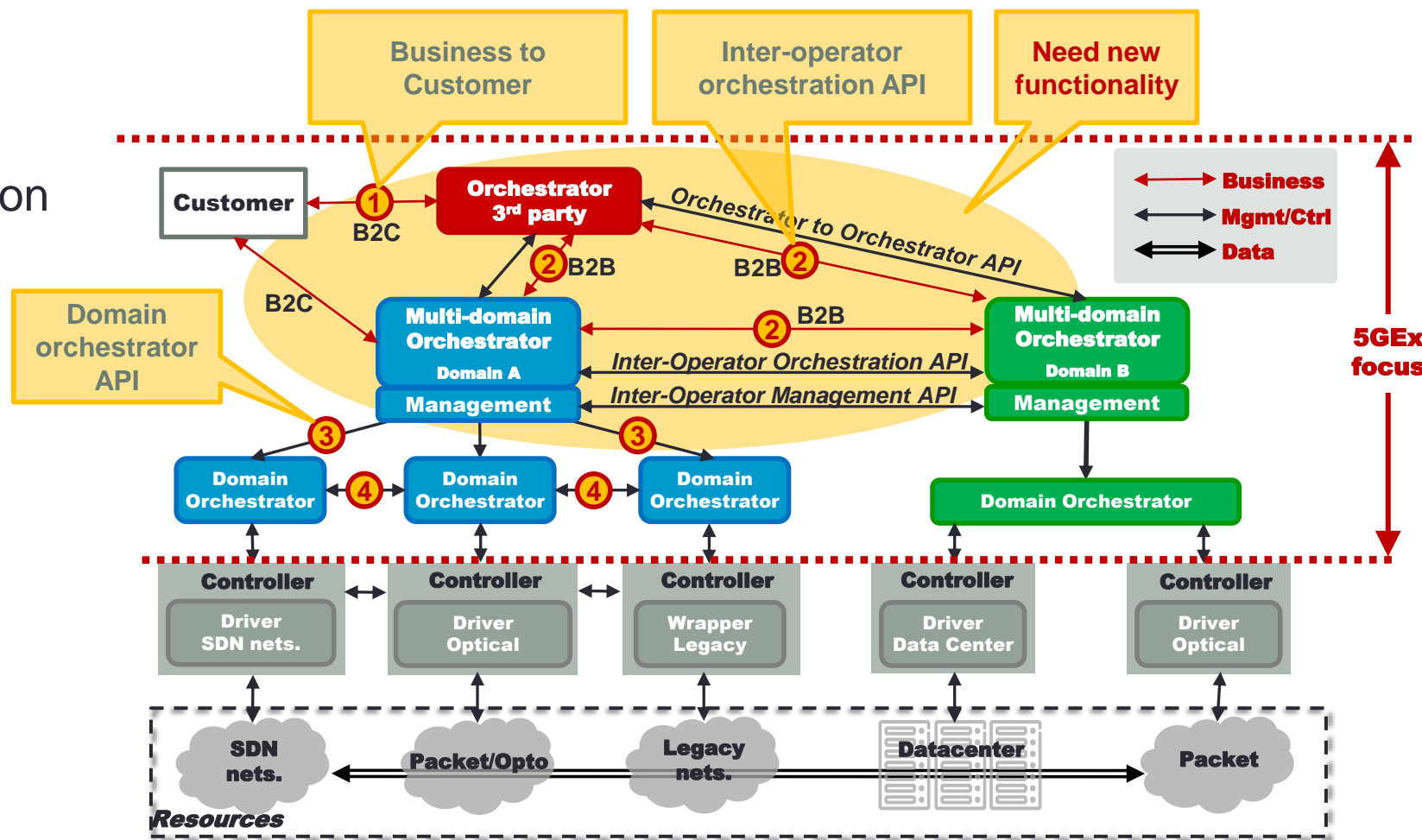
The 5GEx approach

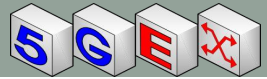
Challenges:

Market fragmentation
Technology fragmentation

Mission:

Unified European
infrastructure
services market





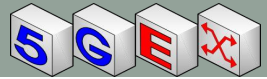
Expected outcome

- Design and specify architecture, mechanisms, algorithms and enablers for **automated and fast provisioning** of infrastructure services in a multi-domain/multi-operator 5G environment
- Define and validate the novel 5GEx business layer, including the **business information model**, economic and market mechanisms that promote efficiency of multi-domain services
- **Build** a working end-to-end system and deploy a proof of concept prototype
- **Sandbox Exchange** - validate by experimenting with selected use cases
- Contribute to the relevant **standard** forums and **Open Source** communities

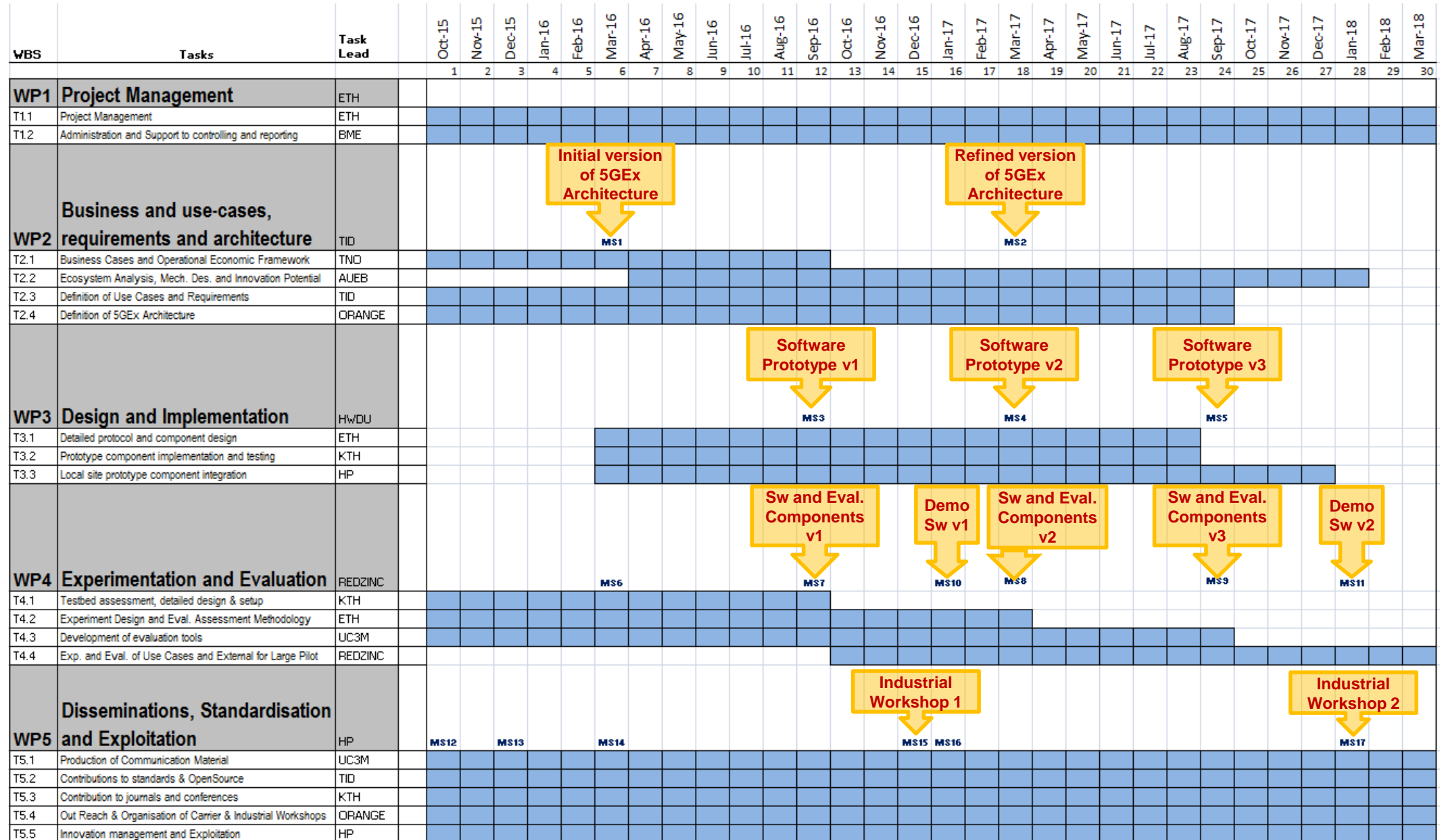
The 5GEx Sandbox Exchange



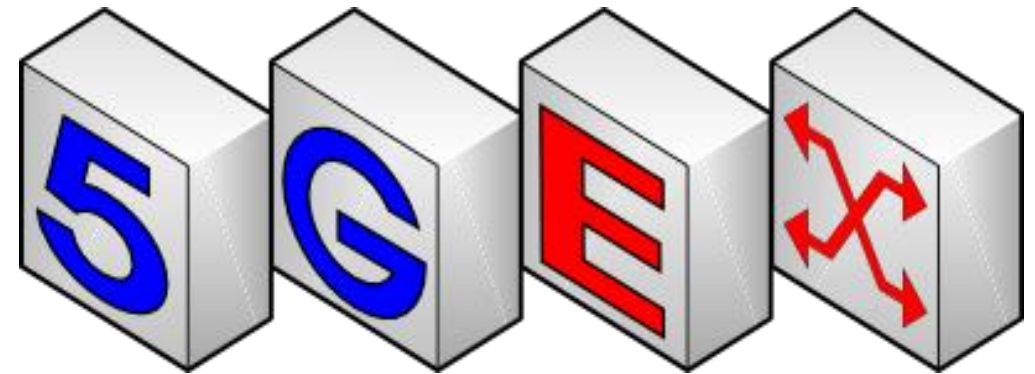
- Set of testbeds from **operators** integrated
 - to complement existing peering functions with additional **buyer-fulfiller** functions
 - Focus on
 - determining the feasibility of end-to-end multi-domain orchestration,
 - assessing carrier-grade quality, and
 - verifying technological choices.
- **Ambition:**
to influence how to interconnect 5G-PPP testbeds



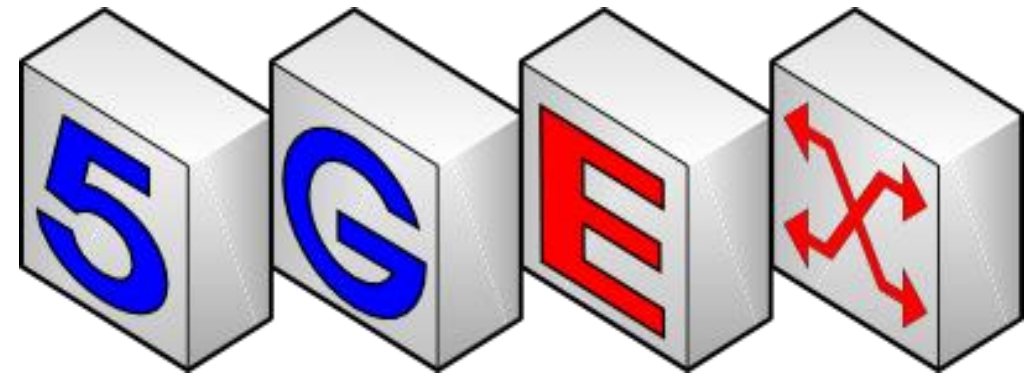
Plan



THANK YOU

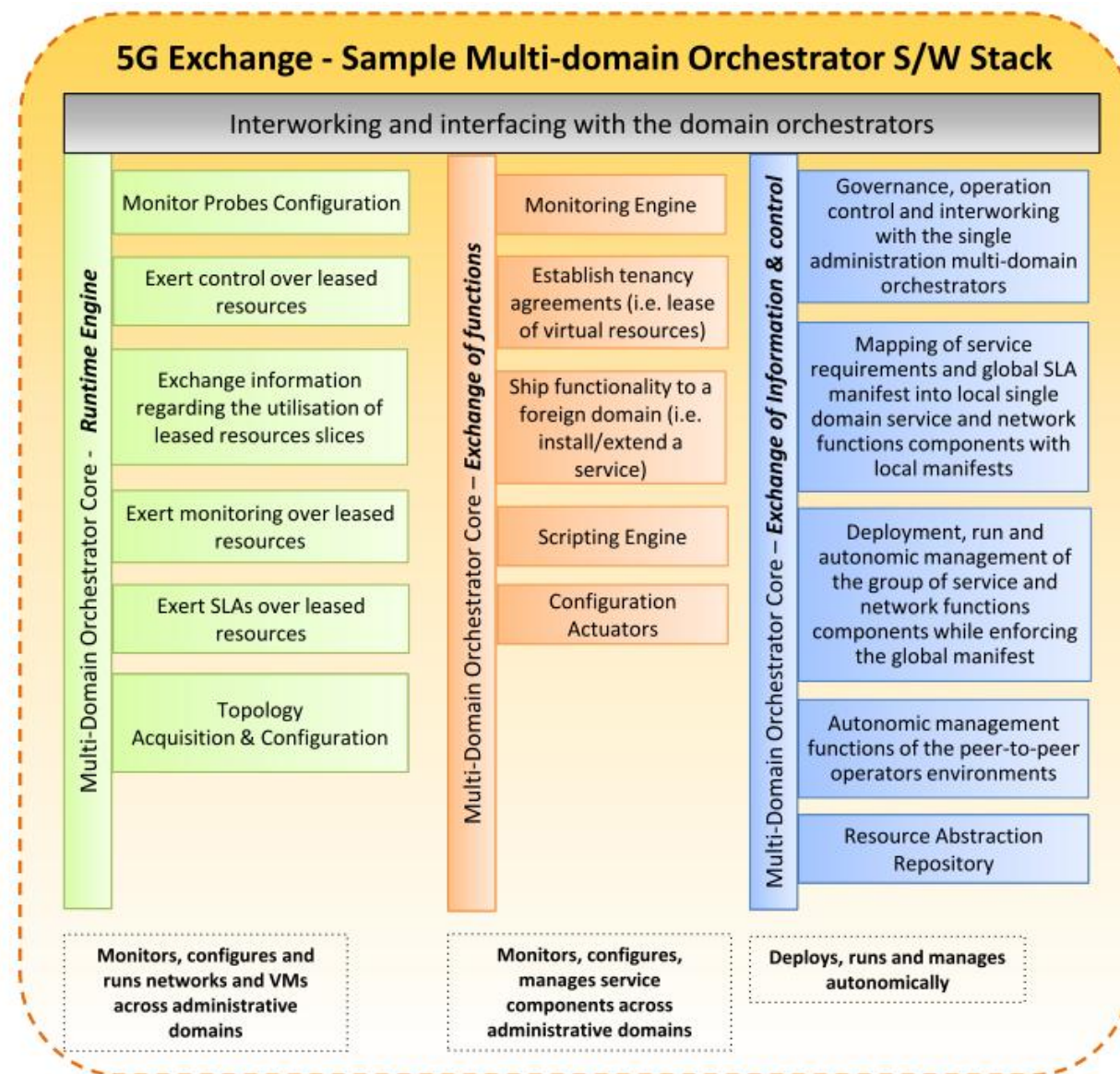


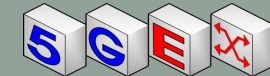
BACK UP SLIDES



The 5GEx Architecture

- Multi-domain orchestrator. Three main new components:
 - Runtime Engine:** manages networks and Virtual Machines across domains
 - Exchange of Functions:** manages service components across domains
 - Exchange of Information and Control:** enforces interworking, SLAs, mapping and autonomic management of service and network functions





Some use cases

Category	Use Case
Connectivity	Network creation across multiple optical domains
	Multi-technology Connectivity Service Provisioning
	Packet services Multi-domain
Network as a Service (NaaS)	Multi-domain mobile backhauling
	Multi-domain network sharing
	Network slicing
Network + Storage + Compute as a Service	Deployment Content Delivery service across several domains
	Multi-operator IaaS