Mobile Edge Computing:
A customizing and deployment opportunity in 5G

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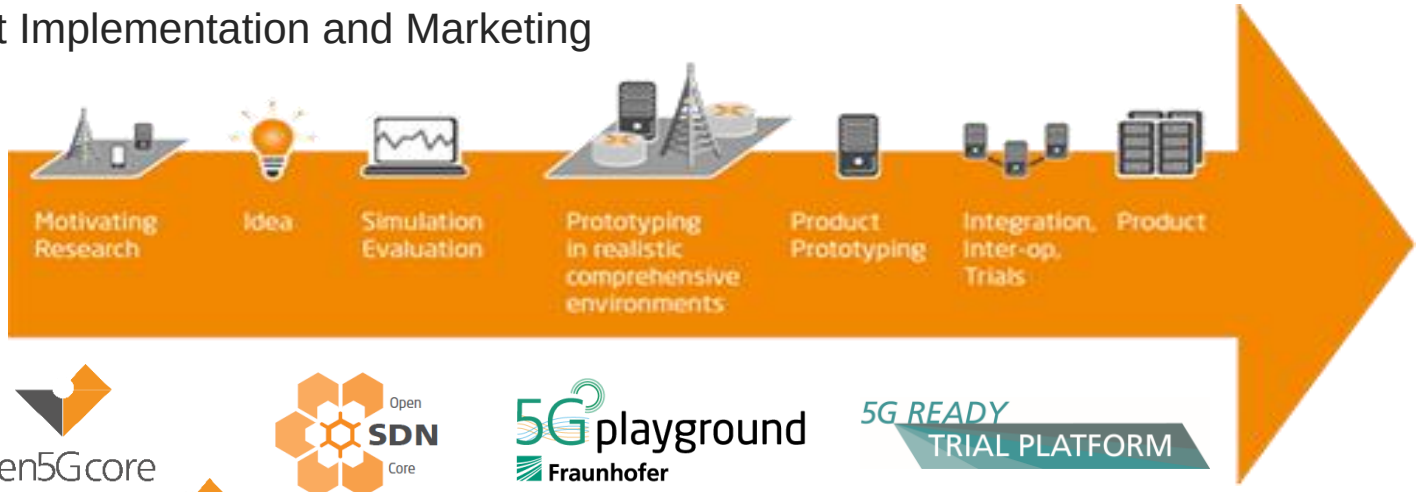
BEST PRACTICE EXAMPLE FOR R&D

There are some R&D steps which can not be missed for reaching relevant research and innovation results

- Motivating Research – showcasing the possible of a new technology
- Novel Ideas – direction, planning, literature study and hands-on implementations
- Simulation Environment – evaluations of ideas on complex models
- Prototyping in Real Environments – realistic, comprehensive PoCs
- Product Prototyping – and the appropriate counterpart network environment
- Integration, Inter-op and Trials – comprehensive environments
- Product Implementation and Marketing



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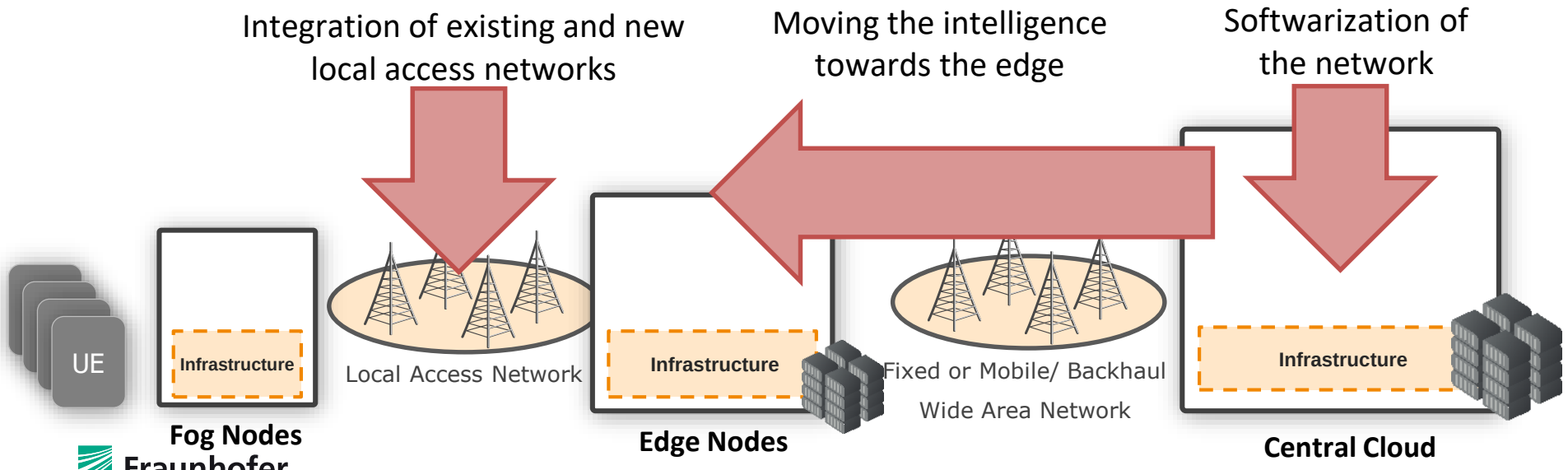
Key Communication Changes with 5G

5G is based on a comprehensive software system using all the resources available in the system

- The network functions are becoming software only → convergence with IT
  - More flexible network infrastructures (growing on demand, adapting to changes)
  - Enabling the parallel deployments of multiple dedicated networks
- Network functions can be installed in compute nodes at the edge of the network
- Development of new types of local access networks (and integrating existing ones)



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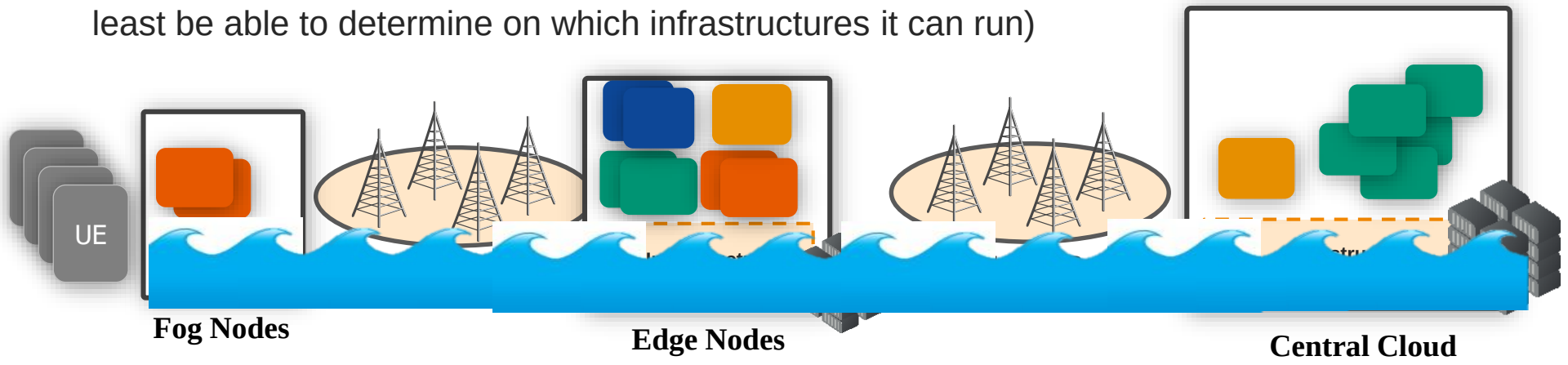
The Network Functions Perspective

- The 5G system is a distributed system
  - The network functions should be able to understand the underlying connectivity
  - Network functions should be properly synchronized
- The 5G system is a software system
  - Performance depends on the underlying uncertain infrastructure
- New mechanisms for ensuring the resilience and the security
  - With different levels of trust on the infrastructure

➔ The 5G system should be adaptable enough to run on the available infrastructures (or at least be able to determine on which infrastructures it can run)



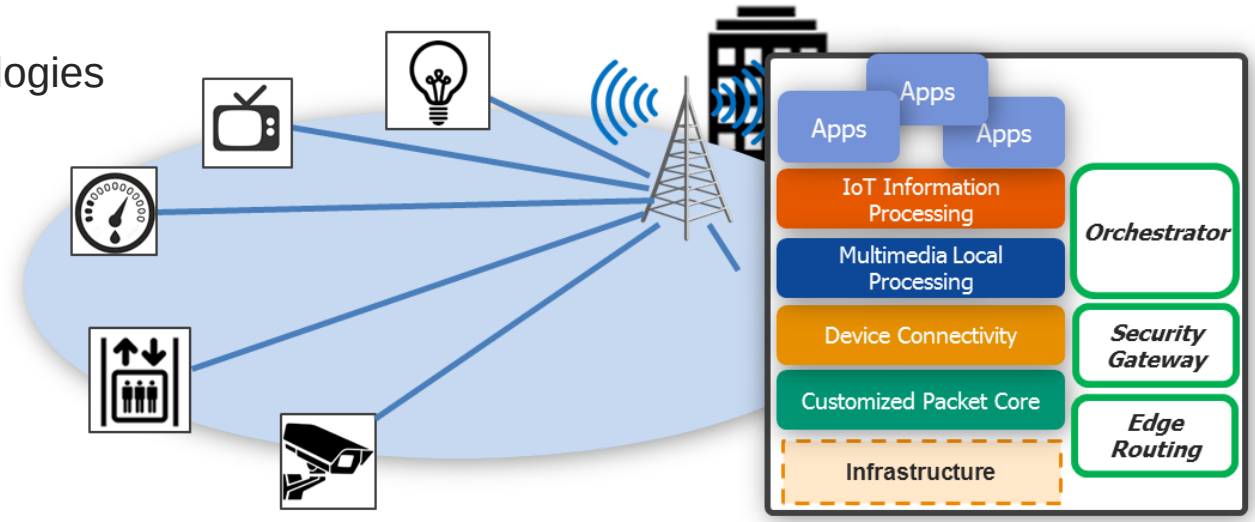
Edge Intelligence

Example Use Case: Edge Intelligence in Enterprise Networks

Development of a secure overlay for bringing edge intelligence in existing enterprise networks

- Secure and customized local access network (e.g. local WiFi, NB-IoT, LoRa network)
- Provide customized connectivity
- Secure backhaul connectivity
- Backhaul selection and aggregation
- Remote management and orchestration

- Can be done with customized 4G technologies
- No need to wait for 5G



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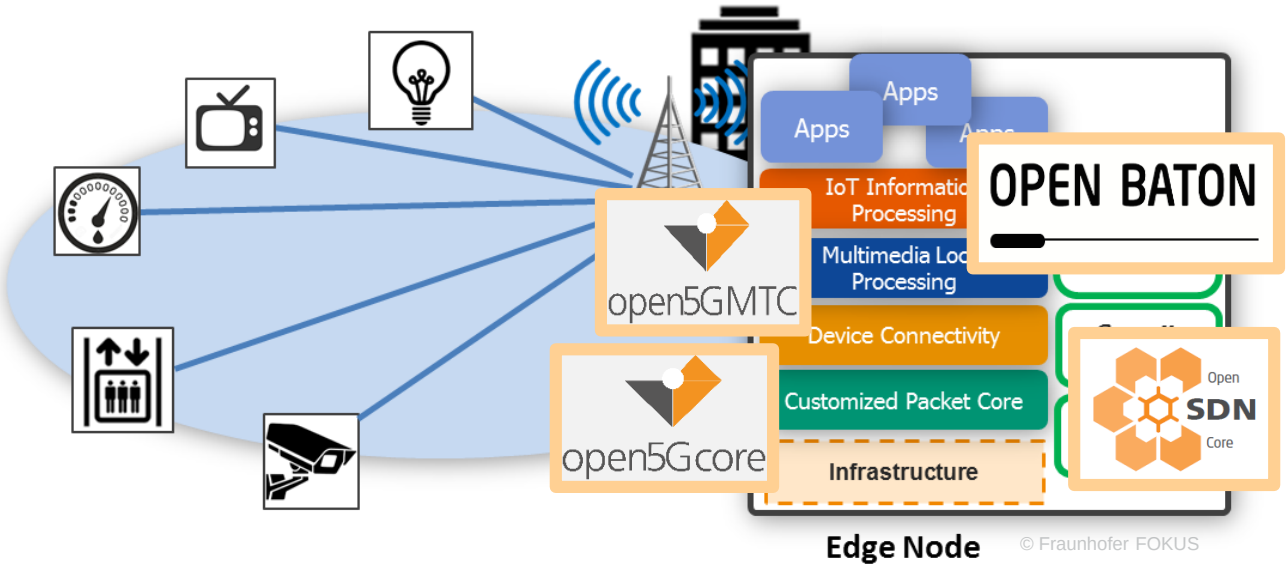
Example use case: Edge Intelligence in Enterprise Networks

A comprehensive set of software toolkits enabling the setup and development of 5G applications in an end-to-end testing environment

- Open5GCore – R&D prototype of software core networks (3GPP Release 11) extended with support for NB-IoT
- OpenSDNCore – SDN platform showcasing added value in flexible routing, virtual environments, secure and resilent backhauls
- Open5GMTC – efficient support for device connectivity & management and IoT information control
- OpenBaton – mangement and orchestration of virtual network environments



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