

12/10/2019

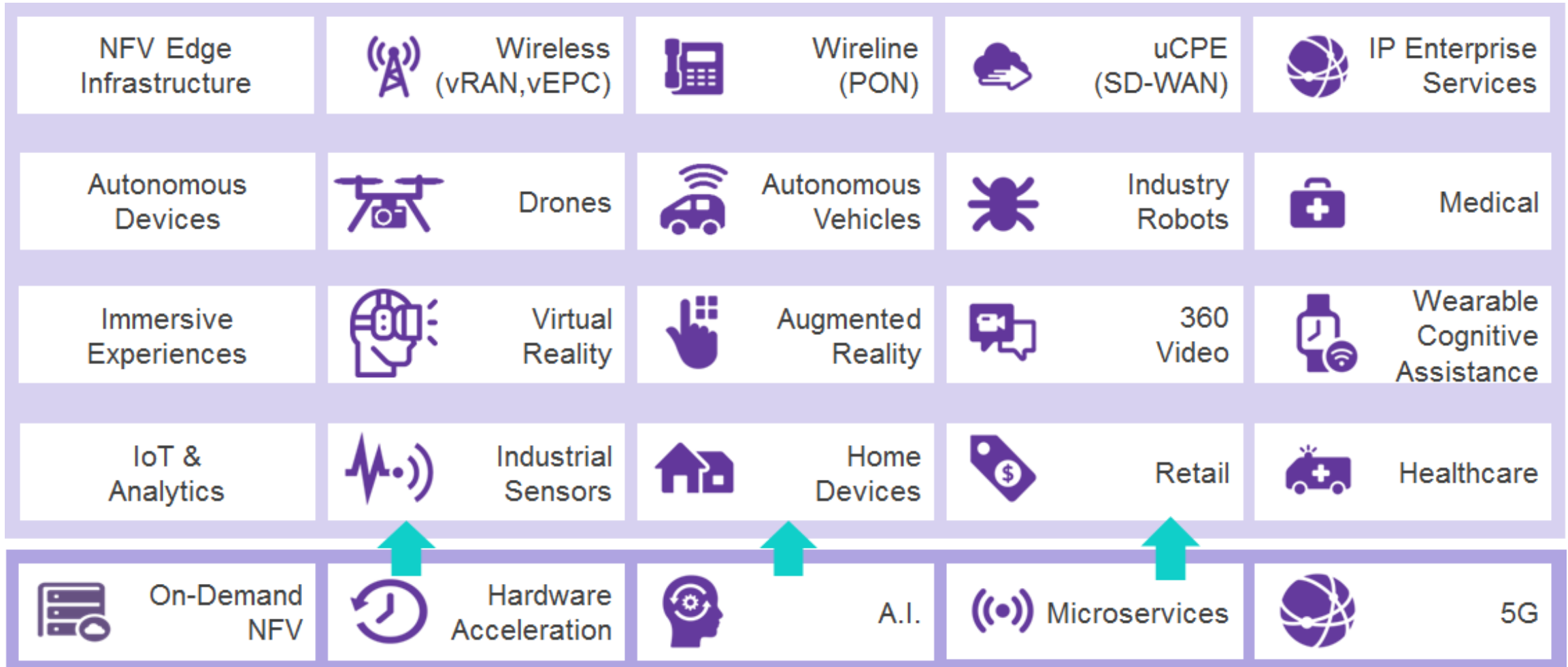
Portland, OR

Qualcomm

Cloud computing, edge computing, and media on cloud

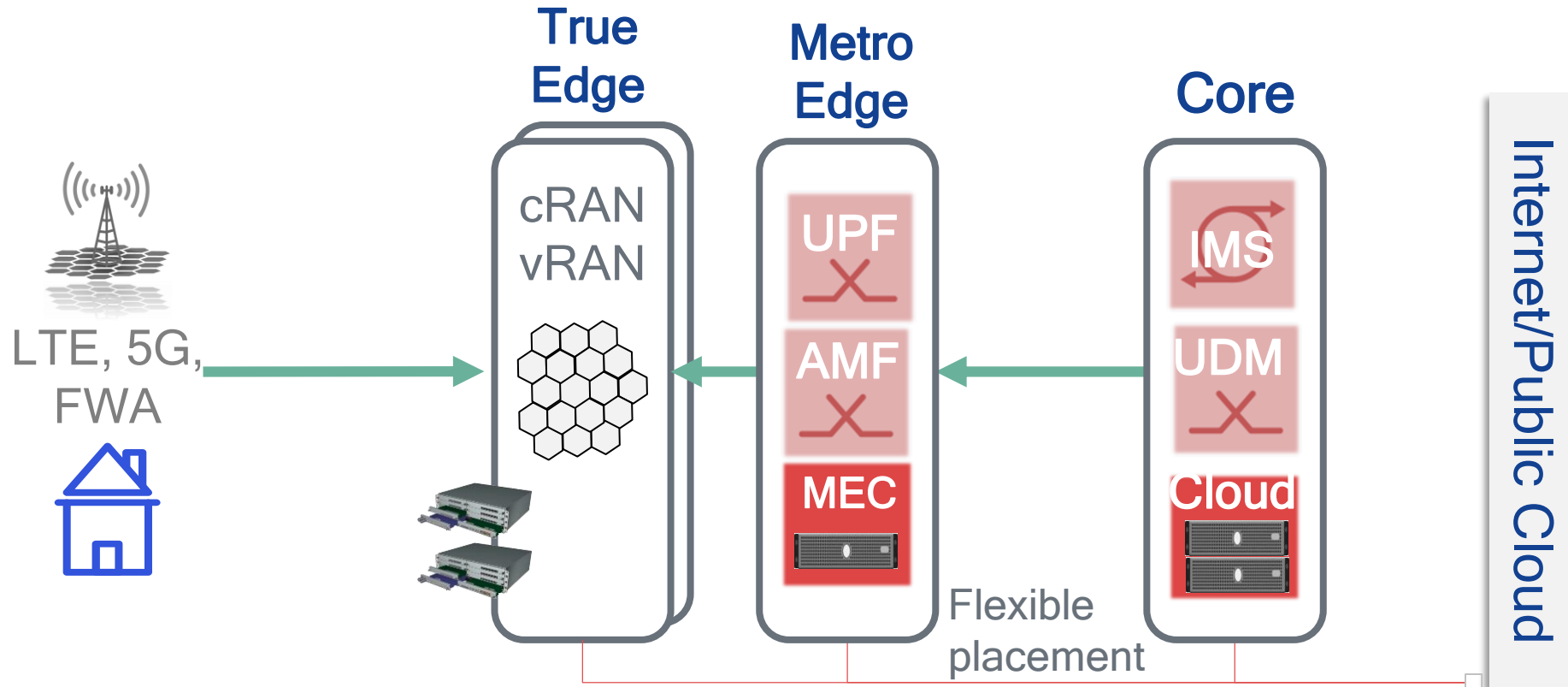
Imed Bouazizi

Edge Computing - Enablers and Applications



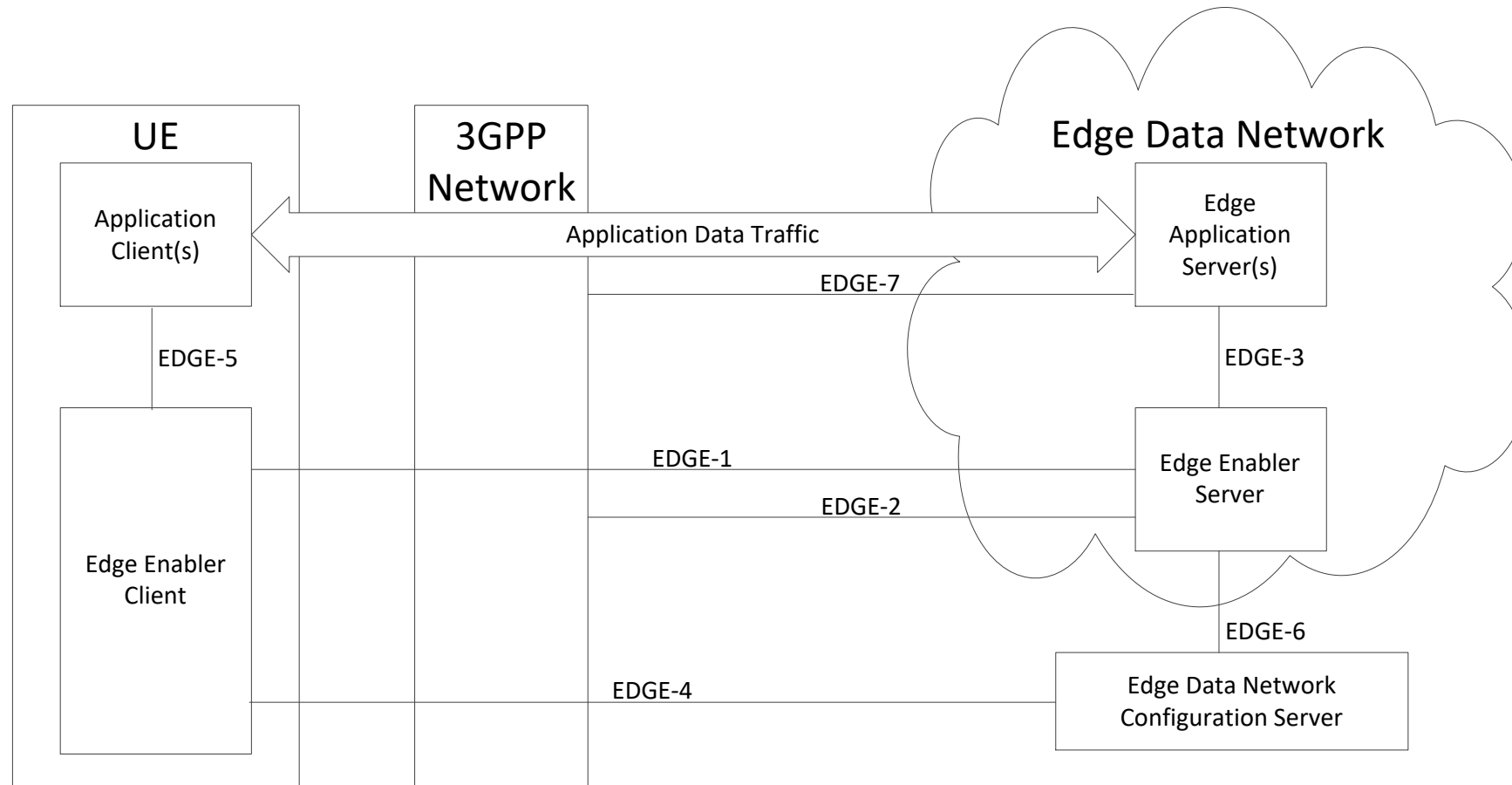
(courtesy of Linux Foundation)

Compute Opportunities in 5G

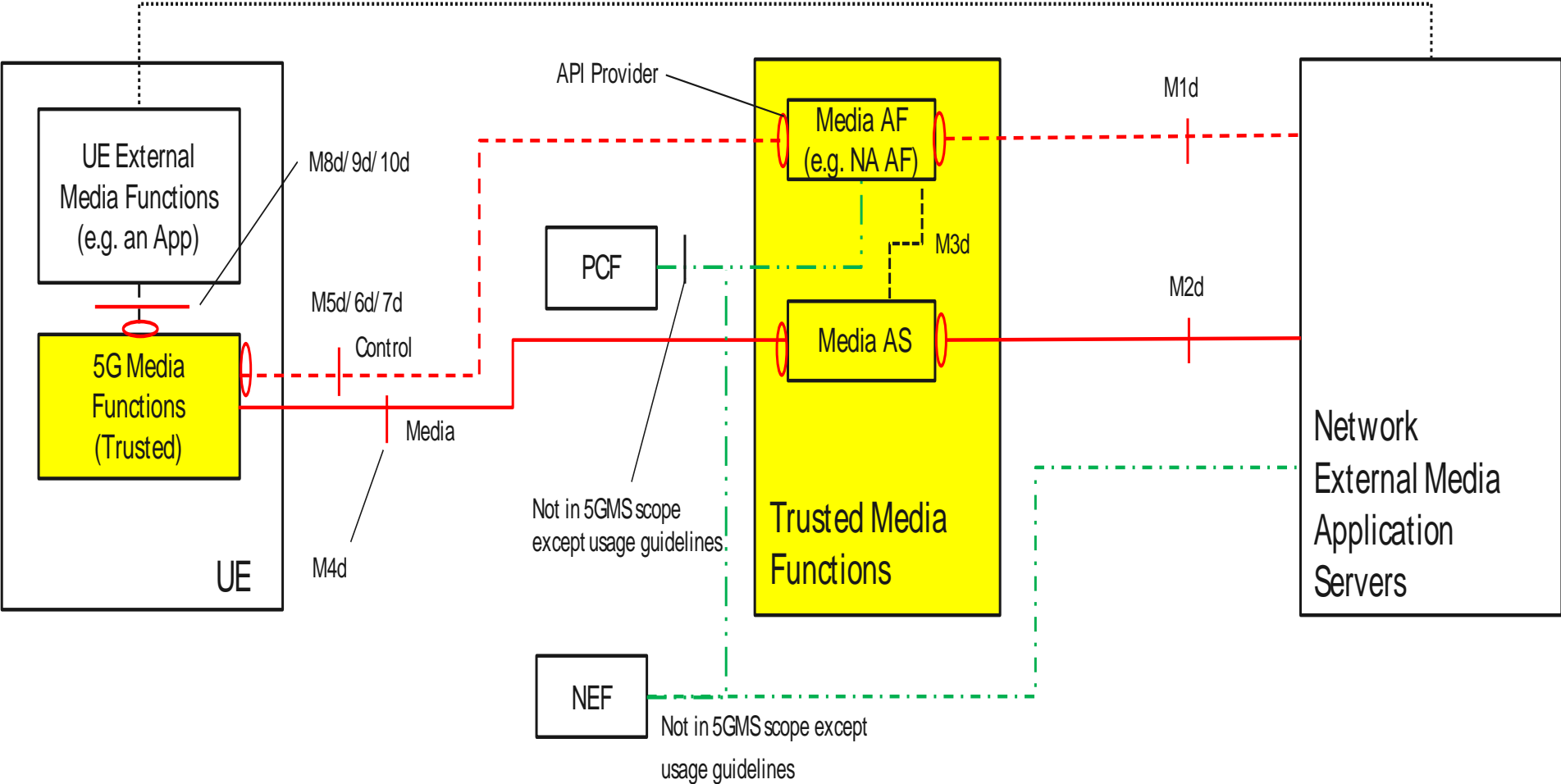


5G brings compute power to all levels of the network

3GPP SA6 Edge Architecture

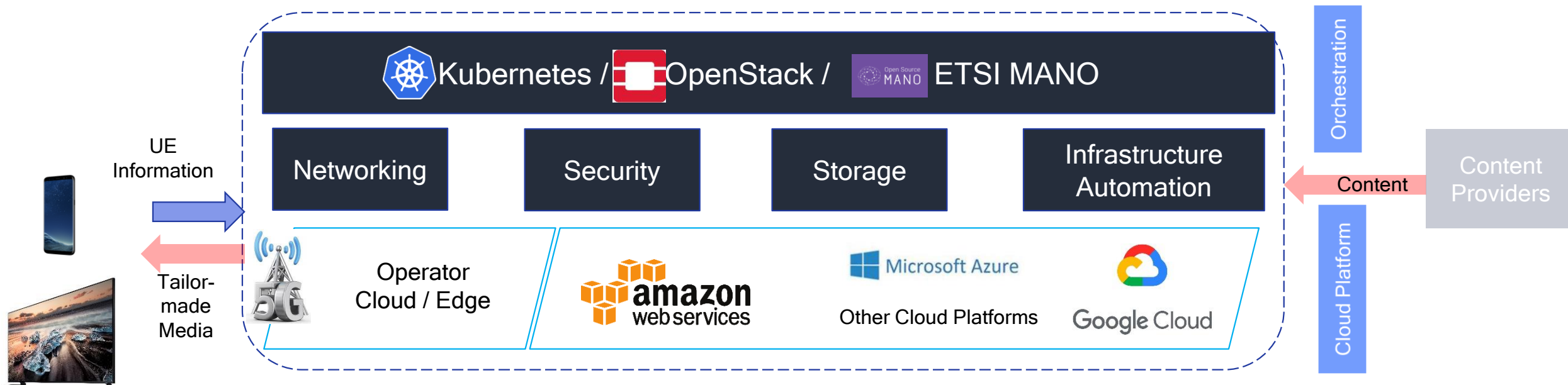


5G Media Architecture

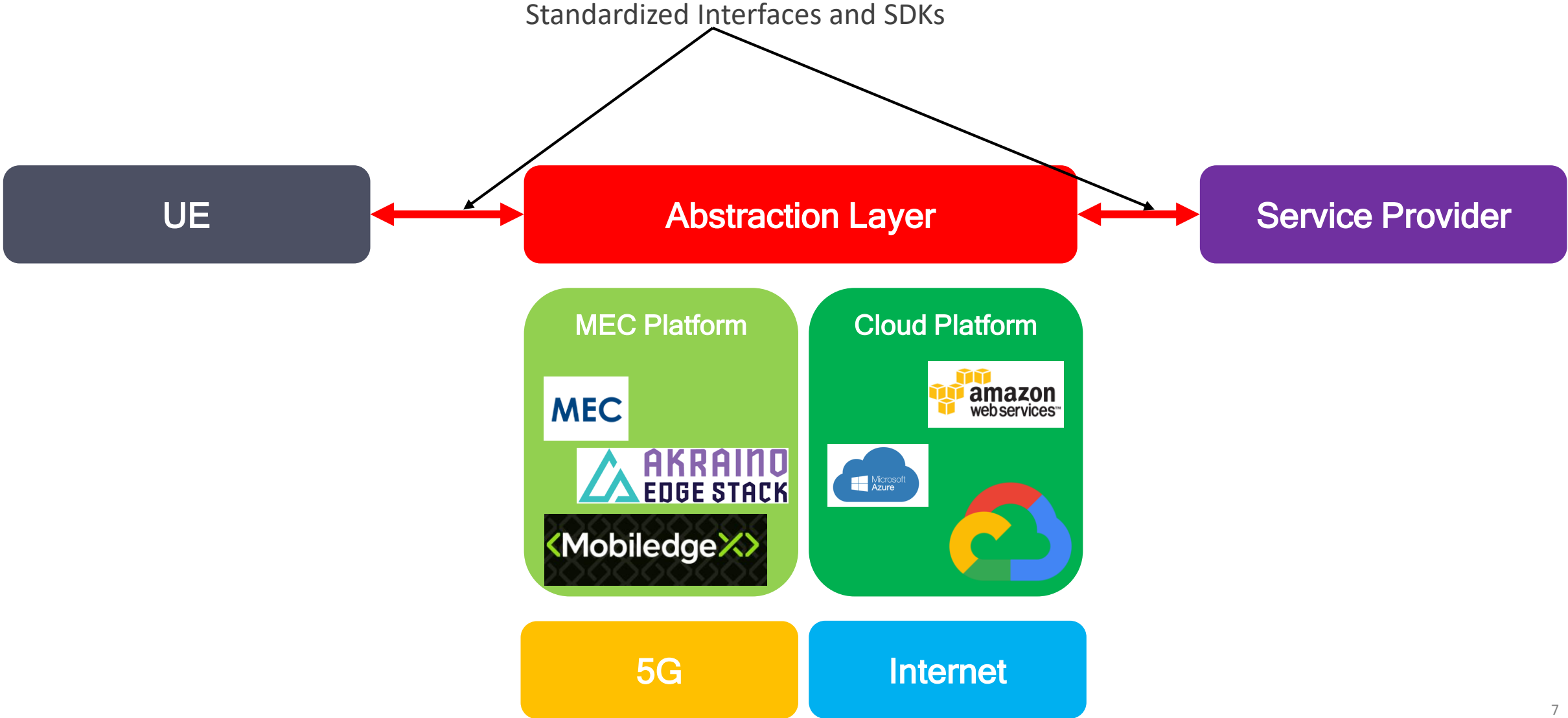


Edge Processing with 5G Network Slicing

- Traffic Routing:
 - Through appropriate Filtering rules, traffic is routed to an edge network (e.g. LADN)
 - Through appropriate DNS resolution, an Application Server is selected in the LADN
 - If no AS instance is running, AF together with Orchestrator launch a new instance of the AS
- Slice Configuration:
 - AS criteria and requirements
 - DNS resolution rules
 - AF configuration to manage AS



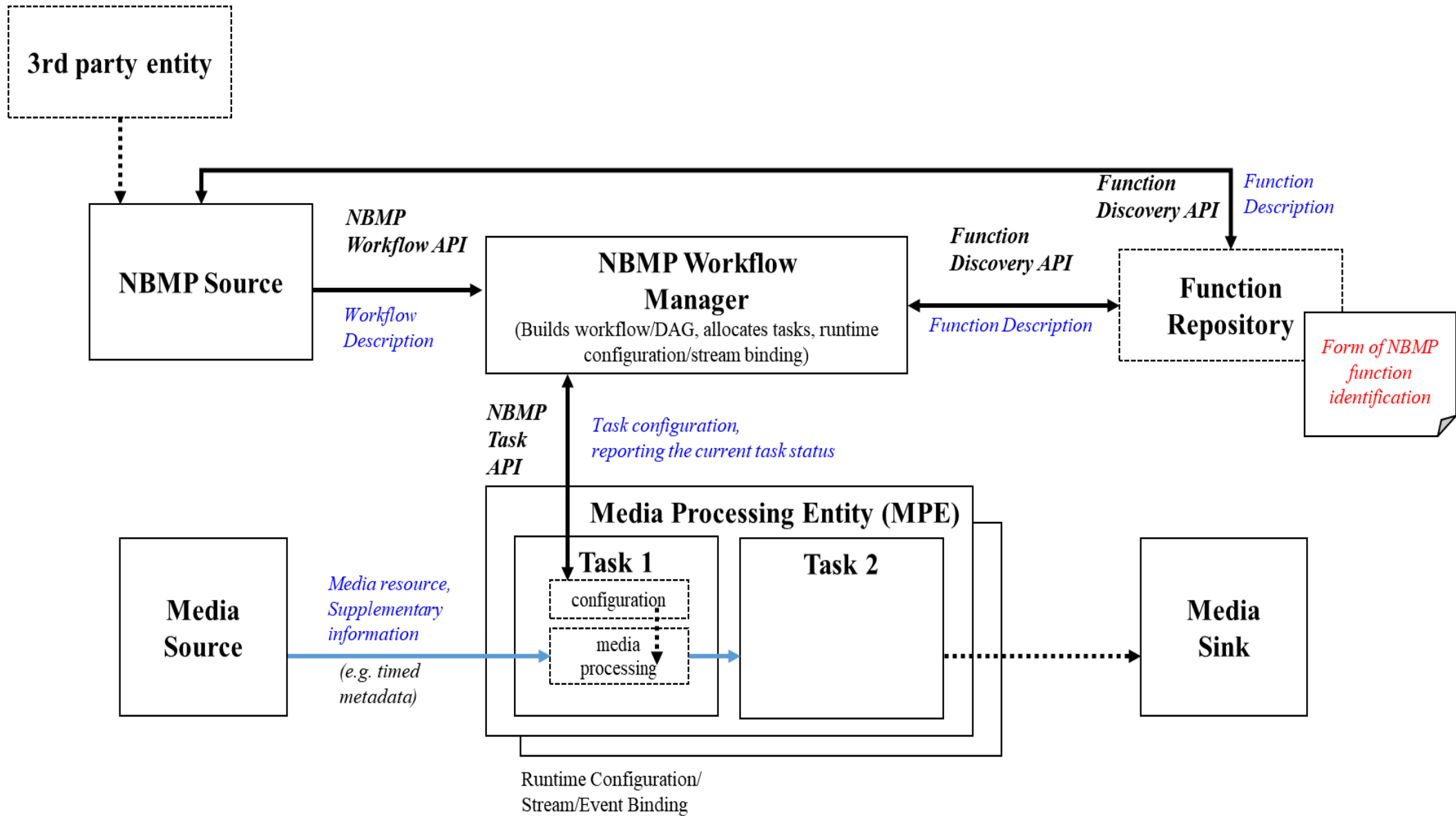
Edge Platform Fragmentation



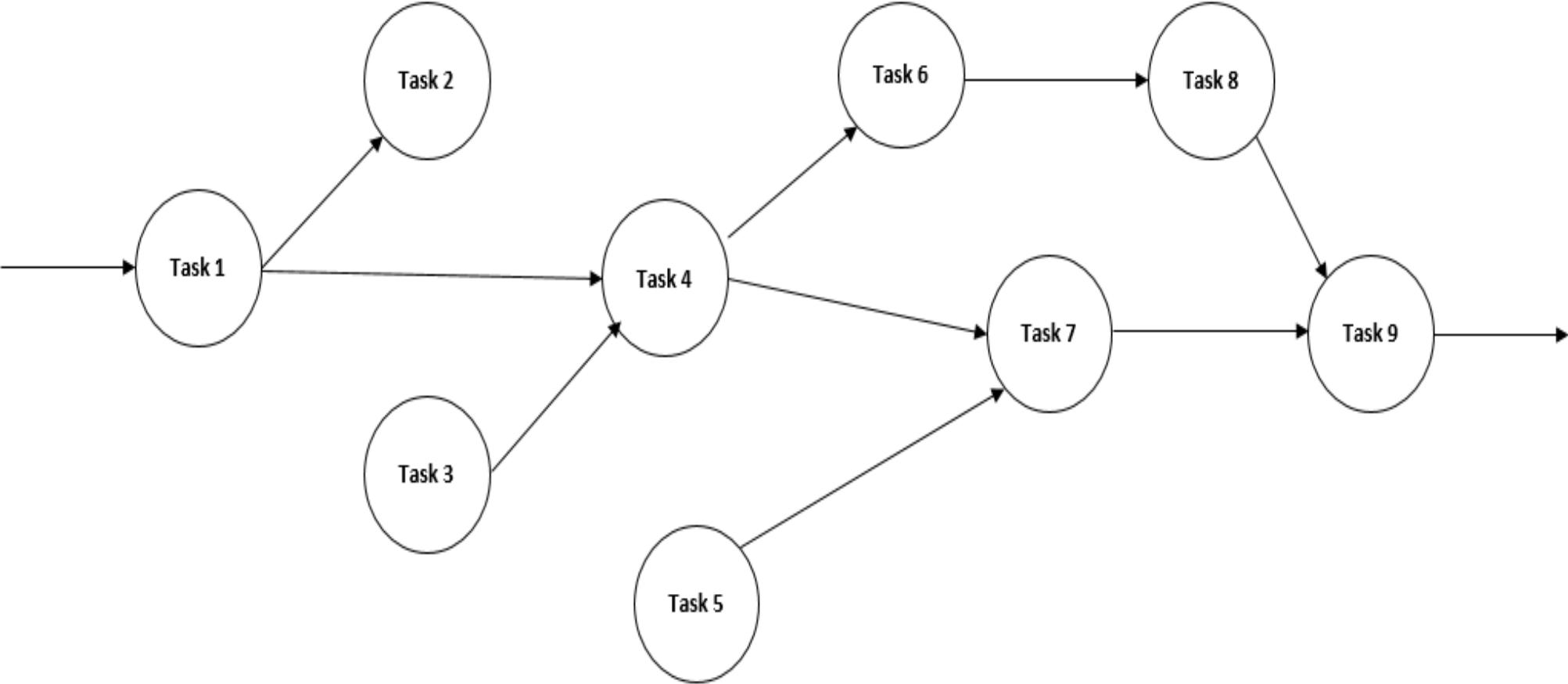
Network-Based Media Processing (NBMP)

- MPEG is defining a Media Processing layer
 - Cloud Platform-agnostic
 - Can run on top of 5G Core and other cloud services
- Interfaces for Control Plane
 - Workflow description and control
 - Load customized media processing
 - Configure discovery and placement of media processing
 - Build media processing pipeline from existing and custom processing entities
- Interfaces for User Plane
 - Formats for media and metadata

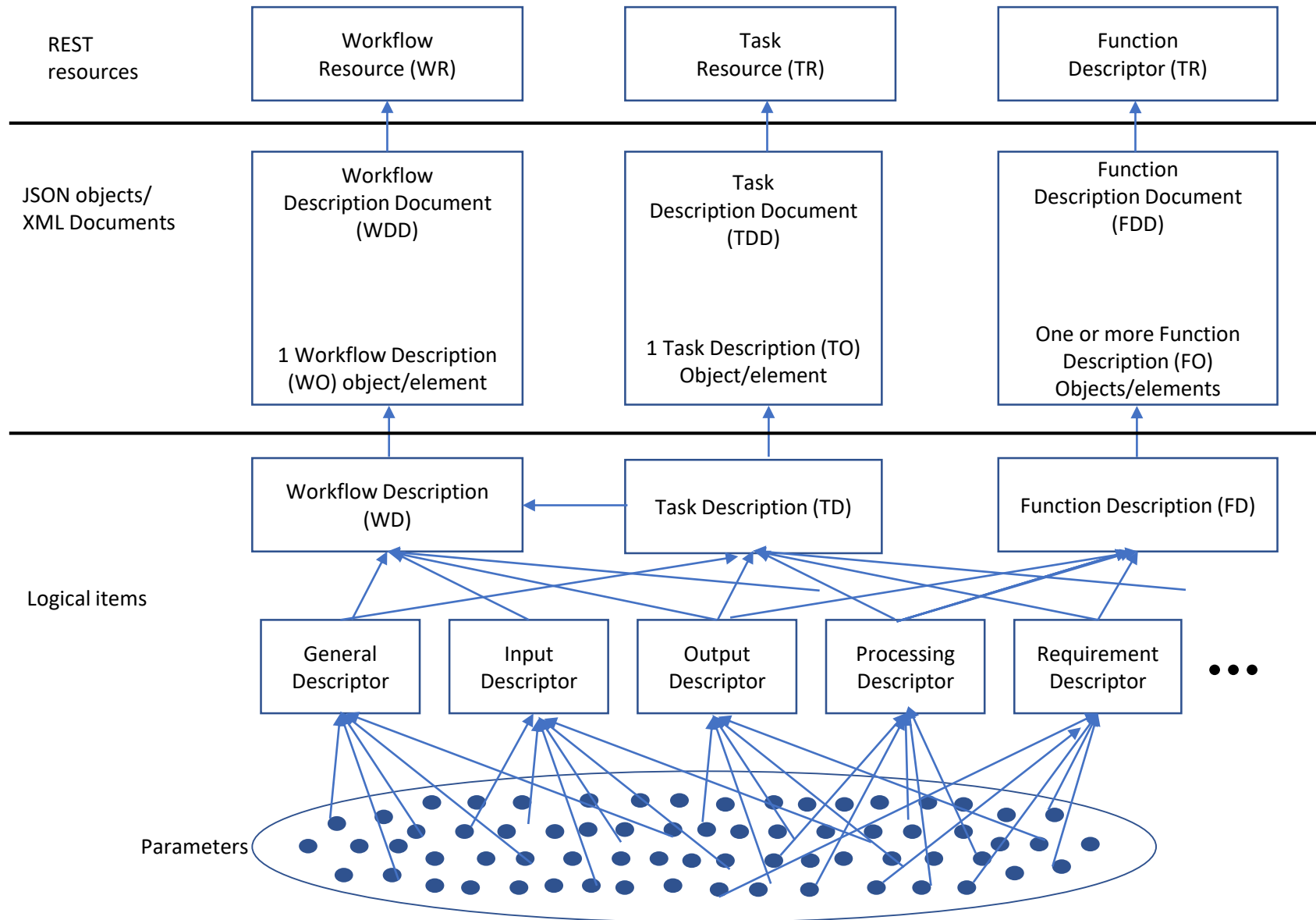
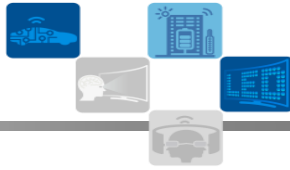
NBMP Architecture



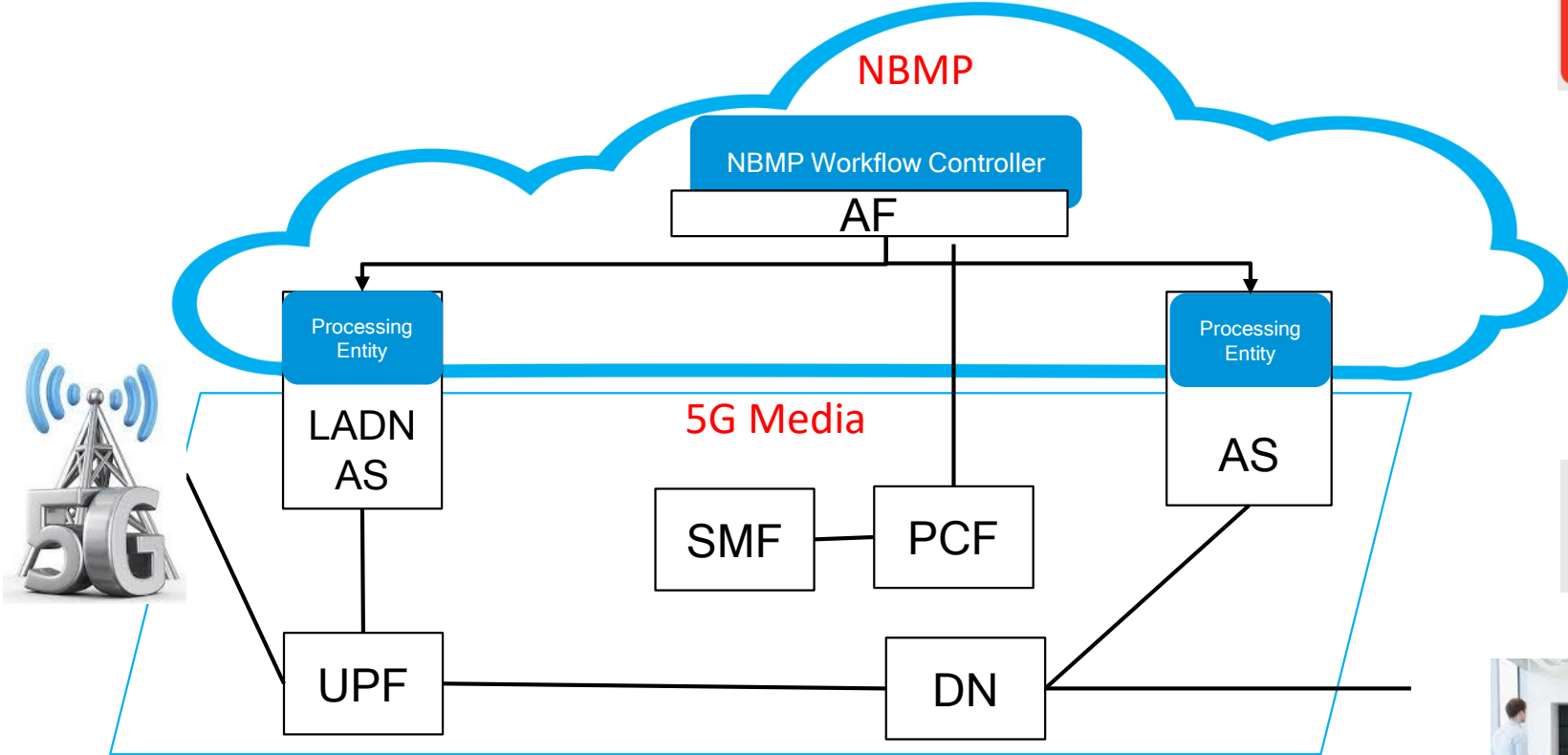
NBMP Workflow Graph



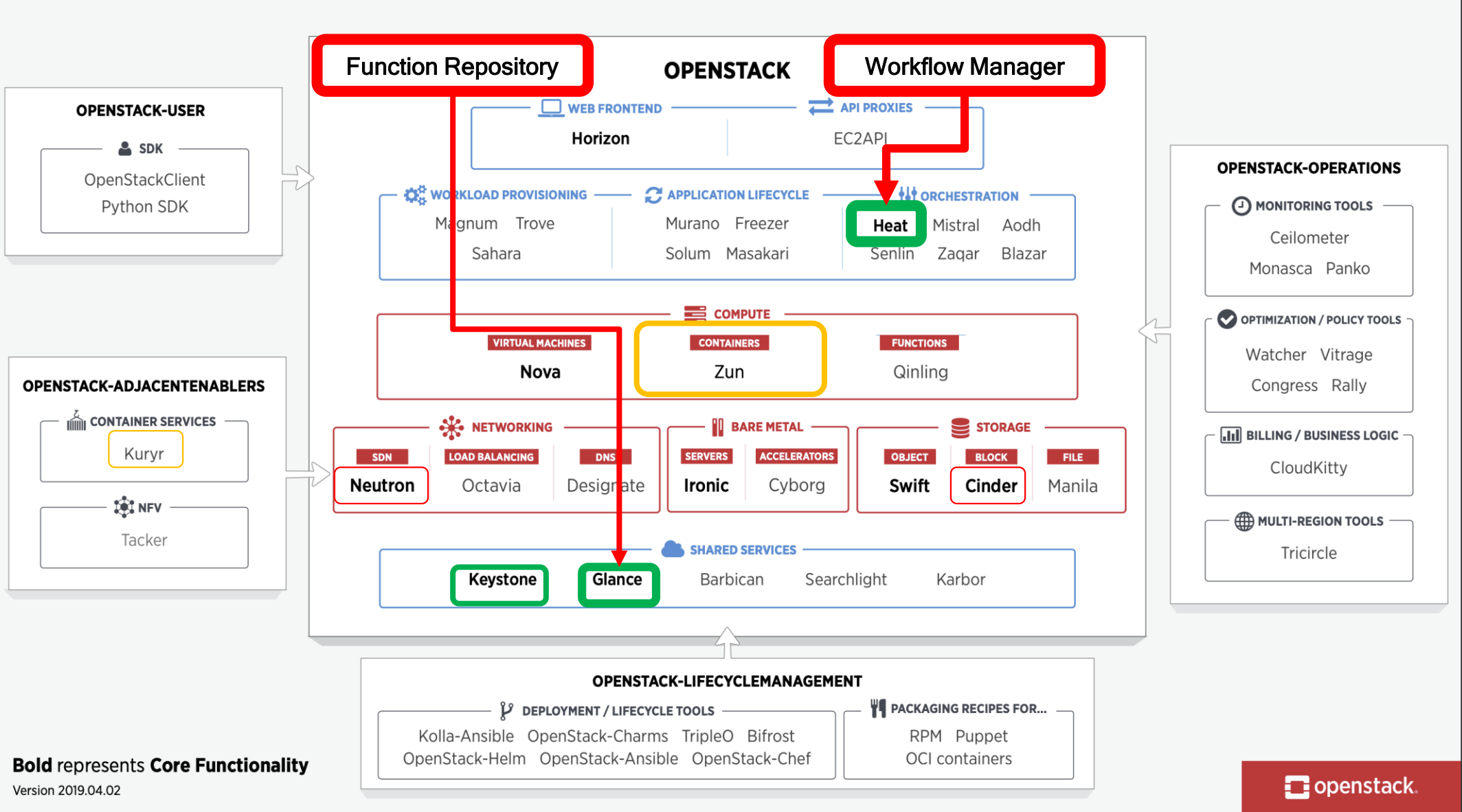
Hierarchical Structure



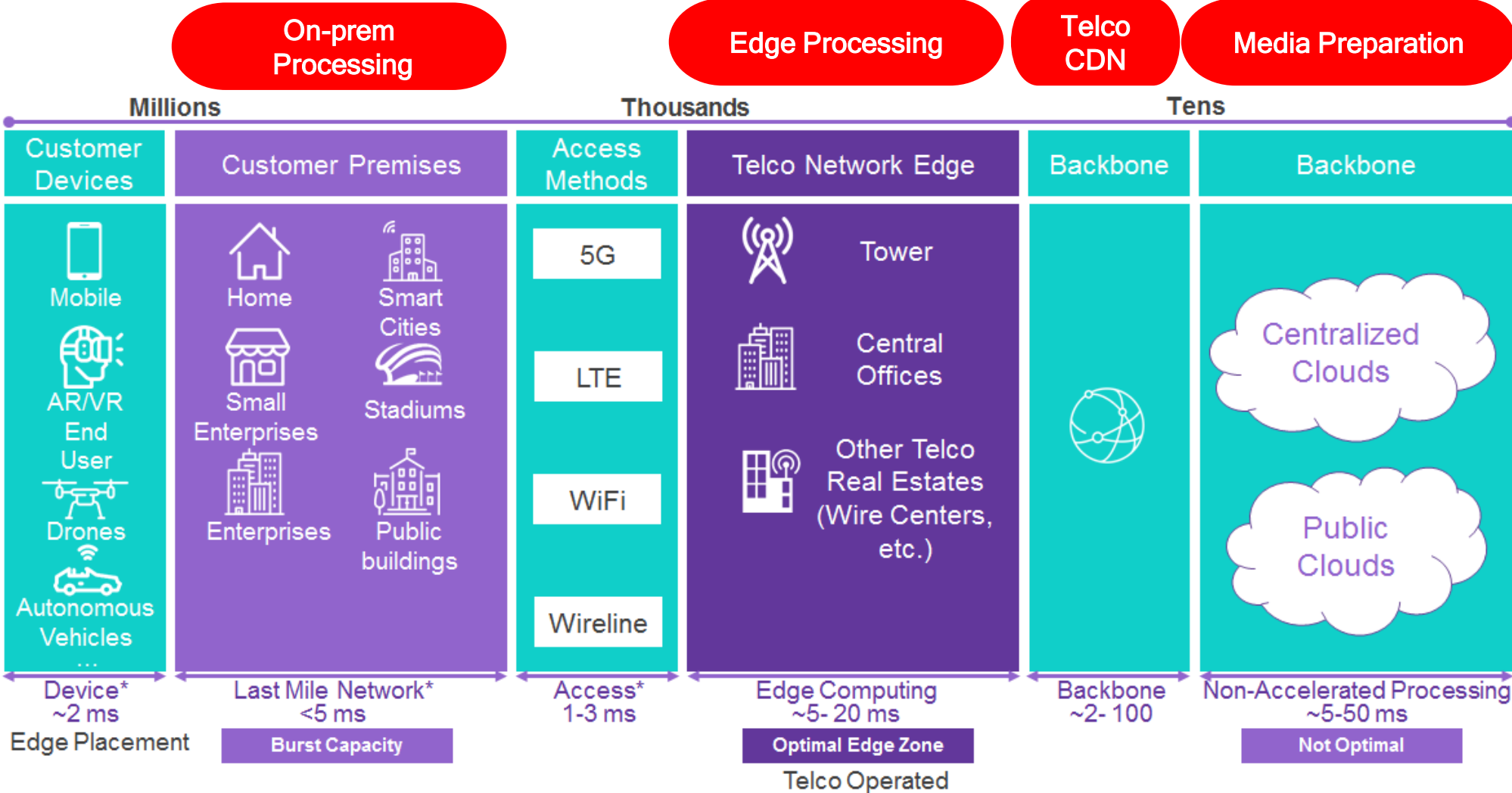
5G Media Overview with NBMP



NBMP Mapping

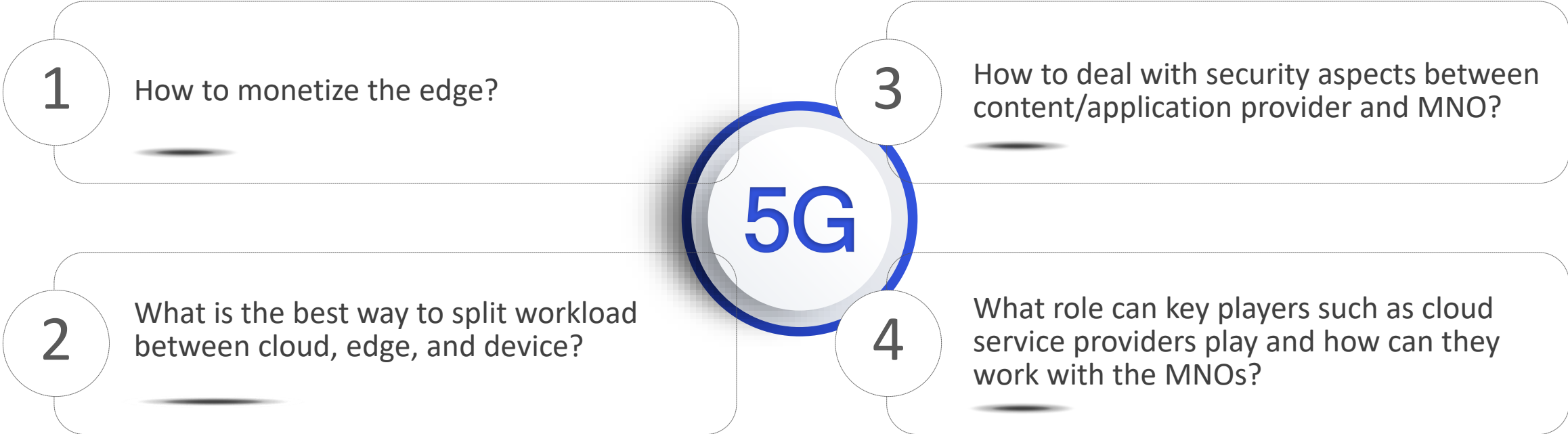


Edge Placement





* Estimates

Discussion





Thank you!

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