The Standards People

FTTR in ISG F5G

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Presentation break-down

- ETSI ISG F5G aim and role and approach to work
- ISG F5G activities and the R1 Use Cases
- FTTR deep dive
- Wrap-up and final remarks

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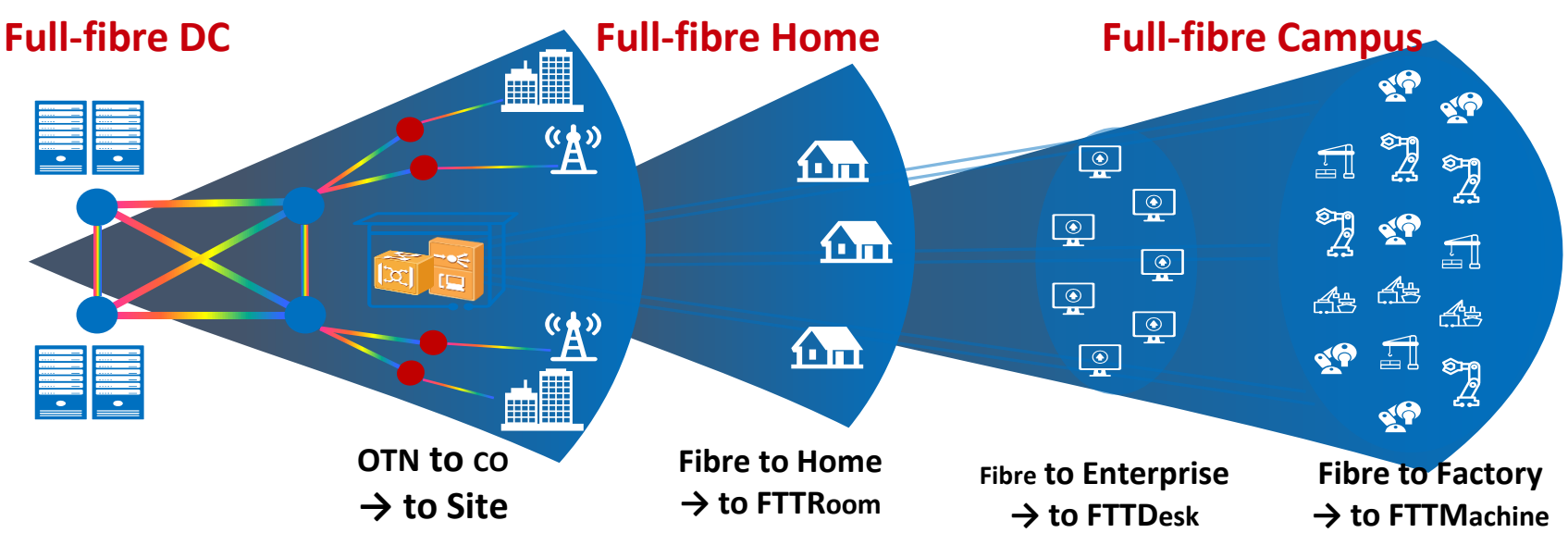
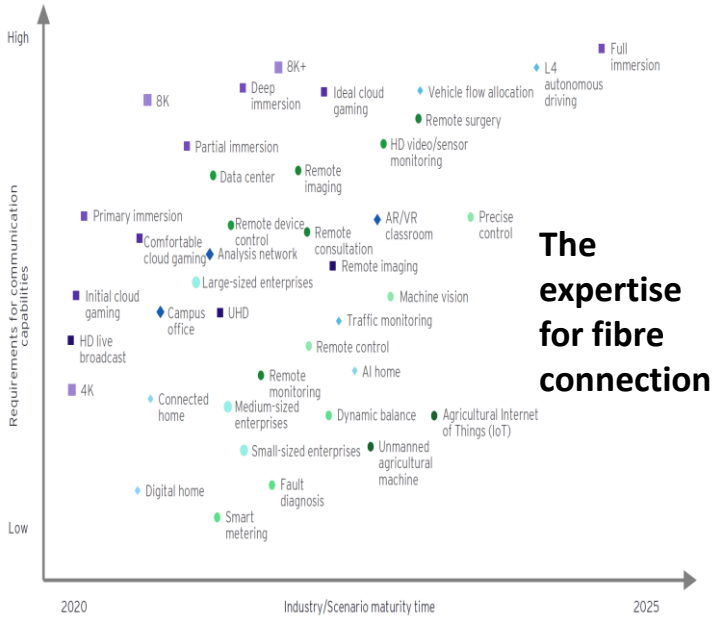
Vision and Mission of ISG F5G

Better Humanity via Fibre to Everywhere & Everything, and Enabler for Digital Transformation!

F5G is needed for fibre to make 5G deployment possible… …and not only

Fibre to provide services to the end users, matching the requirements of new applications





The expertise for fibre connection

FTTR can be a turning-point

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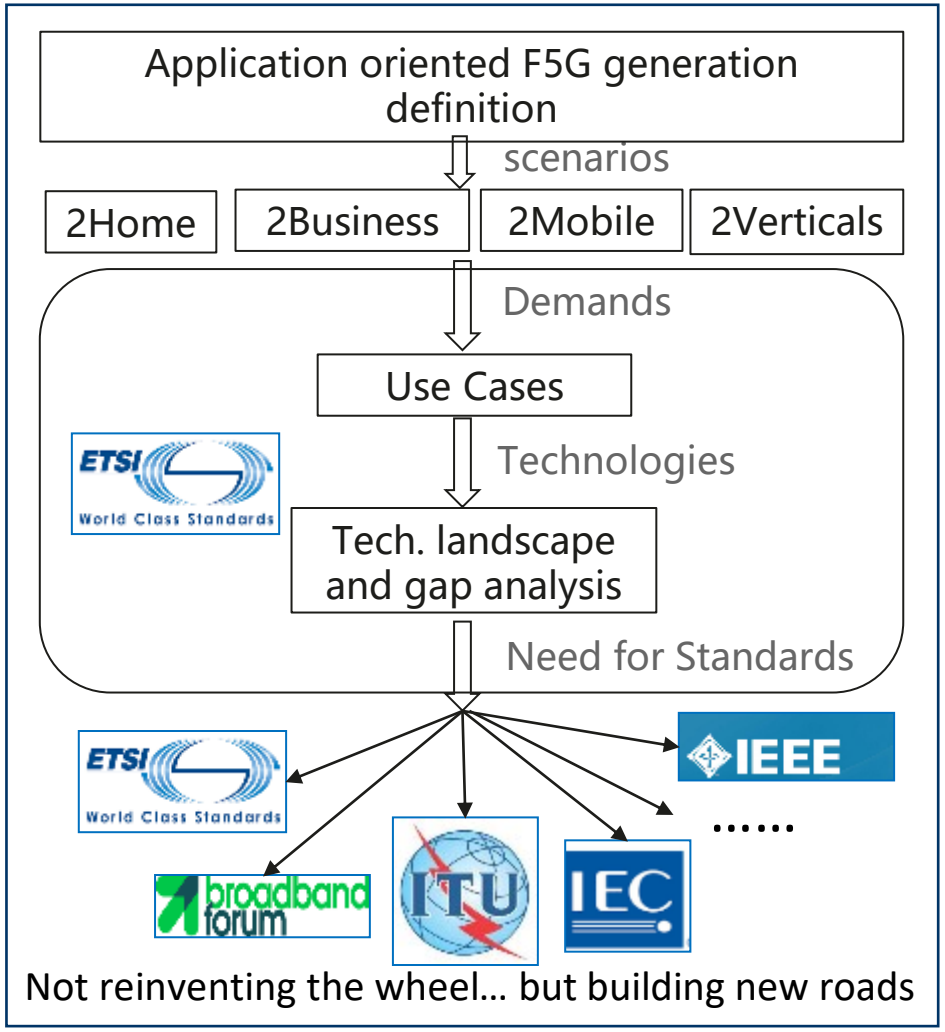
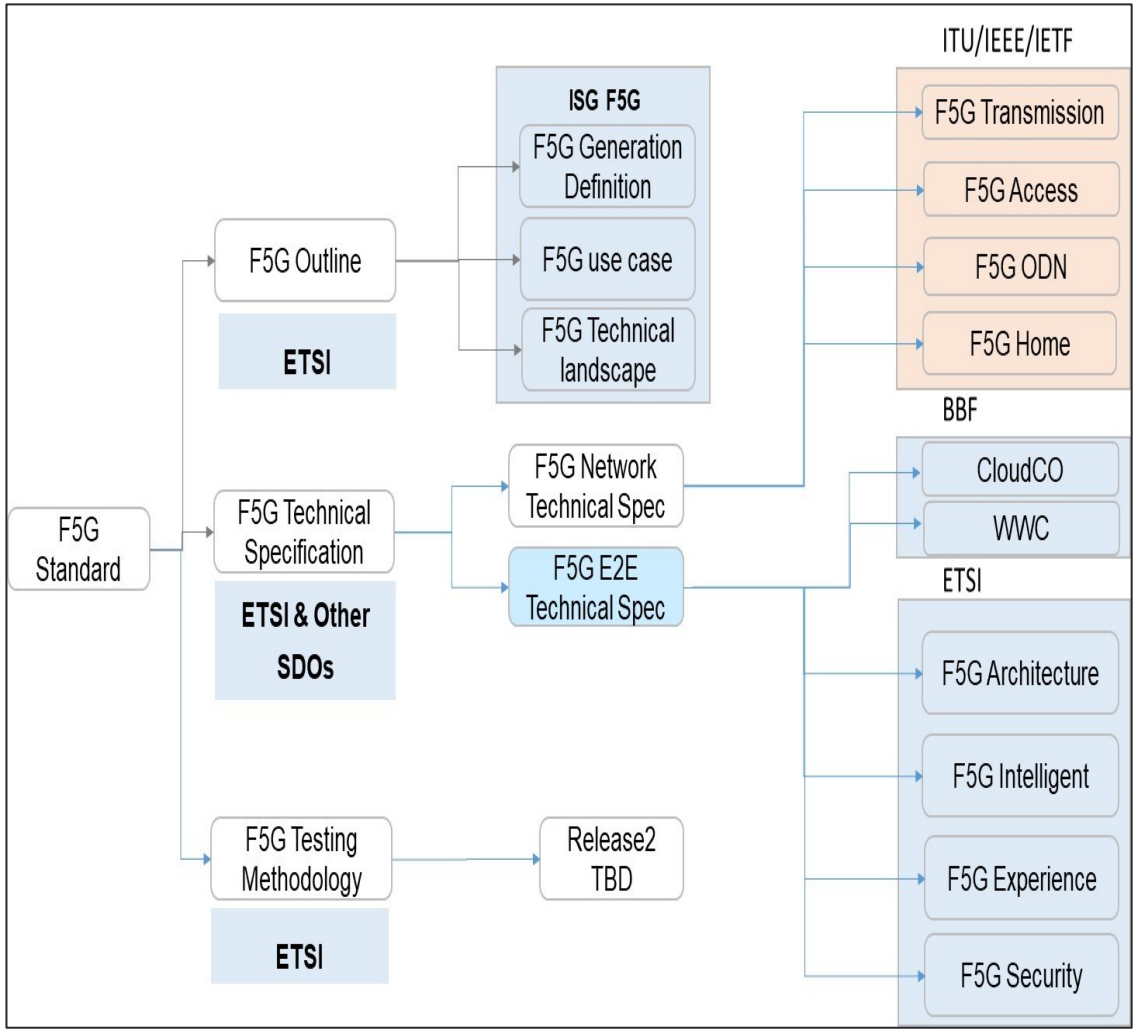
Value Proposition of ISG F5G and its Approach to Standards

ISG F5G as Portal



F5G approach to Standards Overview



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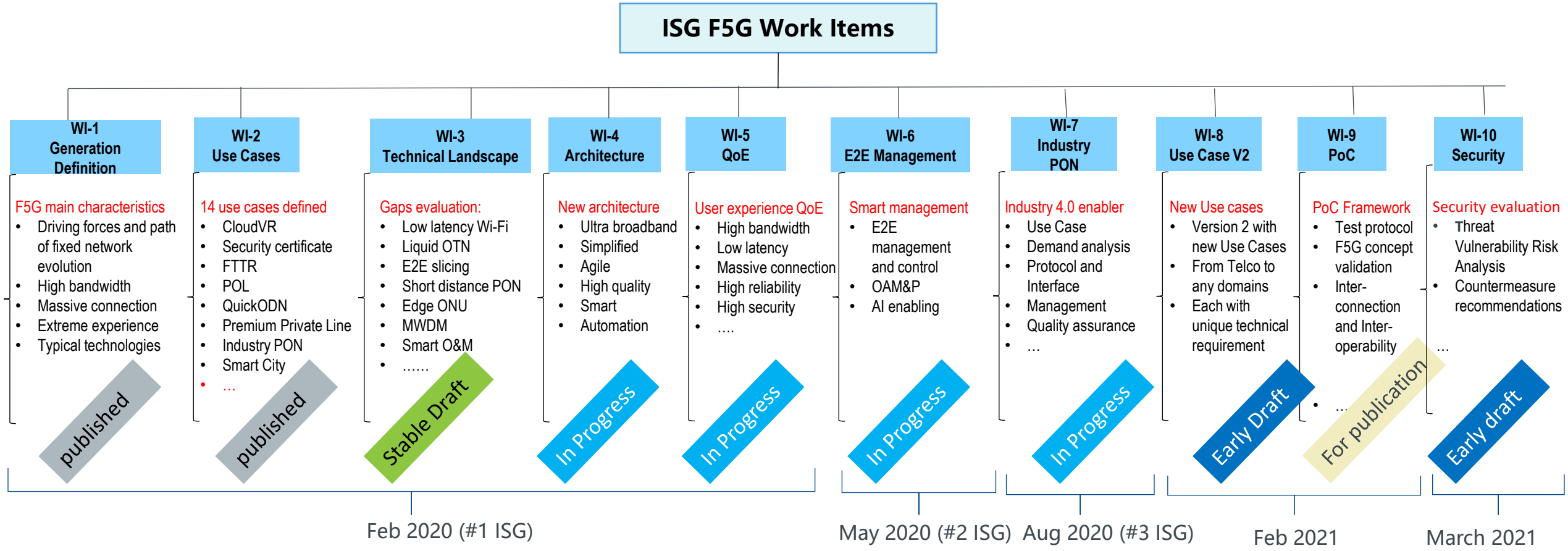
ISG F5G Work Items and Status



+ White Paper on the F5G Vision: Fibre to everywhere and everything (link)

+ White Paper on Global Fibre Deployment Index -> how to measure fibre deployment

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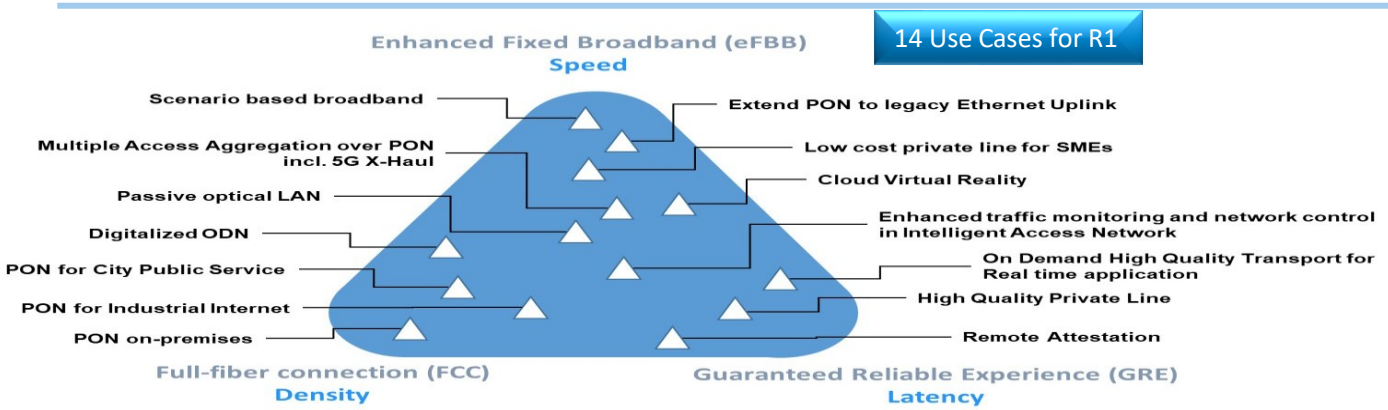
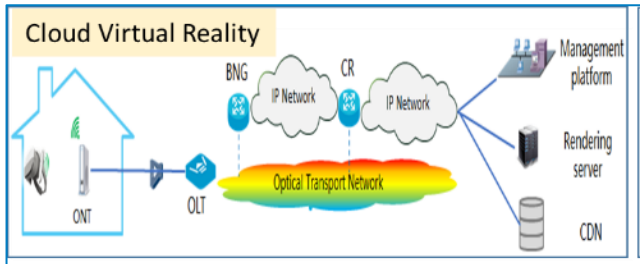
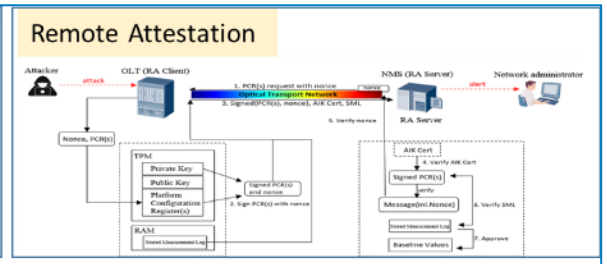
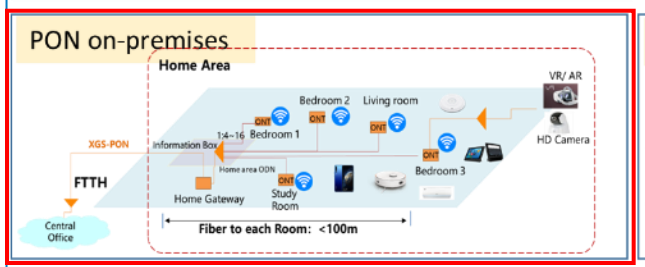
Use Cases Snapshot in ISG F5G (Release 1)

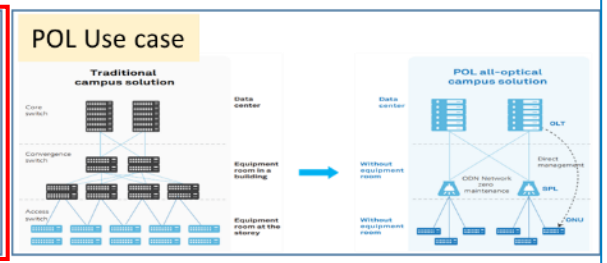


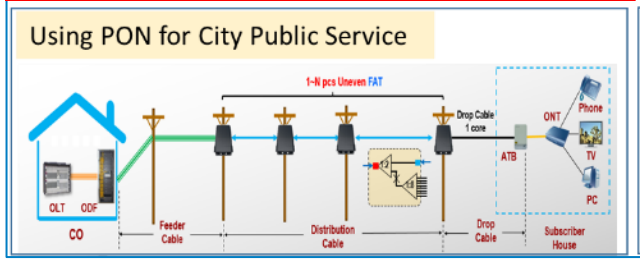
To Home	To Enterprise	To Mobile	Common
CloudVR	Leased line by OTN	5G X-haul	MAAP
Gigabit FTTR	Economic leased line solution		ODN for fast deployment
Scenario-based BB	POL		Remote Attestation
Om-demand broadband	Smart Cities		
	Industry PON		
	SFP ONU (Small Footprint Pluggable)		

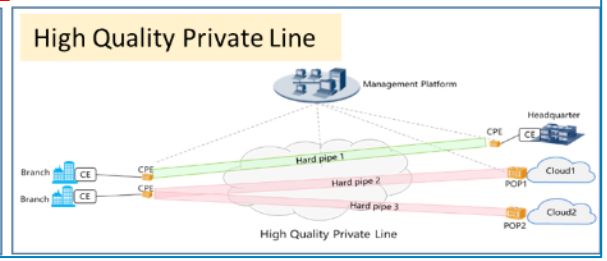


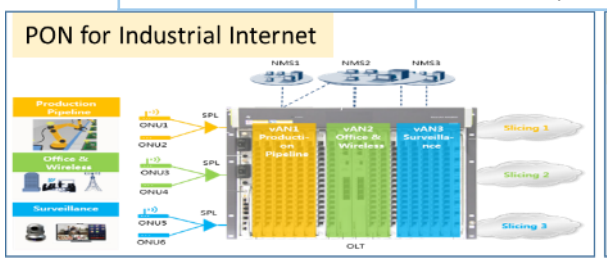


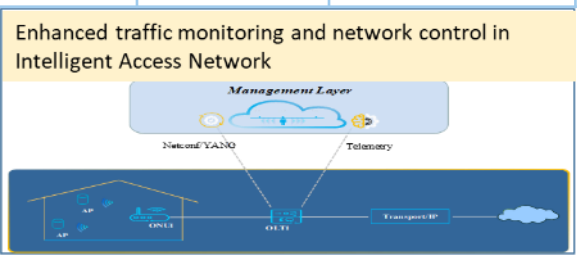


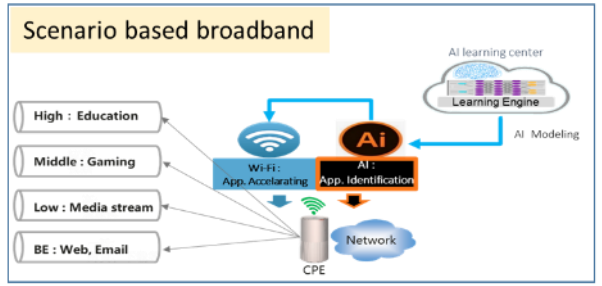


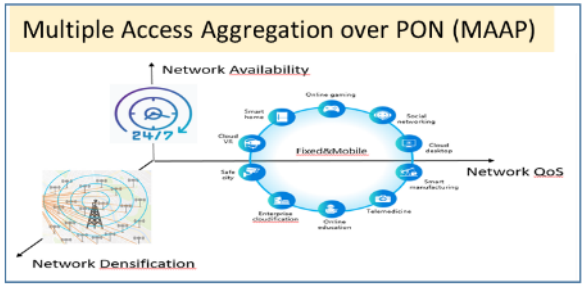


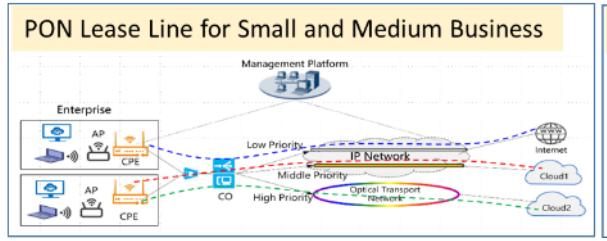


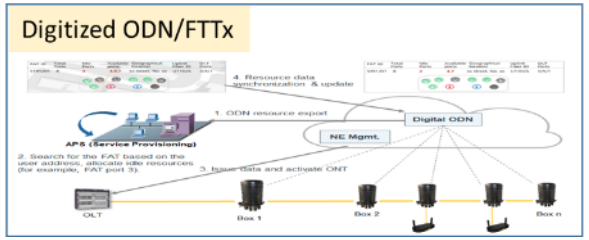






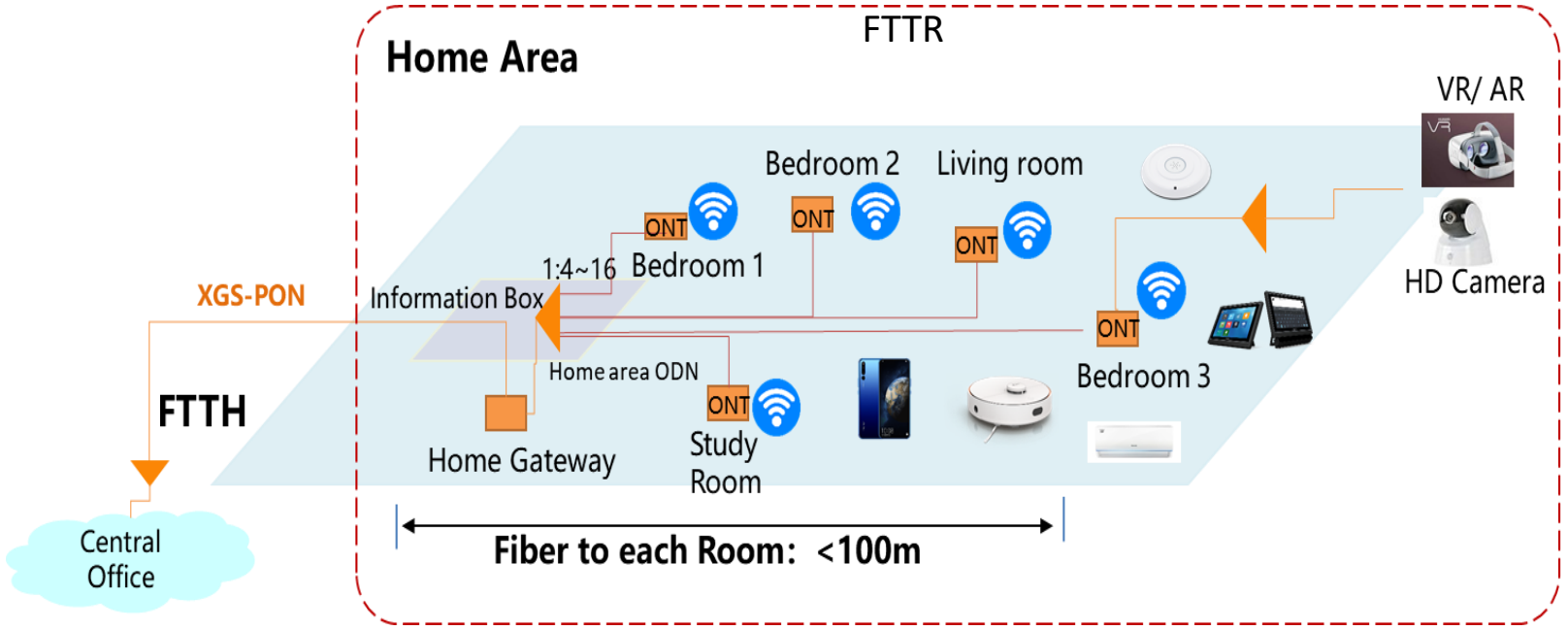


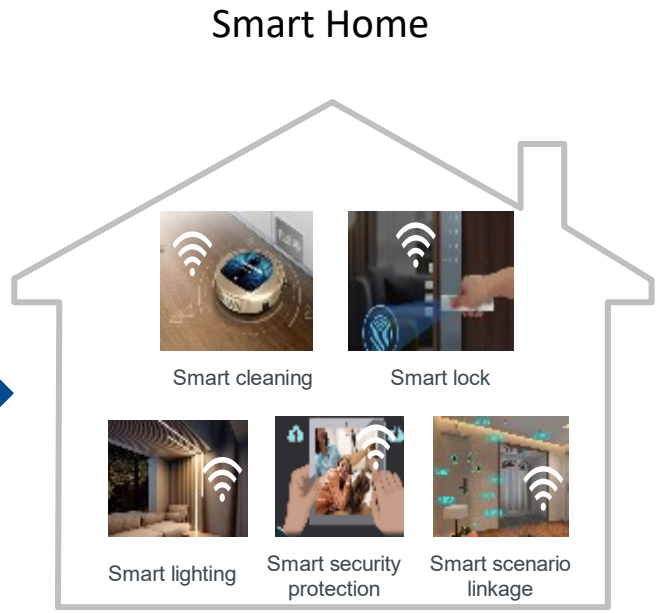




Deep Dive of FTTRoom of ISG F5G

- Fiber on premises: future proof for bandwidth upgrade and lifetime (30years+)
- Bring Gbit/s to end-system with last few meters wireless
- Cascaded XG(S)-PONs (may upgrade with higher speed PON)
  - Shorter loop length (up to 1km) and less splitting ratio
  - Different cost structure (e.g. consumer)
- ONT: merged with WiFi for unified user experience and device compatibility
  - Lower wireless launch power, less interference, lower power
- Advanced feature:
  - Coordinative multi-AP with optimized experience through fibre (C-RAN like Wifi)
  - CPN Slicing





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Technical Landscape and Gaps Identified -FTTRoom

Aspects	Technical Requirement	Gap Analysis
Variety of data rate profile	• R1 • R2 • R3	• Gap 1 • Gap 2 • Gap 3
Lower optical link budget	• R4 • R5	• Gap 4 • Gap 5
Seamless handover support for Wi-Fi connection	• R6 • R7 • R8	• Gap 6 • Gap 7 • Gap 8
Support of diversified transceiver	• R9	• Gap 9
Network security	• R10 • R11	• Gap 10 • Gap 11
Fibre infrastructure	• R12 • R13 • R14 • R15	• Gap 12 • Gap 13 • Gap 14 • Gap 15
Power saving and management	• R16 • R17	• Gap 16 • Gap 17
Support of network QoS	• R18	• Gap 18
Support of East-to-West data streaming	• R19	• Gap 19

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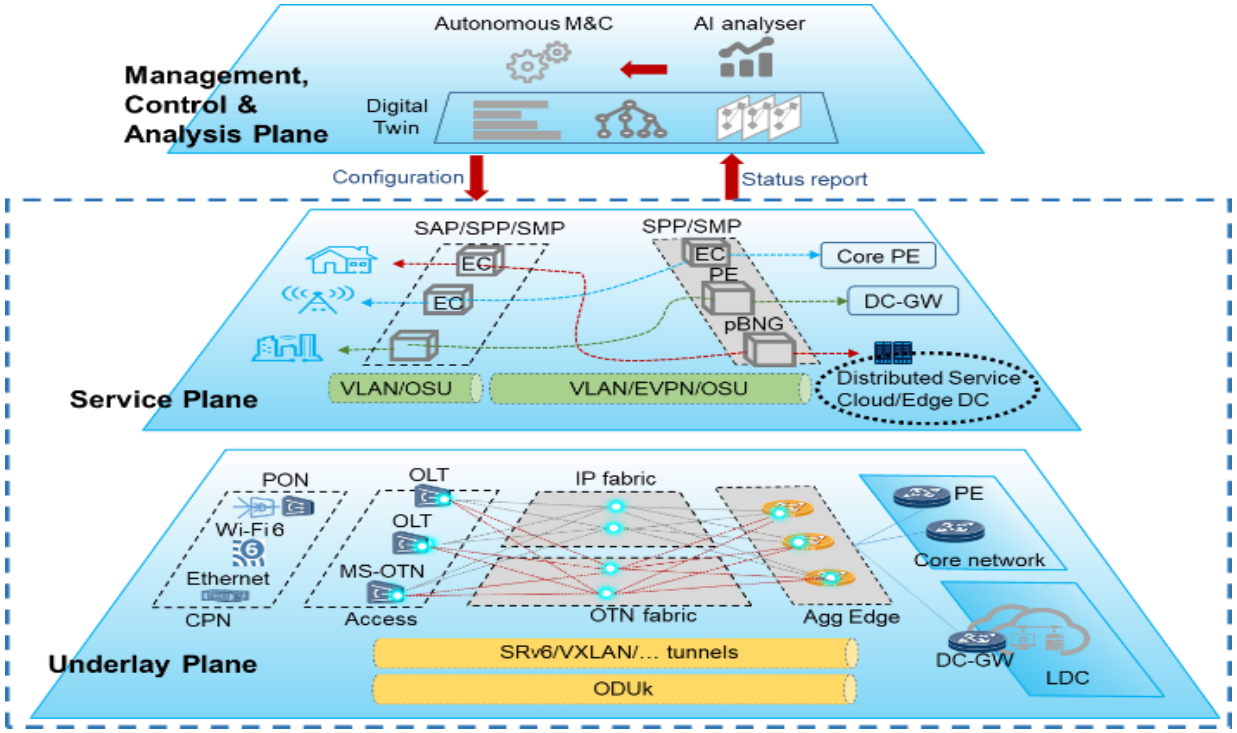
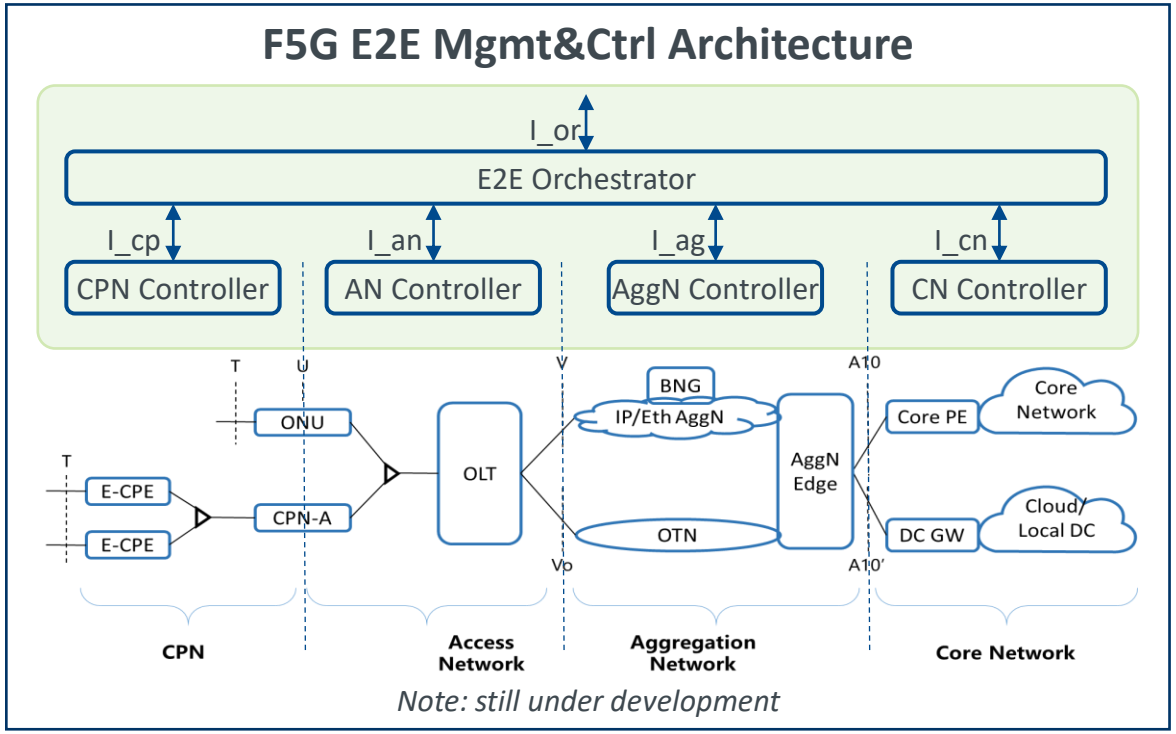
FTTR Driving Architecture and E2E M&C Compatibility

- Architecture and E2E M&C are two of the main focus, and planned for publication in 3Q2021 and 1Q2022 respectively
- FTTR is one of the drivers to make the architecture and E2E M&C future-proof, by SLA based deployment, AI-enabling and dual IP and OTN fabrics…





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Closing Summary and Remarks

Benefits

1. ISG F5G as FTTR enabler, starting from use cases that are most interesting for end-users
2. Services (like VR Cloud) and assured QoS are the driver of FTTR
3. Pandemic (COVID-19) speeds up the demand for FTTR
4. FTTR may be extended to CPN, including
   - Home broadband
   - Business (SMEs and Corporate)
   - POL (like campus, manufactory workshop, corporate HQ, developing zone, etc.)

Challenges

1. How to deploy the in-house fibre cable in existing building/home
2. How to reuse and make ODN digitalized and visible
3. Simplifying Provisioning and OAM, e.g. by self-installation

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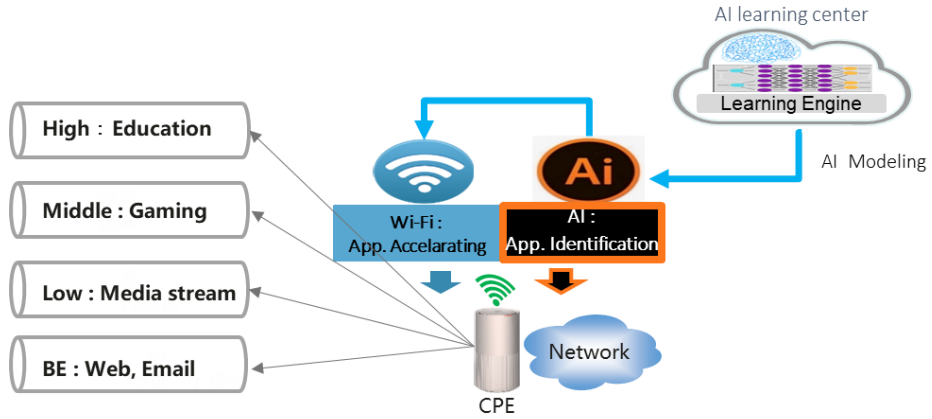
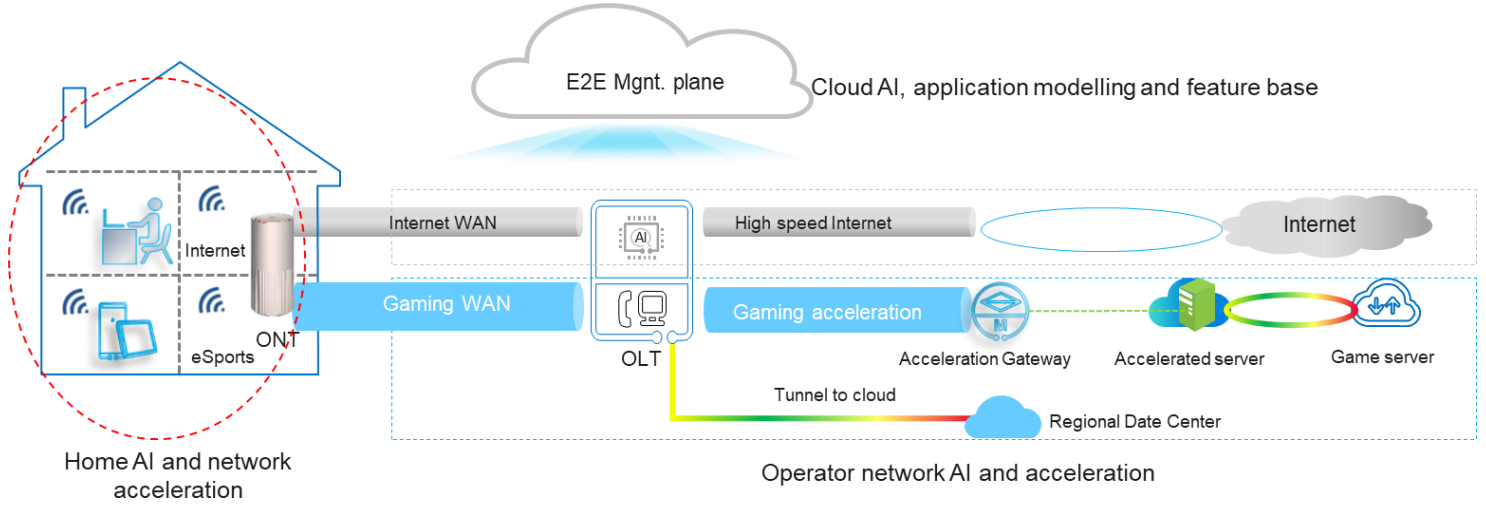
Together, we make it happen.

Backup 1: Use Case 1 -Scenario-Based Broadband

- Varity of Home Services incl. Gaming, Education, Work from Home
- Automatic Traffic identification and classification
- Use of application specific acceleration





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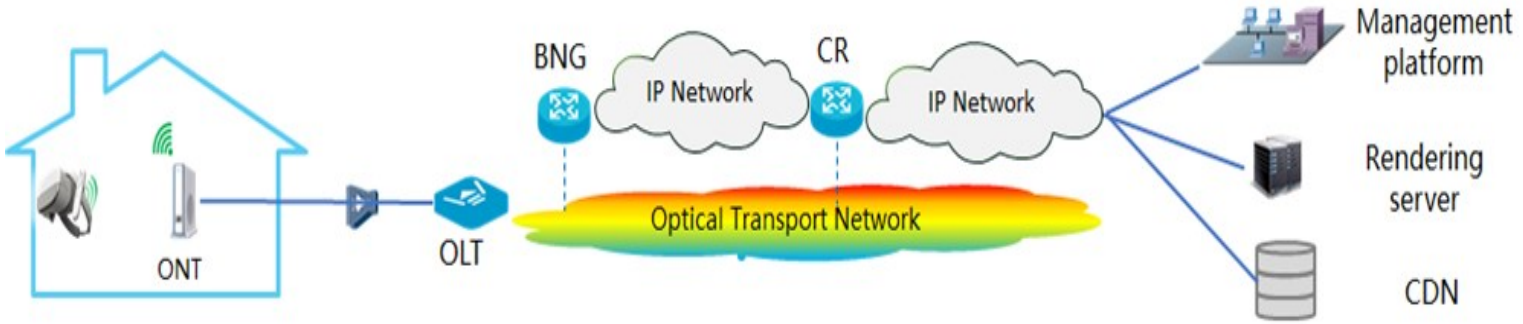
Backup 2: Use Case - Cloud VR

Cloud VR 4K requires
- guaranteed bandwidth >1Gbps
- lower latency <10ms
- and lower jitter <5ms

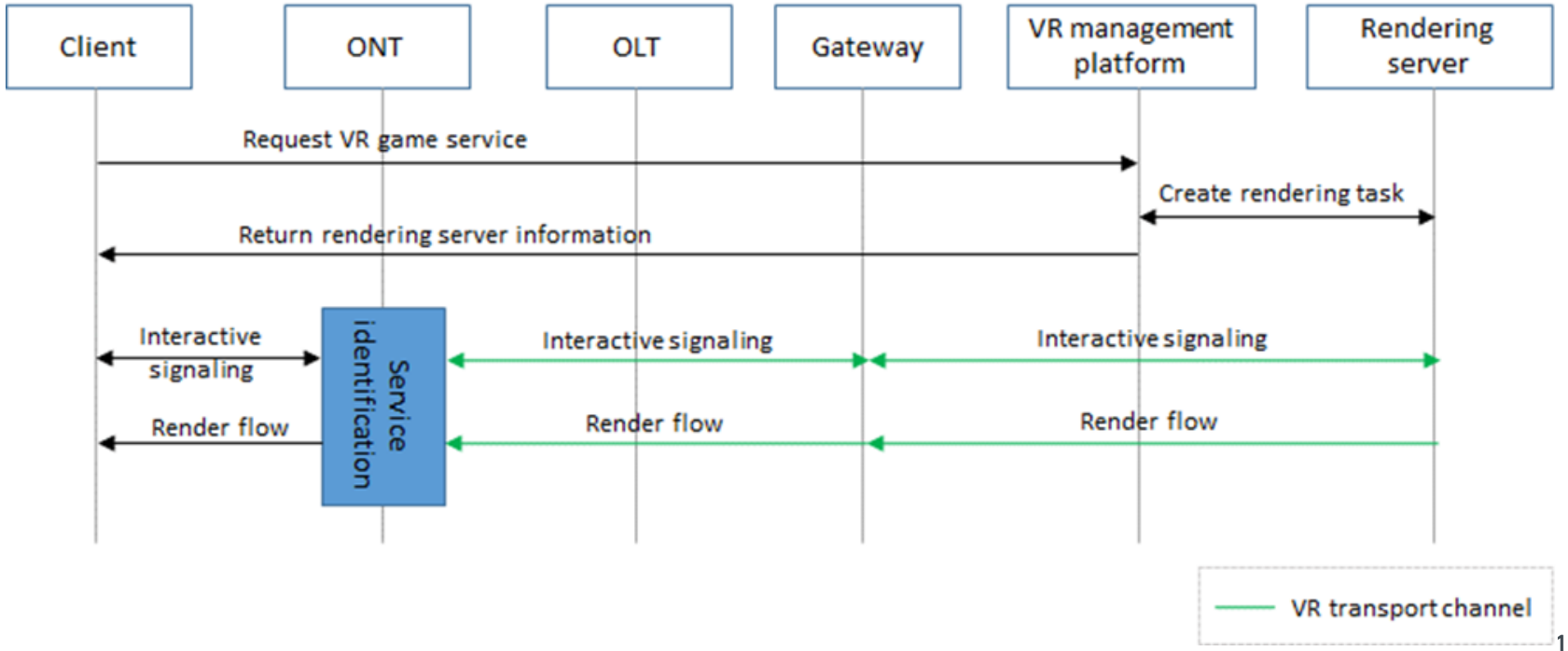


Actors and Roles

Network Operator: provides Cloud VR services.

Content Provider: provides VR copyrighted content, authorizes the Operator's Cloud VR platform to use the content.

Service Users: residential users and business users who order Cloud VR service.



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