

**RP-211927**

3GPP TSG-RAN#93-e

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# Views on Rel. 18 XR Enhancements

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## Outlines

- XR Architectures and Glasses Type Devices
- Views on Application / XR-Aware RAN
- Views on Use Cases/Applications Prioritization

# XR Architectures and Glasses Type Devices

- Support of different XR Rendering architectures (e.g. SA4 TR 26.928, TR 26.998 )
  - Device Rendering
  - Edge/Cloud/Split Rendering
- Focus study on Glasses Type Devices as in SA4 FS\_5GSTAR
  - Enhancement of power saving is extremely critical (as the all-day wearables)
  - Study of RAN impact if the media processing is performed at edge/smartphone/puck/devices,
  - Study of constraints on transmit powers/thermal, tradeoffs between complexity and latency/BW etc.

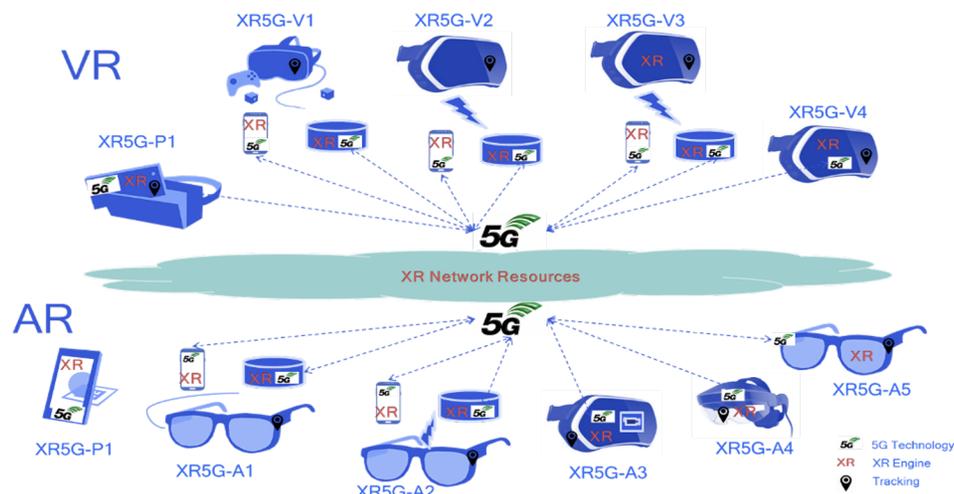


Figure 4.8-1 XR Form Factors  
TR 26.928 Extended Reality (XR) in 5G

# Views on Application / XR-Aware RAN

- **Application/XR Awareness**

- SPS/CG/DG enhancements to efficiently support XR application and services
  - Diverse and flexible adjustment covering both low data rate applications and immersive experiences
- Efficient inter-protocol layers information exchange and SDAP Enhancement
- The RAN enhancements/awareness should leverage existing media processing architecture, media format, protocols and ecosystems (e.g. WebRTC, 3GPP MTSI), e.g.
  - Multi-flows definitions, traffic pattern characterization, media-layer adaptivity, QoS requirements
  - Support both OTT-based and 3GPP IMS-based

- **Alignment with other working groups, e.g.**

- SA2/SA6 Edge Computing Architecture
- SA4 work on media architecture and protocols (e.g. FS\_EMSA, FS\_5GSTAR and the follow up items)

# Views on Use Cases/Applications Prioritization

- **Observations**

- Definition of new KPI/QoS supporting XR services are tied to the specific applications
- Application-aware RAN enhancement closely tied to the application and media processing

- **Prioritization of Applications**

- Focus on selected AR use cases in TR 26.628 including AR conversational and AR sharing

Service Type	Use Case
Interactive immersive	<ul style="list-style-type: none"> <li>- UC#1: 3D Image Messaging</li> <li>- UC#2: AR Sharing</li> <li>- UC#4: AR guided assistant at remote location (industrial services)</li> <li>- UE#5: Police Critical Mission with AR</li> <li>- UE#15: 5G Shared Spatial Data</li> <li>- UE#16: AR remote cooperation</li> <li>- UC#21: AR gaming</li> </ul>
Cognitive immersive	<ul style="list-style-type: none"> <li>- UC#4: AR guided assistant at remote location (industrial services)</li> <li>- UE#5: Police Critical Mission with AR</li> <li>- UE#14: AR Streaming with Localization Registry</li> <li>- UE#16: AR remote cooperation</li> <li>- UC#20: AR IoT control</li> </ul>
AR conversational	<ul style="list-style-type: none"> <li>- UC#3: Real-time 3D Communication</li> <li>- UC#4: AR guided assistant at remote location (industrial services)</li> <li>- UC#7: Real-time communication with the shop assistant</li> <li>- UC#11: AR animated avatar calls</li> <li>- UC#16: AR remote cooperation</li> <li>- UC#19: AR conferencing</li> </ul>

AR use cases in TRs 26.628, 26.998)

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