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Views on the Support of High-end Wearables

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Use cases for Rel. 18 RedCap Evolution to be addressed

- **Observations 1**:
  - Significant industry interests in highend wearables such as SA4 SI on the 5G glass type AR/MR devices (S4-200961)
  - Table 4.2.2.1-1 from TR 26.998 provides different wearable device types with different requirements in terms of data rate, power consumption and coverage performance that RAN need to address

Table 4.2.2.1-1: 5G Augmented Reality device types

Device Type Name	Reference	Tethering	5G Uu Modem	AR Runtime	Scene Manager	AR/MR Application	Power Supply
5G Standalone AR UE	1: STAR	N/A	Glass	Glass	Glass/Split 1)	Glass	Glass
5G EDGe-Dependent AR UE	2: EDGAR	N/A	Glass	Glass/Split 1)	Split 1)	Split	Glass
5G WireLess Tethered AR UE	3: WLAR	802.11ad, 5G sidelink, etc.	Tethered device	Glass	Split 2)	Tethered device	Glass
5G Wired Tethered AR UE 3)	4: WTAR	USB-C	Tethered device	Tethered device	Split 2)	Tethered device	Tethered device

1) Cloud/Edge
2) Phone/Puck and/or Cloud/Edge
3) Not considered in this document

Use cases for Rel. 18 RedCap Evolution

- **Observation 2**:
  - Rel-17 Redcap WI creates the basic framework for enabling Redcap and mainly focuses on capability reduction features
  - High end wearables, such as the glass type devices remain technically challenging due to compact form factors, all day wearing, and increasing data consumption to support sharing of short form videos
  - Messaging applications for wearables become a critical part of the mobile experience, replacing old style text messaging, and increasingly are video-based, particularly short form video

Enhanced RedCap | Objectives

- Support of all-day wearables
  - Further improvements in power efficiency
- Support of different compact wearable form factors such as glass-type devices
  - Further UL/DL coverage enhancements for both idle and connected modes, particularly for higher frequency bands, and bands with reduced antenna gain due to the compact form factors of wearables.
- Support of increasingly diverse applications such as video conferencing, video messaging/social multimedia sharing, video streaming
  - Optional support of wider bandwidth than Rel. 17, such as 40MHz and/or CA

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