



xiaomi

Xiaomi's views on SA4's Release 19

3GPP SA4 #127 – SOPHIA-ANTIPOLIS, FR
S4-240306

- 1. Remarks on process for WI and SI**
- 2. Xiaomi products perspective**
- 3. Proposed topics for consideration in Rel-19**

■ Observations

- The SA4 group seems eager to work on (too) many topics. Time is limited.
- Avoiding misunderstanding on scope and process helps in reaching our goals more quickly.
- Extending scope often leads to project extensions. A moving target does not help completing projects on time.
- Studies are sometimes misused as a mean to promote technology.

■ Recommendations

- Limited number of WID/SIDs with:
 - project time plan to assess the time budget needed by the activity and its feasibility.
 - skeleton for TS/TRs to clarify the outcome of each objective.
- During WI/SI execution:
 - Avoid using PD, instead consider working against TR or TS.
 - PDs seem to bring more disadvantages than benefits (MeCAR rapporteur's opinion as lesson learned).
- Studies should only aim at identifying missing technology or evaluating competitive technologies and should not be driven by an external technology choice. Market relevance here is essential.



XIAOMI Wireless AR Glass **Discovery Edition**



XIAOMI SU7

C级高性能 生态科技轿车



Xiaomi HyperOS

Human x Car x Home
All your needs in one smart ecosystem

Innovation for everyone



150+
ports modes

Advanced health tracking

Snapdragon®
W5+ Gen 1

Powering a seamless experience

XIAOMI Watch 2 Pro
Smarter every wear

Remote camera
Seamless interconnectivity

4G LTE

Stay connected

Wear OS by Google

Get the power of Google's apps on your wrist

Extend your adventure

Up to 65h long-lasting battery life

■ Innovation for everyone

- **Innovation** does not necessarily mean new technology. Reusing or enhancing existing 3GPP technologies often provides an easier and faster productization.
- **Market relevance** and implementation feasibility are essential. Any technology without users or affordable products is irrelevant.
- **Interoperability** is key to enable an open ecosystem for the user's benefits.

■ The following proposed topics are motivated by:

- Xiaomi's product perspectives; and/or,
- Industry development we see on the horizon.

Video topics



■ Observations

- 3D Displays, 3DTV, VR and even Metaverse had a limited success.
- 3D capture devices are now ready but there are (too) many 3D video formats.
- There is little relevance in studying 3D video codecs before relevant 3D video formats for 5G services are identified and agreed.

■ Recommendation

- Identify the different types of a “3D video” and their signal characteristics.
- Identify corresponding 3D video formats with proven market relevance and their distribution and rendering workflows.
- Evaluate existing solutions (efficiency, versatility, implementability) for the coding and delivery of such 3D video formats.
- Favor reusing 3GPP codecs when possible.
- Prioritize devices: Smartphones, AR Glasses, smart glasses.
- When: Can start ASAP
- See for more details S4-240081 (FS_3DV)

Video: MeCAR phase 2 ?



■ Observations

- Many announcements of AR Glasses and MR HMD since the start of MeCAR (06/04/2022).
- Recent mixed reality HMD are covered by device type 4 in MeCAR TS.
- This validates the scope and timing of MeCAR.

■ Recommendations

- Finalizing MeCAR TS phase 1.
- Monitor if new AR devices are expected with different capabilities than the ones in phase 1.
- No new Work Item for the time being.



■ Observations

- Wearables become increasingly media capable, e.g.:
 - Audio call on smartwatches
 - Video streaming and playback on smartwatches
 - Smart glasses with camera, speaker, mic
- Wearables become standalone UE.

■ Recommendation

- Identify the hardware capabilities (media, CPU, GPU) and display characteristics of existing and expected wearables.
- Identify connectivity and network protocol support of existing and expected wearables.
- Identify media formats suitable for consumption and production on existing and expected wearables.
- List uses cases for media-capable wearables (smart glasses, smartwatches, smartbands), e.g.:
 - Remote view phone-watch
 - Real-time communication
 - Messaging
- When: Can start ASAP
- See corresponding draft Study Item Description S4-240234.



MBS topic



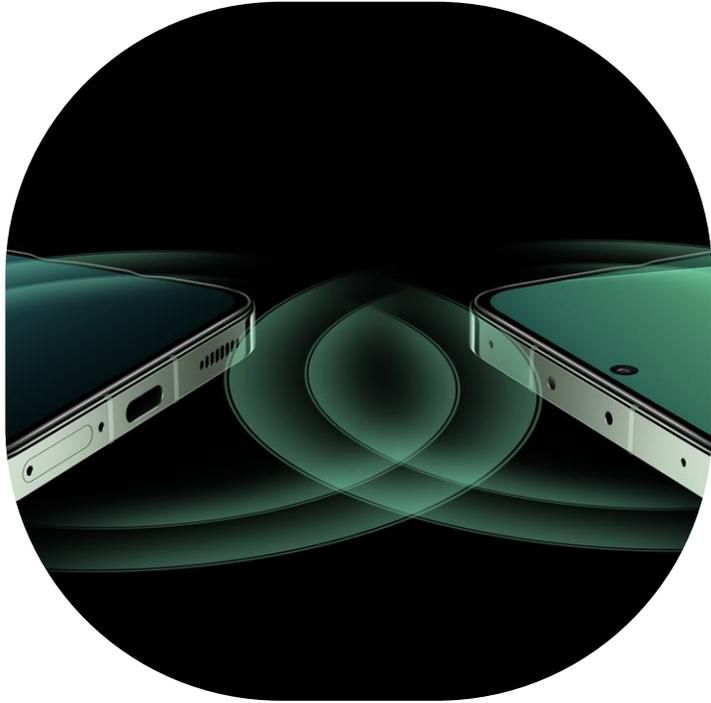
■ Observations

- Same software stack gets deployed across wide range of (media) devices.
- Network protocols, like QUIC, entering the software stack too.
- More flexibility but less predictability of media packetization over QUIC.
- Opportunity for media applications to have more control over the way the media data is transmitted.
- From FS_XRM_Ph2 (SP-231671):
 - WT#1.1 Study whether and how to enhance PDU Set related (e.g. new standardized 5QI, enhancements to Alternative QoS profiles, FEC) and PDU Set information (including Control Plane and/or User plane information provided by the AF/AS) and the corresponding PDU Set QoS handling enhancement.
 - NOTE 1: This will require close coordination between SA4 and SA2.
 - WT#2.2 Study whether and how to support dynamic change (via user plane) in traffic characteristics (e.g. burst related parameters), provided by the application in the DN.
 - NOTE 2: This will require close coordination between SA4 and SA2.

■ Recommendation

- Normative work to be assessed based on study conclusions, no need expected at this point.
- Study questions:
 - What media applications are today QUIC-aware and QUIC-agnostic?
 - How is a media segment carried over QUIC streams when requested via HTTP/3?
 - Do QUIC streams serve different purpose in known QUIC-based media protocols?
 - How can QoS policies be applied to media applications over QUIC?
- See more details in corresponding draft Study Item Description S4-240232.

Audio topic



■ Observations

- High Quality immersive audio services (such as the one provided by IVAS) require high quality immersive audio capture.
- DaCED study identified such technology gaps. SA4 now needs to address these findings.
- While DaCED considers a large variety of devices, market relevance today is predominantly on smartphones for UE-to-UE services.

■ Recommendation

- Define objective metrics and associated testing methodology to quantify quality of diverse audio capture.
- Define recommended configuration for efficient diverse audio capture on smartphones.
- Normative work should start after DaCED SID finishes.



Innovation for everyone

