3GPP TSG|WG-4 Meeting #127 S4-240234

Sophia Antipolis, FR, 29th January 2024 - 2nd February 2024

**Source: Xiaomi**

**Title: New Study on sUpport for media formats and protocols on WEARables (FS\_UWEAR)**

**Document for: Approval**

**Agenda Item: 9.10**

3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>   
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

Title: Study on sUpport for media formats and protocols on WEARables

Acronym: FS\_UWEAR

Unique identifier: XXXXXX

Potential target Release: Rel-19

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  | X |  | X |  |
| No | X |  | X |  | X |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
| X | Study |
|  | Normative – Stage 1 |
|  | Normative – Stage 2 |
|  | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

For a brand-new topic, use “N/A” in the table below. Otherwise indicate the parent Work Item.

|  |  |  |  |
| --- | --- | --- | --- |
| Parent Work / Study Items | | | |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| N/A |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work /Study Items (if any) | | |
| Unique ID | Title | Nature of relationship |
| N/A |  |  |

# 3 Justification

Wearables are seamlessly integrating technology into our daily lives, enabling standalone connectivity and providing users with real-time data and personalized experiences. To offer more complex functionalities, wearables are progressively becoming more capable in handling media modalities. For instance, smartwatches are being used nowadays for audio calls, video playback or even video streaming applications. Smartglasses (i.e., glasses equipped with camera, speakers and microphones), can be used for audio calls, image capture, and video recording. Therefore, wearables are increasingly becoming standalone devices that can offer media-centric user experiences.

Typical wearable devices considered in this study are primarily smartwatches, smartbands and smartglasses, although the study may include other types of devices provided they qualify as wearables (i.e., devices designed to be worn) that are not falling into the scope of XR, i.e. AR Glasses, MR HMD, VR HMD, etc…

In this study, we intend to collect various end-to-end use cases that are related to media applications, such as messaging, audio and video recording, on-demand streaming, real-time communication, remote view etc…, and involve wearable devices. Given the definition of wearable devices above, the targeted user’s experience is a non-immersive 2D experience and, therefore, immersive applications and immersive formats will not be considered. Also, commercialized and deployed use cases expected to be feasible in the near future, will be of higher interest and priority in this study.

Based on those use cases and the device inventory, we consolidate the typical hardware capabilities as well as audio and video formats commonly used or expected to be used in those wearable devices. This consolidation may be organised in different device category for each form factor. We also identify necessary content delivery transport and real-time transmission protocols. Lastly, we discuss, if any, possible issues regarding the subjective quality and perceived experience as well as possible inefficiency of the current state-of-the art media formats (primarily designed for smartphones, TV, etc..) when delivered to wearable devices.

# 4 Objective

The objective of this study item includes the following:

1. Define functional structures of wearable devices. Then, identify their hardware capabilities and constraints with respect to streaming, rendering, communication, computing and graphics processing, tracking, sensors, display and power consumption.
2. Describe use cases and respective applications for wearables, such as remote phone-monitoring, real-time communication and messaging. Map each use case to suitable device type(s), and define relevant processing functions and reference architectures for the devices that are required to support the use cases, taking into account the constraints and capabilities identified under the first objective.
3. Describe the architecture for media flow relevant to the use cases identified in the second objective. Identify media (exchange) formats and profiles relevant to the use cases identified in the second objective that can be processed and/or consumed on wearables. Identify where media processing functions occur and which type of media formats are used for exchange between these elements to the described architecture.
4. Identify coverage of necessary content delivery transport protocols and capability exchange mechanisms, required for the use cases. If existing technologies and protocols cannot serve the cases sufficiently, describe the limitations.
5. Identify, if any, possible issues regarding the subjective quality and perceived experience as well as possible inefficiency of the current state-of-the art media formats (primarily designed for smartphones, TV, etc..) when delivered to wearables.

# 5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| New specifications {One line per specification. Create/delete lines as needed} | | | | | |
| Type | TS/TR number | Title | For info  at TSG# | For approval at TSG# | Rapporteur |
| TR | 26.8xx | Support of media formats and protocols on wearables | SA#106  (Dec 24) | SA#108  (June 25) | Potetsianakis, Emmanouil, Xiaomi, emmanouil@xiaomi.com |
|  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| N/A |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Potetsianakis, Emmanouil, Xiaomi, emmanouil@xiaomi.com

# 7 Work item leadership

SA4

# 8 Aspects that involve other WGs

SA4 will coordinate this work with relevant WGs if necessary.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Xiaomi |
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