**Source: Samsung Electronics, Co., Ltd**

**Title: [Draft] New WID on 5G generic architecture for AR/MR experience**

**Document for: Discussion and Agreement**

**Agenda Item: 8.11**

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: [Draft] New WID on 5G generic architecture for AR/MR experience

Acronym: 5G\_AREA

Unique identifier:

1 Impacts

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

2 Classification of the Work Item and linked work items

2.1 Primary classification

This work item is a …

|  |  |
| --- | --- |
| X | **Feature** |
|  | **Building Block** |
|  | *Work Task* |
|  | **Study Item** |

2.2 Parent Work Item

|  |  |
| --- | --- |
| **Parent Work Items** | |
| **Unique ID** | **Title** |
|  |  |

2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| **Other related Work Items (if any)** | | |
| **Unique ID** | **Title** | **Nature of relationship** |
| 880011 | FS\_5GSTAR (Study on 5G Glass-type AR/MR Devices) | Study of the use cases and service scenario for glass-type AR/MR devices. |
| 810006 | (FS\_5GXR) Extended Reality (XR) in 5G | Study on various approaches to extend the reality, such as VR, AR, or MR |

3 Justification

AR/MR experience involves augmenting visual/auditory contents into the real world to improve the user’s experience to the better immersiveness, unlike VR, which provides an entirely virtual world. To realize those experiences, glass-type AR/MR devices may be a good candidate device, easily combining the lights from the real world and those from the display without a need of holding a device in one’s hand.

Based on the recent study of FS\_5GSTAR (Study on 5G Glass-type AR/MR Devices) and FS\_XR5G (Study on Extended Reality in 5G), it was identified that the additional components including AR runtime and AR Scene Manager need to be defined to 5G media streaming architecture and media workflow for AR/MR experiences. The technical report TR 26.998 also includes the need to support various provider of third-party services as well as typical operator services.

This WID is proposing the follow-up normative works from the recommendations in TR 26.998.

4 Objective

Based on the discussion in TR 26.998, it is proposed to specify the following stage-2 normative works:

* A generic AR/MR architecture to define relevant core building blocks, interfaces as well as rendering-centric end-points
* Extensions to existing 5G system architectures including 5G media streaming architecture or MTSI-based AR conversational based on the identified building blocks in clause 6 of TR 26.998.
* Call flows and procedures for AR/MR experience based on the context of clause 6 in TR 26.998, including capability exchange mechanism and establishment of 5G edge instance
* Specify a split-rendering and spatial computing architecture for AR devices on top of a 5G System
* Provide all relevant reference points and interfaces to support different collaboration models between 5G System operator and third-party AR application provider

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# | Remarks |
| TS | 26.xxx | General Architecture of AR/MR experiences for 5G system | *SA#97 (Sept 22)* | *SA#98*  *(Dec 22)* |  |

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

6 Work item Rapporteur(s)

*Hakju Ryan Lee, hakju00.lee@samsung.com*

7 Work item leadership

*SA4*

8 Aspects that involve other WGs

*None*

9 Supporting Individual Members

|  |
| --- |
| **Supporting IM name** |
| Samsung Electronics Co., Ltd |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |