**3GPP TSG SA WG4#127 S4-240082**

**Sophia-Antipolis, France, 29th Jan- 2nd Feb 2024**

**Agenda item:** 9.12

**Source:** China Mobile Com. Corporation, Qualcomm Incorporated, ZTE, Xiaomi, Fraunhofer HHI, China Unicom, Huawei, Nokia, Philips, InterDigital Europe, Samsung Electronics Co. Ltd

**Title:** Draft Time Plan for the FS\_B2DV Study Item

**Document for** Discussion

# Introduction

The study item has the following objectives:

# Identify and document beyond 2D format, that are market-relevant within the next years, generated from

#  established and emerging capturing system (including cameras for spatial video capturing), contribution, and

#  usable on display technologies (smartphones, VR HMDs, AR glasses, autostereoscopic and multiscopic displays).

NOTE 1: The work is expected to build upon and extend the findings documented in TR 26.928, TR 26.998 and TS 26.119.

# Establish and document a set of beyond 2D video end-to-end reference scenarios, including real-time communication, streaming services, split rendering, and messaging and workflows (capturing, encoding, packaging, delivery, decoding, rendering, including general constraints on latency, as well as complexity) to support 3GPP network related delivery and devices leveraging the generation or display technologies. This includes identifying and defining relevant beyond 2D formats in the context of above workflows, and representation technologies to support delivery of these formats within 3GPP networks.

NOTE 2: The work is expected to build upon and extend the findings documented in TR 26.928, TR 26.998 and TS 26.119.

# Prioritize the scenarios and the associated formats based on market relevance for further evaluation.

NOTE 3: The scenario priority will be determined as the first step following the agreement on the specification skeleton and scope.

# Define concrete evaluation framework per scenario (test conditions, KPIs, Metrics, test sequences, agreed reference signals) based on the above prioritized reference scenarios, and evaluate the feasibility and performance of existing 3GPP codecs as well as potentially new codecs to support the scenarios.

NOTE 4: Reuse existing performance results from MPEG or other standard organizations, fitting in the evaluation framework defined in 3GPP may be considered and is recommended to be done. If there are no suitable existing performance results, communication with MPEG to ask for potential further evaluation on selected topics may be done, but 3GPP may also initiate the evaluation independently of MPEG.

# Based on the findings in steps 1, 2, and 4 document (i) interoperability requirements, (ii) traffic characteristics and (iii) potential QoS optimizations or requirements, to support the above workflows and evaluate the feasibility of new formats with different services, considering the implementation constraints and performance indicators such as encoding, decoding, and rendering complexity, bandwidth utilization, and interoperability considerations.ased on the findings in steps 1, 2, 4 and 5, identify potential gaps or deficiencies of existing 3GPP codecs, and offer recommendations to potentially extend 3GPP video specifications and capabilities.

NOTE 5: Network service, and end-device implementation constraints and complexity are expected to be considered when evaluating existing video profiles from 3GPP or other standards for their commercial feasibility in supporting 3D services over 5G/5G-A.

# Based on the findings in steps 1, 2, 4 and 5, identify potential gaps or deficiencies of existing 3GPP codecs, and offer recommendations to potentially extend 3GPP video specifications and capabilities.

# Identify potential areas for normative work as the next phase and communicate with other 3GPP WGs regarding relevant aspects related to the study to the extent needed.

2 Time Plan

The following time plan for the execution of the FS\_B2DV study item objectives is proposed in the following table.

|  |  |  |
| --- | --- | --- |
| Meeting | **Study on 3D Video in Real-time Communication** | **Completion Status** |
| **SA4#127 (29 January - 2 February 2024, Sophia-Antipolis, FR)** | * Agree study item in S4-24xxxx
 | Target %Real % |
| **SA#103 (19 - 22 March 2024, FR)** | * Approve Study Item in SP-24XXXX
 | Target %Real % |
| SA4#127-bis-e (08 - 12 April 2024, online) | * Define and agree initial work and time plan
* Agree Specification skeleton and Scope for TR XXXX
* Agree on the priority of beyond 2D video related reference scenarios /work flows and the associated formats based on market relevance.
* Determine the lead of ?
* Initiate work on:
	+ Document established and emerging capturing/acquisition, display technologies and the associated formats
 | Target %Real % |
| Post SA4#127-bis-e AHG calls | * Progress work on:
	+ Document capturing/acquisition and display technologies and the associated formats
* Initiate work on:
	+ Document and establish beyond 2D video related end-to-end reference scenarios and work flows
 | Target %Real % |
| SA4#128 (20 - 24 May 2024, Korea) | * Progress work on:
	+ Document and establish beyond 2D video related end-to-end reference scenarios and work flows
* Initiate work on:
	+ Define evaluation frameworks per scenario based on the priority of reference scenarios.
	+ For each scenario, agree and document
		- Relevant and exemplary test conditions and material, including test sequences.
		- Performance of existing 3GPP codecs
		- Identify potential new formats to support the work flows
 | Target %Real % |
| Post SA4#128 AHG calls | * Progress work on:
	+ Define evaluation frameworks per scenario based on the priority of reference scenarios.
	+ For each scenario, agree and document
		- Relevant and exemplary test conditions and material, including test sequences.
		- Performance of existing 3GPP codecs
		- Identify potential new formats to support the work flows
* Initiate work on:
	+ Building the evaluation environment.
	+ For each scenario, evaluate the feasibility and performance of existing 3GPP codecs as well as potentially new codecs
 | Target %Real % |
| SA4#129-e (19 - 23 August 2024, online) | * Progress work on:
	+ Building the evaluation environment.
	+ For each scenario, evaluate the feasibility and performance of existing 3GPP codecs as well as potentially new codecs
 | Target %Real % |
| Post SA4#129 AHG calls | * Progress work on:
	+ Building the evaluation environment.
	+ For each scenario, evaluate the feasibility and performance of existing 3GPP codecs as well as potentially new codecs
 | Target %Real % |
| SA4#130 (18 - 22 November 2024, Orlando) | Initial work on:* + Collect and review the initial evaluation results and identify any open issues .
	+ Documenting interoperability requirements, traffic charactertistics and QoS requirements to support the above work flows
 | Target %Real % |
| SA#106 (10 - 13 December 2024, Madrid) | Progress work on:* + Collect and review the initial evaluation results and identify any open issues .
	+ Documenting interoperability requirements, traffic charactertistics and QoS requirements to support the above work flows
* Identify gaps and deficiencies of existing 3GPP codecs, offering recommendations to enhance video specification and capabilities.
 | Target %Real % |
| SA4#131 (17 - 21 February 2025, Geneva) | * Identify gaps and deficiencies of existing 3GPP codecs, offering recommendations to enhance video specification and capabilities.
* Initiate work on potential related normative work and conclusions
* Agree on TR XXX to be sent to SA plenary for information
 | Target %Real % |
| SA#107 (11 - 14 **March 2025**, **Korea**) | * Present TR XXX to SA for information
 | Target %Real % |
| SA4#132 (19 - 23 May 2025, Japan) | * Complete work on identify potential related normative work and conclusions
* Complete all remaining open issues
* Communicate with other 3GPP working groups and external organizations, if necessary
* Agree on TR XXX to be sent to SA plenary for approval
 | Target %Real % |
| SA#108 (10 - 13 June 2025, China) | * Send TR XXX to SA for Approval
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# Proposal

We propose the above Work Plan for the SA4 team's consideration.