

**FG-VM**

**CALL FOR  
PROPOSALS #2**

**Focus Group on  
Vehicular Multimedia**

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**Call for Proposals for a Vehicle Multimedia  
Architecture to be submitted to the ITU-T Focus  
Group on Vehicular Multimedia (FG-VM), Working  
Group 2 (WG2)**

# Call for Proposals for a Vehicle Multimedia Architecture

**Abstract:** Taking into account the discussions during the sixth meeting of Focus Group on Vehicular Multimedia ([FG-VM](#)) in Budapest, Hungary (11-12 September 2019), the call for proposals for a vehicular multimedia architecture (previously agreed during the fifth meeting in Changchun) was updated. All interested stakeholders, namely OEMs, Tier1 and Tier2 suppliers, are invited to submit their proposals for an internationally agreed Vehicular Multimedia Architecture. Participating in the FG-VM is free of charge and open to all stakeholders.

## 1 Introduction

With the increasing convergence of automotive and the information and communication technology (ICT) industries, modern automotive vehicles are evolving from a mere transport tool to an infotainment space and smart living platform. The functions of a vehicular infotainment system could include navigation, radio, climate control, video streaming etc.

In this scenario, vehicle manufacturers face the daunting challenge of bridging the production cycles of vehicles with the emerging multimedia demands of users.

To address this challenge, new interoperable standards are required to reduce the costs and time to market for new products and services, to improve the user experience, and to guarantee the fast growth of national, regional, and international markets.

In August 2018, ITU-T Focus Group on Vehicular Multimedia (FG-VM) was established to identify the need for vehicular multimedia standards based on the convergence of satellite and terrestrial communication networks. The objectives of the FG-VM include:

- 1) to develop corresponding use cases and requirements of vehicular multimedia enabled by converged networks;
- 2) to study architectures, interfaces, protocols, data formats, interoperability performance evaluation, security and protection of personal information for vehicular multimedia;
- 3) to produce a gap analysis of vehicular multimedia standardization in order to identify the relevant scope of possible future ITU-T Recommendations (international standards) on these topics and develop a roadmap for vehicular multimedia.

A draft ITU-T Technical Report (TR) on “*Use Cases and Requirements for the Vehicular Multimedia Networks*” has been developed by Working Group 1 (WG1) through collaboration among all FG-VM participants, where the overview of the vehicle multimedia networks (VMN), the reference model for the vehicle multimedia system (VMS), and various use cases and requirements for the VMN are described. The latest TR is available in [FGVM-O-028](#).

The goal of this Call for Proposals (CfP) is to identify the architectures, interfaces, and protocols of the VMN such that the various business and function requirements defined in the TR could be satisfied.

UPDATE: During the half-day workshop on “[The Future of Vehicular Multimedia](#)” (11 September 2019), presentations were delivered from the European Commission, Rohde and Schwarz, Great Wall Motors, BlackBerry, ITU-T Study Group 17, Deutsche Telekom, and Global Fusion Media Technology and Development Co., Ltd. , which covered a variety of topics ranging from vehicular multimedia architecture and related security challenges, 5G broadcast for automotive, smart mobility etc.

As a follow up, the Working Group 2 on “Vehicular Multimedia Architecture” considered two contributions to brainstorm on the vehicular multimedia architecture. Both contributions were reviewed and are available for consideration and further reactions from relevant stakeholders as:

<a href="#">FGVM-I-134</a>	Reference Architectures of Vehicle Multimedia Service Platform and Receivers for Multimedia Streaming Services over Vehicle Multimedia Networks	Global Fusion Media Technology and Development Co., Ltd.
<a href="#">FGVM-I-126R1</a>	Definition, Structure of Vehicle Multimedia System(VMS) configuration and Architecture	Great Wall Motors, China

IMPORTANT: All FG-VM inputs and outputs can be downloaded by anyone, previous creation of a [free ITU user account](#). The ITU user account allows access to FG-VM ( [all documents](#) / [input documents](#) / [output documents](#) ).

## 2 Scope of the call for proposals

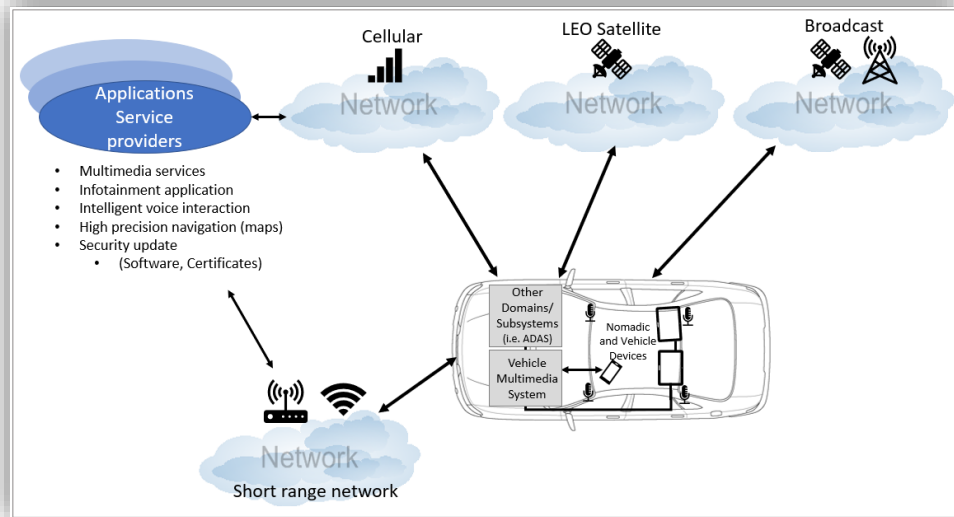
As illustrated in Fig. 1, the VMN is an end-to-end system, which consists of a vehicular multimedia service platform in the cloud, a variety of broadcast and communication networks, the vehicular multimedia system (VMS) in the vehicle, vehicle devices and nomadic devices in proximity of the vehicle, and other domain/subsystems (e.g. ADAS) within the automotive vehicle. In this context the VMS plays a fundamental role since it is the device that interacts with and accomplishes the multimedia entertainment and information delivery to the driver and passengers. Nevertheless, it is noted that none of these functions or services can be achieved without the collaboration of the vehicular multimedia service platform in the cloud and the various broadcast and communication networks.

Therefore, the scope of this Call for Proposals includes (but is not limited to) the architecture, interface, and protocols of the VMS. In particular, the next activities of FG-VM, which will be undertaken under the framework of Working Group 2 (WG2) include the development of:

- architecture of the VMS
- architecture of the vehicular multimedia service platform
- convergent network transmission protocols
- in-vehicle communication and network protocols
- intelligent human to machine interface (HMI) technologies
- copy right management technologies
- security technologies
- etc.

There is a plan to accomplish these tasks in two stages.

- 1) In the first stage, the architectures of the VMS and the vehicular multimedia service platform will be developed. This is actually the main call for proposals that this document wishes to convey to the various stakeholders. These overall architectures could help to avoid the fragmentation on non-competitive areas/domains of the VMS and related service platform.
- 2) In the second stage, the architecture, protocols, and technologies of each area/domain of the VMS and the vehicular multimedia service platform will be developed in more details.



**Figure 1: Overview of the VMN<sup>1</sup>**

<sup>1</sup> [FGVM-O-028](#), Draft ITU-T Technical Report on “Use Cases and Requirements for the Vehicular Multimedia System,” ITU-T FG-VM, September 2019.

## Appendix I

### “CfP deadlines and useful information”

*(This appendix is provided for informative purposes only)*

#### – CfP agreement

This CfP was discussed at the 5th FG-VM meeting held in Changchun, China, 11-12 July 2019. The final version of the CfP is an output document of the aforementioned meeting and was published in the ITU-T FG-VM website: <https://www.itu.int/en/ITU-T/focusgroups/vm>.

#### – CfP deadlines

Responses to this CfP are due in two stages as follows:

##### 1) Stage 1: Proposals for the Architectures of the VMS and related service platform:

Contributions were received from Great Wall Motors [[FGVM-I-126R1](#)] and Global Fusion Media Technology and Development Co., Ltd [[FGVM-I-134](#)] on during **the 6th FG-VM Meeting in Budapest, 11-12 September 2019**. These contributions were discussed and were deemed to be a good starting point for the Technical Report on vehicular multimedia architecture. Additional contributions from stakeholders are invited in order to commence the drafting of the Technical Report under Working Group 2. Based on the discussions in Budapest, the WG2 objectives and methodologies are contained in [FGVM-I-143](#).

Interested stakeholders are required to submit:

- Overview of the proposal using the ([FG-VM documents template](#))
- Presentation of the Proposal in Power Point or PDF
- Proposals should be submitted to the FG-VM Secretariat at [tsbfgvm@itu.int](mailto:tsbfgvm@itu.int)

Respondents will be requested to propose a detailed description of their proposal, taking into account the discussion held in Budapest, by **the 7th FG-VM Meeting planned during 12-13 December 2019**.

##### 2) Stage 2: Proposals for Functional Areas/Domains of VMS and related service platform:

After the 7<sup>th</sup> FG-VM meeting, a new Call for Proposals will be agreed upon to propose solutions for specific functional areas/domains of VMS and related service platform.

Note: Consideration of responses received after the submission deadline shall be at the sole discretion of ITU-T FG-VM.

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