

International Telecommunication Union

FG-VM

**CALL FOR
PROPOSALS**

**Focus Group on
Vehicular Multimedia**

**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)**

ITU-T

Call for Proposals for a Vehicle Multimedia Architecture

Abstract: During the fifth meeting of the ITU-T Focus Group on Vehicular Multimedia ([FG-VM](#)), held in Changchun, China, 11-12 July 2019, it was agreed to issue a call for proposals to initiate the activities under the Working Group 2 on Vehicular Multimedia Architecture. 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 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.

IMPORTANT: The latest version of the Technical Report 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](#)).

At the time this CfP was published, the latest TR was available in [FGVM-O-014](#).

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.

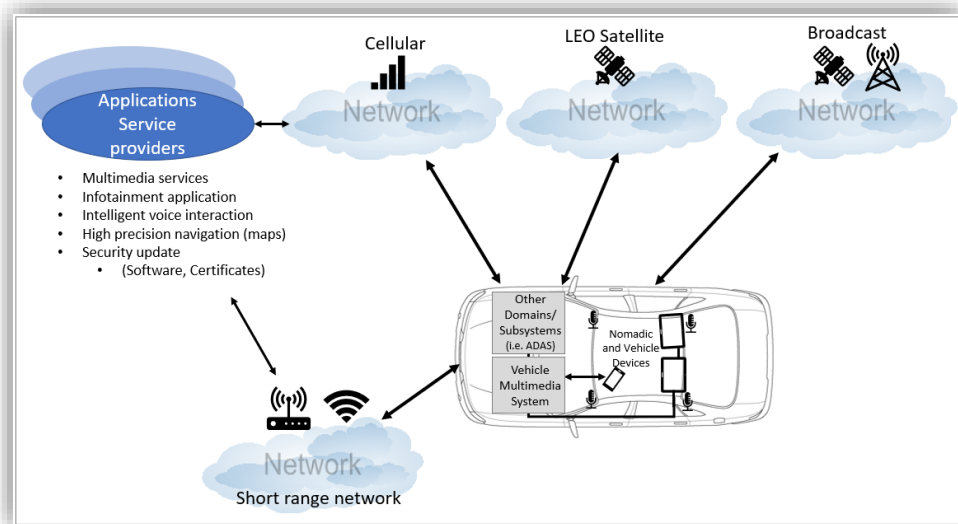


Figure 1: Overview of the VMN¹

¹ FGVM-O-014, Draft ITU-T Technical Report on “Use Cases and Requirements for the Vehicular Multimedia System,” ITU-T FG-VM, May 2019.

Appendix I

“An informative example of a VMS architecture”

(This appendix is provided for informative purposes only)

The GENIVI reference architecture is illustrated in Fig. 2 as an example. This architecture serves as a blueprint for building a full in-vehicle infotainment (IVI) solution and it covers the primary target functional areas of GENIVI’s work.²

The architecture of the VMS to be studied in WG2 shall play similar roles as those of the GENIVI reference architecture. It shall establish a solid foundation for building a full VMS solution and shall cover all the important functional areas/domains of the VMS, i.e., convergent network transmission protocols, in-vehicle communication and network protocols, intelligent human to machine interface (HMI) technologies, copy right management technologies, security technologies, and etc..

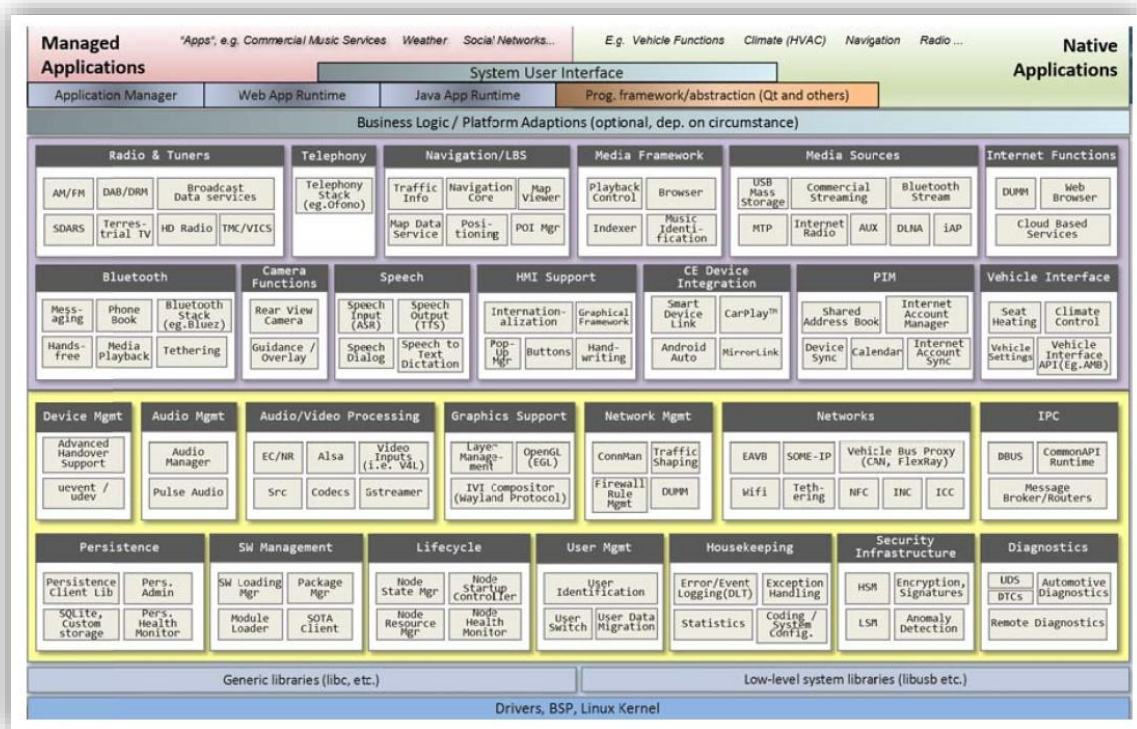


Figure 2: An Example Reference Architecture

² GENIVI Reference Architecture, GENIVI Alliance, 2015.

Appendix II

“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> on 19 July 2019.

– 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:

Respondents may propose either a VMS solution or a related service platform solution or both by **the 6th FG-VM Meeting planned in Budapest, 11-12 September, 2019**.

Respondents 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

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 at the end of 2019 (exact date and time to be determined)**

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

After the 7th FG-VM meeting a new Call for Proposals will be agreed 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.
