SLOVENSKI STANDARD
oSIST prEN IEC 63246-2:2021

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Multimedijski sistemi in oprema za avtomobile - Nastavljiva avtomobilska informacijska vzdrževalna storitev (CCIS) - 2. del: Zahteve (TA 17)

Multimedia systems and equipment for cars - Configurable Car Infotainment Services (CCIS) - Part 2: Requirements (TA 17)

Systèmes multimédia et équipements pour les véhicules - Services d'infodivertissements configurables pour les véhicules (CCIS) - Partie 2 : Exigences (TA 17)

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ICS:

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COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TA 17 : MULTIMEDIA SYSTEMS AND EQUIPMENT FOR VEHICLES	
SECRETARIAT: Korea, Republic of	SECRETARY: Mr Ock-Woo Nam
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☐ ENVIRONMENT ☐ QUALITY ASSURANCE ☐ SAFETY	
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TITLE:

Multimedia systems and equipment for cars - Configurable Car Infotainment Services (CCIS) – Part 2: Requirements (TA 17)

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

<Version history>

Version	Meeting Date (Place)	Description
1	May 2019 (London)	- Initial draft text of CCIS-2 was proposed. - CCIS-2 NP ballot processing was initiated.
2	October 2019 (Shanghai)	- NP ballot was approved. - CCIS-2 CD ballot processing was initiated.
3	September 2020 (On-line)	- CD ballot was approved. - CCIS-2 CDV ballot processing will be initiated.
4		

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MULTIMEDIA SYSTEMS AND EQUIPMENT FOR VEHICLES – CONFIGURABLE CAR INFOTAINMENT SERVICES (CCIS) – PART 2: REQUIREMENTS

FOREWORD

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The text of this standard is based on the following documents:

FDIS	Report on voting
XX/XX/FDIS	XX/XX/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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The National Committees are requested to note that for this publication the stability date is ....

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

INTRODUCTION

It is noted that the markets on car infotainment services (as known as in-vehicle infotainment systems) have been growing rapidly, as shown in the growth of the associated industries. It is expected that a variety of car infotainment (or multimedia) devices and services will be newly developed in the future. Such devices include navigations, cameras, speakers, headrest displays, air-conditioners, thermometers and heating seats, and lights. It is also expected that some devices will be developed to provide 4-dimensional experiences for user.

Car infotainment systems typically include A/V features (such as standard radio and CD players), and two-way communication tools as well as hands-free phone connections, vehicle voice commands and other types of interactive audios or videos. The car infotainment systems will be evolved to allow passengers to watch movies and other visual media, as shown in the rear seat with DVD capability. Another distinctive feature in the future infotainment systems is the mobile device connectivity. Newer vehicles will provide a wide range of systems that allow devices (e. g., smartphones and laptops) to be connected to a variety of services embedded in the vehicle.

From this observation, there is a crucial need on the standardization to provide car infotainment users with more enhanced services so as to easily manage and control infotainment devices as well as contents within a car.

The purpose of the IEC 63246 (Configurable Car Infotainment Services, CCIS) series is to specify the general considerations, requirements, framework, and protocols so as to provide car users with the functionality of managing and controlling the device and contents resources within a car.

The International Standards IEC 63246 consists of the following parts:

- Part 1: general;
- Part 2: requirements;
- Part 3: framework; and
- Part 4: protocol.

Part 1 of IEC 63246 describes the general considerations of CCIS, which includes the CCIS system model and the types of CCIS users with the associated service flows.

Part 2 of IEC 63246 describes the requirements for CCIS, which includes the CCIS functional and service requirements.

Part 3 of IEC 63246 describes the CCIS framework, which includes the information flows between CCIS functional entities, such as registration, device monitoring and control, and content delivery.

Part 4 of IEC 63246 describes the CCIS protocol, which include the protocol messages and parameters, protocol procedures, implementation guidelines, etc.

MULTIMEDIA SYSTEMS AND EQUIPMENT FOR VEHICLES – CONFIGURABLE CAR INFOTAINMENT SERVICES (CCIS) – PART 2: REQUIREMENTS

1. Scope

This part of IEC 63246 specifies the CCIS requirements, which include the general, functional and service requirements for CCIS.

2. Normative references

The following document is referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- IEC 63246-1, Multimedia Systems and Equipment for Vehicles - Configurable Car Infotainment Services – Part 1: General (20XX)

3. Definitions and terminology

For the purposes of this document, the terms and definitions given in IEC 63246-1 apply.

4. General requirements

4.1. General

This clause describes the general requirements for CCIS. CCIS can provide a wide variety of services for CCIS users, with the help of CCIS master and devices. CCIS shall be able to support multiple users and to control and monitor many infotainment devices.

In general, CCIS shall provide the following functionality.

- User registration and deregistration;
- Device registration;
- Service provisioning as per the authority;
- Device monitoring
- Device control; and
- Content Delivery.

4.2. User registration and deregistration

CCIS provides the services for one or more users at the same time via the CCIS master. Each user shall have a different authority to access the devices. To effectively support many users, all users must be registered and certified with the CCIS master. The profile of Public Client shall be temporarily stored in the CCIS master, whereas the profile of Car Owner, Temporary Owner, and Private Client must be stored by the CCIS master in the long-term period.

CCIS user must obtain authorization through the appropriate authentication process before accessing the CCIS devices. Such authentication or authority information shall be generated with a security index that is specific to the client. The clients that have once registered and authorized with the CCIS master can use the CCIS services with the security index.

4.3. Device registration and deregistration

CCIS should be able to support the dynamic addition and removal of CCIS devices to provide CCIS services. For this purpose, all devices shall be registered with the CCIS master. The registration process begins with the identification notification of a CCIS device to CCIS master. The CCIS master shall maintain all profile of CCIS devices.

4.4. Profile management

To provide enhanced CCIS services, all CCIS users/devices should be registered with the CCIS master. The CCIS master continues to keep and update the profile information of registered CCIS users/devices, and the profile information can be used to provide enhanced CCIS services, such as authorization check.

4.5. Service provisioning according to authority

The CCIS users are divided into the four types: Car Owner, Temporary Owner, Private Client, and Public Client. Each user has different authority for service usage. Car Owner and Temporary Owner have a wide range of authority for CCIS services, whereas Private Clients and Public Clients shall use a subset of CCIS services and they may need to obtain permission from Car Owner or Temporary Owner. When a CCIS user asks the CCIS master for a service, the CCIS master will verify the authority level of the client. If the CCIS user has the proper authority and the concerned device is available, it can use the associated CCIS service.

4.6. Device monitoring

All CCIS devices shall be monitored by CCIS master. The CCIS master must be able to provide the CCIS users with the monitored information on the status of CCIS devices.

4.7. Device control

CCIS users can control the CCIS devices via CCIS master. For example, Car Owner can change the status of a specific CCIS device by requesting the associated control to CCIS master.

4.8. Content delivery

CCIS shall support to exchange of various audio and video contents among CCIS users, CCIS master and CCIS devices. For example, CCIS users shall download or upload the multimedia contents from or to CCIS devices via CCIS master. For this purpose, CCIS user can request a metadata list of available contents to CCIS master, such as file name, file size, type, creation date, modification date, and so on.

5. Functional requirements for functional entity

5.1. General

This clause describes the functional requirements for CCIS entities, as summarized in Table 1.

Table 1 – CCIS functions required for CCIS entities

	CCIS user	CCIS device	CCIS master
Registration and deregistration	✓	✓	✓
Profile management		✓	✓
Service provisioning	✓	✓	✓
Device monitoring		✓	✓
Device control	✓	✓	✓
Content delivery	✓	✓	✓

5.2. CCIS user

5.2.1. General

CCIS user exploits a variety of CCIS services associated with the CCIS devices. CCIS user shall have a different authority to each service or device, depending on the type of CCIS user. The CCIS user must meet the following functional requirements.

- Registration and deregistration;
- Authentication and authorization;
- Device control; and
- Content delivery.

5.2.2. Registration and deregistration

To use the CCIS services, each CCIS user must be registered with the CCIS master. For this purpose, the CCIS user must deliver its own profile information to the CCIS master in the registration process. Such information shall include user type, user identifier, security index, the authority level to services and devices.

Car Owner and Temporary Owner must be registered with the CCIS master in the initialization phase, before CCIS service starts. In the meantime, Private Client and Public Client shall be registered with the CCIS master during the CCIS service phase, in which these clients shall be authenticated and authorised by Car Owner or Temporary Owner.

The profile information stored in the CCIS master may be kept permanently or temporarily. The profile information registered by Car Owner are permanently stored, but the profile information registered by Temporary Owner, Private Client and Public Client may be stored with a specific time limit.

The deregistration functionality of CCIS user shall also be provided. Temporary Owner and Public Client have a specific expiration time. These users will be deregistered automatically after the specific time limit. Private Client registered by Temporary Owner shall be deregistered when the Temporary Owner is deregistered. In addition, CCIS user performs the deregistration process explicitly by requesting the deletion of the associated information to CCIS master.

5.2.3. Authentication and authorization

Authentication is performed to each user, and authorization is applied in the service level. Before using CCIS service, CCIS user must receive an authentication key from CCIS master through a certification procedure. This authentication key shall always be included in the request messages that are exchanged for CCIS services.

Car Owner or Temporary Owner has the authority to allow Private Client or Public Client through the authentication and authorization process.

5.2.4. Device control

CCIS user can control CCIS devices via CCIS master, according to its authority level. For this purpose, CCIS user shall ask CCIS master for the list of CCIS devices available. Based on such information, the CCIS user shall issue the device control message.

5.2.5. Content delivery

CCIS user shall be able to perform the content delivery operation with CCIS devices via CCIS master. For this purpose, CCIS user shall first get a profile list of available devices and services from CCIS master. Each user will then upload or download the content data to or from CCIS master or a specific CCIS device. All CCIS contents shall be transferred via CCIS master.