SLOVENSKI STANDARD
oSIST prEN IEC 63033-2:2021

01-julij-2021

Multimedijski sistemi in oprema za vozila - Sistem prostorskega pogleda - 2. del: Metode snemanja prostorskega pogleda

Multimedia Systems and equipment for vehicle - Surround view system - Part 2: Recording methods of the surround view system

Systèmes et équipements multimédias pour véhicules - Système de vision panoramique - Partie 2: Méthodes d'enregistrement du système de vision panoramique

Ta slovenski standard je istoveten z: prEN IEC 63033-2:2021

ICS:

33.160.60	Večpredstavni (multimedijski) sistemi in oprema za telekonference	Multimedia systems and teleconferencing equipment
43.040.15	Avtomobilska informatika. Vgrajeni računalniški sistemi	Car informatics. On board computer systems

oSIST prEN IEC 63033-2:2021 **en,fr,de**

100/3585/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 63033-2 ED2**	
DATE OF CIRCULATION: **2021-05-21**	CLOSING DATE FOR VOTING: **2021-08-13**
SUPERSEDES DOCUMENTS: **100/3513/CD, 100/3578/CC**	

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	
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Multimedia Systems and equipment for vehicle - Surround view system - Part 2: Recording methods of the surround view system

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

In the voting for the maintenance of 63033-1,2,3 and 4, the 63033-1 and 4 received comments.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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MULTIMEDIA SYSTEMS AND EQUIPMENT FOR VEHICLES– SURROUND VIEW SYSTEM

Part 2: Recording methods of the surround view system

FOREWORD

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International Standard IEC 63033-2 has been prepared by technical area 17: Multimedia systems and equipment for vehicles of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
100/XX/FDIS	100/XX/RVD

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

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

A list of all parts in the IEC 63033 series, published under the general title *Multimedia systems and equipment for vehicles – Surround view system*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This document specifies recording methods of the surround view system that is specified in IEC 63033-1, which also specifies the model for generating the surrounding visual image of the surround view system. The system allows drivers to monitor the car's perimeter in real time by using "free eye point" technology, which allows drivers to dynamically change the viewing perspective, offering the most appropriate views according to the driving situation.

IEC 63033-2 specifies recording methods of the surround view system in order to view the recorded video file with free eye point technology.

MULTIMEDIA SYSTEMS AND EQUIPMENT FOR VEHICLES– SURROUND VIEW SYSTEM

Part 2: Recording methods of the surround view system

1 Scope

This part of IEC 63033 specifies recording methods of the surround view system that is specified in IEC 63033-1 in order to view the recorded video file with free eye point technology.

2 Normative references

The following documents are 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 63033-1:2020, *Multimedia systems and equipment for vehicles– Surround view system – Part1: General*

3 Terms, definitions and abbreviated terms

3.1 General

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.2 Abbreviated terms

SIM stream information and metadata

GNSS global navigation satellite system

4 System model

4.1 General

IEC 63033-2 specifies recording methods of the surround view system. Specifically, the recording from a vehicle-mounted camera as obtained by the surround view system, and also a model for the replay of the recorded video. The purpose of the replay of the recorded video can be considered in various ways, such as verification at the occurrence of an accident, as legal proof, for reviewing driving behaviour and use at educational sites.

There are two types of recorded videos: recording of each camera image (referred to as "recording 1"), and recording of the composite image (referred to as "recording 2"). For replay of the recorded videos, the related metadata (refer to 4.2.2.3 and 4.2.3.3) is simultaneously saved in recording 1 and recording 2. These recorded files are transferred by the portable recording medium or via a network, where they can be later replayed by the user. The user

can also recreate the composite image by using the stored metadata in the free eye point in the viewer (refer to Clause 5). It is also possible to provide the distribution service with the recorded file by using storage on the network.

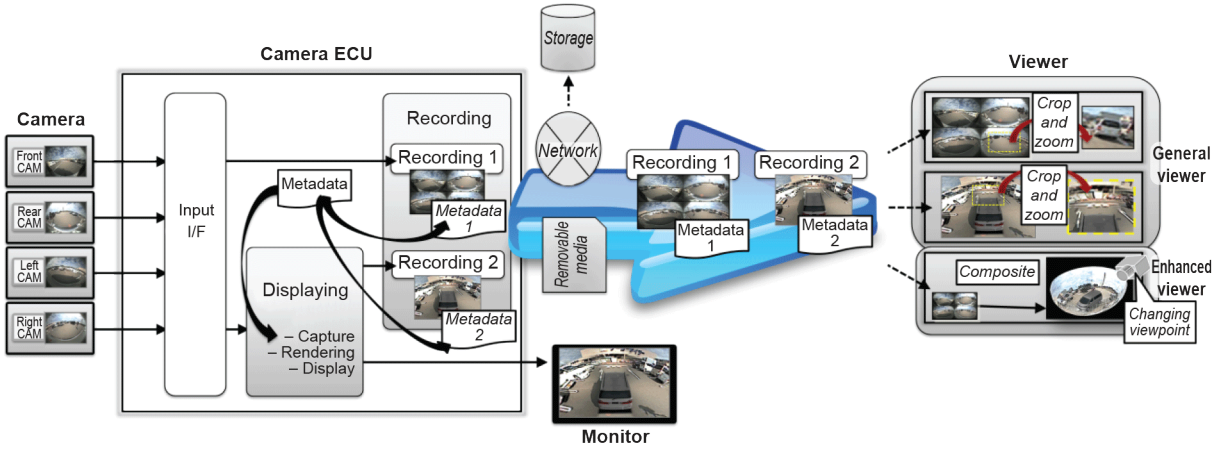

Figure 1 – Displaying and Recording system model of surround view system

4.2 Video recording

4.2.1 General

There are two types of recording files provided by the driver monitor system and as shown Figure 1: recording 1 and recording 2.

4.2.2 Recording 1

4.2.2.1 General

Recording 1 consists of both the raw (before composite) video data as obtained by each camera, and related metadata (refer to 4.2.2.3) at the same time. Using both, the video data and the metadata, enables the user to recreate a new composite image. The user can change the view point freely while viewing the composite image. In addition, they can also see a vehicle's surroundings instantly in a single composite image.

4.2.2.2 Video data

The raw video data obtained from the vehicle-mounted cameras is recorded. The raw video data example is described in Figure 2.

Since the recording is pre-composition, there is no distortion and the image cut-off is as directly input from each vehicle-mounted camera. This method allows for the full image to be transferred, thus, keeping as much of the original image information.

Figure 2 – Raw video data example of recording 1, the image before composition

4.2.2.3 Metadata for recording 1

The metadata listed in Table 1 and Table 2 shall be saved together with the video data. Some metadata will be included in the SIM source packet.

Table 1 – Metadata for recording 1

Metadata	Explanation	Mandatory
Time stamp	It is necessary to identify the exact time when a certain event occurred. The time information is generally extracted from GNSS. If GNSS is not included in the system, the time information can be extracted from another system equivalent to GNSS.	✔
GNSS	It is necessary to identify details about the location and the exact time when a certain event occurred.	✔
ID data	It is necessary to specify which car the recorded file came from.	✔
Orientation	It is necessary to identify details about orientation when a certain event occurred.	✔

Table 2 – Metadata for dependent part of video data 1

Metadata	Explanation	Mandatory
Optical axis shift data	The optical axis shift adjusts the central coordinates and the captured image's width and height. For details, please see IEC 63033-1.	✔
Lens distortion data	Distortion data of lens used for each camera. For details, please see IEC 63033-1.	✔
Camera position and direction data	Camera position information consisting of mounted camera position (X, Y, Z) at optics' centre (mm) and camera angle (tilt angle ψ, rot angle φ, pan angle θ) at optical axis direction (deg). For details, see IEC 63033-1.	✔
View point position and direction data	The same view point position data as registered to make the existing composite image. It contains the virtual view point position (X, Y, Z), angle and virtual 3D projection surface.	Preferable to be saved
3D car model data and size	The same 3D car model data and size as registered to make the existing composite image. It contains 3D model data, transparency and drawing car model size (left, front, right, bottom, tail, top) described in (mm).	Preferable to be saved

4.2.3 Recording 2

4.2.3.1 General

Recording 2 records both the composite image video data and the related metadata (refer to 4.2.3.3) at the same time. The composite image video data example is described in Figure 3.

Users cannot change the view point while viewing the composite image. However, the user can instantly view the vehicle's surroundings through a specific pre-set composite image regardless of the viewer used (see Clause 5 for details).