



Edition 1.0 2019-12

TECHNICAL REPORT



Smart television – Part 2: Framework of integrated service on smart television

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 33.160.25

ISBN 978-2-8322-7695-2

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD					
IN	TRODU	ICTION	7		
1	Scop	e	8		
2	Norm	native references	8		
3	Term	s and definitions	8		
4	Refe	rence model of smart television service	8		
•	4.1	Description of general smart television service			
	4.1.1				
	4.1.2	-			
	4.1.3		-		
	4.1.4				
	4.1.5				
	4.2	Architecture of smart television service management system	18		
	4.2.1				
	4.2.2	Service management objects	18		
	4.2.3				
	4.3	Smart television service operations platform	21		
	4.4	Smart television content operations platform	21		
5	Refe	rence model of smart television service pattern	22		
	5.1	General framework of service pattern	22		
	5.2	Logic layers of smart television service pattern	23		
	5.2.1	Overview	23		
	5.2.2	Front-end user layer	24		
	5.2.3	Service layer	24		
	5.2.4	Data layer	24		
6	Cont	ent interface of smart television service pattern	24		
	6.1	Interface specification of smart television platform	24		
	6.1.1	General architecture of platform interface	24		
	6.1.2	Electronic program list data	25		
	6.1.3	Framework of content broadcast	26		
7	Tech	nical requirements for smart television terminal performance	27		
	7.1	Service technical requirements	27		
	7.1.1	Communications service capacity	27		
	7.1.2	Information service capacity	27		
	7.1.3	Language input capacity	27		
	7.1.4				
	7.2	Requirements for media processing			
	7.2.1	Audio and video			
	7.2.2				
	7.3	Network requirements			
	7.3.1	Network interface and network configuration			
	7.3.2	65			
^	7.3.3				
Ar	Annex A (informative) Typical application scenarios of smart television				
	A.1	Overview			
	A.2	Scenario description	32		

A.2.1 Home office scenario	32
A.2.2 Public media scenario	32
A.2.3 Game entertainment scenario	32
A.3 Interactive mode	
A.4 Discovery mode	
A.5 Connection mode	
Annex B (informative) Typical smart interaction mode of smart television	
B.1 Overview	
B.2 Description of interaction mode	
B.2.1 Interaction via remote control	
B.2.2 Interaction via voice	
B.2.3 Interaction via smart touch	
Annex C (informative) Model for general service context of smart television	
C.1 Overview	
C.2 Definition of model	
C.3 Classification of general service context of smart television	
Annex D (informative) Service model of smart television application store	
D.1 Overview	
D.2 Features	
D.3 Model of service industrial chain	
Annex E (informative) Typical technical application of smart television	
E.1 Multi-screen interaction technology	
E.2 DLNA technology	
Annex F (informative) Classified identity of smart television programme list	
Bibliography	
Figure 1 Medel of convice industrial shain	10
Figure 1 – Model of service industrial chain	
Figure 2 – Model of hierarchical architecture	
Figure 3 – Smart television service classification	
Figure 4 – Relation model of service management objects	18
Figure 5 – Architecture of service management system	19
Figure 6 – Service operations platform	21
Figure 7 – Content operations platform	22
Figure 8 – Framework of service pattern	23
Figure 9 – Service pattern framework	24
Figure 10 – General architecture of platform interface	25
Figure 11 – Content broadcast of smart television	
Figure C.1 – Definition of context model	
Figure D.1 – Architecture of application store	
-	
Figure E.1 – Multi-screen interaction	40
	10
Table 1 – Category grouping	
Table 2 – Electronic programme list	26

	F - 3	
Table 3 -	- Format of audio and video media	28
Table 4 –	- Audio parameters and indices	28

– 4 – IEC TR 63122-2:2019 © IEC 2019

Table 5 – Video file parameters (played locally)	29
Table 6 – Video file parameters (played online)	29
Table 7 – Picture format	
Table 8 – Type of picture files and parameters	
Table A.1 – Home office scenario	
Table A.2 – Public media scenario	
Table A.3 – Game entertainment scenario	32
Table C.1 – Classified code of programme list content	
Table E.1 – DLNA functional components	41
Table E.2 – Supported formats	41
Table F.1 – Classified code of programme list content	42

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SMART TELEVISION -

Part 2: Framework of integrated service on smart television

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committee; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC/TR 63122-2, which is a technical report, has been prepared by subcommittee TA 1: Terminals for audio, video and data services and contents, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
100/2904/DTR	100/3054/RVDTR

Full information on the voting for the approval of this technical report 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 the parts in the IEC 63122 series, published under the general title *Smart television*, 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 Technical Report is formulated based on the current state of the industrialization of smart television and regards open innovation, vertical integration of chain and in-depth incorporation of technology and service as fundamental principles. The intention of this document is to strengthen the innovation of smart television in terms of technology, service mode and system mechanism, to advance compatibility of smart television products, and to speed up the expansion of the application market, thereby putting forward a relevant conceptual model and standardized demand for smart television. This document applies to guide service operations and service mode implementation of smart television.

SMART TELEVISION -

- 8 -

Part 2: Framework of integrated service on smart television

1 Scope

This part of IEC 63122 specifies the service pattern conceptual model and standardized demand of smart television, illustrates the terms and related to smart television, and describes service reference model of smart television, the reference model of the service pattern as well as interfaces between various platforms.

2 Normative references

There are no normative references in this document.