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**Information technology — Generic coding  
of moving pictures and associated audio  
information —**

**Part 10:**

**Conformance extensions for Digital Storage  
Media Command and Control (DSM-CC)**

*Technologies de l'information — Codage générique des images animées et  
des informations sonores associées —*

*Partie 10: Extensions de conformité pour commande et contrôle de  
supports de mémoire numérique (DSM-CC)*

*ISO/IEC 13818-10:1999*

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**Contents**

1	Scope .....	1
2	Normative References .....	1
3	Abbreviations .....	1
4	The PICS .....	2
4.1	ISO/IEC Protocol Versions Implemented.....	3
4.2	Global Statement of Conformance .....	3
4.3	DSM-CC User-to-Network Functional Unit .....	4
4.3.1	Roles of DSM-CC User-to-Network.....	4
4.3.2	Major Capabilities of DSM-CC User-to-Network .....	4
4.3.3	PDU Support for DSM-CC User-to-Network .....	4
4.3.4	Parameter support for DSM-CC User-to-Network Message Header .....	7
4.3.5	Parameter support for DSM-CC Compatibility Descriptors .....	8
4.3.6	Parameter support for DSM-CC User-to-Network Configuration messages .....	8
4.3.7	Parameter support for DSM-CC U-N Session messages.....	9
4.3.8	Parameter Support for DSM-CC User-to-Network Download Messages.....	19
4.3.9	Parameter support for DSM-CC User-to-Network SDB CCP Messages .....	21
4.3.10	Parameter Support for DSM-CC U-N Pass-Thru Messages .....	23
4.4	DSM-CC User-to-User Functional Unit.....	24
4.4.1	Roles of DSM-CC User-to-User .....	24
4.4.2	Major capabilities of DSM-CC User-to-User.....	24
4.4.3	Subsidiary Capabilities Related to DSM-CC User-to-User Procedures .....	27
4.5	Conformance .....	29
5	The Conformance ATS .....	29
5.1	Test Method.....	29
5.1.1	Test Environment of DSM-CC U-N Functions.....	30
5.1.2	Test Environment of DSM-CC U-U Functions.....	31
5.2	Test Cases.....	31
5.2.1	DSM-CC User-to-Network.....	31
5.2.2	Test Coverage.....	96
5.2.3	DSM-CC User-to-User .....	101

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 13818-10 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

ISO/IEC 13818 consists of the following parts, under the general title *Information technology — Generic coding of moving pictures and associated audio information*:

- Part 1: Systems
- Part 2: Video
- Part 3: Audio
- Part 4: Conformance testing
- Part 5: Software simulation
- Part 6: Extensions for DSM-CC
- Part 7: Advanced Audio Coding (AAC)
- Part 9: Extension for real time interface for systems decoders
- Part 10: Conformance extensions for Digital Storage Media Command and Control (DSM-CC)

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# Information technology – Generic coding of moving pictures and associated audio information –

## Part 10:

### Conformance extensions for Digital Storage Media Command and Control (DSM-CC)

## 1 Scope

This part of ISO/IEC 13818 defines compliance to Data Storage Media Command and Control (DSMCC) standard in 2 steps: the static review and the dynamic review as defined in ISO/IEC 9646 Conformance Testing standard [1, 2, 3]. The static review requirements are specified in clause 4 of this part of ISO/IEC 13818 in the form of Protocol Implementation Conformance Statement (PICS) proforma. The ATS used for dynamic review is described in clause 5.

This part of ISO/IEC 13818 does not specify all the requirements with which terminal equipment intended for use in conjunction with multimedia information retrieval services has to comply. In particular, this part of ISO/IEC 13818 does not specify (lower layer) protocols to be used to deliver/transport DSM-CC protocol data units. Neither does it specify requirements related to safety, protection, and electromagnetic compatibility (EMC) of the equipment, or regulatory requirements with which such equipment may be required to comply.

## 2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 13818. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 13818 are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

- ISO/IEC 13818-10:1999  
<https://standards.itec.ai/catalog/standards/sist/9646/iaa4-c54d-40d5-989b-7fab69145668/iso-iec-13818-10-1999>
- [1] ISO/IEC 9646-1: Information technology - Open Systems Interconnection - Conformance testing methodology and framework – Part 1: General concepts.
- [2] ISO/IEC 9646-2: Information technology - Open Systems Interconnection - Conformance testing methodology and framework – Part 2: Abstract Test Suite Specification.
- [3] ISO/IEC 9646-7: Information technology - Open Systems Interconnection - Conformance testing methodology and framework – Part 7: Implementation Conformance Statements.
- [4] ISO/IEC 13818-6: Information technology - Generic coding of moving pictures and associated audio information – Part 6: Extensions for DSM-CC.

## 3 Abbreviations

API : Application Portability Interface

ATS : Abstract Test Suite

DSM-CC : Digital Storage Media-Command and Control

DSM-CC UN : Digital Storage Media-Command and Control User to Network

DSM-CC UU : Digital Storage Media-Command and Control User to User

ETS : Executable Test Suite

LT : Lower Tester

IUT : Implementation Under Test

MPEG-2 : Moving Picture Experts Group-2

PCO : Point of Control and Observation

PDU : Protocol Data Unit

SUT : System Under Test

TCP : Test Coordination Procedures

UT : Upper Tester

VOD : Video on Demand

Additional abbreviations are defined in ISO/IEC 13818-6 and ISO/IEC 9646 parts 1-7.

## 4 The PICS

This part of ISO/IEC 13818 defines a Protocol Implementation Conformance Statement (PICS) proforma for the detailed expression of the conformance requirements of ISO/IEC 13818-6. The PICS proforma is in compliance with the relevant requirements, and in accordance with the relevant guidance for a PICS proforma, given in ISO 9646-2. Detail of the use of this proforma is provided in this part of ISO/IEC 13818. Implementations claiming conformance to ISO/IEC 13818-6 shall complete the proforma as part of the conformance requirements.

The DSM-CC specification is a collection of protocols and interfaces that accomplish the control of bit streams. DSM-CC can be viewed as consisting of two broad categories of functionality; User-to-User and User-to-Network. Each of these categories is further divided into functional groups.

The following table defines the functional groups of DSM-CC User-to-Network and provides a brief description of each group:

**Table 1 – DSM-CC User-to-Network Functional Groups**

Functional Group	Description
U-N Configuration	A set of messages which are used to configure a User device for operation in a DSM-CC Network environment.
U-N Session Messages	A set of messages which are used to set-up maintain, and tear-down DSM-CC sessions. <a href="https://standards.iteh.ai/catalog/standards/sist/984-fc4e-341-4013-9891-7fab69f456b8/iso-iec-13818-10-1999">ISO/IEC 13818-10:1999</a>
U-N Download	A set of messages which are used to download information to a DSM-CC User. <a href="https://standards.iteh.ai/catalog/standards/sist/984-fc4e-341-4013-9891-7fab69f456b8/iso-iec-13818-10-1999">https://standards.iteh.ai/catalog/standards/sist/984-fc4e-341-4013-9891-7fab69f456b8/iso-iec-13818-10-1999</a>
U-N Switched Digital Broadcast Channel Change Protocol	A set of messages which are used by the User to request stream switching by the Network.
U-N Pass Thru Messages	A set of messages which are used to communicate between Users through the Network and outside of a session.
DSM-CC Message Header	All DSM-CC UN messages begin with the DSM-CC Message Header, which contains information about the type of message being passed

The following table defines the functional groups of DSM-CC User-to-User and provides a brief description of each group:

**Table 2 – DSM-CC User-to-User Functional Groups**

Functional Group	Description
U-U Application Portability Interfaces (API)	Describes the U-U interfaces for application software programmer
U-U Service Interoperability Interfaces (SII)	Describes the U-U interfaces for network software programmer
U-U Application Boot Process	Describes a complete boot process including User-to-Network Session messages
U-U Object Carousel	U-U API for broadcast networks
Stream Descriptors	Descriptors that are inserted into the MPEG-2 transport stream to control or signal a change in the stream.

Transport in MPEG-2 Systems	Defines the method by which the messages and data shall be transported when these messages or data are transported in an MPEG-2 Systems Transport. This clause does not specify transport methods other than MPEG-2 Systems Transport.
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An implementation may be compliant with any or all of the functional groups as required by that implementation.

### 4.1 ISO/IEC Protocol Versions Implemented

ISO/IEC 13818-6 identifies the protocol version through the use of the `dsmccType` field in the message header of User to Network messages. If the protocol is modified, the `dsmccType` for that class of messages shall be assigned a new value. The following table (from ISO/IEC 13818-6 clause 2, table 2-2) identifies the current versions of the DSM-CC protocol:

Table 3 – DSM-CC Protocol Versions

dsmccType	Description
0x00	ISO/IEC 13818-6 Reserved
0x01	Identifies the message as an ISO/IEC 13818-6 User-to-Network configuration message.
0x02	Identifies the message as an ISO/IEC 13818-6 User-to-Network session message.
0x03	Identifies the message as an ISO/IEC 13818-6 Download message.
0x04	Identifies the message as an ISO/IEC 13818-6 SDB Channel Change Protocol message.
0x05	Identifies the message as an ISO/IEC 13818-6 User-to-Network pass-thru message.
0x06-0x7F	ISO/IEC 13818-6 Reserved
0x80-0xFF	User Defined message type.

ISO/IEC 13818-10:1999

For DSM-CC User-to-User, the protocol version is identified by the object version in the message header.

An implementation shall be described by completing a separate PICS proforma for each supported protocol version. The PICS for all versions of the protocol for which conformance is claimed, should be attached to each other, and used together.

### 4.2 Global Statement of Conformance

Table 4 – DSM-CC Functional Units

Item Number	Does the implementation support ...	Condition for status	Status	ISO/IEC 13818-6 reference	Implemented? Y = Yes, N = No, n/a = not applicable
Fu1	User-to-Network (U-N)		o.1	4	
Fu2	User-to-User (U-U)		o.1	5	
Fu3	Stream Descriptors	Fu2	o.1	8	
Fu4	Transport in MPEG-2 Systems	Fu1 or Fu2	o.1	9	

o.1 It is mandatory to support at least one of these options

Note: DSM-CC may be used in an interactive network and/or a broadcast network. Therefore some functional units are exclusive. In a broadcast environment the U-U Object Carousel will be implemented while in an interactive network the U-U Service Interoperability Interface will be implemented.

### 4.3 DSM-CC User-to-Network Functional Unit

#### 4.3.1 Roles of DSM-CC User-to-Network

Table 5 – User-to-Network Role PICS

Item	Role Does the implementation support...	Conditions for status	Status	ISO/IEC 13818-6 reference
R1	the client role		o.1	0.6
R2	the session & resource manager (SRM) role		o.1	0.6
R3	the server role		o.1	0.6
o.1 Support of one, and only one, of these options is required.				

#### 4.3.2 Major Capabilities of DSM-CC User-to-Network

Table 6 – DSM-CC User-to-Network Major Capability PICS

Item	Does the implementation support...	ISO/IEC 13818-6 reference	Role: Client		Role: Server		Role: SRM		Implemented? Y = Yes, N = No, n/a = not applicable		
			Conditions for status	Status	Conditions for status	Status	Conditions for status	Status	Client	Server	SRM
Mc1	User-to-Network (U-N)	3.1	Mc2 Not Mc2	O M	Mc2 Not Mc2	o		m			
Mc11	Configuration Procedures	3		c:o		c:o		c:o			
Mc12	Session Control Procedures	4		c:o1		c:m		c:m			
Mc13	Data Download Procedures	7		c:o		c:o		c:o			
Mc14	Switched Digital Broadcast / Channel Change Procedures	10		c:o1		c:o2		n/a			
Mc15	Pass-Thru Procedures	12		c:o		c:o		c:o			
o.1: It is mandatory to support at least one of these options											
o.2: It is mandatory to support at least one of these options											

#### 4.3.3 PDU Support for DSM-CC User-to-Network

Table 7 – PICS for DSM-CC User-to-Network PDU Support

Item	Does the implementation support...	ISO/IEC 13818-6 reference	Role: Client		Role: Server		Role: SRM		Implemented? Y = Yes, N = No, n/a = not applicable		
			Cond. for status	Status	Cond. for status	Status	Cond. for status	Status	Client	Server	SRM
Mc11	<b>User-to-Network Configuration Group</b>										
Pdu1	UNConfigRequest	3.3.1		m		m		m			
Pdu2	UNConfigIndication	3.3.3		m		m		m			
Pdu3	UNConfigResponse	3.3.4		m		m		m			
Pdu4	UNConfigConfirm	3.3.2		m		m		m			
Mc12	<b>User-to-Network Session Control Group</b>										
Pdu5	ClientSessionSetUpReqest	4.2.4.1		m		n/a		m			
Pdu6	ClientSessionSetUpConfirm	4.2.4.2		m		n/a		m			
Pdu7	ServerSessionSetUpIndication	4.2.4.3		n/a		m		m			
Pdu8	ServerSessionSetUpResponse	4.2.4.4		n/a		m		m			
Pdu9	ServerContinuousFeedSession Request	4.3.8.1		n/a		o		o			
Pdu10	ServerContinuousFeedSession Confirm	4.2.8.2		n/a		o		o			
Pdu11	ClientReleaseRequest	4.2.5.1		m		n/a		m			
Pdu12	ClientReleaseIndication	4.2.5.3		m		n/a		m			
Pdu13	ClientReleaseResponse	4.2.5.4		m		n/a		m			
Pdu14	ClientReleaseConfirm	4.2.5.2		m		n/a		m			
Pdu15	ServerReleaseRequest	4.2.5.5		n/a		m		m			
Pdu16	ServerReleaseIndication	4.2.5.7		n/a		m		m			



Pdu17	ServerReleaseResponse	4.2.5.8		n/a		m		m			
Pdu18	ServerReleaseConfirm	4.2.5.6		n/a		m		m			
Pdu19	ClientAddResourceIndication	4.2.6.1	If Pdu21 used	m		n/a		m			
Pdu20	ClientAddResourceResponse	4.2.6.2	If Pdu21 used	m		n/a		m			
Pdu21	ServerAddResourceRequest	4.2.6.3		n/a		o		m			
Pdu22	ServerAddResourceConfirm	4.2.6.4		n/a	If Pdu21 used	m		m			
Pdu23	ClientDeleteResourceIndication	4.2.7.1	If Pdu25 used	m		n/a		m			
Pdu24	ClientDeleteResourceResponse	4.2.7.2	If Pdu25 used	m		n/a		m			
Pdu25	ServerDeleteResourceRequest	4.2.7.3		n/a		o		m			
Pdu26	ServerDeleteResourceConfirm	4.2.7.4		n/a	If Pdu25 used	m		m			
Pdu27	ClientStatusRequest	4.2.9.1		m		n/a		m			
Pdu28	ClientStatusIndication	4.2.9.3		m		n/a		m			
Pdu29	ClientStatusResponse	4.2.9.4		m		n/a		m			
Pdu30	ClientStatusConfirm	4.2.9.2		m		n/a		m			
Pdu31	ServerStatusRequest	4.2.9.5		n/a		m		m			
Pdu32	ServerStatusIndication	4.2.9.7		n/a		m		m			
Pdu33	ServerStatusResponse	4.2.9.8		n/a		m		m			
Pdu34	ServerStatusConfirm	4.2.9.6		n/a		m		m			
Pdu35	ClientResetRequest	4.2.10.1		m		n/a		m			
Pdu36	ClientResetIndication	4.2.10.3		m		n/a		m			
Pdu37	ClientResetResponse	4.2.10.4		m		n/a		m			
Pdu38	ClientResetConfirm	4.2.10.2		m		n/a		m			
Pdu39	ClientSessionProceedingIndication	4.2.11.1		n/a		n/a		m			
Pdu40	ServerSessionProceedingIndication	4.2.11.2		n/a		m		m			
Pdu41	ClientSessionInProgress	4.2.14.1		n/a		n/a		o			
Pdu42	ServerSessionInProgress	4.2.14.2		n/a		o		o			
Pdu43	ServerResetRequest	4.2.10.5		n/a		m		m			
Pdu44	ServerResetIndication	4.2.10.7		n/a		m		m			
Pdu45	ServerResetResponse	4.2.10.8		n/a		m		m			
Pdu46	ServerResetConfirm	4.2.10.6		n/a		m		m			
Pdu47	ClientResetRequest	4.2.10.1		m		m		n/a			
Pdu48	ClientResetConfirm	4.2.10.2		m		m		n/a			
Pdu49	ClientResetIndication	4.2.10.3		m		m		n/a			
Pdu50	ClientResetResponse	4.2.10.4		m		m		n/a			
Pdu51	ClientConnectRequest	4.2.12.1		o		n/a		o			
Pdu52	ServerConnectIndication	4.2.12.2		n/a		o		o			
Pdu53	ServerSessionTransferRequest	4.2.13.3		n/a		o		o			
Pdu54	ServerSessionTransferIndication	4.2.13.5		n/a		o		o			
Pdu55	ServerSessionTransferResponse	4.2.13.6		n/a		o		o			
Pdu56	ServerSessionTransferConfirm	4.2.13.4		n/a		o		o			
Pdu57	ClientSessionTransferIndication	4.2.13.1		o		n/a		o			
Pdu58	ClientSessionTransferResponse	4.2.13.2		o		n/a		o			
Mc13	<b>User-to-Network Download</b>										
Pdu59	DownloadInfoRequest	7.3.1									
Pdu60	DownloadInfoResponse	7.3.2									
Pdu61	DownloadInfoIndication	7.3.2									
Pdu62	DownloadDataBlock	7.3.3									
Pdu63	DownloadDataRequest	7.3.4									
Pdu64	DownloadCancel	7.3.5									
Pdu65	DownloadServerInitiate	7.3.6									
Mc14	<b>User-to-Network Switched Digital Broadcast Channel Change protocol</b>										
Pdu66	SDBProgramSelectRequest	10.2.3.1									
Pdu67	SDBProgramSelectConfirm	10.2.3.2									

Pdu68	SDBProgramSelectIndication	10.2.3.3									
Pdu69	SDBProgramSelectResponse	10.2.3.4									
Mc15	<b>User-to-Network Pass-Through messages</b>										
Pdu70	PassThruRequest	12.2.2.1		0		0		0			
Pdu71	PassThruIndication	12.2.2.2		0		0		0			
Pdu73	PassThruReceiptRequest	12.2.2.3		0		0		0			
Pdu74	PassThruReceiptConfirm	12.2.2.4		0		0		0			
Pdu75	PassThruReceiptIndication	12.2.2.5		0		0		0			
Pdu76	PassThruReceiptResponse	12.2.2.6		0		0		0			

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## 4.3.4 Parameter support for DSM-CC User-to-Network Message Header

Table 8 – DSM-CC User-to-Network Message Header Parameters

Item	Parameter	ISO/IEC 13818-6 reference	Role: Client		Role: Server		Role: SRM	
			Status	Values allowed	Status	Values allowed	Status	Values allowed
Par1	protocolDiscriminator	2	m	0x11	m	0x11	m	0x11
Par2	dsmccType	2	m o	0x01-0x05 0x80-0xFF	m o	0x01-0x05 0x80-0xFF	m o	0x01-0x05 0x80-0xFF
Par3	messageId	3.3  4.2	m o  m m  m m  o  n/a	0x0001-0x0004 0x8000-0xFFFF  0x4010-0x4011 0x4020-0x4023 0x4032-0x4033 0x4042-0x4043 0x4060-0x4063 0x4070-0x4073 0x4082 0x4090 0x40A2-0x40A3 0x40B0  0x6000-0x7FFF  n/a	m o  n/a  m	0x0001-0x0004 0x8000-0xFFFF  0x8012-0x8013 0x8020-0x8023 0x8030-0x8031 0x8040-0x8041 0x8050-0x8051 0x8060-0x8063 0x8070-0x8073 0x8082 0x8092 0x80A0-0x80A3 0x80B0	m o  m  o	0x0001-0x0004 0x8000-0xFFFF  0x4010-0x4011 0x4020-0x4023 0x4032-0x4033 0x4042-0x4043 0x4060-0x4063 0x4070-0x4073 0x4082 0x4090 0x40A2-0x40A3 0x40B0  0x6000-0x7FFF  0x8012-0x8013 0x8020-0x8023 0x8030-0x8031 0x8040-0x8041 0x8050-0x8051 0x8060-0x8063 0x8070-0x8073 0x8082 0x8092 0x80A0-0x80A3 0x80B0  0xA000-0xFFFF
		7.3	m	0x1001-0x1006	m	0x1001-0x1006	n/a	
		10.2	m o	0x0001-0x0004 0x8000-0xFFFF	n/a		m o	0x0001-0x0004 0x8000-0xFFFF
		12.2	m o	0x0001-0x0006 0x8000-0xFFFF	m o	0x0001-0x0006 0x8000-0xFFFF	m o	0x0001-0x0006 0x8000-0xFFFF
Par4	transactionId	2	m	0x00 - 0x03	m	0x00 - 0x03	m	0x00 - 0x03
Par5	adaptationLength	2	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par6	messageLength	2	m	0x0000-0xFFFF	m	0x0000-0xFFFF	m	0x0000-0xFFFF
Par7	dsmccAdaptationHeader	2.1	o		o		m	
Par7.1	AdaptationType	2.1	c:m c:o	0x01, 0x02 0x80-0xFF	c:m c:o	0x01, 0x02 0x80-0xFF	c:m c:o	0x01, 0x02 0x80-0xFF
Par7.1.2	Reserved	2.1.1	c:m	0xFF	c:m	0xFF	c:m	0xFF
Par7.1.3	CaSystemId	2.1.1	c:m	(CA_system_ID in ISO/IEC 13818-1)	c:m	(CA_system_ID in ISO/IEC 13818-1)	c:m	(CA_system_ID in ISO/IEC 13818-1)
Par7.1.4	ConditionalAccessLength	2.1.1	c:m	TBA	c:m	TBA	c:m	TBA
Par7.1.5	conditionalAccessDataByte	2.1.1	c:m	TBA	c:m	TBA	c:m	TBA
Par7.2	dsmccUserId	2.1.2	o		o		o	
Par7.2.1	reserved	2.1.2	c:m	0xFF	c:m	0xFF	c:m	0xFF
Par7.2.2	userId	2.1.2	c:m	(values of clientId or serverId in U-N session messages)	c:m	(values of clientId or serverId in U-N session messages)	c:m	(values of clientId or serverId in U-N session messages)

c:m If the dsmccAdaptationHeader is supported, this parameter is mandatory.  
The support of the dsmccAdaptationHeader is optional.  
c:o If the dsmccAdaptationHeader is supported, this parameter is optional.  
The support of the dsmccAdaptationHeader is optional.

## 4.3.5 Parameter support for DSM-CC Compatibility Descriptors

Table 9 – DSM-CC Compatibility Descriptor Parameters

Item	Parameter	ISO/IEC 13818-6 reference	Role: Client		Role: Server		Role: SRM	
			Status	values allowed	Status	Values allowed	Status	Values allowed
Par1	compatibilityDescriptorLength	6.1	m	0x0000-0xFFFF	m	0x0000-0xFFFF	m	0x0000-0xFFFF
Par2	descriptorCount	6.1	m	0x0000-0xFFFF	m	0x0000-0xFFFF	m	0x0000-0xFFFF
Par3	descriptorType	6.1	m	0x00 - 0x02 0x40 - 0xFF	m	0x00 - 0x02 0x40 - 0xFF	m	0x00 - 0x02 0x40 - 0xFF
Par4	descriptorLength	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par5	specifierType	6.1	m	0x01 0x80 - 0xFF	m	0x01 0x80 - 0xFF	m	0x01 0x80 - 0xFF
Par6	specifierData	6.1	m	0x000000 - 0xFFFFFFF	m	0x000000 - 0xFFFFFFF	m	0x000000 - 0xFFFFFFF
Par7	model	6.1	m	0x0000-0xFFFF	m	0x0000-0xFFFF	m	0x0000-0xFFFF
Par8	version	6.1	m	0x0000-0xFFFF	m	0x0000-0xFFFF	m	0x0000-0xFFFF
Par9	subDescriptorCount	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par10	SubDescriptor	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par10.1	subDescriptorType	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par10.2	subDescriptorLength	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par10.3	additionalInformation	6.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF

## 4.3.6 Parameter support for DSM-CC User-to-Network Configuration messages

Table 10 – DSM-CC User-to-Network Configuration Message Parameters

Item	Parameter	ISO/IEC 13818-6 Reference	Role: Client		Role: Server		Role: SRM	
			Status	Values Allowed	Status	Values Allowed	Status	Values Allowed
<b>User-to-Network Configuration Parameters</b>								
Par1	<b>dsmccConfigurationParameters</b>							
Par1.1	MessageTimer	3.2.1	m	0x00000000 - 0xFFFFFFFF	m	0x00000000 - 0xFFFFFFFF	m	0x00000000 - 0xFFFFFFFF
Par1.2	SessionInProgressTimer	3.2.1	m	0x00000000 - 0xFFFFFFFF	m	0x00000000 - 0xFFFFFFFF	m	0x00000000 - 0xFFFFFFFF
Par1.3	MessageRetryCount	3.2.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par1.4	SessionIdAssignor	3.2.1	m	0x00 - 0x01	m	0x00 - 0x01	m	0x00 - 0x01
Par1.5	ResourceIdAssignor	3.2.1	m	0x00 - 0x01	m	0x00 - 0x01	m	0x00 - 0x01
Par1.6	MaximumForwardCount	3.2.1	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par2	<b>NetworkConfigurationParameters</b>							
Par2.1	UserId	3.2.2	m	(OSI NSAP address)	m	(OSI NSAP address)	m	(OSI NSAP address)
Par2.2	PrimaryServerId	3.2.2	m	(OSI NSAP address)	m	(OSI NSAP address)	m	(OSI NSAP address)
Par2.3	NetworkParameterLength	3.2.2	m	0x0000 - 0xFFFF	m	0x0000 - 0xFFFF	m	0x0000 - 0xFFFF
Par2.4	NetworkParameterDataByte	3.2.2	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par3	<b>UserDefinedConfigurationParameters</b>							
Par3.1	UserDefinedParameterLength	3.2.2	o	0x0000 - 0xFFFF	o	0x0000 - 0xFFFF	m	0x0000 - 0xFFFF
Par3.2	UserDefinedParameterDataByte	3.2.2	o	0x00 - 0xFF	o	0x00 - 0xFF	m	0x00 - 0xFF
<b>UNConfigRequest</b>								
Par4	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par5	DeviceId	3.3.1	m	0x000000000 - 0xFFFFFFFFFFFF	m	0x000000000 - 0xFFFFFFFFFFFF	m	0x000000000 - 0xFFFFFFFFFFFF
Par6	Reserved	3.3.1	m	0xFFFF	m	0xFFFF	m	0xFFFF

Par7	CompatibilityDescriptor	6	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)
<b>UNConfigConfirm</b>								
Par8	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)		(as specified by ISO/IEC 13818-6 subclause 4.3.4)		(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par9	DeviceId	3.3.2	m	0x000000000-0xFFFFFFFF		0x000000000-0xFFFFFFFF		0x000000000-0xFFFFFFFF
Par10	Response	3.3.2	m o	0x0000 - 0x0003 0x8000 - 0xFFFF		0x0000 - 0x0003 0x8000 - 0xFFFF		0x0000 - 0x0003 0x8000 - 0xFFFF
Par11	DsmccConfigurationParameters	3.2.1	m	(see Par1)	m	(see Par1)	m	(see Par1)
Par12	NetworkConfigurationParameters	3.2.2	m	(see Par2)	m	(see Par2)	m	(see Par2)
Par13	UserDefinedConfigurationParameters	3.3.2	o	(see Par3)	o	(see Par3)	o	(see Par3)
<b>UNConfigIndication</b>								
Par11	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par12	DeviceId	3.3.3	m	0x000000000-0xFFFFFFFF	m	0x000000000-0xFFFFFFFF	m	0x000000000-0xFFFFFFFF
Par13	Reason	3.3.3	m o	0x0000 - 0x0001 0x8000 - 0xFFFF	m o	0x0000 - 0x0001 0x8000 - 0xFFFF	m o	0x0000 - 0x0001 0x8000 - 0xFFFF
Par14	CompatibilityDescriptor	3.3.3	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	M	(as specified by ISO/IEC 13818-6 subclause 4.3.5)
Par15	DsmccConfigurationParameters	3.2.1	m	(see Par1)	m	(see Par1)	M	(see Par1)
Par16	NetworkConfigurationParameters	3.2.2	m	(see Par2)	m	(see Par2)	M	(see Par2)
Par17	UserDefinedConfigurationParameters	3.3.2	o	(see Par3)	o	(see Par3)	O	(see Par3)
<b>UNConfigResponse</b>								
Par18	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par19	UserId	3.3.4	m	(see OSI NSAP)	m	(see OSI NSAP)	m	(see OSI NSAP)
Par20	Response	3.3.4	m o	0x0000 - 0x0003 0x8000 - 0xFFFF	m o	0x0000 - 0x0003 0x8000 - 0xFFFF	m o	0x0000 - 0x0003 0x8000 - 0xFFFF
Par21	Reserved	3.3.4	m	0x00 - 0xFF	m	0x00 - 0xFF	m	0x00 - 0xFF
Par22	CompatibilityDescriptor	6	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)	m	(as specified by ISO/IEC 13818-6 subclause 4.3.5)

### 4.3.7 Parameter support for DSM-CC U-N Session messages

Table 11 – DSM-CC User-to-Network Session Message Parameters

Item	Parameter	ISO/IEC 13818-6 reference	Role: Client		Role: Server		Role: SRM	
			Status	Values allowed	Status	Values allowed	Status	Values allowed
<b>ClientSessionSetUpRequest</b>								
Par1	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par2	sessionId	4.2.4.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par3	Reserved	4.2.4.1	m	0xFFFF	n/a		m	0xFFFF
Par4	clientId	4.2.4.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par5	serverId	4.2.4.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)

Par6	UserData	4.2.4.1	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientSessionSetUpConfirm</b>								
Par7	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par8	sessionId	4.2.4.2	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par9	serverId	4.2.4.2	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par10	Response	4.2.4.2	m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF	n/a		m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF
Par11	Resources	4.2.4.2	m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)
Par12	UserData	4.2.4.2	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientReleaseRequest</b>								
Par13	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par14	sessionId	4.2.5.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par15	Reason	4.2.5.1	m o	0x0000x001B 0x8000 - 0xFFFF	n/a		m o	0x0000x001B 0x8000 - 0xFFFF reason
Par16	UserData	4.2.5.1	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientReleaseIndication</b>								
Par17	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par18	sessionId	4.2.5.3	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par19	reason	4.2.5.3	m o	0x0000x001B 0x8000 - 0xFFFF	n/a		m o	0x0000x001B 0x8000 - 0xFFFF
Par20	UserData	4.2.5.3	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientReleaseIndication</b>								
Par21	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par22	sessionId	4.2.5.4	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par23	Response	4.2.5.4	m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF	n/a		m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF
Par24	UserData	4.2.5.4	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientReleaseConfirm</b>								
Par25	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par26	sessionId	4.2.5.2	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)

Par27	response	4.2.5.2	m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF	n/a		m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF
Par28	UserData	4.2.5.2	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientAddResourceIndication</b>								
Par29	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par30	sessionId	4.2.6.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par31	Resources	4.2.6.1	m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)
Par32	UserData()	4.2.6.1	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientAddResourceResponse</b>								
Par33	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par34	sessionId	4.2.6.2	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par35	response	4.2.6.2	m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF	n/a		m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF
Par36	Resources	4.2.6.2	m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)
Par37	UserData()	4.2.6.2	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientDeleteResourceIndication</b>								
Par38	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par39	sessionId	4.2.7.1	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par40	reason	4.2.7.1	m o	0x00000x001B 0x8000 - 0xFFFF	n/a		m o	0x00000x001B 0x8000 - 0xFFFF
Par41	Resources	4.2.7.1	m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.3)
Par42	UserData()	4.2.7.1	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.2.2)
<b>ClientDeleteResourceResponse</b>								
Par43	dsmccMessageHeader()	2	m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3.4)
Par44	sessionId	4.2.7.2	m	(as specified by ISO/IEC 13818-6 subclause 4.3)	n/a		m	(as specified by ISO/IEC 13818-6 subclause 4.3)
Par45	response	4.2.7.2	m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF	n/a		m m m m m o	0x0000 - 0x000B 0x0010 - 0x0019 0x0020 - 0x002A 0x0030 - 0x0038 0x0041 - 0x0042 0x8000 - 0xFFFF
Par46	UserData()	4.2.7.2	o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)	n/a		o	(as specified by ISO/IEC 13818-6 subclause 4.2.2)

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