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Marlin - Export Parameter Specification

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1 Introduction

This document describes specifications of parameters used when exporting contents from Marlin to other DRM systems.

1.1 Terminology and Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this specification are to be interpreted as described in IETF RFC 2119 [RFC2119].

1.2 Abbreviations

AACS	Advanced Access Content System
CPRM	Content Protection for Recordable Media
DTCP	Digital Transmission Content Protection
MG-R	MagicGate Type-R
SAFIA	Security Architecture for Intelligent Attachment Device
VCPS	Video Content Protection System

1.3 References

1.3.1 Normative References

[AACSREC]	Advanced Access Content System (AACS), Recordable Video Book – Revision 0.91 or later.
[AACSBDDREC]	Advanced Access Content System (AACS), Blu-ray Disc Recordable Book – Revision v0.92 or later.
[AACSRLLREC]	Advanced Access Content System (AACS), Red Laser Recordable Video Book – Revision 0.92 or later.
[CPRM-DVD]	Content Protection for Recordable Media Specification, DVD Book, Revision 0.96, http://www.4centity.com/data/tech/spec/cprm-dvd096.pdf
[CPRM-SD-AUDIO]	Content Protection for Recordable Media Specification, SD Memory Card Book, SD-Audio Part, Revision 0.96, http://www.4centity.com/data/tech/spec/Cprm-sd-audio096.pdf
[CPRM-SD-VIDEO]	Content Protection for Recordable Media Specification, SD Memory Card Book, SD-Video Part, Revision 0.93, http://www.4centity.com/data/tech/spec/Cprm-sd-video-part-093-1.pdf
[DTCP14]	Digital Transmission Content Protection Specification Revision 1.4 Informational Version
[RFC2119]	S. Bradner, <i>Key words for use in RFCs to Indicate Requirement Levels</i> , IETF RFC 2119, March 1997 http://www.ietf.org/rfc/rfc2119.txt
[SAFIA-PDS1]	Security Architecture for Intelligent Attachment Device Specifications – Protocol and Data Structure Volume 1 - Version 1.10
[SAFIA-RPD-Audio]	Security Architecture for Intelligent Attachment Device Specifications – Recording and Playback Device for iVDR –Audio Stream Recording - Version 1.01
[SAFIA-RPD-TV]	Security Architecture for Intelligent Attachment Device Specifications – Recording and Playback Device for iVDR –TV Recording

[VCPS] Video Content Protection System for the DVD+R/+RW, Video
Recording Format System Description, Version 1.2, February 2005
<http://www.licensing.philips.com/vcps/>

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109 **1.3.2 Informative References**

[MGRSARAAD-Info] MagicGate Type-R for Secure Audio Recording for ATRAC Audio
Device Specification – Informational Version – ver0.9
[MGRSARMS-Info] MagicGate Type-R for Secure Audio Recording for Memory Stick and
Memory Stick PRO Specification – Informational Version – ver0.9
[MGRSVREMPR-
Info] MagicGate Type-R for Secure Video Recording Embedded Memory
with Playback and Recording Function Specification – Informational
Version – ver1.03
[MGRSVRMS-Info] MagicGate Type-R for Secure Video Recording for Memory Stick
PRO Specification – Informational Version – ver1.03
SAFIA Specification License Agreement. February 23, 2007

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111 **1.3.3 Byte/Bit Ordering**

112 All data variables in this specification are presented with the most significant bit (or
113 byte) on the left-hand side and the least significant bit (or byte) on the right-hand side
114 (network byte order), unless particular definition is given.

2 Export parameters

2.1 Target System ID and Action Result Parameters

2.1.1 Export to DTCP Action

To support exporting to DTCP Sinks, a license can implement the Export action. The Target System ID defined to represent an export to a DTCP sink is:

```
urn:marlin:action:export:target:dtcp-1-4
```

2.1.1.1 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing the DTCP descriptor to use for the content, as defined in Digital Transmission Content Protection Specification Revision 1.4 Informational Version [DTCP14], Annex B, Section B.2:

Syntax	Size	Formats
Private_data_type{		
Reserved	1	bslbf
Retention_Move_mode	1	bslbf
Retention_State	3	bslbf
EPN	1	bslbf
DTCP_CCI	2	bslbf
Reserved	5	bslbf
Image_Constraint-Token	1	bslbf
APS	2	bslbf
}		

2.1.2 Export to CPRM Action

CPRM is a recording method that can be used to record digital video/audio content to removable or portable media including DVD-R/-RW [CPRM-DVD], SD Memory Cards [CPRM-SD-VIDEO], [CPRM-SD-AUDIO], and so on.

This chapter describes identifiers and parameters that are used to export from Marlin to CPRM.

2.1.2.1 Export to CPRM for DVD

2.1.2.1.1 Target System ID

The Target System ID defined to represent an export to a CPRM for DVD sink is:

```
urn:marlin:action:export:target:cprm-dvd-0-9-6
```

2.1.2.1.2 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing following information:

Byte	Bit	7	6	5	4	3	2	1	0
0		CGMS		APSTB		Reserved	EPN	Reserved	

CGMS, APSTB, EPN and Reserved SHALL be specified according to [CPRM-DVD].

2.1.2.2 Export to CPRM for SD Video

2.1.2.2.1 Target System ID

The Target System ID defined to represent an export to a CPRM for SD Video sink is:

urn:marlin:action:export:target:cprm-sd-video-0-9-3

2.1.2.2.2 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing following information:

Byte	Bit	7	6	5	4	3	2	1	0
0		Initial Move Control Information		Current Move Control Information		Copy Count Control Information			
1		Reserved		APSTB		Reserved			

Initial Move Control Information, Current Move Control Information, Copy Count Control Information, APSTB and Reserved SHALL be specified according to [CPRM-SD-VIDEO].

2.1.2.3 Export to CPRM for SD Audio

2.1.2.3.1 Target System ID

The Target System ID defined to represent an export to a CPRM for SD Audio sink is:

urn:marlin:action:export:target:cprm-sd-audio-0-9-6

2.1.2.3.2 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing following information:

Bit	7	6	5	4	3	2	1	0
Byte	Reserved						CCI	
0								
1	Move Control Information				Check-out Control Information			

CCI, Move Control Information, Check-out Control Information and Reserved SHALL be specified according to [CPRM-SD-AUDIO].

2.1.3 Export to VCPS Action

To support exporting to VCPS Sinks **Error! Reference source not found.**, a license can implement the Export action. The Target System ID defined to represent an export to a VCPS sink is:

urn:marlin:action:export:target:vcps-1-2

2.1.3.1 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing the following information:

Bit	7	6	5	4	3	2	1	0
Byte	APS		CGMS1		CGMS2		EPN1	EPN2
0	Reserved							
1								
2								
3								

Where APS stands for Analog Protection System trigger bits, CGMS for Copy Generation Management System control bits EPN for Encryption Plus Non-Assertion bit

APS, CGMS, EPN and Reserved SHALL be specified according to **Error! Reference source not found.**

2.1.4 Export to MG-R Action

2.1.4.1 Export to MG-R(SVR) for Memory Stick PRO

The parameters that are used to export from Marlin to MG-R(SVR) for Memory Stick PRO are described below.

urn:marlin:action:export:target:mgr-svr-ms-1-0-3

Bit	7	6	5	4	3	2	1	0
Byte	CCI		EPN	APSTB		ICT	Reserved	
0								

CCI, EPN, APSTB, ICT and Reserved SHALL be specified according to [MGRSVRMS-Info].

2.1.4.2 Export to MG-R(SAR) for Memory Stick and Memory Stick PRO

The parameters that are used to export from Marlin to MG-R(SAR) for Memory Stick and Memory Stick PRO are described below.

urn:marlin:action:export:target:mgr-sar-ms-0-9-0

Bit	7	6	5	4	3	2	1	0
Byte								

0	Copyright Protection Information	Copy Generation Information	Reserved	Copy Attribution Information	Reserved
1	Number of check-out Information				

Copyright Protection Information, Copy Generation Information, Copy Attribution Information and Reserved SHALL be specified according to [MGRSARMS-Info].
Number of check-out Information SHALL be specified according to [MGRSARMS-Info].

2.1.4.3 Export to MG-R(SVR) for EMPR

The parameters that are used to export from Marlin to MG-R(SVR) for EMPR are described below.

urn:marlin:action:export:target:mgr-svr-empr-1-0-3

Bit	7	6	5	4	3	2	1	0
Byte	CCI		EPN	APSTB		ICT	Reserved	
0								

CCI, EPN, APSTB, ICT and Reserved SHALL be specified according to [MGRSVREMPR-Info].

2.1.4.4 Export to MG-R(SAR) for ATRAC Audio Device

The parameters that are used to export from Marlin to MG-R(SAR) for ATRAC Audio Device are described below.

urn:marlin:action:export:target:mgr-sar-aad-0-9-0

Bit Byte	7	6	5	4	3	2	1	0
0	Copyright Protection Information	Copy Generation Information	Reserved		Copy Attribution Information		Reserved	
1	Number of check-out Information							

Copyright Protection Information, Copy Generation Information, Copy Attribution Information and Reserved SHALL be specified according to [MGRSARAAD-Info].
Number of check-out Information SHALL be specified according to [MGRSARAAD-Info].

2.1.5 Export to SAFIA for iVDR TV Recording

The parameters that are used to export from Marlin to SAFIA for iVDR TV Recording are described below.

urn:marlin:action:export:target:safia-ivdr-tv-1-1-0

Bit	7	6	5	4	3	2	1	0
Byte								

0	FM	COUNT			MU	MB
1	Content Type					
2	MC	DOT	ICT	APS	Reserved	
3	Reserved					

FM, COUNT, MU, MB and Reserved SHALL be specified according to [SAFIA-PDS1].
Content Type, MC, DOT, ICT and APS SHALL be specified according to [SAFIA-RPD-TV].

2.1.6 Export to SAFIA for iVDR Audio Recording

The parameters that are used to export from Marlin to SAFIA for iVDR Audio Recording are described below.

urn:marlin:action:export:target:safia-ivdr-audio-1-0-1

Bit	7	6	5	4	3	2	1	0
Byte	FM		COUNT				MU	MB
0	Reserved							
1								
2								
3								

FM, COUNT, MU, MB and Reserved SHALL be specified according to [SAFIA-PDS1].

2.1.7 Export to AACs Action

2.1.7.1 Export to AACs Blu-ray Disc Recordable for BD-R/RE

2.1.7.1.1 Target System ID

The Target System ID defined to represent an export to AACs Blu-ray Disc Recordable for BD-R/RE [AACsBDREC] is:

urn:marlin:action:export:target:aacs-rec-bd

2.1.7.1.2 Action Result Parameters

In the Extended Status result for the Describe, Check and Perform methods, the ExportInfo parameter SHALL be an Integer value containing following information:

Bit Byte	7	6	5	4	3	2	1	0
0	Reserved					EPN	CCI	
1	Reserved		Trusted _Input	Image_C onstraint _Token	Digital _Only_ Token	APS		
2~15	Reserved							

EPN, CCI, Trusted_Input , Image_Constraint_Token, Digital_Only_Token, APS and Reserved SHALL be specified according to [AACsBDREC].

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280 **2.1.7.2 Export to AACSL Blu-ray Disc Recordable for Red Laser Media**

281 **2.1.7.2.1 Target System ID**

282 The Target System ID defined to represent an export to AACSL Blu-ray Disc
283 Recordable for Red Laser Media defined in Chapter 3 of [AACSLREC] is:

284

urn:marlin:action:export:target:aacs-rec-bdrl

285 **2.1.7.2.2 Action Result Parameters**

286 In the Extended Status result for the Describe, Check and Perform methods, the
287 ExportInfo parameter SHALL be an Integer value containing following information:

288

Bit Byte	7	6	5	4	3	2	1	0
0	Reserved					EPN	CCI	
1	Reserved		Trusted _Input	Image_C onstraint _Token	Digital _Only_ Token	APS		
2~15	Reserved							

289

290 EPN, CCI, Trusted_Input , Image_Constraint_Token, Digital_Only_Token, APS and
291 Reserved SHALL be specified according to Chapter 3 of [AACSLREC].

2.2 ActionParameters for Marlin IPTV-ES

The following ActionParameters for Marlin IPTV-ES Specification are defined:

- 00h: Export to DTCP.
- 01h: Export to CPRM for DVD.
- 02h: Export to CPRM for SD Video.
- 03h: Export to CPRM for SD Audio.
- 04h: Export to MG-R (SVR) for Memory Stick PRO.
- 05h: Export to MG-R (SAR) for Memory Stick and Memory Stick PRO.
- 06h: Export to VCPS.
- 07h: Export to MG-R (SVR) for EMPR.
- 08h: Export to MG-R (SAR) for ATRAC Audio Device.
- 09h: Export to SAFIA for iVDR TV Recording
- 0Ah: Export to SAFIA for iVDR Audio Recording
- 0Bh: Export to AACs Blu-ray Disc Recordable for BD-R/RE.
- 0Ch: Export to AACs Blu-ray Disc Recordable for Red Laser Media.