

MOST

Media Oriented Systems Transport

Multimedia and Control
Networking Technology

MOST FunctionBlock NetworkMaster

Rev 3.0.2

03/2011

MOSTCO CONFIDENTIAL

See page 3 for the terms of disclosure



Legal Notice

COPYRIGHT

© Copyright 1999 - 2011 MOST Cooperation. All rights reserved.

LICENSE DISCLAIMER

Nothing on any MOST Cooperation Web Site, or in any MOST Cooperation document, shall be construed as conferring any license under any of the MOST Cooperation or its members or any third party's intellectual property rights, whether by estoppel, implication, or otherwise.

CONTENT AND LIABILITY DISCLAIMER

MOST Cooperation or its members shall not be responsible for any errors or omissions contained at any MOST Cooperation Web Site, or in any MOST Cooperation document, and reserves the right to make changes without notice. Accordingly, all MOST Cooperation and third party information is provided "AS IS". In addition, MOST Cooperation or its members are not responsible for the content of any other Web Site linked to any MOST Cooperation Web Site. Links are provided as Internet navigation tools only.

MOST COOPERATION AND ITS MEMBERS DISCLAIM ALL WARRANTIES WITH REGARD TO THE INFORMATION (INCLUDING ANY SOFTWARE) PROVIDED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

In no event shall MOST Cooperation or its members be liable for any damages whatsoever, and in particular MOST Cooperation or its members shall not be liable for special, indirect, consequential, or incidental damages, or damages for lost profits, loss of revenue, or loss of use, arising out of or related to any MOST Cooperation Web Site, any MOST Cooperation document, or the information contained in it, whether such damages arise in contract, negligence, tort, under statute, in equity, at law or otherwise.

FEEDBACK INFORMATION

Any information provided to MOST Cooperation in connection with any MOST Cooperation Web Site, or any MOST Cooperation document, shall be provided by the submitter and received by MOST Cooperation on a non-confidential basis. MOST Cooperation shall be free to use such information on an unrestricted basis.

TRADEMARKS

MOST Cooperation and its members prohibit the unauthorized use of any of their trademarks. MOST Cooperation specifically prohibits the use of the MOST Cooperation LOGO unless the use is approved by the Steering Committee of MOST Cooperation.

SUPPORT AND FURTHER INFORMATION

For more information on the MOST technology, please contact:

MOST Cooperation

Administration
Bannwaldallee 48
D-76185 Karlsruhe
Germany

Tel: (+49) (0) 721 966 50 00

Fax: (+49) (0) 721 966 50 01

E-mail: contact@mostcooperation.com

Web: www.mostcooperation.com



This Specification is Confidential Information of the MOST Cooperation. It may only be disclosed to member companies. Member companies wishing to discuss these Specifications with suppliers or other third parties must ensure that a commercially standard form of non-disclosure agreement has been previously executed by the party receiving such Specifications. Use of these Specifications may only be for purposes for which they are intended by the MOST Cooperation. Unauthorized use or disclosure is a violation of law.

© Copyright 1999 - 2011 MOST Cooperation
All rights reserved

MOST is a registered trademark

BIBLIOGRAPHY	5
DOCUMENT HISTORY	6
1 INTRODUCTION	7
2 FBLOCK DEFINITION	7
2.1 NetworkMaster (FBlockID=0x02).....	7
2.1.1 Configuration (0xA00)	9
2.1.2 CentralRegistry (0xA01).....	11
2.1.3 OwnConfigInvalid (0xA03).....	12
2.1.4 SystemAvail (0xA10).....	13

Bibliography

All documents, which this MOST document has references to, are listed here with the actual revision this document is referring to.

Number	Document	Revision
[1]	MOST Specification	3.0
[2]	MOST FBlock template GeneralFBlock	3.0.3

Document History

Changes NetWorkMaster FBlock 3.0.1 to NetworkMaster FBlock 3.0.2

Change Ref.	FktID	Changes
3.0.2-001	General	Filled the SymbolicName attribute for all Enums.
3.0.2-002	0xA00	Configuration: - Corrected invalid parameter sequence for ConfigurationControl.
3.0.2-003	0xA02	SaveConfiguration: - Function deleted.

Changes NetWorkMaster FBlock 3.0.0 to NetworkMaster FBlock 3.0.1

Change Ref.	FktID	Changes
3.0.1-001	General	- Removed obsolete FunctionSection attributes.
3.0.1-002	0xA00	- Configuration: Removed Get OPType. - Added statement that DeltaFBlockList has to fit in a single telegram.
3.0.1-003	0xA03	- OwnConfigurationInvalid: New function.

Changes NetWorkMaster FBlock 2.5.1 – Speed Grade MOST50 to NetworkMaster FBlock 3.0.0

Change Ref.	FktID	Changes
3.0.0-001	General	- Added Occurrence attribute to all functions. - Corrected ParamPos from 1 to 0 for parameterless OPTypes. - Modified boundary descriptor range--now 0..93.
3.0.0-002	0xA00	- Changed function class of Configuration from Unclassified Property to Sequence Property. - In function Configuration, added new Enum value NewExt to ConfigurationControl. "New" becomes reserved. Added RxTxLog to DeltaFBlockList. - Added missing OPType Get for function Configuration. - Removed remark that Configuration messages must not be segmented. This is described in more detail in the MOST Specification.
3.0.0-003	0xA01	- Modified InstID range for CentralRegistry to also include 0x00.
3.0.0-004	0xA03	- Removed function Boundary.
3.0.0-005	0xA10	- Added function SystemAvail.

Changes NetWorkMaster FBlock 2.5.1 - Speed Grade MOST25 to NetworkMaster FBlock 2.5.1 – Speed Grade MOST50

Change Ref.	FktID	Changes
2.5.1-001	-	- Created NetworkMaster for speed grade MOST50, based on NetworkMaster 2.5.1 (speed grade MOST25).
2.5.1-002	0xA03	- Function Boundary: Modified range of Boundary Descriptor - previously 6-15, now 0-29.

1 Introduction

This document contains the specification of an FBlock. MOST FBlocks are standardized and maintained by MOST workgroup Device Architecture (WG_DA). In order to speed up the process of making new Function Blocks available, every FBlock will be updated individually as required.

2 FBlock Definition

2.1 NetworkMaster (FBlockID=0x02)

In a MOST network there exists exactly one NetworkMaster. The NetworkMaster administrates the Central Registry that represents an image of the physical and logical system configuration.

In addition to the functions contained in this document, the following functions are also part of the NetworkMaster FBlock. They exist in the GeneralFBlock template Rev. 3.0.2 and are included here by reference:

FktID	Function name
0x000	FktIDs
0x010	Version
0x011	FBlockInfo

Function Overview		
FktID	Name	Occurrence
0xA00	Configuration	Mandatory
0xA01	CentralRegistry	Mandatory
0xA03	OwnConfigInvalid	Optional
0xA10	SystemAvail	Optional

2.1.1 Configuration (0xA00)

Occurrence: Mandatory

Informs each device about the state of the network configuration. The Status is reported by a broadcast message.

2.1.1.1 Format of Function

Function classes: Sequence Property

FBlock	Function	OPType	Parameter
NetworkMaster (0x02)	Configuration (0xA00)	Status	ConfigurationControl , DeltaFBlockList
		Error	ErrorCode, ErrorInfo

2.1.1.2 Parameter

ConfigurationControl

Validity of the Central Registry.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x04	0x00	NotOK	NotOK
		0x01	OK	OK
		0x02	Invalid	Invalid
		0x03	Reserved	Reserved
		0x04	NewExt	NewExt

DeltaFBlockList

List of changed FBlocks. The DeltaFBlockIDList must not contain more entries than a single transfer can transport. If there are more FBlocks, several single transfers must be performed.

Basis data type	Length	Condition	Description
Stream		ConfigurationControl = 0x00...0x01	-
		ConfigurationControl = 0x02	Content: FBlockID (repeated), InstID (repeated) Stream structure: {FBlockID1, InstID1} {, FBlockID2, InstID2} ...
		ConfigurationControl = 0x04	Content: RxTxLog (repeated), FBlockID (repeated), InstID (repeated) Stream structure: {RxTxLog1, FBlockID1, InstID1} {, RxTxLog2, FBlockID2, InstID2} ...

FBlockID

Functional address of an FBlock.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...0xFF	1	none

InstID

Distinction of identical FBlocks in a system.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...0xFF	1	none

RxTxLog

Calculated by each device when the network is initialized:
RxTxLog = 0x0100 + RxTxPos.

May also be defined later by the user with range:
[0x0010...0x02FF] and [0x0500...0x0FEF]

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

2.1.2 CentralRegistry (0xA01)

Occurrence: Mandatory

Query of information about an FBlock from the Central Registry. The parameter InstID is optional. After a Get command without any parameter, the NetworkMaster responds with all registry entries.

2.1.2.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
NetworkMaster (0x02)	CentralRegistry (0xA01)	Get	FBlockID , InstID
		Status	FBlockInfoList
		Error	ErrorCode, ErrorInfo

2.1.2.2 Parameter

FBlockID

Functional address of an FBlock.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	1...0xFF	1	none

InstID

Distinction of identical FBlocks in a system.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Byte	0	0...0xFF	1	none

FBlockInfoList

List of information about the FBlocks.

Basis data type	Length	Condition	Description
Stream		-	Content: RxTxLog (repeated), FBlockID (repeated), InstID (repeated) Stream structure: {RxTxLog1, FBlockID1, InstID1} {, RxTxLog2, FBlockID2, InstID2}

RxTxLog

Calculated by each device when the network is initialized:
 $RxTxLog = 0x0100 + RxTxPos$.

May also be defined later by the user with range:
 [0x0010...0x02FF] and [0x0500...0x0FEF]

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

2.1.3 OwnConfigInvalid (0xA03)

Occurrence: Optional

This function is used to

1. inform the NetworkMaster that a NetworkSlave has received a Configuration.Status(Invalid) message that affect FBlocks the NetworkSlave has registered in the Central Registry. This will prompt the NetworkMaster to start the "own configuration invalid" handling, as described in the MOST Specification.
2. inform the NetworkSlave when the NetworkMaster has completed the "own configuration invalid" handling.

2.1.3.1 Format of Function

Function classes: Unclassified Method

FBlock	Function	OPType	Parameter
NetworkMaster (0x02)	OwnConfigInvalid (0xA03)	StartResultAck	SenderHandle , State , DeviceID
		ErrorAck	SenderHandle , ErrorCodes, ErrorInfo
		ProcessingAck	SenderHandle
		ResultAck	SenderHandle , State

2.1.3.2 Parameter

SenderHandle

Unique identifier of the requesting task within the device.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

State

The state of the "own configuration invalid" handling.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	Active	"own configuration invalid" handling active
		0x01	Finished	"own configuration invalid" handling completed

DeviceID

The DeviceID of the NetworkSlave that received the Configuration.Status(Invalid) message that affects its own FBlocks.

Basis data type	Exp.	Range of values	Step	Unit
Unsigned Word	0		1	none

2.1.4 SystemAvail (0xA10)

Occurrence: Optional

After System State OK is entered the NetworkMaster shall query the property ImplFBlockIDs of each device that either reported an empty or non empty list as FBlockIDs.Status before.

Furthermore, the NetworkMaster shall also query the property ImplFBlockIDs after it has received an FBlockIDs.Status message from a device that has not replied to ImplFBlockIDs.Get at all or has replied with ImplFBlockIDs.Error 0x41 before.

A system integrator may decide to delay that request according to the specific needs.

By comparing the list of implemented FBlocks with the list of registered FBlocks in the Central Registry, the NetworkMaster can determine the current state of the system configuration and makes this information available via the function SystemAvail.

This function is optional.

2.1.4.1 Format of Function

Function classes: Unclassified Property

FBlock	Function	OPType	Parameter
NetworkMaster (0x02)	SystemAvail (0xA10)	Get	-
		Status	DeviceAvail , FBlockAvail
		Error	ErrorCode, ErrorInfo

2.1.4.2 Parameter

DeviceAvail

Device availability.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x02	0x00	Incomplete	Incomplete At least on node is not fully operable: All nodes have answered but at least one node has answered with the error 0x41.
		0x01	Complete	Complete All nodes are fully operable: All available nodes have reported their implemented FBlocks through the property ImplFBlockIDs.
		0x02	Error	Error At least one node has not answered to ImplFBlockIDs or has returned an error not equal to 0x41.

FBlockAvail

FBlock availability.

Basis data type	Range of values	Code	Symbolic Name	Description
Enum	0x00...0x01	0x00	Incomplete	Incomplete All other cases (Not all FBlocks reported by the property ImplFBlockIDs of the available devices are currently registered in the CentralRegistry or the state of DeviceAvail is still Incomplete.)
		0x01	Complete	Complete DeviceAvail is Complete and all FBlocks reported by ImplFBlockIDs are registered in the Central Registry.