ETG.1020 EtherCAT Protocol Enhancements

Please return form to g.beckmann@ethercat.org

Date	Document
18.11.2014 17.11.2015 01.12.2015	ETG1020_v1i1i0_S_D_ProtocolEnhancements.pdf

ETG member	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF ETG on each comment submitted
OMRON		Table1		Code0x006, what does “Slave needs BOOT-INIT transition” means	I think it can be deleted because “Slave needs BOOT-INIT transition” is only specific action for Semi devices but the code may also be used by other slaves which may have different recovering behavior, e.g. re-download, power cycle	Proposal: **Meaning:** Delete “Slave needs BOOT-INIT transition” Adapt: SII/EEPROM information does not match Firmware **Description:** if the slave checks if the SII/EEPROM content matches the firmware, e.g. process data description or revision number, and detects a mismatch Init -> PreOp, final state ErrInit Accepted by TAB e-mail voting 10.12.2014
OMRON		Table1	E	Code0x002E, “Cycle time to small”	“Cycle time too small”	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
ETG		Table 1		Code 0x0070 Description wrong: ~~Detected~~ Configured Module Ident List (0xF030) and ~~Configured~~ Detected Module Ident list (0xF050) does not match	correct	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
OMRON		Table 60	E	some Footnote numbers “2” are strange (too big in size and wrong position)	Correct	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
ETG	10			There are additional objects defined in ETG.5001 that need this procedure	Add objects 0xF01x, 0xF02x and 0xF03x to the list of objects	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014

ETG member	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF ETG on each comment submitted
OMRON	11.1			What does 0-terminator mean? Does it apply for ALL single entry with flexible length? (OCTET_STRING", "UNICODE_STRING", "ARRAY_OF_*", "VISIBLE_STRING", Byte stream, international language string, etc)		Proposal: Entries with flexible length, as specified in table 93, may have a shorter length than given as the maximum size of the entry. For entries with data type VISIBLE_STRING the following applies: Write access - Master can send a VISIBLE_STRING without 0-terminator: slave shall add the 0-terminator if the written VISIBLE_STRING is shorter than the maximum entry size - Master can also write VISIBLE_STRING with 0-terminator Read access: - If the master reads a VISIBLE_STRING the slave should return the VISIBLE_STRING with its actual length. - Bytes following the 0-terminator shall be zero. Accepted by TAB e-mail voting 10.12.2014
OMRON	11.2	Item 6		That means some objects are allowed not to support CompleteAccess. How does a master/tool know which object does not support CompleteAccess? By ESI "Object/Flags@SdoAccess"? I believe a tool/master should use "Object/Flags@SdoAccess"		Proposal: Add new: Even when the slave supports complete access there still may be objects that cannot be accessed via complete access. For descriptions about complete access in ESI, see ETG2000. If Object/Flags@SdoAccess=CompleteAccess in ESI, the device shall support complete access to the object. Accepted by TAB e-mail voting 10.12.2014
OMRON	11.2	Item 7		what should a master/tool use to identify whether an object supports CompleteAccess or not? The specific DataTypes of entries in an object or ESI "Object/Flags@SdoAccess"?		Proposal: See above Accepted by TAB e-mail voting 10.12.2014

ETG member	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF ETG on each comment submitted
OMRON	11.2	Item 10		, also some other objects may not support CompleteAccess. E.g. very big objects with thousands bytes, supporting CompleteAccess will require extra RAM cost. I believe ETG should allow other objects not mentioned explicitly here not support CompleteAccess. For those objects without supporting CompleteAccess, it is required to indicate in ESI by "Object/Flags@SdoAccess=SubIndexAccess" (default value).		Proposal: See above Accepted by TAB e-mail voting 10.12.2014
OMRON	11.2			concerns about item 11, 12 of Subclause 11.2. My assumption is the 2 rules are for some special objects such as 0x10F3. My concern is if the 2 rules apply for all objects, the usability would be very bad for a tool: it would receive data packages without knowing how to decode them.	My proposal: add NOTE: -- this applies only for 0x1F03, (and other known ETG-defined objects) -- this shall not be used for other objects.	Proposal: The concerns are reasonable. But it is up to the slave vendor if a complete access makes sense for an object or not. An EtherCAT master need to rely on the structure information provided by the ESI (or slave application). Accepted by TAB e-mail voting 10.12.2014
OMRON	11.3		E	typo in 11.3 title: SDI -> SDO		Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
OMRON	13.1	Note		NOTE: A state machine for Diagnosis Handling is under preparation When the state machine is supposed to be available?		Proposal: the diagnosis state machine handling is implicitly described by the existing diagnosis chapters. Delete Note Accepted by TAB e-mail voting 10.12.2014
OMRON	13.2	Table 27 SI 3		Writing = 0: (support optional) the slave will clear all messages		Proposal: Add , i.e. resetting SI2, SI3, SI4 and Si5 Bit 5 Accepted by TAB e-mail voting 10.12.2014

ETG member	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF ETG on each comment submitted
OMRON	13.2	Table 27 SI 5		If any bit is changeable by write, SI_5 is writable. For bits not changeable by write of Bit0, Bit3 and Bit4, the slave shall check with its respective default bit values. If all are matched, the slave responds positively		Proposal: Add: When writing SI5, the readonly bits should match the current values. Bit5 shall be "don't care". The slave should send an abort with 0x6090030 Value exceeded in case the readonly bits differ from current values. Accepted by TAB e-mail voting 10.12.2014
Beckhoff	13.3.	Table 28		There can be additional data types for DiagMessage parameter Bit 0-11 = Data type Index of the data type of parameter 1 0x0001: BOOLEAN; ESI specifier: %c 0x0002: INTEGER8; ESI specifier: %d 0x0003: INTEGER16; ESI specifier: %d 0x0004: INTEGER32; ESI specifier: %d 0x0005: UNSIGNED8; ESI specifier: %u 0x0006: UNSIGNED16; ESI specifier: %u 0x0007: UNSIGNED32; ESI specifier: %u	Bit 0-11 = Data type Index of the data type of parameter 1 Data type IDs: 0x0001: BOOLEAN 0x0002: INTEGER8 0x0003: INTEGER16 0x0004: INTEGER32 0x0005: UNSIGNED8 0x0006: UNSIGNED16 0x0007: UNSIGNED32 0x0008 : REAL32 0x0011 : REAL64Ae 0x0015 : INTEGER64 0x001B : UNSIGNED64 The corresponding text parameters and formatting are specified in the ETG.2000.	Proposal: accept Accepted by TAB e-mail voting 10.12.2014
ETG	14.3	Table 32		Typo Name: RxPDO Parameter	Change to TxPDO Parameter	Proposal: accept Accepted by TAB e-mail voting 10.12.2014
OMRON	14.4.			the last extension is allowed to have size of 240 according to Rule3. There is no need for "end of entry" in the last 2 examples.	Please delete "end of entry" from the last 2 examples	Proposal: accept Accepted by TAB e-mail voting 30.11.2015
OMRON	19.2.1.1.6		E	renumber items starting from 1, not current 5		Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
SEW	23			Data types are already defined in ETG.1000.6	Add note that this chapter enhances the data type definition of ETG.1000.6	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014

ETG member	Clause/ Subclause	Paragraph Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF ETG on each comment submitted
OMRON	23	Table 93		I have a concern about explanation in Table93 for VISUAL_STRING. It may conflict with the definition in ETG2000 and our discussions.	Please clarify	I propose to delete “ByteSize = xxx+1” in table 93 and adapt description for xxxx as follows: VISIBLE_STRING with xxxx equals n (in HEX) OCTET_STRING with xxxx equals n+1 (in HEX) UNICODE_STRING with xxxx equals n+1 (in HEX) Accepted by TAB e-mail voting 10.12.2014
OMRON	23	Table 92, 93 94		Why do you put GUID for some DataTypes, not for others in Table92, 93, 94? What are the GUID is supposed to be used?	add a GUID for the other data types as well	Proposal: accepted Accepted by TAB e-mail voting 10.12.2014
OMRON	23	Table 93		Table 93 contains strange texts, e.g {18071995-????????????-xxxx}, in explanations about Index 0x0009, 0x000A and 0x000B		Proposal: GUID is missing in the last cell of the table heading. xxxx is described in the corresponding cell, i.e. "with xxxx (in HEX) is length of data." Accepted by TAB e-mail voting 10.12.2014
OMRON	23	Table 93		2. Can GUID be used in ESI? If yes, it will cause a compatible problem: almost all tool can not support it. To avoid the trouble, I would like to propose adding a NOTE: using GUID in ESI is reserved.		Proposal: reject There might be objects/entries, that are of type GUID. E.g. we already defined some in the EAP specification. Therefore a definition of a GUID data type is useful and should be allowed as any other BaseDataType. For the configuration tools: this is a feature enhancement, which needs an enhancement in the configuration tools. However, in the moment there are no standardizes objects in the EtherCAT specs, hence it might not be necessary to be supported any time soon in the tools. Agreed by TAB e-mail voting 30.11.2015