

# Industrial automation systems — Manufacturing Message Specification —

## Part 1: Service definition

### TECHNICAL CORRIGENDUM 1

*Systèmes d'automatisation industrielle — Spécification de messagerie industrielle —*

*Partie 1: Définition de service*

RECTIFICATIF TECHNIQUE 1

Technical corrigendum 1 to International Standard ISO/IEC 9506-1:1990 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 5, *Architecture and communications*.

Page 19

#### Subclause 7.2

In the VMD Object model, replace

Attribute: Logical Status (STATE-CHANGES-ALLOWED, NO-STATE-CHANGES-ALLOWED, LIMITED-SERVICES-PERMITTED, SUPPORT-SERVICES-ALLOWED)

Attribute: List Of Capabilities

Attribute: Physical Status (OPERATIONAL, PARTIALLY-OPERATIONAL, INOPERABLE, NEEDS-COMMISSIONING)

with

Attribute: Logical Status (STATE-CHANGES-ALLOWED, NO-STATE-CHANGES-ALLOWED, LIMITED-SERVICES-PERMITTED, SUPPORT-SERVICES-ALLOWED)

Attribute: Physical Status (OPERATIONAL, PARTIALLY-OPERATIONAL, INOPERABLE, NEEDS-COMMISSIONING)

Attribute: Local Status Detail  
Attribute: List Of Capabilities

Page 24

### Subclause 7.2.14

Renumber subclause 7.2.14 as 7.2.15.

Page 24

### Subclause 7.2.14

Insert a new subclause:

#### 7.2.14 Local Status Detail

This attribute is a bitstring which represents additional detail about the status of the VMD as specified by the vendor of the device. The maximum length of the bitstring is 128 bits. The contents of this attribute is a local matter and not a subject for further standardization.

Page 25

### Subclause 7.3.2

In NOTE line 2, change "semaphonre" to semaphore".

Page 33

### Subclause 8.2.3.2

Insert a note at the end of the subclause:

NOTE — The set of Parameter CBBs used in this parameter only contains those that can be represented by a binary value. The value of the NEST Parameter CBB is conveyed in the Data Structure Nesting Level parameter.

Page 35

### Subclause 8.2.4.2.

Insert a note at the end of the subclause:

NOTE — The set of Parameter CBBs used in this parameter only contains those that can be represented by a binary value. The value of the NEST Parameter CBB is conveyed in the Data Structure Nesting Level parameter.

Page 46

### Subclause 9.2.1.2.3

Replace the text with:

This optional parameter, of type bitstring, shall convey the value of the Local Status Detail attribute of the VMD object. The VMD object is defined in 7.2.

Page 49

### Subclause 9.4.1.2.2

In the third line, change

"List Of Names"

to

"List Of Identifier"

Page 50

### Subclause 9.4.2

Replace with the following:

The responding MMS-user shall determine which objects at the responding MMS-user have a name attribute value that satisfies the class and scope specified in the Extended Object Class and Object Scope parameters of the indication service primitive. The responding MMS-user shall return this list of object names in the List Of Identifier parameter of the response service primitive. The elements of the List Of Identifier shall be ordered as determined by the collating sequence of the International Reference Version of ISO 646. If the Continue After parameter is not present in the indication service primitive, the List of Identifier shall begin with the first name, as determined by the collating sequence of the International Reference Version of ISO 646. Otherwise, the List Of Identifier shall begin with the first name after the name specified in the Continue After parameter, using the ordering described above. The More Follows parameter shall be returned with the value determined as described above.

The responding MMS-user shall not issue a Result(-) parameter to indicate that no objects of the requested class and scope exist. Instead, a Result(+) parameter shall be issued with an empty List Of Identifier.

NOTE — Repeated usage of this service with the Continue After parameter does not guarantee a list that is consistent in time with any other instance of use of this service. This service returns a segment of the list of object names for which the starting point is based on the Continue After parameter.

Page 69

### Subclause 10.8.1

In table 22, change the List Of Capabilities parameter from "M" to "U".

Page 69

#### Subclause 10.8.1.1.2

Change the text to the following:

This optional parameter, of type list of character string, shall be used, if present, as the value of the List Of Capabilities parameter in the subsequent Initiate Download Sequence service request.

Page 70

### Subclause 10.8.2

In the second sentence, delete the phrase

, List Of Capabilities.

Insert the following sentence after the second sentence:

If the List Of Capabilities parameter is present in the service indication, then this value shall be used as the value of the parameter of the same name for the Initiate Download Sequence service request; otherwise, the value of this parameter of the Initiate Download Sequence service request shall be a local matter.

Add the following note after this paragraph:

NOTE 1 — If the Domain Content at the responding MMS-user was the result of a previous Domain Upload, the value of the List Of Capabilities parameter retained from that upload will normally be used as the value of the List Of Capabilities parameter in the Initiate Download Sequence service request.

Change "NOTE" to "NOTE 2".

Page 71

**Subclause 10.9.2**

Add the following sentence after the first sentence:

The value of the List Of Capabilities shall be retained and associated with the load data.

Page 73

**Subclause 10.10.1**

In table 24, change the List Of Capabilities parameter from "M" to "U".

Page 73

**Subclause 10.10.1.1.2**

Change the text to the following:

This optional parameter, of type list of character string, shall be used, if present, in the creation of the named Domain.

Page 77

**Subclause 10.11.2**

Add the following sentence after the third sentence:

The value of the List Of Capabilities shall be retained and associated with the load data.

Page 86

**Subclause 11.2.1**

In table 28, replace "Resusable" with "Reusable".

Page 119

**Subclause 12.4.3**

Insert the following between OBJECT-NON-EXISTANT and the note:

OBJECT-VALUE-INVALID - The proposed value is not consistent with the set of allowable values for this object.

Page 136

### Subclause 12.13.2

In the fourth paragraph replace "is" with "shall be".

Page 142

### Subclause 12.16.2

In the fourth paragraph replace "is" with "shall be".

Page 154

### Subclause 13.1.2

Replace the second paragraph of the text for 'Remaining Control Time Out' with the following text:

When a Semaphore Entry Object transitions from the Entry State QUEUED to OWNER and the initial value of the Remaining Control Time Out attribute is not FOREVER, then a Remaining Control Time Out Timer associated with this object shall be initialized with this value and activated. The timer, when activated, shall start decrementing from its initial value to zero. The granularity supported by the VMD shall be specified in the static conformance statement of the PICS. A granularity of one millisecond shall not be required.

Upon reaching zero, a Control Time Out shall occur and the Event Condition which is referenced by the Event Condition Reference attribute of the associated Semaphore shall be triggered. Further actions on this time out are dependent on values of other attributes of the Semaphore Entry object.

If the value of the Entry State parameter is OWNER and the value of the Abort On Time Out parameter is true, then the Application Association shall be aborted with a provider abort and the Semaphore Entry shall be relinquished or changed to HUNG state depending on the value of the Relinquish if Connection Lost parameter.

If the value of the Entry State parameter is OWNER and the value of the Abort On Time Out parameter is false, then the Semaphore Entry shall be changed to the HUNG state.

If the value of the Entry State parameter is HUNG, then the Semaphore Entry shall be relinquished.

When a Semaphore entry is relinquished, the Semaphore Entry Object shall be deleted, its reference in the associated Semaphore's List Of Owners shall be deleted, and the Remaining Control Time Out Timer shall be deactivated and the decrementation process shall cease.

Page 160

**Subclause 13.2.2**

In item j) delete the phrase "and the associated Control Timer activated".

Page 161

**Subclause 13.2.2**

In item b) replace

by a Cancel service or a control time out has occurred;

with

by a Cancel service;

Page 163

**Subclause 13.4.2**

In item g), replace in all three occurrences

Entry Condition

with

Event Condition

Page 173

**Subclause 13.9.2**

In item b) replace

The specified delay has expired, the service request has been cancelled by a Cancel service, a time out has occurred, as a result of local action, or for any other reason before control of the semaphore is effective.

with

The specified delay has expired before control of the semaphore is effective, the service request has been cancelled by a Cancel service, a time out has occurred, as a result of local action, or for any other reason.

In item j) delete the phrase "and the associated timer activated".

Page 183

### **Subclause 15.1.1.1**

In the last paragraph of the Monitored Variable Reference replace

shall never be invoked

with

shall be invoked

In the description of Monitored Variable Reference, delete the last sentence of the last paragraph. This is the sentence that reads:

In this case, the Procedure for Event Transition Processing (see 15.1.4.2) shall never be invoked.

Page 184

### **Subclause 15.1.1.2**

Delete item j) from the list, and renumber the succeeding items accordingly.

Page 185

### **Subclause 15.1.3**

Delete the third sentence "A client MMS-user ..... by the VMD."

Page 186

### **Subclause 15.1.3.1**

Delete the Attribute Acknowledgement Event Condition Reference in the Object Model.

Page 187

**Subclause 15.1.3.1**

In Event Condition Transitions, second paragraph in the third line, change

TriggerEvent service, when

to

TriggerEvent service or when

Delete the last phrase of the sentence starting in the 4th line:

", or when the specified network-triggered...."

Page 188

**Subclause 15.1.3.1**

Delete the paragraph for Attribute Acknowledgement Event Condition Reference.

Page 189

**Subclause 15.1.3.1**

In note 1, delete the last phrase of the last sentence starting at the end of the 4th line "or invoking the Procedure for .....".

In the description of ACK-ALL change note 3 to:

Acknowledgement should never be required for an event notification specifying a transition into or out of the DISABLED state

Page 194

**Subclause 15.1.4.2.4**

In item b) replace

7.2.10.2

with

7.2.11.2

Page 194

#### **Subclause 15.1.4.2.5**

In the second paragraph replace

7.2.10.2

with

7.2.11.2

Page 196

#### **Subclause 15.1.4.3,**

Delete the first four paragraphs and Figure 14. Delete items f) and g) in the list of specific actions in this subclause. Renumber all following figures and references to them in the text accordingly.

Page 202

#### **Subclause 15.3.2**

In paragraph 1, 5th line, change

If the deletion occurs as a result of deletion of a ...

to

If the deletion occurs for any reason including the deletion of a ...

Insert the following at the end of the subclause:

If an error occurs in the deletion of any of the specified objects, then a negative response shall be returned. Failure to delete an object with the MMS deletable attribute equal to false shall not be deemed an error.

Page 211

#### **Subclause 15.9.2**

Insert the following after the first paragraph:

If an error occurs in the deletion of any of the specified objects, then a negative response shall be returned. Failure to delete an object with the MMS deletable attribute equal to false shall not be deemed an error.

Page 215

**Subclause 15.12.1**

In table 78, remove the parameter Acknowledgement Event Condition from the Argument.

Page 216

**Subclause 15.12.1.1.7**

Delete the entire subclause.

Page 216

**Subclause 15.12.1.3.1**

Remove "or the Acknowledgement Event Condition parameter,".

Add to the end of the last sentence "or an Event Action Object".

Pages 216 to 217

**Subclause 15.12.2**

In the last paragraph on page 216/first paragraph on page 217 delete the third sentence:

If the Acknowledgement Event Condition .....Event Condition object.

Page 217

**Subclause 15.12.2**

Delete all of item i) and renumber subsequent items.

Page 220

**Subclause 15.13.2.3**

Replace text with the following:

When the value of the Scope of Delete parameter is equal to SPECIFIC, the VMD shall execute the procedure for the Event Enrollment Deletion (see 15.13.2.4), for each of the specified Event Enrollment objects, for which the value of the MMS Deletable attribute is equal to true. A positive response shall be issued, indicating the count of candidate Event Enrollment objects which were not deleted due to the presence of the value of FALSE in the MMS Deletable attribute.

If an error occurs in the deletion of any of the specified objects, then a negative response shall be returned. Failure to delete an object with the MMS deletable attribute equal to false shall not be deemed an error.

Page 221

**Subclause 15.14.1**

In table 80, remove the parameter Acknowledgement Event Condition from the Result(+).

Page 224

**Subclause 15.14.1.2.1.10.**

Delete the entire subclause.

Page 232

**Subclause 15.18**

Delete the third paragraph.

Page 233

**Subclause 15.18.1**

In table 84, remove the last parameter of the Argument, Acknowledgement Event Condition.

Page 233

**Subclause 15.18.1.1.4**

Delete the entire subclause.

Page 234

**Subclause 15.18.2**

Delete the 3rd and 4th sentences.

If the Acknowledgement.....of this object.

Page 249

**Subclause 15.23.1**

Remove the heading AKEC and the three paragraphs which describe it.