

**Telecommunications and Information Exchange Between Systems**

**ISO/IEC JTC 1/SC 6**

|  |   |
|--|---|
| <b>Document Number:</b>  | N13937  |
| <b>Date:</b>   | 2009-05-04  |
| <b>Replaces:</b>   |   |
| <b>Document Type:</b>  | National Body Contribution  |
| <b>Document Title:</b>   | UK's Comments on 6N13917 Text for PDAM comment, PDAM 2 of ISO/IEC 16512-2 (X.603.1) |
| <b>Document Source:</b>  | National Body of UK   |
| <b>Project Number:</b>   |   |
| <b>Document Status:</b>  | For consideration at the SC 6/WG 7 Tokyo meeting.                                   |
| <b>Action ID:</b>  | FYI   |
| <b>Due Date:</b>   |   |
| <b>No. of Pages:</b>   | 46  |
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## Template for comments and secretariat observations

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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### General UK comments

|      |     |  |    |  |  |  |
|------|-----|--|----|--|--|--|
| GB 1 | All |  | ge | <p><u>Background</u></p> <p>At the SC 6 meeting in Montreux it was recognised that the lack of codes to identify node types and control types rendered the exchange of protocol messages inoperable. Draft Corrigendum 1 was issued to overcome this. It was assumed at the time that the changes could be made by the addition of a few tables with minimal additional text to reference the tables.</p> <p>It was also thought that there were missing code values for some sub-control types but, because details were not available at the time, the issue of PDAM 2 was authorized.</p> <p><u>Temporary numbering of sub-clauses, figures and tables</u></p> <p>We note that the changes in PDAM 2 are more extensive than originally anticipated and that they involve significant changes to the numbering of figures and tables.</p> <p>Because of the extent of these changes and potential discussion in the meeting, we suspect that the numbers will not be stable until (after) the end of the WG 7 in Tokyo. We propose that up to this time temporary numbers are allocated to keep the text/figures/tables in order without having to make constant global numbering changes. For example, the UK comments have used</p> <p><u>8.3.0</u> for a new sub-clause before the current 8.3.1;</p> <p><u>Figure 68A</u> for a new figure between the current Tables 68 and 69; and</p> <p><u>Table 2A</u> for a new table between Tables 2 and 3.</p> |  |  |
|------|-----|--|----|--|--|--|

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|                 |  |   |   | <p>If a figure or table has been deleted, the table number has been left blank.</p> <p>The global numbering changes to obtain a sequential numbering scheme should be left until the end of the editing process. It is essential at this stage that all references to figures are checked in addition to allocating the revised numbers.</p> <p><u>Structure of the revised PDAM text</u></p> <p>The extent of the changes, together with those arising from the UK comments, will result in a major Amendment to ISO/IEC 16512-2. The proposed changes nearly all occur in the following sub-clauses:</p> <p>7.3. Message formats; and</p> <p>8.3. Encoding rules to represent values used in RMCP-2.</p> <p>In order to minimise the change instructions, we propose that the Amendment should contain complete replacements for sub-clause 7.3 and 8.3 and that the changes in DCor.1 should be incorporated in Amendment 2. A resolution will be required in Tokyo to merge the two ITTF projects.</p> <p>In conjunction with these comments, the UK is submitting a preliminary draft for the revised PDAM which contains revised text for 7.3 and 8.3. It does not contain the rationale for the specific changes as this would become too unwieldy for the extensive changes. It would be more appropriate to add a generalized reason for the issue of the Amendment to the Foreword of the standard. This will be part of the preliminary material of the standard and can be added at a later stage.</p> |                           |   |

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|                 |  |   |   | <p><u>UK comments</u></p> <p>The UK comments have been limited to issues raised in PDAM 2 and to other issues that are necessary for the operation of the protocol. They do not include a revision of the whole standard in response to the Defect Reports in 6N 13784: this would be a long term process that would hold up the publication of the essential changes.</p> <p>The UK has two major technical comments on PDAM 2:</p> <p>GB 4. <u>Deletion of the AUTH control.</u></p> <p>This control is incompatible with the authentication controls in secure RMCP-2 in FPDAM 1 that are used in conjunction with those in basic RMCP 2 (ISO/IEC 16512-2). The proposed AUTH control in PDAM 2 identifies a particular hash/MAC algorithm without indicating how or where it is applied.</p> <p>GB 5. <u>New command codes for SYSINFO commands</u></p> <p>The codes for individual SYSINFO sub-control types cannot be added together to give unique SI_CMD_CODES. This means that the decomposition of the command codes could result in a wrong response to the command.</p> <p>These comments would have resulted in a vote of disapproval if PDAM 2 had been issued for ballot.</p> <p>Additional technical comments include</p> <p>GB 6. Splitting the COMMAND control into RP_COMMAND and SI_COMMAND cocontrols</p> <p>GB 10. Deletion of SI_PROV_QOS and ST_PERCV_QOS sub-controls</p> <p>GB 12. Splitting the UPTIME sub-control into SI_UPTIME</p> |                           |   |

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|                 |  |   |   | <p>and HMA_UPTIME sub-controls</p> <p>GB 13. Incorporating the TREE control into the SYSINFO control and adding SI_ to its sub-control titles.</p> <p>GB 15 and 16. Redrafting the ROOTPATH sub-control text and code values.</p> |                           |   |

## UK comments relating to References

CONVENTION relating to references to clause number:  
References to items in PDAM 2 are indicated in **red**, and  
references to ISO/IEC 16512-2 are indicated in black, e.g.  
**1) 2**

|             |             |  |  |   |                                     |  |
|-------------|-------------|--|--|---|-------------------------------------|--|
| <b>GB 2</b> | <b>1) 2</b> |  |  | <p><u>References</u></p> <p>X.601, X.605, X.606, X.606.1 are not used in the text of the standard and they should be deleted from Clause 2.</p> <p>This action was approved in Defect Report 003 on X.603.1   ISO/IEC 16512-2 in SC6 N 13784. Although this action was approved for inclusion in Amendment 1, it was not included in FPDAM 1. It is more appropriate that the instruction to delete these references should be included in Amendment 2.</p> | Delete these references. See below. |  |
|-------------|-------------|--|--|---|-------------------------------------|--|

## Clause 2. Normative references

*Delete the following references:*

– **ITU-T Recommendation X.601 (2000), *Multi-peer communications framework*.**

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- ITU-T Recommendation X.605 (1998) | ISO/IEC 13252:1999, *Information technology – Enhanced communications transport service definition.*
- ITU-T Recommendation X.606 (2001) | ISO/IEC 14476-1:2002, *Information technology – Enhanced communications transport protocol: Specification of simplex multicast transport.*
- ITU-T Recommendation X.606.1 (2003) | ISO/IEC 14476-2:2003, *Information technology – Enhanced communications transport protocol: Specification of QoS management for simplex multicast transport.*

|             |               |  |    |  |  |  |
|-------------|---------------|--|----|--|--|--|
| <b>GB 3</b> | <b>1)</b> 2.2 |  | te | <u>Additional references</u><br>Comment GB 4 proposes deletion of AUTH control. If accepted, references to RFC 1321 and RFC 2014 will not be needed for basic RMCP-2.<br>References related to authentication will be dealt with in the response to ISO/IEC 16512-2/FPDAM 1. | Do not insert references to RFC 1321 and RFC 2014. |  |
|-------------|---------------|--|----|--|--|--|

### UK comments relating to withdrawal of AUTH control

|             |                 |  |    |  |                         |  |
|-------------|-----------------|--|----|--|-------------------------|--|
| <b>GB 4</b> | <b>2)</b> 7.3.1 |  | te | <u>Deletion of AUTH control</u><br>See below | Remove the AUTH control |  |
|-------------|-----------------|--|----|--|-------------------------|--|

Comment relating to comment GB 4:

A revised AUTH control has been included in PDAM 2:

|                        |                   |          |                 |
|------------------------|-------------------|----------|-----------------|
| 0                      | 8                 | 16       | 31              |
| Control Type<br>(AUTH) | Length (variable) | AUTH_ALG | Reserved (0x00) |

**Figure 46 – AUTH control**

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This control does not deliver authentication information. It just identifies a particular hash/MAC algorithm using an AUTH\_ALG attribute. It is not clear where and how this algorithm is applied.

The following extracts from the message specifications in clause 7 are incompatible with the new control.

| Sub-clause | Message   | AUTH text extract   |
|------------|-----------|---|
| 7.3.1      | SUBSREQ   | Authentication information is delivered by using AUTH control   |
| 7.3.2      | SUBSANS   | AUTH control is used to update session auth information if necessary. If updated authentication information is not necessary, it just copies the auth data sent from the subscriber |
| 7.3.5      | HSOLICIT  | AUTH control is used to verify the solicitor is in the same RMCP-2 session  |
| 7.3.6      | HANNOUNCE | AUTH control is used to verify the HANNOUNCE sender is in the same RMCP-2 session.  |
| 7.3.7      | HLEAVE    | AUTH control is used to verify the solicitor is in the same RMCP-2 session.   |
| 7.3.16     | HB        | To refresh authentication information during session, new authentication information can be delivered using AUTH control  |

The AUTH control in PDAM 2 is incompatible with the authentication controls for the secure RMCP-2 protocol in FPDAM 1:

| Protocol      | Message     | Control   | Parameter  | Values              |
|---------------|-------------|-----------|------------|---------------------|
| Basic RMCP-2  | SUBSREQ/ANS | AUTH      | AUTH_ALG   | Hash/MAC algorithms |
| Secure RMCP-2 | SECAGREQ    | AUTH_ALG  | AUTH_ID    | Hash/MAC algorithms |
|               | SECLIST     | AUTH_MECH | AUTH_NAME  | MEM_AUTH            |
|               | RELREQ      | AUTH*     | AUTH_NAME* | MEM_AUTH*           |

\* These components are specific to the RELANS message in the secure RMCP-2 protocol

This control type conflicts with the AUTH\_ALG control in the secure RMCP-2 protocol. Secure RMCP-2 uses the SUBSANS control to subscribe to the secure RMCP-2 session and it does not need the AUTH control because it has

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separate controls for both the authentication mechanism and the hash/MAC algorithms in the security agreement messages (SECAGREQ, SECLIST and SECAGANS).

The use of AUTH\_NAME for hash/MAC algorithms in basic RMCP-2 is confusing as the AUTH\_NAME control is used in secure RMCP for authentication mechanisms (currently only the MEM\_AUTH algorithm) in secure RMCP-2 and the attributes for hash/MAC algorithms in secure RMCP-2 are listed under the AUTH\_ALG attribute codes.

We consider that the simplest way to overcome these inconsistencies is to assume that basic RMCP does not use authentication and to remove the AUTH controls from basic RMCP-2. This will leave secure RMCP-2 with defined authentication procedures based on agreed algorithms without the need to reference basic RMCP-2.

If this is accepted, the following changes GB 4a – GB 4i will need to be made to ISO/IEC 16512-2

| Instructions for modification of ISO/IEC 16512-2 |        |                   |    |  |   |  |
|--|--------|-------------------|----|--|---|--|
| <b>GB 4a</b>                                     | 2      |                   | te |  | Delete RFC 1321 and 2104 from the list of references              |  |
| <b>GB 4b</b>                                     | 4      |                   | te |  | Delete AUTH from the list of abbreviations                        |  |
| <b>GB 4c</b>                                     | 6.1.2  | Paragraph 1       | te |  | At the end of paragraph 1 delete 'and authentication information' |  |
| <b>GB 4d</b>                                     | 7.3.1  | Figures 46 and 47 | te |  | Delete AUTH control and figures 46 and 47                         |  |
| <b>GB 4e</b>                                     | 7.3.2  |                   | te |  | Delete AUTH control   |  |
| <b>GB 4f</b>                                     | 7.3.5  |                   | te |  | Delete AUTH control   |  |
| <b>GB 4g</b>                                     | 7.3.6  |                   | te |  | Delete AUTH control   |  |
| <b>GB 4h</b>                                     | 7.3.7  |                   | te |  | Delete AUTH control   |  |
| <b>GB 4i</b>                                     | 7.3.16 |                   | te |  | Delete AUTH control   |  |

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| <b>GB 4j</b>    | A.3  |   | te                                      |  | In first text box delete 'of valid Auth' |   |
| <b>GB 4k</b>    | D.2.3  | Last<br>paragraph                                     | te                                      |  | Delete 'such as AUTH information'.       |   |
| <b>GB 4l</b>    | DCor.1   | Table 2 ter   | te                                      |  | Delete table entry for AUTH              |   |

### UK Comments related to COMMAND controls

|             |       |         |    |   |  |  |
|-------------|-------|---------|----|---|--|--|
| <b>GB 5</b> | 8.3.4 | Table 6 | te | <p><u>Command controls for SYSINFO in relaying and status queries</u></p> <p>The analysis for sub-control types for the SYSINFO control shown in <u>Appendix 1</u> indicates that addition of control codes (in item 9) of PDAM 2 to produce codes for the combination of several sub-control types can give the same command control value for several different combinations.</p> <p>This means that it is not possible for the recipient of the command to deconstruct the code into its individual components. This is not acceptable.</p> <p>The rationale for this action is provided in Appendix 1 to this document.</p> | <p>Add proposed new text below. This adds a separate table to clause 8 giving 16-bit codes that provide unique values for all combinations of the constituent code values.</p> |  |
|-------------|-------|---------|----|---|--|--|

### Proposed new text:

*Add the following text and table immediately after Table 6:*

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Table 6A lists the command codes corresponding to the sub-controls for the SYSINFO control. Combinations of different sub-controls may be indicated by adding together the corresponding individual command codes.

NOTE – The 16-bit format column in Table 6A demonstrates how the command code values can be added to give unique combinations. The bit positions can be considered as representing individual sub-control types and the 1 or 0 values can be interpreted as presence or absence of these sub-control types.

**Table 6A – SI\_COMMAND codes for SYSINFO**

| Sub-control Type | Sub-control Code | Command Code | 16-bit format       |
|------------------|------------------|--------------|---------------------|
| SI_UPTIME        | 0x12             | 0x00 01      | 0000 0000 0000 0001 |
| SI_DELAY         | 0x13             | 0x00 02      | 0000 0000 0000 0010 |
| SI_ROOM_CMA      | 0x14             | 0x00 04      | 0000 0000 0000 0100 |
| SI_SND_BW        | 0x35             | 0x00 08      | 0000 0000 0000 1000 |
| SI_SND_PACKET    | 0x36             | 0x00 10      | 0000 0000 0001 0000 |
| SI_SND_BYTES     | 0x37             | 0x00 20      | 0000 0000 0010 0000 |
| SI_RCV_BW        | 0x45             | 0x00 40      | 0000 0000 0100 0000 |
| SI_RCV_PACKET    | 0x46             | 0x00 80      | 0000 0000 1000 0000 |
| SI_RCV_BYTES     | 0x47             | 0x01 00      | 0000 0001 0000 0000 |
| SI_TREE_CONN     | 0x68             | 0x02 00      | 0000 0010 0000 0000 |
| SI_TREE_MEMBER   | 0x69             | 0x04 00      | 0000 0100 0000 0000 |

NOTE – The sub-control code column has been added for cross reference to Table 6.

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|-------------|--|--|----|--|---|--|
| <b>GB 6</b> | 7.3.8,<br>7.3.10,<br>7.3.12,<br>7.3.16 |  | te | <p><u>New command controls</u></p> <p>The new codes for COMMAND controls for SYSINFO proposed in GB 5 require a separate specification for COMMAND controls for ROOTPATH information.</p> <p>We propose the introduction of two new control types to replace the current CONTROL command:</p> <p>RP_COMMAND</p> <p>SI_COMMAND.</p> | <p>Add specification of RP_COMMAND in 7.3.8 (RELREQ message) replacing the current COMMAND control in 7.3.8.</p> <p>Add specification of SI_COMMAND in 7.3.10 (STREQ message) replacing the current COMMAND control in 7.3.10.</p> <p>See replacement text below.</p> |  |
|-------------|--|--|----|--|---|--|

### Replacement text for RP\_COMMAND in 7.3.8.

- RP\_COMMAND**

When CMA needs some information from PMA, it can ask PMA by using **RP\_COMMAND** control within RELREQ message.

For example, whenever a MA connects to PMA during joining or parent switching procedure, the MA needs information *from\_root path* of its new PMA for network diagnosis and loop detection. In this case, the MA uses then COMMAND control for ROOTPATH of newly attached PMA.

Figure 66 shows **the RP\_COMMAND** control format. The description of each field is as follows:

- Control type* – This field represents the type of control.
- Length* – It represents the length of the control data and the size is 4.
- Command code* – This 2-byte length field contains an integer value to indicate the specific reason for the leaving.

The encoded value and their meaning are indicated in ~~8.3~~ **Table 4**.

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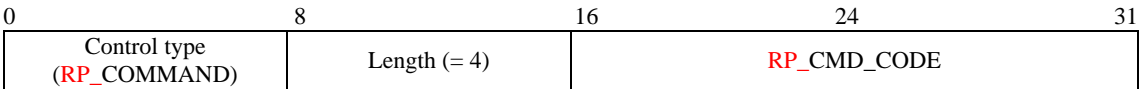


Figure 66 – RP\_COMMAND control

Replacement text for SI\_COMMAND in 7.3.10

• SI\_COMMAND

STREQ message should include the SI\_COMMAND control shown in Figure 68A to express what status report it requires. To get MA's status, SM uses SI\_COMMAND control within STREQ message. Table 6 summarizes considerable commands for status monitoring and its expected reports.

Figure 68A shows the format of the SI\_COMMAND control. The description of each field is as follows:

- Control type* – This field represents the type of control.
- Length* – It represents the length of the control data and the size is 4.
- Command code* – This 2-byte length field contains an integer value to indicate the combination of sub-control types required in the status report. ~~specific reason for the leaving. The encoded value and their meaning are indicated in 8.3. The SI\_CMD\_CODE value is obtained by adding together the command codes in Table 6A for the individual sub-controls that are required.~~

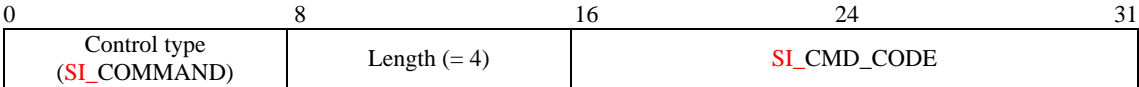


Figure 68A – SI\_COMMAND control

Replacement text for SI\_COMMAND in 7.3.12

1 MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

2 Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

- SI\_COMMAND**

When PMA asks its CMAs of its status, it includes the **SI\_COMMAND** control in its STCOLREQ message. ~~Table 6 summarizes considerable commands for status monitoring.~~ The **SI\_COMMAND** control is specified in 7.3.10 and its format is shown in Figure 68A.

Replacement text for RP\_COMMAND in 7.3.16

- RP\_COMMAND**

When a PMA tries to recover from network partition, its descendants may start network fault recovery procedure due to HB expectation timeout. In other words, a single point of partitioning may cause a fault recovery chain effect. So it is necessary to generate a pseudo-HB message to delay its descendants' fault recovery procedure and means of notifying its pseudo-HB message to its descendants.  
RP\_PSEUDO command in Table 4 is used to indicate that the ROOTPATH in HB message with this **RP\_COMMAND** is a pseudo ROOTPATH. The format of the **RP\_COMMAND** is shown in Figure 66.

## UK comments relating to SYSINFO sub-controls

|             |                                |               |    |   |   |  |
|-------------|--------------------------------|---------------|----|---|---|--|
| <b>GB 7</b> | <b>7.3.3,<br/>7.3.4, 7.3.6</b> |               |    | <u>SYSINFO and SYSTEMINFO controls</u><br><br>SYSTEMINFO is used in PPROBREQ, PPROBANS and HANNOUNCE messages. SYSINFO is used in other messages.<br><br>We suggest that SYSINFO is used throughout (as in FCD 16512-3) | Change all occurrences of SYSTEMINFO to SYSINFO.<br><br>This can be done by use of the 'replace' function in Word.  |  |
| <b>GB 8</b> | <b>6) 7.3.11</b>               | Figure 76 bis | te | <u>SI_DELAY sub-control</u><br><br>We cannot approve the addition of this sub-control as it stands. It is defined in terms of Edge MAs that are not   | Replace the specification of this sub-control with a definition that relates to basic RMCP-2. Otherwise, delete it. |  |

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB   | Proposed change by the MB | Secretariat observations<br>on each comment submitted |
|                 |  |   |   | used in RMCP-2.<br>This should be specified in terms of the ROOT.  |                           |   |
| <b>GB 9</b>     | <b>6)</b> 7.3.11                                     | Figures 76<br>bis – octies                            | te                                      | <u>SI_SND and SI_RCV sub-controls</u><br><br>The addition of these sub-controls requires further<br>changes. See below |                           |   |

We note that that the addition of sub-controls for

|               |               |
|---------------|---------------|
| SI_SND_BW     | SI_RCV_BW     |
| SI_SND_PACKET | SI_RCV_PACKET |
| SI_SND_BYTES  | SI_RCV_BYTES  |

duplicates information in SI\_PROV\_QOS and ST\_PERCV\_QOS controls:

SI\_PROV\_QOS and ST\_PERCV\_QOS parameters with the send and receive sub-controls

|              |  |  |
|--------------|--|--|
| SI_PROV_QOS  | Incoming BW of NIC<br>Outgoing BW of NIC   | SI_RCV_BW<br>SI_SND_BW   |
| SI_PERCV_QOS | Number of PMAs<br>Number of CMAs<br>Total incoming bytes<br>Total incoming packets<br>Total outgoing bytes<br>Total incoming packets | No equivalent<br>SI_ROOM_CMA<br>SI_RCV_BYTES<br>SI_RCV_PACKETS<br>SI_SND_BYTES<br>SI_SND_PACKETS |

However, the use of SI\_SND\_BW, etc, does provide a direct link with the command codes, which is hard to find in the published standard. This will also correspond with the sub-controls in RMCP-3.

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

If the proposed SI\_SND\_BW, SI\_SND PACKETS, etc, sub-controls are adopted, the existing SI\_PROV\_QOS and ST\_PERCV\_QOS sub-controls should be deleted.

NOTE – This action will remove the ‘Number of PMAs’ parameter which is defined as ‘the number of PMAs attached directly’. The tree structure demands that there should be only one PMA for any given MA and this makes this parameter superfluous...

|              |                  |  |            |   |   |  |
|--------------|------------------|--|------------|---|---|--|
| <b>GB 10</b> | 7.3.11           | Figures 72 and 74  | te         | <u>Deletion of SI_PROV_QOS and ST_PERCV_QOS sub-controls</u>  | Delete Figure 72 and the text relating to SI_PROV_QOS preceding the figure.<br><br>Delete Figure 74 and the text relating to ST_PERCV_QOS preceding the figure. |  |
| <b>GB 11</b> | <b>6)</b> 7.3.11 | Figures 76 ter, quarter, quinquies, sexies, septies and octies | ge, te, ed | 1. We consider that the use of suffixes bis, ter ... will not be acceptable to the ITU-T and ITTF editors. There is also a possibility that other table may be added or removed and, that as a temporary measure these are given Figure numbers 76A, 76B, 76C ... until the total changes to the numbering have been decided.<br><br>2. Sub-controls are always preceded by their parent controls and the parent controls have been included in front of the sub-controls in the figures in clause 7. We consider that the proposed sub-controls figures should follow this practice.<br><br>3. We consider that the text accompanying these figures should indicate the code for the sub-control with a reference to the code tables in clause 12 and that they should follow the form used for controls and sub-controls used in secure RMCP-2. | Replacement text and figures are shown below.   |  |

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

Figure 76A shows the format of the SI\_DELAY sub-control. The description of each field of the SI\_DELAY sub-control is as follows:

- SI\_DELAY
  - a) *Sub-control type* – denotes the SI\_DELAY sub-control. Its value shall be set to 0x13 (see Table 6).
  - b) *Length* – denotes the length of the SI\_DELAY sub-control. Its value shall be set to 0x06.
  - c) *Delay* – shall be set to the delay in seconds from the ROOT, as perceived by the MA
  - d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

|                           |              |                                |              |    |
|---------------------------|--------------|--------------------------------|--------------|----|
| 0                         | 8            | 16                             | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_DELAY) | Length (= 6) |    |
| Delay (in seconds)        |              | Reserved (0x00)                |              |    |

**Figure 76A – SI\_DELAY sub-control**

Figure 76B shows the format of the SI\_SND\_BW sub-control. The description of each field of the SI\_SND\_BW sub-control is as follows:

- SI\_SND\_BW
  - a) *Sub-control type* – denotes the SI\_SND\_BW sub-control. Its value shall be set to 0x35 (see Table 6).
  - b) *Length* – denotes the length of the SI\_SND\_BW sub-control. Its value shall be set to 0x06
  - c) *Bandwidth* – shall be set to the total bandwidth in Mbps consumed by the MA to serve its CMAs
  - d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

<sup>1</sup> MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.



| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

|                           |              |                                 |              |    |
|---------------------------|--------------|---------------------------------|--------------|----|
| 0                         | 8            | 16                              | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_SND_BW) | Length (= 6) |    |
| Bandwidth (in Mbps)       |              | Reserved (0x00)                 |              |    |

Figure 76B – SI\_SND\_BW sub-control

Figure 76C shows the format of the SI\_SND\_PACKET sub-control. The description of each field of the SI\_SND\_PACKET sub-control is as follows:

- SI\_SND\_PACKET
  - a) *Sub-control type* – denotes the SI\_SND\_PACKET sub-control. Its value shall be set to 0x36 (see Table 6).
  - b) *Length* – denotes the length of the SI\_SND\_PACKET sub-control. Its value shall be set to 0x06.
  - c) *Number of packets* – shall be set to the total number of packets sent by the MA from startup.
  - d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

|                           |              |                                     |              |    |
|---------------------------|--------------|-------------------------------------|--------------|----|
| 0                         | 8            | 16                                  | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_SND_PACKET) | Length (= 6) |    |
| Number of packets         |              | Reserved (0x00)                     |              |    |

Figure 76C – SI\_SND\_PACKET sub-control

Figure 76D shows the format of the SI\_SND\_BYTES sub-control. The description of each field of the SI\_SND\_BYTES sub-control is as follows:

- SI\_SND\_BYTES

<sup>1</sup> MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

- a) *Sub-control type* – denotes the SI\_SND\_BYTES sub-control. Its value shall be set to 0x37 (see Table 6).
- b) *Length* – denotes the length of the SI\_SND\_BYTES sub-control. Its value shall be set to 0x06.
- c) *Number of packets* – shall be set to the total number of bytes sent by the MA from startup.
- d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

|                           |              |                                   |              |    |
|---------------------------|--------------|-----------------------------------|--------------|----|
| 0                         | 8            | 16                                | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_SND_BYTE) | Length (= 6) |    |
| Number of packets         |              | Reserved (0x00)                   |              |    |

**Figure 76D – SI\_SND\_BYTES sub-control**

Figure 76E shows the format of the SI\_RCV\_BW sub-control. The description of each field of the SI\_SND\_BW sub-control is as follows:

- SI\_RCV\_BW
  - a) *Sub-control type* – denotes the SI\_RCV\_BW sub-control. Its value shall be set to 0x46 (see Table 6).
  - b) *Length* – denotes the length of the SI\_RCV\_BW sub-control. Its value shall be set to 0x06.
  - c) *Number of packets* – shall be set to the bandwidth in Mbps perceived by the MA between its PMA.
  - d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

|                           |              |                                 |              |    |
|---------------------------|--------------|---------------------------------|--------------|----|
| 0                         | 8            | 16                              | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_RCV_BW) | Length (= 6) |    |
| Bandwidth (Mbps)          |              | Reserved (0x00)                 |              |    |

**Figure 76E – SI\_RCV\_BW sub-control**

Figure 76F shows the format of the SI\_RCV\_PACKET sub-control. The description of each field of the SI\_RCV\_PACKET sub-control is as follows:

- SI\_RCV\_PACKET
  - a) *Sub-control type* – denotes the SI\_RCV\_PACKET sub-control. Its value shall be set to 0x47 (see Table 6).
  - b) *Length* – denotes the length of the SI\_RCV\_PACKET sub-control. Its value shall be set to 0x06.
  - c) *Number of packets* – shall be set to the number of packets received by the MA from startup.
  - d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

|                           |              |                                     |              |    |
|---------------------------|--------------|-------------------------------------|--------------|----|
| 0                         | 8            | 16                                  | 24           | 31 |
| Control type<br>(SYSINFO) | Length (= 2) | Sub-control type<br>(SI_RCV_PACKET) | Length (= 6) |    |
| Number of packets         |              | Reserved (0x00)                     |              |    |

**Figure 76F – SI\_RCV\_PACKET sub-control**

Figure 76G shows the format of the SI\_RCV\_BYTES sub-control. The description of each field of the SI\_RCV\_BYTES sub-control is as follows:

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

• SI\_RCV\_BYTES

- a) *Sub-control type* – denotes the SI\_RCV\_BYTES sub-control. Its value shall be set to 0x45 (see Table 6).  
b) *Length* – denotes the length of the SI\_RCV\_BYTES sub-control. Its value shall be set to 0x06.  
c) *Number of packets* – shall be set to the number of bytes received by the MA from startup.  
d) *Reserved* – is reserved for future use. Its value shall be set to 0x00.

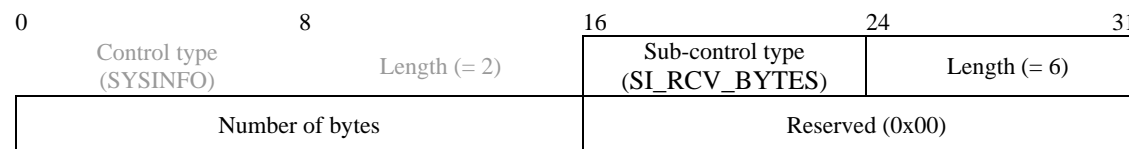


Figure 76G – SI\_RCV\_BYTES sub-control

|              |                                |                         |    |  |   |  |
|--------------|--------------------------------|-------------------------|----|--|---|--|
| <b>GB 12</b> | 5) 7.3.6,<br>7.3.11,<br>7.3.13 | Figure 60,<br>Figure 73 | te | <p><u>UPTIME sub-controls</u></p> <p>Item 5 in PDAM 2 claims that SYSINFO_PERSIST_TIME in 7.3.11 is identical to UPTIME in 7.3.6.</p> <p>This is not true. The first paragraph of SYSTEMINFO in 7.3.6 indicates it is used to recover from HMA collision and the text accompanying Figure 60 describes the sub-control as the HMA lifetime [sub-]control. We assume this to be correct and not the 'uptime after the MA joins the session' in Figure 60.</p> <p>We suggest that this is named as a new sub-control HMA_UPTIME that is defined in terms of the uptime since</p> | <p>Rename the UPTIME control in 7.3.6 as HMA_UPTIME.</p> <p>Define this uptime as the time in seconds since the HMA issued its first HANNOUNCE.</p> <p>Do not delete the SYSINFO_PERSIST TIME control. Rename it as SI_UPTIME (as in 16512-3)</p> |  |
|--------------|--------------------------------|-------------------------|----|--|---|--|

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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|-----------------|--|---|---|--|---|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB   | Proposed change by the MB   | Secretariat observations<br>on each comment submitted |
|                 |  |   |   | <p>the MA assumed the role of HMA, i.e. from when it first issued an HANNOUNCE message.</p> <p>We also suggest that the SYSINFO_PERSIST_TIME sub-control be retained and renamed as SI_UPTIME.</p>   |   |   |
| <b>GB 13</b>    | 9) 8.3.4, 8.3.1                                      | Figures 75 and 76                                     | te, ed                                  | <p><u>TREE sub-controls</u></p> <p>We propose that TREE_CONN and TREE_MEMBER are considered as SYSINFO sub-controls and renamed as SI_TREE_CONN and SI_TREE_MEMBER (as in FCD 16512-3)</p> <p>We have reconsidered our position on the UK response to DCor.1 in N 13875 (comment GB 10) and we no longer support the code allocation for TREE in Table 2 ter of Cor.1.</p>   | <p>Change TREE_CONN to SI_TREE_CONN.</p> <p>Change TREE_MEMBER to SI_TREE_MEMBER</p> <p>Delete any occurrences of TREE control.</p> |   |
| <b>GB 14</b>    | 9) 8.3.4   | Table 6   | te                                      | <p><u>Sub-control types for SYSINFO</u></p> <p><u>Questions</u></p> <p>Most of the sub-controls for SYSINFO are related to the controls for status information. Do the set of sub-controls apply to all messages making use of SYSINFO controls?</p> <p>The Local_IP sub-control in HANNOUNCE appears to be specific to HMA selection and does not appear to be relevant to status enquiries. Is this required for status enquiries?</p> <p>AVAILABLE_CMA and POSSIBLE_BW sub-controls are defined for SUBSREQ. Are they used with PPROBREQ/ANS messages or with status enquiries?</p> |   |   |

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|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

### UK comments relating to ROOTPATH sub-control

|              |                 |                    |    |   |   |  |
|--------------|-----------------|--------------------|----|---|---|--|
| <b>GB 15</b> | <b>9)</b> 8.3.3 | Table 4<br>Table 5 | te | <p><u>ROOTPATH codes</u></p> <p>Use of the term ROOTPATH is confusing; it appears to be used for the actual pathway, the ROOTPATH control and for the sub-control information relating to individual ROOTPATH elements.</p> <p>The MAID information applies to the nodes of the path, and the bandwidth and delay data relate to hops along the path. The number of hops is one less than the number of nodes. We suggest that dummy entries of 0x00 be applied to bandwidth and delay for the ROOT element.</p> <p><u>Title of Table 4</u></p> <p>The title should indicate that the same code is used for the ROOTPATH sub-control and the ROOTPATH command..</p> <p><u>Table 5. The size of each ROOTPATH element</u></p> <p>The information in this table could be expressed more elegantly in an extra column in Table 4.</p> <p>Note that the use of each ROOTPATH type refers to elements rather than rootpaths.</p> | Replace Table 4 with the revised table below: |  |
|--------------|-----------------|--------------------|----|---|---|--|

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

**Table 4 – Sub-control and command codes for ROOTPATH and RP\_COMMAND controls**

| Sub-control type  | Code | Meaning  | Bytes required<br>for each<br>ROOTPATH<br>element |
|---|------|--|---|
| The following six code values apply both to ROOTPATH and RP_COMMAND controls.   |      |  |   |
| RP_ID   | 0x11 | The ROOTPATH control contains only the MAID for each node  | 16  |
| RP_BW   | 0x12 | The ROOTPATH control contains only the bandwidth in Mbps as perceived by the MA for each node.                           | 4   |
| RP_DL   | 0x14 | The ROOTPATH control contains only the delay in seconds from the ROOT node as perceived by the MA for each node          | 4   |
| RP_ID_BW  | 0x13 | The ROOTPATH control contains the MAID and bandwidth in Mbps as perceived by the MA for each node.                       | 20  |
| RP_ID_DL  | 0x15 | The ROOTPATH control contains the MAID and the delay in seconds from the ROOT node as perceived by the MA for each node. | 20  |
| RP_ID_BW_DL   | 0x17 | The ROOTPATH control contains the MAID, bandwidth in Mbps and the delay in seconds as perceived by the MA for each node. | 24  |
| The following code value applies only to the RP_COMMAND control in HB messages. |      |  |   |
| RP_PSEUDO   | 0x10 | Indicates that the ROOTPATH control in the HB message is a pseudo-ROOTPATH for fault recovery                            | N/A   |

NOTE – The code values for RP\_ID\_BW, RP\_ID\_DL and RP\_ID\_BW\_DL sub-controls are the arithmetic sums of the individual RP\_ID, RP\_BW and RP\_DL components

<sup>1</sup> MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

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| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB  | Proposed change by the MB   | Secretariat observations<br>on each comment submitted |
| <b>GB 16</b>    | 7.3.3  | Figures 54<br>and 55                                  | te, ed                                  | <u>ROOTPATH specification</u><br><br>The current figures do not completely specify the structure of the RP_XXX sub-controls. In particular, the fields for MAID, bandwidth and delay are not specified. | Add the replacement figure, together with text for each sub-control as indicated below. |   |

### Replacement figure and text for the ROOTPATH control

*In sub-clause 7.3.3, Delete Figure 55 and delete the text for the ROOTPATH between Figures 54 and 55 [starting from 'Figure 55 shows ...' and finishing with 'are listed in Table 5']. Replace with the following figure and text.*

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.



| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

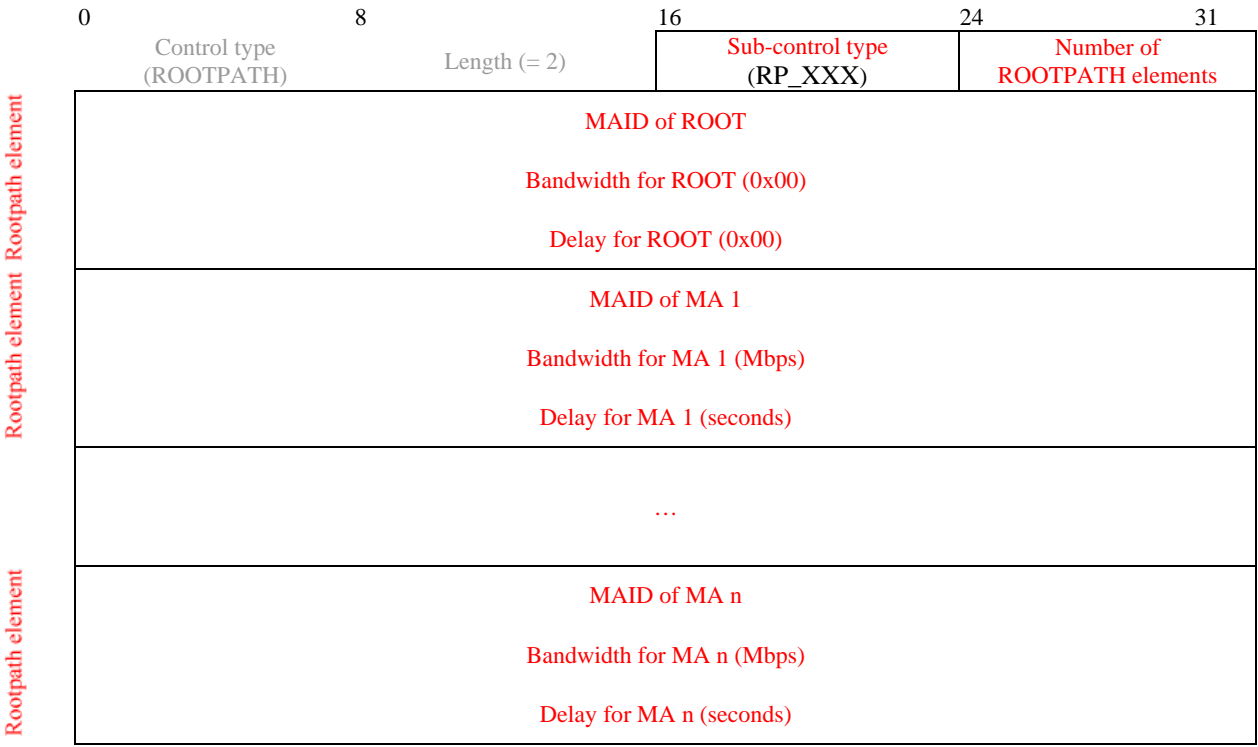


Figure 55 – General format for ROOTPATH sub-controls. RP\_XXX stands for one of the first six ROOTPATH types listed in Table 4.

Figure 55 shows the general format of the ROOTPATH sub-controls. RP\_XXX stands for appropriate ROOTPATH type from the first six ROOTPATH types listed in Table 4 (see note). These ROOTPATH types represent different combinations of fields for

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NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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MAIDs, bandwidth and delay. If the ROOTPATH type indicates that any of the MAID, bandwidth or delay fields are not needed, these fields shall not be present in the ROOTPATH control. The length of each rootpath element, in bytes, for each ROOTPATH type is indicated in Table 4.

NOTE – RP\_PSEUDO is a special ROOTPATH type used to indicate a pseudo HB message used in network partitioning, detection and recovery (see 6.2.5.3.b and 7.3.16) and applies only the RP\_COMMAND for the HB message.

The description of each field of the RP\_XXX sub-controls is as follows:

- RP\_XXX
  - a) *Sub-control type* – denotes the RP\_XXX sub-control. Its value shall be set to one of the first six code values in Table 4.
  - b) *Number of ROOTPATH elements* – shall be set to the number of ROOTPATH elements in the RP\_XXX message.
  - c) *MAID* – for each element in the ROOTPATH, listed in order from the ROOT, this field if present shall be set to that of the MAID corresponding to the element in the ROOTPATH.
  - d) *Bandwidth* – for each element in the ROOTPATH, listed in order from the ROOT, this field if present shall be set to the bandwidth, in Mbps, between the MA and its parent, as perceived by the MA. In the case of the ROOT element the value for the bandwidth shall be set to 0x00.
  - e) *Delay* – for each element in the ROOTPATH, listed in order from the ROOT, this field if present shall be set to the delay in seconds from the ROOT as perceived by the MA. In the case of the ROOT element the value for the bandwidth shall be set to 0x00.

NOTE – The values for the perceived bandwidth and delay for the ROOT node are set to 0x00 as the ROOTPATH is assumed to start at the ROOT.

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NOTE Columns 1, 2, 4, 5 are compulsory.

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| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

### UK comments relating to PPROBREQ and PPROBANS messages

|              |       |  |    |   |  |  |
|--------------|-------|--|----|---|--|--|
| <b>GB 17</b> | 7.3.3 |  | te | <p><u>ROOTPATH and SYSINFO controls in PPROBREQ</u></p> <p>PPROBREQ is used in the following circumstances:</p> <ul style="list-style-type: none"> <li>a) <u>map discovery</u> in which the probing MA seeks information from its parent MA or a potential parent MA; and</li> <li>b) <u>network partitioning, detection and recovery</u> (see 6.2.5.3) to check that its counterpart is still alive.</li> </ul> <p>In both cases, information is sought by the probing MA but it is uncertain whether the probed MA requires the unsolicited information from the probing MA.</p> <p><u>Question</u></p> <p>Should the PPROBREQ message contain COMMAND controls (as in RELREQ, STREQ and STCOLREQ messages) rather than RP and SI sub-controls?</p> |  |  |
| <b>GB 18</b> | 7.3.4 |  | te | <p><u>SYSINFO sub-controls in PPROBANS</u></p> <p>The specification for the SYSTEMINFO control format for PPROBANS in 7.3.4 states that the message may include system information such as in-and-out bandwidth, affordable number of CMAs, etc.</p> <p><u>Question</u></p> <p>Is this intended to be a limited list for the purpose of map discovery consisting of AVAILABLE_CMA and POSSIBLE_BW (as in 7.3.1), with the possibility of further modifications in the RELREQ/ANS exchanges when joining the tree?</p> <p>Or in this intended to be the full set of sub-controls listed</p>  |  |  |

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<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

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|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |
|                 |  |   |   | in the proposed Table 6A above?              |                           |   |

### UK comments relating to the NL\_MAID sub-control in NEIGHBORLIST and CANDIDATEHMA controls

|              |                |  |    |  |   |  |
|--------------|----------------|--|----|--|---|--|
| <b>GB 19</b> | 7.3.2<br>7.3.7 | Figure 50<br>Figure 51<br>Figure 62<br>Figure 63 | te | <p><u>NEIGHBORLIST and CANDIDATEHMA controls</u></p> <p>Both these controls use an NL_MAID sub-control whose definition was not included in 16512-2. NL_MAID is not an appropriate name for the CANDIDATEHMA sub-control.</p> <p>Neither the NEIGHBORLIST nor the CANDIDATEHMA controls have any other sub-controls and we consider that the sub-control is superfluous.</p> | <p>Delete the NL_MAID sub-control and place the list in the NEIGHBORLIST control. Delete Figures 50 and 51 and replace Figure 50 with a revised version of Figure 51.</p> <p>Delete the NL_MAID sub-control and place the list in the CANDIDATEHMA control. Delete Figures 62 and 63 and replace Figure 62 with a revised version of Figure 63.</p> <p>Delete Table 10 and its accompanying text in the new sub-clause 8.3.8 in PDAM 2. It will no longer be needed.</p> <p>Replacement text is shown below</p> |  |
|--------------|----------------|--|----|--|---|--|

Replacement text and Figure 50 for NEIGHBORLIST control in 7.3.2.

#### NEIGHBORLIST

~~When a subscription is successful, SM gives enough neighbour lists back to the subscriber. The meaning of NEIGHBORLIST control is that it can be used as bootstrapping information by each subscriber. Figure 50 [48] shows the format of NEIGHBOR\_LIST; note that it only delivers MAID. The description of each field is as follows:~~

~~a) *Control type* NEIGHBOR\_LIST.~~

~~b) *Length* It represents the length of the control data, and the size should be two.~~

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

~~e) *Neighbour list information* – It includes a series of information on MAIDs, and the usage and format are as follows:~~

When a subscription is successful, SM gives **sends a list of MAS** back to the subscriber. The NEIGHBORLIST control **may** be used as bootstrapping information by each subscriber. Figure 50 shows the format of NEIGHBORLIST **control**. ~~note that it only delivers MAID.~~ The description of each field is as follows:

- a) *Control type* – **denotes the NEIGHBORLIST control type. Its value shall be set to 0x04 (see Table 2A).**
- b) *Length* – **shall be set to the length in bytes of the NEIGHBORLIST control**
- c) *Reserved* – **is reserved for future use. Its value shall be set to 0x00.**
- d) *Number of MAIDs* – **shall be set to the number of subsequent MAIDs listed in the control.**
- e) *MAID(s)* – **The list of MAIDs provided by the SM.**

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<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

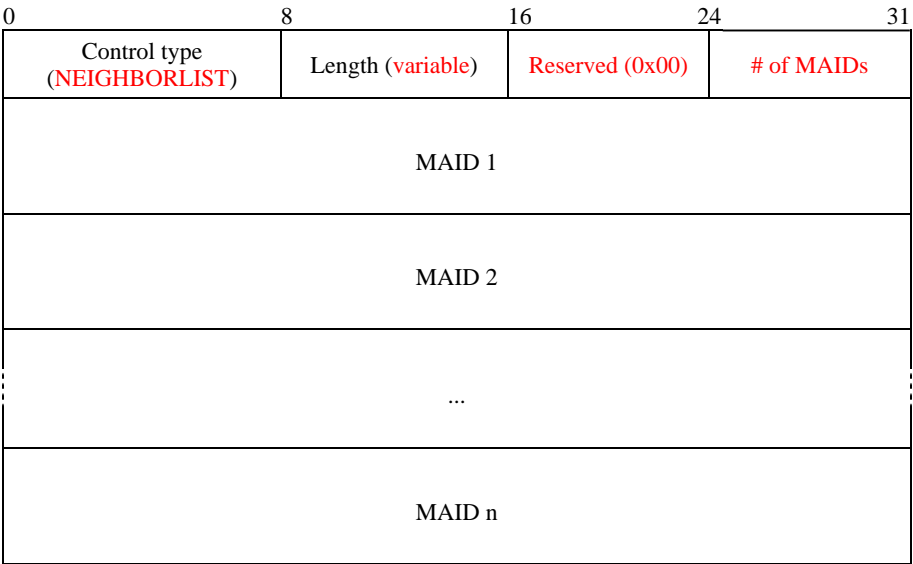


Figure 50 – NEIGHBORLIST control

NOTE – Length and Number of MAIDs can both be used to determine the length of the control. If the possible number of MAIDs is greater than 255 the Length field should be replaced by a Reserved field.

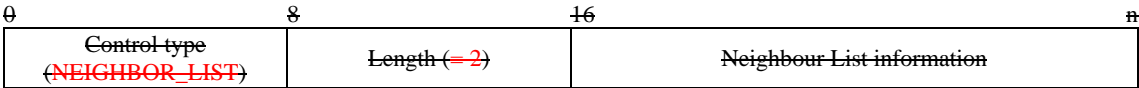


Figure 50 – NEIGHBOR\_LIST control

1 MB = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

2 Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

Figure 51 ~~[49]~~ shows the sub-control which follows Neighbour List control. The description of each field is as follows:

- a) ~~Sub-control type~~ It defines which kind of NL will be used. In this example, the list of MAIDs is used as a NEIGHBOR\_LIST.
- b) ~~Number of NL~~ It represents the number of subsequent MAIDs.
- c) ~~MAID(s)~~ It is a list of MAIDs provided by the SM. The number of MAs in the list is indicated in the "Number of NL" field.

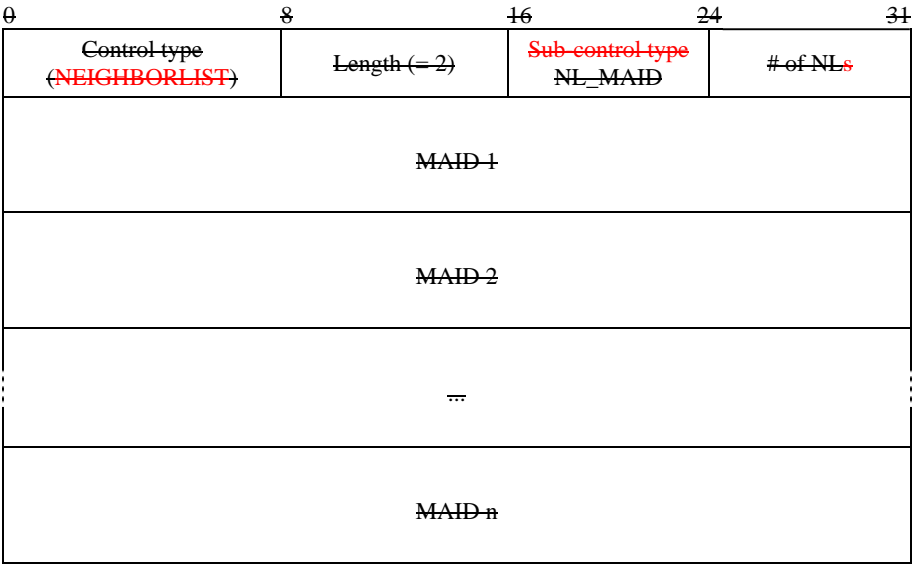


Figure 51 ~~NL\_MAID sub-control~~

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2 Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

Replacement text and Figure 63 for CANDIDATEHMA control in 7.3.7.

• **CANDIDATEHMA**

When an HMA leaves a session, every non-HMA in the multicast-enabled area may compete to become an HMA. This may drive the multicast-enabled area be filled with HANNOUNCE message. To prevent HMA selection collision, HMA may use CANDIDATEHMA control which is shown in Figure 62. The description of each field is as follows:

- Control type* – denotes the CANDIDATEHMA control type. Its value shall be set to 0x0A
- Length* – shall be set to the length in bytes of the CANDIDATE HMA control.
- Reserved* – is reserved for future use. Its value shall be set to 0x00.
- Number of MAIDs* – shall be set to the number of subsequent MAIDs listed in the control.
- MAID(s)* – shall contain the list of MAIDs of candidate HMAs provided by the leaving HMA.

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

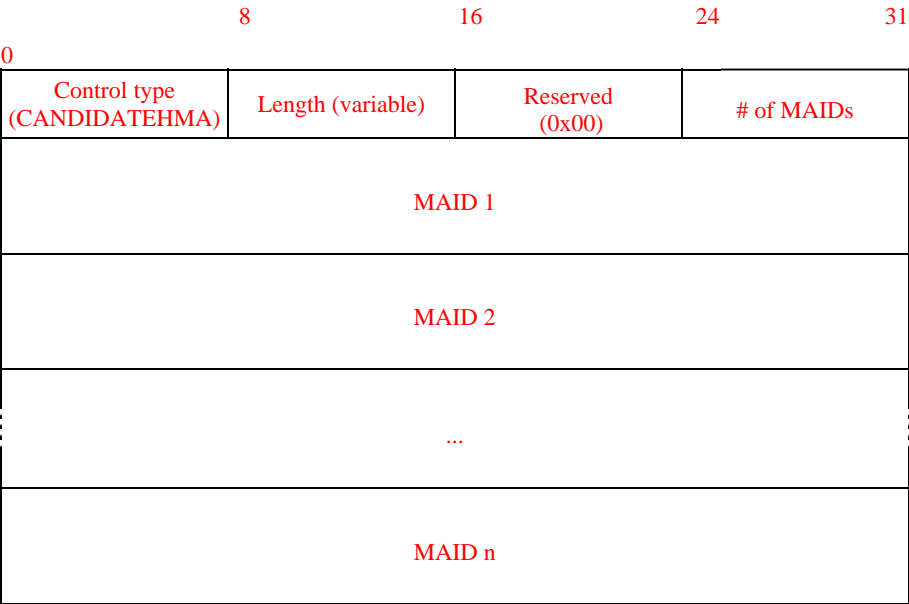
<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.



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| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |



**Figure 62 –CANDIDATEHMA control**

Additional changes to align with the changes to the NEIGHBORLIST control are shown in comments GB 17a – GB 17 b:

|               |       |  |    |                          |   |  |
|---------------|-------|--|----|--------------------------|---|--|
| <b>GB 19a</b> | 7.3.3 |  | Te | In NEIGHBOURLIST control | Change<br>'The control format ... in Figures 50 and 51' to<br>'The control format ... in Figure 50' |  |
| <b>GB</b>     | 7.3.4 |  | Te | In NEIGHBOURLIST control | Change  |  |

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2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial  
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| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB  | Secretariat observations<br>on each comment submitted |
| <b>19b</b>      |  |   |   |  | 'NEIGHBORLIST control as shown in Figures 50 and 51' to 'NEIGHBORLIST control as shown in Figure 50'           |   |
| <b>GB 19c</b>   | 7.3.6  |   | Te                                      | In NEIGHBOURLIST control                     | Change<br>'neighbor list as shown in Figures 50 and 51' to<br>'neighbor list as shown in Figure 50'            |   |
| <b>GB 19d</b>   | 7.3.7  |   | Te                                      | In NEIGHBOURLIST control                     | Change<br>'NEIGHBORLIST control as shown in Figures 50 and 51' to 'NEIGHBORLIST control as shown in Figure 50' |   |

## UK comments relating to parameter tables

|              |                      |                     |    |  |  |  |
|--------------|----------------------|---------------------|----|--|--|--|
| <b>GB 20</b> | DCor.1<br>Clause 8.3 | Tables 2A<br>and 2B | ed | <p><u>Incorporation of DCor.1</u></p> <p>We consider that the tables in DCor.1 and the content of PDAM 2 represent changes that are essential for the application of Recommendation X.603.1   International Standard 16512-2 and that they should be considered together.</p> <p>We propose that the changes in DCor.1 should be incorporated into Amendment 2.</p> <p>The code values in Table 2 should be changed to hexadecimal values for consistency with other tables in the standard.</p> | <p>Insert Tables 2 bis and 2 ter in DCor.1 as Tables 1A and 2A in Amendment 2. Minor corrections to the tables in DCor.1 are indicated in <b>red</b>.</p> <p>Replacement text is shown below.</p> <p>The new sub-clause (8.3.0) and associated tables in 8.3 have been given a temporary numbers in order to place them in their correct positions. All sub-clause and table numbers will be changed when decisions on the proposed changes in 8.3 have been made.</p> |  |
|--------------|----------------------|---------------------|----|--|--|--|

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|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB   | Proposed change by the MB | Secretariat observations<br>on each comment submitted |
| <b>GB 21</b>    | 8.3  |   | te                                      | <u>Consolidated changes to sub-clause 8.3</u><br>This text incorporates text from previous comments. |                           |   |

In the following text, changes to ISO/IEC 16512-2:2008 and its PDAM 2 have been indicated in **red**.

*Delete the current sub-clause 8.3 and replace with the following text:*

### **8.3.0. Codes values for basic RMCP-2 node types**

Table 1A lists the node types (NT) for the basic RMCP-2 protocol and their corresponding 4-bit code values.

NOTE – The code value for the MA node type applies only to the basic RMCP-2 protocol defined in clauses 5 – 7 of this Recommendation | International Standard. The secure RMCP-2 protocol in Amendment 1 does not use the code value for MAs: it has its own code values for DMA and RMA node types.

**Table 1A – Node type code values for basic RMCP-2**

| Node type | Code value (4 bits) |
|-----------|---------------------|
| SM        | 0x1                 |
| SMA       | 0x2                 |
| MA        | 0x4                 |

<sup>1</sup> **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

### 8.3.1 Code values for RMCP-2 message types

Table 2 lists the **RMCP-2 message types** and their corresponding code values.

**Table 2 – Code values for RMCP-2 message types.**

| Message type | Value (8 bits) | Code value<br>(Hexadecimal) |
|--------------|----------------|-----------------------------|
| SUBSREQ      | 00000001       | 0x02                        |
| SUBSANS      | 00000011       | 0x03                        |
| PPROBREQ     | 00000100       | 0x04                        |
| PPROBANS     | 00000101       | 0x05                        |
| HSOLICIT     | 00000110       | 0x06                        |
| HANNOUNCE    | 00000111       | 0x07                        |
| HLEAVE       | 00001000       | 0x08                        |
| RELREQ       | 00001001       | 0x09                        |
| RELANS       | 00001100       | 0x0C                        |
| STREQ        | 00010011       | 0x12                        |
| STANS        | 00010100       | 0x13                        |
| STCOLREQ     | 00010100       | 0x14                        |
| STCOLANS     | 00010101       | 0x15                        |
| LEAVREQ      | 00010110       | 0x16                        |
| LEAVANS      | 00010111       | 0x17                        |
| HB           | 00011000       | 0x18                        |
| TERMREQ      | 00011001       | 0x19                        |
| TERMANS      | 00011010       | 0x20                        |

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<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
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### 8.3.2 Code values for RMCP-2 control types

Table 2A lists the RMCP-2 control types and their corresponding code values

**Table 2A –Code values for RMCP-2 control types**

| Control type       | Value<br>(Hexadecimal)                                       | Value<br>(Hexadecimal)  |
|--------------------|--|---|
|                    | Use this column if<br>AUTH is retained<br>(see comment GB 4) | Use this column if<br>AUTH is withdrawn<br>(see comment GB 4) |
| AUTH               | 0x01   | <del>0x01</del>   |
| <del>COMMAND</del> | <del>0x02</del>  | <del>0x02</del>   |
| RP_COMMAND         | 0x02   | 0x01  |
| SI_COMMAND         | 0x03   | 0x02  |
| DATAPROFILE        | 0x04   | 0x03  |
| NEIGHBORLIST       | 0x05   | 0x04  |
| REASON             | 0x06   | 0x05  |
| RESULT             | 0x07   | 0x06  |
| ROOTPATH           | 0x08   | 0x07  |
| SYSINFO            | 0x09   | 0x08  |
| TIMESTAMP          | 0x0A   | 0x09  |
| CANDIDATEHMA       | 0x0B   | 0x0A  |
| TREEEXPLOR         | 0x0C   | 0x0B  |

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<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
| MB <sup>1</sup> | Clause No./<br>Subclause No./<br>Annex<br>(e.g. 3.1) | Paragraph/<br>Figure/Table/<br>Note<br>(e.g. Table 1) | Type<br>of<br>com-<br>ment <sup>2</sup> | Comment (justification for change) by the MB | Proposed change by the MB | Secretariat observations<br>on each comment submitted |

### 8.3.3 Values related to the ROOTPATH control

Table 4 lists the code values for the sub-control types of the ROOTPATH and RP\_COMMAND controls. The same code is used for both the ROOTPATH and the RP\_COMMAND sub-controls. The length in bytes of each rootpath element (corresponding to a node in the rootpath) is indicated for each of the rootpath types.

**Table 4 – Sub-control and command codes for ROOTPATH and RP\_COMMAND controls**

| Sub-control type  | Code | Meaning  | Bytes required<br>for each node<br>element |
|---|------|--|--|
| The following six code values apply both to ROOTPATH and RP_COMMAND controls.   |      |  |  |
| RP_ID   | 0x11 | The ROOTPATH control contains only the MAID for each node  | 16   |
| RP_BW   | 0x12 | The ROOTPATH control contains only the bandwidth in Mbps as perceived by the MA for each node.                           | 4  |
| RP_DL   | 0x14 | The ROOTPATH control contains only the delay in seconds from the ROOT node as perceived by the MA for each node          | 4  |
| RP_ID_BW  | 0x13 | The ROOTPATH control contains the MAID and bandwidth in Mbps as perceived by the MA for each node.                       | 20   |
| RP_ID_DL  | 0x15 | The ROOTPATH control contains the MAID and the delay in seconds from the ROOT node as perceived by the MA for each node. | 20   |
| RP_ID_BW_DL   | 0x17 | The ROOTPATH control contains the MAID, bandwidth in Mbps and the delay in seconds as perceived by the MA for each node. | 24   |
| The following code value applies only to the RP_COMMAND control in HB messages. |      |  |  |
| RP_PSEUDO   | 0x10 | Indicates that the ROOTPATH control in the HB message is a pseudo-ROOTPATH for fault recovery                            | N/A  |

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<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
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NOTE – The code values for RP\_ID\_BW, RP\_ID\_DL and RP\_ID\_BW\_DL sub-controls are calculated by 0x10 plus the arithmetic sums of last four bits of the individual codes of the RP\_ID, RP\_BW and RP\_DL components.

[Table 5 has been incorporated into Table 4]

### 8.3.4 Values related to SYSINFO control data

A single control data may include zero or more sub-control data. This clause defines codes for RMCP-2 sub-control data.

SYSINFO control data is used for exchange information related to MA. Table 6 lists the sub-control types, its code, and meaning. The four most significant bits of the encoded code specify the category of the information. The lowest four bits specifies detailed items such as bandwidth, packets, and bytes.

Table 6 – Sub-control types for SYSINFO

| Type                    | Code (8 bit)         | Meaning  |
|-------------------------|----------------------|--|
| <del>SI_PROV_QOS</del>  | 0x10                 | <del>Maximum incoming / outgoing bandwidth of MA's network interface card.</del> |
| LOCAL_IP                | <del>0x11</del> 0x10 | IP address of MA.  |
| HMA_UPTIME              | <del>0x12</del> 0x11 | Time of MA's uptime.   |
| SI_UPTIME               | 0x12                 | Time of MA's uptime.   |
| SI_DELAY                | 0x13                 | Status of delay as perceived by MA from ROOT.                                    |
| SI_ROOM_CMA             | 0x14                 | The room for CMAs.   |
| <del>ST_PERCV_QOS</del> | 0x20                 | <del>The QoS perceived by each MA</del>  |
| AVAILABLE_CMA           | 0x24                 | The number of available CMAs.  |

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|                |      |   |
|----------------|------|---|
| POSSIBLE_BW    | 0x25 | The possible forwarding bandwidth that MA can afford. |
| SI_SND_BW      | 0x35 | Total bandwidth consumed by PMA to serve its CMAs.    |
| SI_SND_PACKET  | 0x36 | Total number of packets sent by MA from startup.      |
| SI_SND_BYTES   | 0x37 | Total number of bytes sent by MA from startup.        |
| SI_RCV_BW      | 0x45 | Bandwidth perceived by MA between its PMA.            |
| SI_RCV_PACKET  | 0x46 | Number of packets received by MA from startup.        |
| SI_RCV_BYTES   | 0x47 | Number of bytes received by MA from startup.          |
| SI_TREE_CONN   | 0x68 | PMA and CMA(s) of MA.                                 |
| SI_TREE_MEMBER | 0x69 | List of tree members.                                 |

Table 6A lists the command codes corresponding to the sub-controls for the SYSINFO control. Combinations of different sub-controls may be indicated by adding together the corresponding individual command codes.

### NOTES

1. Table 6A only contains the sub-control types that require a command control for their initiation. There is, therefore no one-to-one correspondence with the sub-controls in Table 6.
2. The 16-bit format column in Table 6A demonstrates how the command code values may be added together to give unique combinations. The bit positions can be considered as representing individual sub-control types and the 1 or 0 values can be interpreted as presence or absence of these sub-control types..

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**NOTE** Columns 1, 2, 4, 5 are compulsory.



| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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Table 6A – SI\_COMMAND codes for SYSINFO

| Sub-control Type | Sub-control Code | Command Code | 16-bit format       |
|------------------|------------------|--------------|---------------------|
| SI_UPTIME        | 0x12             | 0x00 01      | 0000 0000 0000 0001 |
| SI_DELAY         | 0x13             | 0x00 02      | 0000 0000 0000 0010 |
| SI_ROOM_CMA      | 0x14             | 0x00 04      | 0000 0000 0000 0100 |
| SI_SND_BW        | 0x35             | 0x00 08      | 0000 0000 0000 1000 |
| SI_SND_PACKET    | 0x36             | 0x00 10      | 0000 0000 0001 0000 |
| SI_SND_BYTES     | 0x37             | 0x00 20      | 0000 0000 0010 0000 |
| SI_RCV_BW        | 0x45             | 0x00 40      | 0000 0000 0100 0000 |
| SI_RCV_PACKET    | 0x46             | 0x00 80      | 0000 0000 1000 0000 |
| SI_RCV_BYTES     | 0x47             | 0x01 00      | 0000 0001 0000 0000 |
| SI_TREE_CONN     | 0x68             | 0x02 00      | 0000 0010 0000 0000 |
| SI_TREE_MEMBER   | 0x69             | 0x04 00      | 0000 0100 0000 0000 |

NOTE – The sub-control code column has been added for cross reference to Table 6.

### 8.3.5 Values related to the leave

Table 7 lists the reason codes for leaving. The **four** most significant bits of the **code** specify the main cause of leaving, and the **four** least significant bits specify further details for leaving, such as exhaustion of system resources or termination by the user's request.

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<sup>2</sup> Type of comment: ge = general te = technical ed = editorial

NOTE Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
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Table 7 – Leave reason code

| Category         | Code | Meaning   |
|------------------|------|---|
| Leave            | 0x10 | <del>MA's Own leave</del> Leave initiated by MA         |
|                  | 0x11 | <del>SMA leave</del> Leave of SMA                       |
| Kick out         | 0x20 | <del>SM kick out</del> Expulsion by SM                  |
|                  | 0x21 | <del>PMA kick out</del> Expulsion by PMA                |
| Parent switching | 0x40 | <del>MA's parent switching</del> Parent switching by MA |

### 8.3.6 Values related to the session termination

Table 8 lists the reason codes for the session termination. The **four** most significant bits of the **code** specify the main reason for the session termination, and the **four** least significant bits specify the **detailed reason for session termination**.

Table 8 – Termination reason code

| Category                     | Code | Meaning  |
|------------------------------|------|--|
| Normal session termination   | 0xE0 | Session is terminated normally                   |
| Abnormal session termination | 0xF0 | Session is terminated abnormally without reason  |
|                              | 0xF1 | Session is terminated abnormally by user request |

[8.3.7 and Table 9 have not been included as comment GB 4 proposes withdrawal of the AUTH control]

[8.3.8 and Table 10 have not been included see GB 19]

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**NOTE** Columns 1, 2, 4, 5 are compulsory.

| 1               | 2  | (3)   | 4                                       | 5  | (6)                       | (7)   |
|-----------------|--|---|---|--|---------------------------|---|
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## Appendix 1. Analysis of sub-control codes for the SYSINFO control

The following table (for this analysis and not for inclusion in Amendment 2) lists the sub-controls of the SYSINFO and TREE controls as proposed in PDAM 2 and shows cross references to where the format of these sub-controls is specified in the standard.

### SYSINFO sub-controls

| Code | Sub-control    | Clause | Message   | Table | Comment                              |
|------|----------------|--------|-----------|-------|--------------------------------------|
| 0x10 | SI_PROV_QOS    | 7.3.11 | STANS     | 72    | Duplicates BW sub-controls           |
| 0x11 | LOCAL_IP       | 7.3.6  | HANNOUNCE | 59    | Specific to HANNOUNCE                |
| 0x15 | HMA_UPTIME     | 7.3.6  | HANNOUNCE | 60    | Specific to HANNOUNCE                |
| 0x12 | SI_UPTIME      | 7.3.11 | STANS     | 73    | SI added for consistency with RMCP-3 |
| 0x13 | SI_DELAY       | 7.3.11 | STANS     | 76A   |                                      |
| 0x14 | SI_ROOM_CMA    | 7.3.11 | STANS     | 71    |                                      |
| 0x20 | ST_PERCV_QOS   | 7.3.11 | STANS     | 74    | Duplicates PKT+BYTES sub-controls    |
| 0x24 | AVAILABLE_CMA  | 7.3.1  | SUBSREQ   | 42    | Specific to SUBSREQ                  |
| 0x25 | POSSIBLE_BW    | 7.3.1  | SUBSREQ   | 43    | Specific to SUBSREQ                  |
| 0x35 | SI_SND_BW      | 7.3.11 | STANS     | 76B   |                                      |
| 0x36 | SI_SND_PACKET  | 7.3.11 | STANS     | 76C   |                                      |
| 0x37 | SI_SND_BYTES   | 7.3.11 | STANS     | 76D   |                                      |
| 0x45 | SI_RCV_BW      | 7.3.11 | STANS     | 76E   |                                      |
| 0x46 | SI_RCV_PACKET  | 7.3.11 | STANS     | 76F   |                                      |
| 0x47 | SI_RCV_BYTES   | 7.3.11 | STANS     | 76G   |                                      |
| 0x68 | SI_TREE_CONN   | 7.3.11 | STANS     | 75    | SI added for consistency with RMCP-3 |
| 0x69 | SI_TREE_MEMBER | 7.3.11 | STANS     | 76    | SI added for consistency with RMCP-3 |

The sub-controls that are not used for control commands in STREQ and STCOLREQ messages have been greyed out.

Comment GB 4b proposes that SI\_PROV\_QOS and ST\_PERCV\_QOS should be deleted as the parameters duplicate those in the SI\_SND and SI\_RCV sub-controls.

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<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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AVAILABLE\_CMA and POSSIBLE\_BW are not used in the STREQ and STCOLREQ messages. They are specific to the SUBSREQ message and are used by the MA when subscribing to the session. **They do not need a COMMAND control to initiate their use.**

LOCAL\_IP and HMA\_UPTIME are specific to HANNOUNCE messages.

The table below shows the hexadecimal totals for the pairwise combination of SYSINFO and TREE values for the status queries:

**Pairwise combinations of SYSINFO sub-controls**

|      | 0x12 | 13 | 14 | 35 | 36 | 37 | 45 | 46 | 47 | 68 | 69 |
|------|------|----|----|----|----|----|----|----|----|----|----|
| 0x12 | -    | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 13   | 25   | -  | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 14   | 26   | 27 | -  | -  | -  | -  | -  | -  | -  | -  | -  |
| 35   | 47   | 48 | 49 | -  | -  | -  | -  | -  | -  | -  | -  |
| 36   | 48   | 49 | 4A | 6B | -  | -  | -  | -  | -  | -  | -  |
| 37   | 49   | 4A | 4B | 6C | 6D | -  | -  | -  | -  | -  | -  |
| 45   | 57   | 58 | 59 | 7A | 7B | 7C | -  | -  | -  | -  | -  |
| 46   | 58   | 59 | 5A | 7B | 7C | 7D | 8B | -  | -  | -  | -  |
| 47   | 59   | 5A | 5B | 7C | 7D | 7E | 8C | 8D | -  | -  | -  |
| 68   | 7A   | 7B | 7C | 9D | 9E | 9F | AD | AE | AF | -  | -  |
| 69   | 7B   | 7C | 7D | 9E | 9F | A0 | AE | AF | B0 | B1 | -  |

This table shows that there are many duplicated values (shown in **red**). Similar duplicated values occur when combinations of three or more constituent controls are added together.

Example:

| COMMAND<br>code | Combinations of<br>constituent codes |
|-----------------|--------------------------------------|
| 0x90            | = 0x12 + 0x37 + 0x47                 |
|                 | = 0x13 + 0x14 + 0x69                 |
|                 | = 0x13 + 0x36 + 0x47                 |

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|  |                      |
|--|----------------------|
|  | = 0x13 + 0x37 + 0x46 |
|  | = 0x14 + 0x35 + 0x47 |
|  | = 0x14 + 0x36 + 0x46 |

The proposed new text below is based on the values in the SYSINFO sub-controls table (above) that have not been greyed out. This leaves room for an additional five sub-controls, if required.

## Proposed new text:

Add the following text and table immediately after Table 6:

Table 6A lists the command codes corresponding to the sub-controls for the SYSINFO control. Combinations of different sub-controls may be indicated by adding together the corresponding individual command codes.

NOTE – The 16-bit format column in Table 6A demonstrates how the command code values can be added to give unique combinations. The bit positions can be considered as representing individual sub-control types and the 1 or 0 values can be interpreted as presence or absence of these sub-control types.

**Table 6A – SI\_COMMAND codes for SYSINFO**

| Sub-control Type | Sub-control Code | Command Code | 16-bit format       |
|------------------|------------------|--------------|---------------------|
| SI_UPTIME        | 0x12             | 0x00 01      | 0000 0000 0000 0001 |
| SI_DELAY         | 0x13             | 0x00 02      | 0000 0000 0000 0010 |
| SI_ROOM_CMA      | 0x14             | 0x00 04      | 0000 0000 0000 0100 |
| SI_SND_BW        | 0x35             | 0x00 08      | 0000 0000 0000 1000 |
| SI_SND_PACKET    | 0x36             | 0x00 10      | 0000 0000 0001 0000 |

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|-----------------------|--|---|--|---|----------------------------------|---|
| <b>MB<sup>1</sup></b> | <b>Clause No./<br/>Subclause No./<br/>Annex<br/>(e.g. 3.1)</b> | <b>Paragraph/<br/>Figure/Table/<br/>Note<br/>(e.g. Table 1)</b> | <b>Type<br/>of<br/>com-<br/>ment<sup>2</sup></b> | <b>Comment (justification for change) by the MB</b> | <b>Proposed change by the MB</b> | <b>Secretariat observations<br/>on each comment submitted</b> |

|                |      |         |                     |
|----------------|------|---------|---------------------|
| SI_SND_BYTES   | 0x37 | 0x00 20 | 0000 0000 0010 0000 |
| SI_RCV_BW      | 0x45 | 0x00 40 | 0000 0000 0100 0000 |
| SI_RCV_PACKET  | 0x46 | 0x00 80 | 0000 0000 1000 0000 |
| SI_RCV_BYTES   | 0x47 | 0x01 00 | 0000 0001 0000 0000 |
| SI_TREE_CONN   | 0x68 | 0x02 00 | 0000 0010 0000 0000 |
| SI_TREE_MEMBER | 0x69 | 0x04 00 | 0000 0100 0000 0000 |

NOTE – The sub-control code column has been added for cross reference to Table 6.

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