

**Telecommunications and Information Exchange Between Systems**

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

<b>Document Number:</b>	N14192
<b>Date:</b>	2010-01-15
<b>Replaces:</b>	
<b>Document Type:</b>	Disposition of Comments
<b>Document Title:</b>	Proposed disposition of comments on 6N14038, Summary of Voting on SC 6N13890, Text for 2nd FCD ballot, ISO/IEC 16512-3 RMCP-3 (X.603.2)
<b>Document Source:</b>	Project Editor
<b>Project Number:</b>	
<b>Document Status:</b>	For consideration at the SC 6/WG 7 Barcelona meeting.
<b>Action ID:</b>	FYI
<b>Due Date:</b>	
<b>No. of Pages:</b>	22
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ISO/IEC JTC 1/SC 6  
TELECOMMUNICATION AND INFORMATION  
EXCHANGE BETWEEN SYSTEMS

Title: Proposed Disposition of Comments to 16512-2 2<sup>nd</sup> FCD Ballot (6N13890)

Source: ITU-T experts

SC/WG: ISO/IEC JTC 1/SC 6/WG 7 & ITU-T Q.15/11 Joint meeting

Type: For Discussion

Summary:

This document describes the proposed disposition of comments to JTC 1/SC 6 6N14038 (SoV on FCD Ballot for 16512-2, RMCP-3).

This document is prepared by the ITU-T experts in RMCP-3 which was discussed in Sept. 2009 ITU-T SG 11 meeting.

This document is prepared to be discussed in the JTC 1/SC 6 & ITU-T SG11 Joint meeting.

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**Question(s):** 15/11

Mar del Plata, 2-10 September 2009

**TEMPORARY DOCUMENT**

**Source:** Editors

**Title:** Disposition of Comments on the FCD to ITU-T X.603.2 | ISO/IEC 16512-3

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Disposition of Comments below,

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<b>GB 0</b>			ge	<p><u>UK vote of disapproval</u></p> <p>We note that significant changes have been proposed in IISO/IEC 16512-2/PDAM 2 and we consider that these changes should also be incorporated in ISO/IEC 16512-3.</p> <p>Our vote of disapproval is based on the following UK comments:</p> <p><b>GB 7.</b> Reconsideration of the content of the AUTH control;</p> <p><b>GB 17</b> Redefinition of the ROOTPATH control;</p> <p><b>GB 18 and 19.</b> Redefinition of the COMMAND control to cover SI_COMMAND and RP_COMMAND</p> <p><b>GB 21</b> Lack of specification of the format of the Data Profile. A figure showing an example of a profile needs to be added.</p>		
<b>GB 1</b>	1		te	<p><u>Scope</u></p> <p>The RMCP-3 topology has undergone significant development since the publication of ISO/IEC 16512-1.</p>	<p>Delete the following sentence:</p> <p>'The RPCP topology and service scenario described in this specification follows the definition of the RPCP framework without any modification'.</p>	<p>Agreed.</p> <p>Sentence is deleted.</p>
<b>GB 2</b>	3.1		ed, te	<p><u>Definitions. Terms defined elsewhere</u></p> <p>Many of the definitions in 3.1 have been taken from X.603 16512-1 but in places the wording has been modified. This could lead to duplications and contradictions and should be avoided. The ISO Directives state:</p> <p>'If the concept is used in several documents, it should be defined in the most general of those documents, or in an independent terminology standard. The other documents should then refer to this standard, without repeating the definition of the concept.</p> <p>When the repetition of a definition is necessary, an informative reference shall be made to the document from which it is reproduced.'</p> <p>We consider that the definitions in 3.1 are sufficiently</p>	<p>Proposed replacement text, together with minor corrections to the terms defined in 16512-3, is indicated below.</p> <p><i>Note that both a CoreMA and an Edge MA are individual MAs and not groups of MAs. Also that a CoreMA by definition is not part of the edge domain.</i></p>	<p>Agreed</p> <p>Made revision as proposed.</p>

				close to those in ITU-T Rec. X.603   ISO/IEC 16512-1 or ITU-T Rec. X.603.1   ISO/IEC 16512-2 to be used in this standard and that these definitions should be referenced from this standard.		
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### 3 Definitions

#### 3.1 Terms defined elsewhere

This recommendation | International Standard uses the following terms defined in ITU-T Rec. 603 | ISO/IEC 16512-1:

- 3.1.1 IP multicast;
- 3.1.2 Multicast;
- 3.1.3 Multicast agent (MA);
- 3.1.4 N-plex;
- 3.1.5 Parent multicast agent (PMA);
- 3.1.6 RMCP session;
- 3.1.7 Sender multicast agent (SMA);
- 3.1.8 Simplex.

This Recommendation | International Standard uses the following terms defined in ITU-T Rec. 603.1 | ISO/IEC 16512-2:

- 3.1.9 Child multicast agent (CMA);
- 3.1.10 Relayed multicast (RMCP);
- 3.1.11 Relayed multicast protocol (RMCP);
- 3.1.12 Receiver multicast agent (RMA);
- 3.1.13 Session manager (SM).

#### 3.2 Terms defined in this Recommendation | International Standard

For the purposes of this Recommendation | International Standard, the following definitions apply:

- 3.2.1 **Core domain:** The top-level domain consisting of group of CoreMAs and the SM.

**3.2.2 Core multicast agent (CoreMA):** ~~Group of MAs that configures~~ **An MA that helps to configure the** RMCP-3 core domain.

**3.2.3 CoreRing:** A ring topology consisting of CoreMAs and **the** SM in the core domain.

**3.2.4 Edge domain:** **The** bottom-level domain consisting of **a** group of EdgeMAs.

**3.2.5 Edge multicast agent (EdgeMA):** ~~MAs that configures~~ **An MA that helps to configure the** RMCP-3 edge domain.

**3.2.6 EdgeTree:** **A** tree topology consisting of EdgeMAs and **a** single CoreMA as **a** **its** root node ~~in the edge domain.~~

**3.2.7 Head multicast agent (HMA):** **The** head of the MAs inside ~~the~~ **a** local multicast area which relays multicast data to ~~the~~ **its** local multicast area.

**3.2.8 RMCP-3 Hybrid Tree:** **A** mixed topology with **the** CoreRing and EdgeTrees.

<b>GB 3</b>	All		te	<p><u>Terminology for messages, controls and sub-controls</u></p> <p>WG 7 in its Tokyo meeting decided on the following usages for 16512-2:</p> <p>‘control’ in place of ‘control data’; and</p> <p>‘sub-control’ in place of ‘sub-control data’</p> <p>We consider that this usage should be adopted in 16512-3.</p> <p>We also consider that</p> <p>‘message’ should be used in place of ‘control message’</p> <p>Rationale: 1. The use of ‘control’ in control message could be confused with ‘control’ in the sense of a component of the message.</p> <p>2. 16512-3 does not specify any particular data delivery mechanism, so that an RMCP-3 message can only refer to a control message, as distinct from a data message.</p>	<p>Throughout the standard</p> <p>Use ‘control’ in place of ‘control data’.</p> <p>Use ‘sub-control’ in place of ‘sub-control data’.</p> <p>Use ‘message’ in place of ‘control message’.</p>	<p>Agreed</p> <p>Made replacement as proposed.</p>
<b>GB 4</b>	6.5	Figure 7	te	<p><u>Mesh topography.</u></p> <p>Figure 7 illustrates a data delivery model with a full mesh topography. The remainder of the standard ignores this configuration and gives the impression that the ring topography is the only structure.</p>	<p>This is just a comment and we are not necessarily proposing a change of text.</p>	<p>Agreed</p> <p>Made changes to proposed text.</p>

				<p>I suggest:</p> <p>Figure 7 shows an example of a <del>the</del> data delivery model where ....</p> <p>Figure 8 shows an example of a <del>the</del> data delivery model using the CoreRing ....</p>		
<b>GB 5</b>	6.5	Figure 8	te	<p><u>Relation of SM to data delivery model</u></p> <p>The SM takes no part on data delivery. The SM is not shown in Figure 7 for a mesh topology but the SM is included in Figure 8 for a ring topology.</p> <p>We consider that the SM should not be included the delivery model and that Figure 8 should illustrate <u>logical</u> connections only. This will avoid the invention of algorithms explaining why the SM takes no part in the delivery mechanism.</p> <p>A note (not part of the specification) stating that the ring connections are the same physical connections as used for the RMCP-3 control messages.</p>	Replace Figure 8 with the figure below in which the SM has been removed.	<p>Agreed</p> <p>Revised the current figure to apply to proposed changes.</p>
<b>GB 6</b>	6.6	Table 1	ed	<p><u>Order of messages</u></p> <p>It is important to demonstrate a consistent approach to the drafting of the standard. We consider that any listing of messages should be in the same order wherever they occur.</p> <p>We also suggest that the ordering of VHB and HHB messages should be reversed. It is more logical to think of HHB messages being created by the SM and the heartbeat is then passed on the edge trees.</p>	Reorder Table 1 to be consistent with the order of message specifications and with Table 2.	<p>Agreed.</p> <p>Changed the ordering in table 2.</p>

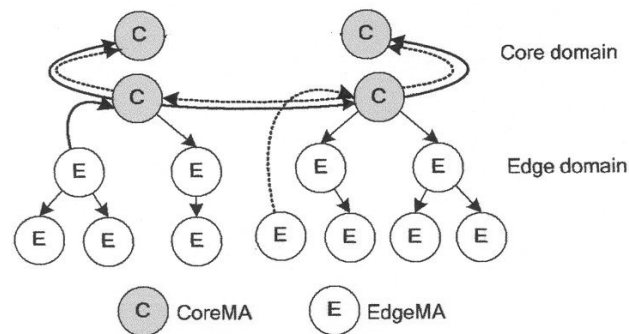


Figure 8 – RMCP-3 data delivery model with ring-linked core-domain

<b>GB 7</b>	7.3.1 7.3.2.1 7.3.4.1 7.3.4.2 8.3.1.2 8.3.2.2 8.3.5.2 8.3.6.2 8.3.7.2 8.3.16.2 8.4.3 9.3.1		te, ge	<p><u>Authentication</u></p> <p>We note that authentication has been withdrawn from the basic RMCP-2 protocol on the grounds that it was not sufficiently defined and in 16512-2 and that its proposed use in basic RMCP-2 was not compatible when used in conjunction with secure RMCP-2 (16512-2/Amd.1).</p> <p>7.3.1 states that the decision rule for authentication and authorization is defined in the initial stage of RMCP-3 services. We cannot find this decision rule in the FCD text.</p> <p>Furthermore, although 7.3.2.1.a) states the need for an authentication mechanism, this is not specified in the Recommendation.</p> <p>The AUTH control defined in 16512-3 has the same structure (but not the same field names) as the AUTH_ALG control in the revised text of 16512-2/Amd.1. Both are based on a choice of Hash/MAC algorithms (HMAC-SHA1   HMAC-MD5   MD5).</p> <p>The meaning for the AUTH control in the table in clause 8 is described as 'authentication information for verifying the sender'. The AUTH control provides no information</p>	<p>Either remove authentication form the standard or provide a more adequate specification of the procedure for authentication.</p> <p>If the latter is chosen, the control type should be aligned with the AUTH_ALG control in 16512-2/Amd.1.</p> <p>We are not in a position to provide replacement text.</p>	<p>Agreed</p> <p>Removed every AUTH parts. (Not in text)</p>
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				beyond the identification of a Hash/MAC algorithm.  The identification one of these algorithms may be necessary for authentication but we doubt that it is sufficient for successful authentication.		
<b>GB 8</b>	7.3.4.1.a		ed	<u>Korean characters</u>	Translation required	Agreed  It was an MS word problem. it is removed.  (Not in text)
<b>GB 9</b>	8.2		te	<u>Control data format</u>  The field size should be related to the need for multiple control types, not vice versa.  The number of control types is of concern only to the writers of the standard.  There are less than 16 control types in this protocol and we cannot envisage a case where 256 control types will be needed.	Delete: Since the control type field is 1-byte long , the maximum number of unique control types is limited to 256 cases.	Agreed.  Deleted as proposed.
<b>GB 10</b>	8.3.1.1.g) 8.3.2.1.g) 8.3.3.1.g) 8.3.4.1.g) 8.3.5.1.g) 8.3.6.1.g) 8.3.7.1.g) 8.3.8.1.g) 8.3.9.1.g) 8.3.10.1.g) 8.3.11.1.g) 8.3.12.1.g) 8.3.13.1.g) 8.3.14.1.g) 8.3.15.1.g) 8.3.16.1.g) 8.3.17.1.g)		ed, te	<u>Reference to controls in the specification of message formats</u>  We consider that the sub-clause in the message formats dealing with reference to control types should be amalgamated with item g) <i>Control data</i> .  Rationale: The control data consists solely of controls and sub-controls.	The suggested form for the Control Data field (item g) for all RMCP-3 in indicated below.  The tables referring to the specific controls should have a title and table number which is referenced in the text.  We have added a reference column to the table as we consider that reference should be made to individual controls in all cases (i.e. not a general reference to 8.4).  This rearrangement eliminates the sub-clause numbering for message formats (e.g 8.3.2.1 and 8.3.2.2 are not required for the SUBSANS message in 8.3.2.	Agreed.  Changed every table as proposed.

Proposed format for item g) in the message formats

Note that this specific example relates to the SUBSANS message.

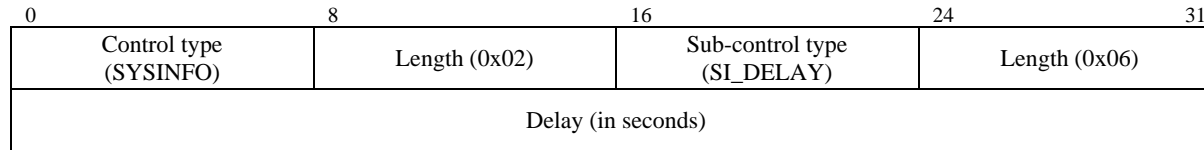
g) *Control data.* The valid control types that may be used in the SUBSANS message are listed in Table XX.

**Table XX. Control types that may be used in the SUBSANS message.**

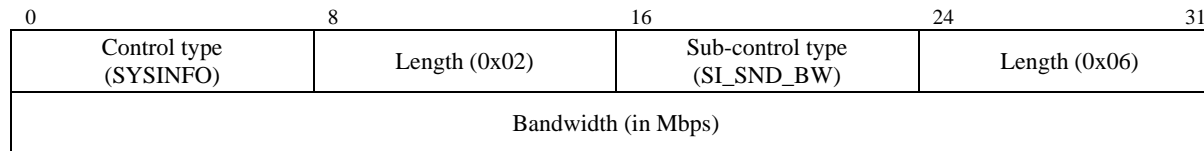
Control type	Meaning	M/O	Reference
RESULT	The result of the subscription request.	M	See 8.4.4
NEIGHBORLIST	A list of MAIDs for performing the neighbor discovery	M	See 8.4.5
DATAPROFILE	A description of the requirements for forwarding data.	O	See 8.4.2
AUTH	Authentication information for verifying the sender.	O	See 8.4.3

<b>GB 11</b>	8.4.1		ed	<u>Ordering of sub-controls</u> We suggest that the sub-controls in 8.4.1 be listed in order of the sub-control codes. Rationale: Consistency with listing in tables.	Order 8.4.1.2 to 8.4.1.16 so that the sub-controls are listed in code order.	Agreed: No action required. Sub-controls are already in order. Controls are not code order and this can be considered in a future review.
<b>GB 12</b>	8.4.1.2		ed	<u>Renaming of SI_POS_BW sub-control</u> We suggest that this sub-control be renamed as SI_POSS_BW. Rationale: For English speakers this gives a more intuitive understanding of the acronym. It also aligns with the naming in 16512-2/Amd.2	Rename SI_POS_BW as SI_POSS_BW	Agreed. Changed SI_POS_BW to SI_POSS_BW.
<b>GB 13</b>	8.4.1.3		te	<u>Deletion of SI_IP sub-control</u> This sub-control has been deleted from 16512-2/Amd.1 as there was no need to request the IP address from the local host in the COMMAND control as this information could be deduced from its MAID. The sub-control should also be removed from 16512-3.	Delete 8.4.1.3 and remove its coding from Table 5	Agreed. Removed SI_IP.
<b>GB 14</b>	8.4.1.5 8.4.1.8 8.4.1.9 8.4.1.10 8.4.1.11 8.4.1.12	Figure 68 Figure 71 Figure 72 Figure 73 Figure 74 Figure 75	te	<u>Addition of control type fields to sub-control figures</u> For consistency with the other figures in 8.4.1 and to ensure that the sub-control is preceded by a control type we propose to replace these figures as indicated below. The value of the length field for the sub-control needs to	Replace figures 68, 71,72,73,74,75 and 76 as shown below. Change the value for the length of the sub-control from 0x04 to 0x06 in the corresponding sub-clauses.	Agreed Changed format as proposed.

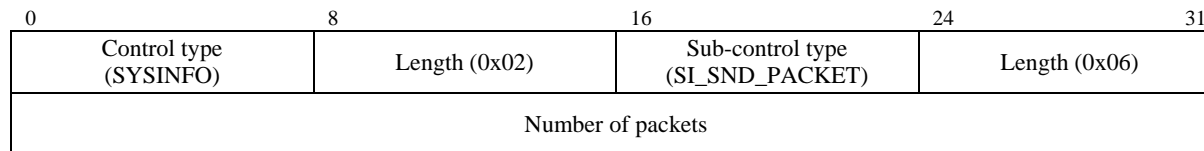
	8.4.1.13	Figure 76		be changed from 0x04 to 0x06 in order to ensure that the overall length of the control plus the sub-control is a multiple of four bytes.		
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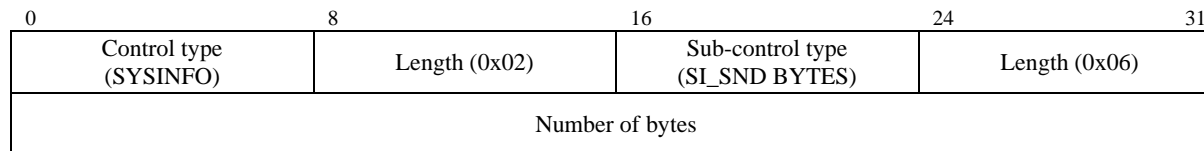
**Figure 68 – Format of the SI\_DELAY sub-control**



**Figure 71 – Format of the SI\_SND\_BW sub-control**



**Figure 72 – Format of the SI\_SND\_PACKET sub-control**



**Figure 73 – Format of the SI\_SND BYTES sub-control**



Control type (SYSINFO)	Length (0x02)	Sub-control type (SI_RCV_BW)	Length (0x06)
Bandwidth (in Mbps)			

**Figure 74 – Format of the SI\_RCV\_BW sub-control**

0	8	16	24	31
Control type (SYSINFO)	Length (0x02)	Sub-control type (SI_RCV_PACKET)	Length (0x06)	
Number of packets				

**Figure 75 – Format of the SI\_RCV\_PACKET sub-control**

0	8	16	24	31
Control type (SYSINFO)	Length (0x02)	Sub-control type (SI_RCV_BYTES)	Length (0x06)	

**Figure 76 – Format of the SI\_RCV\_BYTES sub-control**

<b>GB 15</b>	8.4.2 9.5	Table 18	te	<p><u>Format of data profile</u></p> <p>8.4.2.1.b) Length The 8-bit field size defines a maximum length for the data profile of 253 bytes. It is not clear whether a profile could exceed this maximum. If so, the length field could easily be extended to 16 bytes. If not, the explanation of the maximum length profile is superfluous and should be deleted.</p> <p>8.4.2.1.c) Data Profile does not define the format of the data profile field. It does not state that it is a text field and the statement that 'it follows SDL-like encoding scheme' is an inadequate definition.</p>	<p>Add a figure following Table 18 in 9.5 to illustrate the format of a data profile.</p> <p>Add further permissible parameters to Table 18</p> <p>We are not in a position to provide text to cover these comments. They require discussion before a decision can be made on content.</p>	<p>For further discussion.</p> <p>With inclusion of a sentence describing DATAPROFILE describes single profile.</p> <p>Agreed. Changed text as in N 14053</p>
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				<p>8.4.2.1.d) Padding. This should refer to a length of a multiple of four bytes.</p> <p><u>List of profile parameters</u></p> <p>Table 18 (in 9.5, Data profile) lists parameters for use in the data profile and the text in 9.5 indicates that it is in text-mode. There is no indication of how it is to be formatted so that the relevant values can be extracted. We consider it to be essential that an example profile such as that in Figure 84 of the published X.603.1   16512-2 should be added to accompany Table 18.</p> <p>References need to be given for TCP, UDP, SCTP and added to the References clause.</p> <p>We note that no parameters for encapsulation are given in Table 18 [these parameters, e.g. IP-IP, UDP, TCP] should be listed Table18]</p> <p>We do not approve of the reference to Annex A or Annex B in this context as these are only informative parts of the standard</p> <p><u>Extensions</u></p> <p>We cannot approve the statement that additional parameters can be defined. It is not clear whether this means that they can be defined in a future edition of the standard or whether the Session Administrator can define them. We consider that additional parameters should be defined in the standard so that there is a common understanding of them that can be understood by users who have not participated in the drafting of the standard.</p>		<p>Agreed. Changed text as in N 14053</p> <p>Agreed. Changed text and tables as in N 14053</p> <p>Agreed. Extensions removed</p>
GB 16	8.4.5	Figure 83	te, ed	<u>NEIGHBORLIST control</u>	Replace 8.4.5 with the text below	Agreed

				<p>The NL_MAID sub-control type is superfluous and its equivalent has been deleted from 16512-2/Amd.2.</p> <p>We propose revisions eliminating NL_MAID from the text and the figure.</p> <p>If there is a likelihood of the number of MAIDS exceeding 255 the size of the Number of MAIDS field should be increased to 2 bytes.</p>		Changed as proposed.
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16512-2/Amd.2 (in N 14140) has already eliminated the NL-MAID sub-control and our comment GB 16 was meant to align with this. If you are thinking of copying Figure 48 of Amd.2, I think you should delete the Length field which now denotes the full length of the NEIGHBORLIST control. If the Length field is retained, the maximum number of MAIDS is  $(256 - 40)/8 = 31$  [2040 bytes are required for 255 Maids of 8 byte lengths each].

Have another look at the proposed solution in our original ballot comments below. It is the same as the Amendment 2 NEIGHBORLIST but without the length field.

If you want to be able to have more than 255 MAIDS, the Number of MAIDS field can be increased easily to 16-bits.

#### 8.4.5 NEIGHBORLIST control

When a subscription is successful, the SM sends a list of the MAIDS of active CoreMAs back to the subscriber. This list may then be used as bootstrap information by the subscriber.



**Figure 83. NEIGHBORLIST control**

The format of the NEIGHBORLIST control is shown in Figure 83. The description of each list is as follows:

- a) Control type – This field denotes the NEIGHBORLIST control type. Its value shall be set to 0x04 (see Table 4)
- b) Reserved – This field is reserved for future use. Its value shall be set to 0x00.
- c) Number of MAIDs – This field shall be set to the number of MAIDs listed in the NEIGHBORLIST control.
- d) MAIDs – The fields MAID 1 to MAID n shall contain the MAIDs of the active CoreMAs.

GB 17	8.4.6		Te	<u>ROOTPATH control</u>  The existing text does not clearly indicate that RP_XXX refers to six possible RP sub-controls and that it is not a sub-control in its own right.  We propose revised text that defines the sub-controls in terms of rootpath elements. This gets over the problem that the number of nodes is not the same as the number of hops (there is always one more node than the number of hops)	Replace 8.4.6 with the text below	Agreed.  Made replacement as proposed.
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Proposed replacement text for the ROOTPATH control

**8.4.6 ROOTPATH control**

8.4.6.1 The ROOTPATH control is used to prevent loops and to solve triangular the problem. The probed MA shall include its root path by using the ROOTPATH control.

The format of the ROOTPATH control is shown in Figure 85. The description of each field and its value are as follows:

- a) Control type – This field denotes the ROOTPATH control. Its value shall be set to 0x07 (see Table 4).
- b) Length – This field shall be set to the length in bytes of the ROOTPATH control. Its value shall be set to 0x02.
- c) Rootpath information. This information is included in the sub-control defined in 8.4.6.2

Control type (ROOTPATH)	Length (2)	Sub-control data
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**Figure 85 – ROOTPATH control**

8.4.6.2 The general format of the RP\_XXX sub-control is shown in Figure 85. RP\_XXX stands for one of the appropriate ROOTPATH types from the first six ROOTPATH types listed in Table 6 (see note). These ROOTPATH types represent different combinations of fields for MAIDs, bandwidth and delay. If the ROOTPATH type indicates that any of the MAIDs, bandwidth or delay fields are not needed, these fields shall not be present in the ROOTPATH control. The length of the rootpath element, in bytes, for each of the ROOTPATH types is indicated in Table 6.

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.



0	8	16	24	31	
Control type (ROOTPATH)	Length (= 2)	Sub-control type (RP_XXX)	Number of ROOTPATH elements		
MAID of ROOT				Rootpath element	
Bandwidth for ROOT (0x00)					
Delay for ROOT (0x00)					
MAID of MA 1				Rootpath element	
Bandwidth for MA 1 (Mbps)					
Delay for MA 1 (seconds)					
...				Rootpath element	
MAID of MA n					
Bandwidth for MA n (Mbps)					
Delay for MA n (seconds)					

**Figure 86 – General format for RP\_XXX sub-control.**

RP\_XXX stands for one of the first six ROOTPATH types listed in Table 6. The description of each field of the RP\_XXX sub-control is as follows:

- Sub-control type.* This field denotes the RP\_XXX sub-control. Its value shall be set to one of the first six code values in Table 7
- Number of ROOTPATH elements.* This field shall be set to the number of rootpath elements in the RP\_XXX message
- MAID.* For each element in the ROOTPATH, listed in order from the ROOT, this field if present shall be set to the MAID corresponding to that element.

- 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.

GB 18	8.4.9			<p><u>Command controls for SYSINFO</u></p> <p>Analysis of SYSINFO sub-control types in ISO/IEC 16512-2/PDAM 4 (see 06N 13937) demonstrated the addition of command codes for individual sub-control types could give the same command control value for several different command components.</p> <p>The same would apply to combinations in CFD 16512-3. This means that it is not possible for the recipient of the command to deconstruct the code into its individual components.</p>	<p>Add the proposed new text below.</p> <p>This adds a separate table to clause 9 giving 16-bit codes that provide unique values for all combinations of the constituent code values</p> <p><i>Note that this list has incorporated the changes proposed in UK comments GB d' and GB d''</i></p>	<p>Agreed.</p> <p>Added proposed text</p>
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Proposed new text:

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

Table 5A 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 5A 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 5A – 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_PROV_BW	0x15	0x00 08	0000 0000 0000 1000
SI_POSS_BW	0x25	0x00 10	0000 0000 0001 0000
SI_SND_BW	0x35	0x00 20	0000 0000 0010 0000
SI_SND_PACKET	0x36	0x00 40	0000 0000 0100 0000
SI_SND_BYTES	0x37	0x00 80	0000 0000 1000 0000
SI_RCV_BW	0x45	0x01 00	0000 0001 0000 0000
SI_RCV_PACKET	0x46	0x02 00	0000 0010 0000 0000
SI_RCV_BYTES	0x47	0x04 00	0000 0100 0000 0000
SI_REL_BYTES	0x57	0x08 00	0000 1000 0000 0000
SI_TREE_CONN	0x68	0x10 00	0001 0000 0000 0000
SI_TREE_MEMBER	0x69	0x08 00	0010 0000 0000 0000

NOTE – The sub-control code column has been added for cross reference to Table 5.

UK comment GB x proposes the deletion of the NL\_MAID sub-control type from the NEIGHBORLIST control. If this comment is accepted, Table 6 will be deleted and the Table 5A above can be renumbered as Table 6 without affecting the rest of the standard.

<b>GB 19</b>	8.4.9		te	16512-2/Amd.2 has identified a need for an RP_COMMAND control in its RELREQ message for a CMA to request rootpath information from its PMA. For example, whenever an MA connects to PMA during joining or parent switching procedure, the MA needs information on the <i>from_root path</i> of its new PMA for network diagnosis and loop detection.  Is an equivalent RP_COMMAND required for 16512-3?	If an RP_COMMAND is required add the following item to the table in 8.3.8.2	Agreed. Made revision as proposed.
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Control type	Meaning	M/O	Reference
RP_COMMAND	A request for rootpath information from a PMA	O	See 8.4.10

<b>GB 20</b>	9.2.3	Table 4	te	If an RP_COMMAND is required Table 4 will need to be modified.		Agreed Made revision as proposed.
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				<p>The proposal below is based on control types for RP_COMMAND and SI_COMMAND and removal of AUTH control (see comment GB x) and is identical to the equivalent values in Table 4 of the review text for 16512-2/Amd.1.</p> <p>If the AUTH control is not removed a different solution will be required. It is preferable that the codes values for both standards are kept the same.</p>		
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**Table 4 – RMCP-3 control data types**

Current values		Proposed values if AUTH deleted and SI_ and RP_COMMANDs added	
Control type	Code		
AUTH	0x01		
		RP_COMMAND	0x01
COMMAND	0x02	SI_COMMAND	0x02
DATAPROFILE	0x03	DATAPROFILE	0x03
NEIGHBORLIST	0x04	NEIGHBORLIST	0x04
REASON	0x05	REASON	0x05
RESULT	0x06	RESULT	0x06
ROOTPATH	0x07	ROOTPATH	0x07
SYSINFO	0x08	SYSINFO	0x08
TIMESTAMP	0x09	TIMESTAMP	0x09

<b>GB 21</b>	9.5, A.2, B.1.5.2, B.2.6	Tables 18, A.1, A.2, B1 and B.2	te	<p><u>Extra data profiles</u></p> <p>Various examples of data profiles are described in Annexes A and B. They contain several parameters that are not included in Table 18.</p> <p>If the data delivery schemes in these annexes are used, these profiles will need to appear in the RMCP-3 control protocol. These parameters should, therefore, be included in Table 18.</p>		<p>Agreed:</p> <p>The additional parameters in the informative annexes have not been included in Table 16 (now Table 31)</p>
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				The parameters involved are listed below.		
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Add the following figure after Table 18.

Stream1: Protocol = UDP, Listen address = a.b.c.d:9898, Encapsulation= IP-IP,  
Stream2: Protocol = UDP, Listen address = a.b.c.d:9899, Encapsulation= UDP  
Stream3: Protocol = TCP, Listen address = a.b.c.d:9899, Encapsulation = TCP,  
CurrentSeq=xxxx, BufferedSeq=yyyy, CurrentRcvdSeq=xxxx-1

**Figure 92 – An example of a Data Profile**

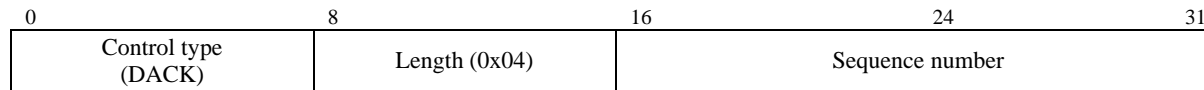
The following parameters and values appear in examples of profiles in Annexes A and B. They will need to be incorporated in DATAPROFILE controls in the RMCP-3 control protocol and Table 18 needs to be extended to incorporate these values.

Parameter	Values
Protocol	UDP   SCTP   TCP
Listening address	<i>IPv4 address: port number</i>
Data stream type	REALTIME   RELIABLE
Encapsulation	None   IP-IP   TCP
Local address	<i>IPv4 address: port number</i>
RMCP header	SOURCE_EDGEMA   APPENDIX B.2
ItemNum	<i>Number of streams that are received from different senders</i>
WantedSenderMAID	<i>Sender MAID</i>
WantedSeq	<i>Sequence number</i>

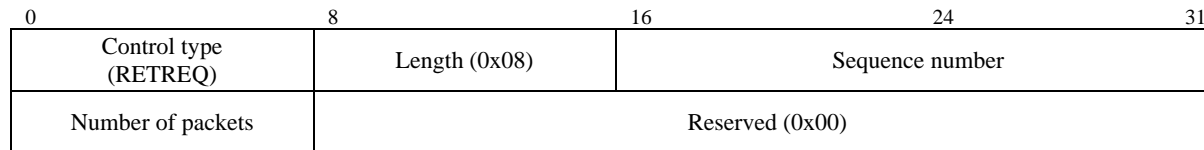
NOTES

1. This table is intended to highlight all the possible parameters and it is not intended that it should be included in this form in the standard.
2. The first four entries are common to most of the profiles. The remainder are only used in specific instances.
3. The data stream type does not appear in Table 18. This parameter need not be negotiable if it is defined by the session administrator during the establishment of the session.
4. We do not approve the use of the value ‘APPENDIX B.2’ as this is only an informative part of the standard.

<b>GB 22</b>	B.2.5	Figures B.16, B.17, B.18 and B.19	te	<p><u>Extra RMCP-3 messages</u></p> <p>B.2.5 states that acknowledgement and requests for retransmission may be made through an RMCP-3 control message. They thus become part of the RMCP-3 protocol and the DACK and RETREQ messages and controls should be moved to the main body of the standard.</p> <p>Additional entries will be required in Table 2 (message types) and Table 4 (control types)</p> <p>The sub-control types for these messages are redundant and should be removed (see Figures below)</p>		The UK has withdrawn its suggestion that DACK and RETREQ controls be included in the main body of the text.
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**Figure XX – Format of the DACK control**



**Figure XY – Format of the RETREQ control**