

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [LB50 Comment Resolution related to color frame]

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Re: [Response to LB50 Comment]

Abstract: [This document describes LB50 Comment Resolution related to color frame]

Purpose: [To resolve LB50 comments related to color frame]

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LB50 Comment Resolution related to Color Frame

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- PLME Primitive Modification for the use of Color Frame
- MLME Primitives for Color Frame
- Color Frame Structure
- MAC Command Frame for Color Frame

21CIDs related to Color Frame

	A	B	D	E	F	G	J	K
	CID	Name	Clause	Subclause	Page	Line	Comment	Suggested Remedy
2	177	ETRI	5	5.6.4.6	18	13	We would like to suggest that the new sub-clause of 5.6.4.6 for the use of	1. Add the subclause of "5.6.4.6 Color Packet Frame"
3	247	ETRI	6	6.2.1.1	26	28	We would like to suggest that the additional parameters for the use of color	Add the additional parameters for the use of color packet as follows ;
4	635	ETRI	7	7.1.17	130	50	We would like to suggest that the new clause of 7.1.17 and its sub-clauses	1. Add the clause of "7.1.17 Primitives for requesting color packet
5	645	ETRI	7	7.2.1.1	132	18	We would like to suggest that the new frame type value and description for	Add the new frame type value and description for the use of color packet
6	660	ETRI	7	7.2.2.4	142	10	We would like to suggest that the new clause of 7.2.2.4 and its sub-clause	1. Add the clause of "7.2.2.4 Color Packet Frame Format".
7	785	David Cyp	7	7.6.10	213	33	Table XX ??	Try Table 88
8	786	Clint Chap	7	7.6.10	213	24	(TB) Not sure the sub-title meaning, especially, supplemental / information,	remove "information"
9	787	David Cyp	7	7.6.10	217	15	Figure 123 is supposed to be used in conjunction with Figures 119, 120, 121,	Add "using color 'C' to Transfer Data box replacing various colors.
10	788	David Cyp	7	7.6.10	217	25	"slide" really?	Replace "This slide ..." with "Figure 123 ..."
11	789	David Cyp	7	7.6.10	217	53	Figure 123 is specific to the example, while Figure 124 is general, lacking	Rewrite sentence leaving out Figure 123 and any reference to the
12	790	R. Roberts	7.6.10		217	25	modify sentence at line 25	Instead of saying "This slide" we ought to reference the figure number.
13	791	R. Roberts	7.6.10		217	25	reference to Previous Basic Communication Procedures.	What is meant by "Previous Basic Communications Procedures"?
14	792	Clint Chap	7	7.6.10	218	8	(TB) No definition or explanation LV in Fig.125	define or explain what the LV is.
15	793	Clint Chap	7	7.6.10	218	8	(TB) Not sure the right side boxes is place in right.	Box replace on the right side next to device 2. if the box shows the
16	794	R. Roberts	7.6.10	Figure	218		In figure 125 reference is made LV1 byte, LV2 byte and LV3 byte.	What does LV mean and should it be added to the acronym list?
17	795	David Cyp	7	7.6.10	219	51	Table 89 is marked as an example, yet the text states that the user can	Unknown
18	796	Clint Chap	7	7.6.10	219	30-31	(TB) Need more explanation about 125, Which device is going to use the	Insert the below sentence or more explanation
19	797	Clint Chap	7	7.6.10	219	31-32	(TB) Need more explanation about 125, how this color packet works?	Insert the below sentence or more explanation
20	798	David Cyp	7	7.6.10.	220	1	2009 IEEE Standards Style Manual 11.1 is not being followed.	remove heading 7.6.10.1, since there is no other subclause.
21	799	David Cyp	7	7.6.10.	220	9	What technical detail does this Figure show except two fields? No size! no	Add missing material
22	800	Sridhar Ra	6.10.1		220		color packet is not integrated	need to integrate color packet with rest of the draft

PLME Primitive Modification for Color Frame (CID 247)

- CID 247
 - We would like to suggest that the additional parameters for the use of color frame will be added to the clause 6.2.1.1 and the table 7 in the current D1 draft.
- Accept CID 247
 - We need the assignment of the color band for transmitting the corresponding psdu.

Clause 6.2.1.1.1 Modification (CID 247)

6.2.1.1.1 Semantics of the service primitive

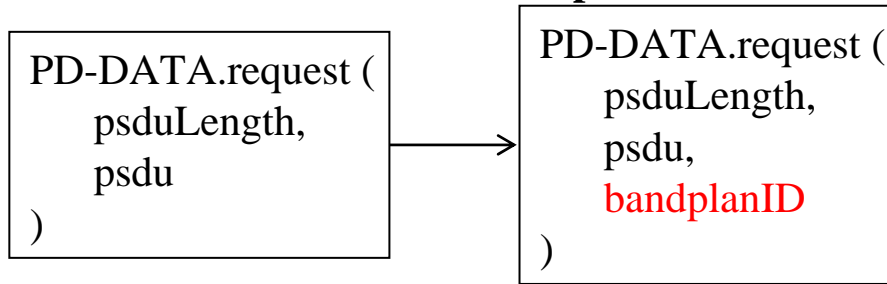


Table 7—PD-DATA.request parameters

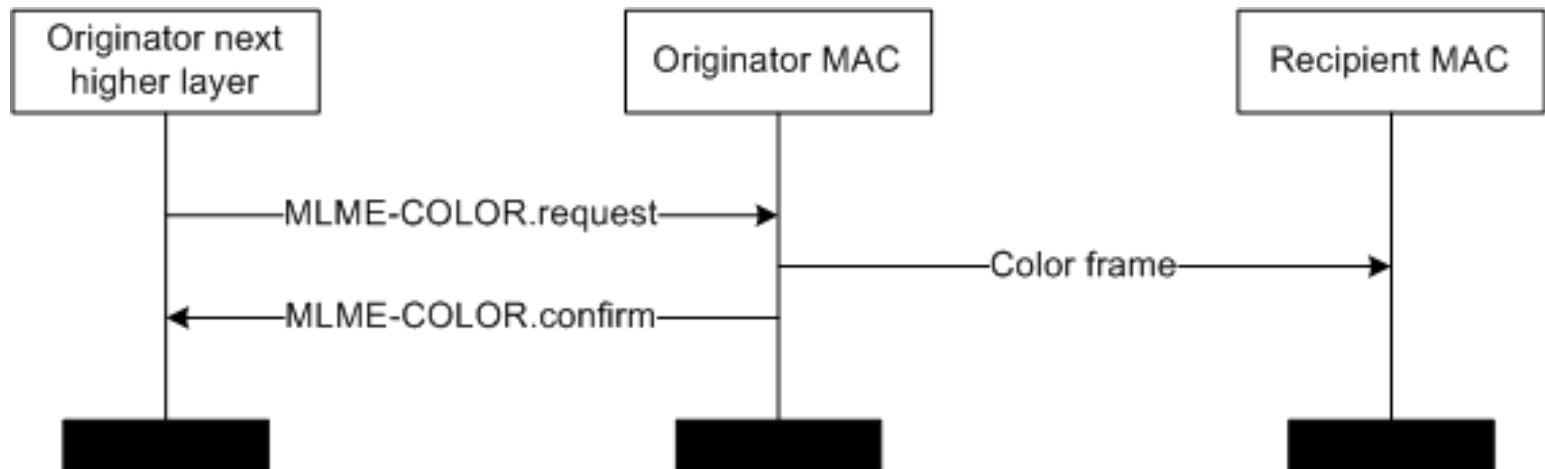
Name	Type	Valid range	Description
psduLength	Unsigned Integer	<=aMaxPHYPacketSize	The number of octets in the PSDU to be transmitted by the PHY entity.
psdu	Set of octets	-	The set of octets forming the PSDU to be transmitted by the PHY entity.
bandplanID	Integer	bandplanID	The color band of psdu

MLME Primitives for color frame (CID 635)

- CID 635
 - We would like to suggest that the new clause of 7.1.17 and its sub-clauses 7.1.17.1 and 7.1.17.2 for the use of color frame will be added to the current D1 draft.
- Accept,
 - We need new clause of 7.1.17 with 7.1.17.1 and 7.1.17.2 to transfer MLME primitive from upper layer to originator MAC
 - 7.1.17 Primitives for requesting color frame settings from DME
 - 7.1.17.1 MLME-COLOR.request
 - 7.1.17.1.1 Semantics of the service primitive
 - 7.1.17.1.2 When generated
 - 7.1.17.1.3 Effect on receipt
 - 7.1.17.2 MLME-COLOR.confirm
 - 7.1.17.2.1 Semantics of the service primitive
 - 7.1.17.2.2 When generated
 - 7.1.17.2.3 Effect on receipt

New Clause 7.1.17 (CID 635)

- 7.1.17 Primitives for requesting color frame settings from DME
 - MLME-SAP color primitives defines how to request color packet function from a DME.



New Sub-clause 7.1.17.1 (CID 635)

- 7.1.17.1 MLME-COLOR.request
 - MLME-COLOR.request primitive requests MLME to do the color packet function described in 7.6.10.

New Sub-clause 7.1.17.1.1 (CID 635)

- 7.1.17.1.1 Semantics of the service primitive
 - The semantics of MLME-COLOR.request primitive are as follows;
MLME-COLOR.request (
 macCFTType,
 macCFColor,
 macCFEnable,
 macCFMsg
)
 - Table < MLME-COLOR.request parameters > specifies the parameters for the MLME-COLOR.request primitive.

New Table <MLME-COLOR.request parameters> (CID 635)

New Table <MLME-COLOR.request parameters>

Name	Type	Valid range	Description
macCFTType	Integer	0-2	0 : Configuration for MAC procedures 1: Configuration for channel quality 2: Configuration for upper layer
macCFColor	Integer	bandplanID	bandplanID
macCFEnable	BOOL	TRUE, FALSE	Color frame enable/disable
macCFMsg	CF MSG Format	-	When macCFTType is 2, this field is not used.

New Table <Color frame configuration message format for MAC procedures> (CID 635)

New Table <Color frame configuration message format for MAC procedures>

Name	Type	Valid range	Description
macDuringASSOCColor	Integer	bandplanID	Color frame is transmitted using macDuringASSOCColor bandplanID between MLME- ASSOCIATE.request and MLME- ASSOCIATE.confirm.
macDuringDISASSOCColor	Integer	bandplanID	Color frame is transmitted using macDuringDISASSOCColor bandplanID between MLME- DISASSOCIATE.request and MLME- DISASSOCIATE.confirm,.
macDuringSYNCColor	Integer	bandplanID	Color frame is transmitted using macDuringSYNCColor bandplanID between MLME- SYNC.request and MLME- SYNC.confirm.
macDuringSCANColor	Integer	bandplanID	Color frame is transmitted using macDuringSCANColor bandplanID between MLME- SCAN.request and MLME- SCAN.confirm.

New Table <Color frame configuration message format for channel quality> (CID 635)

New Table <Color frame configuration message format for channel quality>

Name	Type	Valid range	Description
macACKFrameColor	Integer	bandplanID	Use macACKFrameColor for ACK Frame which denotes ACK
macNACKFrameColor	Integer	bandplanID	Use macNACKFrameColor for ACK Frame which denotes NACK

New Sub-clauses 7.1.17.1.2 and 7.1.17.1.3 (CID 635)

- 7.1.17.1.2 When generated
 - MLME-COLOR.request primitive is generated by MLME and issued to its MLME whenever the color packet function is required.
- 7.1.17.1.3 Effect on receipt
 - If the transmitter is enabled on the receipt of the MLME-COLOR.request primitive, MLME will cause the MAC to perform the required color packet function., MLME will issue MLME-COLOR.confirm primitive with the status of SUCCESS after a color frame is transmitted.

New Clause 7.1.17.2 (CID 635)

- 7.1.17.2 MLME-COLOR.confirm
 - MLME-COLOR.confirm primitive reports the results of a color frame request

New Sub-clause 7.1.17.2.1 (CID 635)

- 7.1.17.2.1 Semantics of the service primitive
 - The semantics of MLME-COLOR.confirm primitive are as follows;
 MLME-COLOR.confirm (
 - status
)
 - Table <xx> specifies the parameters for the MLME-COLOR.confirm primitive

Table <MLME-COLOR.confirm parameters>

Name	Type	Valid range	Description
status	Enumeration	SUCCESS, UNSUPPORTED_ATTRIBUTE, or INVALID_PARAMETER	The result of the request to perform a CCA.

New Sub-clauses 7.1.17.2.2 and 7.1.17.2.3 (CID 635)

- 7.1.17.2.2 When generated
 - The MLME-COLOR.confirm primitive is generated by the MLME and issued to its MLME in response to a MLME-COLOR.request primitive. The MLME-COLOR.confirm primitive will return a status of SUCCESS, indicating a successful color packet transmission. The reasons for these status values are fully described in 7.1.17.2.3.
- 7.1.17.2.3 Effect on receipt
 - On receipt of the MLME-COLOR.confirm primitive, the MLME is notified of the results of the color packet transmission. If the MLME-COLOR.request attempt was successful, the status parameter is set to SUCCESS. Otherwise, the status parameter will indicate the error.

Color Frame Structure (CID 177)

- CID 177:
 - We would like to suggest that the new sub-clause of 5.6.4.6 for the use of color frame will be added to the clause 5.6.4 in the current D1 draft.
- Accept:
 - We need the new sub-clause, 5.6.4.6, for MAC frame which supports color packet function.

New Sub-clause 5.6.4.6 (CID 177)

- 5.6.4.6 Color Frame
 - Figure <XX> shows the structure of the color frame, which originates from the MAC sublayer. MAC payload contains the color frame payload. MAC payload is prefixed with an MHR. The MHR contains the MAC Frame Control field and a 16-bit FCS. The MHR and MAC payload together form the color frame, (i.e., MPDU).

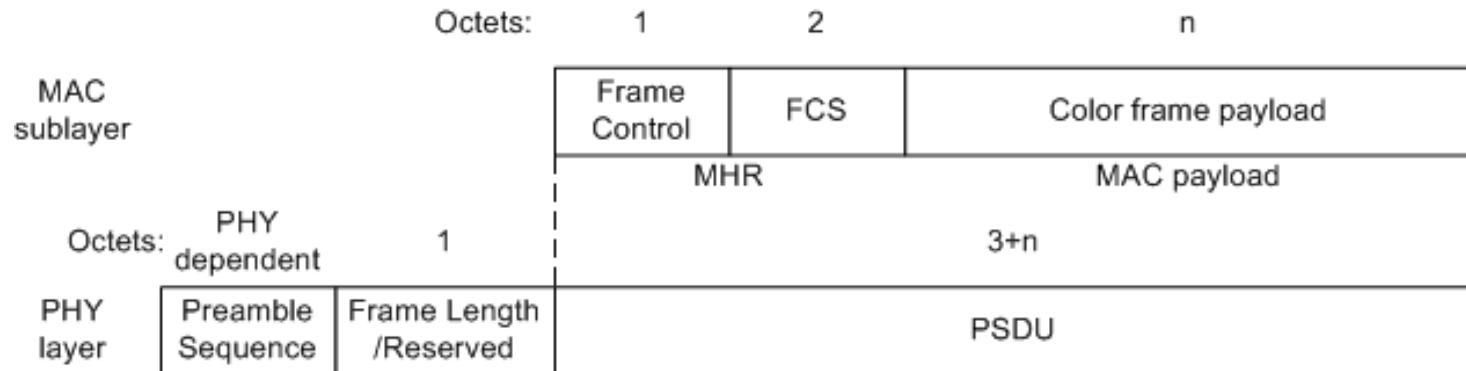


Figure <XX>—Schematic view of the Color packet frame and the PHY packet

New Text in Clause 5.6.4.6 (CID 177)

- The MPDU is then passed to the PHY as the PSDU, which becomes the PHY payload. The PHY payload is prefixed with an SHR, containing the Preamble Sequence field, and a PHR containing the length of the PHY payload in octets. The preamble sequence enables the receiver to achieve symbol synchronization. The SHR, PHR, and PHY payload together form the PHY packet, (i.e., PPDU).
- The color frame is used for the color packet function.
- An user can perceive intuitively some information (such as the current step of communication procedure, the data transmission quality, the transferred file size or remained file size).

Color Frame (CID 645)

- CID 645
 - We would like to suggest that the new frame type value and description for the use of color frame will be added to the table 67 of the sub-clause of 7.2.1.1.1 in the current D1 draft.
- Accept
 - We need to modify table 67 for adding the new frame type value and description for the color frame usage.

Modification of table 67 (CID 645)

Table 67—Values of the Frame Type subfield

Frame type value $b_2 b_1 b_0$	Description
000	Beacon
001	Data
010	Acknowledgment
011	MAC command
100	Visibility
101	Color
110–111	<i>Reserved</i>

Color Frame Control Field (CID 660)

- CID 660
 - We would like to suggest that the new clause of 7.2.2.4 and its sub-clause 7.2.2.4.1 for the use of color frame will be added to the current D1 draft.
- Accept
 - New clause of 7.2.2.4 with 7.2.2.4.1 are needed to define the control field for color frame

Clause 7.2.2.4 Insertion from CID 660

- 7.2.2.4 Color Frame Format
 - The MAC color frame shall be formatted as illustrated in Figure <XX>.
 - The MHR for a color packet frame shall contain the Frame Control field.

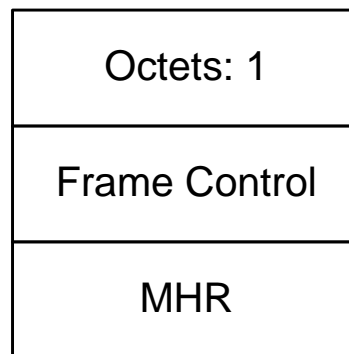


Figure <XX> -MAC Color frame format

Clause 7.2.2.4 Insertion from CID 660

- In the Frame Control field, the Frame Type subfield shall contain the value that indicates a color frame, as shown in Figure <XX>.
- The Color Packet Indicator field(CPI) shall contain whether this frame include color frame payload.
- The Peer Device Information Indicator(PDDI) field shall contain the information for transferring to the peer device such as channel quality.

Bits: 0-2	3	4	5-7
Frame Type	CPI	PDII	Reserved

Figure <xx> Frame Control Field

Clause 7.3.18 Insertion from CID 660

- 7.3.18 Color frame command
 - Color frame command is used to enable or disable the color frame of peer device.
 - Color frame format is showed Figure <XX>

Octets: 7	1	N
MHR fields	Command Frame Identifier (see Table 79)	Color frame transmission

Figure <XX> - Color frame command format

Table 79 Modification from CID 660

Table 79—MAC command frames

Command frame identifier	Command name	device		Subclause
		Tx	Rx	
0x01	Association request	X		7.3.1
0x02	Association response		X	7.3.2
...
0x13	Visible frame transmission			7.3.17
0x14	Color packet transmission			7.3.18
0x15-0xff	<i>Reserved</i>			

Clause 7.6.10.1 Deletion from CID 660

- According to insert clause 7.2.2.4, we don't need Clause 7.6.10.1.
- So we delete clause 7.6.10.1
- CID 798, 799, 800 related Clause 7.6.10.1 is resolved

Other Comment Resolution related to Color Frame CIDs

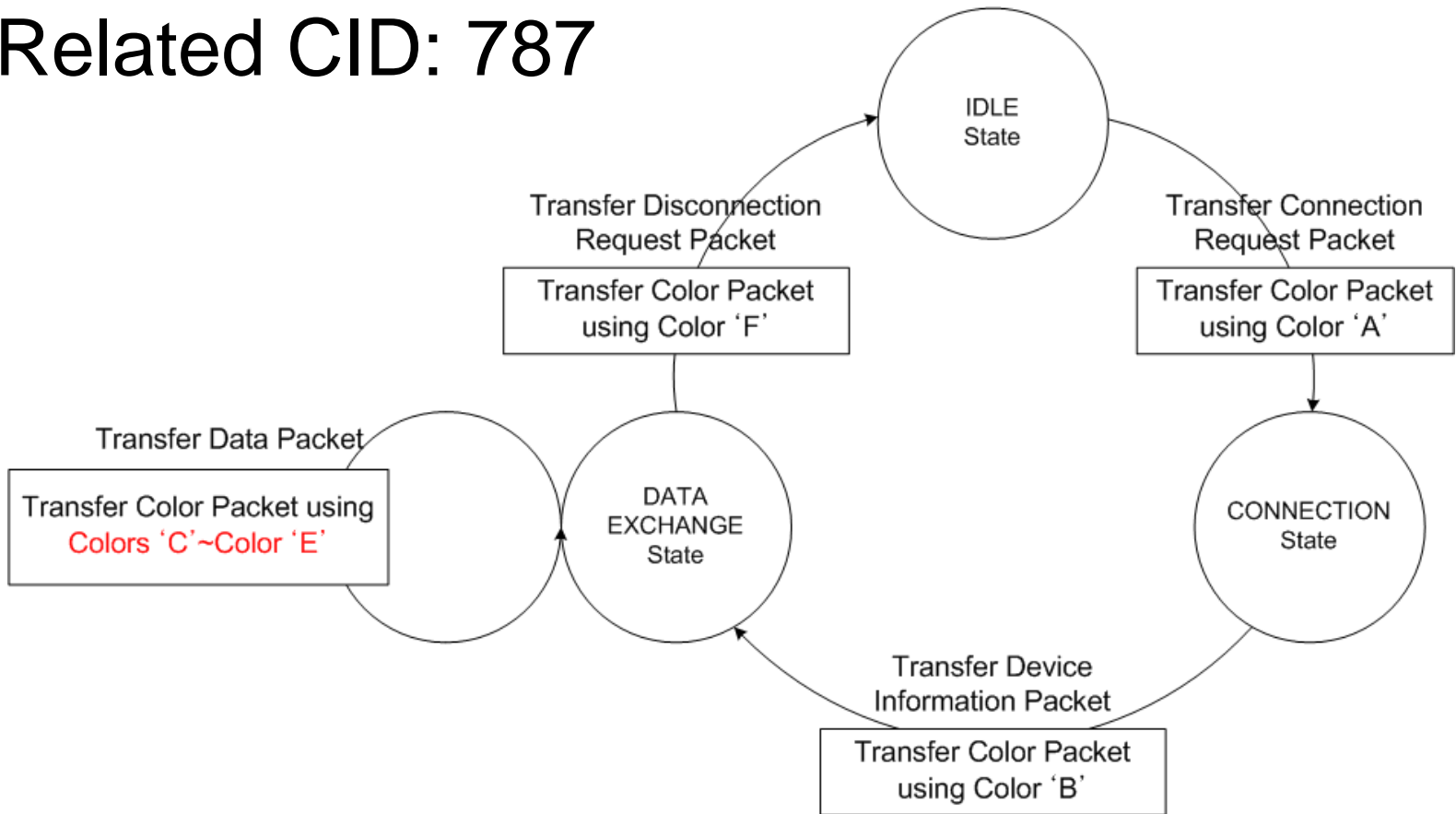
- CID 785
 - We changed ‘Table XX’ to ‘Table 88’
- CID 786
 - We removed ‘information’
- CID 787
 - Change Figure
 - We changed various color to Color ‘C’~ Color ‘E’
- CID 788, 790
 - We changed ‘This slide’ to ‘Figure 123’
- CID 789
 - The comment seems not to be clear, so we reject this comment.

Other Comment Resolution related to Color Frame CIDs

- CID 791
 - We changed ‘Previous Basic Communications Procedures’ to ‘MAC State Transition Procedures’
- CID 792, 793, 794, 796, 797
 - Instead of LV1, LV2, LV3, we changed L, M, N
 - We changed the Figure
 - We explained the Figure
- CID 795
 - This table is an example for information.
 - So we reject this comment.

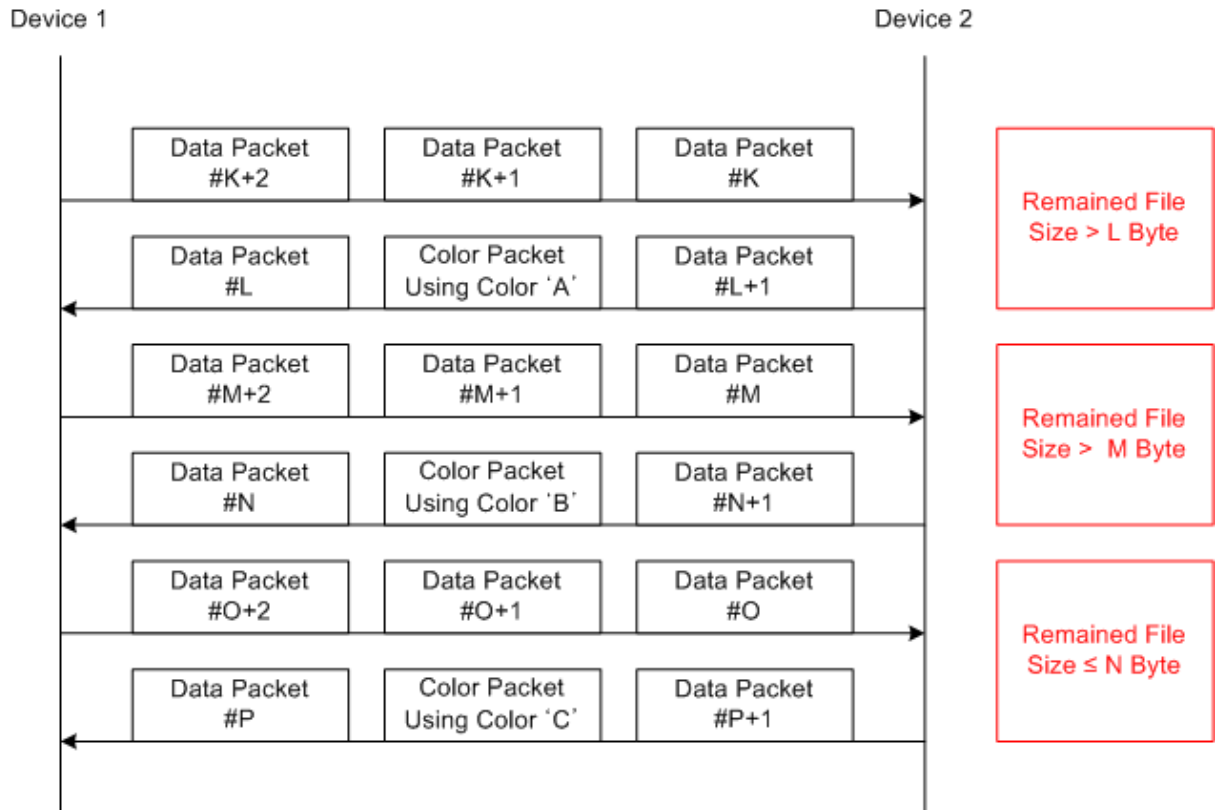
Other Comment Resolution related to Color Frame CIDs

- Related CID: 787



Other Comment Resolution related to 5 CIDs

Accept : CIDs 792, 793, 794, 796, 797



21 CIDs are resolved

- By the insertion and modification of PLME primitives and MLME primitives for color frame
 - CID 177, 247, 635, 645, 660, 798, 799, 800 are resolved.
- Comment Resolution by the modification of Figure 125
 - CIDs 792, 793, 794, 796, 797 are resolved.
- Other CIDs are resolved by the suggested remedy
 - CIDs 785, 786, 787, 788, 790, 791 are resolved.
- CIDs 789 and 795 are rejected.