

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

Submission Title: [proposed resolutions about comments CID 244 and more]

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Re: []

Abstract: [Proposed resolution about comment CID 664 and more and helping discussion]

Purpose: [Contribution to IEEE 802.15.7 TG-VLC]

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Proposed resolutions of CID 664 and more

**(664, 704, 710, 711, 712, 483, 691, 700, 703, 555,
557, 561)**

2010. 07.08

Samsung Electronics

Technical comment CID 664

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
664	R. Roberts	7.2.3.1		144		Relocate text	Relocate the text at the top of page 144 (line 1 thru 10) to section 7.3.1 and then also reference it from section 7.3.2. Where this text is located now is not useful for where the concept is actually used.	Sridhar_2	accept remedy

- ❖ The text between line 1 to 10 at page 144 is part of sub clause, 7.2.3.1 Codeword.
- ❖ So, my suggested remedy is Reject.
- ❖ TE: please nothing to do.

Technical comment CID 704

CID	Name	Clause	Subclause	Page	Line	Comment	Suggested Remedy
704	R. Roberts	7.3.15		160	43	Confusing and unclear text	<p>The following text needs to be rewritten for clarity. I don't understand what is trying to be conveyed.</p> <p><i>The multiple channel should be applied to the VLC system. When time slot resources are not enough to cover the current all user in the VLC service area, the multiple channel usage help to enhance the multi-user communication. These channels should be assigned based on the band-plan in Table 1.</i></p>

❖ **Accept in principle.**

❖ Need some explanation and rewrite the sentence.

❖ This is a MAC command frame and this explanation let us know when and how to use this multiple channel command.

❖ **TE: Please replace below text with current text in line 43**

❖ The multiple channel should be applied to the VLC system. When the coordinator does not have time slot resources to assign for new user, the coordinator should extend the resource by using multiple channel. (new user means that new initially access user in a cell)

Technical comment CID 710

CID	Name	Clause	Subclause	Page	Line	Comment	Suggested Remedy
710	R. Roberts	7.3.17		161		Question on "visible frame transmission command"	Is this the same as the visibility frame? If so then we should change the name to "visibility frame transmission command".

❖ **Accept**

❖ **TE : change ““Visible frame” into “Visibility frame”in subclause 7.3.17.**

Technical comment CID 711

CID	Name	Clause	Page	Line	Comment	Suggested Remedy
711	R. Roberts	7.3.17	161	29	The paragraph below figure 100 is too restrictive and presumptuous ... rewrite accordingly	The VF should can be transmitted depending on bi-directional, multicasting and broadcasting capabilities. When the device sends visible frame to the coordinator, it can sometimes cause interference to other devices because different user use different time slot. To reduce interference, the device may not send the visible frame. In broadcasting case, VF should not be used in uplink case. In bi-directional or multicasting case, the coordinator should decide whether the device transmits the VF to the coordinator or not. It is not power efficient for some battery-powered device to maintain continuous visibility. So in peer to peer case, the visible frame may not be used to reduce power consumption. To use the VF, the coordinator should transmit VF_info_type which is defined in table 1 to the device. The visibility frame should be used prudently so as to cause minimal interface and prolong battery life. In many cases a light source is used for illumination, which takes precedence over the use for communications.

- ❖ Need some explanation for the comment. This subclause is nothing with the illumination.
 - ❖ **Suggested : Accept in principle.**
 - ❖ Re write including commentator's text.
 - ❖ **TE: Please replace below text with current text in line 29~37.**
- ❖ The visibility frame can be transmitted depending on bi-directional, multicasting and broadcasting capabilities. A device shall not transmit a Visible Frame after the device has received a frame from an associated device that has the "VF_info_type" bit set to ZERO which is defined in table 82. A device may resume sending Visible Frames after it has received a frame from associated devices that have the "VF_info_type" bit set to ONE. When the coordinator transmits and receives data with a device, if other device transmits a visible frame, interference occurs in a link between the coordinator and devcie. In this case, coordinator may designate the transmission of "VF_info_type". So, to use the VF, the coordinator should transmit VF_info_type which is defined in table 82 to the device. The visibility frame should be used prudently so as to cause minimal **interference** and prolong battery life. **In many cases a light source is used for illumination, which takes precedence over the use for communications.**

Technical comment CID 712

CID	Name	Clause	Subclause	Page	Line	Comment	Suggested Remedy
712	R. Roberts	7.3.17.1	Table 82	161	37	<p>Confusing text in Table 82 ...</p> <p>There are two problems with the text in this table:</p> <ol style="list-style-type: none"> 1. The text has the receiver transmitting. This is interesting! Can we replace "receiver" by "a device", or something like that? 2. VF_info_type lets the coordinator make the determination as to whether a device makes itself visible or not; that is, regardless of the intended use of the light in the first place, the coordinator appears to be able to turn off the light. Obviously this was not the intent, so we need to put rules in place that all ows a device intended for illumination to achieve its primary function without hinderence from the coordinator. 	<p>Replace "receiver" by "a device" – or something equivalent.</p> <p>Restrictions need to be placed on the coordinator to prevent it from hindering with the intended purpose of a lighting device.</p>

❖ **About comment 1.**

❖ Replace "receiver" by "a device" – or something equivalent.

❖ **Accept. – Change the receiver into a device.**

❖ **About comment 2.**

❖ The command can give the decision as to whether a device use the visibility frame or not, like you mentioned in your comment. For example, there are multiple users in the room and the VLC system give a service through the ceiling light. We don't want to disrupted or interfered by each user's visibility uplink signal. Or the broadcasting system, it's one way communication, so it does not need the uplink signal including visibility frame signal.

So, I think it's nothing with the illumination or lighting and restriction. If you have an other idea, or if I understand wrong, please, let me know.

Technical comment CID 483

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
483	R. Roberts	6.8		55		Add an MCS table	Add a table indicating the MCS indexes for CSK ... suggest the following: MCS 24 thru 30, starting the numbering from the top of the table to the bottom.		

- ❖ **accept in principle**
- ❖ **It's already applied in new PHY Header. Please refer 10/448r2**

Technical comment CID 691, 700

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
691	Michael Bahr	7	7.3.8	157	12-8	(see comment on 5.6.1) GTS request command not needed since GTS concept is not flexible enough.	remove clause 7.3.8, remove entry for GTS request command from Table 79	Bae	see doc 10/388r1 skipped – not resolved – we need to have a discussion with Michael Bahr. Joachim will coordinate with Michael on attending a conference call.
700	Michael Bahr	7	7.3.13	159	22-15	(see comment on 5.6.1) GTS response command not needed since GTS concept is not flexible enough.	remove clause 7.3.13, remove entry for GTS response command from Table 79	Bae	skipped – not resolved – we need to have a discussion with Michael Bahr. Joachim will coordinate with Michael on attending a conference call.

- ❖ **Reject**
- ❖ **During the last conference call, the TG7 committee agree with same answer “reject due to lack of a detailed remedy.”**
- ❖ **TE : nothing to do work. Just explain in excel sheet.**

Technical comment CID 703

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
703	R. Roberts	7.3.14	Figure 97		160	Change name of this command	I think it would be better to have an MCS change notification instead of mentioning the clock. Why would the supported clock change? The hardware is not changing. But the MCS might change based upon channel conditions. Change this command to "MCS change notification".	Bae	skipped - needs more discussion - addressed in 10/386r0 but unresolved

- ❖ **Reject the comment**
 - ❖ **By the way, MCS is applied in new PHY header for D2 draft.**
- Clock rate change notification is still needed even if MCS is used.**

Technical comment CID 449

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
449	R. Roberts	6.6.4.1		52	17	Relocate the paragraph of text below table 27.	The text below table 27 should be relocated to section 6.6 since this is introductory text. Currently this text is in the RLL encoding section the content of this paragraph is not about RLL encoding.	Kim	24 hr review and discuss in the near future - reference doc 10/337r0

- ❖ We've discussed in Beijing meeting like below 10/337r0.
- ❖ So, based on doc.10/337r0
- ❖ Accept in principle.
refer the slide 9 in 10/337r0

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the relocation of the text below table 27

- The text below table 27 is more related to dimming.
 - Need to move the related paragraph to VPM dimming section such as 6.9.6.2
- CID 449 : Accept as a suggested remedy and recommends a relocation to sub clause 6.9.6.2 VPM dimming

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Technical comment CID 450

CID	Name	Clause	Subclause	Page	Line	Comment	Suggested Remedy		
450	R. Roberts	6.6.4.1		52		Make changes to the text below table 27	Change "After communications, sequent frames ..." with "After link establishment, sequent frames ..."	Kim	24 hr review and discuss in the near future - reference doc 10/337r0

- ❖ We've discussed it in Beijing meeting like below 10/337r0.
 - ❖ So, based on doc.10/337r0
 - ❖ Accept
- refer the slide 13 in 10/337r0

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CID 450 for dimming

- Suggested remedy
 - Change "After communications, sequent frames ..." with "After link establishment, sequent frames ..."
- CID 450 : Accept as suggested remedy

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Technical comment CID 451

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
451	R. Roberts	6.6.4.1		52	20	Remove last sentence of the paragraph below table 27.	Remove the sentence "The transmitter should check the receiver's capability for dimming support before dimming using VPM". I don't understand why the transmitter should check if the receiver supports dimming. I would think dimming support is mandatory so this sentence should be removed.	Kim	24 hr review and discuss in the near future - reference doc 10/337r0

- ❖ The theme been discussed before in Beijing meeting like 10/337r0.
- ❖ The author dose not agree with that Every each VLC device has dimming ability. The dimming support is optional.
- ❖ So, my suggested remedy is Reject.
- ❖ TE: do nothing.

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Summary of suggested 10 CIDs resolutions

- CID 446 : reject
- CID 448 : accept as suggested remedy
- CID 452 : partially accept
- CID 449 : accept
 - relocate the paragraph of the text below table 27 to 6.9.6.2
- CID 450 : accept as suggested remedy
- CID 451 and 467 : accept
 - remove last sentence at relocated paragraph from 6.6.4.1 by CID 449
 - remove the last sentence at first paragraph of 6.7
- CID 447 and 454 : reject- see CID 451 and 467
- CID 540 : reject– dimming is a mandatory

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Das-Ho Kim, ETRI

Technical comment CID 453

CID	Name	Clause	Subclause	Page	Line	Comment	SuggestedRemedy		
453	R. Roberts	6.6.4.1		52	19	Need additional text to indicate how dimming is mapped to VPM duty cycle	The text at this line indicates that the dimming duty cycle for VPM is transmitted via the visibility frame. Reviewing section 7.4 (visibility frame) it is seen that what is really sent is a number between 0.1% and 100% and not actually the VPM duty cycle. So the question is how do we map VPM duty cycle to what is sent in the visibility frame. An equation or a table is needed to be inserted into the text.	Kim	Reject - the equation is already there

- ❖ If look at line 19, page 52, there is refer 6.9.6.
- ❖ So suggested remedy is Reject.
- ❖ Sub clause 6.9.6 explain how to work dimming procedure between 0.1% and 100% including equation.

6.6.4.1 VPM modes

17 By default, a 50% duty cycle shall be used for VPM. If dimming is required to be supported using VPM, the
 18 duty cycle shall be first communicated to the receiver by using the visibility frame. After communication,
 19 subsequent frames from the transmitter use VPM dimming as specified in 6.9.6. The transmitter should
 20 check the receiver's capability for dimming support before dimming using VPM.