Cl **00** *SC* *P* *L* # **195**

Gubbi, Rajugopal Broadcom India Pvt. Lt

Comment Type **TR** *Comment Status* **R**

It is easy for anybody to see the need for low power devices supported by this standard. E what is not clear is why a simplified version of work done by an already progressing TG could not be adopted. It is fair to mention the work of 802.15.3 of the same WG in this context. The concepts involved, like association, authentication, security, GTS etc. are more or less same in both the TGs. If the argument is going to be that the 802.15.3 is not ready it is simply because of the following reason. Even though when 802.15.4 started within 802.1 WG, 802.15.3 in the same WG had already decided the MAC-PHY and had also decided the direction for its refinements, the design in 802.15.3 is being done rigorously while the same in 802.15.4 is not. A proof to this is that, the draft subimitted for LB13 did not even have elementary concepts like association defined within the standard, but instead relied or standard enforcing group to define them. When it was commented during LB13 those conepts were borrowed from 802.15.3 but in a mangled fashion. The same story goes with the security. Another proof is the number of comments submitted by the 802.15 WG to lette ballots of 802.15.3 and 802.15.4 drafts. While 802.15.3 received lot of constructive comments from vast majority of 802.15 voters in multiple, succesful letter ballots resulting in betterment of the draft, comments for 802.15.4 were by a handful of voters. Rest of the voters either abstained or simply voted yes as if to avoid losing voting rights, without even looking at the rampant disconnects and missing definitions in the draft. It is worth mentioning that there is already enough confusion in the market caused due to the multiple IEEE wireless standards. One might argue that the reason for multiple wireless standards has the noble intention of supporting different sets of applications and/or scenarios. That is true, but the confusion in the minds of end user today is definite and non-arguable. And it is also a well known fact that the same confusion is leading to slowing down of the adaptatio of wireless devices and hence solowing the take-off of wireless market. To add to that, if IEEE publishes yet another new wireless standard it is only going to cause further confusio and frustration at the end user, causes further delay in the adaptation. Hence will be an embarrassment to IEEE standards body. This confusion, frustration and the resulting market effects can not be ignored by the IEEE standards body. Hence I recommend that this draft be NOT allowed to become a standard. Instead, if the standard is absolutely desired, given the very close similarity between the goals of 802.15.3 and 802.15.4, a stripped down, but interoperable, version of the 802.15.3's work be adopted for 802.15.4 purposes with possible enhancements to power save policies. I once again urge the IEEE body and SEC to abandon this yet another new standard and save the wireless community from embarrassment.

SuggestedRemedy

A stripped down, but interoperable, version of the 802.15.3's work be adopted for 802.15.4 purposes with possible enhancements to power save policies

Proposed Response *Response Status* **U**

REJECT.

<Letter Created by the Technical Editing Team and Sent to commenter>

<snip>Source: -02/484r0
Dear Rajugopal:

The TG4 group thanks you for your participation. Many of your comments on LB13 were helpful and a significant number of changes to the original 802.15.4 draft were based on your comments.

We would like to address the issues you raised in your Sponsor Ballot comments and then respond to your suggested remedy that would change your “no” vote to a “yes” vote.

In one comment, you ask “why a simplified version of work done by an already progressing TG could not be adopted.” This is similar to the questions the WPAN SG received from 802.11 WG on using the 802.11 MAC. In short, the applications driving TG4 are so significantly different from TG3 and 802.11 that using either of those MACs, even in a “ stripped down” fashion, would not meet the needs of the market targeted by the TG4 task group or would result in a standard that would be ignored by that market place. The selected TG4 MAC proposal was a smaller footprint than the TG3 MAC, supported both star and peer-to-peer networks (something TG3 isn't designed to do) and uses short headers (necessary when considering TG4’s low data rate).

In another comment you claimed that “the draft submitted for LB13 did not even have elementary concepts like association defined within the standard, but instead relied on standard enforcing group to define them.” We agree and these points have been addresse in this and prior drafts.

There is no action we can take regarding the comment “Rest of the voters either abstained or simply voted yes as if to avoid losing voting rights, without even looking at the rampant disconnects and missing definitions in the draft” other than stating that we do not agree wit your position. Since the IEEE does not require comments for an affirmative vote; we do not know the voter’s reasoning.

The comment “One might argue that the reason for multiple wireless standards has the noble intention of supporting different sets of applications and/or scenarios. That is true, bu the confusion in the minds of end user today is definite and non-arguable” has merit. The TG4 has worked with industry consortiums such as the ZigBee Alliance to foster adoption 802.15.4 as their preferred PHY/MAC in an effort to reduce market confusion by reducing the number of wireless systems.

The final comment we would like to address is “To add to that, if IEEE publishes yet another new wireless standard it is only going to cause further confusion and frustration at the enc user, causes further delay in the adaptation. Hence will be an embarrassment to IEEE standards body. This confusion, frustration and the resulting market effects can not be ignored by the IEEE standards body.” Since this market place has not been effectively addressed by any other IEEE standard we respectfully disagree with this comment.

The TG4 comment resolution team believes that the suggested remedy “A stripped down, but interoperable, version of the 802.15.3's work be adopted for 802.15.4 purposes with possible enhancements to power save policies” is not appropriate for the following reason

1. The 802.15.3 MAC draft standard doesn’t meet the TG4 targeted application needs such as mesh networking, simpler and smaller implementation, ability for message pending notification, smaller header (reduced transmit time), etc.

2. The security issues being addressed by TG3 differ substantially from those being addressed by TG4. The messages that 802.15.3 sends are very much larger, faster, and more frequent while the 802.15.4 messages are shorter and very infrequent. Using the

same security would have excessively burdened 802.15.4 especially those applications tha do not require security.

3. Even if a modified TG3 MAC was adopted, the two DEVs would not be interoperable. It would unnecessarily burden the cost and power of the low rate DEV to require it to suppor 22 MB/s PHY implementation. Not only that, but you have a basic 20 dB of link margin difference due to bandwidth, so the coverage area would not even be close to the same.

Similarly, if the 15.3 piconet was required to allocate time for low-rate DEVs, it would take away quite a bit of time from the high-rate DEVs that need it for multi-media. Thus, requiring 15.3 PNCs to support 15.4 DEVs would create a cost and performance burden.

Therefore, the requirement for a low-rate, low-power, low-cost PHY requires that the15.3 and 15.4 piconets will not be interoperable, no matter what is done with the MAC.

If that is the case, then interoperability has to occur at higher layers and the differences in the MAC are irrelevant. The appropriate task would be to form a new SG to consider some form of piconet bridging above the MAC that would allow 15.1, 15.3 and 15.4 DEVs to pass useful information (e.g. identities, services, capabilities, etc.) between the DEVs. However this bridging function is outside of the scope of the 15.3 and 15.4 PARs.

In summary these two standards are significantly different, the IEEE 802.15.3 has been optimized for wireless multimedia distribution in the home, with the associated attention to QoS, high data rates, low packet latency, etc. In contrast, the IEEE 802.15.4 is targeted for wireless sensor networks that mandate current drains to support multiyear battery-life, and simple implementation.

Status: Suggested remedy rejected
Finally Raju, we have appreciated the opportunity to work with you and converse with you your stance on this standard. We hope that you will maintain your participation with this task group and the working group. Thanks again for your help.

Sincerely,
Patrick Kinney
Vice-Chair 802.15 TG4
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