**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **SG LECIM meeting minutes September-2010** |
| Date Submitted | 16 September 2010 |
| Source | [David A. Howard] [On-Ramp Wireless, Inc.][Roberto Aiello] [Independent][Betty Zhao] [Huawei Technologies] | E-mail:[david.howard@onrampwireless.com][aiello@ieee.org][betty.zhao@huawei.com] |
| Re: | Low Energy Critical Infrastructure Monitoring Study Group |
| Abstract | SG LECIM Meeting minutes  |
| Purpose | Meeting minutes |
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# Study Group LECIM Meeting September 13 2010

Chair called meeting to order at 10:30am

Chair presented meeting objectives, opening report and agenda

Roberto Aiello agreed to act as secretary for this session

Roberto moved to approve agenda (658r0)

Betty seconded motion

No discussion, no objections, motion passed

Chair reminded to register for attendance.

Roberto moved to approve minutes (550r0)

Betty seconded

No discussion, no objections, motion passed

Chair reviewed IP policy and other IEEE guidelines (0714r0)

Chair reviewed 5C (665r2)

Chair amended agenda

Roberto moved to approve agenda (658r1)

Betty seconded

No discussion, no objections, motion passed

Chair appointed Betty as secretary for the SG phase

Chair appointed James Gilb as editor of PAR and 5C documents during SG phase

Chair reviewed LECIM applications (053)

John pointed out that SCADA systems have problems with external antennas

John pointed out that it would be useful to have time information

Chair reviewed summary LECIM contributions (533)

Pat Kinney provided an overview of study group’s purpose and rules

Discussion

Chair led discussion of appropriate strategy for SG

Bob Heile advised that the bar is higher for a new standard versus an amendment to 15.4

John noted that no existing 802 standards meets LECIM apps requirements

Pat noted that long battery lifetime and range with limited infrastructure present unique requirements

Betty asked what compatibility a 15.8 would need

Pat replied that a 15.8 would have a new PHY and MAC but it would still need to be compatible with 802, while a 15.4x would need to be compatible with 15.4

David said that an amendment to 15.4 would still allow the group to make small changes to 15.4

Chair led PAR discussion showing applications requirements document (208r3)

Chair recessed meeting at 12:30pm

# Sep. 15 Wed. AM1

Chair David Howard calls meeting to order at 8:04am.

Chair introduces today’s agenda: put together PAR and 5C.

Open to discussion: How to define MAC amendment in PAR? It’s not sure whether 4e MAC is enough to be LECIM MAC.

Steve Jillings: I haven’t seen 4e draft, how about low power scheme in it?

Chair: It’s still not a std., but would support low energy.

Roberto suggests to start discussing PAR draft right now and then the problems will be resolved in the discussion.

Steve Shearer suggests making market requirement document.

Chair explains that the timeline is tight, so it’s not enough time to do MRD.

Steve: how does SG cope with 4e which is still changing.

Chair: straw poll is a choice.

Pat gives an overview of 4e.

Clint suggests putting all the metric of MAC up and discussing which path to go.

Roberto: go down the direction and work out the PAR, then modify it if necessary.

Bob Heile: modifying PAR will go a long way.

Roberto suggest straw poll

Straw poll: in favor of PHY amendment to 15.4 and minimal change to MAC.

approve 10 oppose 0 abstain 5

Straw poll: Abstain only

don’t care 1 without enough knowledge 4

PAR discussion:

Chair puts draft PAR 756-00 on the projector.

Discussion about 120dB and 40kbits/s in the scope section

Shuzo Kato: should be at most 120dB

Roberto: be careful about using ‘long range’

Shuzo Kato: how about transmission distance? Does it fit for ‘personal space’?

Bob Heile: don’t stick to the title of WPAN

Steve: Why not using ‘link margin’?

Chair: it’s not suitable for different spectrums.

Clint: why put a limit there.

Steve Shearer: why put the number there?

Shuzo Kato: don’t put receiver sensitivity on, try to put something like transmission range on.

Steve Shearer: receiver sensitivity depends on data rate.

Chair needs somebody to provide the words for PAR.

Steve Shearer: propagation loss is better than receiver sensitivity, propagation loss is independent from data rate.

Shuzo Kato: what’s the network topology?

Steve Shearer: how about ‘asymmetric data flow’

Chair: unique to this PAR.

Betty: how about ‘multihop’?

Chair: multihop is a MAC concept.

Steve: what about no mains powered infrastructure if PAR only says ‘mains powered infrastructure’.

Chair: still include no mains powered infrastructure.

Many discussion about the name of ‘application data rate’

?: change ‘application data rate’ to ‘aggregation data rate’.

Larry: don’t agree.

Many discussion about ‘asymmetric data flow’, and its effect on network topology.

Qin: ‘asymmetric data flow’ seems not supporting relay mode.

Chair: ‘asymmetric data flow’ is a data model and doesn’t preclude relay or mesh.

Roberto suggests to add some explanation to it.

Straw poll: in favor of removing the bullet point ‘asymmetric data flow (many to one)’ from PAR.

approve 5 oppose 9 abstain 10

Chair change the wording of that bullet point.

Straw poll: in favor of adding ‘asymmetric application data flow’

approve ? oppose 0

Again, discussion on 120dB and 40kbtis/s and ‘application data rate’

Does ‘40kbtis/s’ mean different things between down link and uplink.

Chair: up to application, the door is open.

Is ‘40kbits/s’ for endpoint or aggregated throughput?

Chair: not specific.

Pat: is that any security requirements?

Chair: it’s needed, but not unique. So it’s not in PAR.

Meeting adjourned at 10:05

# Sep. 16 Thu. AM2

Chair call meeting to order at 10:35.

Chair upload draft PAR doc. 756-02 and draft 5C doc. 757-01 and introduce the timeline for SG and expect to submit them to WG this session.

Chair explains the new adds to PAR scope from yesterday’s version.

Betty: change ‘must’ to ‘may’ of the bullet point ‘coordinator must support all standardized modulations and data rates’.

Chair agreed.

No discussion on other parts of PAR.

Straw poll: oppose to forward PAR doc. 756-03 to WG.

No opposition.

Chair introduces 5C doc. 757-01.

Shuzo Kato: 1 b) ‘many vendors … are promoting the current standard.’ should be reworded.

Chair changes ‘current standard’ to ‘current standard group’.

Shuzo Kato suggested adding ‘MCS’ between ‘standardized modulations’ and ‘data rates’.

Chair agreed.

Qin asks the definition of ‘changing environment’ in PAR and the relationship between ‘professional installation’ and ‘changing environment’, need clarification.

No discussion on other parts of 5C. Chair rewords some sentences.

Chair updates 5C to doc. 757-02 and PAR to 756-04.

Motion:

Move that the Low Energy Critical Infrastructure Monitoring Study Group requests that the 802.15 WG forward the LECIM draft PAR (doc number: 15-10-0756-04) and LECIM draft 5C (doc number: 15-10-0757-02) to the 802 EC for approval to forward the LECIM PAR request to NesCom.

Moved: Steve Jillings

Seconded: Shuzo Kato

approve 17 oppose 0 abstain 1

Motion carries

# Attendance

Chair - David Howard

Attendance:

David Howard - On Ramp Wireless

Roberto Aiello - Independent

Noriyasu Fukagu - Mitsubishi Electric Automotive Lab

Wooyong Lee - ETRI

Jimkyeong Kim - ETRI

Lin Wang - DT Mobile

Betty Zhao - Huawei

Gahng Ahn - CUNY

John Geiger - GE Digital Energy

Kochiro Hayashi - MTI

Seong-Soon Joo - ETRI

Myung Lee - CUNY

Youcy Yang - SIMIT

Tae-Joon Park - ETRI

Kiyoshi Fukui - OKI

Garth Hillman - OakTree

Shuzo Kato - NICT

Steve Jillings - Semtech

Mike McGillow - CEC

Chiu Ngo - Samsung

Khanh Tuan Le - TI

Soo-Young Chang - CSUS

Qin Wang - USTB

Steve Shearer - Independent