IEEE P802.15

**Wireless Personal Area Networks**

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| Project | Dependability Interest Group |
| Title | **Meeting Minutes for July 2018**  |
| Date Submitted | July 12th, 2018 |
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| Re: | Meeting Minutes |
| Abstract |  |
| Purpose | Minutes of Dependability Interest Group sessions |
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**Tuesday, July 10th, 2018, PM2, 16:00-18:00**

* 1. Meeting called to order 16:10

By Chair Ryuji Kohno (YNU / CWC-Nippon)

* 1. Roll Call

Notepad for Attendance circulated.

* 1. Opening Report

Chair presented Opening report　　　　　　　　　　　　　 Doc #18-0304-r1

Chair showed IEEE Patent policy.

Chair issued Call for Potentially Essential Patents

No essential intellectual property in the scope of IG DEP was declared.

Chair presented agenda this week 　　　　　　　　　　　　Doc.#18-0318-r1

* 1. Approval of previous meeting minutes

Upon no comments on the previous meeting minutes, doc #18-0142 was approved.

* 1. Review of ID DEP activities
1. Overview of IG DEP activity: Ryuji presented doc #18-0311-01
2. Review Usecase: An Adaptive Control System for Anesthesia during Surgery Operation Using Model Predictive Control of Anesthetic Effects doc #18-0129
3. Review A dependable MAC protocol matched to bi-directional transmission in WBAN Doc.#18-0115-01
4. Review Superframe controlling scheme based on IEEE 802.15.6 for dependable WBAN Doc.#18-0138-00
	1. Discussion

Possible collaboration with FFPJ (Flexible Factory Project) which is active in IEEE802.1 has been discussed. Channel environment and wireless use cases are very various according to a wide variety of factories in a sense of various types of products making heavy industrial products such as car manufacturing, small electronics products such as car electronics devices and others. To confirm technical requirement, some specific types of factories have been focused in FFPJ including heterogenous traffic and various levels of QoS. To design appropriate MAC and PHY for the common targets, permissible packet and bit error rates, feedback controlling loop delay, and so on.

* 1. Recess at 17.51.
	2. Attendees 3

Satoko Itaya(NICT)

Kenichi Maruhashi(NEC)

Ryuji Kohno(YNU/CWC-Nippon)

**Wednesday 11 July, 2018, AM2, 10:30-13:30**

In WNG session after mid-plenary session, Kohno gave a presentation on

“Review of IG Dependability Activities for Cars and other IoT & M2M Use cases and Amendment of IEEE802.15.6 Wireless Medical BAN.”

Doc.# 15-18-0347-00-0dep-IG DEP

Discussion on the presentation, several serious issues were pointed out.

1. If include medical BAN applications as well as car applications in terms of BANs for human body as well as car and other bodies, it will be too difficult to make a single standard.
2. Need more participants to support this activity although multiple car and car electronics companies have been supporting this activity. For instance, Nissan and Mahle gave keynotes to appeal necessity of this standard in Berlin meeting last July.
3. Choices of IG-DEP are either focused car industry only or a revision or amendment of BAN IEEE802.15.6 to make it more dependable. Through September, a direction of IG-DEP should be fixed.

**Wednesday 11 July, 2018, PM1, 13:30-15:30**

Meeting was cancelled.

**Wednesday 11 July, 2018, PM2, 16:00-18:00**

* 1. Meeting called to order at 16:00
	2. Roll Call
	3. Presentation & Discussion
1. Overview of Japanese IEICE TC on Reliable Communication and Control (RCC).  doc.#15-18-0306-01-0dep
2. Overview of Japanese IEICE TC on Healthcare and Medical Information
3. Communication Technology (MICT) doc.#15-18-0307-01-0dep
4. ETSI TC Smart BAN Update  doc.#15-18-0308-01-0dep

Other activities related with IG-DEP have been overviewed in order to survey latest technologies to perform enhanced dependability.

1. Space-time domain interference mitigation using based on OMF and TDL-AA for dependable UWB-BANs doc.#15-18-0352-00-0dep
2. Improved error controlling scheme for WBAN doc.#15-18-0353-00-0dep

These were presented to focus major design criteria, i.e. multiple piconet interference and channel errors for wireless remote sensing and controlling feedback loop.

 OMF (Orthogonal Matched Filter) in time and space domains are introduced to mitigate multiple BAN environment. A modified hybrid ARQ scheme fir BAN is also introduced.

* 1. Recess at 17:35
	2. Attendees 2

Huan-Bang Li (NICT)

Ryuji Kohno(YNU/CWC-Nippon)

**Thursday 12 July, 2018, PM2, 16:00-18:00**

* 1. Meeting called to order at 16:01
	2. Roll Call
	3. Review of the presentation in WNG on Wednesday and discussion
* Regarding IEEE802.15.6 for medical BAN, what uniqueness comparing with other existing standards are has been discussed to make sure necessity of revision or amendment of IEEE802.15.6.
1. Priority control for various QoS packets
2. Human impact and EMC for a human body
3. Three PHY, i.e. narrow band, ultra wide band(UWB), and human body communications(HBC) with one common MAC for wearable and implant BANs
4. Others.
* Coexistence among multiple BANs and among different UWB PANs such as 15.4a, 15.4f. 15.4z with 15.6.
1. Authentication in CCA period
2. Modeling of coexistence near fields around a body
3. common or similar MAC of 15.4 to solve coexistence issues
4. Others.
	1. Tentative Conclusion of Future Activity of IG-DEP

After discussion in the session Kohno has tentatively concluded that IG-DEP will focus on Car Body internal network for sensing and controlling devices and components in a car as an extension or a revision of body area network for Human Body by focusing priority control in MAC and coexistence with other UWB-PANs such as 15.4a, 15.4f, 15.4z etc. in PHY and MAC.

* 1. Scheduling of May meeting
	2. Adjourn 17:31
	3. Attendees 5

Demir Rakanovic (U-BLOX)



Yeong Min Jang (Kookmin Univ.)

Charlie Perkins (FUTUREWEI)

Huan-Bang Li (NICT)

Ryuji Kohno (YNU/CWC-Nippon)