# IEEE P802.15

**Wireless Personal Area Networks**

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| Project | Dependable Interest Group | |
| Title | **Meeting Minutes for July 2013** | |
| Date Submitted | July 17, 2013 | |
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| Re: | Meeting Minutes | |
| Abstract |  | |
| Purpose | Minutes of Dependable Interest Group sessions | |
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**Monday, July 15, 2013, PM2, 16:00**

* 1. Meeting called to order

By Art Astrin

* 1. Roll Call

Notepad for Attendance circulated.

* 1. Approval of previous meeting minutes

Minutes were approved.

* 1. Use case and application matrix

Doc #416: Presented by Ryuji Kohno (affiliation YNU/CWC-Nippon)

Quote from Hawaii session: “For us, “Dependability in network” means to guarantee lowest performance enough high in a sense of highly reliable, safe, secure, fault tolerant, robust services in any predictable and even unpredictable worse environments.“

Call for applications: Send applications to Jussi Haapola and Ryuji Kohno for further processing.

Whether to go for M2M or BAN amendment is still under consideration. Depends on participant interests.

How to detect and control effect of device hardware failure?

* Hardware fault tolerance in devices.
* How to attain protocol fault tolerance?

Dedicated band would solve interference issues.

* Amount of band available will constrict useable applications.

Dependability means the device will certainly work for a specified period.

* It may work longer, but dependability is not guaranteed anymore.

Car control electronics may be too sensitive for wireless acceptance, but auxiliary electronics like entertainment, etc. would greatly benefit from wireless dependable technologies.

* The systems would be a one whole set however.
* Mass market may offset additional cost of reconfigurable and reliable technology.
  1. Definition of dependability in M2M network (in BAN network)

Presented by Jussi Haapola (Centre for Wireless Communications)

It is possible to prepare an appendix that goes beyond IEEE 802.15 scope.

Jussi Haapola to prepare initial document (doc #440r0) on techniques for dependability at communications layers.

Approach by layers:

Management layer at the side with hooks to other layers.

Application

* Quote from Hawaii session: “Collect trending retransmissions and other info to prevent failures.”

Transport

Network

Link

* Quote from Hawaii session: “MAC layer error may be able to correct by adaptation to guarantee delay specification (e.g. to switch to fragmentation, change to lower coding rate, change back-off window, change number of retransmission attempts, cooperate with other MACs to create virtual MIMO, use L2R), rather than incur delay by going to Apps layer.”

Physical

* Quote from Hawaii session: “MIMO and multipath are friends of dependability with PHY layer redundant links.”
* Quote from Hawaii session: “PHY layer can be adaptable to environment, by switching frequency particularly, if you are in a null.”
* Quote from Hawaii session: “PHY layer error may be able to correct by adaptation (switch to a better antenna) to guarantee delay specification rather than incur delay by going to Apps layer.”
  1. Intro to ETSI Smart BAN project

Doc #415: Presented by Hirokazu Tanaka (Toshiba Corporation)

How important does ETSI SmartBAN see dependability and are there other more important criterion.

* Has not been identified yet, currently establishing communication practices.

What are the targets for ultra low-power PHY?

* Not defined yet.

What does multi-radio PHY mean?

* E.g., multiple frequencies.
  1. Adjourn

The meeting was recessed (depending time slot allocation) ~~or adjourned~~ 17:55.

**Wednesday, July 17, 2013, AM1, 9:00**

1. Meeting called to order

By Art Astrin at 09:02

1. Roll Call

Notepad for Attendance circulated.

1. Approval of previous meeting minutes

Minutes were approved.

1. Application Matrix Discussion

Participants are requested to send their envisioned use cases to start formulating the application matrix.

So far Identified use cases are:

Refer to Table ‘Use Cases’ in doc #412r2

Use Case

* Medical
* Car
* Factory automation
* Disaster prevention
* Indoor positioning
* Energy flow control
* Building and smart city management
* Public safety
* Personal information space
* Government information

Min Requirements for dependability

* Max BER, e.g. 0.01%
* max delay, e.g. 1 second
* max jitter, e.g. 5%
* network resilience
* max outage probability, e.g. 100 per year
* max power consumption
* recovering time, e.g. 5 seconds
* min lifetime
* Security and authentication
* constraints

1. Adjourn

The meeting was adjourned at 10:17.