# IEEE P802.15

**Wireless Personal Area Networks**

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| Project | Dependable Interest Group | |
| Title | **Meeting Minutes for May 2013** | |
| Date Submitted | May 16, 2013 | |
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| Re: | Meeting Minutes | |
| Abstract |  | |
| Purpose | Minutes of Dependable Interest Group sessions | |
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**Session 1**

**Monday, May 21, 2013, 10:00**

Meeting was called to order by the chair.

Attendees:

Jussi Haapola

Art Astrin

Shusaku Shimada

Shu Kato

Shiu Ngo

Shoichi Kitazawa

Takashi Yamamoto

We continued the talk about Ryuji Kohno presentation to WNG: 15-13-0192-01-0dep-review-and-amendment-of-ieee802-15-6-ban-to-focus-on-dependable-wireless-ban-of-things

We continued to discuss Definition of dependability

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.

We continued on definition of Dependability

From <http://www.merriam-webster.com/dictionary/dependable>

Definition of DEPENDABLE: capable of being [depended](http://www.merriam-webster.com/dictionary/depended) on : [reliable](http://www.merriam-webster.com/dictionary/reliable)

From <http://thesaurus.com/browse/dependable>

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| Definition: | reliable, responsible |
| Synonyms: | always there, carrying the load, [certain](http://thesaurus.com/browse/certain), [constant](http://thesaurus.com/browse/constant), [faithful](http://thesaurus.com/browse/faithful), good as one's word, [loyal](http://thesaurus.com/browse/loyal), rocklike, [secure](http://thesaurus.com/browse/secure), [stable](http://thesaurus.com/browse/stable), [staunch](http://thesaurus.com/browse/staunch), [steadfast](http://thesaurus.com/browse/steadfast), [steady](http://thesaurus.com/browse/steady), [sturdy](http://thesaurus.com/browse/sturdy), [sure](http://thesaurus.com/browse/sure), to be counted on, [tried](http://thesaurus.com/browse/tried), tried-and-true, [true](http://thesaurus.com/browse/true), [trustworthy](http://thesaurus.com/browse/trustworthy), trusty, unfailing |
| Antonyms: | [dishonest](http://thesaurus.com/browse/dishonest), [irresponsible](http://thesaurus.com/browse/irresponsible), [uncertain](http://thesaurus.com/browse/uncertain), undependable, [unreliable](http://thesaurus.com/browse/unreliable), unsteady, [unsure](http://thesaurus.com/browse/unsure) |

Dependability (is subjective) depends on observer or user or management.

The feeling of dependability grows as things work for a long time until a catastrophe happens and then we feel strongly about its failure.

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.

Info to management entity that quantifies what is dependable, i.e. check often if it is working and exercise repairs to be ready for failure. (e.g. redundancy, software upgradability to fix the bugs)

Increase power, increase retransmissions, increase coding, SNR, change modulation, shorten packets, use relays, decrease contentions, change channels,

Network of many links is more dependable than a single link.

What are the tools or techniques to affect dependability?

How do we measure and track links reliability?

For example, if dependability is interfered by hacking /eavesdropping we can change security settings, change passwords, change encryption.

For dependability we have to guarantee minimum delivery ratio (example PER<1%), maximum delay (e.g. 1 sec), mean time to repair (MTTR) e.g. < 1 hour.

Collect trending retransmissions and other info to prevent failures.

MIMO and multipath are friends of dependability with PHY layer redundant links.

PHY layer can be adaptable to environment, by switching frequency particularly, if you are in a null.

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.

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.

We will have 1 time slots in July.

The meeting was adjourned by the chair.