

---

**Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)**

**Submission Title:** [ETSI TC Smart BAN Updates]

**Date Submitted:** [20 March, 2014]

**Source:** [Hirokazu Tanaka<sup>1,2</sup> John Farserotu<sup>3</sup> [1;Toshiba, 2;Yokohama National University, 3; CSEM]

**Address** [1; 72-34 Horikawa-cho, Saiwai-ku, Kawasaki, Japan 212-8585,  
2; 79-5 Tokiwadai, Hodogaya-ku, Yokohama, Japan 240-8501  
3; ]

Voice:[2; +81-45-339-4115], FAX: [2:+81-45-338-1157],

Email:[hi.tanaka@toshiba.co.jp] **Re:** []

**Abstract:** [ETSI Technical Committee on Smart BAN has been promoting research and development on dependable wireless systems for wide variety of applications of BAN such as radio controlling, automotive control etc by extending e-Health regarding medical BAN and so on. This slides may offer opportunity to discuss on use cases and applications of this standard.]

**Purpose:** [The discussion on use cases and applications will lead definition and requirement of current ongoing research and development on dependable wireless networks.]

**Notice:** This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Release:** The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.

# ETSI TC Smart BAN Updates

20<sup>th</sup> March, 2014 Beijing

Hirokazu Tanaka\*<sup>1,2</sup>, John Farserotu\*<sup>3</sup>

\*1 Toshiba, Japan

\*2 Yokohama National University, Japan

\*3 CSEM, Switzerland

---

# Schedule

- **Officially started in March 2013**
- **Supporting Members**
  - CSEM
  - Toshiba (TREL-TRL)
  - Institute Telecom
  - University of Oulu
  - University of Florence (through CNIT)
- **So far 3 face to face meetings**
  - #1 @ ETSI, 28 May 2013
  - #2 @ TREL-TRL, 5 Sep 2013
  - #3 @ ETSI, 12 Dec 2013
- **•Next face to face meeting tentatively in May 2014**

# Acting Working Items

- 5 Work Items have been created so far:
  1. Smart BAN Data representation and transfer, service and application; **Standardized interfaces, APIs and infrastructure for heterogeneity management (TR)**
  2. Smart BAN Low Complexity Medium Access Control and Routing (TS)
  3. Smart BAN Measurements and **Modelling of Smart BAN RF environment (TR)**
  4. Smart Body Area Networks Enhanced Ultra-Low Power Physical Layer (TS)
  5. Smart BAN System Description (TR)

---

# Technical overview

- **Key technical challenges for BAN today include:**
  - Radio co-existence, robustness and QoS
  - ULP multi-radio PHY and enhancements
  - Low complexity, ULP MAC
  - Heterogeneous networks, end-to-end system, handling and presentation of data
  - Interoperability
  - Security / privacy / trust
  - Smart control, coordination and management
  - Multi-layer (PHY-MAC through API and applications)
  - Implant communication
- **TC Smart BAN addresses communication protocols, physical layer, security, and coexistence issues for BAN.**
- **Different to other TBs because ...TC SmartBAN is a vertical technical committee focussed on the issues and technical challenges of Body Area Networks**

---

# Terms of Reference

- TC Smart BAN is a vertical technical committee with responsibilities for development and maintenance of ETSI Standards, Specifications, Reports, Guides and other deliverables to support the development and implementation of Smart Body Area Network technologies (Wireless BAN, Personal BAN, Personal Networks etc.)
- Target applications include health, wellness, leisure, sport and other relevant domains.
- TC SmartBAN's scope includes communication media, and associated physical layer, network layer, security, QoS and lawful intercept, and also provision of generic applications and services (e.g. web) for standardisation in the area of BAN technologies.

***Use what exists, fill in the gaps, and make it work better. This is the mission of the new ETSI TC SmartBAN***

# TB Structure

- **Plenary level (Projects)**
  1. **Heterogeneity management**, data representation and transfer
  2. **Smart control**, network management, interoperability & **security**
  3. **Multi-layer, co-existence** and **dependability** for SmartBAN
  4. **Low complexity MAC** and routing for SmartBAN
  5. Enhanced, **ultra-low power PHY** for SmartBAN
  6. **SmartBAN implant communication**
- **Project 1: Heterogeneity management, data representation and transfer**
  - WI 1.1 - Service, application and data representation (M. Girod)
- **Project 3: Multi-layer, co-existence and dependability for SmartBAN**
  - WI 3.1 - 2.4 GHz band coexistence (L. Mucchi)
- **Project 4: Low complexity MAC and routing for SmartBAN**
  - WI 4.1 - Low complexity MAC and routing requirements for SmartBAN (W. Chin)
- **Project 5: Ultra-low power PHY for SmartBAN** *New*

---

# Major activities/deliverables

- **New ETSI members to support SmartBAN work**
  - University of Oulu joint ETSI membership in March 2013
  - Few others are considering to apply
- **Draft, Work Item DTR/SmartBAN-004 (TR), Data representation and transfer, service and application**
  - First draft has been uploaded to the latest draft tool
- **Draft, Work Item DTS/SmartBAN-005 (TS), Low Complexity Medium Access Control and Routing**
- **Draft, WI DTR/SmartBAN-006 (TR), Measurements and Modelling of SmartBAN RF environment**
- **Draft, WI DTR/SmartBAN-008 (TR), System Description SmartBAN**

*New*