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Smart Body Area Networks (SmartBAN);
System Description

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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Smart Body Area Network (SmartBAN).

Modal verbs terminology

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1 Scope

The present document describes the system description of Smart BAN.

SmartBAN addresses the five major features below:

1) Smart Body Area Networks (SmartBAN) Unified data representation formats, semantic and open data model.
2) SmartBAN Data representation and transfer, service and application; Standardized interfaces, APIs and infrastructure for heterogeneity and interoperability management.
3) SmartBAN Measurements and Modelling of SmartBAN RF environment.
4) Low complexity MAC and routing for SmartBAN.
5) Enhanced, ultra-low power PHY for SmartBAN.

The following technologies are also to be defined:

- smart control;
- network management;
- implant communications;
- security; and
- privacy mechanisms.

SmartBAN takes a comprehensive view of BAN from lower layer (e.g. physical layer and MAC layer) to higher layer system aspects and end-to-end (e.g. heterogeneity management and semantic interoperability and monitoring and control). End-to-end connectivity (e.g. SmartBAN to Medical Centre or SmartBAN to SmartBAN) is illustrated by figure 1.

Figure 1: Scope of SmartBAN

SmartBAN facilitates the efficient use of multiple radio technologies. This will be handled in all the layers including semantic interoperabilities and a BAN coordinator will be introduced for that purpose (figure 2). This coordinator will also provide mandatory functionality related to routing and interactions with other application domains that includes e.g. SmartM2M, automotive, smart home environments.