IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)
Title	IEEE 802.15.4m Functional Requirement Document
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Re:	
Abstract	Requirements for functional and system performance for TG4m. The requirements have to be addressed by the amendment.
Purpose	Specifies the functional requirements of TG4m
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Overview

This document specifies the functional and specification requirements for TG4m based on the PAR and 5C documents of SG4TV.

The requirements are summarized in the following:

(a) Regulations

(b) System Performance

(c) Frequency band switching

(d) Compatibility with 802.15.4

(e) Coexistence with systems protected by regulations

(f) Coexistence with other 802 systems

(g) Compliance to PAR

1. **Functional Requirements**

2.1 Regulations

1.1.1 Regulatory domains

> [Req01] The amendment shall specify operations meeting at least one, and as many as practical, TV White Space regulatory requirements.

1.1.2 Frequency band

> [Req02] The amendment shall specify operations in TV white space frequency bands under regulatory constraints that can be identified.

1.2 System Performance

1.2.1 Data rate

> [Req03] The amendment shall provide operation modes that support PHY data rate of at least 40kbps.
>
> [Req04] The amendment shall provide at least one optional operation mode that supports PHY data rate up to at least 10Mbps.

1.2.2 Operating range

> [Req05] The amendment shall achieve operating range of at least 1km.

1.2.3 Number of supported devices

> [Req06] The amendment shall provide at least one operation mode that supports up to at least 1000 direct neighboring devices.

1.3 Frequency band switching

[Req07] The amendment should provide a means for seamless frequency band and channel switching for radios with multi-band capability.

1.4 Coexistence with systems protected by regulations

[Req08] The amendment shall provide mechanism to enable coexistence with users (*e.g.* TV broadcasting) protected by regulations.

1.5 Coexistence with other 802 systems

[Req09] The amendment should support coexistence with other 802 systems operating in the TV white space, fulfilling the requirements of providing the Coexistence Assurance Document..

1.6 Compliance to PAR

[Req10] The amendment complies with the SG4TV PAR and 5 Criteria.

2. **Specification Requirements**

[Req11] The amendment will include a PICS proforma.