

# P802.15.10

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**Submitter Email:** [bheile@ieee.org](mailto:bheile@ieee.org)  
**Type of Project:** New IEEE Standard  
**PAR Request Date:** 07-Jun-2013  
**PAR Approval Date:** 23-Aug-2013  
**PAR Expiration Date:** 31-Dec-2017  
**Status:** PAR for a New IEEE Standard

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**1.1 Project Number:** P802.15.10  
**1.2 Type of Document:** Recommended Practice  
**1.3 Life Cycle:** Full Use

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**2.1 Title:** Recommended Practice for Routing Packets in 802.15.4 Dynamically Changing Wireless Networks

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**3.1 Working Group:** Wireless Personal Area Network (WPAN) Working Group (C/LM/WG802.15)

**Contact Information for Working Group Chair**

**Name:** Robert Heile  
**Email Address:** [bheile@ieee.org](mailto:bheile@ieee.org)  
**Phone:** 781-929-4832

**Contact Information for Working Group Vice-Chair**

**Name:** PATRICK KINNEY  
**Email Address:** [pat.kinney@kinneyconsultingllc.com](mailto:pat.kinney@kinneyconsultingllc.com)  
**Phone:** 847-960-3715

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**3.2 Sponsoring Society and Committee:** IEEE Computer Society/LAN/MAN Standards Committee (C/LM)

**Contact Information for Sponsor Chair**

**Name:** Paul Nikolich  
**Email Address:** [p.nikolich@ieee.org](mailto:p.nikolich@ieee.org)  
**Phone:** 857.205.0050

**Contact Information for Standards Representative**

**Name:** James Gilb  
**Email Address:** [gilb@ieee.org](mailto:gilb@ieee.org)  
**Phone:** 858-229-4822

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**4.1 Type of Ballot:** Individual  
**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 11/2015  
**4.3 Projected Completion Date for Submittal to RevCom:** 05/2016

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 100

**5.2 Scope:** This recommended practice identifies protocols that route packets in a dynamically changing 802.15.4 network (changes on the order of a minute time frame), with minimal impact to route handling. The result is an extension of the area of coverage as the number of nodes increase.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** This recommended practice facilitates the routing of packets in dynamically changing wireless networks. Specifically it provides for automatic handling of route related capabilities such as:

- Route establishment
- Dynamic route reconfiguration
- Discovery and addition of new nodes
- Breaking of established routes
- Loss and recurrence of routes
- Real time gathering of link status
- Allowing for single hop appearance at the networking layer (not breaking standard L3 mechanisms)
- Support of broadcast
- Support of multicast
- Effective frame forwarding

**5.5 Need for the Project:** Wireless PANs are being increasingly used in a variety of applications, including in Field Area Networks and in Neighborhood Area Networks. In these networks there is increased mobility as well as an increase in the opportunity for loss of connection due to both mobility and blockers/interferers. The ability to handle dynamically changing networks would be satisfied by defining new route handling capabilities.

**5.6 Stakeholders for the Standard:** Chip vendors, Equipment Manufacturers, wireless sensor application developers and users.

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### **Intellectual Property**

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** Yes

**If yes please explain:** The project will be reviewed by the Registration Authority Committee (RAC) even though the proposed recommended practice is not changing the Medium Access Control (MAC) addressing used in IEEE Std. 802.15.4, therefore no changes to registration activity are anticipated.

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**7.1 Are there other standards or projects with a similar scope?:** No

### **7.2 Joint Development**

**Is it the intent to develop this document jointly with another organization?:** No

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**8.1 Additional Explanatory Notes (Item Number and Explanation):** (5.2) Dynamically changing networks refer to network connections changing due to mobility, signal impairments, and the transient nature of networks

(5.5) Add to 8.1: The Field Area Network (FAN) may provide a connectivity path from field Distribution Automation (DA) devices to the substation upstream, or connectivity that bypasses the Substations and links the field DA devices into a centralized management and control system

(General) It is anticipated that 802.15.4e (MAC enhancements) will facilitate 802.15.10 but 15.10 will not add any new functions to IEEE 802.15.4. 15.10 is intended to define IEEE 802.15.4 behaviors for routing. In the process, it will only use features previously defined by 15.4e.