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Telecommunications and information exchange between systems — Wireless Smart Utility Network Field Area Network (FAN)

Télécommunications et échange d'information entre systèmes — Réseau de terrain (FAN) sans fil pour services publics intelligents

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ISO/IEC/IEEE 32857 was prepared by the LAN/MAN of the IEEE Computer Society (as IEEE 2857-2021) and drafted in accordance with its editorial rules. It was adopted, under the “fast-track procedure” defined in the Partner Standards Development Organization cooperation agreement between ISO and IEEE, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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1 Introduction

1.1 Scope

This document defines the technical implementation and behavior of a Wi-SUN Field Area Network which fulfills the marketing requirements specified in [MRD]. With the details presented in this document, an implementer is enabled to construct an interoperable and certifiable implementation of the Wi-SUN FAN.

1.2 Requirements Language

Requirements are specified using the terminology and conventions as described in [RFC2119]. Requirements key words described in [RFC2119] must be capitalized.

1.3 Structure of This Document

The FAN Technical Profile Specification is developed in an iterative process as described in [FWGDP]. A brief overview of each TPS section is provided below. Unless noted otherwise, all sections are informative.

1. Introduction. Self-explanatory.
2. References. Self-explanatory.
3. Definitions and Acronyms. Self-explanatory.
4. Technical Requirements (normative). This section defines the requirements which must be met by the Specification section. It defines what functionality must be provided by the TPS. It does not define the technical specifics of how the Technical Requirements are met, nor test cases required to verify that functionality.
5. Architecture. Overview of the design and operation of the FAN.
6. Specification (normative). The technical specifics of how the mechanisms of the FAN are to be implemented. Normative clauses within this section require corresponding test case coverage be incorporated into the Wi-SUN FAN Compliance and Interoperability Test Plans.
7. Appendix A. (normative). Description of the TR51 Channel Function.
8. Appendix B. Unicast Frame Exchange examples.
9. Appendix C. (normative). Description of the Direct Hash Channel Function.
10. Appendix D. Guidance for FAN IPv6 Addressing Architecture.
11. Appendix E. Unicast / Broadcast / Discovery Example.
12. Appendix F. Description of IPv6 Neighbor Discovery Optimizations.
13. Appendix G. Description of Frame Counter, Frame Sequence Number, and MPX-IE Transaction ID interaction.
14. Appendix H. Unicast Timing Calculation Example.
15. Appendix J. FAN Node Bootstrap Messaging Flow.
16. Appendix K. EAPOL Target Selection.
17. Appendix L. Key Reinstallation Attack.

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