

lpwan
Internet-Draft
Intended status: Informational
Expires: April 26, 2017

S. Farrell, Ed.
Trinity College Dublin
October 23, 2016

LPWAN Overview
draft-farrell-lpwan-overview-00

Abstract

Low Power Wide Area Networks (LPWAN) are wireless technologies with characteristics such as large coverage areas, low bandwidth, possibly very small packet and application layer data sizes and long battery life operation. This memo is an informational overview of the set of LPWAN technologies being considered in the IETF and of the gaps that exist between the needs of those technologies and the goal of running IP in LPWANs.

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[1.](#) Introduction

[[Editor comments/queries are in double square brackets like this.]]

This document provides background material and an overview of the technologies being considered in the IETF's Low Power Wide-Area Networking (LPWAN) working group. We also provide a gap analysis between the needs of these technologies and currently available IETF specifications.

This document is largely the work of the people listed in [Section 8](#). Discussion of this document should take place on the lpwan@ietf.org list.

[[Editor's note: the eventual fate of this draft is a topic for the WG to consider - it might end up as a useful RFC, or it might be best maintained as a draft only until its utility has dissipated. FWIW, the editor doesn't mind what outcome the WG choose.]]

[2.](#) Terminology

[[Not sure if 2119 terms will be needed. Leave it here for now.]]

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [[RFC2119](#)].

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[[Extract common terms here. Maybe define and relate technology specific terms, e.g. lora g/w similar to sigfox bs etc. There is text for this in the current "gaps" draft.]]

[3.](#) Common Concerns

[[Editors note: We may want a section like this that describes some cross-cutting issues, e.g. duty-cycles, some of the ISM band restrictions. This isn't intended to be a problem statement nor a set of requirements but just to describe some issues that affect more than one of the LPWAN technologies. Such a section might be better before or after [Section 4](#), will see when text's added there. There is some text for this in the current "gaps" draft.]]

[4.](#) LPWAN Technologies

This section provides an overview of the set of LPWAN technologies that are being considered in the LPWAN working group. The text for each was mainly contributed by the proponents of each technology.

Note that this text is not intended to be normative in any sense, but simply to help the reader in finding the relevant layer 2 specifications and in understanding how those integrate with IETF-defined technologies. Similarly, there is no attempt here to set out the pros and cons of the relevant technologies. [[Editor: I assume that's the right target here. Please comment if you disagree.]]

[[Editor's note: the goal here is 2-3 pages per technology. If there's much more needed then we could add appendices I guess depending on what text the WG find useful to include.]]

[4.1.](#) LoRaWAN

[[Text TBD, I-D co-authored by the editor of this document and Alper is planned to be published Wed Oct 26]]

[4.2.](#) Narrowband IoT (nb-iot)

[[Add text here from [[I-D.ratilainen-lpwan-nb-iot](#)].]]

[4.3.](#) Sigfox

[[Add text here from [[I-D.zuniga-lpwan-sigfox-system-description](#)].]]

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[4.4.](#) WI-SUN

[[Add text here when available. Source = bheile@ieee.org]]

[5.](#) Gap Analysis

[[Add text here from [[I-D.minaburo-lpwan-gap-analysis](#)].]]

[6.](#) Security Considerations

[7.](#) IANA Considerations

There are no IANA considerations related to this memo.

[8.](#) Contributors

As stated above this document is mainly a collection of content developed by the full set of contributors listed below. The main input documents and their authors were:

- o Text for [Section 4.2](#) was provided by Antti Ratilainen in [[I-D.ratilainen-lpwan-nb-iot](#)].
- o Text for [Section 4.3](#) was provided by Juan Carlos Zuniga and Benoit Ponsard in [[I-D.zuniga-lpwan-sigfox-system-description](#)].
- o Text for [Section 5](#) was provided by Ana Minabiru, Carles Gomez, Laurent Toutain, Josep Paradells and Jon Crowcroft in [[I-D.minaburo-lpwan-gap-analysis](#)]. Additional text from that

draft is also used elsewhere above.

The full list of contributors are:

Jon Crowcroft
University of Cambridge
JJ Thomson Avenue
Cambridge, CB3 0FD
United Kingdom

Email: jon.crowcroft@cl.cam.ac.uk

Carles Gomez
UPC/i2CAT
C/Esteve Terradas, 7
Castelldefels 08860

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October 2016

Spain

Email: carlesgo@entel.upc.edu

Ana Minaburo
Acklio
2bis rue de la Chataigneraie
35510 Cesson-Sevigne Cedex
France

Email: ana@ackl.io

Josep PARadells
UPC/i2CAT
C/Jordi Girona, 1-3
Barcelona 08034
Spain

Email: josep.paradells@entel.upc.edu

Benoit Ponsard
SIGFOX
425 rue Jean Rostand
Labège 31670
France

Email: Benoit.Ponsard@sigfox.com
URI: <http://www.sigfox.com/>

Antti Ratilainen
Ericsson
Hirsalantie 11
Jorvas 02420
Finland

Email: antti.ratilainen@ericsson.com

Laurent Toutain
Institut MINES TELECOM ; TELECOM Bretagne
2 rue de la Chataigneraie
CS 17607
35576 Cesson-Sevigne Cedex
France

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Email: Laurent.Toutain@telecom-bretagne.eu

Alper Yegin
Actility
Paris, Paris
FR

Email: alper.yegin@actility.com

Juan Carlos Zuniga
SIGFOX
425 rue Jean Rostand
Labège 31670

France

Email: JuanCarlos.Zuniga@sigfox.com

URI: <http://www.sigfox.com/>

9. Acknowledgements

Thanks to all those listed in [Section 8](#) for the excellent text.
Errors in the handling of that are solely the editor's fault.

Thanks to [your name here] for comments.

Stephen Farrell's work on this memo was supported by the Science
Foundation Ireleand funded CONNECT centre
<<https://connectcentre.ie/>>.

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Author's Address

Stephen Farrell (editor)
Trinity College Dublin
Dublin 2
Ireland

Phone: +353-1-896-2354

Email: stephen.farrell@cs.tcd.ie