

lpwan Working Group
Internet-Draft
Intended status: Informational
Expires: September 6, 2018

A. Minaburo
Acklio
E. Ramos
Ericsson
S. Shanmugalingam
Acklio
March 05, 2018

LPWAN Static Context Header Compression (SCHC) over NB-IoT
draft-minaburo-lpwan-nbiot-hc-00

Abstract

The Static Context Header Compression (SCHC) specification describes a header compression and fragmentation functionalities for LPWAN (Low Power Wide Area Networks) technologies. SCHC was designed to be adapted over any of the LPWAN technologies.

This document describes the use of SCHC over the NB-IoT channels, and provides elements for an efficient parameterization.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <https://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on September 6, 2018.

Copyright Notice

Copyright (c) 2018 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<https://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents

carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

Table of Contents

1.	Introduction	2
2.	Terminology	3
3.	Architecture	3
3.1.	The Control Plane	3
3.2.	The Data Plane	3
3.3.	SCHC entities	4
3.4.	NB-IoT Channels	4
4.	Static Context Header Compression	4
4.1.	SCHC Rules	4
4.1.1.	Rule ID	4
4.2.	Packet processing	4
4.3.	SCHC Context	4
5.	Fragmentation	4
5.1.	Fragmentation modes	4
5.2.	Fragmentation Parameters	5
6.	Padding	5
7.	Security considerations	5
8.	3GPP References	5
9.	Informative References	5
	Authors' Addresses	6

[1.](#) Introduction

The Static Context Header Compression (SCHC)

[[I-D.ietf-lpwan-ipv6-static-context-hc](#)] defines a header compression scheme and fragmentation functionality, both specially tailored for Low Power Wide Area Networks (LPWAN) networks defined in [[I-D.ietf-lpwan-overview](#)].

Header compression is needed to efficiently bring Internet connectivity to the node within an NB-IoT network. SCHC uses an static context to performs header compression with specific parameters that need to be adapted into the NB-IoT channels.

This document describes the use of SCHC and its parametrizing over the NB-IoT channels.

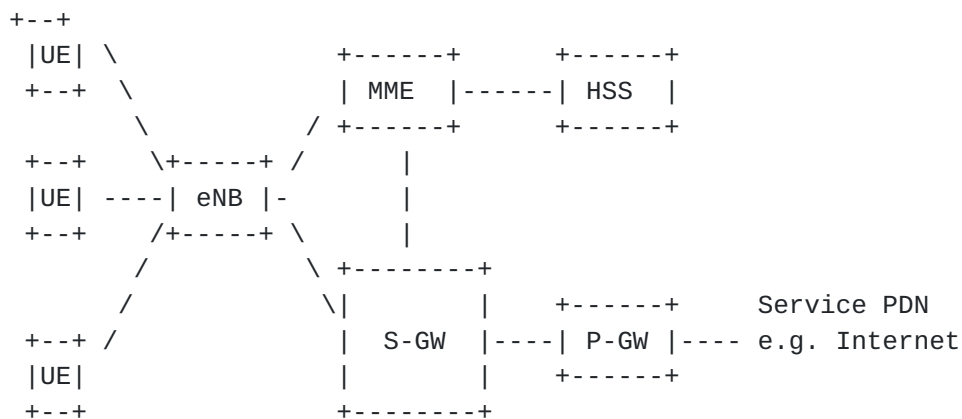
2. Terminology

This document will follow the terms defined in [\[I-D.ietf-lpwan-ipv6-static-context-hc\]](#), in [\[I-D.ietf-lpwan-overview\]](#), and the (TGPP23720).

- o UE. User Equipment
- o eNB. Node B. Base Station that controls the UE
- o MME. Mobility Management Entity. Handle mobility of the UE
- o S-GW. Serving Gateway. Routes and forwards the user data packets through the access network
- o HSS. Home Subscriber Server. It is a database that performs mobility management
- o P-GW. Packet Data Node Gateway. Interface between the internal with the external network

TBD

3. Architecture



3.1. The Control Plane

3.2. The Data Plane

TDB

[3.3.](#) SCHC entities

TBD

[3.4.](#) NB-IoT Channels

(Rule ID on L2)

TBD

[4.](#) Static Context Header Compression

TBD

[4.1.](#) SCHC Rules

TBD

[4.1.1.](#) Rule ID

The Rule ID the SCHC identifies are: * In the SCHC C/D context the Rule used to keep the Field Description of the header packet.

- o In SCHC Fragmentation the specific modes and settings.
- o And at least one Rule ID may be reserved to the case where no SCHC C/D nor SCHC fragmentation were possible.

TBD

[4.2.](#) Packet processing

TBD

[4.3.](#) SCHC Context

TBD

[5.](#) Fragmentation

Fragmentation Headers TBD

[5.1.](#) Fragmentation modes

TBD

5.2. Fragmentation Parameters

- o Rule ID
- o DTag
- o FCN
- o Retransmission Timer
- o Inactivity Timer
- o MAX_ACK_Retries
- o MAX_ATTEMPS

TBD

6. Padding

TBD

7. Security considerations

3GPP access security is specified in (TGPP33203).

8. 3GPP References

- o TGPP23720 3GPP, "TR 23.720 v13.0.0 - Study on architecture enhancements for Cellular Internet of Things", 2016.
- o TGPP33203 3GPP, "TS 33.203 v13.1.0 - 3G security; Access security for IP-based services", 2016.

9. Informative References

[I-D.ietf-lpwan-ipv6-static-context-hc]

Minaburo, A., Toutain, L., and C. Gomez, "LPWAN Static Context Header Compression (SCHC) and fragmentation for IPv6 and UDP", [draft-ietf-lpwan-ipv6-static-context-hc-10](#) (work in progress), February 2018.

[I-D.ietf-lpwan-overview]

Farrell, S., "LPWAN Overview", [draft-ietf-lpwan-overview-10](#) (work in progress), February 2018.

Authors' Addresses

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

Email: ana@ackl.io

Edgar Ramos
Ericsson
Stockholm
Stockholm
Sweden

Email: edgar.ramos@ericsson.com

Sivasothy Shanmugalingam
Acklio
2bis rue de la Chataigneraie
35510 Cesson-Sevigne Cedex
France

Email: sothy@ackl.io

