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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.

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[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.

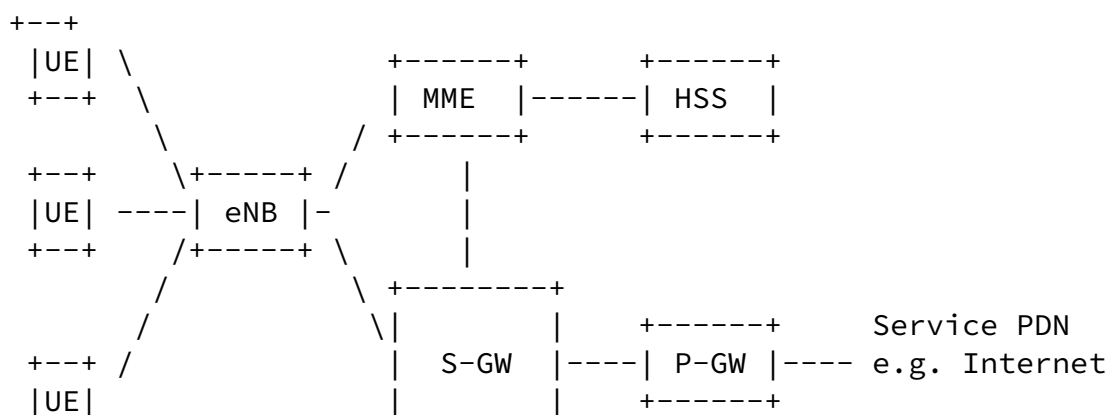
2. Terminology

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



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[3.1.](#) The Control Plane

[3.2.](#) The Data Plane

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[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.

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