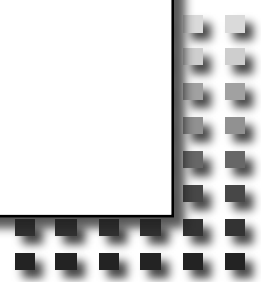# openSCHC
LPWAN WG
IETF Hackathon

IETF 115
5-6 Nov 2022
London, UK

I E T F

openSCHC background

- SCHC is Header Compression and Fragmentation for LPWAN (low datarate, small payloads)
- specification work done at the LPWAN WG (Int Area)
- RFCs 8376, 8724, 8824, 9011, +more coming
- openSCHC is Python3 open source implementation of RFC 8724 + 8824
- openSCHC adopted by the LoRa Alliance as certification reference for IPv6 over LoRaWAN

Hackathon Plan

- Clean up the GitHub repo
  - merge branches, remove dead code
  - increase pytest coverage
- Interop testing with libSCHC/RiOT
- Improve documentation
- YANG model validation (pyang)
- Discuss specification understanding, implementation assumption

What got done

- Cleaned up the openSCHC GitHub repo
- Clean-slate micropython implementation of SCHC compression (dubbed "microSCHC")
- Proof-read openSCHC tutorial ("The Book of SCHC")
- Designed connector between openSCHC and Sigfox Network Server
- Interop testing between openSCHC and libSCHC
  - compression on RiOT/libSCHC, decompression on openSCHC
  - compression on openSCHC, decompression on RiOT/libSCHC
  - transport over UDP between two computers
- Interop between microSCHC and openSCHC
  - compression on microSCHC, decompression on openSCHC
  - work to be continued during the IETF week

What we learned

- clean slate implementation by newcomer led to
  - lots of good questions on RFC8724 wording, design choices, implementation recommendations
  - ideas for other ways of doing Header Compression using the same SCHC toolbox
  - might lead to YANG model extension, protocol variants
  - feedback to the LPWAN Working Group
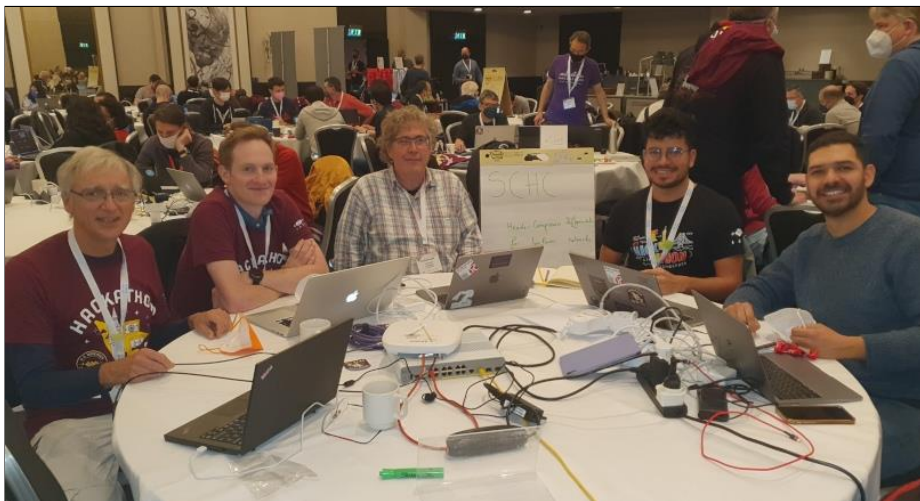
Wrap Up

Team members:

-   Laurent Toutain
-   Ivan Martinez
-   Quentin Lampin*
-   Sergio Aguilar Romero+
-   Martine Lenders
-   Dominique Barthel

* First timer @ IETF/Hackathon

+ First timer onsite @IETF/Hackathon

https://github.com/openschc

https://book.openschc.net

https://github.com/quentinlampin/microschc