openSCHC
LPWAN WG
IETF Hackathon

IETF 115
5-6 Nov 2022
London, UK
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