LPWAN IPv6 fragmentation

- **draft-ietf-lpwan-ipv6-static-context-hc**
- Efficient fragmentation on very small payloads
  - complements compression
- **Goals**
  - prove algorithm
  - provide reference code
  - allow perf. evaluation
Status of LPWAN fragmentation

- Windows of fragments
  - Bitmaps for ACK’ing fragments in windows
- Three different ACK modes
- Started with textual description
- Several brainstorm sessions
  - interim meetings, side meeting
- Then drew state machines
- Still discussing
IETF100 hackathon team

- 3 academics/govt:
  - Laurent Toutain: IMT-Atlantique
  - Cedric Adjih: INRIA
  - Sandoche Balakrishnan: AFNIC

- 3 companies:
  - Alexander Pelov: Acklio
  - Soichi Sakane: Cisco
  - Dominique Barthel: Orange
Achieved at this Hackathon

• Source code available at https://github.com/ltn22/SCHC

• Implementation
  – Developed fragm/assbly Python3 code on Server and End-Device (Pycom)
  – Updated compression code

• Testing
  – over LoRaWAN, over UDP
What’s next

• Provide food for thought at side meeting
  – Tuesday 9:30-12, Butterworth
• Integration of fragmentation and compression
• Converge on draft
  – draft-ietf-lpwan-ipv6-static-context-hc
• Performance evaluation on real payloads
  – CoAP, ICMPv6
Thank you!