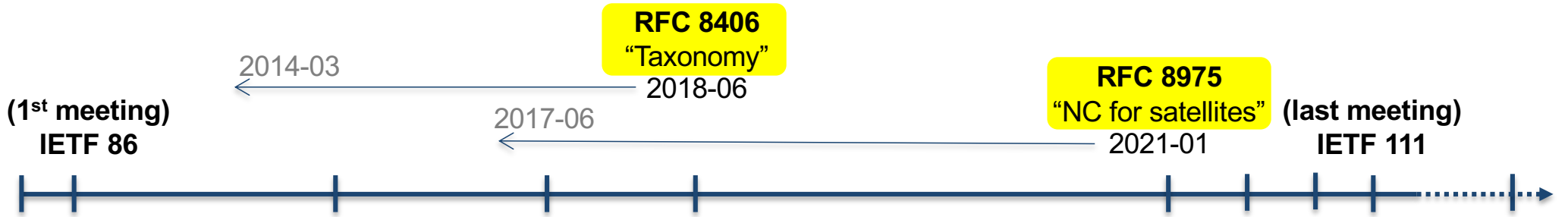
NWCRG status, after 8 ½ years… (2013 – 2021)

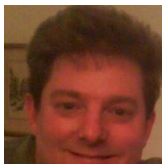
Marie-José Montpetit, Vincent Roca

July 29th, 2021, IETF 111 online meeting

Key events and RFC publications



2013-02
NWCRG launch, Brian/Victor co-chairs
(Lars E. IRTF chair)



2016-10
Vincent new co-chair

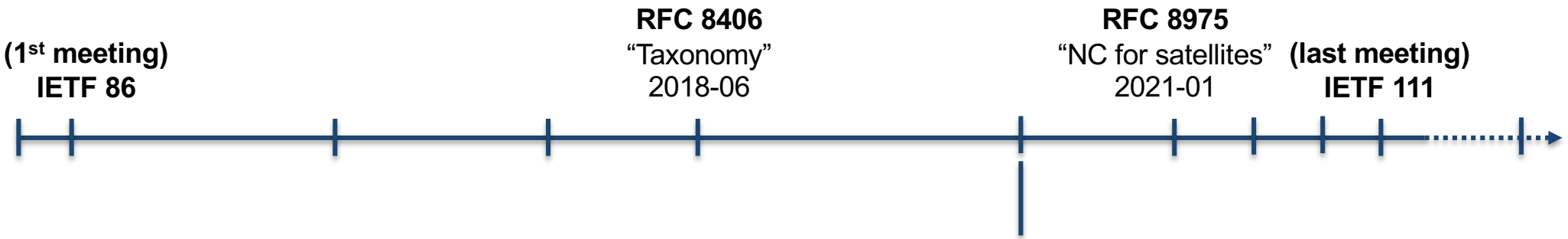
2017-09
- Marie-Jose new co-chair
- new RG acronym expansion: "coding for efficient NC"

2021-03
"NC for CCN"
sent to IRSG

2021-07
"Coding & CC"
sent to IRSG

2021-09 (?)
"BATS"
to be sent to IRSG

Three additional RFCs ☺



2017-06 ← 2020-01 @ TSVG, but initiated within NWCRG

- RFC 8680: "FECFRAME extension for sliding window codes
- RFC 8681: "sliding window RLC codes"
- RFC 8682: "TinyMT32 PRNG"

But also controversy

- After 8 years of silent participation to NWCRG/TSVWG (no IPR disclosure), on March 2020 **CodeOn** disclosed a patent against RFC 8681 “Sliding window RLC FEC schemes for FECFRAME”, soon after the RFC being published

  https://datatracker.ietf.org/ipr/4069/

- Pretty uncomfortable situation
  - MJM listed as co-inventor but convinced IP does not apply to RFC 8681

    https://mailarchive.ietf.org/arch/msg/nwcrg/n4DeGM_4xRzQChPX7NQ9CUmThvo/
  - full support of IRSG chair and several NWCRG participants towards MJM

    https://mailarchive.ietf.org/arch/msg/nwcrg/vk_7y3JyPSWJdXNkCcs3EdOegaY/

And a few regrets

- no “Random Linear Network Coding” with in-network recoding RFC (!)
  - two I-D initiated by CodeOn, but never finalized
  - BTW CodeOn explained (June 2018) they had no reason disclosure any IPR for this doc

    https://mailarchive.ietf.org/arch/msg/nwcrg/1hMBDR4XLE0cXbj4BOGhW5doYU0/

- no Tetrys RFC
  - an I-D initiated but never finalized

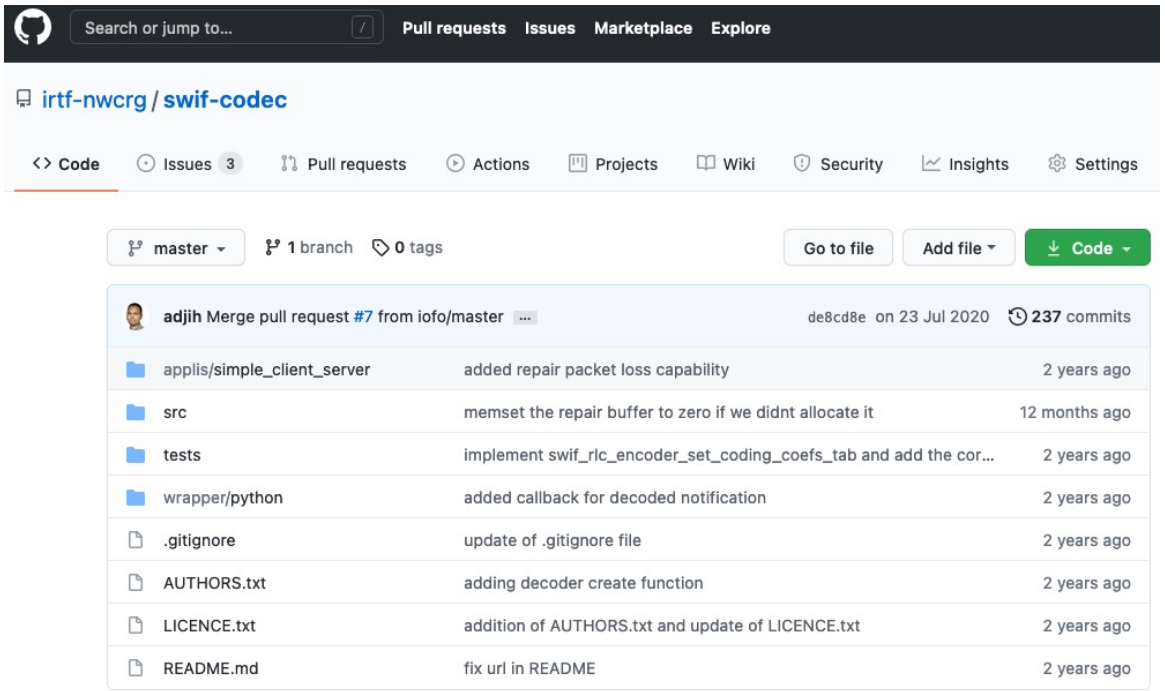
- no “FEC for QUIC” nor “RLC for QUIC” RFC
  - QUIC v1 RFC publication took too long, and lack of resources ☹

    https://datatracker.ietf.org/doc/draft-swett-nwcrg-coding-for-quic/
    https://datatracker.ietf.org/doc/draft-roca-nwcrg-rlc-fec-scheme-for-quic/

And a few regrets (2)

- SWIF (sliding window FEC codec) hackathon project
  - almost done, but not finalized because of lack of resources and difficulties with remote hackathon ☹

https://github.com/irtf-nwcrg/swif-codec



What's next?

- IRSG processing of
  - https://datatracker.ietf.org/doc/draft-irtf-nwcrg-nwc-ccn-reqs/
  - https://datatracker.ietf.org/doc/draft-irtf-nwcrg-coding-and-congestion/

Network Coding Research Group
Internet-Draft
Intended status: Informational
Expires: January 28, 2022

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July 27, 2021

Network Coding for Content-Centric Networking / Named Data Networking:
Considerations and Challenges
draft-irtf-nwcrg-nwc-ccn-reqs-06

Abstract

This document describes the current research outcomes in Network Coding (NC) for Content-Centric Networking (CCNx) / Named Data Networking (NDN), and clarifies the technical considerations and potential challenges for applying NC in CCNx/NDN. This document is the product of the Coding for Efficient Network Communications Research Group (NWCRG) and the Information-Centric Networking Research Group (ICNRG).

NWCRG
Internet-Draft
Intended status: Informational
Expires: December 27, 2021

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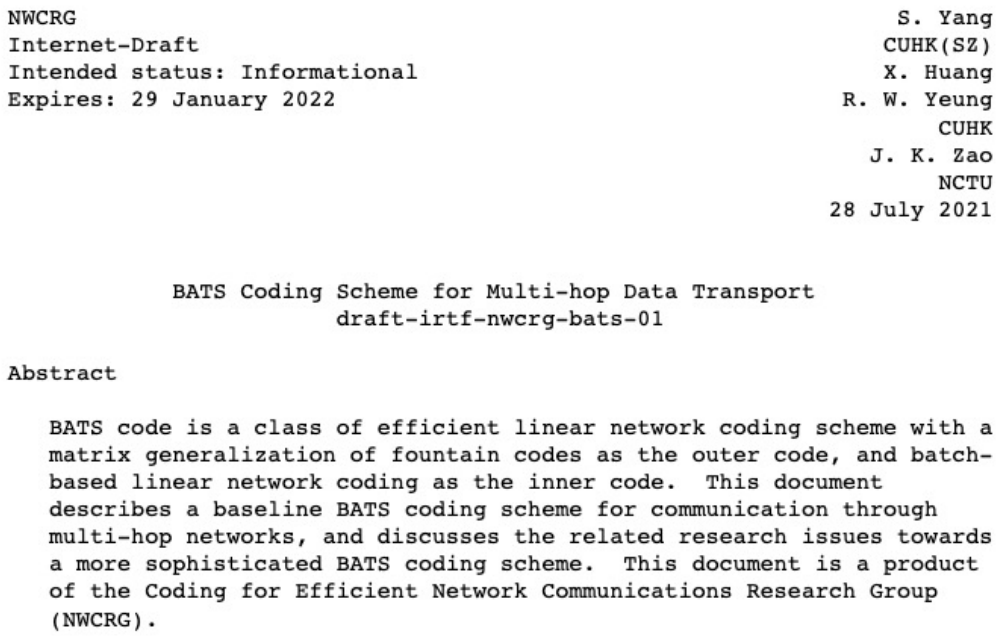
Coding and congestion control in transport
draft-irtf-nwcrg-coding-and-congestion-09

Abstract

Forward Erasure Correction (FEC) is a reliability mechanism that is distinct and separate from the retransmission logic in reliable transfer protocols such as TCP. FEC coding can help deal with losses at the end of transfers or with networks having non-congestion losses. However, FEC coding mechanisms should not hide congestion signals. This memo offers a discussion of how FEC coding and

What's next? (2)

- BATS codes
  - RG LC remains to be done but I-D has already been carefully reviewed (soon to start)
  - then IRSG processing (September?)



NWCRG
Internet-Draft
Intended status: Informational
Expires: 29 January 2022

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28 July 2021

BATS Coding Scheme for Multi-hop Data Transport
draft-irtf-nwcrg-bats-01

Abstract

BATS code is a class of efficient linear network coding scheme with a matrix generalization of fountain codes as the outer code, and batch-based linear network coding as the inner code. This document describes a baseline BATS coding scheme for communication through multi-hop networks, and discusses the related research issues towards a more sophisticated BATS coding scheme. This document is a product of the Coding for Efficient Network Communications Research Group (NWCRG).

- We’re almost done, this is our last meeting, thank you all, it was a pleasure!