Thor update and AV1 comparisons

High Efficiency, Moderate Complexity Video Codec using only RF IPR

(https://datatracker.ietf.org/ipr/2636/)

draft-fuldseth-netvc-thor-03

Steinar Midtskogen (Cisco)

IETF 101 – London, UK – March 2018

Thor status

- Development mostly stalled since IETF100
- Changes:
  - Some optimisations for CDEF
  - Bug fixes
- Thor supports common input formats and is complete in that sense, but two “nice-to-have” features still missing:
  - Support for Daala EC not yet completed
  - Screen content tool(s)

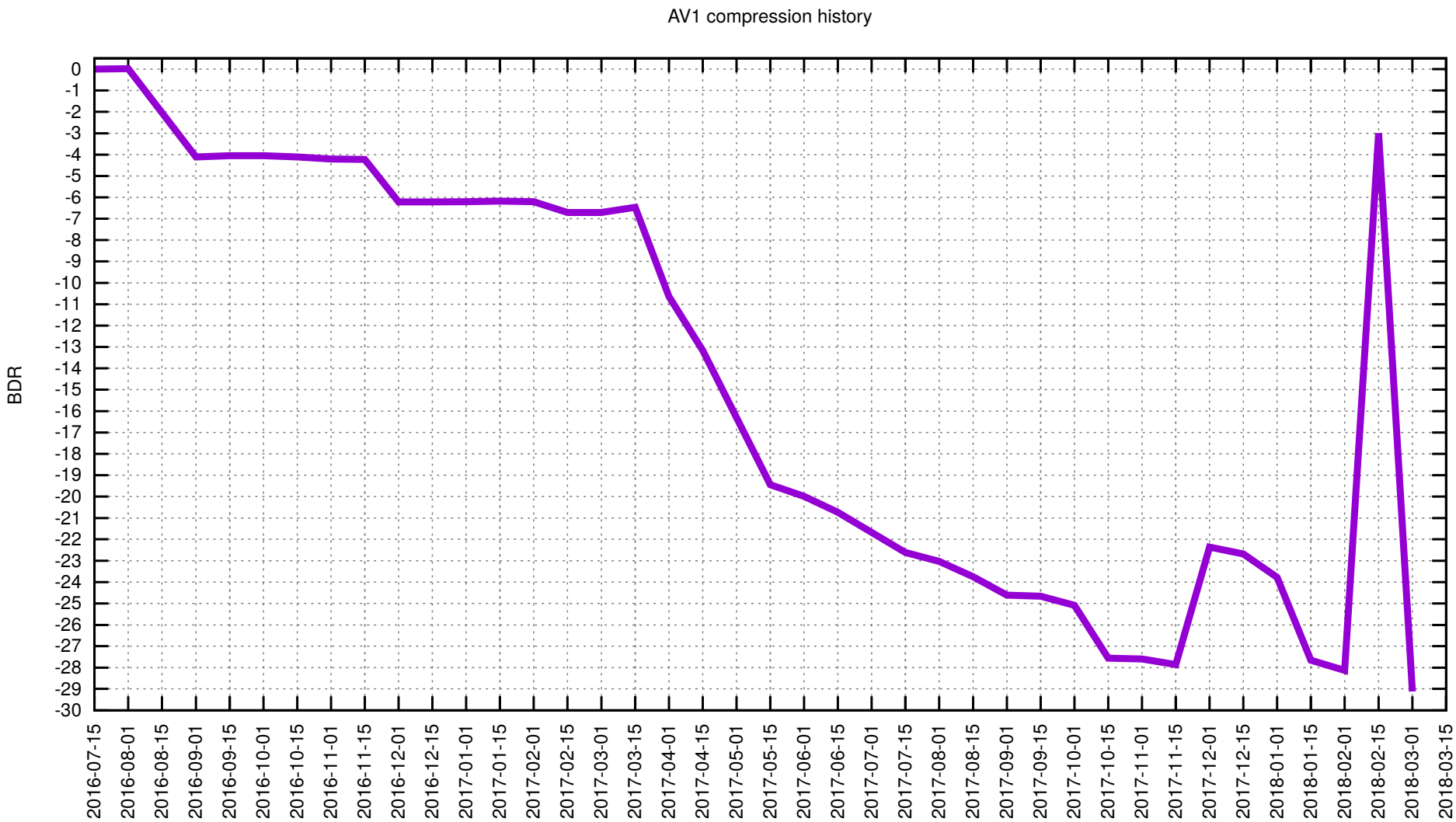
AV1 status

- No new tools are allowed
- The spec is “frozen”
  - Only non-normative compression improvements from now on
  - Critical bug fixes still allowed
- BDR improvements over VP9:
  - PSNR-Y: -29%
  - PSNR-U: -34%
  - PSNY-V: -36%
  - CIEDE2000: -32%
  - APSNR: -29%
  - MS SSIM: -27%

AV1 compression history

- Compression/speed relationships measured using AWCY
  - Mixed content: objective-1-fast
  - About 5% improvement since IETF100 and 3x complexity
- Low delay configuration
- BDR anchor is AV1 in July 2016, roughly equivalent to VP9
- Note that the speed axis is logarithmic

AV1 compression history



AV1 complexity history