

CELLAR 2016

**Codec Encoding for LossLess Archiving
and Real-time transmission**

IETF 96 Berlin

19 July 2016

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Agenda

- 10 min Administrivia
- 60 min EBML + Matroska (draft-lhomme-cellar-ebml-00, draft-lhomme-cellar-matroska-00)
- 30 min FFV1 (draft-niedermayer-cellar-ffv1-00)
- 20 min Participation and work moving forward (including FLAC, advice for new IETF participants, getting commitments to work on various specs, etc)

Administrivia

- Blue sheets
- Jabber scribe
 - Jabber room: <xmpp:cellar@jabber.ietf.org?join>
- Minute-taker
 - Etherpad: <http://etherpad.tools.ietf.org:9000/p/notes-ietf-96-cellar?useMonospaceFont=true>
- PDF of meeting materials
 - <https://datatracker.ietf.org/meeting/96/agenda/cellar-drafts.pdf>
- Twitter: #ietf96 #cellar16
- Remarks from the Chairs

The CELLAR origin story

Working group formed in late 2015

Chairs: Tessa Fallon, Tim Terriberry

<https://datatracker.ietf.org/wg/cellar/charter/>

Mission: “Using existing work done by the development communities of Matroska, FFV1, and FLAC, the Working Group will formalize specifications for these open and lossless formats.”

About those milestones...

Date	↕ Milestone
Dec 2016	Submit specification for FLAC audio codec to IESG (Standards Track)
Sep 2016	Submit specification for FFV1 video codec version 4 to IESG (Standards Track)
Jul 2016	Submit specification for Matroska container format version 4 to IESG (Standards Track)
Jul 2016	Submit informational specification for FFV1 video codec versions 0, 1 and 3 to IESG for publication
Jun 2016	Submit specification for EBML to IESG (Standards Track)
Jun 2016	Submit informational specification for Matroska container format versions 1, 2 and 3 to IESG for publication

Working Group Charter: Deliverables

- Info. spec for Matroska container format v. 1, 2 and 3 to IESG for publication
- Standards Track spec for Matroska container format v. 4 to IESG for publication
- Info. spec for FFV1 video codec versions 0, 1 and 3 to IESG for publication
- Standards Track spec for FFV1 video codec version 4 to IESG for publication
- Standards Track spec for FLAC audio codec to IESG for publication

Matroska, EBML

Steve Lhomme

State of the Spec: EBML

EBML Draft RFC

<https://datatracker.ietf.org/doc/draft-lhomme-cellar-ebml/>

GitHub Repository

<https://github.com/Matroska-Org/ebml-specification>

State of the Spec: Matroska

RFC Draft

<https://datatracker.ietf.org/doc/draft-lhomme-cellar-matroska/>

GitHub Repository

<https://github.com/Matroska-Org/matroska-specification>

Current Issues

- Timecode vs Timestamp wording
- EBML spec reordering to define things gradually
- Parts to be removed from Matroska (codecs, menus, etc)
- Explain what to do in EBML when "attacks"/bad data are detected
- How to store Timecodes (see ongoing discussion in the mailing list)
- Should deprecated/legacy elements be included in the RFC, maybe as an annex so people are not tempted to reuse these IDs ?
- Remove Default/Range when they have no values to reduce the amount of text that is meaningless.

Upcoming Work

- Edit/review Matroska and EBML drafts
- Post questions/comments/inquiries/relevant manifestos on the CELLAR list
- Formatting
- Adherence to IETF protocol/guidelines
- Adding the 2 encryption elements from Google in Matroska to support Widevine DRM properly
- Changing the specification format to remove "levels" and use the parent name instead

FFV1

Jérôme Martinez

State of the Spec

Draft RFC

<https://datatracker.ietf.org/doc/draft-niedermayer-cellar-ffv1/>

GitHub Repository

<https://github.com/ffmpeg/ffv1>

What's been done...

Since January 2016:

- Switch from Lyx text format to Markdown (better known)
- More details about the frame header, definition of the bitstream for planes and lines
- Creation of an independent FFV1 implementation checker, from scratch (no reuse of the original FFV1 encoder/decoder)

What needs to be done...

- Specification improvement based on feedback from peer review
- More test files, including buggy (from real life or home made) files
- FFV1 version 4, based on new features requested by users (e.g. bayer filter support) and compression performance improvement (e.g. motion compensation)

Moving Forward

Moving Forward

1. Next meeting: Chicago, March 2017?
2. Goals for the rest of 2016?
3. New milestones
4. Document shepherding assistance/management
5. Outreach to encourage participation
6. More reviewers, more editors, more contributors!
7. An End to FLAC Neglect