

RDD 48 Sample Files

July 30, 2019

Revised: September 20, 2019

These files were built by Oliver Morgan/Metaglue Corp for FADGI (http://www.digitizationguidelines.gov/guidelines/MXF_app_sampleFiles.html#2017). As these files have not yet been reviewed by a second reviewer, they are classified as Silver files although in content, they are very close to Golden files.

The images are born digital, not transferred from an analog source file.

Comments are welcome to Kate Murray, kmur@loc.gov

1. Silver – Uncompressed NTSC (file name: RDD48-sf-unc-ntsc-rev)

Same as RDD48-sf-unc-ntsc with the following addition

- 1.1. Index Table
- 1.2. Captions converted to Timed Text
 - 1.2.2. Stored according to the SMPTE RP2057 wrapping (File marked as OP1b).

2. Silver – Uncompressed NTSC (file name: RDD48-sf-unc-ntsc)

- 2.1. Uncompressed picture essence:
 - 2.1.1. Raster: NTSC (720*486i59.94).
 - 2.1.2. Codec: Uncompressed YCbYCr 8-bit.
 - 2.1.3. Includes burnt in Master TC and sync flags to match audio pips
 - 2.1.4. Wrapping: SMPTE ST384.
- 2.2. Audio essence:
 - 2.2.2. 5 audio tracks
 - 2.2.3. English, stereo
 - 2.2.4. Spanish, stereo
 - 2.2.5. Natural sound with sync pips, stereo
 - 2.2.6. Continuous SMPTE 12 LTC, mono
 - 2.2.7. Discontinuous SMPTE 12 LTC, mono
 - 2.2.8. 24bits, 48 000Hz.
 - 2.2.9. Wrapping: ST382 – Broadcast Wave.
 - 2.2.10. Includes SMPTE 377-4 Multichannel Audio Labels
 - 2.2.11. The property "AS_07_Core_DMS_AudioTrackLayout" in "AS_07_Core_DMS" is present.
- 2.3. Master timecode:
 - 2.3.2. Present in Material Package, Top Level Source Package, GC System Item
 - 2.3.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 2.4. Historical source timecode:
 - 2.4.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.
 - 2.4.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 2.5. Captions in line 21
- 2.6. Captions at CTA-708 with CTA-608 in ANC packets
 - 2.6.2. Wrapping: SMPTE ST436 with appropriate essence descriptor.
- 2.7. Content integrity
 - 2.7.2. Castagnoli CRC-32C Cyclic Redundancy Code (IETF RFC 3385) value for every V or value data unit in the KLV triplets that represent frame-wrapped essences
 - 2.7.3. When CRC-32C hash values are created for frame-wrapped essences, AS-07 encoders shall also create and populate Cryptographic Context Set, Cryptographic Framework, and Cryptographic Framework DM Tracks as specified in SMPTE ST 429-6:2006, with the optional item MICCarriage in the Cryptographic Context Set in which a SystemItem value indicates the AS- 07 usage and whose absence indicates use of Encrypted Triplets. Detailed information and requirements on this interrelated set of metadata elements is provided in appendix I.
- 2.8. AS-07 Core Metadata
 - 2.8.2. In an ST377-1 Descriptive Metadata Track
- 2.9. QC Metadata
 - 2.9.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 2.9.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.
- 2.10. TIFF image of box:

- 2.10.2. Wrapped in GSP as binary data.
- 2.10.3. An instance of "AS-07 GSP Binary Data Descriptive Metadata" for non-essence binary data is present.
- 2.11. Manifest embedded:
 - 2.11.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 2.11.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.

3. Silver –JPEG 2000 NTSC (file name: RDD48-sf-jpeg2000-ntsc-rev)

Same as RDD48-sf-jpeg2000-ntsc with the following addition

- 3.1. Captions converted to Timed Text
 - 3.1.2. Stored according to the SMPTE RP2057 wrapping (File marked as OP1b).

4. Silver - JPEG 2000 – NTSC (file name: RDD48-sf-jpeg2000-ntsc)

- 4.1. Lossless JPEG 2000 picture essence
 - 4.1.2. Raster: NTSC (720*486i59.94).
 - 4.1.3. Codec: JPEG 2000 Broadcast Profile Multi tile reversible 7 in Lossless.
 - 4.1.4. Wrapping: SMPTE ST422 – I2.
 - 4.1.5. Includes burnt in Master TC and sync flags to match audio pips
- 4.2. Audio essence
 - 4.2.2. 5 audio tracks
 - 4.2.3. English, stereo
 - 4.2.4. Spanish, stereo
 - 4.2.5. Natural sound with sync pips, stereo
 - 4.2.6. Continuous SMPTE 12 LTC, mono
 - 4.2.7. Discontinuous SMPTE 12 LTC, mono
 - 4.2.8. Wrapping: ST382 – Broadcast Wave.
 - 4.2.9. Includes SMPTE 377-4 Multichannel Audio Labels
 - 4.2.10. The property "AS_07_Core_DMS_AudioTrackLayout" in "AS_07_Core_DMS" is present.
- 4.3. Master timecode:
 - 4.3.2. Present in Material Package, Top Level Source Package, GC System Item.
 - 4.3.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 4.4. Historical source timecode VITC
 - 4.4.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.
 - 4.4.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 4.5. Historical source timecode LTC:
 - 4.5.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.
 - 4.5.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 4.6. Historical source timecode LTC in discontinuities:
 - 4.6.2. The source file does not contain any discontinuities so this was created manually.
 - 4.6.3. Present in Top Level Source Package, Low Level Source Package, GC System Item.
 - 4.6.4. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
 - 4.6.5. Captions in line 21
 - 4.6.6. English CC1
 - 4.6.7. Spanish CC3
 - 4.6.8. Captions at CTA-708 with CTA-608 in ANC packets
 - 4.6.9. Wrapping: SMPTE ST436 with appropriate essence descriptor.
- 4.7. Content integrity
 - 4.7.2. Calculate the Castagnoli CRC-32C for the concatenated values of the two Vs in the pair of KLVs for interlaced JPEG 2000 that is wrapped according the case I2 specified in SMPTE ST 422:2014.
 - 4.7.3. When CRC-32C hash values are created for frame-wrapped essences, AS-07 encoders shall also create and populate Cryptographic Context Set, Cryptographic Framework, and Cryptographic Framework DM Tracks as specified in SMPTE ST 429-6:2006, with the optional item MICCarriage in the Cryptographic Context Set in which a SystemItem value indicates the AS- 07 usage and whose absence indicates use of Encrypted Triplets. Detailed information and requirements on this interrelated set of metadata elements is provided in appendix I
- 4.8. AS-07 Core Metadata
 - 4.8.2. In an ST377-1 Descriptive Metadata Track
- 4.9. QC Metadata
 - 4.9.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 4.9.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based

- data.
- 4.10. TIFF image of box:
 - 4.10.2. Wrapped in GSP as binary data.
 - 4.10.3. An instance of "AS-07 GSP Binary Data Descriptive Metadata" for non-essence binary data is present.
- 4.11. Manifest embedded:
 - 4.11.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 4.11.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.

5. Silver – Uncompressed PAL (file name: RDD48-sf-unc-pal-rev)

Same as RDD48-sf-unc-pal with the following additions

- 5.1. Index Table
- 5.2. Captions converted to Timed Text
 - 5.2.2. Stored according to the SMPTE RP2057 wrapping (File marked as OP1b).

6. Silver – Uncompressed – PAL (file name: RDD48-sf-unc-pal)

- 6.1. Uncompressed picture essence:
 - 6.1.2. Raster: PAL 720x576 50i.
 - 6.1.3. Codec: Uncompressed YCbYCr 10-bit.
 - 6.1.4. Wrapping: SMPTE ST384.
- 6.2. Audio essence:
 - 6.2.2. 4 audio tracks
 - 6.2.3. English, stereo
 - 6.2.4. Spanish, stereo
 - 6.2.5. Natural sound with sync pips, stereo
 - 6.2.6. Continuous SMPTE 12 LTC, mono
 - 6.2.7. Wrapping: ST382 – Broadcast Wave.
 - 6.2.8. Includes SMPTE 377-4 Multichannel Audio Labels
 - 6.2.9. The property "AS_07_Core_DMS_AudioTrackLayout" in "AS_07_Core_DMS" is present.
- 6.3. Master timecode:
 - 6.3.2. Present in Material Package, Top Level Source Package, GC System Item
 - 6.3.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 6.4. Historical source timecode:
 - 6.4.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.
 - 6.4.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).
- 6.5. Captions in OP-47 in ANC packets
 - 6.5.2. English
 - 6.5.3. Spanish
 - 6.5.4. Wrapping: SMPTE ST436 with appropriate essence descriptor.
- 6.6. Captions converted to Timed Text
 - 6.6.2. Stored according to the SMPTE ST429-5 (File marked as OP1b).
- 6.7. Content integrity
 - 6.7.2. Castagnoli CRC-32C Cyclic Redundancy Code (IETF RFC 3385) value for every V or value data unit in the KLV triplets that represent frame-wrapped essences
 - 6.7.3. When CRC-32C hash values are created for frame-wrapped essences, AS-07 encoders shall also create and populate Cryptographic Context Set, Cryptographic Framework, and Cryptographic Framework DM Tracks as specified in SMPTE ST 429-6:2006, with the optional item MICCarriage in the Cryptographic Context Set in which a SystemItem value indicates the AS-07 usage and whose absence indicates use of Encrypted Triplets. Detailed information and requirements on this interrelated set of metadata elements is provided in appendix I.
- 6.8. AS-07 Core Metadata
 - 6.8.2. In an ST377-1 Descriptive Metadata Track
- 6.9. QC Metadata
 - 6.9.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 6.9.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.
- 6.10. TIFF image of box:
 - 6.10.2. Wrapped in GSP as binary data.
 - 6.10.3. An instance of "AS-07 GSP Binary Data Descriptive Metadata" for non-essence binary data is present.
- 6.11. Manifest embedded:
 - 6.11.2. Wrapped in GSP as text-based data (SMPTE RP2057).
 - 6.11.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.

7. Silver – JPEG 2000 - PAL (file name: RDD48-sf- jpeg2000-ntsc-rev)

Same as RDD48-sf-jpeg2000-ntsc with the following additions

7.1. Captions converted to Timed Text

7.1.2. Stored according to the SMPTE RP2057 wrapping (File marked as OP1b).

8. Silver – JPEG 2000 – PAL (file name: RDD48-sf- jpeg2000-ntsc)

8.1. Lossless JPEG 2000 picture essence

8.1.2. Raster: PAL. 720x576 50i.

8.1.3. Codec: JPEG 2000 Broadcast Profile Multi tile reversible 7 in Lossless.

8.1.4. Wrapping: SMPTE ST422 – I2.

8.2. Audio essence

8.2.2. 4 audio tracks

8.2.3. English, stereo

8.2.4. Spanish, stereo

8.2.5. Natural sound with sync pips, stereo

8.2.6. Continuous SMPTE 12 LTC, mono

8.2.7. Wrapping: ST382 – Broadcast Wave.

8.2.8. Includes SMPTE 377-4 Multichannel Audio Labels

8.2.9. The property "AS_07_Core_DMS_AudioTrackLayout" in "AS_07_Core_DMS" is present.

8.3. Master timecode:

8.3.2. Present in Material Package, Top Level Source Package, GC System Item.

8.3.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).

8.4. Historical source timecode VITC

8.4.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.

8.4.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).

8.5. Historical source timecode LTC:

8.5.2. Present in Top Level Source Package, Low Level Source Package, GC System Item.

8.5.3. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).

8.6. Historical source timecode LTC in discontinuities:

8.6.2. The source file does not contain any discontinuities so this was created manually.

8.6.3. Present in Top Level Source Package, Low Level Source Package, GC System Item.

8.6.4. Labelling Timecode in Header Metadata is present (including DateTimeDescriptor and subdescriptor).

8.7. Captions in OP-47 in ANC packets

8.7.2. English

8.7.3. Spanish

8.7.4. Wrapping: SMPTE ST436 with appropriate essence descriptor.

8.8. Content integrity

8.8.2. Calculate the Castagnoli CRC-32C for the concatenated values of the two Vs in the pair of KLVs for interlaced JPEG 2000 that is wrapped according the case I2 specified in SMPTE ST 422:2014.

8.8.3. When CRC-32C hash values are created for frame-wrapped essences, AS-07 encoders shall also create and populate Cryptographic Context Set, Cryptographic Framework, and Cryptographic Framework DM Tracks as specified in SMPTE ST 429-6:2006, with the optional item MICCarriage in the Cryptographic Context Set in which a SystemItem value indicates the AS- 07 usage and whose absence indicates use of Encrypted Triplets. Detailed information and requirements on this interrelated set of metadata elements is provided in appendix I

8.9. AS-07 Core Metadata

8.9.2. In an ST377-1 Descriptive Metadata Track

8.10. QC Metadata

8.10.2. Wrapped in GSP as text-based data (SMPTE RP2057).

8.10.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.

8.11. TIFF image of box:

8.11.2. Wrapped in GSP as binary data.

8.11.3. An instance of "AS-07 GSP Binary Data Descriptive Metadata" for non-essence binary data is present.

8.12. Manifest embedded:

8.12.2. Wrapped in GSP as text-based data (SMPTE RP2057).

8.12.3. Instance of "AS-07 GSP Text-based Data Descriptive Metadata" for non-essence text-based data.