Conch

Appendix: Conformace Check Registry and Expression Snapshot

Project Acronym: PREFORMA

Grant Agreement number: 619568

Project Title: PREservation FORMATs for culture information/e-archives

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Prepared for:

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Summary:

- DocTypeVersion Presence
- DocTypeReadVersion Presence
- EBML Version Coherency
- EBMLMaxIDLength Limits
- EBMLMaxSizeLength Limit
- EBMLMaxSizeLength Matches
- DocType
- DocTypeVersion Coherency
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- SegmentUID-Range
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- NextUID-Size
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- SegmentFamily-Size
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- TimecodeScale-Presence
- Duration-Range
- Duration-Type
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- Title-Type
- Tag Total Parts
- Tag Part Number
- Tag Part Offset
- Tag Title
- Tag Subtitle
- Tag URL
- Tag Sort_with
- Tag Email
- Tag Address
- Tag Fax
- Tag Phone
- Tag Initial_Key

  - Tag Law_Rating
  - TAG ICRA
  - Tag DATE_RELEASED
  - Tag DATE_RECORDED
  - Tag DATE_ENCODED
  - Tag DATE_TAGGED
  - Tag DATE_DIGITIZED
  - Tag DATE_WRITTEN
  - Tag DATE_PURCHASED
  - Tag Play_Counter
  - Tag FPS
  - Tag BPM
  - Tag Measure
  - Tag Tuning
  - Tag Replay Gain (Gain)
  - Tag Replay Gain (Peak)
  - Tag (Identifiers) ISRC
  - Tag (Identifiers) MCDI
  - Tag (Identifiers) ISBN
  - Tag (Identifiers) Barcode
  - Tag (Identifiers) Catalog number
  - Tag (Identifiers) Label code
  - Tag (Identifiers) LCCN
  - Tag (Commercial) Purchase Item
  - Tag (Commercial) Purchase Price
  - Tag (Commercial) Purchase Currency
- FFV1 Conformance Checks (Draft)
  - Missing header
  - version
  - version 2
  - micro_version 2
  - coder_type
  - state_transition_delta
  - colorspace_type
  - bits_per_raw_sample
  - h_chroma_subsample
  - h_chroma_subsample
  - v_chroma_subsample
  - v_chroma_subsample
  - QuantizationTables
  - initial_state_delta
  - ec
  - intra
  - crc_parity
  - end of header
  - slice x / y / width / height
  - quant_table_index
  - picture_structure
  - sar_den

  - slice_size
  - error_status
  - crc_parity
  - end of slice
  - end of frame
- LPCM Conformance Checks (Draft)
  - formatType
  - bitsPerSample
  - bytesPerSecond
  - blockAlignment
  - channelCount
  - nChannels
  - sampleRate
- Container/Stream Coherency Checks (Draft)
  - CodecID mismatch
  - Aspect Ratio Match
  - Width Match
  - Height Match
  - Frame duration

Checker Design: Conformance and Coherency

Conformance checks for both container formats (such as Matroska) and streams (such as LPCM and FFV1) shall be defined, registered, and associated with the code that performs the check. Conch will perform and report on a growing list of tests per format. Many of these tests will be derived directly from the specifications or standard documents of a given file format, but other tests will derive from expected patterns and structural incoherency. Some checks focus on coherency between a stream and a container (such as if the container and stream utilize contradictory aspect ratios).

These checks shall have logical cause and effect or conditional relationships and shall be documented by the citation of external standards documentation or by the project's own research and development. MediaArea plans to provide guidance for user communities to develop and explain their own ruleset in shareable form. An XML schema for conformance definition is provided. MediaArea's development of conformance and policy checkers will involve several categories of tests. In addition to supporting conformity checks and logical interpretation of selected file formats, there is user desire for checks performed based on internal or institutional policy that are not necessarily embedded in the file format technical specifications. A PREFORMA MediaArea 'shell' shall be able to load multiple sets of conformity/coherency rulesets so that users may select which rulesets they choose to adhere to as well as create their own.

Conformance and coherency rulesets specifically targeting specification compliance of FFV1, Matroska, and LPCM are currently under development.

The Conformance Check Registry defines the basis of how a conformance check may be expressed. MediaArea proposes developing online resources that define checks and relate them to sample files, associated code, rationale, potential responses and community discussion. The Conformance Check Registry provides a basis on how information on the implementation checks themselves can be communicated to users.

Conformance Check Registry

This documentation explains the elements, structure, and intent of the Conch Conformance Check Registry.

A conformance check is a particular test applied to a file format, stream, or section of a format or stream in order to quantify the adherence of such data to associated sets of rules and practices. The registry refers specifically to checks performed by the implementation checker. Rules performed by the policy checker are defined elsewhere.

MediaArea plans to maintain an identity and open documentation for each Conformance Check in both a public online space and within the internal help documentation of a Conch Shell. As the implementation checker assesses given files against a series of checks and the reporter presents the findings to the user, MediaArea plans for the shell to facilitate the user to discover more underlying information, advice, or responses to conformance checks that appear as problematic from the implementation checker.

Conformance Check Registry Requirements

- Each conformance check must be identitified by a unique identifier.
- Documentation for Conformance Checks must offer hierarchical relationships between related checks.
- Conformance Checks must be documented according to their CCID (Conformance Check Identifier) and Version number.
- Any revised Conformance Check must maintain a changelog as well as records of all past versions of the conformity check.
- The following keywords to indicate requirement levels when used in a conformance check description MUST be used according to their definitions provided by (RFC2119)[http://tools.ietf.org/html/rfc2119]: “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL”.

Elements

A draft list of elements to be used in the definition of an implementation confomrance check are provided.

Name A human-readable name for the conformance check.

CCID Conformance Check Identifier. An alphanumeric identifier used to reference or identify the conformance check to order to relate code, documentation, and reports that reference the check.

Version The version number of the reference Conformance Check. This value should be expressed as a standard GNU version number in major.minor.revision format. A value of “0” may be used to indictate draft status.

Authority The authority associates each conformance check with a standards organization, community, or logic from which the conformance check is derived. Examples: EBU, Microsoft. Within the use of a implementation checker, the user may enable or disable check from certain authorities; for instance to perform checks against specifications of Standards Organization A and Community Practice B, but not Standards Organization C or Community Practice D.

Target Format The name of the file format, codec, or bit stream that is to be test.

Target Format Version Identify the version of range of versions of the target format which are eligible for the conformance test. A numeric range should be used or the word “all” if the rule applies to all known versions.

Target Format Part The name of a chunk, atom, element, bitstream, or other smaller component of the target format that the conformance check relates to.

Citation A reference of the specific document, specification, or reference from which the conformance check is derived. Typically the citation will be a publication or expression of the 'Authority'.

Quote A quote from the authority that demonstrates the logic or reaons for the check.

Rule Clarity Expresses whether the check is based of an explicit statement of an underlying specificiation or based on deductive logic or inference from a reading of the specification.

Definition A clear description of conformance check.

Regex Parameters A human-readable description of what the regular expression must check for.

Regular Expression Code that checks for conformance to the suggested parameters.

Matroska Conformance Checks (Draft)

Extension Test

Descriptor	Value
CCID	MKV-EXT
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	File name
Citation	http://www.matroska.org/node/2/revisions/153/view

Rule Clarity: Inferred

Quote:

Definition: The file extension SHOULD be one of the following (MKV, MKA, MKS, MK3D, WEBM)

Extension Test MKV

Descriptor	Value
CCID	MKV-EXT-MKV
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	File name
Citation	http://www.matroska.org/node/2/revisions/153/view

Rule Clarity: Inferred

Quote:

Definition: If the file extension is MKV, the file SHOULD contain at least one video track.

Extension Test MKA

Descriptor	Value
CCID	MKV-EXT-MKA
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	File name
Citation	http://www.matroska.org/node/7/revisions/214/view

Rule Clarity: Inferred

Quote:

Definition: If the file extension is MKA, the file SHOULD contain at least one audio track and no other type of track, i.e. “audio-only”.

Extension Test MKS

Descriptor	Value
CCID	MKV-EXT-MKS
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	File name
Citation	http://www.matroska.org/node/2/revisions/153/view

Rule Clarity: Inferred

Quote:

Definition: If the file extension is MKS, the file SHOULD contain at least one subtitle track and no other type of track, i.e. “subtitle-only”.

Extension Test MK3D

Descriptor	Value
CCID	MKV-EXT-MK3D
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	?

Descriptor	Value
Target Format Part	File name, StereoMode element
Citation	http://www.matroska.org/node/2/revisions/153/view

Rule Clarity: Inferred

Quote:

Definition: If the file extension is MKV3D the file SHOULD contain at least one video track AND SHOULD contain at least one StereoMode element.

EBML Element Start

Descriptor	Value
CCID	MKV-EBML-ELEM-START
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	specdata.xml

Rule Clarity:

Quote: "Set the EBML characteristics of the data to follow. Each EBML document has to start with this."

Definition: An Matroska file MUST start with an EBML element id, ie. 0x1A45DFA3.

EBML vint efficiency

Descriptor	Value
CCID	EBML-VINT-EFF
Version	0
Authority	EBML Specification
Target Format	EBML
Target Format Version	all
Target Format Part	EBML Structure
Citation	http://matroska.org/technical/specs/rfc/index.html

Rule Clarity:

Quote: Section 2.2 "IDs are always encoded in their shortest form, e.g. 1 is always encoded as 0x81 and never as 0x4001."

Definition: The bits following the Element ID's Length Descriptor are not more than (8 - ${bit-length-of-length-descriptor}) successive 0 bits, i.e. vint is expressed as efficiently as feasible.

Element ID Registered

Descriptor	Value
CCID	MKV-KNOWN-ELEM
Version	0
Authority	
Target Format	EBML
Target Format Version	all
Target Format Part	
Citation	

Rule Clarity: Inferred

Quote:

Definition: Ensure MKV Element ID is registered in specdata.xml (as of Dec. 13, 2014 this is 224 registered Element IDs)

Element Size 0x7F Reservation

Descriptor	Value
CCID	EBML-ELEM-SIZE-7F
Version	0
Authority	EBML Specification
Target Format	EBML
Target Format Version	all
Target Format Part	EBML Element Size
Citation	http://matroska.org/technical/specs/rfc/index.html

Rule Clarity: Warning, since it is possible (though unlikely) element size is unknown but then happens to be 127 bytes.

Quote: "Note that the shortest encoding form for 127 is 0x407f since 0x7f is reserved."

Definition: If Element Size is set to 0x11111111 but element size is actually 127 bytes provide a warning.

Element Size Byte Length Limit

Descriptor	Value
CCID	EBML-ELEM-SIZE-CAP
Version	0
Authority	EBML Specification
Target Format	EBML
Target Format Version	all
Target Format Part	EBML Element Size
Citation	http://matroska.org/technical/specs/rfc/index.html

Rule Clarity:

Quote: Section 2.3: "The EBML element data size is encoded as a variable size integer with, by default, widths up to 8."

Definition: The first eight bits of any Element Size may not start with 0b00000000.

Element Size Unknown

Descriptor	Value
CCID	EBML-ELEM-SIZE-UNK
Version	0
Authority	EBML Specification
Target Format	EBML
Target Format Version	all
Target Format Part	EBML Element Size
Citation	Dave

Rule Clarity: Warning

Quote: "Values with all data bits set to 1 means size unknown, which allows for dynamically generated EBML streams where the final size isn't known beforehand."

Definition: Warning on unknown element sizes, unoptimized MKV.

Level 0 Segment

Descriptor	Value
CCID	MKV-LEVEL-0
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	specdata.xml

Rule Clarity:

Quote: Inferred: EBML and Segment are the only level 0 elements, both are allowed to occur multiple times.

Definition: The EBML Header MUST be immediately followed by another EBML Header Element, 0x1A45DFA3, or a Segment Element, 0x18538067. {{Can global Elements exist at level 0?!}}

Only One EBML Header recommended

Descriptor	Value
CCID	MKV-1-EBML
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Matroska structure
Citation	is there a rule to prevent this?

Rule Clarity: Warning

Quote: Assumed: Two EBML Headers in one MKV file seems contradictory.

Definition: There SHOULD only occur one EBML level 0 element within an MKV file. (EBML Headers could recur if an MKV file is an attachment of an MKV file).

File Size Consistency

Descriptor	Value
CCID	MKV-FILESIZE-MATCH
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Matroska structure
Citation	http://www.matroska.org/technical/specs/index.html#block_structure

Rule Clarity:

Quote: Inferred

Definition: The actual file size should be the sum of all level 0 Element Size declarations plus the sum of the byte sizes of level 0 Element IDs and Element Sizes.

EBMLVersion Presence

Descriptor	Value
CCID	MKV-EBML-VER
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition: Within any EBML Header exactly one EMBL Version element must be present.

EBMLReadVersion Presence

Descriptor	Value
CCID	MKV-EBML-RV
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all

Descriptor	Value
Target Format Part Citation	EBML Header

Rule Clarity:

Quote:

Definition:

EBMLMaxIDLength Presence

Descriptor	Value
CCID	MKV-EBML-MAXIDL
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part Citation	EBML Header

Rule Clarity:

Quote:

Definition:

EBMLMaxSizeLength Presence

Descriptor	Value
CCID	MKV-EBML-MAXSL
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part Citation	EBML Header

Rule Clarity:

Quote:

Definition:

DocType Presence

Descriptor	Value
CCID	MKV-EBML-DOCT

Descriptor	Value
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition:

DocTypeVersion Presence

Descriptor	Value
CCID	MKV-EBML-DOCTV
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition:

DocTypeReadVersion Presence

Descriptor	Value
CCID	MKV-EBML-DOCTRV
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition:

EBML Version Coherency

Descriptor	Value
CCID	MKV-VER-COH
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	http://www.matroska.org/technical/specs/index.html#block_structure

Rule Clarity: Inferred

Quote:

Definition: The value of EBMLVersion MUST be greater than or equal to the vale of EBMLReadVersion.

EBMLMaxIDLength Limits

Descriptor	Value
CCID	MKV-MAXID-LIMIT
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	specdata.xml

Rule Clarity: Spec says “4 or less”, but since the EBML ID length itself is 4, the EBMLMaxIDLength has not other valid value.

Quote:

Definition: MUST equal 4

EBMLMaxSizeLength Limit

Descriptor	Value
CCID	MKV-MAXSL-LIMIT
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	specdata.xml

Rule Clarity: “The maximum length of the sizes you’ll find in this file (8 or less in Matroska).”

Quote:

Definition: Must be less than or equal to 8 and greater than or equal to 1.

EBMLMaxSizeLength Matches

Descriptor	Value
CCID	MKV-MAXSL-MATCH
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: No Element Size Length exceeds the length noted in EBMLMaxSizeLength

DocType

Descriptor	Value
CCID	MKV-DOCT-KNOWN
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition: MUST equal either “matroska” or “webm”

DocTypeVersion Coherency

Descriptor	Value
CCID	MKV-DOCTV-COH
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity:

Quote:

Definition: The value of DocTypeVersion MUST be greater than or equal to the vale of DocTypeReadVersion.

DocTypeVersion Limits

Descriptor	Value
CCID	MKV-DOCTV-LIMIT
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	EBML Header
Citation	

Rule Clarity: Warning

Quote:

Definition: Values for DocTypeVersion and DocTypeReadVersion must be either 1, 2, 3, or 4.

Top Elements Coded on 4 Octets

Descriptor	Value
CCID	MKV-TOP-ELEM-4CODE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Matroska structure
Citation	http://www.matroska.org/technical/specs/index.html#block_structure

Rule Clarity: "All top-levels elements (Segment and direct sub-elements) are coded on 4 octets, i.e. class D elements."

Quote:

Definition: Note: this seems to contradict EBML rule to use most efficient element size, but perhaps this is an intention deviation of MKV to achieve top elements starting on mutiples of 4 octets. ?

CRC Order

Descriptor	Value
CCID	MKV-CRC-ORDER
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	CRC Element
Citation	http://www.matroska.org/technical/specs/index.html#block_structure

Rule Clarity: "The CRC element should be the first in it's parent master for easier reading."

Quote:

Definition: CRC Elements SHOULD be the first sub-Element of its parent Element.

CRC-32 Size Coherency

Descriptor	Value
CCID	MKV-CRC-COH
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	CRC Element
Citation	http://www.matroska.org/technical/specs/index.html#block_structure

Rule Clarity: Inferred: "The CRC in use is the IEEE CRC32 Little Endian"

Quote:

Definition: The Element Size of the CRC-32 Element MUST be 4 bytes (aka 32 bit).

CRC Validation

Descriptor	Value
CCID	MKV-CRC-VAL
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	CRC Element
Citation	

Rule Clarity:

Quote:

Definition: The crc hash of the CRC-32 element MUST validate the subsequent data of the parent Element, from the Element that follows the CRC-32 element to the end of the parent Element.

CRC Not Pointlessly Used

Descriptor	Value
CCID	MKV-CRC-REASON
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	CRC Element
Citation	author

Rule Clarity: Recommended

Quote:

Definition: A CRC-32 element should not be the only child Element of its parent Element (ie hashing no data).

CRC-Presence

Descriptor	Value
CCID	MKV-CRC-PRES
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	CRC Element
Citation	

Rule Clarity: "All level 1 elements should include a CRC-32." but CRC-32 Element is NOT Mandatory. ?

Quote:

Definition: Warning when Level 1 elements have no CRC-32. Very common.

Single Segment Composition

Descriptor	Value
CCID	
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	
Citation	specdata.xml

Rule Clarity:

Quote: "Typically a Matroska file is composed of 1 segment."

Definition: File MUST contain at least one segment.

Seek-Presence

Descriptor	Value
CCID	MKV-SEEK-PRES
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Meta Seek Element

Descriptor	Value
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: File MUST contain at least one Seek element.

SeekID-Presence

Descriptor	Value
CCID	MKV-SEEKID-PRES
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Meta Seek Element
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: File MUST contain at least one SeekID element.

SeekID-Type

Descriptor	Value
CCID	MKV-SEEKID-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Meta Seek Element
Citation	specdata.xml

Rule Clarity:

Quote:

Definition:

SeekPosition-Presence

Descriptor	Value
CCID	MKV-SEEKPOSITION-PRES
Version	0
Authority	Matroska Specification

Descriptor	Value
Target Format	Matroska
Target Format Version	all
Target Format Part	Meta Seek Element
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: File MUST contain at least one SeekPosition element.

Segment-Info-Presence

Descriptor	Value
CCID	MKV-SEGMENTINFO-PRES
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: Segment information MUST contain at least one Info element.

SegmentUID-Range

Descriptor	Value
CCID	MKV-SEGMENTUID-RNG
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity: Range cannot be zero.

Quote:

Definition: SegmentUID MUST be greater than zero.

SegmentUID-Size

Descriptor	Value
CCID	MKV-SEGMENTUID-SIZE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, SegmentUID MUST be 128 bits (16 bytes) in size.

SegmentUID-Type

Descriptor	Value
CCID	MKV-SEGMENTUID-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition:

SegmentFilename-Type

Descriptor	Value
CCID	MKV-SEGMENTFILENAME-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, SegmentFilename MUST be in UTF-8 format.

PrevUID-Size

Descriptor	Value
CCID	MKV-PREVUID-SIZE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition:

PrevUID-Type

Descriptor	Value
CCID	MKV-PREVUID-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, PrevUID MUST be 128 bits (16 bytes) in size.

PrevFilename-Type

Descriptor	Value
CCID	MKV-PREVFILENAME-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, PrevFilename MUST be in UTF-8 format.

NextUID-Size

Descriptor	Value
CCID	MKV-NEXTUID-SIZE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition:

NextUID-Type

Descriptor	Value
CCID	MKV-NEXTUID-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, NextUID MUST be 128 bits (16 bytes) in size.

NextFilename-Type

Descriptor	Value
CCID	MKV-NEXTFILENAME-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, NextFilename MUST be in UTF-8 format.

SegmentFamily-Size

Descriptor	Value
CCID	MKV-SEGMENTFAMILY-SIZE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition:

SegmentFamily-Type

Descriptor	Value
CCID	MKV-SEGMENTFAMILY-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, SegmentFamily MUST be 128 bits (16 bytes) in size.

TimecodeScale-Presence

Descriptor	Value
CCID	MKV-TIMECODESCALE-PRES
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: File MUST contain at least one TimecodeScale element.

Duration-Range

Descriptor	Value
CCID	MKV-DURATION-RANG
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, duration range MUST be greater than 0

Duration-Type

Descriptor	Value
CCID	MKV-DURATION-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	http://www.matroska.org/technical/specs/index.html

Rule Clarity:

Quote:

Definition: If present, duration type MUST be float integer.

DateUTC-Type

Descriptor	Value
CCID	MKV-DATEUTC-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	specdata.xml

Rule Clarity: UTC standards inferred.

Quote:

Definition: If present, DateUTC MUST be in date format and follow UTC standards.

Title-Type

Descriptor	Value
CCID	MKV-TITLE-TYPE
Version	0
Authority	Matroska Specification
Target Format	Matroska
Target Format Version	all
Target Format Part	Segment Element
Citation	specdata.xml

Rule Clarity:

Quote:

Definition: If present, Title MUST be in UTF-8 format.

Tag Total Parts

Descriptor	Value
CCID	MKV-TAG-TOTALPARTS
Version	0
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Part Number

Descriptor	Value
CCID	MKV-TAG-PARTNUMBER
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Part Offset

Descriptor	Value
CCID	MKV-TAG-PARTOFFSET
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Title

Descriptor	Value
CCID	MKV-TAG-TITLE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Subtitle

Descriptor	Value
CCID	MKV-TAG-SUBTITLE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag URL

Descriptor	Value
CCID	MKV-TAG-URL
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Sort_with

Descriptor	Value
CCID	MKV-TAG-SORT_WITH
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Email

Descriptor	Value
CCID	MKV-TAG-EMAIL
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Address

Descriptor	Value
CCID	MKV-TAG-ADDRESS
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Fax

Descriptor	Value
CCID	MKV-TAG-FAX
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Phone

Descriptor	Value
CCID	MKV-TAG-PHONE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Initial_Key

Descriptor	Value
CCID	MKV-TAG-INITIAL_KEY
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Law_Rating

Descriptor	Value
CCID	MKV-TAG-LAW_RATING
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

TAG ICRA

Descriptor	Value
CCID	MKV-TAG-ICRA
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_RELEASED

Descriptor	Value
CCID	MKV-TAG-DATE_RELEASED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_RECORDED

Descriptor	Value
CCID	MKV-TAG-DATE_RECORDED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_ENCODED

Descriptor	Value
CCID	MKV-TAG-DATE_ENCODED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_TAGGED

Descriptor	Value
CCID	MKV-TAG-DATE_TAGGED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_DIGITIZED

Descriptor	Value
CCID	MKV-TAG-DATE_DIGITIZED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_WRITTEN

Descriptor	Value
CCID	MKV-TAG-DATE_WRITTEN
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag DATE_PURCHASED

Descriptor	Value
CCID	MKV-TAG-DATE_PURCHASED
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Play_Counter

Descriptor	Value
CCID	MKV-TAG-PLAY_COUNTER
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag FPS

Descriptor	Value
CCID	MKV-TAG-FPS
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag BPM

Descriptor	Value
CCID	MKV-TAG-BPM
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Measure

Descriptor	Value
CCID	MKV-TAG-MEASURE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Tuning

Descriptor	Value
CCID	MKV-TAG-TUNING
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Replay Gain (Gain)

Descriptor	Value
CCID	MKV-TAG-REPLAYGAIN_GAIN
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag Replay Gain (Peak)

Descriptor	Value
CCID	MKV-TAG-REPLAYGAIN_PEAK
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) ISRC

Descriptor	Value
CCID	MKV-TAG-ISRC
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) MCDI

Descriptor	Value
CCID	MKV-TAG-MCDI
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) ISBN

Descriptor	Value
CCID	MKV-TAG-ISBN
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) Barcode

Descriptor	Value
CCID	MKV-TAG-BARCODE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) Catalog number

Descriptor	Value
CCID	MKV-TAG-CATALOG_NUMBERA
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) Label code

Descriptor	Value
CCID	MKV-TAG-LABEL_CODE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Identifiers) LCCN

Descriptor	Value
CCID	MKV-TAG-LCCN
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Commercial) Purchase Item

Descriptor	Value
CCID	MKV-TAG-PURCHASE_ITEM
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Commercial) Purchase Price

Descriptor	Value
CCID	MKV-TAG-PURCHASE_PRICE
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

Tag (Commercial) Purchase Currency

Descriptor	Value
CCID	MKV-TAG-PURCHASE_CURRENCY
Version	
Authority	
Target Format	
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition:

FFV1 Conformance Checks (Draft)

Missing header

Descriptor	Value
CCID	OUTOFBAND-HEADER-MISSING
Version	0
Authority	FFV1 Specification
Target Format	FFV1 >=2
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “Version 2 and later files use a global header”

Definition: If version is 2 or more, there should be a global header in the container private data

version

Descriptor	Value
CCID	FFV1-HEADER-version
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity: Warning

Quote: “version 0, 1 or 3”

Definition: Maximum known version is 3, analysis stops (note: doc sometimes indicates version 4)

version 2

Descriptor	Value
CCID	FFV1-HEADER-version2
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity: Warning

Quote: “Version 2 was never enabled in the encoder thus version 2 files should not exist”

Definition: Version 2 is forbidden, analysis stops

micro_version 2

Descriptor	Value
CCID	FFV1-HEADER-micro_version
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity: Warning

Quote: “For version 3, micro_version is 4, micro versions prior to this represent pre standard”

Definition: Not supported version, high risk of decoding issue

coder_type

Descriptor	Value
CCID	FFV1-HEADER-coder_type
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “0 (Golomb Rice), 1 (Range coder), 2 (Range coder with custom state transition table)”

Definition: coder_type >2 is not supported

state_transition_delta

Descriptor	Value
CCID	FFV1-HEADER-state_transition_delta
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote:

Definition: (To be defined)

colorspace_type

Descriptor	Value
CCID	FFV1-HEADER-colorspace_type
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “0 (YCbCr), 1 (JPEG2000_RCT)”

Definition: colorspace_type >1 is not supported

bits_per_raw_sample

Descriptor	Value
CCID	FFV1-HEADER-bits_per_raw_sample
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity: Are other values valid?

Quote: “commonly 8, 9, 10 or 16”

Definition:

h_chroma_subsample

Descriptor	Value
CCID	FFV1-HEADER-h_chroma_subsample-max
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: chroma subsampling factor can not be higher than slice width

h_chroma_subsample

Descriptor	Value
CCID	FFV1-HEADER-h_chroma_subsample-int
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: width divided by chroma subsampling factor is not an integer

v_chroma_subsample

Descriptor	Value
CCID	FFV1-HEADER-v_chroma_subsample-max
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: chroma subsampling factor can not be higher than slice height

v_chroma_subsample

Descriptor	Value
CCID	FFV1-HEADER-v_chroma_subsample-int
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: height divided by chroma subsampling factor is not an integer

QuantizationTables

Descriptor	Value
CCID	FFV1-HEADER-QuantizationTables
Version	0
Authority	Ffmpeg source code
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: QuantizationTables incoherency

initial_state_delta

Descriptor	Value
CCID	FFV1-HEADER- initial_state_delta
Version	0
Authority	Ffmpeg source code
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: initial_state_deltas incoherency

ec

Descriptor	Value
CCID	FFV1-HEADER- ec
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “0(32bit CRC on the global header), 1(32bit CRC per slice and the global header)”

Definition: ec >1 is not supported

intra

Descriptor	Value
CCID	FFV1-HEADER- intra
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “intra 0(key and non key frames), 1(the video contains only key frames)”

Definition: intra >1 is not supported

crc_parity

Descriptor	Value
CCID	FFV1-HEADER-crc_parity
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “32bit that are choosen so that the global header as a whole or slice as a whole has a crc”

Definition: CRC is wrong

end of header

Descriptor	Value
CCID	FFV1-HEADER-END
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Header
Citation	

Rule Clarity:

Quote:

Definition: Real header end is met before or after expected header end

slice x / y / width / height

Descriptor	Value
CCID	FFV1-SLICE-slice_xywh
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	

Rule Clarity:

Quote:

Definition: Slices x/y and slices width/height are not coherant (areas are not sticked)

quant_table_index

Descriptor	Value
CCID	FFV1-SLICE-quant_table_index
Version	0
Authority	Ffmpeg source code
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	

Rule Clarity:

Quote:

Definition: quant_table_index incoherency

picture_structure

Descriptor	Value
CCID	FFV1-SLICE-picture_structure
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “0(unknown) 1(top field first) 2(bottom field first) 3(progressive)”

Definition: picture_structure >3 is not supported

sar_den

Descriptor	Value
CCID	FFV1-SLICE-sar_den
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity: spec is not obvious

Quote: “0/0 when unknown”

Definition: if num is not 0, den should be not 0

slice_size

Descriptor	Value
CCID	FFV1-SLICE-slice_size
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	

Rule Clarity:

Quote:

Definition: slice_size is bigger than frame size

error_status

Descriptor	Value
CCID	FFV1-SLICE-crc_parity
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “0(no error), 1(slice contained a correctable error), 2(slice contains a uncorrectable error)”

Definition: error_status >2 is not supported

crc_parity

Descriptor	Value
CCID	FFV1-SLICE-crc_parity
Version	0
Authority	FFV1 Specification
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	http://www.ffmpeg.org/~michael/FFV1.html

Rule Clarity:

Quote: “32bit that are choosen so that the global header as a whole or slice as a whole has a crc”

Definition: CRC is wrong

end of slice

Descriptor	Value
CCID	FFV1-SLICE-END
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Slice
Citation	

Rule Clarity:

Quote:

Definition: Real slice end is met before or after expected slice end

end of frame

Descriptor	Value
CCID	FFV1-FRAME-END
Version	0
Authority	Coherency
Target Format	FFV1
Target Format Version	all
Target Format Part	Frame
Citation	

Rule Clarity:

Quote:

Definition: Real frame end is met before or after expected frame end

LPCM Conformance Checks (Draft)

formatType

Descriptor	Value
CCID	BWF-LPCM-FMT
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk 'fmt'
Citation	EBU Tech 3285 v2, pg. 16

Rule Clarity: Inferred

Quote: "If the field of the is set to WAVE_FORMAT_PCM, then the waveform data consists of samples represented in pulse code modulation (PCM) format."

Definition: WAVE_FORMAT_PCM = 0x0001

bitsPerSample

Descriptor	Value
CCID	BWF-LPCM-BPS
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk 'fmt'
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: "The field specifies the number of bits of data used to represent each sample of each channel. If there are multiple channels, the sample size is the same for each channel."

Definition: valid bits per sample 16, 20 or 24

bytesPerSecond

Descriptor	Value
CCID	BWF-LPCM-BYT
Version	0
Authority	EBU BWAV v2 Specification

Descriptor	Value
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk ‘fmt’
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: “For PCM data, the field of the ‘fmt’ chunk should be equal to the following formula rounded up to the next whole number: (nChannels x nSamplesPerSecond x nBitsPerSample) / 8”

Definition: MUST equal (nChannels x nSamplesPerSecond x nBitsPerSample) / 8 **only important for compressed formats

blockAlignment

Descriptor	Value
CCID	BWF-LPCM-BLK
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk ‘fmt’
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: “The field should be equal to the following formula, rounded to the next whole number: (nChannels x nBitsPerSample)/8”

Definition: C ontainer size (in bytes) of one set of samples. MUST equal (nChannels x nBitsPerSample)/8EBU **Note: The above formulae do not always give the correct answer. Strictly speaking, the number of bytes per sample (nBitsPerSample/8) should be rounded first. Then this integer should be multiplied by (which is always an integer) to give . This in turn should be multiplied by to give].

channelCount

Descriptor	Value
CCID	BWF-LPCM-CHN
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk ‘fmt’
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: 1 = mono, 2 = stereo, etc.

Definition: 1 = mono, 2 = stereo, etc.

nChannels

Descriptor	Value
CCID	BWF-LPCM-CHN
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk 'fmt'
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: "Number of channels in the wave, 1 for mono, 2 for stereo"

Definition: 1 = mono, 2 = stereo, etc.

sampleRate

Descriptor	Value
CCID	BWF-LPCM-SRT
Version	0
Authority	EBU BWAV v2 Specification
Target Format	BWF
Target Format Version	2
Target Format Part	FormatChunk 'fmt'
Citation	EBU Tech 3285 v2, pg. 17

Rule Clarity: Inferred

Quote: "Frequency of the sample rate of the wave file. This should be 48000 or 44100 etc. This rate is also used by the sample size entry in the fact chunk to determine the length in time of the data."

Definition: 32000, 44100, 48000, etc.

Container/Stream Coherency Checks (Draft)

CodecID mismatch

Descriptor	Value
CCID	COHERENCY-CODECID
Version	0
Authority	
Target Format	FFV1/MKV
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition: Codec identifier indicated in the container (e.g. Matroska) is not the real content (e.g. Codec identifier is V_FFV1 but real content is MPEG Video)

Aspect Ratio Match

Descriptor	Value
CCID	COHERENCY-DAR
Version	0
Authority	
Target Format	FFV1/MKV
Target Format Version	
Target Format Part	
Citation	

Rule Clarity:

Quote:

Definition: Display Aspect Ratio indicated in the container (e.g. Matroska) is not the Display Aspect Ratio indicated in the FFV1 stream

Width Match

Descriptor	Value
CCID	COHERENCY-WIDTH
Version	0
Authority	FVV1 and Container Specifications
Target Format	FFV1
Target Format Version	Container
Target Format Part	all
Citation	Header

Rule Clarity:

Quote:

Definition: Width indicated in the container (e.g. Matroska) is not the width indicated in the FFV1 stream

Height Match

Descriptor	Value
CCID	COHERENCY-HEIGHT
Version	0
Authority	FVV1 and Container Specifications
Target Format	FFV1
Target Format Version	Container

Descriptor	Value
Target Format Part	all
Citation	Header

Rule Clarity:

Quote:

Definition: Height indicated in the container (e.g. Matroska) is not the height indicated in the FFV1 stream

Frame duration

Descriptor	Value
CCID	COHERENCY-FRAMEDURATION
Version	0
Authority	Stream and Container Specifications
Target Format	PCM
Target Format Version	Container
Target Format Part	all
Citation	Header

Rule Clarity:

Quote:

Definition: Duration computed from the the container (e.g. Matroska or WAV) is not the duration computed from the stream (for PCM: based on Channels x SamplesPerSecond x BitsPerSample) / 8)