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SMPTE STANDARD

for Television — Transfer of Edit Decision Lists



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1 Scope

This standard describes the data format for the interchange of a list of audio/video content decisions which specify an audio/video product. Exchange of this information allows the audio/video product to be reproduced on a compatible editing system. Such a list is commonly referred to as an edit decision list. The transfer medium and storage format are not specified in this standard.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI X3.4-1986 (R1992), Information Processing — Coded Character Set - 7-Bit American National Standard Code for Information Interchange (7-Bit ASCII)

SMPTE 12M-1999, Television, Audio and Film — Time and Control

SMPTE RP 162-1993, Storage of Edit Decision Lists on 3-1/2 in Disks

3 Definitions

alphanumeric: The term refers to any alphabetic character or the digits 0 through 9.

ASCII: American National Standard Code for Information Interchange — Coded Character Set — 7-Bit, ANSI X3.4, which describes the character encoding used by this practice.

auto-assembly: Recording one or more edits automatically under system control from data in an edit decision list.

drop frame time code: A time code numbering system which omits frame numbers to compensate for the variance between nominal fields per second and actual fields per second. For NTSC (field rate approximately 59.94 fields per second), frames 0 and 1 are omitted at the start of each minute, except minutes 0, 10, 20, 30, 40, and 50. See also non-drop frame time code.

edit: One or more interrelated elements treated as a unit.

edit decision list: One or more edits.

editing mode: Specification of whether or not video is to be recorded on this edit and which audio tracks, if any, are to be recorded.

effect: An audio/video action which is used to combine two or more sources into a single source.

element: A series of printable ASCII characters, terminating in the ASCII characters 'CR' 'LF.' Elements contain information specifying audio/video content decisions in an audio/video product.

field: A syntactical unit within an element that contains a functional grouping of data. Fields are delineated within an element by separators.

hexadecimal: A notation for representing numbers in base 16. Each 8-bit byte is represented by two ASCII characters. The first character represents the 4 high-order bits, and the second character represents the 4 low-order bits. The range of values of each of the 4-bit nibbles is 0 to 15, which is represented by the ASCII characters '0' through '9' for values 0 through 9, and ASCII characters 'A' through 'F' for values 10 through 15.

mix: A method of combining two or more sources to produce a single source.

nondrop frame time code: A time code numbering system in which the number of frames per second is constant. See also "drop frame time code."

separator: Character(s) used to delineate fields within an element.

source: A reference to video or audio program material.

submaster: A submaster is a medium, other than the master record medium, on which material is recorded for later use as source material. A typical use of a submaster would be the creation of a multiple mix effect on a system with only one mix effect bank.

virtual edit: Specification of an effect that is not to be recorded directly, but can be referenced later as a source.

virtual source reference: A reference to a virtual edit defined earlier in the edit decision list.

4 Notation

The syntax of the edit decision list format is specified using a notation commonly used in the software industry called BNF (Backus-Naur form). The use of this notation allows precise, yet easy to understand, syntactic specification of the edit decision list format.

A BNF grammar consists of a list of rules which define grammatical terms. The first term defined is typically the highest level construct in the grammar, in this case, an EDL. As there are many variations of the notation known as BNF, the following is a formal definition of the notation used in this practice:

- Grammatical terms are capitalized, with an underscore (_) separating words.
- Grammatical rules consist of: the name of the grammatical term being defined, followed by a colon (:), followed by a list of grammatical terms, BNF operators, and/or literals, and terminated with a semi-colon (;).
- Literal strings are enclosed within double-quotes ("").
- Literal characters are enclosed by single-quotes ('').

- Nonprintable characters are represented by their name as shown in annex A.
- Comments begin with “/*” and end with “*/.”
- The logical OR operation is specified with a vertical bar (|).
- Use of square brackets ([and]) indicates that zero or one occurrence of the items in the brackets is allowed.
- Use of braces ({ and }) indicates that one or more occurrences of the items in the braces are allowed.

The complete grammar is defined in annex B.

5 Edit decision list structure

5.1 General information

The information in an edit decision list (EDL) consists of 8-bit data bytes. The low-order 7 bits are interpreted as characters following the ASCII character set. The high-order bit is ignored. No distinction is made between uppercase and lowercase alphabetic characters when interpreting source elements, trigger elements, device control elements, playback elements, and system directives. Uppercase and lowercase alphabetic characters are considered distinct in comment elements and user elements.

The EDL consists of one or more SMPTE_DIRECTIVES, followed by a FRAME_RATE_DIRECTIVE, followed by one or more EDIT_SEQUENCES or PLAYBACK_SEQUENCES. Both EDIT_SEQUENCES and PLAYBACK_SEQUENCES consist of one or more ELEMENTs.

The end of an edit decision list is indicated by either:

- the end of the storage medium;
- a CONTROL-Z (SUB) character.

The physical order of edits on the transfer medium determines the order in which the edits are to be executed. Note that this may result in later edits recording over portions of prior edits.

5.2 Elements

There are eight types of elements:

- INITIAL_DIRECTIVE;
- SYSTEM_DIRECTIVE;
- COMMENT_ELEMENT;
- USER_ELEMENT;
- TRIGGER_ELEMENT;
- DEVICE_CONTROL_ELEMENT;
- SOURCE_ELEMENT;
- PLAYBACK_ELEMENT.

An element consists of a PRINTABLE_STRING, as defined by the grammar in annex B. Each element is terminated by a TERMINATOR ('CR' 'LF'). The basic unit of information in an element is the field, consisting of one or more characters. A field is delineated from the following field by a SEPARATOR. If a TERMINATOR ('CR' 'LF') is preceded by a backslash ('\'), the TERMINATOR is treated as a SEPARATOR.

Zero or more separators, followed by a TERMINATOR, is legal but has no semantic meaning in an EDIT_LIST.

Each element, except for INITIAL_DIRECTIVES and SYSTEM_DIRECTIVES, begins with an EDIT_NUMBER. The element type is determined by an optional element type character immediately following the EDIT_NUMBER field. The absence of this character indicates that the ELEMENT is a SOURCE_ELEMENT. INITIAL_DIRECTIVES and SYSTEM_DIRECTIVES are easily identified, as they are the only elements that do not begin with an EDIT_NUMBER.

5.2.1 Initial directives

The following directives must occur at the start of the EDL, and cannot be used later in the EDL:

SMPTE_DIRECTIVE:

```

"SMPT" SEPARATOR "STD" NUMBER "M"
| "SMPT" SEPARATOR "STD" NUMBER "M" '-' NUMBER
| "SMPT" SEPARATOR "RP" NUMBER
| "SMPT" SEPARATOR "RP" NUMBER '-' NUMBER
| "SMPT" SEPARATOR "EG" NUMBER
| "SMPT" SEPARATOR "EG" NUMBER '-' NUMBER
/* Indicates that this list is compatible with the specified standard, recommended practice, or
engineering guideline. At least one of these directives must be used at the start of the list to identify
the documents that the list conforms to. */
;
```

FRAME_RATE_DIRECTIVE:

```

"TIME_CODE_MODULUS" SEPARATOR NUMBER
/* Specifies the nominal number of frames per second for time code arithmetic. One and only one
shall immediately follow the SMPTE directive(s) at the head of the list. */
;
```

5.2.2 System directive

A SYSTEM_DIRECTIVE does not have an EDIT_NUMBER. Its purpose is to provide additional information to the editing system, or to the operator, for edit(s) subsequent to the directive. SYSTEM_DIRECTIVES are described in clause 6.

5.2.3 Element type

The element type character indicates the type of ELEMENT. Element type identifiers are as follows:

```

'*' - COMMENT_ELEMENT;
'?' - USER_ELEMENT;
'#' - TRIGGER_ELEMENT;
'%' - DEVICE_CONTROL_ELEMENT;
"  - SOURCE_ELEMENT;
'=' - PLAYBACK_ELEMENT.
```

The absence of this character indicates a SOURCE_ELEMENT.

5.2.4 Edit sequence

An EDIT_SEQUENCE consists of one or more of the following element types, each terminated by a TERMINATOR:

```

- COMMENT_ELEMENT;
- USER_ELEMENT;
- TRIGGER_ELEMENT;
```

- DEVICE_CONTROL_ELEMENT;
- SOURCE_ELEMENT.

An EDIT_SEQUENCE need not contain all five types, but must contain at least one.

All ELEMENTs of an EDIT_SEQUENCE have the same EDIT_NUMBER. The end of an EDIT_SEQUENCE is indicated by a change in EDIT_NUMBER on the next ELEMENT, or by the end of the EDL.

5.2.5 Playback sequence

A PLAYBACK_SEQUENCE consists of one or more PLAYBACK_ELEMENTs, each terminated by a TERMINATOR. It is used to specify dynamic source motion in a manner which allows speed variation to be precisely duplicated.

6 System directive specification

System directives are as follows:

SYSTEM_DIRECTIVE:

```

    INFORMATIONAL_DIRECTIVE
  | AUTO_ASSEMBLE_DIRECTIVE
  | CONTROL_DIRECTIVE
  | MISCELLANEOUS_DIRECTIVE
  | MOTION_DIRECTIVE
;

```

INFORMATIONAL_DIRECTIVE:

```

    '*' PRINTABLE_STRING
      /* List Comment (Information for the Operator) */
  | "TITLE" SEPARATOR PRINTABLE_STRING
      /* Indicates that all subsequent edits until another TITLE directive are to be associated with the
      specified title string. */
;

```

AUTO_ASSEMBLE_DIRECTIVE:

```

    "WAIT"
      /* Stop auto-assembly when the following edit is encountered. */
  | "SKIP"
      /* Do not perform the following edit. */
  | "BELL"
      /* Sound an audible indicator before performing the following edit.*/
;

```

CONTROL_DIRECTIVE:

```

    "RECORD" SEPARATOR MODE_FIELD SEPARATOR MEDIUM_IDENTIFIER '=' TIME_CODE
      /* Identifies a reel or other medium upon which subsequent edits will be recorded. The video and/or
      audio tracks specified in both this mode field and in a subsequent edit's mode field will be recorded
      for that edit. The TIME_CODE indicates the offset to be added to the sync entry and sync exit times
      of each edit to determine that edit's record times for this record medium. Note that more than one
      record directive can be active at any time. */
  | "NORECORD" SEPARATOR MODE_FIELD SEPARATOR MEDIUM_IDENTIFIER
      /* Terminates any RECORD directive for the specified video and/or audio tracks on the specified
      record medium. */

```

- | "SYNC" { SEPARATOR SOURCE_IDENTIFIER '=' TIME_CODE }
 /* A sync group is established, comprised of the indicated sources. The members of the sync group roll synchronously, based on the time code associated with each source, whenever any member of the sync group rolls. Establishing a sync group cancels any previous master/slave links between the members of the sync group.
 If more than one source in a sync group has a SOURCE_ELEMENT in an edit, only the first source specified in the edit will be used to determine synchronization of unspecified members of the sync group. Time code values explicitly stated in a SOURCE_ELEMENT will take precedence over any SYNC relationships for the duration of the given edit. */
- | "NOSYNC" { SEPARATOR SOURCE_IDENTIFIER }
 /* Removes the indicated sources from all prior sync groups. */
- | "SLAVE" SEPARATOR MASTER_SRC_ID '=' TIME_CODE { SEPARATOR SLAVE_SRC_ID '=' TIME_CODE }
 /* Establishes master/slave link(s) between the master source and each indicated slave source. All slaves roll synchronously with the master source, whenever the master source is rolled, based on the time codes in the SLAVE directive. Establishing a master/slave link cancels any previous master/slave links between the indicated sources. Time code values explicitly stated in a SOURCE_ELEMENT will take precedence over any master/slave links for the duration of the given edit. */
- | "NOSLAVE" SEPARATOR MASTER_SRC_ID { SEPARATOR SLAVE_SRC_ID }
 /* Breaks the master/slave link between the indicated master source, and each listed slave source. */

MISCELLANEOUS_DIRECTIVE:

- "AUDIO" SEPARATOR MODE_AUDIO_SUBFIELD
 /* The track(s) indicated are the ones that are used by the MODE_FIELD when all audio is called for. A range of audio tracks can be specified by separating two audio track numbers with a dash (-). */
- | "INCLUDE" SEPARATOR FILENAME '=' TIME_CODE
 /* This directive causes the contents of the specified file to replace the include directive in the edit decision list. The time code specifies an offset which will be added to all sync entry and sync exit times of source elements in the included file. The filename is a PRINTABLE_STRING enclosed in quotes. */
- | "MEDIUM" SEPARATOR SOURCE_IDENTIFIER SEPARATOR MEDIA_TYPE
 /* Allows specification of the media type for a source. Options include LIVE, TAPE, and OTHER. Each media type can be optionally followed by a printable string to give more details as to media type. */
- | "WIPES" SEPARATOR "SMPTE"
 /* Wipe patterns are defined by figure 1. */
- | "WIPES" SEPARATOR PRINTABLE_STRING
 /* Wipe patterns are not defined by figure 1. The PRINTABLE_STRING specifies the name of the switcher that the wipe patterns conform to. */

MOTION_DIRECTIVE:

- "MOTION_CURVE" SEPARATOR MOTION_TYPE
 /* The motion curve directive indicates how motion changes from one source speed to the next. Motion is made to fit a curve: BEST, SPLINE, or Nth order. Refer to 7.7.4 for details of the meanings of the MOTION_TYPES. */

7 Edits

7.1 Edit number

The first field of an ELEMENT is the EDIT_NUMBER. It consists of up to three subfields, concatenated without separators:

- EDIT_NUMBER_SUBFIELD (required)
- VIRTUAL_EDIT_INDICATOR_SUBFIELD (optional)
- RECORDED_INDICATOR_SUBFIELD (optional)

The EDIT_NUMBER may be preceded by a separator, but embedded separators are not permitted.

The ELEMENT type is determined by an optional element type character immediately following the EDIT_NUMBER field. The absence of this character indicates that the ELEMENT is a SOURCE_ELEMENT.

7.1.1 Edit number subfield

The EDIT_NUMBER_SUBFIELD consists of from one to six numeric characters, followed optionally by an alphabetic character. The range of valid edit numbers is from 1 to 999999Z. The number zero (0) is not a valid edit number. Leading zeroes are insignificant in differentiating edit numbers (i.e., 0001 is equivalent to 1).

7.1.2 Virtual edit indicator subfield

A VIRTUAL_EDIT is indicated by the greater-than character (>) immediately following the EDIT_NUMBER_SUBFIELD. All elements of a VIRTUAL_EDIT must have this indicator.

7.1.2.1 Virtual edits

A virtual edit is not recorded directly but is used as a source in a following edit. It must be used to specify a transition or effect wherein one or more of the sources is itself an effect. The use of a virtual edit is comparable to the use of a submaster.

7.1.3 Recorded indicator subfield

The RECORDED_INDICATOR_SUBFIELD indicates that this SOURCE_ELEMENT has been recorded; i.e., is not to be auto-assembled. The RECORDED_INDICATOR_SUBFIELD consists of an exclamation mark, (!), immediately following the VIRTUAL_EDIT_INDICATOR_SUBFIELD, which may be empty.

7.2 Comment element

The COMMENT_ELEMENT contains information, specific to the edit, which is to be interpreted by the operator and not the editing system. It consists of an edit number field (with a COMMENT_ELEMENT character) followed by a PRINTABLE_STRING. The COMMENT_ELEMENT is terminated by a TERMINATOR.

7.3 User element

The USER_ELEMENT is provided to allow an escape from the edit decision list format as defined by this standard and will not be infringed upon by any subsequent amendments to the standard. A USER_ELEMENT consists of an EDIT_NUMBER_FIELD (with a USER_ELEMENT character) followed by a PRINTABLE_STRING. The USER_ELEMENT is terminated by a TERMINATOR. The format of the PRINTABLE_STRING is left to the user.

7.4 Trigger element

The TRIGGER_ELEMENT provides the ability to tell the editing system to trigger a specified action at a specified time. It consists of the following fields:

- EDIT_NUMBER;
- TRIGGER_IDENTIFIER;
- TIME_CODE_SRC_IDENTIFIER;
- TIME_CODE_TYPE;
- TIME_CODE.

The TRIGGER_ELEMENT edit number field (with a TRIGGER_ELEMENT character) is followed by a TRIGGER_IDENTIFIER. The TRIGGER_IDENTIFIER is an IDENTIFIER with up to 8 characters, which identifies which user-specified action is to be triggered. This is followed by an optional TIME_CODE_SRC_IDENTIFIER which changes the trigger time from a time code in the audio/video product to a time code in the specified source material. If the TIME_CODE_SRC_IDENTIFIER is present, the specified source must appear in a SOURCE_ELEMENT in the current edit.

The following field, TIME_CODE_TYPE, is also optional. If the TIME_CODE_TYPE field contains any of the following character strings, "ENTRY+," "ENTRY-," "EXIT+," or "EXIT-," the trigger time code is interpreted as an offset relative to the immediately preceding entry or exit time code of the audio/video product (or the specified source) in the text.

If the TIME_CODE_TYPE field contains the characters, "DUR," the trigger time code is interpreted as the duration (in real-time) from the previous trigger with the same TIME_CODE_SRC_IDENTIFIER. If a TIME_CODE_TYPE of "DUR" is used without a TIME_CODE_SRC_IDENTIFIER, the trigger time code is relative to the previous trigger with no TIME_CODE_SRC_IDENTIFIER. If there is no such preceding trigger in the edit, the duration is relative to the immediately preceding SYNC_ENTRY time code in the text.

If a TIME_CODE_TYPE is specified, the current edit must include at least one SOURCE_ELEMENT.

The final field is a TIME_CODE which is the trigger time, either relative or absolute. Table 1 summarizes the options for the trigger time.

Table 1 – Types of trigger time specifiers

TIME_CODE_SRC_IDENTIFIER	TIME_CODE_TYPE	Resulting trigger time
	ENTRY +	Program absolute
	ENTRY –	Program relative entry plus
	EXIT +	Program relative entry minus
	EXIT –	Program relative exit plus
	DUR	Program relative exit minus
		Program duration
SOURCE_IDENTIFIER		Source absolute
SOURCE_IDENTIFIER	ENTRY +	Source relative entry plus
SOURCE_IDENTIFIER	ENTRY –	Source relative entry minus
SOURCE_IDENTIFIER	EXIT +	Source relative exit plus
SOURCE_IDENTIFIER	EXIT –	Source relative exit minus
SOURCE_IDENTIFIER	DUR	Source duration

7.5 Device control element

The DEVICE_CONTROL_ELEMENT defines message strings and their execution times. It consists of the following fields:

- EDIT_NUMBER (with a DEVICE_CONTROL_ELEMENT character);
- DEVICE_IDENTIFIER_FIELD;
- TIME_CODE_SRC_IDENTIFIER;
- TIME_CODE_TYPE;
- MESSAGE_TIME_FIELD;
- MESSAGE_COUNT_FIELD;
- MESSAGE_FIELD.

The TIME_CODE_SRC_IDENTIFIER and TIME_CODE_TYPE fields have the same syntax and function as the fields with the same names in a TRIGGER_ELEMENT.

7.5.1 Device identifier field

The DEVICE_IDENTIFIER_FIELD contains an identifier which specifies the device to which this message should be sent. The device identifier is a symbolic name assigned by the user. Device identifiers are limited to a maximum of 8 characters.

7.5.2 Message time field

The MESSAGE_TIME_FIELD contains either a time code or the keyword "SETUP." The "SETUP" keyword indicates that this message should be sent prior to execution of the edit. If this field contains a time code, it specifies when the message should be sent to the device. This time code is interpreted according to the contents of the TIME_CODE_SRC_IDENTIFIER and TIME_CODE_TYPE fields. See table 1 for a summary of the possible options.

7.5.3 Message count field

The MESSAGE_COUNT_FIELD contains the length, in bytes, of the message string which will be sent. The message count is expressed as a hexadecimal number.

7.5.4 Message field

The MESSAGE_FIELD defines the actual message string which will be sent. Each byte in the actual message is represented by encoding it into ASCII using two hexadecimal digits per byte. Separators within the message field will be ignored.

7.6 Source element

The SOURCE_ELEMENT defines the audio/video source, its related parameters, and its placement on the record medium. It consists of the following fields:

- EDIT_NUMBER;
- SOURCE_IDENTIFICATION_FIELD;
- MODE_FIELD;
- EFFECT_FIELD;
- EFFECT_PARAMETER_FIELD;
- SOURCE_ENTRY_FIELD;
- SOURCE_EXIT_FIELD;
- SYNC_ENTRY_FIELD;
- SYNC_EXIT_FIELD.

7.6.1 Source identification field

The SOURCE_IDENTIFICATION_FIELD consists of one to eight alphanumeric characters. A SOURCE_IDENTIFICATION_FIELD may be qualified by a SOURCE_AUDIO_SUBFIELD.

7.6.1.1 Special source identifiers

The following source identifiers have unique significance:

BLACK indicates black video and silent audio;
BARS indicate video color bars and audio test tone.

7.6.1.2 Virtual source identifier

A virtual edit can be referenced as a source by the use of a VIRTUAL_SOURCE_IDENTIFIER, which consists of the EDIT_NUMBER_SUBFIELD of the virtual edit followed by the less-than character (<). The edit number in the virtual source identifier refers to the most immediately preceding virtual edit with that edit number. Each virtual edit must precede any edit which references that virtual edit.

Note that a virtual source identifier can refer to an edit which itself contains virtual source references. Note also that the source times in a SOURCE_ELEMENT containing a virtual source reference refer to the sync times in the edit being referenced. Thus, an important restriction on both the source entry time and the source exit time is that these times are bounded by the sync entry time and sync exit time of the referenced edit.

Example 1 in annex C gives an example of the use of virtual source identifiers.

7.6.1.3 Source audio subfield

The optional SOURCE_AUDIO_SUBFIELD identifies the source audio tracks to be used. It is separated from the source identifier by a decimal point (.). There are two components in a SOURCE_AUDIO_SUBFIELD: audio sources and ranges of audio tracks. Combinations of audio sources and audio ranges can be linked by commas (,).

An audio source can be either a single audio track, or it can be a mix of two or more audio tracks. A single audio track is specified by one or two digits (0 through 9), and can have any value from 1 to 99. An audio mix is specified by two or more audio sources, linked by a plus sign (+). Successive audio tracks to be mixed can be specified by a notation consisting of the smallest track number followed by two plus signs ("++") and the largest track number. In this case, all audio tracks from the smallest to the largest, inclusive, are to be mixed.

Each track number in the SOURCE_AUDIO_SUBFIELD that is not part of a range specification may be followed by a mix level in parentheses. The mix level is a real number, positive or negative, specifying the gain of that track in dB, where 0 dB represents unity gain, and negative values represent less than unity gain. If a mix level is not specified for a given track, the editing system will not attempt to control the gain for that track.

An AUDIO_RANGE is a notation for denoting successive audio tracks. It consists of the smallest track number followed by a hyphen (-) and the largest track number. All audio tracks from the smallest to the largest, inclusive, are to be used.

The mapping between source audio tracks and record audio tracks is described in 7.6.2.2 which defines the AUDIO_TRACK_SUBFIELD. An example of a SOURCE_AUDIO_SUBFIELD is shown in example 2 of annex C.

7.6.2 Mode field

The MODE_FIELD specifies the editing mode (video and audio track selection) of the record medium, and consists of a MODE_INDICATOR_SUBFIELD, optionally followed by an AUDIO_TRACK_SUBFIELD. If there is no AUDIO_TRACK_SUBFIELD, the audio track specification defaults to all available audio tracks, or, if an AUDIO system directive has been used, the default audio track specification follows the AUDIO system directive.

7.6.2.1 Mode indicator subfield

The MODE_INDICATOR_SUBFIELD consists of one alpha character. The character 'V' indicates video only, 'A' indicates audio only, and 'B' indicates both video and audio.

7.6.2.2 Audio track subfield

The AUDIO_TRACK_SUBFIELD identifies the record audio tracks to be enabled. It immediately follows the MODE_INDICATOR_SUBFIELD. There are two possible components in an AUDIO_TRACK_SUBFIELD: audio track numbers and audio ranges. There can be any combination of audio track numbers and audio ranges linked by commas (.). Note that there can be no spaces in the AUDIO_TRACK_SUBFIELD.

A single audio track is specified by one or two digits (0 through 9), and can have any value from 1 to 99. An AUDIO_RANGE is a notation for denoting successive audio tracks. It consists of the smallest track number followed by a hyphen (-) and the largest track number. All audio tracks from the smallest to the largest, inclusively, are to be used. Two mappings of audio sources to record audio tracks are allowed. If the number of audio tracks specified in the AUDIO_TRACK_SUBFIELD matches the number of audio sources specified in the SOURCE_AUDIO_SUBFIELD, the order of each subfield specifies a one-to-one correspondence of audio source to record track. Note that the track numbers indicated by the AUDIO_TRACK_SUBFIELD must be exclusive; i.e., record track numbers must not repeat.

The only alternative to a one-to-one mapping is to specify one audio source and more than one record track. In this case, the single audio source is recorded on each of the specified record tracks.

Use of the AUDIO_TRACK_SUBFIELD is shown in example 3 of annex C.

7.6.3 Effect field

The EFFECT_FIELD specifies the switcher transition or effect to be performed. It consists of either a SINGLE_SOURCE_EFFECT or a MULTIPLE_SOURCE_EFFECT.

7.6.3.1 Single source effect

A SINGLE_SOURCE_EFFECT is used for switcher effects which specify the involvement of the source in the audio/video product without dependencies on earlier SOURCE_ELEMENTS. The first character in the SINGLE_SOURCE_EFFECT must be one of the following type identifiers:

C – CUT. Audio/video cut to the new source;

R – SYNC ROLL. Although no switcher effect is indicated by this effect type, the 'R' in the EFFECT_FIELD indicates a source synchronization element. No direct effect on video or audio.

A source synchronization element indicates that the specified source is to be rolled synchronously with the audio/video product. The SOURCE_ENTRY_FIELD and SYNC_ENTRY_FIELD define the synchronous relationship. If an edit consists of no other type of SOURCE_ELEMENT than sync roll elements, the first of these elements specifies the duration of the edit.