MISB MOTION IMAGERY STANDARDS BOARD	MISB ST 0808.2
STANDARD	**29 October 2015**
Ancillary Text Metadata Sets	

1 Scope

This standard (ST) defines the Ancillary Text Local Set and the Ancillary Text Universal Set. These sets include KLV metadata elements for encoding text data that may be associated with Motion Imagery data. Including descriptive text along with Motion Imagery supports additional capabilities, such as search and discovery, as well as providing valuable context information about the Motion Imagery data.

2 References

[1] SMPTE ST 336:2007 Data Encoding Protocol Using Key-Length-Value.

[2] MISB ST 0603.3 Common Time Reference for Digital Motion Imagery Using Coordinated Universal Time (UTC), Oct 2015.

[3] ISO/IEC 10646:2012 Information technology -- Universal Coded Character Set (UCS).

[4] MISB ST 0807.15 MISB KLV Metadata Dictionary, Feb 2015.

3 Acronyms

IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KLV	Key Length Value
MISB	Motion Imagery Standards Board
SMPTE	Society of Motion Picture and Television Experts
ST	Standard
UL	Universal Label
UTF	Unicode Transformation Format

4 Definitions

Natural Text Human readable text that is not specially formatted or written in code and does not contain any structure, markup, or protocol information. Examples are English sentences, chat, and lists of items separated by commas.

5 Revision History

Revision	Date	Summary of Changes
ST 0808.2	10/29/2015	• Deprecated REQs -01, -02, -03 • Added REQ -08 • Defined Natural Text

6 Introduction

Text, such as keywords and descriptions, is commonly used and assigned in the exploitation of Motion Imagery. The text may be generated in chat rooms, in mission narration, later as part of the analytic exploitation process, or by an automated process. When such text is stored as metadata along with the Motion Imagery, it can then be leveraged in subsequent indexing, cataloging, and discovery.

This standard allows for the carriage of limited amounts of Natural Text within a Motion Imagery KLV metadata stream. Natural Text is a string of UTF-8 characters that does not contain any structure, markup, or protocol information, which could be used without preprocessing for natural language analysis. Natural Text uses a reduced character set as listed in Table 1.

Table 1: Natural Text Character Set

Hex Character Range		Characters
Start	End	
0x09	0x0D	Tab, Line Feed, Vertical Tab, Form Feed, Carriage Return
0x20	0x7E	Space through tilde (all printable characters)

Natural Text content can include different types of sources, such as chat, or a list of terms taken from a controlled vocabulary. The purpose of Natural Text content is to facilitate cataloging, search, and discovery.

Natural Text content is encoded as Key-Length-Value (KLV) in either an Ancillary Text Local Set or Ancillary Text Universal Set described in Section 7.

Metadata is encoded as KLV according to SMPTE ST 336 [1] for representing data items and data groups.

7 Ancillary Text Data Components

In this section a metadata set consisting of mandatory and optional elements required to create KLV metadata containing ancillary text is defined. The following subsections define requirements for the encoding format:

7.1 Ancillary Text Universal Set

Requirement	
ST 0808.1-04	Each Ancillary Text Universal Set shall have the designator Ancillary Text Universal Set Universal Label (UL) as defined in MISB ST 0808 Table 2.

7.2 Ancillary Text Local Set

A Local Set provides a good balance of coding efficiency and flexibility. Use of an Ancillary Text Local Set is recommended as a preferred alternative to the use of an Ancillary Text Universal Set.

Requirement	
ST 0808.1-05	Each Ancillary Text Local Set shall have the designator Ancillary Text Local Set Universal Label (UL) as defined in MISB ST 0808 Table 2.

7.3 Ancillary Text Mandatory Elements

7.3.1 Precision Time Stamp

The Precision Time Stamp [2] ties the metadata set to a particular frame of Motion Imagery within the Motion Imagery stream. The Precision Time Stamp provides an absolute marker within the stream that correlates the message to the described event within the Motion Imagery.

The Precision Time Stamp is a mandatory element in the ancillary text metadata set.

Requirement	
ST 0808.1-06	An Ancillary Text Metadata Set shall include a Precision Time Stamp as defined in MISB ST 0603.

7.3.2 Ancillary Text Message Body

The Ancillary Text Message Body element contains the Natural Text of the message to be encoded. This element is free text, encoded with the UTF 8-Bit Coded Character Set [3] as described in Section 6.

The Ancillary Text Message Body is a mandatory element in the ancillary text metadata set.

Requirement(s)	
ST 0808.1-07	An Ancillary Text Metadata Set shall include an Ancillary Text Message Body.
ST 0808.2-08	Text within the Ancillary Text Metadata Body shall be encoded using the UTF 8-Bit Coded Character Set restricted to the characters specified in MISB ST 0808 Table 1.

7.4 Ancillary Text Optional Elements

The following are optional elements for any ancillary text metadata set:

- Originator

- Source
- Message Creation Time

The **Originator** element identifies the creator of the message, for example, by system name or username.

The **Source** element identifies the type of the **Originator**, for example, the name of a chat room or the type of the text message.

The **Message Creation Time** element identifies the time at which the ancillary text message was created (*e.g.*, if added to the stream during analysis subsequent to the initial recording). This element is encoded in the same manner as the Precision Time Stamp defined in MISB ST 0603.

Whereas the mandatory Precision Time Stamp marks *where* in the Motion Imagery stream the message applies, the Message Creation Time marks *when* the message is generated. For example, if a message applies to Motion Imagery with frame time X, but is being created at a later time, such as in a latter phase of exploitation, the message would have a Message Creation Time of Y. In the case where the message is made in real time with respect to the Motion Imagery, then the times X and Y would be the same.

8 Ancillary Text Metadata

Table 2 lists the metadata elements that comprise the ancillary text metadata set. When using a Universal Set, the set key is 06.0E.2B.34.02.01.01.01.0E.01.03.05.01.00.00.00 (CRC 22270), and the 16-byte Universal Label column in Table 2 is used for each item in the set.

When using a Local Set the set key is 06.0E.2B.34.02.03.01.01.0E.01.03.05.02.00.00.00 (CRC 28049), and the Tag column in Table 2 is used for each item in the set.

Table 2: Ancillary Text Universal and Local Sets

Tag	Name	16-byte Universal Label	Type[1]	M/O[2]	Length[3] (bytes)	Description
1	Originator	06.0E.2B.34.01.01.01.01. 0E.01.01.04.02.00.00.00 (CRC 59820)	Natural Text	O	V	Text identifier for the creator of a message
2	Precision Time Stamp	06.0E.2B.34.01.01.01.03. 07.02.01.01.01.05.00.00 (CRC 64827)	UINT64	M	8	Time within the Motion Imagery stream (e.g., of a frame) to which the message applies (see MISB ST 0603 [2])
3	Message Body	06.0E.2B.34.01.01.01.01. 0E.01.01.04.04.00.00.00 (CRC 52789)	Natural Text	O	V	Text of the message body
4	Source	06.0E.2B.34.01.01.01.01. 0E.01.01.04.01.00.00.00 (CRC 29296)	Natural Text	M	V	Text identifier for the type of the Originator
5	Message Creation Time	06.0E.2B.34.01.01.01.01. 0E.01.01.03.20.00.00.00 (CRC 21598)	UNIT64	O	8	Time the message is created (see MISB ST 0603 [2])

1 – Types are Natural Text or UINT64
2 – M/O is Mandatory (M) or Optional (O)
3 – Lengths are either a numeric value or Variable (V)

9 Deprecated Requirements

Requirement(s)	
ST 0808.1-01 (Deprecated)	Text data shall be encoded in accordance with SMPTE ST 336 compliant Universal Sets or Local Sets.
ST 0808.1-02 (Deprecated)	Metadata data shall be multiplexed into a MPEG-2 Transport Stream in accordance with MISB ST 1402.
ST 0808.1-03 (Deprecated)	All metadata shall be expressed in accordance with MISB ST 0107.