MISB MOTION IMAGERY STANDARDS BOARD	MISB TRM 1803
TECHNICAL REFERENCE MATERIAL	
NATO STANAG 4609 Edition 4 Mapped to NATO STANAG 4609 Edition 5	**1 November 2018**

1 Scope

This TRM defines the mapping of standards and requirements for NATO STANAG 4609 Edition 4 as represented in MISP-2015.1 to NATO STANAG 4609 Edition 5 as represented in MISP-2019.1. As of STANAG 4609 Edition 4, the STANAG is a covering document rather than a standalone document, which points directly to a version of the U.S. Motion Imagery Standards Profile (MISP).

2 References

[1] NATO STANAG 4609: NATO Digital Motion Imagery Standard, Edition 4, 19 Dec 2016.

[2] NATO AAP-03: Directive for the Production, Maintenance and Management of NATO Standardization Documents, Edition K Version 1, Feb 2018.

[3] NATO STANAG 4609: NATO Digital Motion Imagery Standard, Edition 5 (unpublished).

[4] MISB MISP-2019.1 Motion Imagery Standards Profile, Nov 2018.

3 Terms & Acronyms

MISB	Motion Imagery Standards Board
MISP	Motion Imagery Standards Profile
NATO	North Atlantic Treaty Organization
STANAG	Standardization Agreement

4 Revision History

Revision	Date	Summary of Changes
TRM 1803	11/1/2018	• Initial release

5 STANAG 4609 Edition 4 (MISP-2015.1) Mapped to STANAG 4609 Edition 5 (MISP-2019.1)

Until STANAG 4609 Edition 4 [1], all previous versions of STANAG 4609 were standalone documents, which referenced standards defined by the U.S. Motion Imagery Standards Board (MISB), Society of Motion Picture & Television Engineers (SMPTE), International Organization of Standardization/International Electrotechnical Commission (ISO/IEC), International Telecommunication Union (ITU), etc. The intent was for STANAG 4609 to be technically equivalent to the U.S. Motion Imagery Standards Profile (MISP). However, maintaining the documents to be in sync with one another proved difficult resulting in duplicate documentation, excessive management costs and invariably minor differences.

The NATO Standardization Office (NSO) published NATO Allied Administrative Publication-03 (AAP-03) [2] which defines a STANAG as a standalone document, distinct from a standard, to cover one or several subject-related Allied standards. This allows the STANAG to directly cite Non-NATO standards such as the MISP and its supporting standards. STANAG 4609 Edition 4 was the first in the series to leverage AAP-03 guidance and cited MISP-2015.1 as the Non-NATO Standard for Motion Imagery. STANAG 4609 Edition 5 [3] continues this practice and will therefore cite MISP-2019.1 [4].

This TRM provides the mapping of requirements and documents changed or added from STANAG 4609 Edition 4 / MISP-2015.1 to STANAG 4609 Edition 5 / MISP-2019.1. Table 1 provides a map of modified MISP requirements from STANAG 4609 Edition 4; Table 2 cites new MISP requirements in STANAG 4609 Edition 5; Table 3 provides a map of modified MISB documents from STANAG 4609 Edition 4; and, Table 4 cites new MISB documents in STANAG 4609 Edition 5.

5.1 Modified Requirements and Impacts

Table 1: Modified requirements between STANAG 4609 Edition 4 and STANAG 4609 Edition 5

Item	STANAG	Req. Number	Requirement
1	Ed. 4	MISP-2015.1-03	All Motion Imagery shall include a Precision Time Stamp in accordance with MISB ST 0603.
	Ed. 5	MISP-2018.3-116	Every Motion Imagery frame shall include a timestamp representing Absolute Time consistent with MISB ST 0603.
	Notes		
	Conclusion: Change makes requirement apply to all frames and agnostic to time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no		

	impact on existing data producers but the inclusion of a second time representation will impact data producers who leverage the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
2	Ed. 4	MISP-2015.1-04	Any Metadata that contains a time stamp element shall include a Precision Time Stamp in accordance with MISB ST 0603.
	Ed. 5	MISP-2018.1-97	Where Metadata contains a timestamp element representing Absolute Time, the timestamp shall be in accordance with MISB ST 0603.
	Notes		
	Conclusion: Change makes requirement agnostic to time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no impact on existing data producers but the inclusion of a second time representation will impact data producers who leverage the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
3	Ed. 4	MISP-2015.1-14	All data constraints for a MXF file shall comply with MISB ST 0301.
	Ed. 5	MISP-2015.1-14	All data constraints for an ASPA MXF file shall comply with MISB ST 0301.
	Notes		
	Conclusion: Change clarifies intent so as not to confuse with MISB ST 1606. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
4	Ed. 4	MISP-2015.1-16	Digital Images extracted from Motion Imagery as a NITF (National Imagery Transmission Format)/NSIF (NATO Secondary Imagery Format) shall comply with MIL-STD-2500C / STANAG 4545 respectively.
	Ed. 5	MISP-2015.1-16	Digital Images extracted from Motion Imagery as a NITF (National Imagery Transmission Format)/NSIF (NATO Secondary Imagery Format) shall comply with MIL-STD-2500 / STANAG 4545 respectively.
	Notes		
	Conclusion: Change generalizes the requirement and allows the References Section to identify the relevant specific version. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
5	Ed. 4	MISP-2015.1-23	The Container format for Standard Definition (SD) Class 0 Motion Imagery for source aspect ratios of 4:3 and 16:9 shall be defined by SMPTE ST 259 Levels C and D respectively.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows implementers to pick the appropriate SDI standard (1.5G / 3G / 6G / 12G) for their system. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		

Item	STANAG	Req. Number	Requirement
6	Ed. 4	MISP-2015.1-24	The Container format for Enhanced Definition (ED) 525- and 625-line Class 0 Motion Imagery over SMPTE ST 292-1 shall be defined by SMPTE ST 349.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows implementers to pick the appropriate SDI standard (1.5G / 3G / 6G / 12G) for their system. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		
Item	**STANAG**	**Req. Number**	**Requirement**
7	Ed. 4	MISP-2015.1-25	The Container format for High Definition (HD) Class 0 Motion Imagery up to 1080p at 60 frames per second shall be defined by SMPTE ST 424. The Container format for High Definition Class 0 Motion Imagery up to 1080p at 30 frames per second may use SMPTE ST 292-1.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows implementers to pick the appropriate SDI standard (1.5G / 3G / 6G / 12G) for their system. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		
Item	**STANAG**	**Req. Number**	**Requirement**
8	Ed. 4	MISP-2015.1-26	The Container format for High Definition (HD) Class 0 Motion Imagery up to 1080p at 60 frames per second shall be defined by SMPTE ST 424 with signal mapping specified in SMPTE ST 425.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows implementers to pick the appropriate SDI standard (1.5G / 3G / 6G / 12G) for their system. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		
Item	**STANAG**	**Req. Number**	**Requirement**
9	Ed. 4	MISP-2015.1-27	The Container format for Ultra High Definition (UHD) Class 0 Motion Imagery shall be defined by SMPTE ST 435-2 with signal mapping specified in SMPTE ST 2036-3.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows implementers to pick the appropriate SDI standard (1.5G / 3G / 6G / 12G) for their system. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		
Item	**STANAG**	**Req. Number**	**Requirement**
10	Ed. 4	MISP-2015.1-28	The mapping of digital infrared Class 0 Motion Imagery into a SMPTE ST 292-1 interface shall be defined by MISB ST 0403.

	Ed. 5	ST 0605.9-27	The mapping of digital infrared Class 0 Motion Imagery into a SMPTE ST 292-1 interface shall be defined by MISB ST 0403.
	Notes		
	Conclusion: Requirement moved to MISB ST 0605 as part of consolidation effort to locate all SDI guidance within a single document. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
11	Ed. 4	MISP-2015.1-29	Class 0 Motion Imagery carried by a SMPTE ST 292-1 or SMPTE ST 424 Container shall contain a Precision Time Stamp in accordance with MISB ST 0605.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement as it is deemed redundant to requirements within MISB ST 0605. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
12	Ed. 4	MISP-2015.1-30	Class 0 Motion Imagery Metadata inserted into SMPTE ST 292-1 or SMPTE ST 424 shall comply with MISB ST 0605.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement as it is deemed redundant to requirements within MISB ST 0605. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
13	Ed. 4	MISP-2015.1-31	One AES3 Audio channel (one stereo pair) encoded in accordance with SMPTE ST 291 and inserted into the Horizontal Ancillary Space (HANC) of a Serial Digital Interface (SDI) shall be reserved for mission Audio (narration, etc.).
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement as it is deemed redundant to requirements within SMPTE SDI standards series. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
14	Ed. 4	MISP-2015.1-32	Class 1 Motion Imagery compressed using H.264/AVC shall comply with ITU-T Rec. H.264.
	Ed. 5	MISP-2015.1-32	While compressing Class 1 Motion Imagery with H.264/AVC, the compression shall comply with ISO/IEC 14496-10 | ITU-T Rec. H.264.
	Notes		
	Conclusion: Change qualifies when the requirement applies and clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**

15	Ed. 4	MISP-2015.1-33	Class 1 Motion Imagery compressed using H.264/AVC shall use Baseline, Main or High Profile.
	Ed. 5	MISP-2018.2-114	While compressing Class 1 Motion Imagery with H.264/AVC, the compression shall be profile Constrained Baseline, Main or High in the range of Level 1 to Level 4 inclusive.
	Notes		
	Conclusion: Change qualifies when the requirement applies and explicitly defines compression profile & level to eliminate Points of Interoperability requirement. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
16	Ed. 4	MISP-2015.1-34	Class 1 Motion Imagery compressed using MPEG-2 shall comply with ISO/IEC 13818-2.
	Ed. 5	MISP-2015.1-34	While compressing Class 1 Motion Imagery with H.262/MPEG-2, the compression shall comply with ISO/IEC 13818-2 | ITU-T Rec H.262.
	Notes		
	Conclusion: Change qualifies when the requirement applies and clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
17	Ed. 4	MISP-2015.1-35	Class 1 Motion Imagery compressed using MPEG-2 shall use Main or High Profile.
	Ed. 5	MISP-2018.2-115	While compressing Class 1 Motion Imagery with H.262/MPEG-2, the compression profile shall be Main at Main or High Level.
	Notes		
	Conclusion: Change qualifies when the requirement applies and explicitly defines compression profile & level to eliminate Points of Interoperability requirement. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
18	Ed. 4	MISP-2015.1-36	At least one Point of Interoperability (POI) (Table 6) shall be supported by a Class 1 Motion Imagery [H.264/AVC] Encoder.
	Ed. 5	Deprecated	N/A
	Notes		
	Conclusion: Removal of requirement allows MISP to align compression / decompression requirements with international specifications based on spatial resolutions and processing rate per profile & level for maximum flexibility. The modification has minimal to no impact on backwards compatibility as all MISB requirements are defined in MISB ST 0605.		
Item	**STANAG**	**Req. Number**	**Requirement**
19	Ed. 4	MISP-2015.1-37	When Infrared Motion Imagery with a Pixel Value Range greater than 8 bits is converted into Class 1 Motion Imagery and compressed using MPEG-2 or H.264/AVC it shall comply with MISB ST 0404.
	Ed. 5	MISP-2015.1-37	When Infrared Motion Imagery with a Pixel Value Range greater than 8 bits is converted into Class 1 Motion Imagery and

			compressed using H.262/MPEG-2 or H.264/AVC the compressed imagery shall comply with MISB ST 0404.
	Notes		
	Conclusion: Change clarifies identity of compression specification and intent. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
20	Ed. 4	MISP-2015.1-38	A Class 1 Motion Imagery Decoder shall support the decoding of Class 1 Motion Imagery compressed using MPEG-2 Main Profile at Main and High Level.
	Ed. 5	MISP-2015.1-38	A Class 1 Motion Imagery Decoder shall support the decoding of Class 1 Motion Imagery compressed using H.262/MPEG-2 Main Profile at Main and High Level.
	Notes		
	Conclusion: Change clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
21	Ed. 4	MISP-2015.1-39	A Class 1 Motion Imagery Decoder for MPEG-2 shall fully meet the compliance requirements of ISO/IEC 13818-2 per Profile and Level.
	Ed. 5	MISP-2015.1-39	A Class 1 Motion Imagery Decoder for H.262/MPEG-2 shall fully meet the conformance requirements of ISO/IEC 13818-2 | ITU-T Rec H.262 per Profile and Level.
	Notes		
	Conclusion: Change clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
22	Ed. 4	MISP-2015.1-40	A Class 1 Motion Imagery Decoder shall support the decoding of Class 1 Motion Imagery compressed using H.264/AVC Baseline Profile, Main Profile and High Profile up to and including Level 4.1.
	Ed. 5	MISP-2017.1-94	A Class 1 Motion Imagery Decoder shall support the decoding of Class 1 Motion Imagery compressed using H.264/AVC Constrained Baseline Profile, Main Profile and High Profile at Level 4.
	Notes		
	Conclusion: Change corrects the profiles and levels allowed. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
23	Ed. 4	MISP-2015.1-41	A Class 1 Motion Imagery Decoder for H.264/AVC shall fully meet the compliance requirements of ISO/IEC 14496-10 per Profile and Level.
	Ed. 5	MISP-2015.1-41	A Class 1 Motion Imagery Decoder for H.264/AVC shall fully meet the conformance requirements of ISO/IEC 14496-10| ITU-T Rec. H.264 per Profile and Level.
	Notes		

	Conclusion: Change clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
24	Ed. 4	MISP-2015.1-42	A Class 1 Motion Imagery Decoder that supports graphic overlay shall comply with MISB ST 0602.
	Ed. 5	MISP-2015.1-42	Where a Class 1 Motion Imagery Decoder supports graphic overlay, the decoder shall comply with MISB ST 0602.
	Notes		
	Conclusion: Change qualifies when the requirement applies. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
25	Ed. 4	MISP-2015.1-43	Class 1 Motion Imagery compressed using H.264/AVC shall contain a Precision Time Stamp in accordance with MISB ST 0604.
	Ed. 5	MISP-2018.1-104	Class 1 Motion Imagery shall contain a timestamp based on Absolute Time in accordance with MISB ST 0604.
	Notes		
	Conclusion: Change makes requirement agnostic to compression technology and time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no impact on existing data producers but the inclusion of additional compression technologies and a second time representation will impact data producers who leverage the new compression technologies and/or the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
26	Ed. 4	MISP-2015.1-44	Class 1 Motion Imagery compressed using MPEG-2 shall contain a Precision Time Stamp in accordance with MISB ST 0604.
	Ed. 5	MISP-2018.1-104	Class 1 Motion Imagery shall contain a timestamp based on Absolute Time in accordance with MISB ST 0604.
	Notes		
	Conclusion: Change makes requirement agnostic to compression technology and time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no impact on existing data producers but the inclusion of additional compression technologies and a second time representation will impact data producers who leverage the new compression technologies and/or the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
27	Ed. 4	MISP-2015.1-47	Class 1 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall comply with ISO/IEC 13818-1 (a.k.a. ITU-T Rec H.222.0).
	Ed. 5	MISP-2015.1-47	Class 1 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall comply with ISO/IEC 13818-1 | ITU-T Rec H.222.0.
	Notes		
	Conclusion: Change clarifies identity of compression specification. The modification has no impact on backwards compatibility across the enterprise.		

Item	STANAG	Req. Number	Requirement
28	Ed. 4	MISP-2015.1-50	Class 1 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall meet the compliance requirements of ISO/IEC 13818-4.
	Ed. 5	MISP-2015.1-50	Class 1 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall meet the conformance requirements of ISO/IEC 13818-4.
	Notes		
	Conclusion: Change clarifies terminology across all MISB documents. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
29	Ed. 4	MISP-2015.1-52	Class 2 Motion Imagery compressed with H.264/AVC shall use High 4:2:2 Profile (Hi422P) or High 4:4:4 Predictive Profile (Hi444PP).
	Ed. 5	MISP-2018.3-117	While compressing Class 2 Motion Imagery with H.264/AVC the compression shall be High 4:2:2 Profile (Hi422P) or High 4:4:4 Predictive Profile (Hi444PP) in the range of Level 1 to Level 4.2 inclusive.
	Notes		
	Conclusion: Change qualifies when the requirement applies and explicitly defines compression profile & level to eliminate Points of Interoperability requirement. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
30	Ed. 4	MISP-2015.1-54	A Class 2 Motion Imagery Decoder for JPEG2000 shall meet the compliance requirements of ISO/IEC 15444-4.
	Ed. 5	MISP-2015.1-54	A Class 2 Motion Imagery Decoder for JPEG2000 shall meet the conformance requirements of ISO/IEC 15444-4.
	Notes		
	Conclusion: Change clarifies terminology across all MISB documents. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
31	Ed. 4	MISP-2015.1-55	A Class 2 Motion Imagery Decoder for H.264/AVC shall support the decoding of High 4:2:2 Profile (Hi422P) and High 4:4:4 Predictive Profile (Hi444PP) up to and including Level 4.2.
	Ed. 5	MISP-2015.1-55	A Class 2 Motion Imagery Decoder for H.264/AVC shall support the decoding of High 4:2:2 Profile (Hi422P) and High 4:4:4 Predictive Profile (Hi444PP) at Level 4.2.
	Notes		
	Conclusion: Change clarifies intent. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**

32	Ed. 4	MISP-2015.1-56	A Class 2 Motion Imagery Decoder for H.264/AVC shall fully meet the compliance requirements of ISO/IEC 14496-10 per Profile and Level.
	Ed. 5	MISP-2015.1-56	A Class 2 Motion Imagery Decoder for H.264/AVC shall fully meet the conformance requirements of H.264/AVC per Profile and Level.
	Notes		
	Conclusion: Change clarifies terminology across all MISB documents. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
33	Ed. 4	MISP-2015.1-58	Class 3 Motion Imagery shall be compressed using H.264/AVC or MPEG-2.
	Ed. 5	MISP-2018.1-109	Class 3 Motion Imagery shall be compressed using H.265/HEVC, H.264/AVC or H.262/MPEG-2.
	Notes		
	Conclusion: Change extends requirement for compression technologies. The modification has minimal to no impact on existing data producers but the inclusion of additional compression technology will impact data producers who leverage the new compression technology as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
34	Ed. 4	MISP-2015.1-59	When time stamp information is available in Class 3 Motion Imagery, it shall be converted to a Precision Time Stamp according to MISB ST 0603.
	Ed. 5	MISP-2018.1-110	When timestamp information is available in Class 3 Motion Imagery, it shall be converted to a timestamp based on Absolute Time in accordance with MISB ST 0603.
	Notes		
	Conclusion: Change makes requirement agnostic to time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no impact on existing data producers but the inclusion of a second time representation will impact data producers who leverage the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
35	Ed. 4	MISP-2015.1-60	When a Precision Time Stamp is generated from Class 3 Motion Imagery, it shall be inserted into a H.264/AVC or MPEG-2 compressed elementary stream in accordance with MISB ST 0604.
	Ed. 5	MISP-2018.1-111	When a timestamp based on Absolute Time is generated from Class 3 Motion Imagery, it shall be inserted into a H.265/HEVC, H.264/AVC or H.262/MPEG-2 compressed elementary stream in accordance with MISB ST 0604.
	Notes		
	Conclusion: Change extends requirement to support H.265/HEVC and agnostic to time representation so it applies to both the microsecond and nanosecond use case. The modification has minimal to no impact on existing data producers but the inclusion of an additional compression		

	technology and a second time representation will impact data producers who leverage the new compression technology and/or the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Req. Number**	**Requirement**
36	Ed. 4	MISP-2015.1-61	When time stamp information is available in Class 3 Motion Imagery and after conversion to a Precision Time Stamp according to MISB ST 0603, it shall be inserted as Metadata according to MISB ST 0601.
	Ed. 5	MISP-2018.1-112	When timestamp information is available in Class 3 Motion Imagery and after conversion to a timestamp based on Absolute Time in accordance with MISB ST 0603, it shall be inserted as Metadata in accordance with MISB ST 0601.
	Notes		
	Conclusion: Change makes requirement agnostic to time representation so it applies to both the microsecond and nanosecond use case. However, MISB ST 0601 only supports microsecond timestamps. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
37	Ed. 4	MISP-2015.1-63	When converting Class 3 Motion Imagery to meet MISP requirements, a Minor Core Identifier shall be generated and inserted according to MISB ST 1204.1.
	Ed. 5	MISP-2015.1-63	When converting Class 3 Motion Imagery to meet MISP requirements, a Minor Core Identifier shall be generated and inserted in accordance with MISB ST 1204.
	Notes		
	Conclusion: Change makes requirement agnostic to version of MISB ST 1204 as the version is identified within the MISP bibliography. The modification has no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
38	Ed. 4	MISP-2015.1-67	Graphic and text information overlaid onto Motion Imagery shall be nondestructive to the Motion Imagery content (i.e. “burned-in metadata” is not allowed).
	Ed. 5	MISP-2015.1-67	Where graphic and text information are overlaid onto Motion Imagery, the information shall be nondestructive to the Motion Imagery content (i.e. “burned-in metadata” is not allowed).
	Notes		
	Conclusion: Change qualifies when the requirement applies. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
39	Ed. 4	MISP-2015.1-69	Supplemental identifiers to be used with MISB ST 1204 shall be defined by MISB ST 1301.
	Ed. 5	MISP-2015.1-69	Where supplemental identifiers are used with MISB ST 1204, the supplemental identifiers shall be defined by MISB ST 1301.

	Notes		
	Conclusion: Change qualifies when the requirement applies. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Req. Number**	**Requirement**
40	Ed. 4	MISP-2015.1-72	When Standard Deviation and Correlation coefficient Metadata is available, it shall be provided in accordance with MISB ST 1010.
	Ed. 5	MISP-2015.1-72	Where Standard Deviation and Correlation Coefficient Metadata is available, such metadata shall be provided in accordance with MISB ST 1010.
	Notes		
	Conclusion: Change qualifies when the requirement applies. The modification has minimal to no impact on backwards compatibility across the enterprise.		

5.2 New Requirements

Table 2: New requirements for STANAG 4609 Edition 5

Item	**STANAG**	**Req. Number**	**Requirement**
41	Ed. 5	MISP-2018.1-98	An instantiation of Motion Imagery shall have only one timestamp representation which represents Absolute Time.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
42	Ed. 5	MISP-2018.1-99	While compressing Class 1 Motion Imagery with H.265/HEVC, the compression shall comply with ISO/IEC 23008-2 | ITU-T Rec. H.265.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
43	Ed. 5	MISP-2018.1-113	While compressing Class 1 Motion Imagery with H.265/HEVC, the compression shall be profile Main 10 in the range of Level 1 to Level 5.1 inclusive.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
44	Ed. 5	MISP-2018.1-102	A Class 1 Motion Imagery Decoder shall support the decoding of Class 1 Motion Imagery compressed using H.265/HEVC profile Main 10 at Level 5.1.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**

45	Ed. 5	MISP-2018.1-103	A Class 1 Motion Imagery Decoder for H.265/HEVC shall fully meet the conformance requirements of ISO/IEC 23008-2 | ITU-T Rec. H.265 per Profile and Level.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
46	Ed. 5	MISP-2018.3-118	While compressing Class 2 Motion Imagery with H.265/HEVC the compression shall be Main Profile 4:2:2 12 or Main Profile 4:4:4 12 in the range of Level 1 to Level 6.1 inclusive.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
47	Ed. 5	MISP-2018.3-119	A Class 2 Motion Imagery Decoder for H.265/HEVC shall support the decoding of the profiles Main 4:2:2 12 and Main 4:4:4 12 at Level 6.1.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
48	Ed. 5	MISP-2018.1-107	A Class 2 Motion Imagery Decoder for H.265/HEVC shall fully meet the conformance requirements of H.265/HEVC per Profile and Level.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
49	Ed. 5	MISP-2016.1-85	Where a Class 2 Motion Imagery Decoder supports graphic overlay, the decoder shall comply with MISB ST 0602.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
50	Ed. 5	MISP-2018.1-108	Class 2 Motion Imagery shall contain a timestamp based on Absolute Time in accordance with MISB ST 0604.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
51	Ed. 5	MISP-2016.1-88	Class 2 Motion Imagery compressed Audio shall comply with MISB ST 1001.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**

52	Ed. 5	MISP-2016.1-89	Class 2 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall comply with ISO/IEC 13818-1 | ITU-T Rec H.222.0.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
53	Ed. 5	MISP-2016.1-90	Class 2 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall comply with MISB ST 1402.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
54	Ed. 5	MISP-2016.1-91	Class 2 Motion Imagery encapsulated in a MPEG-2 Transport Stream Container shall meet the conformance requirements of ISO/IEC 13818-4.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
55	Ed. 5	MISP-2016.1-92	A MISB metadata set shall conform to all requirements as specified for that metadata set.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		
Item	**STANAG**	**Req. Number**	**Requirement**
56	Ed. 5	MISP-2017.1-95	When metadata elements within an instantiating metadata set are changed, the changed metadata shall be signaled using the Amend Local Set and Segment Local Set as defined in MISB ST 1607.
	Notes		
	New Requirement not represented in STANAG 4609 Ed. 4 / MISP-2015.1.		

5.3 Modified Documents and Impacts

Table 3: Modified documents between STANAG 4609 Edition 4 and STANAG 4609 Edition 5

Item	STANAG	Doc Version	Name
57	Ed. 4	TRM 1404	H.264 Compression Principles, Oct 2014
	Ed. 5	TRM 1404.1	H.264 Compression Principles, Jun 2015
	Notes		
	ST 1404.1: Changed Luminance to Luma consistent with SMPTE usage. **Conclusion:** TRMs are informational. The modification has minimal to no impact on backwards compatibility across the enterprise.		

Item	STANAG	Doc Version	Name
58	Ed. 4	RP 0904.1	H.264 Bandwidth/Quality/Latency Tradeoffs, Feb 2014
	Ed. 5	RP 0904.4	Bandwidth/Quality/Latency Tradeoffs for Compressed Motion Imagery, Nov 2018
	Notes		
	RP 0904.2: Removed redundant Figure 1 and added 640x480x30 to the High Quality Level in Table 2: Points of Interoperability (POI). **RP 0904.3:** Removed Table 2: POI as it is duplicative of the POI table in the MISP and altered text to reference the MISP. **RP 0904.4:** Generalized to include other compression types, changed title to reflect scope change and removed reference in Section 8 to MISP POI table data rates & quality as this information is no longer incorporated in the table. **Conclusion:** Changes are mainly clerical in nature. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
59	Ed. 4	ST 0603.2	Common Time Reference for Digital Motion Imagery Using Coordinated Universal Time (UTC), Feb 2014
	Ed. 5	ST 0603.5	MISP Time System and Timestamps, Oct 2017
	Notes		
	ST 0603.4: Defined the MISP Time System (i.e. Epoch, SI Second, monotonically increasing), deprecated requirements ST 0603.2-03, ST 0603.2-04, ST 0603.2-05 & ST 0603.2-06 to allow for MISP Time System incorporation and added requirement ST 0603.4-08 which bases the Precision Time Stamp on the MISP Time System truncated to the nearest microsecond. **ST 0603.5:** Added Nano Precision Time Stamp representation, added requirement ST 0603.5-09 which bases the Nano Precision Time Stamp on the MISP Time System truncated to the nearest nanosecond and made several editorial changes to introduce the concept of Absolute Time which can be represented as microseconds or nanoseconds. **Conclusion:** Changes clarify definitions for time and extend time representation to a greater precision. Note that the MISP Time System does not account for leap seconds. The modifications have minimal to no impact on existing data producers but the inclusion of a second time representation will impact data producers who leverage the nanosecond representation as well as all data consumers.		
Item	**STANAG**	**Doc Version**	**Name**
60	Ed. 4	ST 0107.2	Bit and Byte Order for Metadata in Motion Imagery Files and Streams, Feb 2014
	Ed. 5	ST 0107.3	KLV Metadata in Motion Imagery, Nov 2018
	Notes		
	ST 0107.3: Added requirements ST 0107.3-03, ST 0107.3-04, ST 0107.3-05, ST 0107.3-06, ST 0107.3-07, ST 0107.3-08, ST 0107.3-09, ST 0107.3-10, ST 0107.3-11, ST 0107.3-12 & ST 0107.3-13 to consolidate KLV requirements into one document and modified title to reflect expanded scope. **Conclusion:** Changes are mainly clerical in nature as all requirements where migrated from other MISB documents. The modifications have no impact on backwards compatibility across the enterprise.		

Item	STANAG	Doc Version	Name
61	Ed. 4	ST 1201.1	Floating Point to Integer Mapping, Feb 2014
	Ed. 5	ST 1201.3	Floating Point to Integer Mapping, Oct 2017
	Notes		
	ST 1201.2: Deprecated requirement ST 1201.1-09 as it is not testable, added requirements ST 1201.2-16 & ST 1201.2-17 to define options for when the precision is computed or defined at runtime and made minor editorial clarifications to qualify when requirements ST 1201.1-13 & ST 1201.1-14 shall be applied. **ST 1201.3:** Made minor clarification to Table 2: Special Value Bit Patterns for "Other bits" +/- Infinity to be Zero Filled as opposed to reserved. **Conclusion:** Changes clarify when to use specific notations and extend capabilities to runtime for IMAP. The modifications have minimal to no impact on existing data producers but the inclusion of a runtime mode will impact data producers who leverage the runtime option as well as all data consumers.		
Item	**STANAG**	**Doc Version**	**Name**
62	Ed. 4	ST 1303	Multi-Dimensional Array Pack, Feb 2014
	Ed. 5	ST 1303.1	Multi-Dimensional Array Pack, Nov 2018
	Notes		
	ST 1303.1: Modified Section 8.2 Example 3 invoking statement dimension lengths to match the number of dimensions, deprecated requirement ST 1303-06 as it is a definition, renamed Appendix A to be Deprecated Requirements & re-ordered existing appendices to their occurrence in the doc and revised the entire document content to increase readability as well as interpretability. **Conclusion:** The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
63	Ed. 4	ST 0403.2	Digital Representation and Source Interface Formats for Infrared Motion Imagery Mapped into 1280x720 Format Bit-Serial Digital Interface, Feb 2014
	Ed. 5	ST 0403.3	Digital Representation and Source Interface Formats for Infrared Motion Imagery Mapped into 1280x720 Format Bit-Serial Digital Interface, Jun 2015
	Notes		
	ST 0403.3: Changed Luminance to Luma consistent with SMPTE usage. **Conclusion:** The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
64	Ed. 4	ST 0605.4	Time Stamping and Metadata Transport in High Definition Uncompressed Motion Imagery, Feb 2014
	Ed. 5	ST 0605.9	Class 0 Motion Imagery, Audio and Metadata over SDI, Jun 2018
	Notes		
	ST 0605.5: Deprecated requirements ST 0605.4-01, ST 0605.4-12, ST 0605.4-13 & ST 0605.4-14 some are redundant while others are incorrectly worded, added requirements ST 0605.5-16, ST 0605.15-17		

	& ST 0605.518 to clarify metadata insertion into SDI VANC and added a new Figure 1 to describe typical SDI frame structure. **ST 0605.6:** Changed Luminance / Chrominance to Luma / Chroma consistent with SMPTE usage. **ST 0605.7:** Deprecated requirements ST 0605.4-05 & ST 0605.4-06 as the first is inaccurate & second is not testable, added requirement ST 0605.7-19 on presence of Precision Time Stamp Pack and added figures & additional text to address UHD-1. **ST 0605.8:** Added support for Nano Precision Time Stamp, changed Precision Time Stamp Status to Time Status, deprecated requirements ST 0605.4-10 & ST 0605.7-19 as they only allow Precision Time Stamps and added requirements ST 0605.8-20, ST 0605.8-21, ST 0605.8-22, ST 0605.8-23, ST 0605.8-24, ST 0605.8-25 & ST 0605.8-26 to define the insertion of Nano Precision Time Stamps & qualify requirements for both Precision Time Stamps & Nano Precision Time Stamps. **ST 0605.9:** Consolidated all SDI content from the MISP within ST 0605, deprecated all SDI requirements from MISP except for one as they are too restrictive, added requirement ST 0605.9-27 on usage of ST 0403 and revised several sections as well as appendices to improve readability. **Conclusion:** Changes clarify requirements usage and extend time representation to a greater precision. The modifications have minimal to no impact on existing data producers but the inclusion of a second time representation will impact data producers who leverage the nanosecond representation as well as all data consumers.

Item	STANAG	Doc Version	Name
65	Ed. 4	ST 0604.3	Time Stamping Compressed Motion Imagery, Feb 2014
	Ed. 5	ST 0604.6	Timestamps for Class 1 / Class 2 Motion Imagery, Oct 2017
	Notes		
	ST 0604.4: Deprecated requirements ST 0604.3-02, ST 0604.3-04, ST 0604.3-06 & ST 0604.5-10 due to ambiguity or no longer endorsed methodology of populating timestamps, added requirements ST 0604.4-10, ST 0604.4-12, ST 0604.4-13, ST 0604.4-14 & ST 0604.4-15 to clarify insertion of timestamps into compressed data streams. **Caveat:** Requirement ST 0604.4-10 was revised on version as change was originally viewed as editorial but later was decided was technical. **ST 0604.5:** Deprecated requirements ST0604.3-01, ST 0604.03-05 & ST 0604.3-08 so as to not limit Class 0 containers to SDI & clarify intent, added requirements ST 0604.5-16, ST 0604.5-17, ST 0604.5-18 & ST 0604.5-19 to generically define Class 0 & clearly define timestamp insertion for MPEG-2 compressed data. **ST 0604.6:** Added Nano Precision Time Stamp & a second UUID to signal Nano Precision Time Stamp for H.265/HEVC, modified Precision Time Stamp Status to Time Status, deprecated requirements ST 0604.3-03, ST 0604.3-07, ST 0604.4-13 & ST 0604.4-14 as they are too restrictive or duplicative, added requirements ST 0604.6-20, ST 0604.6-21, ST 0604.6-22, ST 0604.6-23, ST 0604.6-24 & ST 0604.6-25 to qualify Precision Time Stamp vs Nano Precision Time Stamp usage and revised several sections to increase readability. **Conclusion:** Changes clarify requirements usage, extend to support H.265 and extend time representation to a greater precision. The modifications have minimal to no impact on existing data producers but the inclusion of H.265 and a second time representation will impact data producers who leverage H.265 and the nanosecond representation as well as all data consumers.		

Item	STANAG	Doc Version	Name
66	Ed. 4	RP 0701	Common Metadata System: Structure, Aug 2007

	Ed. 5	Motion Imagery Handbook	MISP-2019.1: Motion Imagery Handbook
	Notes		
	It is the intent of the MISB to deprecate RP 0701 in the coming cycles. As a start to this effort, all information regarding KLV constructs such as KLV Packs and Local Sets within RP 0701 have been incorporated into the Motion Imagery Handbook Section 7. **Conclusion:** RP 0701 is still valid and available but is no longer referenced within the MISP. All relevant information regarding KLV structures is found within the Motion Imagery Handbook. The modification has minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
67	Ed. 4	ST 1402	MPEG-2 Transport of Compressed Motion Imagery and Metadata, Feb 2014
	Ed. 5	ST 1402.2	MPEG-2 Transport Stream for Class 1 / Class 2 Motion Imagery, Audio and Metadata, Oct 2016
	Notes		
	ST 1402.1: Modified time interval for successive PTS values to be 0.7 seconds to align with ISO/IEC 13181-1, added requirement ST 1402.1-26 to specify metadata_format_identifier for Synchronous Metadata Multiplex Method, added informative guidance for audio, removed unused Metadata Types from Table 4: KLV Metadata Types and incorporated concept of Class 1 / Class 2 Motion Imagery. **ST 1402.2:** Deprecated requirements ST 140205, ST 1402-06, ST 1402-19 & ST 1402-23 as they are duplicative of requirements in ISO/IEC 13181-1 **Conclusion:** Changes clarify text and align requirements with ISO/IEC 13181-1. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
68	Ed. 4	ST 0601.8	UAS Datalink Local Set, Oct 2014
	Ed. 5	ST 0601.14	UAS Datalink Local Set, Nov 2018
	Notes		
	ST 0601.9: Added requirements ST 0601.9-20 & ST0601.9-21 to inform data consumers on priority with existing “distance” items & new “distance-extended” items, added Tag 96: Target Width Extended item and modified all references to POSIX Time Stamp / UNIX Time Stamp to be Precision Time Stamp. **ST 0601.10:** Added Tags 97-98 & Tags 100-102, added column to Table 1 indicating if item is allowed as entry in SDCC-FLP and added requirement ST 0601.10-22 to enforce Mode 2 for Parse Control of Tag 102: SDCC-FLP. **ST 0601.11:** Added Tag 99 & Tags 103-105, removed qualifier “distance” from requirements ST 0601.9-20 & ST 0601.9-21 and made several editorial changes to improve readability. **ST 0601.12:** Added Tags 106-108 and made several edits to example values / figures to address inconsistencies as well as errors. **ST 0601.13:** Deprecated requirements ST 0601.8-01, ST 0601.8-13 & ST 0601.8-18 as they are not testable or ambiguous, added requirements ST 0601.13-23, ST 0601.13-24, ST 0601.13-25, ST 0601.13-26, ST 0601.13-27, ST 0601.13-28, ST 0601.13-29 & ST 0601.13-30 to clarify inclusion of		

	items, added Tags 108-141 and completely revised the entire document structure to increase readability as well as interpretability. **ST 0601.14:** Deprecated requirements ST 0601.8-02, ST 0601.8-04, ST 0601.8-05, ST 0601.8-06 & ST 0601.8-07 as they are now in MISB ST 0107.3, deprecated requirement ST 0601.8-15 as TBDs are no longer in the document, removed UTM references in Tag 12: Image Coordinate System, deprecated Tag 66: Target Location Covariance Matrix as it is replaced by Tag 102: SDCC-FLP and added requirements ST 0601.14-31, ST 0601.14-32, ST 0601.14-33, ST 0601.14-34, ST 0601.14-35 & ST 0601.14-36 to clarify gaps in implementation guidance. **Conclusion:** Changes clarify intent and extend capabilities to support new data. The modifications have minimal to no impact on existing data producers but the inclusion of over 45 new items will impact data producers who leverage them as well as all data consumers.		
Item	**STANAG**	**Doc Version**	**Name**
69	Ed. 4	ST 0102.11	Security Metadata Universal and Local Sets for Digital Motion Imagery, Oct 2014
	Ed. 5	ST 0102.12	Security Metadata Universal and Local Sets for Motion Imagery Data, Jun 2017
	Notes		
	ST 0102.12: Eliminated concept of linking security sets to transport stream / elementary stream / individual metadata items as it is not used or supported, deleted corresponding linking items for UMID / Stream ID / Transport Stream ID / Item Designator and requirements ST 0102.10-28 through ST 0102.10-48, deprecated requirements ST 0102.10-01, ST 0102.52 & ST 0102.10-53 as they are not testable or redundant, added requirements ST 0102.12-65 & ST 0102.12-66 for Universal & Local Sets to conform to SMPTE ST 336 and replaced all references to FIPS 10-4 with GEC per policy. **Conclusion:** Changes clarify intent and removes concepts no longer supported. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
70	Ed. 4	ST 0808.1	Ancillary Text Metadata Sets, Feb 2014
	Ed. 5	ST 0808.2	Ancillary Text Metadata Sets, Oct 2015
	Notes		
	ST 0808.2: Deprecated requirement ST 0808.1-01, ST 0808.1-02 & ST 0808.1-03 to clarify encoding of text & remove redundant requirements. **Conclusion:** Changes clarify intent of requirements. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
71	Ed. 4	ST 0801.5	Photogrammetry Metadata Set for Digital Motion Imagery, Feb 2014
	Ed. 5	ST 0801.6	Photogrammetry Metadata Set for Motion Imagery, Feb 2018
	Notes		
	ST 0801.6: Modified names of Measured Line / Sample Coordinate for Range to be SPRM Row / Column Coordinates, modified name of Focal Plane Line / Sample Principal Point Offset to be Focal Plane Principal Point Offset X / Y and revised Section 7 to include more detail on rotation angles & coordinate systems to increase interpretability.		

	Conclusion: Changes align standard to common terms used across MISB documents and clarifies intent. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
72	Ed. 4	ST 1107.1	Metric Geopositioning Metadata Set, Feb 2014
	Ed. 5	ST 1107.3	Metric Geopositioning Metadata Set, Feb 2018
	Notes		
	ST 1107.2: Deprecated requirements ST 1107.1-03, ST 1107.1-04, ST 1107.1-05, ST 1107.1-06, ST 1107.1-07, ST 1107.1-08, ST 1107.1-09, ST 1107.1-10 & ST 1107.1-11 as they are too restrictive on implementations, added requirement 1107.2-12 to enforce Mode 2 for Parse Control of Tag 32: SDCC-FLP and reorganized document to increase readability. **ST 1107.3:** Modified names of Tags 19, 20, 39 & 40 to correspond to name changes in ST 0801 and removed POSIX reference on Tag 43. **Conclusion:** Changes clarify intent of requirements and modify decoding interpretation for SDCC-FLP. The modifications will impact existing data producers / consumers across the enterprise		
Item	**STANAG**	**Doc Version**	**Name**
73	Ed. 4	ST 1202.1	Generalized Transformation Parameters, Feb 2014
	Ed. 5	ST 1202.2	Generalized Transformation Parameters, Feb 2015
	Notes		
	ST 1202.2: Added requirements ST 1202.2-10 & ST 1202.2-11 to clarify implementation of standard deviation & correlation coefficients and added information on fast steering mirrors. **Conclusion:** Changes clarify intent. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
74	Ed. 4	ST 1010.1	Generalized Standard Deviation and Correlation Coefficient Metadata, Feb 2014
	Ed. 5	ST 1010.3	Generalized Standard Deviation and Correlation Coefficient Metadata, Oct 2016
	Notes		
	ST 1010.2: Modified Status Byte to Parse Control which has two different “modes”: Mode 1 for backward compatibility & Mode 2 which extends value length & allows runtime detection of type used, deprecated requirements ST 1010.1-03 & ST 1010.1-07 as methodology on invoking standard is extended, added requirements ST 1010.2-09, ST 1010.2-10, ST 1010.2-11, ST 10101.2-12 & ST 10101.2-13 to clarify data type usage, sparse matrix population & runtime options and added further details & examples for invoking standard. **ST 1010.3:** Added guidance for sets as groups of random variables. **Conclusion:** Changes clarify intent of requirements and extend capabilities to support runtime mode. The modifications have minimal to no impact on existing data producers but extension to support runtime will impact data producers who leverage it as well as all data consumers.		
Item	**STANAG**	**Doc Version**	**Name**
75	Ed. 4	ST 1002.1	Range Motion Imagery, Feb 2014
	Ed. 5	ST 1002.2	Range Motion Imagery, Jun 2016

	Notes		
	ST 1002.2: Deprecated requirement ST 1002.1-01 as it is not testable, clarified data types in all tables, modified all time references to be Precision Time Stamp and modified other terminology to align with definitions in the Motion Imagery Handbook. **Conclusion:** Changes clarify intent. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
76	Ed. 4	ST 0809.1	KLV Representation of Meteorological Data, Feb 2014
	Ed. 5	ST 0809.2	Meteorological Metadata Local Set, Nov 2018
	Notes		
	ST 0809.2: Modified title, added Local Set Universal Label to Section 5, reorganized document to meet new document format and modified Table 1 data types for strings to be utf8. **Conclusion:** Changes clarify intent and increase readability of overall document. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
77	Ed. 4	ST 0901.2	Video-National Imagery Interpretability Rating Scale, Feb 2014
	Ed. 5	ST 0901.3	Video-National Imagery Interpretability Rating Scale, Oct 2017
	Notes		
	ST 0901.3: Revised entire document to align with current practices for determining subjective interpretability, modified Orders of Battle criteria & terminology, added description on use of fractional VNIIRS ratings and added requirements ST 0901.3-01, ST 0901.3-02 & ST 0901.3-03 to establish common practice of determining VNIIRS ratings. **Conclusion:** Changes clarify intent and aligns VNIIRS to the current practices. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
78	Ed. 4	ST 1206	SAR Motion Imagery Metadata, Feb 2014
	Ed. 5	ST 1206.1	SAR Motion Imagery Metadata, Jun 2017
	Notes		
	ST 1206.1: Deprecated requirement ST 1206-02 as it is not testable and made editorial modifications to align document to other MISB documents. **Conclusion:** Changes clarify intent. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
79	Ed. 4	ST 1403	SARMI Threshold Metadata Sets, Feb 2014
	Ed. 5	ST 1403.2	SARMI Threshold Metadata Sets, Jun 2017
	Notes		
	ST 1403.1: Added Tag 104: Sensor Ellipsoid Height Extended as preferred alternative representation and deprecated requirement ST 1403-02 as it is not testable. **ST 1403.2:** Added requirement ST 1403.2-07 to clarify intent of minimum reporting requirement. **Conclusion:** Changes clarify intent and extend capabilities to support larger values. The modifications have minimal to no impact on existing data producers but extension of Tag 104 will impact data producers who leverage it as well as all data consumers.		

Item	STANAG	Doc Version	Name
80	Ed. 4	ST 0902.4	Motion Imagery Sensor Minimum Metadata Set, Oct 2014
	Ed. 5	ST 0902.8	Motion Imagery Sensor Minimum Metadata Set, Feb 2018
	Notes		
	ST 0902.5: Added Tag 96: Target Width Extended as alternative representation and modified all references to timestamps to be Precision Time Stamp. **ST 0902.6:** Added Tag 104: Sensor Ellipsoid Height Extended as alternative representation and modified all string values in Table 1 to be of type ISO 646 except for Tag 48/13: Object Country Codes which is of type UTF-16. **ST 0902.7:** Revised Tables 2, 4 & 6 to add Tag Count & Byte Count and revised Annexes A & B to increase accuracy & interpretability. **ST 0902.8:** Added requirement ST 0902.8-05 to clarify intent of minimum reporting requirement. **Conclusion:** Changes clarify intent and extend capabilities. The modifications have minimal to no impact on existing data producers but extension of Tags 96 & 104 will impact data producers who leverage them as well as all data consumers.		
Item	**STANAG**	**Doc Version**	**Name**
81	Ed. 4	ST 0607.3	MISB Metadata Registry and Processes, Oct 2014
	Ed. 5	ST 0607.4	MISB Metadata Registry and Processes, Feb 2015
	Notes		
	ST 0607.4: Added requirements ST 0607.4-05, ST 0607.4-06, ST 0607.4-07 & ST 0607.4-08 to define Registry Symbols' composition, define Unit of Measure as ISO metric standard units & identify Defining Document which may contain further info regarding metadata item, removed Registry Field: Alias and added Registry Fields: Effective Version Number (Normative), Minimum Value (Stated) & Maximum Value (Stated). **Conclusion:** Changes clarify MISB ST 0807 supporting information and removes unused information. The modifications have minimal to no impact on backwards compatibility across the enterprise.		
Item	**STANAG**	**Doc Version**	**Name**
82	Ed. 4	ST 0807.14	MISB KLV Metadata Dictionary, Oct 2014
	Ed. 5	ST 0807.22	MISB KLV Metadata Registry, Jun 2018
	Notes		
	ST 0807.15: Removed Aliases Column, added Minimum Value, Maximum Value & Status Information Columns and corrected values / made consistency changes across all Columns. **ST 0807.16:** Added keys for ST 1507. **ST 0807.17:** Revised type for Range Image Enumerations to be ber-oid, revised min/max values for Range Image Enumerations and revised max value for Sensor Calibrated/Effective Focal Length to align with ST 0801. **ST 0807.18:** Added keys for ST 1504, ST 1601, ST 1603 & ST 1607 and deprecated key Version (CRC 43652) as it is duplicative of Key Document Version (CRC 56368). **ST 0807.19:** Added keys for ST 1602, extended Data Ranges for Density Altitude, Sensor Ellipsoid Height & Alternative Platform Ellipsoid Height defined in ST 0601. **ST 0807.20:** Modified Names, Symbols & Definitions for Nanosecond Counter to be Nano Precision Time Stamp, Microsecond Timestamp Status to be Time Status & Enhanced Precision Time Stamp Defined Length Pack to be Nano Time Transfer Pack as part of MISP Time System cleanup effort and added key Nano Precision Time Stamp Pack defined in ST 0605.		

	ST 0807.21: Modified Names & Symbols for Focal Plane Line Principal Point Offset to be Focal Plane Principal Offset Y, Focal Plane Sample Principal Point Offset to be Focal Plane Principal Point Offset, SPRM Line Coordinate to be SPRM Row Coordinate & SPRM Sample Coordinate to be SPRM Column Coordinate. **ST 0807.22:** Added addition keys for ST 0601. **Conclusion:** Changes clarify intent and extensions to the registry serve as a common reference point for all MISB defined keys but actual implementation details are found in the defining MISB document. The modifications have minimal to no impact on backwards compatibility across the enterprise.

5.4 New Documents

Table 4: New documents for STANAG 4609 Edition 5

Item	STANAG	Doc	Name
83	Ed. 5	ST 1507.2	Motion Imagery Sensor Timing Metadata, Oct 2017
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
84	Ed. 5	ST 1606.1	MXF Profile for High Performance Motion Imagery Applications, Oct 2017
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
85	Ed. 5	ST 1608.1	Transport of Motion Imagery and Metadata over GigE Vision, Oct 2017
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
86	Ed. 5	ST 1603.2	Time Transfer Pack, Oct 2017
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
87	Ed. 5	ST 1504.1	Natural Representation of Orbital State Vectors, Oct 2016
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		

Item	STANAG	Doc Version	Name
88	Ed. 5	ST 1607	Constructs to Amend/Segment KLV Metadata, Oct 2016
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
89	Ed. 5	ST 1601.1	Geo-Registration Local Set, Oct 2016
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
90	Ed. 5	ST 1602.1	Composite Imaging Local Set, Feb 2017
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new ST contains requirements for conformance.		
Item	**STANAG**	**Doc Version**	**Name**
91	Ed. 5	TRM 1605	NATO STANAG 4609 Edition 3 Mapped to NATO STANAG 4609 Edition 4, Oct 2016
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new TRM contains support information to aid interpretation.		
Item	**STANAG**	**Doc Version**	**Name**
92	Ed. 5	TRM 1803	NATO STANAG 4609 Edition 4 Mapped to NATO STANAG 4609 Edition 5, Nov 2018
	Notes		
	New Document not represented in STANAG 4609 Ed. 4 / MISP-2015.1. If utilized, new TRM contains support information to aid interpretation.		