

Unmanned Systems Interoperability Profile (USIP)

USIP No: 1

MOD No: 1

DATE: 23 June 2008

Title: Line of Sight Transmission of Motion Imagery for Battle Space Awareness Using Standard Common Data Link

Purpose: This profile defines the mandatory implementation of standards and specifications to achieve an interoperable mode of operation for internal and external information exchange. The specified interoperable mode is the minimum, threshold implementation required for Unmanned Air Systems (UAS). Per Joint Instruction (CJCSI 3170 and CJCSI 6212) Interoperability is defined as the ability to provide, accept and use information, data and services, including technical exchange of information and the end-to-end operational effectiveness of that exchanged information as required for mission accomplishment. This profile supports the Battlespace Awareness (BA) Joint Capability Area (JCA).

Applicability: This USIP applies to all developmental and fielded Tier 2 and above Unmanned Air Systems (UAS), as defined by the Joint Unmanned Air Systems Concept of Operations. This USIP is effective immediately. Any required changes or modifications will be addressed annually.

Scope: This USIP pertains to the direct communication and receipt of data from the Air Vehicle (AV) to the ground/surface Control Station (CS) or Remote Video Terminal (RVT). The operational context for this profile is the Transmission, Collection, Production and Exploitation (TCPED) chain of operational activities. Accordingly, this profile addresses the following layers of the Open Systems Interconnection Model: (1) Physical, (2) Data Link, (3) Network, (4) Transport, and (7) Application. Layers 5 and 6 for Session and Presentation are reserved for future use.

Implementation Conventions (IC):

IC 1: Motion Imagery (MI) for Situational Awareness (SA) of the Battle Space Supporting TCPED

Governing Standards. These standards are the basis for the implementation and take precedence.

- MISP 4.4. Motion Imagery Standards Profile
- EG 0601.1. Motion Imagery Standards Board Engineering Guideline: Data Link Local Metadata Set
- IETF RFC 0768 User Datagram Protocol, August 1980
- IETF RFC 0791 Internet Protocol (IPv4), September 1981
- MIL-STD-1777 Internet Protocol, 12 August 1983

Other Applicable Standards. These references are cited by the Governing Standards and provide further specification detail to completely define the implementation.

- MISB Metadata Registry, Version 4
- ISO/IEC 13818-1 Part 1, Systems 2000. Generic Coding of Moving Pictures and Associated Audio Information
- EG 0104.5. Motion Imagery Standards Board Engineering Guideline: Predator UAV Basic Universal Metadata Set
- SMPTE 335M-2001. Metadata Dictionary Structure
- SMPTE 336M-2001. Data Encoding Protocol Using Key-Length Value
- SMPTE RP210.10-2007. Metadata Dictionary Contents
- RP 0601.2 Annotation Universal Metadata Set
- RP 0603 Common Time Reference for Digital Motion Imagery Using Coordinated Universal Time (UTC)
- RP 0604 – Time Stamping of Compressed Imagery
- RP 0605 – Inserting Time Code and Metadata in High Definition Uncompressed Video
- RP 0102.4 Security Metadata Universal and Local Sets for Digital Motion Imagery
- ISO 8601: 2004 – Data Elements and Interchange Formats – Information Interchange – Representation of Dates and Times

IC 2: Managed Configuration of Common Data Link Transmit and Receive Terminals

Governing Standards:

- Specification Number 7681990, Rev G – Performance Specification for the Standard Common Data Link Waveform
- Specification Number 60038365 – Capstone Specification for the Network-Centric Common Data Links

