JSIL UAS Interoperability Test Tool Catalog

Content of this page is:

DISTRIBUTION STATEMENT A. Approved for public release. Distribution is unlimited

Overview

Joint Systems Integration Laboratory (JSIL) TECH Center software developers have developed the following software test tools to demonstrate compliance with applicable standards as identified for each tool. These software test tools are primarily used to verify compliance with U.S. Army Unmanned Aircraft (UA) and Manned-Unmanned Teaming (MUM-T) Family of Systems (FoS) Block I Interoperability Profiles (IOPs). Tool updates are ongoing to verify Block III IOP implementations. Recipients for Block I association tools will be notified once those Block III tool variations are available. Available test tools fall under two domains:

- **C2 Test Tools**
- **Payload Test Tools**

Datalink tools are not included in this list since they involve firmware and are not available for Distribution.

For more information on TECH Center Tools or verification activities, or if datalinks verification is desired, please contact JSIL TECH Center.

Distribution Limitations

Many JSIL tools are available for public release, while others are limited to U.S. Department of War (DoW) and qualified U.S. DoW Contractor distribution. Requests will be vetted individually for recipient eligibility.

To request any of the tools listed below **CLICK HERE**

C2 Test Tools

STANAG 4586 Compliance Toolkit (4586CT)	
Purpose	This tool is used to decode and display the Unmanned Aircraft Systems (UAS) performer's transient message traffic to support passive, interactive, and automated testing, or message/set development. It can be used to monitor live traffic or open recorded traffic and allows for the injection of additional messages, or the scripting of new message(s) or message sequences. For relevant test activities, 4586 CT can be used to evaluate message/sequence compliance against preloaded message sets The following message sets are available through separate distribution request): Distribution A (STANAG 4586) Message Sets Distribution D (FoS Block I IOP) Message Sets (see detailed descriptions or each below)
Applicable Standard	STANAG 4586 FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v4.2.4 FoS Block III, v4.2.4
Available Distribution	Available for Public Release

4586CT (Publicly Releasable) Message Sets	
Purpose	4586CT (Distribution A) Message Sets and documentation are intended for use with the 4586 Compliance Toolkit for evaluation of UAS performer transient message compliance against the following North America Treaty Organization (NATO) STANAG 4586 variants: - STANAG 4586 Edition 2 (all amendments and versions) - STANAG 4586 Edition 3 (all versions) - STANAG 4586 Edition 4: AEP-84, Volume 1, Edition A, Version 1 - STANAG 4586 Edition 4: AEP-84, Volume 2, Edition A, Version 2
Applicable Standard	STANAG 4586 FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v1.4.4 FoS Block III, v1.4.4
Available Distribution	Available for Public Release

4586CT (Limited Distribution) Message Sets	
Purpose	4586CT (Distribution D) Message Sets and documentation are intended for use with the 4586 Compliance Toolkit for evaluation of UAS performer transient message compliance against additional message sets that are not publicly available. A complete list of these messages are available to members with appropriate access.
Applicable Standard	STANAG 4586 FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v1.3.4 FoS Block III, v3.0.0
Available Distribution	Limited Distribution

JSIL-Bird (J-Bird)	
Purpose	J-Bird is used to emulate an IOP-compliant Unmanned Aircraft (UA) and provides gold-standard IOP-compliant UA for integration testing. It supports all IOP-specified payload types for the relevant FoS Block and engineering analysis and rapid prototyping efforts for IOPs.
Applicable Standard	FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v1.2.0 FoS Block III, v3.0.0
Available Distribution	Limited Distribution

JSIL-Yet Another Map (J-YAM)	
Purpose	The J-YAM tool is intended to be used to visualize J-Bird simulation but can be used separately as a stand-alone map tool. It displays location and orientation of simulated UA and payload footprint and can overlay mission waypoints and Safe Air Volume on a map.
Applicable Standard	FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v1.1.0 FoS Block III, v3.0.0
Available Distribution	Limited Distribution

JSIL-Core Unmanned Aircraft Control System (CUCS) (J-CUCS)	
Purpose	J-CUCS emulates IOP-compliant ground or manned air component of interoperable relationship and provides gold standard IOP-compliant Control/Supervised Usage for integration testing.
Applicable Standard	FoS Block I and III IOPs
Available Tool Version(s)	FoS Block I, v1.2.0 FoS Block III, v3.0.0
Available Distribution	Limited Distribution

JSIL-Nest (J-Nest)	
Purpose	J-Nest emulates IOP-compliant control component (ground or air) of the Collaborative Behavior (CB) interoperable relationship. Provides implementers and testers with a gold standard IOP-compliant Control Node for integration testing in support of team-based operations. Incorporates Collaborative Behavior requirements and messaging.
Applicable Standard	FoS Block III IOPs
Available Tool Version(s)	FoS Block III, v1.0.0
Available Distribution	Limited Distribution

JSIL-Lark (J-Lark)	
Purpose	J-Lark emulates an IOP-compliant team of UA participating in Collaborative Behavior (CB) interoperations. Provides implementers and testers with a gold-standard IOP-compliant CBT-Team for integration testing in support of team-based operations. Incorporates Collaborative Behavior requirements and messaging.
Applicable Standard	FoS Block III IOPs
Available Tool Version(s)	FoS Block III, v1.0.0
Available Distribution(s)	Limited Distribution

Payload Test Tools

Ground Moving Target Indicator Format (GMTI) Common Installer	

Purpose	GMTI Common Installer that includes the following tools:
	• GMTI Format File Translator (GIFT)
	  ○ GIFT converts GMTIF eXtensible Markup Language (XML) files to binary STANAG 4607 and vice versa. It is useful for creating test sets of STANAG 4607 data.
	• GMTI Accreditation and Validation for Interoperability Needs (GAVIN)
	  ○ GAVIN verifies that binary GMTI data compiles in STANAG 4607 format.
	• Moving Target Indicator (MTI) XML Packet Creator (MIXPACT)
	  ○ MIXPACT creates and edits XML files based on the GMTIF XML schema referenced in STANAG 4607 Implementation Guide Allied Engineering Document Publication (AEDP)-7.
	  ○ Useful for creating test sets of STANAG 4607 data
	• GMTI Format Streamer (GMTIStreamer)
	  ○ GMTIStreamer streams GMTIF packets to a configurable IP address in accordance with STANAG 4607

Applicable Standard	FoS Block I and Block III IOPs STANAG 4607, Edition 4
Available Tool Version(s)	FoS Block I, Common Installer v3.2.0 includes: • GAVIN v3.1.0 • GIFT v2.1.0 • GMTIStreamer v2.0.0 • MIXPACT v3.0.0 FoS Block III, Common Installer v3.3.0 includes: • GAVIN v3.2.0 • GIFT v2.1.0 • GMTIStreamer v2.1.0 • MIXPACT v3.2.0
Available Distribution	Available for Public Release

Motion Imagery Common Installer (MICI)	

Purpose	Motion Imagery Common Installer includes the following tools:
	• eXtensible Motion Imagery Authentication Tool (xMAT)
	  ○ xMAT is a Motion Imagery validator used to analyze Motion Imagery and determines whether it complies with requirements specified in Payload Product IOP
	• Metadata Extraction Tool (MET)
	  ○ MET supports the ability to export metadata to an external file
	• Transport Stream Streamer (TSStreamer)
	  ○ TSStreamer streams a transport stream or packet capture file to a configurable IP address

Applicable Standard	FoS Block I and III IOPs Motion Imagery Standards Profile (MISP) STANAG 4609
Available Tool Version(s)	FoS Block I, Common Installer v4.1.0 includes: • xMAT v4.0.0 • MET v1.0.0 • TSStreamer v2.4.0 FoS Block III, Common Installer v4.2.0 includes: • xMAT v4.1.0 • MET v2.0.0 • TSStreamer v2.4.1
Available Distribution	Available for Public Release

Video and Metadata Player (VAMP)	
Purpose	VAMP plays video and displays metadata from a Moving Picture Experts Group-2 (MPEG-2) Transport Stream via file or User Datagram Protocol (UDP) Stream
Applicable Standard	Motion Imagery Standards Profile (MISP)
Available Tool Version(s)	v1.2.0
Available Distribution	Limited Distribution (also available in a legacy version/publicly releasable variant)

Ground Moving Target Indicator Format (GMTI) Silver Files	
Purpose	GMTI Silver Files provides IOP Compliant GMTI test files to enable testers to verify IOP compliance with GMTI and metadata standards
Applicable Standard	STANAG 4607 FoS Block I and III IOPs
Available Tool Version(s)	Edition 3
Available Distribution	Available for Public Release

Motion Imagery Silver Files	
Purpose	Motion Imagery Silver Files provide IOP-Compliant Motion Imagery test files to enable testers to verify IOP compliance with video and metadata standards
Applicable Standard	Motion Imagery Standards Profile (MISP) STANAG 4609 FoS Block I and III IOPs
Available Tool Version(s)	v2.0.2
Available Distribution	Available for Public Release

National Imagery Transmission Format (NITF) Silver Files	
Purpose	NITF Silver files provide IOP Compliant Still Imagery test files to enable testers to verify IOP compliance with NITF standards
Applicable Standard	NITF STANAG 4545 FoS Block I and III IOPs
Available Tool Version(s)	v3.0.0
Available Distribution	Available for Public Release