**Technical Architecture for Aircraft, Launcher, and Weapon Interoperability (ALWI TA)**

## RATIONALE

This document was produced in 2008 in response to a NATO Request and is a snapshot of the technology and recommended standardization path as of 2008.

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FOREWORD

This report presents a recommended technical architecture for interoperable plug-and-play integration of aircraft, launchers, and weapons across NATO air forces. It was developed under the Aircraft, Launcher, and Weapon Interoperability - Common Interface (ALWI-CI) study performed over the period from October 2005 to November 2006. This study was authorized by the Conference of National Armament Directors (CNAD) at the request of Aerospace Capability Group 2 of the NATO Air Force Armament Group (NAFAG). It followed two previous studies on aircraft, launcher, and weapon interoperability (ALWI-1 and ALWI-2) that addressed all aspects of interoperability including the physical and electrical interfaces, environmental compatibility, and data/software. The focus of ALWI-CI was to build upon the recommendations of those two studies in the area of data/software.

The technical architecture described in this document was defined by a team within Subgroup 97 of the NATO Industrial Advisory Group (NIAG), which conducted the ALWI-CI study in collaboration with the SAE Aerospace AS-1 Committee. The Technical Architecture team was required by the NATO sponsor to address the following items in performing its role in the study:

- Analyze the applicable results of the previous ALWI-1 and ALWI-2 studies

- Take compatibility with legacy weapons into account, as well as compatibility with both airplanes and helicopters, and all types of unmanned combat air vehicle (UCAV)

- Harmonize the technical architecture with the Integrated Modular Avionics (IMA) standards of the Allied Standard Avionics Architecture Council (ASAAC) and with NATO Air Force Armament Group (NAFAG) Air Group 5 (Avionics and Landing Systems)

- Harmonize the technical architecture with the requirements of the Generic Open Architecture (GOA) and other applicable definitions/specifications of the Society of Automotive Engineers (SAE)

- Coordinate with other relevant NATO agencies as applicable

- Develop a Technical Architecture Document with interface descriptions for use within NATO

The developed Technical Architecture Document is the underlying basis of this report.

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