A primary effort for ISIS has been the development of software tools to enable the adoption of the FACE Technical Standard by software suppliers. These tools have been developed for model based development of FACE Conformant software. These tools were not intended to enforce a specific software development process but instead to be integrated into existing software development processes.

A goal of the FACE Software Developer’s Toolkit (SDK) is to reduce barriers to adoption of the FACE Technical Standard. By providing software suppliers a path to meeting FACE requirements, the SDK quickens the adoption of the FACE Technical Standard by industry.

The FACE SDK allows for modeling the key components of avionics software components. These models are then used to automatically generate source code. Features such as the data exchanged with other components, the communications paradigms and mechanisms and the scheduling of software threads are captured. The SDK does not attempt to capture the business logic of components.

The Future Airborne Capabilities Environment (or FACE™) consortium is composed of industry, academia, and government organizations. The goal of the FACE Consortium is to define new standards, reference implementations, and recommendations for constructing portable and interoperable software systems. This will help reduce cost in software acquisitions for military avionics by enabling software reuse.

The FACE Technical Standard is applicable to both manned and unmanned avionics platforms.

ISIS and the Georgia Tech Research Institute (GTRI) are funded by the U.S. Navy Naval Air Command (NAVAIR) and U. S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC) to provide input to the government regarding the FACE Technical Standard, produce tools to enhance the adoption of FACE, provide reference implementations of the FACE Architecture and to develop tools used in enforcing conformance to the FACE Technical Standard.

The Consortium was formed in 2010 to address the lack of an enforceable standard for portable, interoperable avionics software. Government and industry are participating and collaborating on developing the FACE Technical Standard. The FACE Consortium is addressing both technical and business issues through the FACE Technical Standard and published policies and procedures.

Academia has been contracted by NAVAIR and AMRDEC since 2010 to support development of the FACE Technical Standard. ISIS has been directly involved with the FACE Consortium since early 2012. ISIS attends FACE Consortium meetings at the request of, and as representatives of, NAVAIR.

ISIS has developed and released tools to the FACE Consortium to support:
- Rigorous modeling of exchanged data
- Development of FACE Conformant software components
- Integration of systems from FACE Conformant software components
- Verification of software conformance to the FACE Technical Standard

The FACE Conformance Test Suite has been officially adopted by the FACE Consortium for use in the FACE Conformance Process. ISIS is maintaining the test suite with NAVAIR and AMRDEC funding.

Two ISIS engineers (Matt Eby and Stu Frerking) are credited as principal authors of the FACE Technical Standard, Edition 2.0. This acknowledges their efforts in developing the FACE Data Modeling technologies.

ISIS co-chairs two subcommittees in the FACE Consortium (as NAVAIR representatives) and participates in many more. ISIS represents NAVAIR on the subcommittee charged with oversight and development of the FACE Technical Standard.

The Conformance Test Suite

A key component in verifying a software components adherence to the FACE Technical Standard is the Conformance Test Suite. Conformance if verified through a combination of automated testing and inspection of software development artifacts. A rigorous process has been developed to ensure products claiming FACE conformance meet specific standards.

ISIS has developed a test suite for verifying that software components meet elements of the FACE Technical Standard. NAVAIR and AMRDEC funded development of the test suite and donated the product to the FACE Consortium. In August 2013, the FACE Consortium formally adopted the FACE Conformance Test Suite as the official FACE Conformance Test Suite. It will be used by the consortium and their agents in validating that software meets the requirements contained in the FACE Technical Standard.

The FACE Conformance Test Suite is a configurable tool that utilizes commercial software development tools to build and verify correct usage of the APIs defined in the FACE Technical Standard.