Secure Interface System (SIS)

Proven, Secure Flight Line Operations

Type 1 certified, EAL5 evaluated and approved for worldwide use

Multiple programmable crypto algorithms

Certified key management

Multiple security level data filtering and encryption

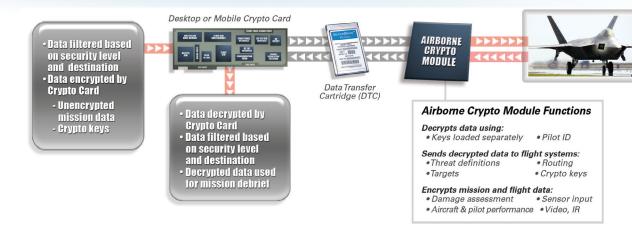Decryption of mission assessment data

Overview

There are three phases to a successful mission — planning, execution and debriefing. Mission planners and debriefers deal with raw, highly sensitive information in security-protected enclaves. The warfighter who executes the mission does not have that luxury. Any data either used or gathered during a mission must be protected by Type 1 encryption. The Secure Interface System (SIS) is the critical security link that protects the mission-critical data going to an aircraft and unlocks the collected data brought back.

Mission planning data comes from a variety of sources and can have multiple classification levels. The trusted filtering capability of the SIS sorts that data and encrypts it using the appropriate keys. When all of the mission data has been secured, including the crypto keys, it is downloaded to the Data Transfer Cartridge (DTC) for transport to the aircraft.

At the aircraft, the corresponding keys are loaded into the Airborne Crypto Modules using a separate key fill device. These keys, along with specific aircraft and pilot codes, enables the Airborne Crypto Modules to decrypt the mission plan and load it into the appropriate aircraft system so that the execution phase can be carried out.

While conducting the mission, information is gathered by the onboard sensors and Intelligence, Surveillance, and Reconnaissance (ISR) systems and stored. To maintain the integrity of this data, it is encrypted and downloaded to the DTC and removed from the aircraft at the conclusion of the mission. The mission data from DTC is then decrypted and disseminated by the SIS for analysis, audits, and post mission assessments.

Secure Interface System (SIS)

- Data filtered based on security level and destination
- Data encrypted by Crypto Card
  - Unencrypted mission data
  - Crypto keys

Desktop or Mobile Crypto Card

- Data decrypted by Crypto Card
- Data filtered based on security level and destination
- Decrypted data used for mission debrief

Data Transfer Cartridge (DTC)

AIRBORNE CRYPTO MODULE

Airborne Crypto Module Functions

Decrypts data using:
- Keys loaded separately
- Pilot ID

Sends decrypted data to flight systems:
- Threat definitions
- Routing
- Targets
- Crypto keys

Encrypts mission and flight data:
- Damage assessment
- Sensor input
- Aircraft & pilot performance
- Video, IR

Secure Interface System Desktop Specifications

- PC with Xeon 2.8 GHz
- 1GB of RAM
- SCSI-160
- Removable 73GB drive
- 8 MB video memory
- 12/24 GB 4mm tape drive
- 3U ruggedized, Tempest tower case
- EAL5 certification
- Type II PCMCIA card slot for DTC

Secure Interface System Portable Specifications

- Ruggedized Tadpole TOPAZ laptop
- Intel® Core Duo (P9400 CPU), 2.53 GHz
- 4GB of RAM
- Trusted OS
- Removeable 250 GB hard drive
- Internal express card interfaces 34mm/54mm
- External Peripheral Devices
  - 4 Type II PCMCIA Card Readers
  - 1 DVD-R/CD-R/W
  - 1 Floppy Drive
- Weight 9 lbs
- Display Size 15" TFT XGA
- MIL-STD-810 Environmental Requirements
- EAL4+ Certification

Securing Mission Planning
Secure Interface System (SIS)

- Multi-level secure data filtering and encryption
- Certified Type 1 cryptography
- Crypto modernization upgradeable
- Certified crypto key management
- Loads Data Transfer Cartridge (DTC)
- All classified data and keys to aircraft are encrypted
- No exposure of sensitive data

Securing Mission Execution
Airborne Crypto Module

- Certified Type 1 cryptography and key management embedded in aircraft
- Crypto modernization upgradeable
- Decrypts planning data and keys from DTC
- Data downloaded to aircraft systems
- Encrypts mission data from sensors and aircraft systems and loads to DTC

Securing Mission Debriefing
Secure Interface System (SIS)

- Decrypts mission data from DTC
- Provides multi-level secure data filtering
- Routes Sensor data at different classification levels for intelligence analysis
- Routes Flight data for evaluation, training and planning of future missions

Securing Mission Planning
Future SIS Capabilities

- Upgrade to crypto modernization suite algorithms
- Upgrade to growth/future waveforms
- Increase throughput
- Leverage technology evolution

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