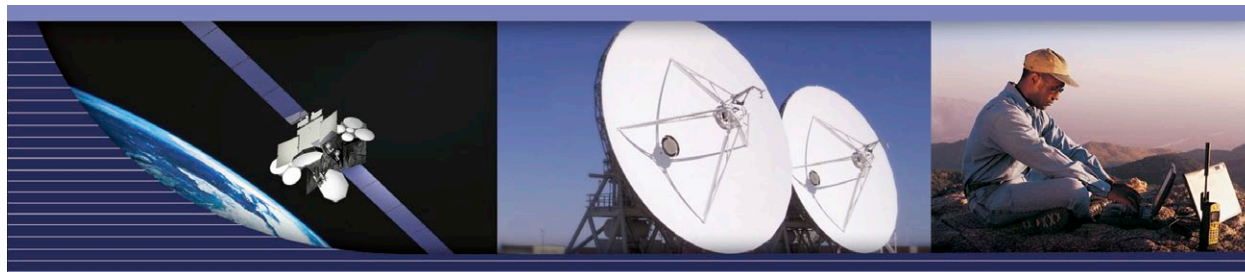


# Securing Access to Space

*Enabling Assured and Secure Space-Based Communications, Management and Control*



Space-based systems and communications are subject to unique threats and have unique challenges. Special expertise is needed to properly secure all aspects of a space system, yet provide the programmability and maintainability now needed in space. General Dynamics C4 Systems is a leader in securing communications within space-based platforms and vehicles and is helping develop new Information Assurance (IA) protections needed by modern net-centric concepts for future satellite-based systems and communications.

**Space Encryption:** General Dynamics C4 Systems' space-based encryptors are successfully employed in numerous space missions. Our high-speed, space-based, Type 1-certified encryptors, and corresponding ground encryptors, are suited for large bandwidth data transmission. We also support the special encryption and protections needed for Telemetry, Tracking, and Control (TT&C) communications. We are exploring application and space-qualification of our ground-based HAIPE® encryptor technologies for in-space HAIPE needs. Transmission security is an important part of many space-based communication systems, and our technologies support those protections on both the space and ground sides of the link. We are also investigating application of Crypto Modernization concepts to space encryption, specifically the ability to increase key management in space vehicles.

**Secure SATCOM Personal Communications:** General Dynamics C4 Systems offers a National Security Agency (NSA)-certified security module, the Black Digital Interface, for satellite phones that are a part of the Iridium satellite network. These modules allow secure classified conversations to take place and data to be securely transferred across the Iridium®, Inmarsat®, Globalstar and Thuraya networks. These products use the Secure Communications Interoperability Protocol (SCIP) signaling and are certified to protect information classified Top Secret through Sensitive But Unclassified.

**System Security Engineering:** We are applying our engineering expertise in IA to the ground control, space, and end-user elements of Satellite Communications systems and Satellite ISR systems. We are proficient in applying the appropriate protections for confidentiality, integrity, availability, authentication, and non-repudiation to space

## Available Today

Expertise in:

- Secure Space Communications
- Space Encryption
- System Security Engineering for Space
- Systems Transmission Security

Products:

- Iridium® Security Module
- Sectera® BDI (Black Digital Interface) Terminal
- Secure Portable SATCOM Terminal
- Space Encryptor Products

## What's Next

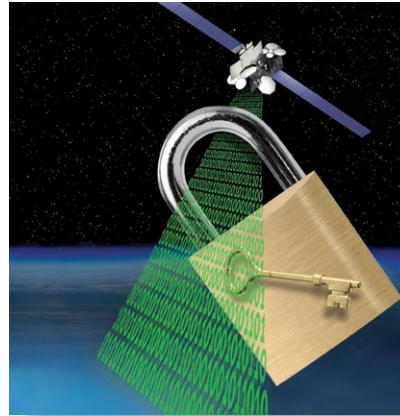
Programs:

- Next Generation Telemetry, Tracking and Control Encryption (TT&C)
- Next Generation High Speed Mission Data Encryption

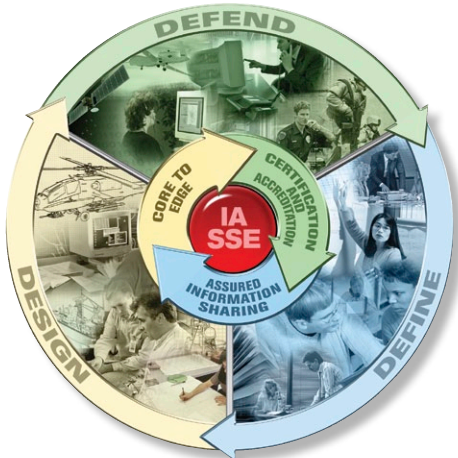


**GENERAL DYNAMICS**  
C4 Systems

platforms, ground control stations, end-user terminals, and other users or administrators of the overall system. Our expertise extends to the rigorous integration and testing (e.g., security testing) that satellite systems must endure prior to launch, the overall accreditation of the system, and the inter-connection of the system to other networks and systems.



*Solid Mission Data Security*



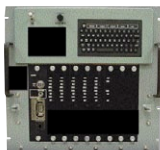
*Secure System Engineering*



*High Speed Aerospace Vehicle Equipment (AVE) Spacecraft Encryptor*



*Iridium® Security module*



*High Speed 8-Channel Ground Operations Equipment (GOE) Decryptor*



*Sectéra® BDI (Black Digital Interface)*



*KG-327 TT&C Encryptor/Decryptor*

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[www.gdc4s.com/InformationAssurance](http://www.gdc4s.com/InformationAssurance)

D-IA-SPACE-5-1109

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