



GENERAL DYNAMICS
C4 Systems

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Trusted. Core to Edge.

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In today's environments, the speed of the decision cycle can mean the difference between winning and losing – and ultimately, between life and death. Earlier awareness through faster information flow improves the user's reaction time and can better affect the outcome of an event.

General Dynamics C4 Systems is enabling its customers to realize the full potential of net-centricity by facilitating the delivery of decision-quality information from anywhere, based on need and capability. The company is a critical enabler of transformation, trusted by its customers to increase their speed, tempo, motion and

information flow through leading-edge technologies and integrated networks, services and solutions. By leveraging its world-class capabilities and CMMI® Level 5 processes, General Dynamics C4 Systems helps its customers maximize performance and improve the speed and quality of decision making.

We invite you to take a look at why General Dynamics C4 Systems is trusted to link people, information and events – *core to edge*.





Robust and continuous connectivity...anywhere, anytime

COMMUNICATIONS

Let's begin at the edge with the end user – the warfighter, the commander, the first responder, or anyone who has a need to communicate information. Users need to identify and understand the existing environment or emerging threat and act or react with decisiveness to achieve the optimum end result. To succeed, they require continuous connectivity, or trusted performance, from *core to edge*.

As a global leader in communications and networking, General Dynamics C4 Systems creates dynamic and interoperable communication solutions that link decision makers to a world of information – activated by the touch of a screen – the sound of a voice – or the flip of a switch. Our solutions are trusted to support and connect national, allied and coalition forces. They link governments and

agencies worldwide, from the local to the international level. And they allow users to communicate information worldwide – from anyplace, under any condition, at any time. From design and development to integration and network management, General Dynamics C4 Systems engineers for trusted performance and value.

High impact examples include: Warfighter Information Network – Tactical, the high-speed, high-capacity communications network for the Army's Future Force; Tactical Data Network, providing the backbone for the Marine Corps air-ground tactical networking across the entire spectrum of operations; and Theatre Deployable Communications, an interoperable, scalable voice, video and data system in use by the U.S. Air Force. We're also

transforming joint service operations by providing communication flexibility and adaptability through software defined radio technology with the Joint Tactical Radio Systems program.

General Dynamics C4 Systems' communication networks and products are trusted worldwide for seamless communication. Our high-fidelity acoustic processors and simulators have garnered a worldwide reputation for anti-submarine detection. Our VertexRSI®, Gabriel® and Prodelin® brands are the market leaders for base station and earth station communication products and services, VSAT antennas and antenna systems, and wireless backhaul products. We've replaced a radio room with a single software-defined radio, and fielded the only fully software-

programmable radio in use by the U.S. Navy. Our HOOK2™ combat search and rescue system has saved more lives of downed pilots and aircrews than any other in use. And our air traffic control radios are the next-generation replacement radios for the Federal Aviation Administration.

Building on these successes, General Dynamics C4 Systems is placing miniaturized software-defined radio technology into small devices to help lighten the load and make users more mobile, waveforms more portable and communication virtually seamless – *core to edge*.



Integrated, end-to-end communications solutions for mission critical applications

SPACE COMMUNICATIONS

A truly comprehensive communication network incorporates communication and information flow through assets in space. Here, our results speak for themselves.

For nearly half a century, we have been delivering advanced space-based communication systems prized by U.S. government agencies, the military services and commercial customers. From the first words spoken on the moon, to the recent images of Saturn delivered by the Cassini orbiter, we have provided the critical Earth-space communications link for NASA's missions of discovery. We've provided the communications for the satellites in every generation of the Global Positioning System (GPS), while our GPS spaceborne receivers enable other satellites

to navigate into the precise position at the precise time to accomplish their missions.

Our engineers helped design and build the Iridium® satellite communication network, one of the world's greatest system and software engineering feats. We now secure Iridium handsets for U.S. government-authorized users of the system, manage their airtime services, operate and maintain the government's dedicated gateway, provide 24/7 customer care, and engineer customized, innovative applications for the U.S. military and federal government agencies.

In addition, our industry expertise through Spectrum Astro® is being applied to the engineering, design and integration of high performance satellites and spacecraft for various

civil and military applications. Our "Factory of the Future," the most modern satellite manufacturing facility in the United States, now enables us to manufacture one satellite or a multitude of spacecraft, either broadly varying in size and weight, or identical for satellite constellations.

General Dynamics C4 Systems has been managing the spacecraft and ground systems for NASA's Tracking Data Relay Satellite System for nearly 30 years. Our spacecraft engineering teams support launch and mission activities at NASA's Goddard Space Flight Center and those at the Naval Satellite Operations Center. We excel at the design, integration and test of specialized space payloads, integrated ground systems, constellation and network

management, and end-to-end information assurance architecture for large-scale transformational programs and high-speed, space-based encryption solutions.

At General Dynamics C4 Systems we leverage technology and expertise to meet our customers' needs for ground-based and space-based communication and information systems, linking users through network coverage, from fixed to mobile and wireless to satellite. From undersea to outer space, no one understands communications – *core to edge* – better than General Dynamics C4 Systems.



Denying the adversary through rapid sensory perception

Innovative solutions to power command and control

INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (ISR)

In addition to having continuous communication, users must be able to observe and orient within their environment. General Dynamics C4 Systems provides these abilities through world-class ISR applications and tools from the operations center to the individual – *core to edge*.

Our ISR legacy is found in ground stations built for the U.S. Army's Joint STARS program. These ground stations are built to integrate input from over 20 sensors and display it in a comprehensive picture on a single screen. In addition, we've developed a smaller, more mobile version called the Joint Services Workstation, in use in joint operations centers worldwide. We also provide users with significantly improved electronic surveillance capabilities and advanced electronic

attack capabilities, like those used in the U.S. Army's Prophet program.

General Dynamics C4 Systems integrates Blue Force Tracking and situational awareness capabilities into systems that identify and track "friendlies" and assets, cutting through the fog of war to save lives. We also develop training and simulation systems like the Intelligence and Electronic Warfare Tactical Proficiency Trainer that directly simulates all tactical IEW equipment to train and measure user proficiency by merging live training and computer-based simulations. Through systems like these, our customers can locate threats with speed and precision, and act decisively.

COMPUTING

General Dynamics C4 Systems helps users build networks and leverage their applications. We produce specially packaged commercial and ruggedized hardware and commercial software on which to transmit and display actionable information, like the Commander's Digital Assistant with embedded tactical communications and secure GPS. These lightweight, handheld devices allow for improved data sharing and enhanced situational awareness down to the individual level, allowing users to see and share information across the network – *core to edge*.

Our hardened servers and portable laptops are being used daily in some of the most extreme environments on Earth. And our world-renowned militarized flat panel displays allow users to send and receive the latest information and quickly interact with armored vehicles, rotary wing operations centers, reconnaissance aircraft, ships and submarines with the touch of a screen. Whatever the requirement, we ensure the information is processed and displayed on demand, and without interruption.



Common operating picture and execution planning across the battle space

COMMAND AND CONTROL

General Dynamics C4 Systems takes command and control beyond the platform by providing a common operating picture and execution planning from *core to edge* – from the command center to the dismounted user. We help users observe and orient by ensuring data and information are readily available and easily understandable. This allows the user to see first and act decisively.

Prominent examples include air and land warrior systems allowing universal information exchange between command and control systems down to the individual soldier, and

ground stations used for targeting, force protection and mission planning by the U.S military and its allies. We've also integrated and successfully deployed the most advanced mobile airspace management and deconfliction system within the Department of Defense.

We're providing the U.S. Coast Guard's Rescue 21 system, a state-of-the-art search and rescue system that locates distressed mariners and deploys rescue assets through a single human-system interface. And we're leveraging its command and control architecture to link local, state and

federal systems to provide a common picture and awareness that aids in border and port security, and emergency response planning.

Our command and control capabilities are perhaps best demonstrated in the design and integration of operations centers at the tactical, operational and theater levels. These operations centers provide an integrated view of the battlespace with the interoperability required for quicker information flow and speed of decision making.

Building on these successes, General Dynamics C4 Systems is developing true on-the-move, beyond-line-of-sight command and control, providing users with the same type and speed of information on the move as in a fixed operations center. These command and control applications can be adapted to increasingly complex scenarios for security, emergency response and warfighting helping to facilitate the sharing of relevant information with those who need it from wherever it exists – *core to edge*.



Securing the network and authenticating its users

INFORMATION ASSURANCE

General Dynamics C4 Systems enables seamless connectivity and information flow to be used as an advantage by protecting the data and the network. We ensure secure access and integrity of stored and processed information. It's what you'd expect from a company that has been protecting all levels of information including Type 1, both domestically and abroad, for more than 35 years.

As a key supplier to U.S government agencies, the military and coalition partners worldwide, General Dynamics C4

Systems provides the highest level of assurance possible. We address information assurance – from *core to edge* – with solutions ranging from embedded security to multiple security level architecture and system design, and from Key Management Infrastructure (KMI) to leading-edge voice and data products.

General Dynamics C4 Systems' world-class family of encryption products includes Taclane (KG-175), the leading Type 1 encryptor, as well as FASTLANE® and Sectéra® (KG-235) In-Line Network encryptors. All are certified by

the National Security Agency to protect classified information at Type 1. Our key and identity management technology is used to develop and deliver cryptographic keys to protect classified information through the Electronic Key Management System. We also design and build Type 1, high-grade, programmable encryption systems for major aircraft platforms and mission planning.

The versatile design of our software-enabled Advanced INFOSEC Machine (AIM) is radically changing high-grade cryptography – making it embeddable and easily

reprogrammable – and enabling revolutionary advances in the embedment of complex encryption technology into today's major aircraft platforms. And our Sectéra family of end user products, including the Secure GSM phone, secures voice and data communication worldwide.

General Dynamics C4 Systems' world-class information assurance products are trusted universally by users needing to communicate with absolute confidence – *core to edge*.



FUTURE

As a prime systems integrator and a CMMI® Level 5 company for software and systems integration and supplier sourcing, General Dynamics C4 Systems is continuously improving its processes and capabilities to develop new applications and solutions that directly benefit the user through size, weight, speed, agility, mobility and interoperability.

We're investing in innovative technologies that will enhance the development of net-centricity and further increase the speed of decision making, including:

- Multi-level security – ensuring secure access and integrity of stored and processed information at all the levels
- Advanced fuel cell research – providing alternate power sources for electronic devices to reduce weight and increase mobility

- Next-generation software defined waveforms – optimizing wideband use of the spectrum
- Advanced acoustics – increasing transmission speed through information processing
- Self-healing networks – facilitating the formation, healing and updating of a network as users come and go

Working side by side with our customers, General Dynamics C4 Systems is helping to realize true network-centric operations, so users can plan and act in parallel asymmetrically, communicate without boundaries and share information simultaneously – from anyplace, under any condition, at any time – *core to edge*.

From the individual to the command center

From local to global

From planning to execution

From the sea bed to deep space, and everywhere in between

Trusted People. Trusted Performance.

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Trusted. Core to Edge.***