

NetVIPR™

Networked, Virtualised, Intelligent
and Protected Routing

We are Digital Intelligence

BAE Systems Digital Intelligence is home to 4,800 digital, cyber and intelligence experts. We work collaboratively across 16 countries to collect, connect and understand complex data, so that governments, nation states, armed forces and commercial businesses can unlock digital advantage in the most demanding environments. Launched in 2022, Digital Intelligence is part of BAE Systems, and has a rich heritage in helping to defend nations and businesses around the world from advanced threats.





Information provided has been subject to ITAR review and contains no ITAR data.

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For more information contact:

BAE Systems Digital Intelligence, C5ISR
Grange Road, Christchurch, BH23 4JE
United Kingdom

E: C5ISR@baesystems.com
W: www.baesystems.com

 [linkedin.com/company/baesystemsdigital](https://www.linkedin.com/company/baesystemsdigital)
 twitter.com/BAES_digital
 facebook.com/baesystemsdigital
 youtube.com/user/baesystemsdigital

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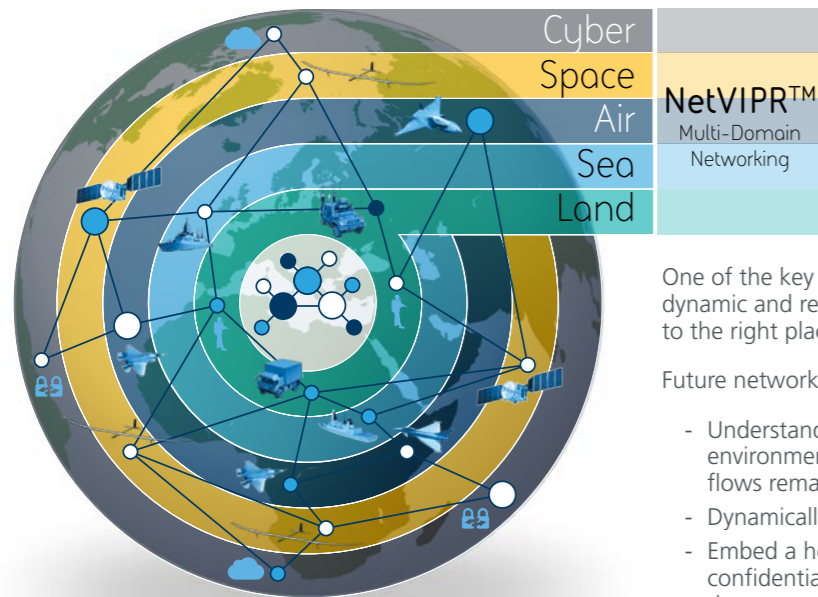
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Digital
Intelligence

BAE SYSTEMS

NetVIPR™ – Networked, Virtualised, Intelligent and Protected Routing



Information is critical in the future operational environment; timely analysis, assessment and exploitation of information will enable advantage over our adversaries and ultimately, mission success.

One of the key enablers of Information Advantage will be a flexible, dynamic and resilient network infrastructure that can deliver information to the right place at the right time to enable informed decision making.

Future network infrastructure must be able to:

- Understand the Cyber and Electromagnetic Activities (CEMA) environment and autonomously adapt to ensure critical information flows remain unaffected.
- Dynamically scale as the operational tempo dictates.
- Embed a holistic, secure by design approach to maintain information confidentiality, availability and integrity in the face of sophisticated threat actors.
- Interoperate with our allies and span the operational domains to breakdown information silos and maintain seamless interconnectivity across the future battlespace.

NetVIPR™ is a next generation software defined routing and network management capability, that provides an intelligent, flexible and resilient digital backbone at the strategic, operational and tactical levels of command. NetVIPR™ uses open architectures and network virtualisation technologies to be platform and hardware agnostic. This allows NetVIPR™ to be flexibly deployed to enable Information Advantage across the air, land, sea, cyber and space domains.

How does NetVIPR™ contribute to mission success?

Intelligent Routing	Secure by Design	Plug and Play	Network Visualisation	Standards Based Interoperability
Continuous, automated optimisation of network bandwidth and availability based on real-time bearer performance metrics ensures commanders can access the information they need in a timely manner.	Comprehensive multi-layered threat protection underpinned by a zero-trust architecture.	Automated configuration of NetVIPR™ nodes reduces training and configuration burden and enables agile responses to changing operational tempo.	A single user interface increases commanders' situational awareness with a global overview of the NetVIPR™ network.	Alignment with the NATO Federated Mission Networking (FMN) Protected Core Networking Architecture provides a robust and resilient security overlay and simple interoperability with NATO allies and partners.

NetVIPR™ Ecosystem

NetVIPR™ is a flexible software defined routing and network management solution that can be deployed on a variety of hardware platforms, optimised and tested by BAE Systems to meet the needs of multiple scenarios. A set of example deployment scenarios are shown below.

Deployment Scenario	Solution Characteristics
Base COTS Hardware for an environmentally controlled equipment room	<ul style="list-style-type: none"> - Hub solution deployed in the base environment providing the intelligent and protected networking services that link the fixed base with deployed components - Support for multiple information systems operating at different security classifications - Backplane bandwidth of $\geq 10\text{Gbps}$ - ≥ 10 Ports, individually configurable to support LAN or WAN connectivity with speeds of $\geq 1\text{Gbps}$
Operational Operational level of command, e.g. maritime platforms and deployed HQs	<ul style="list-style-type: none"> - Rugged variant for large platform operation with limited environmental regulation - MIL-STD 810G compliance - Support for multiple information systems operating at different security classifications - LOSA compliant and qualified for use across all operational domains - Backplane bandwidth of $\geq 10\text{Gbps}$ - 10 Ports, individually configurable to support LAN or WAN connectivity with speeds of $\geq 1\text{Gbps}$
Tactical Tactical level of command, e.g. land platform	<ul style="list-style-type: none"> - Ultra-rugged variant for the most extreme environments - MIL-STD 810G compliance - Available with LOSA GVA compliance for plug and play installations in tracked and wheeled vehicles - Support for a single information domain operating at a single security classification - Backplane bandwidth of $\geq 1\text{Gbps}$ - 5 Ports, individually configurable to support LAN or WAN connectivity with speeds of $\geq 100\text{Mbps}$
Edge Rugged edge variant e.g. UAV, USV, UGV	<ul style="list-style-type: none"> - Ultra-rugged and compact variant for operation at the edge - MIL-STD 810G compliance - Support for a single information domain operating at a single security classification - Backplane bandwidth of $\geq 1\text{Gbps}$ - 4 Ports, individually configurable to support LAN or WAN connectivity with speeds of $\geq 100\text{Mbps}$

NetVIPR™ system features

NetVIPR™ supported system features	Description
Deployment	Hardware agnostic, supports multiple type-1 hypervisors
IPv4 and IPv6 Features	RIP v2/v3, OSPF v2/v3, EIGRP, BGP, GRE, VRF
Security Features	IPSEC Encryption, Next Generation Firewall, PKI Authentication, AAA services
Interoperability Interfaces	FMN PCN1, FMN PCN2, BAE Systems Falcon
Supported Bearers	Ethernet bearers including fibre, copper, IP radios, Satcom, Internet Bearer of Opportunity (IBoO) - with suitable encryption module
Number of Interfaces	Flexible and configurable, tailored by deployment scenario
QoS	Class-Based WFQ (CBWFQ), Class of Service (CoS) to Differentiated Services Code Point (DSCP) mapping, Class-Based Traffic Shaping (CBTS), Class-Based Traffic Policing (CBTP)
High Availability Options	NetVIPR™ can be deployed in a redundant and highly available configuration
Supported Network Services	DNS, DHCP, NTP, SNMP, ICMP, LDAP