HUGHES®
An EchoStar Company

SOLUTIONSHEET

Next Generation Base Communications

Flexibility, Agility, and Resiliency for Today's Military

The Hughes vision for next-generation communication systems includes building networks that address current challenges while anticipating future needs. The company supports the United States Military's vision for integrated communication and interoperability.

Accelerating Innovation

Hughes empowers the Department of Defense (DoD) by integrating advanced commercial technologies and adopting agile development methodologies. This approach accelerates innovation, allowing the DoD to quickly adapt to emerging threats and opportunities. Utilizing Artificial Intelligence (AI), Machine Learning (ML), and edge computing, Hughes enhances the DoD's communication infrastructure with superior speed and efficiency, ensuring top performance and reliability in defense operations.

Improved Interoperability

Hughes promotes seamless, standards-based integration across different platforms and systems, eliminating communication silos and enhancing interoperability. By leveraging open standards and protocols, Hughes ensures harmonious collaboration and information sharing across various networks, fostering a unified communication environment.

Flexibility, Reliability, and Resiliency

Advanced Fifth Generation (5G) wireless communications networks represent a significant leap forward, enabling unprecedented connectivity, operational efficiency and flexibility. The Hughes Secure 5G Solution can now offer an on-premises standalone 5G Open Radio Access Network (O-RAN) network that can be deployed in various locations – a campus, a warehouse or on a marine platform – including the most remote and rural locales. This Hughes 5G Solution powers high-capacity wireless connectivity securely on off-the-shelf smart phones, tablets, PCs, sensors, routers and more.

Capabilities:

- Runs on fully virtualized and typically containerized software, deployed via the cloud across its network platform.
- Creates 'openness' and flexibility that allows Hughes to virtually 'open up' the ecosystem and separate the software from the hardware.
- Operates without the constraints of a traditional, vertically integrated system where the software is anchored to the hardware.
- Delivers a mini-core for each enterprise user based on the cloud-native environment, ensuring full user control.

5G provides significant security and speed, but even this new wireless technology can meet interruptions during extraordinary circumstances. In such situations, adding resilient range extension into multi-transport and multi-orbit communications is crucial. This adaptive infrastructure ensures continuous connectivity and mission readiness, even in the face of disruptive events. By leveraging diverse communication pathways, modern military bases can maintain robust command and control capabilities, ensuring that critical operations and strategic objectives are met without compromise.

Intelligent Networking and Network Management System

The integration of AI and ML into Hughes networks represents a significant advancement, optimizing real-time network performance and resource usage. Coupled with edge computing and advanced communication technologies, Hughes offers unparalleled security and speed. As a pioneer in communication networks, Hughes exemplifies hybrid integration, intelligent networking, multi-path routing, and high performance, positioning itself to meet the demands of a connected military.

Intelligent application of cloud-based 5G Open Radio Access Network (O-RAN) and a RAN Intelligent Controller (RIC) that leverages 3GPP and Open RAN standards

- Provides an O-RAN architecture defined Non-Real time and Near-Real Time platform along with O-RAN defined interfaces to collect RAN performance indicators and support near real-time decisions (within milliseconds) for controlling and/or influencing RAN Network functions behavior.
- Native support for use of Artificial Intelligence (AI) and Machine Learning (ML) by the applications (rAPP, xAPP) for various use-cases including but not limited to Spectrum Coordination, Interference Mitigations, Network optimizations, Traffic Predictions.
- Offers features for critical, time-sensitive decisions in Disrupted, Degraded, Intermittent, and Low-Bandwidth (DLL) environments.
- Supports greater network resilience and minimized human error in adjusting RAN configurations.

Trust Hughes

Hughes represents the future of communication networks, embodying the essential qualities of hybrid integration, intelligent networking, multi-path routing, security, resilience, reliability, and high performance. As we continue to push the boundaries of what is possible in digital communication, Hughes stands as a beacon of innovation and excellence, ready to meet the demands of an increasingly connected military. Hughes offers a comprehensive vision for the next generation of communication systems. We build networks that are capable of handling today's challenges and prepared for tomorrow's advancements and communication requirements.

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