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NATIONAL SECURITY & QUALITY OF LIFE

The Critical Role of 5G and Wi-Fi on U.S. Military Bases



Mission Support
Training & Education
Morale, Welfare and Recreation

eBook



Dear Military Leaders,

In the dynamic world of military operations where national security is paramount, the importance of state-of-the-art technology and communication infrastructure cannot be overstated. Our military's ability to train for the mission, respond effectively, communicate efficiently, and safeguard our nation's interests depends on the resilience and sophistication of the tools at their disposal.

As we navigate the evolving landscape of global threats and challenges, cutting-edge wireless networks are indispensable for U.S. military bases. Wireless connectivity bolsters mission readiness, establishes installation resilience and enhances the lives of those who selflessly serve our great nation. It also supports artificial intelligence, providing connectivity at the edge for sense, decide, act.

At Boingo Wireless, we work every day to deliver connectivity that is essential for national security, mission success and the wellbeing of troops. As Senior Vice President and General Manager of Military at Boingo, I am immensely proud of the work we do and the critical role we play in supporting more than 85 U.S. military bases around the world with next generation 5G and Wi-Fi networks. I can attest that our Boingo military Veteran workforce sees their support to DOD as a continuation of their commitment to protect and defend.

It is our privilege to introduce this eBook that delves deep into the critical role of 5G and Wi-Fi for ensuring our Armed Forces are always prepared, informed, and connected—no matter where they are deployed. We invite you to explore the following pages and the profound implications of communication infrastructure for national security and quality of life for the brave women and men in uniform.

Thank you for your interest. Together we can ensure that advanced wireless service amplifies your commitment to "Mission First, People Always."

Warm regards,

Rebecca

Rebecca Gray
Senior Vice President and General Manager, Military, Boingo Wireless
Colonel, United States Air Force, Air National Guard

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Communication infrastructure's mission advantage



MISSION FIRST, PEOPLE ALWAYS

Congress and the president have identified 5G technology as a key area where global economic competition and national security intersect. The Department of Defense (DOD) is now tasked with leading the race for a 5G-enabled mission advantage. The deployment of innovative 5G and Wi-Fi networks on U.S. military bases bolsters mission readiness, enabling our Armed Forces to leverage the full breadth of advanced technologies for a competitive edge.

It is incumbent upon military leadership to invest in communication infrastructure to support the mission, improve the daily lives of those who wear the uniform and attract a talented workforce. The soldiers, sailors, airmen and Marines who call U.S. military bases home are the lifeblood of our nation's defense. Their resilience, readiness and morale are inextricably linked to the success of any mission they undertake. Prioritizing a commitment to their quality of life includes giving them access to everyday conveniences like high-speed Wi-Fi. Wi-Fi also serves as a recruitment and retention tool as it enables troops to stay connected with loved ones, follow educational pursuits, access support services and engage with streaming and gaming services.

"Mission First, People Always" has never been more relevant. Wireless connectivity stands as a linchpin for national security, mission success and the wellbeing of those who serve.

"5G is a critical strategic technology: those nations that master advanced communications technologies and ubiquitous connectivity will have a long-term economic and military advantage."

Department of Defense 5G Strategy

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Growing connectivity demands

Modern military bases require secure wireless networks that ensure 24/7/365 reliable connectivity. Networks must support mission effectiveness, base resilience, soldier empowerment, speed-to-field and logistics efficiencies.

CONNECTED USE CASES



Field training



Tactical missions



Base communications



Utility monitoring



Perimeter access control



Frictionless entry



Push-to-talk devices



AR/VR training



Autonomous vehicles



Wi-Fi for housing



Classroom education



Cellular coverage



Video calls



Gaming



Entertainment streaming

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5G networks



5G is essential for state-of-the-art training, access to real-time data from the field, strong coverage for phones and tablets, and countless connected devices that are critical to national security and mission readiness. With 5G, military bases can enable a future of unmanned and autonomous weapons systems and empower troops with greater access to situational data, providing a clear tactical advantage. 5G is the glue for AI-enabled missions and can accelerate innovation with Open RAN architectures.

CELLULAR SOLUTIONS

Towers
Transmit cell signals over long distances to provide voice and data services to mobile device users. Neutral host towers bring all carriers to the network, maximizing provisioning options and helping to reduce deployment costs.

Private 5G
Deploy private enterprise networks, available only to assigned users, to securely and reliably power high-bandwidth IoT devices and critical communications. Private networks can securely serve Base Operations Support (BOS), mission tenants, MWR and commercial activity, as well as enable critical machine-to-machine communication.

Distributed Antenna Systems (DAS) and Small Cells
Improve cell service on base, eliminating dead zones and boosting signal strength for all wireless carriers including AT&T, T-Mobile and Verizon.

Boingo is a U.S. leader in 5G Open RAN, installing the first DOD 5G Open RAN flight line and aviation logistics hub that utilizes low-cost spectrum.

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Wi-Fi solutions

Delivering fast, flexible Wi-Fi to personnel living on base requires a sophisticated and nuanced approach.

CONNECTIVITY CHALLENGES

- Dead zones and limited internet access on remote bases with poor cellular reception
- Base residents expect 24/7/365 connectivity, everywhere
- Lack of reliable connectivity for online education
- Troops are highly mobile and do not want the hassle of new service contracts and Wi-Fi set up with each base move

WI-FI SOLUTIONS

- **Secure Wi-Fi for Dorms and Barracks:** In the most remote or congested locations, high-bandwidth Wi-Fi networks provide seamless, fast connectivity. Boingo Wi-Fi is uniquely pre-installed in dorms and barracks, ensuring internet access is available the moment troops move in and is portable without contracts or installation appointments.
- **Enterprise Wi-Fi for Classrooms:** Classrooms can utilize Wi-Fi-powered training exercises that simulate real-life situations to help troops hone decision-making skills. Wi-Fi, which can be set with base-specific content filters, also provides access to online learning.
- **Affordable Wi-Fi for Mission and Commercial Services:** From commissaries to hospitals, affordable wireless coverage provides base employees, residents and guests with convenient internet access.
- **Portable Wi-Fi that Moves:** Troops who sign up for Boingo Wi-Fi can seamlessly use the same account as they move to other Boingo-connected bases. Troops can also access free Wi-Fi at Boingo-connected airports and thousands of Boingo hotspots around the world.



"At Boingo, we believe it's a basic requirement that troops have access to high-quality Wi-Fi where they live on base. It should also be a basic requirement that the wireless service moves with them. No hassle, no geographical limits."

Rebecca Gray, Senior Vice President and General Manager, Military at Boingo Wireless

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Cybersecurity and zero-trust architecture

With cyberattacks becoming more and more advanced, a network that is NIST 800-171 compliant and meets DOD standards is a must. As stated by the National Strategic Research Institute, "military bases can derive significant benefits by integrating cyber defense into smart base architecture."

Leading cybersecurity platforms utilize a zero-trust architecture which assumes no implicit trust in any user, device or network. Stringent zero-trust principles should be followed on all military bases and include network segmentation, multi-factor authentication, prompt deployment of security patches and role-based access controls. These security measures can be implemented with Wi-Fi and cellular networks to mitigate the threats and vulnerabilities related to connected devices.



"Cybersecurity risk readiness should not vary from base to base. That's why Boingo's military-grade service for the DOD provides consistent security, with global visibility, agile threat response and continuous mitigation."

Dr. Derek Peterson, CTO Boingo Wireless, Air Force Staff Sergeant (Vet)

Security Operations Center (SOC)

Boingo offers a Security Operations Center (SOC) that provides federal and DOD grade security, with a zero-trust architecture, dedicated content filtering, vulnerability management, redundancy and physical protection.

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Edge cloud, network slicing & Open RAN

SENSE. MAKE SENSE. ACT.

The military principles of sense, make sense and act can be directly applied to base communication infrastructure. Connected bases run efficiently when data is collected, turned into real-time knowledge, and used to make informed decisions. In mission critical situations requiring low latency, reliable machine-to-machine communication and dedicated bandwidth, multi-access edge computing (MEC), network slicing and Open RAN are increasingly important.

MEC

MEC brings network processing on premise to the installation, enabling AI and emerging technologies. By processing data closer to its point of origin, MEC decreases the time it takes for data to travel from one point to another, reduces data transport costs and increases network security.

NETWORK SLICING

Network slicing enables bases to assign the right degree of access, function and security for each particular community. Every installation is a community of communities and network slicing allows base communications to support the varying needs of each group.

OPEN RAN

A radio access network (RAN) connects end-user devices to the cloud. By disaggregating RAN architectures, making them open, network operations are simplified and deliver improved flexibility and efficiency. Endorsed by the DOD, Open RAN models allow for a multi-vendor 5G ecosystem and help establish a trusted domestic supply chain.

Boingo 5G MEC & Open RAN

Boingo Open RAN advances DOD implementation of the National Spectrum Strategy, creating a competitive U.S. advantage. Boingo leverages state-of-the-art Open RAN technology to create a common cloud infrastructure to power several different users and devices. Boingo's borderless infrastructure moves content from MEC to cloud to data center seamlessly. The hybrid offering combines on-premise infrastructure with Open RAN and cloud technology to manage data transport efficiently and securely.

"Open RAN represents a sustainable model for accelerating critical 5G innovation while spurring the growth of domestic supply chains based on trusted and secure vendors."

Department of Defense

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CASE STUDIES

Mission readiness



Private 5G at Whidbey Island

The Naval Air Station Whidbey Island set out to increase aircraft readiness by processing data at higher speeds. 5G was chosen to provide real-time communication across the flight line, reducing maintenance time and time between missions. Boingo installed a private 5G network and deployed the DOD's first Open RAN network at Whidbey Island delivering secure, zero-trust connectivity for smart aviation hangars, warehouses, flight line operations, asset tracking and supply chain management. Learn more.



Immersive Learning and Technical Training at Sheppard Air Force Base

At the largest and most diverse training base in air education and training command, educational programs operate at the highest level. Sheppard Air Force Base leadership desired a secure Wi-Fi network across more than 50 buildings. Leveraging a combination of advanced wireless services, Boingo designed, installed and manages a fast, secure base-wide Wi-Fi network that powers immersive learning experiences for technical and flying training and hybrid learning for use in the dormitories. Learn more.



Streamlined Contracting Process at Fort Drum

Contracting and procurement can be a lengthy, time consuming process involving several stakeholders. To move at the pace of innovation, Fort Drum partnered with Boingo to leverage existing government contracts and agreements to create a turnkey process. With direct agreements, Fort Drum has avoided lengthy procurement cycles and implemented faster Wi-Fi deployments to enhance training.

"Boingo's 5G engineering and military expertise will help us deploy a fast, secure and reliable network for the DOD at Whidbey Island."

Rajeev Gopal, Vice President, Hughes Defense

Wireless support for DOD training is essential. Smart networks connect realistic training, deliberate simulation-based planning, mission rehearsal and real-time operations support.

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CASE STUDIES

Wi-Fi for service members



Connecting Service Members at Camp Pendleton

Camp Pendleton is among the DOD's busiest installations with military training facilities for active and reserve Marine, Army and Navy units, as well as national, state and local agencies. Marine Corps Community Services wanted to provide much-needed internet to barracks and commercial spaces to improve the quality of life for troops on base. To meet the need for streaming, gaming and robust wireless services, Boingo designed, installed and manages high-speed Wi-Fi throughout the base. Learn more.



5G Towers at Helemano Military Reservation

Military families, personnel and visitors at U.S. Army Garrison Hawaii's Helemano Military Reservation now have improved wireless service—a significant quality of life improvement—thanks to a new cellular communications tower designed, constructed and managed by Boingo. The tower is bringing 5G coverage for AT&T, T-Mobile and Verizon to a remote location that previously struggled with inadequate connectivity. Learn more.



Bavarian Alps AFRC Resort Deploys World-Class Wi-Fi

Edelweiss Lodge and Resort is an affordable vacation destination for U.S. Armed Forces that needed secure connectivity to meet the needs of military guests. A Boingo Wi-Fi network was designed to provide guests with free connectivity for communicating with loved ones, streaming services and more. With high-speeds and complete coverage, the network also supports operational needs such as visitor management and staff communication. Learn more.

"Our Nation's wellbeing relies upon secure and resilient critical infrastructure—the assets, systems, and networks that underpin American society."

Cybersecurity & Infrastructure Security Agency

Get more case studies on Boingo's **resource center.**

CASE STUDIES

Civilian expertise

U.S. military bases are unique in their demands. There are many lessons that can be applied from adjacent public and private sector industries to U.S. military bases. Here's how Boingo Wireless is working with airports, ports and hospitals to connect their expansive, complex properties and intricate infrastructures.



Ground, Sea, Rail & Air: How New York and New Jersey Strengthen Security

The Port Authority of New York and New Jersey builds, operates, and maintains many of the most important transportation and trade infrastructure assets in the world. The agency's airports, bridges, tunnels, bus terminals, commuter rail line and seaport are among the busiest and most vital in the country. For the Port Authority, ground, sea, rail and air security is a matter of national security. The Port Authority partners with Boingo to ensure reliable infrastructure connectivity, leveraging a combination of Wi-Fi, private networks, 5G and DAS.



Hospital Operations Rely on 5G and Wi-Fi Connectivity

A leading hospital with 35,000 staff, 106,000 patients, 2,600 beds and more than 100,000 surgery cases a year faces challenges securely connecting medical equipment, staff and patients. Boingo Wireless can support hospitals with a converged wireless solution that leverages DAS, private networks and Wi-Fi to securely power all digital use cases. By using network slicing and private 5G, Boingo ensures patient and guest communications are segmented from critical medical infrastructure.



Fortifying Safety: Commercial Airports Create Secure Digital Ecosystems

In the wake of a global pandemic and with heightened national security, airports around the world turned to tech innovations to reimagine the passenger experience, improve operational efficiencies and enforce stringent security and safety protocols. The 45+ major airports that Boingo supports with wireless infrastructure rolled out vital programs such as advanced security cameras for people monitoring, biometric checkpoints for enhanced security, smart baggage tracking to minimize lost luggage and predictive maintenance monitoring for vehicles operating on the airport apron.

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World-class enterprises choose Boingo

Boingo has pioneered wireless innovation for more than 20 years. From 5G to Wi-Fi 7, Boingo distinguishes itself by being the first to deploy new groundbreaking technologies. The nation's busiest transportation hubs, high-trafficked airports, cutting-edge sports and entertainment venues and iconic commercial properties choose Boingo for its converged, neutral host 5G, Wi-Fi, DAS, private network, tower and small cell solutions.



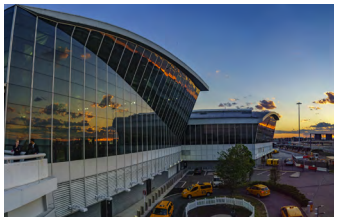
O'Hare International Airport



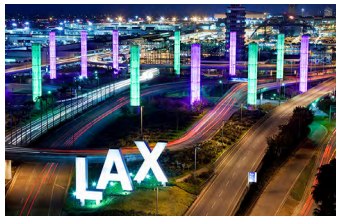
World Trade Center Oculus



Salesforce Transit Center



JFK International Airport



LAX International Airport



Live Nation



Delta Center



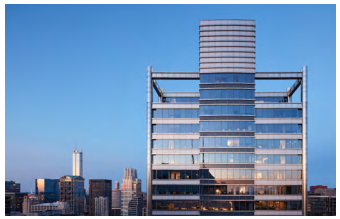
State Farm Arena



Hollywood Bowl



Soldier Field



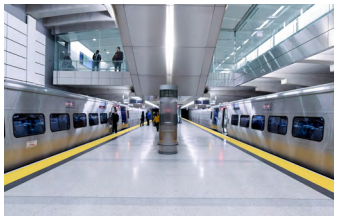
One North Wacker



State Farm Corporate HQ



Lincoln & Holland Tunnels



Grand Central Madison



Rockefeller Center

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Boingo serves bases worldwide

At more than 85 bases and growing, Boingo delivers tailor-made 5G and Wi-Fi services across Army, Navy, Air Force, Marine Corps and Homeland Security Training Center locations worldwide. Whether it's wired or wireless, Wi-Fi or cellular, one building or an entire base, Boingo provides a custom connectivity solution.

UNITED STATES

Albany
Barksdale AFB
Barstow
Beale AFB
Beaufort
Bridgeport
Camp Atterbury
Camp Elmore
Camp Ethan Allen
Camp Foster
Camp Lejeune
Camp Parks
Camp Pendleton
Camp Smith
Cannon AFB
Cherry Point
Davis-Monthan AFB
Dyess AFB
Ellsworth AFB
FLETC Artesia
FLETC Charleston
FLETC Glynco
Fort Belvoir
Fort Bliss
Fort Campbell
Fort Carson
Fort Cavazos
Fort Cavazos North
Fort Devens
Fort Drum
Fort Eisenhower
Fort Eustis
Fort Gregg-Adams
Fort Huachuca
Fort Hunter Liggett
Fort Irwin
Fort Jackson
Fort Johnson
Fort Knox
Fort Leonard Wood
Fort Liberty
Fort Moore
Fort Novosel
Fort Riley
Fort Sill
Fort Stewart
Goodfellow AFB
Hawaii Kaneohe
Hawaii Pu'Uloa
Hunter Army Airfield
JBLM Fort Lewis
JBLM McChord AFB
JBSA Ft. Sam Houston
JBSA Lackland
Keesler AFB
Little Rock AFB
Marine Barracks D.C.
MCB Quantico
McGregor Range
Miramar
Mountain Home AFB
Muscatatuck
Nellis AFB
MCRD Parris Island
Presidio of Monterey
MCRD San Diego
Sheppard AFB
Tinker AFB
Travis AFB
Twentynine Palms
United States Air Force Academy
Whiteman AFB
WPNSTA Yorktown
Yakima
Yuma

JAPAN

Camp Fuji
Iwakuni

OKINAWA
Camp Gonsalves
Camp Schwab
Camp Hansen
Camp Courtney
Fort Buckner
Camp Lester
Camp Kinser
Futenma

S. KOREA

Camp Mujuk

GERMANY

Armed Forces Recreation Center Edelweiss Lodge and Resort

Did you know?
Boingo can deploy highly secure DAS, tower, small cell, private 5G and Wi-Fi technology anywhere in the world, leveraging existing contracts with AAFES and MCCS for rapid installation.

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Your on-base connectivity expert

Boingo's network solutions meet national security needs, serve the unique demands of each military branch and their mission, and support the daily lives of those who wear the uniform. We work with bases locally and around the globe.

DESIGNED. DEPLOYED. DELIVERED.

SECURE NETWORKS: Security solutions that meet DOD risk management requirements, cybersecurity policies and NIST 800-171 standards with a fully compliant security operations center. Boingo experts help spot anomalous events, characterize attacks, respond and recover rapidly.

FULL-SERVICE: End-to-end partner, including network design, project management, construction and maintenance for Wi-Fi, cellular towers, DAS, small cells and private 5G solutions.

24/7/365 SUPPORT: Support via a state-of-the-art Network Operations Center and award-winning customer care.

SPECIAL EVENTS: Base community events to celebrate service members and their families.

VETERAN & MILITARY SPOUSE TEAM: Boingo is a four-time HIRE Vets Gold Medallion award winner for hiring, training and promoting Veteran talent.

FINANCIALLY INVESTED: Boingo funds network builds and a portion of earnings is reinvested into on-base quality of life programs.



Boingo's military Veterans bring experience, insights and a commitment to mission success that benefit each network deployment.

Let's get started
Email Boingo at **sales@boingo.com**

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#WirelessSimplified

Boingo Wireless, Inc. simplifies complex wireless challenges to connect people, operations and things. We design, build and manage converged, neutral host public and private networks at major venues around the world. Boingo's vast footprint of distributed antenna systems (DAS), Wi-Fi, small cells and macro towers securely powers innovation and connectivity in airports, transit stations, stadiums, military bases, hospitals, commercial properties and enterprises worldwide. Learn more at boingo.com. © 2024 Boingo Wireless

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