Tecore networks

Scalable Mobile Networks

For Emerging Operators & Rapid Deployment

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About Tecore

Since 1991, Tecore has been designing, developing, and delivering scalable wireless infrastructure solutions to the commercial, government, and military markets. The company has a proven track record of performance and evolution driven by its innovative software defined approach.

Tecore's technology foundation is the iCore®, a software defined All-IP core network that has been proven in deployments around the world. The key to the iCore's success is a scalable software architecture that maintains industry compliance delivering the feature set and functionality of much larger commercial systems. The effectiveness of the architecture and design has allowed the product to maintain commercial relevance in the wireless infrastructure space for over 20 years. Additionally, the iCore Core Network is an Access Network agnostic having already integrated with over forty base stations and access nodes, including multiple tier one vendor's access equipment supporting the latest 3G and 4G architectures.

When the industry ushers the fifth generation of wireless, Tecore Networks will be there with a comprehensive upgrade continuing the proven product evolution path across multiple generations and technologies.

Technology Vision

Tecore's technology vision is based on two fundamental and revolutionary trends in communications. Software flexibility and scalability are the key to providing robust solutions for the wide range of wireless applications. Additionally, today's solutions must be ready to embrace the rapid evolution of IP based network architectures, policies, and security methods. With wireless as the predominant choice around the world for communications, Tecore stands ready to deliver targeted solutions that bring secure broadband service to the edge.

Our Software Defined All-IP solutions deliver an unprecedented level of functionality, such as:

- Supporting multiple technologies including: **4G LTE, HSPA/HSPA+, WCDMA, GSM,** and **CDMA,** in a single network
- Integrating **multiple network components** on a **feature-rich platform** in a single system solution
- **Evolving security capabilities** and policies that mitigate the ever growing threats of cyber-attacks
- Delivering **innovative new services** that facilitate market differentiation and **targeted functionality** to meet the requirements of the application
- Scalability from single site all in one networks to countrywide deployments leveraging **cloud-based infrastructure**

Tecore Value Proposition

- Multi-technology software defined core and access segments of the network
- Compact integrated design to minimize space and power requirements, installation time, and total cost of ownership
- Scalability to cloud-based virtualized infrastructure
- Value-added features to increase ARPU and retention
- Leveraging unique network architectures to deliver broadband access to the edge
- Patented, IP-based platforms enabling convergence of multiple protocols
- ISO 9001:2008 certified
- Made in the U.S.A.

The Path to LTE

In concert with global rollout and growth of 4G LTE, Tecore has incorporated the key technology elements and additions to the existing system architecture providing LTE support today. Building on the IP-ability inherent in the system architecture, the additional interfaces and functions required by the LTE specifications are integrated and normalized into the existing multi-technology support. For existing Tecore customers, LTE is a mere software upgrade away.

While the majority of the LTE community remains focused on large networks and applications, Tecore, while following the same technology path, provides a solution that is sized, optimized, and designed for use in Tier 2/3 markets, specialized applications, and multi-technology overlays.

With the award winning iCore providing the baseline solution, Tecore has incorporated support for the key components of the Evolved Packet Core (EPC), as well as required product extensions of the Home Subscriber Server (HSS), to support the requirements of LTE services. These components are key in the management of IP connectivity and access to the IMS infrastructure.

The software defined capabilities of the iCore platform, which support the full generational scope of wireless, also support connectivity to standard eNodeB's for access as defined in 3GPP specifications.

As with other components of the iCore, the scalability of the LTE solution matches the model of the existing circuit and packet switching capabilities in providing a complete feature set in a smaller scalable package. Uniquely designed for networks from 100 to 100,000 subscribers, the proven software defined architecture of the iCore platform implements a compliant solution sized for scalable networks.

4G LTE, 3G HSPA/HSPA+, and 2G GSM/CDMA Multi-Technology Core Network

iCore is the world's first complete, multi-technology mobile core network available in three distinct implementations targeted at commercial, private, government, military, and OEM market segments.

This platform delivers one or multiple core network subsystems for LTE, WCDMA, HSPA/HSPA+, GSM and CDMA, enabling support for the most widely deployed mobile technologies in a broad range of applications and deployment scenarios. The common set of object code implements support for all protocols from a single converged platform. Utilizing a carrier-grade, high-availability Linux platform, the next-generation iCore provides a solution for million-subscriber markets as well as distributed scalability across any-sized market. With integrated media gateway capabilities and a choice of standalone or distributed architectures, the system offers an efficient path to convergent wireless technologies and a competitive technology road map for tomorrow's markets. The optional integrated RNC enables operators to manage RAN from multiple technologies or vendors simultaneously.

iCore leverages Tecore's track record of deploying GSM, CDMA, 3G, and multi-protocol networks around the globe, as well as its patented software-defined architecture guided by 3GPP/3GPP2 and industry standards, to deliver a comprehensive, converged mobile platform. Figure 1 references the Multi-Technology Network Architecture.

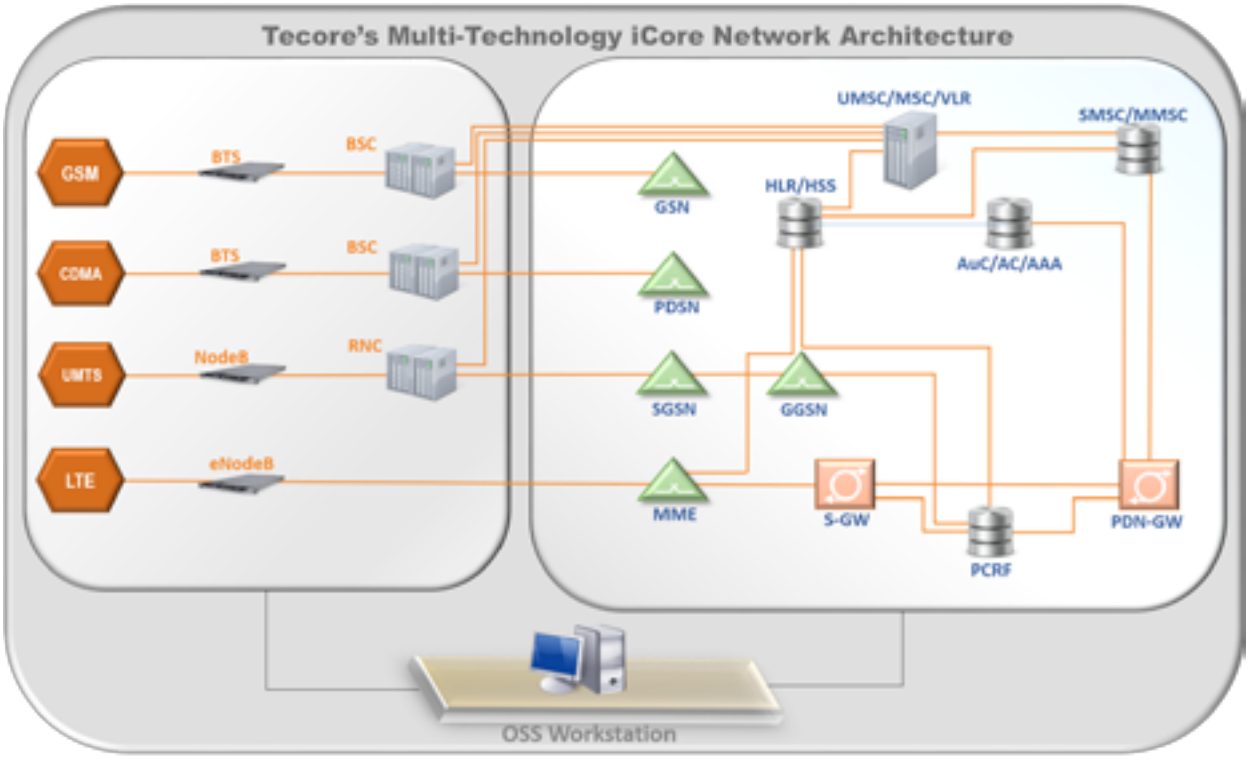


Figure 1:
Multi-Technology
Network Architecture

Core Products

iCore Software Defined Core Network

The iCore Software Defined Core Network is the baseline for a family of solutions that deliver cost-efficient carrier-grade options to a wide range of markets worldwide. The iCore can be deployed supporting the latest 4G LTE technology, but also provide the bridge from previous generations of technology including: 3G, HSPA/HSPA+, 2G GSM, and 2G CDMA from a common baseline.

The Key Attributes of the iCore are:

- Patented processing of multiple technologies and protocols including LTE, HSPA/HSPA+, GSM, and CDMA on a single platform
- Integration of multiple network elements and value-added features in a single chassis with scalability to cloud based virtualized architectures
- IP-based, software-driven architecture built on a carrier-grade Linux platform
- Built to be profitable for as few as 100 subscribers, and scalable to a million subscribers

The iCore includes all of the core network components in a single compact solution delivering value-added features and services for smaller operators.

Benefits & Features

- Dramatically reduced space and power requirements, installation time, operational complexity, and cost of ownership
- Increased functionality and revenue opportunities through a software-driven feature set
- Product line evolution enables operators to future-proof networks through incremental upgrades

IP Multimedia Subsystem (IMS)

The Tecore IMS solution offers a software based compliant implementation that builds on the award winning multi-technology support of the iCore platform. As commercial networks evolve from fallback technologies into an LTE only infrastructure, IMS plays a defining role in the delivery of services to the end user. Tecore's approach to IMS provides a flexible stepwise method for incorporation of Rich Communication Services into the network. Realizing that IMS has different applications from one operator to the next, the software defined approach provides the flexibility to incorporate IMS capability internal to the network, or optionally support the requisite industry standard interfaces allowing incorporation of third party IMS systems.

By leveraging the SIP based capabilities inherent in the iCore and extending the implementation to include compliant Call Session Control Function (CSCF), and DIAMETER based Home Subscriber Server (HSS) capabilities, the addition of IMS to the iCore architecture is a software upgrade away. When combined with the All-IP multi-generational support of the iCore platform including 4G LTE, 4G HSPA/HSPA+, 3G, as well as 2G technology, Tecore's iCore IMS is the next logical step in the evolution of the network.

With Tecore IMS, operators can leverage next generation technology benefits including:

- Common platform to support multi-media services
- Enhanced QoS management
- Multiple charging options
- Consistent delivery of services across networks and technologies

Tecore's IMS is available on all of the iCore hardware platforms including the Network-in-a-Box and the MVP series.

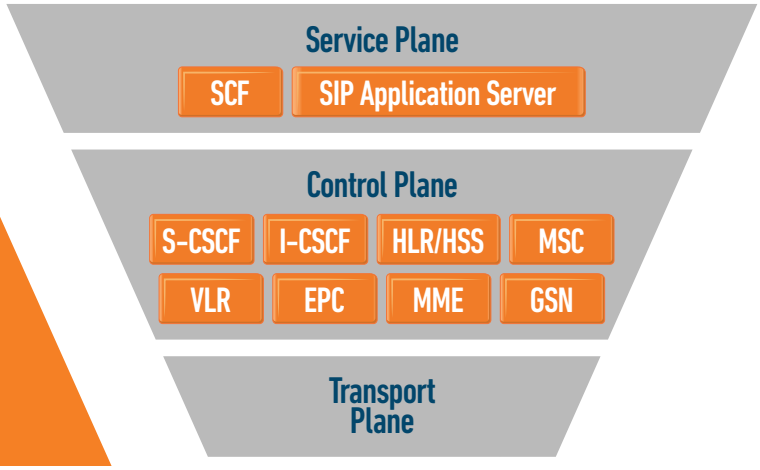
iCore Product Evolution

The software strategy of the iCore is centered on software defined multi-generation industry compliant components providing upgrade paths to augment existing systems with a new technology and/or capability. When the introductions of the next generation of technology are required, the iCore provides the requisite upgrade path to augment the network.

Figure 2:

The iCore's Software Defined evolution maps existing elements to their IMS counterparts, while preserving support for legacy network platforms.

In this way, Tecore offers a unique value proposition of interworking between existing mobile technologies and IMS oriented architectures.



Core Solutions

Mobility Virtualized Platform (MVP)®

iCore® in the Cloud

Tecore's Mobility Virtualized Platform (MVP)® delivers scalability and Cloud capability to the iCore family of products. With the MVP platform providing the consolidation of resources across multiple servers into a common pool, the virtualization package is able to partition resources into multiple virtual machines (VM) and provide the CPU, memory, and storage required in an encapsulated VM environment. The MVP provides a highly reliable platform that is expandable in processing capabilities and resource pools that can adjust as the network grows. This provides an upward scalability for the iCore suite of Core Network elements that was not possible on previous hardware platforms. The MVP platform leverages commercial off-the-shelf hardware and virtualization technology to create a flexible environment for the iCore Applications Suite. Ultimately, this translates into the most flexible Cloud based Core Network in the industry and future protection of CAPEX investment as the network grows. Tecore's MVP architecture provides the customer with the following attributes:

- **Hardware Independence**—Virtual machines are completely independent from their underlying physical hardware, which increases the availability of hardware and applications for improved business continuity
- **Compatibility**—Virtual machines are completely compatible with all standard next generation Intel processors, applications, and device drivers, so you can use a virtual machine to run all applications that you would run on a server based computing platform
- **Isolation**—While virtual machines can share the physical resources of a single computer, they remain completely isolated from each other as if they were separate physical machines
- **Encapsulation**—A virtual machine is essentially a software container that bundles or "encapsulates" a complete set of virtual hardware resources, as well as an operating system and all its applications, inside a software package. Encapsulation makes virtual machines incredibly portable and easy to manage.

Benefits & Features

- Full support for the iCore software defined core network product suite
- Processing scalability supporting 1,000 to 1,000,000 subscribers
- Scalable from 500 to 50,000 sessions
- Third party application support
- Multi-server architecture
- Geo-redundancy options

RAVEN™

Broadband Wireless Communications for the First Tactical Mile

Tecore's RAVEN™ Platform delivers macro 3G/4G wireless service for rapidly deployable communications to military, government, and first responders. The RAVEN leverages a size optimized, All-IP based architecture, delivering the most compact, adaptable, and cost effective rapid response tactical platform. The highly portable mobile platform is small enough to qualify as carry-on luggage on most airlines.

The robust capability set, compact form factor, and cost-effectiveness of the RAVEN enables a broad range of deployment scenarios for tactical deployment, emergency management, armed forces or peacekeeping missions, and mobile communications networks in transit. The RAVEN is delivered in a size optimized package measuring at approximately 2 cubic feet.

Capabilities

Each RAVEN system provides standard 3G/4G compliant voice, text, MMS, and megabit Internet services for local users as a standalone system or as part of a larger communications network. Multiple RAVEN locations can be networked together to provide end users with ubiquitous access from site to site, as well as accessing international voice calling services, the Internet, and social media locally or through a centralized gateway.

Optionally, the RAVEN supports locally controlled push to talk (PTT) capabilities. Critical in many emergency and rapid response situations, PTT is a key communications component, requisite for first responders. Several RAVEN systems can network together via IP, thus expanding the footprint and coverage of the system. This networking can be configured to occur dynamically and adjust as the network configuration changes.

Communications Security

Establishing a "Bring Your Own Device" (BYOD) environment within the government and military, requires additional security and protection to handle cyber-attacks as well as maintain information assurance. With the RAVEN, BYOD is simplified and secured by allowing users to "Bring Your Own Network" (BYON) as well. With control of the wireless network and device, secured communications can extend out to the first tactical mile, avoiding the risk of traversing unsecured networks. Enabling multiple levels of encrypted communications, the RAVEN supports integrated security enclaves that can be controlled locally or from the cloud.

Backhaul Connectivity

The RAVEN offers multiple backhaul connectivity options to securely connect between multiple locations. The integrated 3G/4G WWAN allows systems to interlink connectivity and coverage at distances up to 10km apart. Optionally, the units can be integrated with an external microwave or VSAT for the establishment of remote IP connectivity.

Benefits & Features

- All-in-one network solution, space-optimized at approximately 2 cubic feet
- Full suite of voice services, text, Internet, and multi-media messaging
- Multiple operation modes including standalone private networks, multi-site, or roaming/interconnect with commercial operator's network
- Self-Organizing Network (SON) features
- Integrated 3G/4G WWAN/WiFi backhaul
- WiFi hotspot
- Integrated GPS
- Virtualized platform support for 3rd party applications
- Interworking/connectivity with existing infrastructure
- Integrated push to talk

Network-in-a-Box®

Rural and Remote Communications

Tecore's multi-technology Network-in-a-Box (NIB)®, is the industry's first all-in-one, transportable and ready-in-minutes network solution capable of supporting WCDMA, HSPA+, and LTE in addition to GSM and CDMA. By delivering multiple access technologies and streamlining the network through an IP-based architecture the NIB provides operators with the most compact, adaptable, and cost-effective platform for deploying, extending, and evolving their networks.

Tecore has incorporated over 20 years of experience with scalable wireless systems into the design of the NIB architecture. The NIB leverages the patented iCore portfolio of 3GPP-compliant software-defined core network elements, available as a completely integrated core or as individual elements capable of supporting network scalability across multiple locations. The iNodeB delivers the 3GPP-compliant access portion of the network. The robust capability set, compact form factor, and cost-effectiveness of the NIB enable a broad range of deployment scenarios for remote and rural operators, larger operators, emergency management, armed forces or peacekeeping missions, and mobile communications networks in transit.

Benefits & Features

- All-in-one network solution, space-optimized as small as 22 cm
- Packet data support from WCDMA to HSPA+ and LTE
- Full suite of voice services, text, and multi-media messaging
- Multiple operation modes including standalone private networks, multi-site, or roaming/interconnect with commercial operator's network
- Self-organizing network (SON) features
- Interworking/connectivity with existing infrastructure such as corporate PBXs and LANs
- Localized information security including encryption of communications between users and between locations

As advanced communications proliferate worldwide, and public demand to eliminate any technology divide grows, rural and remote operators are driven to offer state-of-the-art services to their communities. Yet these providers face the challenge of significantly lower population densities in their license areas compared to their metropolitan counterparts. Lower population density translates into lower revenue per dollar of network build out. Tecore's Rural and Remote Systems provides operators with dual benefits: enhanced features to drive incremental revenue and lower build out cost when compared to large vendor offerings.

The Rural and Remote System Provides:

- A complete, compact, and cost-effective mobile network, including core and radio access components
- Capability to process multiple voice and data technologies, including 4G LTE, 3G HSPA/HSPA+, GSM, CDMA, and VoIP in multiple frequency bands
- Superior voice quality compared to alternative solutions
- Integrated value-added features to generate incremental revenue, such as Over-The-Air Prepaid Roaming to provide services directly to network visitors without roaming agreements
- Regulatory compliance features: lawful intercept, emergency calling, and number portability
- High degree of flexibility and control for the operator, such as: complete or limited mobility support to allow the operator to deploy either regional or localized mobility commensurate with the business model and license specifications and zone billing
- Capability for tailored service and rating structures

Tecore's innovative product portfolio goes further to help rural and remote operators address build out and cost challenges unique to their environments:

- Network interfaces including TDM and IP provide a wide choice of connectivity and backhaul options including satellite
- Extended-range base stations reduce the amount of infrastructure required, better matching the population density being served

Access Products

LTE eNodeB

As the 4G LTE footprint spreads toward global coverage, the requirement for deployment flexibility of the network is not just a demand, it is a requirement. To address the market's needs, Tecore offers a full range of eNodeB LTE base stations ranging from high capacity macro to a full suite of small cell configurations that deliver LTE capability in the size, weight, and power required for the application. Tecore's eNodeB's integrate seamlessly with Tecore's 4G LTE Evolved Packet Core (EPC) over an All-IP packet data network providing a complete LTE network solution for commercial, government, and military applications.

Benefits & Features

- 3GPP Release 8/9 compliant, upgradeable to Release 10
- Support for all commercially deployed bands
- Macro version includes high power configuration for outdoor networks
- Macro design leverages separate Base Band Unit and Remote Radio Head providing flexibility in deployment options
- Scalable small cell includes low power configuration for in-building applications and is for ultra-compact, rapidly deployable or ad hoc communication systems
- Integrated design delivers a small footprint optimized for ease of installation and integration
- Complete end-to-end management solution with a total lower cost of ownership
- Enhanced modulation techniques and scalable bandwidth options

iNodeB™ WCDMA/HSPA/HSPA+ NodeB

Smartphone and multimedia applications are driving the market for mobile broadband services, helping carriers to grow revenue while putting networks to the test. Tecore offers rural, government, and specialized network operators a powerful WCDMA/HSPA/HSPA+ NodeB with dramatically reduced footprint through an All-IP connectivity, allowing operators to extend the edges of their networks, growing subscribers subsequently increasing ARPU.

The iNodeB can be integrated with Tecore's multi-technology, multi-generation iCore in the industry's smallest complete mobile broadband Network-in-a-Box. This platform has the capability to support revenue-generating commercial networks, mission-critical man-portable systems, onboard systems for land/sea/air transports, and private in-building networks.

Benefits & Features

- Compliant with 3GPP Rel. 7/8
- Data rates up to HSPA+ 21/3.5
- Support for all commercially deployed bands
- Macro version includes high power configuration for outdoor networks
- Scalable small cell includes low power configuration for in-building applications and is for ultra-compact, rapidly deployable or ad hoc communication systems
- Small footprint provides for ease of installation and integration
- Complete end-to-end management solution with a total lower cost of ownership
- Enhanced modulation techniques and scalable bandwidth options
- End-to-End IP transmission enables more connectivity options, greater control of backhaul costs and ubiquitous deployments
- Compact size and enclosure allow flexibility in installation, including mounting on a wall or in a standard 19" telecommunications rack

GSM Radio Access Network (RAN)

Tecore's high capacity long range GSM RAN has powered mobile networks around the world. This platform has been enhanced with an array of features designed to increase capacity and coverage, and even facilitate RAN sharing among multiple operators, to deliver powerful services at the lowest cost of deployment. The iBSS GSM Super-Capacity RAN is designed specifically for fast deployment and cost-effective capacity and coverage for voice and data. With the unparalleled combination of spectrum-saving vocoders, frequency hopping, support of 16 carriers/TRXs, and quad-band operation, operators can achieve maximum capacity for their licenses. This RAN eliminates the costly and cumbersome equipment and installation challenges associated with traditional systems, combining the BTS, BSC, and optional vocoding into a single unit. This unique compact outdoor RAN architecture is suitable for providers of all sizes, starting with new license networks serving basic voice to thousands of subscribers, and scaling to support high-capacity networks providing voice, high-speed data, and advanced applications.

Benefits & Features

- Quad-Band GSM/GPRS/EDGE RAN
- Multiple carriers (TRXs)
- Peer-to-peer IP switching (tandem-free operation)
- End-to-end IP backhaul
- AMR vocoding
- Compact outdoor enclosure
- Macro output power and coverage

The iBSS platform is also available in a size optimized rack mount configuration. Supporting up to 8 total TRXs, this compact All-IP design delivers compliant GSM/GPRS/EDGE service with macro coverage from a 5U platform. The iBSS is ideal for remote isolated network locations, tactical applications, and rapid response deployments that require macro coverage and a targeted capacity.

The iBSS can be integrated with Tecore's multi-technology, multi-generation iCore in the industry's smallest complete mobile broadband Network-in-a-Box. This platform has the capability to support revenue-generating commercial networks, mission-critical man-portable systems, onboard systems for land/sea/air transports, and private in-building networks.

New License Networks

The technology divide between developed and developing regions of the world is rapidly being addressed by mobile communications, which offer an unmatched combination of service quality, operational flexibility, and cost of ownership. This explains why mobile subscribers today number approximately, the same as wireline subscribers, even though the wireline base had nearly a century's head start. Thus, governments are making spectrum licenses available to operators to cover new regions, and those operators are turning to time-tested, standards-based technologies to deliver services.

Macro Capacity Networks for New and Existing Wireless Operators

New license wireless operators are concerned with all facets of developing their business, and there are many challenges. Defining the target subscriber market, building the operation, staffing, and establishing retail channels are only a few of the challenges facing a new operator. For the task of actually designing and deploying the mobile network, operators need a partner they can trust that will bring the right mix of technology and services together to deliver a rapid, cost-effective, and scalable mobile network upon which to build their business.

Tecore has significant experience in deploying numerous greenfield wireless networks for new license operators throughout the world, from single city applications, to Wireless Local Loop, to nationwide coverage. Tecore's team can leverage this experience to help new license operators in the planning, deployment, and service launch of their business. From network design to deployment planning, and project management to subscriber equipment selection, and integration, Tecore can help you through the time-critical planning and implementation cycles with quick time to service and cost efficiency as primary goals.

End-to-End Solutions

Tecore's Professional Services team will work with you through the entire life cycle of the deployment project, starting with planning and design, through development and deployment, and into commercial operation. The services include project management, network engineering, systems integration, deployment services, training, and support, including a remote Network Operations Center if required by the operator.

Tecore's differentiator in this space is the iCore, providing both the robustness of commercial deployments while leveraging the flexibility of a purpose-built technology. The iCore Core Network is based on a patented software defined architecture that has been recognized on the world stage by industry for innovation and technology leadership. The application of the iCore to the military environment leverages the commercial reliability and feature set, while maintaining the flexibility of being able to adjust to changing requirements.

Specialized Mobile Networks

Tecore's IP-based architecture and turnkey solution set – feature-rich yet flexible, modular yet scalable – can be adapted to a wide range of new network environments. In addition to the proven solutions described earlier, we continually address more specialized applications.

Public Safety

As the United States leads the way to the next generation of public safety infrastructure, the deployment of LTE for first responders will provide game changing technology. The unique requirements spanning from custom feature sets to flexibility in deployment configurations pose significant challenges. Tecore stands ready with its full scope of deployment platforms to address the unique requirements and configurations to address the needs of today's first responders.

Tactical Deployments

For tactical solutions, Tecore's Network-in-a-Box technology can deliver full functionality at the tactical edge. Whether interconnected to the FirstNet infrastructure or operating as an island of coverage in the middle of a disaster, the 4G NIB platform allows the system to adjust to the situation. The NIB can be delivered in a standard rack mounted package or in the size optimized footprint of the RAVEN. Both platforms support additional measures for secured communications. This added element of protection from cyber-attacks is a key component for solutions at the edge of a disaster or rapid response situation.

Government

Today's government and military infrastructures are moving to incorporate commercial wireless technology into their communications backbone. While the lure of COTS technology is tempting, the need to provide secure reliable communications on dedicated infrastructure is vital to the successful incorporation of the technology into everyday operations.

With the ever present threat of cyber-attack, Tecore delivers proven countermeasures and technology solutions that implement the security profiles and capabilities necessary to meet and exceed the requirements to bring smart phone technology to the government and military environment. Whether communicating from a central command or extending an operation from a FOB to a forward position, the full suite of tactical and transportable technology solutions from Tecore can be seamlessly integrated into the approved security enclave.

For government users, Tecore solutions provide local private network services that enable secured government communications, while providing control over devices that are used within the footprint of the government facility.

As the modern day military moves to next generation communications on the battlefield, the situational awareness enabled by delivering secured data and applications to the edge of the battlefield saves lives. Tecore's Network-in-a-Box technology and RAVEN platform are proven solutions that deliver end-to-end secured wireless connectivity to the edge.

Lab Systems for Network Testing and Validation

Mobile operators, governments, and integrators need to have systems that allow them to test their wireless networks in a lab environment. The systems need to support all of the latest commercial standard protocols and interoperability, but must also be compact, easy to install and configure, and cost-effective without sacrificing features and functionality. Tecore's lab systems can be configured in a modular manner from our core and radio access network products to create the precise test bed required. These systems also have built-in interfaces for IN or IMS services that allow an operator or integrator to test their application servers in a real network environment. The systems simplify the task of testing wireless elements, including radio access network products, mobile core network elements, and application servers before deploying new services or products in a live network. Tecore lab systems are available in a variety of hardware platforms, and feature a complete suite of management and administration functions.

Intelligent Network Access Controller (iNAC)™

Managed Access

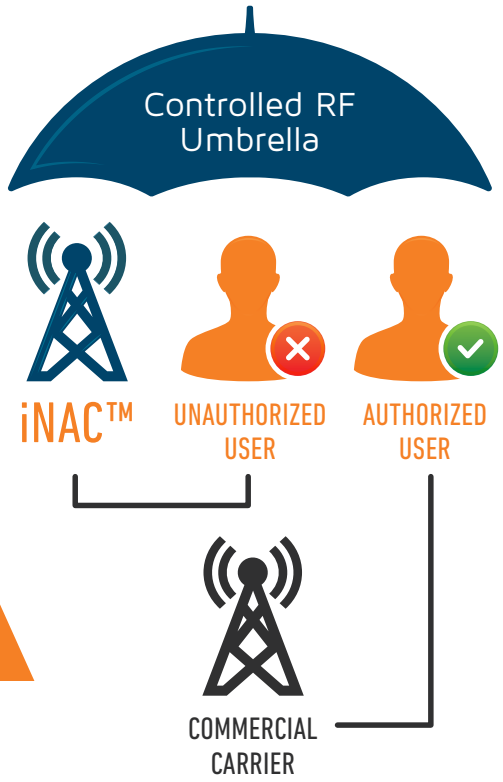
While carriers have built out more coverage and capacity to address requirements in their spectrum licenses, little has been done to carve out the restricted areas and provide a method of limiting service. Tecore has addressed the need to only allow permitted devices to use the wireless service in the target area. Secure communications has a variety of applications including, but not limited to, correctional facilities, military deployments, embassies, and secure government buildings.

The iNAC Managed Access system has revolutionized the industry with a patented solution for controlling contraband cell phones. The epidemic of contraband cell phones in correctional facilities today presents not just a local security risk but a threat to national security. It was not until Tecore delivered iNAC as an effective countermeasure that the corrections community had a solution that delivered the comprehensive operational capability to address the problem. Proven in both urban and rural installations, a contraband device is rendered useless from its first attempt when iNAC is installed. The end result is effective control of the communications environment within the facility.

The patented iNAC provides an end-to-end solution for selective communications restriction across the spectrum of technology, frequency, and portability in a single platform. Users are classified into categories and either allowed to access the commercial network or prohibited access on a device-by-device basis. The iNAC automatically sends authorized communication attempts to the intended commercial carrier, while capturing and blocking unauthorized communication attempts from contraband devices. This meets the requirements of service restriction, while continuing to allow access to select individuals. Further, this approach eliminates the need to overlay additional systems to provide localized communications.

Benefits & Features

- Prevents calls, texts, and Internet access
- Support for lawful intercept and E911
- Option to receive iNAC as a centralized managed service
- Allows administrators cell phone use
- Robust physical security measures including minimal physical points of presence when operated on-site; less staff involved than detection methods
- Effective across all common carriers and technologies
- Building on over 20 years of wireless innovation



LiTECore®

Making ManPack Communications a Reality

In times where the government and military are focused on cost savings, multi-purpose solutions can deliver capability that maximize value and deliver on multiple mission requirements. With LiTECore® the application of specialized communications equipment across a wide breadth of military operations is an ideal solution. Specifically with systems that enable communications for the war fighter, flexibility to deliver the targeted capabilities in the proper operational context is a requirement. With a target on flexibility and agility to support tactical next generation communications for the war fighter, the LiTECore delivers 4G functionality in a military package. Through the LiTECore's credit card sided module, soldiers can "plug their mission" into man-pack radio equipment's providing 3G, 4G LTE, or 4G HSPA+. Once deployed, the LiTECore man-pack provides a coverage umbrella for a squad enabling the communications capabilities for voice, text, and packet data with the appropriate encryption, security, and access restriction as required. Whether connected through to the forward operating base or isolated as a standalone island of coverage, the LiTECore supports multiple modes of dismounted operation.

Benefits & Features

- World's smallest 3G/4G core network
- Pluggable/transportable
- Low power draw (as low as 3.5 W)
- Scalable capacity from 5 to 100 users
- 3GPP compliant solution

Smaller than a Smart Phone

Professional Services

Tecore Networks compliments its broad networking product portfolio with state-of-the-art professional services, delivering true end-to-end solutions. Our professional services team can provide knowledgeable, experienced personnel dedicated to a successful implementation.

Program Management

- Coordinate project planning and execution
- Provide budgets and progress reports
- Perform site survey and equipment engineering services
- Support the equipment procurement process

Network Engineering

- Assess requirements based on traffic models, coverage areas, regional regulations, and other factors
- Develop network architecture, topology and design for radio access and core segments

Integration Services

- Provide access to Tecore's Integration Lab
- Address third-party product integration and interfacing requirements
- Customize features such as announcement recording, airtime billing, special trunk signaling, and configurations

Deployment Services

- Assist in implementation of client database and applications
- Install and configure network components
- Support equipment deployment logistics
- Verify connectivity and configuration of equipment
- Supply on-site training and documentation post-installation
- Provide 24 hours x 365 days proactive performance monitoring at state-of-the-art Customer Response Center (CRC)

Products at a Glance

Software Defined Core Network

- Evolved Packet Core (EPC)
- Mobile Switching Center
- Mobility Management Entity
- Serving GPRS Support Node/ Gateway GPRS Support Node
- Visitor Location Register
- Home Location Register/Home Subscriber Server
- Authentication Center/Authentication Authorization and Accounting
- Short/Multimedia Message Service Center
- International Gateway
- Signaling Gateway
- Serving Gateway/Packet Data Node Gateway
- IMS Gateway (CSCF)
- Policy and Charging Rules Function
- Service Control Function/SIP Application Server

iCore Radio Access Products

- LTE
- HSPA+
- HSPA
- UMTS/WCDMA
- GSM
- CDMA

Frequency Band

- Comprehensive coverage of all commercial frequency bands

Customizable Configurations

- Rapid Response
- Tactical Transportable
- Private Networks
- Disaster Recovery
- Military Core Communications
- Monitoring and Control (Governmental, Prisons)

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ISO 9001:2008 Certified

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