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MOTOROLA SOLUTIONS RECEIVES THE 2023 TECHNOLOGY INNOVATION LEADERSHIP AWARD

Identified as best in class in the North American next generation core services industry

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Motorola Solutions excels in many of the criteria in the NGCS space.

AWARD CRITERIA	
Technology Leverage	Business Impact
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Commitment to Innovation & Creativity

NG9-1-1 represents an industry transformation that proactively enhances public safety by acknowledging and catering to the rapidly evolving demands, products, lifestyles, and technologies of citizens. In contrast to the legacy voice-centric enhanced 9-1-1 (E9-1-1) network, NG9-1-1 supports a more diverse set of

"There is currently an educational gap among many 9-1-1 administrators on the foundational technical requirements for NENA i3 standards, features, and functionality. Motorola Solutions provides call routing based on the NENA i3 functional elements and has been a pioneer in enabling i3 location-based routing for all call types."

- Brent Iadarola Vice President, Frost & Sullivan internet protocol (IP)-based communications that will enhance the speed, accuracy, and preparation of first responders. More specifically, NG9-1-1 introduces an array of innovative features and functionality that will significantly expand public safety capabilities and allow end users to efficiently relay text, data, video, and IP-based voice calls in emergency situations.

Standards bodies such as National Emergency Number Association (NENA) and Association of Public Safety Communications Officials (APCO) have driven NG9-1-1 standards development, training, education, and advocacy. NENA developed and ratified formal standards

and guidelines to provide agencies with a roadmap for NG9-1-1 that includes defined functional elements

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and call flows. The NENA i3v3 standard details the infrastructure, interfaces, transitional and core elements designed to provide the foundation of the NG9-1-1 architecture. Importantly, this includes the application of location-based routing.

Exhibit 1: The Evolution of Traditional 9-1-1 to Next Generation 9-1-1 (NG9-1-1)

		Traditional 911	NG911
1	Network Technology	Traditional analog, circuit-switched technology designed to support landline 911	Managed emergency services IP networks (ESInets) support IP based communications exchanges
2	Call	Legacy selective-router-based 9-1-1 networks; static emergency service numbers (ESNs)	i3 compliant next gen core services (NGCS) intelligently obtain, manage, control, store, validate, and route IP-based data to the appropriate PSAP
3	Call Handling Equipment (CHE)	Legacy call handling equipment not capable of handling texts, photos, video, SIP, or i3-based calls	i3 compliant IP-based call handling user interfaces, connectivity to the ESInet, and enhanced functional elements for voice and data
4	Geographical Information Systems (GIS)	9-1-1 calls mapped based on static addresses, street name, and city information stored in the master street address guide (MSAG)	Location validation function (LVF) validates address locations; emergency call routing function (ECRF) leverages GIS data to dynamically route calls to the correct PSAP
5	PSAP Operational Solutions	Siloed solutions without robust analytics; limited incident intelligence from supplemental connected data sources	Cloud-based, integrated operational solutions leveraging Al/ML for CAD, RMS, incident, and recording applications; integration of supplemental data sources
Traditional 911		Traditional 911	NG911

Source: Frost & Sullivan

Next Generation Core Services (NGCS) are the technologies and services that intelligently obtain, manage, control, store, validate, and route IP-based data and processes in the NG9-1-1 services-oriented architecture. NGCS contracts can generally be categorized into three distinct groupings: 1) NENA compliant NGCS with i3 standards, features, and functionality; 2) deployments with RFAI transitional elements only; 3) IPSR which provides no transitional elements, geospatial routing, or ability to support i3 features and functionality.

Frost & Sullivan research indicates there is currently an educational/awareness gap among many 9-1-1 administrators on the foundational requirements for NENA i3 NGCS standards, features, and functionality. Before the i3 standard was formally approved, the Alliance for Telecommunications Industry Solutions (ATIS) introduced the RFAI, an interim protocol endorsed by NENA as a transitional specification that agencies could use to begin their transition to an IP platform. The ATIS RFAI standard was intended to provide an alternative to the NENA i3 transitional elements. RFAI is a proprietary IP routing approach that does not fulfill NENA i3 NGCS standards.

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NENA's NG9-1-1 standards-based architecture includes defined functional elements & call flows as outlined in Exhibit 2.



Exhibit 1: Overview of an i3-compliant NGCS System with Location-based Call Routing

Motorola Solutions' Next Generation Core Services (NGCS) portfolio is a comprehensive solution that provides Public Safety Answering Points (PSAPs) with the key elements and competitive requirements of

"The routing of 9-1-1 calls to the correct PSAP using NGCS (known as i3 location-based call routing) is an essential element in a successful NG911 system. Motorola Solution's next generation call routing functionality has demonstrated a tangible reduction in the number of mis-routed calls, as well as an improvement to the average response times of first responders during emergency events."

- Brent Iadarola Vice President, Frost & Sullivan

an i3 standards compliant NGCS solution. With the acquisition of 911 Datamaster in 2021, Motorola Solutions now provides inhouse NENA i3 NGCS core elements including ECRF, LDB, LVF and Spatial Interface. Motorola Solutions was, in fact, one of the first U.S NG9-1-1 providers to enable location-based routing for all call types.

smartphone

exceeding 90% in the U.S., Frost & Sullivan estimates that nearly 85% of 9-1-1 calls now originate from a mobile device. Ultimately, the objective of a 9-1-1 call is to get the emergency response team on the scene as quickly as possible. Unfortunately, nearly 12 percent of wireless calls nationwide are misrouted¹,

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¹ Alliance for Telecommunications Industry Solutions

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requiring the PSAP to manually transfer the call to the correct emergency call center. This latency, on average, adds approximately 40 seconds to the 9-1-1 call processing time². Thus, the routing of 9-1-1 calls to the correct PSAP using NGCS (known as location-based call routing) is an essential element in a successful NG9-1-1 system. The NENA i3 architecture inherently assumes the originating service provider

"The Utah Communications Authority's 29 PSAPs field an average of 86,450 9-1-1 calls each month. Each call deserves a consistently fast response, as the caller is often hurt, scared or living in a moment where they need immediate support. Our completed statewide next generation 9-1-1 deployment has been game-changing, cutting misrouted calls in half and shaving 37.4 hours from our emergency response in the first three months of the year so our first responders reached callers much more quickly."

- Tina Mathieu, Deputy Director of the Utah Communications Authority (UCA). (OSP) will provide the location of a caller at the time the call arrives in the NGCS system for routing. However, the reality is that many U.S. OSPs have been challenged to deliver location as Presence Information Data Format-Location Object (PIDF-LO) for 9-1-1 calls. To address this industry challenge and compensate for the absence of dynamic location from the OSP, Motorola Solutions provides call routing based on the NENA i3 functional elements. Thus, PSAPs are uniquely equipped to handle the various stages and/or the

schedule of OSP technology evolution.

Importantly, Motorola Solutions' next generation call routing functionality has demonstrated a tangible reduction in the number of mis-routed calls, as well as an improvement on the average response times of first responders during emergency events. For example, the state of Utah recently indicated that Motorola Solutions' call routing technology has reduced misrouted 9-1-1 calls for public safety answering points (PSAPs) across the state of Utah by 50% year-over-year through March 2023³.

Commercialization Success & Growth Potential

There has been significant momentum in the number of state-wide NG9-1-1 awards over the last 24 months. Frost & Sullivan estimates NGCS/ESInet market penetration, based on the percentage of the United States (US) population covered by closed NG9-1-1 contracts, to grow from approximately 76.3% at year-end (YE) 2022 to approximately 96.4% by 2027. Thus, the NG9-1-1 land grab is closing rapidly. While competition remains fierce for the few remaining regions of the country not currently under contract, contesting incumbents for contract renewals will be the next key battleground to increase market share.

While contracts vary depending on state and local requirements, a typical state contract for an ESInet/NGCS system has a 5-year term, with 2 to 5 years of optional annual extensions. Frost & Sullivan indicates there is a significant percentage of NGCS/ESInet awards currently under contract that are due for renewal over the next 1-3 years that can be categorized as RFAI or Internet Protocol Selective Router (IPSR) deployments. In this environment, Frost & Sullivan believes there is a robust growth opportunity

² APCO International

³ Utah Communications Authority (UCA)

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for Motorola Solutions to capture contract renewals from incumbents by providing NGCS that are fully compliant with i3 standards, features, functionality, and provide location-based routing.

Motorola Solutions' NGCS solutions are currently deployed across North American agencies serving a population of approximately 47 million people. In 2022, Motorola secured over 5.8 million net population adds with awards for the City of Chicago (2.7 million population coverage), the City of Baltimore (570,000 population coverage), the Mid-America Regional Council of Governments (greater Kansas City), and contracts across Missouri, Texas, Florida and Utah. The company also renewed 7.7 million population in contracts, including with greater Harris County, TX. In addition to their US presence, Motorola Solutions was contracted by Telus to provide NGCS in western Canada (provinces of British Columbia, Alberta and Saskatchewan), representing population coverage of 10.39 million. In 2023, Motorola Solutions secured over 4.2 million net population adds with contracts in Tarrant County, TX and the State of New Mexico. Impressively, all Motorola Solutions existing contracts include i3v3 geospatial routing.

Conclusion

Motorola Solutions NGCS solutions empower public safety entities with the tools to trigger faster, more efficient, and precise responses during emergency events. For a commitment to technology innovation, Motorola Solutions earns Frost & Sullivan's 2023 North American Technology Innovation Leadership Award in the NGCS industry.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Leadership Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

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- Innovation Culture: Optimized Customer Experience
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The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

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- Mega Trend (MT)
- Business Model (BM)
- Technology (TE)
- Industries (IN)
- Customer (CU)
- Geographies (GE)



