

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
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Wireless Telecommunications Bureau Seeks)
Comment on Report on technical and) WT Docket No. 02-46
Operational Wireless E911 Issues)
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To: The Wireless Telecommunications Bureau

November 14, 2002

COMMENTS OF TECHNOCOM CORPORATION

TechnoCom Corporation hereby respectfully submits the following comments in response to the Commission's Public Notice, DA 02-2666, seeking comment on a Report on Technical And Operational Issues Impacting the Provision of Wireless Enhanced 911 Services by Dale N. Hatfield filed on October 15, 2002 (the "Hatfield Report") – WT Docket No. 02-46. The Public Notice indicates that the Wireless Telecommunications Bureau (WTB) is seeking to use the comments in conjunction with the Hatfield Report to assess enhanced emergence services deployment issues and consider methods to overcome any obstacles and accelerate deployment. Therefore, TechnoCom herewith offers its views on the Hatfield Report and the issues impacting the provision of wireless E911 services based on the company's unique experience base as outlined below:

TECHNOCOM'S UNIQUE EXPERIENCE/FOCUS

Overview

Since its founding in 1995, TechnoCom has provided software, systems and services that enable wireless carriers, location service providers, integrators and technology providers worldwide to implement, optimize and manage wireless location systems for E911 and commercial location services. In essence, TechnoCom's mission is to help wireless carriers and other stakeholders to deploy and operate wireless location systems as efficiently and effectively as possible through a set of products and services specifically aimed at overcoming many of the challenges identified in the Hatfield Report.

Phase II E911 Experience with 10 of the Largest Wireless Carriers in North America

TechnoCom has been working with customers that include 10 of the largest wireless carriers in North America to assist them with their Phase II E911 efforts, including technology evaluations and studies, end-to-end system design, engineering, deployment planning and testing, First Office Applications (FOA's), system deployments in early markets, full-scale deployments, interfacing with PSAPs, and the provision of software and systems to expedite such activities.

Technology, Vendor and Network Neutral

In addition to working with the vast majority of the largest domestic carriers that are actively deploying Phase II systems, TechnoCom has worked with virtually every leading location technology provider. Thus, TechnoCom has developed a wealth of experience working across all wireless networks (e.g. CDMA, GSM, iDEN, TDMA, AMPS), all

relevant frequency bands, all leading location technologies (including GPS, AGPS, EOTD, AFLT, TDOA, AOA, Cell/Sector and Signal Strength) and a wide variety of infrastructure, software, and location technology providers.

Extensive Accuracy and Performance Testing Experience

Through the years, TechnoCom has worked with numerous carriers and location technology providers in testing and evaluating the performance of their location system. Many location system accuracy and performance reports created by TechnoCom have been filed by carriers with the Commission to document field trial results. Furthermore, TechnoCom's two-tiered E911 location accuracy proposal (i.e., 67 percentile and 95 percentile accuracy specifications)¹ was adopted by the Commission and has been incorporated into its latest ruling on E911 location requirements.² In addition, TechnoCom has worked with several location technology providers to assess and benchmark accuracy and performance during development.

Software & Systems Designed to Fast Track Deployment & Simplify Operations

Through its InterOps Safeguard™ Platform ("IOSP"), TechnoCom provides software solutions initially designed to fast track the deployments of location systems for E911 and commercial location based services. This platform provides applications specifically

¹ Comments of TechnoCom Corporation filed June 17, 1999 in response to the Commission's request for targeted comment on wireless E9-1-1 Phase II Automatic Location Identification requirements (DA 99-1049) in CC Docket No. 94-102.

² FCC 99-245, released October 6, 1999, Third Report and Order in CC Docket No. 94-102, at paragraph 76.

designed to streamline and expedite location system deployment efforts, including end-to-end system interoperability testing, handset verification, subsystem verification, load testing, systems integration, PSAP interoperability verification, system calibration, and OET Bulletin 71 compliance testing. Furthermore, the platform is designed to optimize and manage these systems over time including through the automation of on-going performance assurance, compliance verification and reporting activities.

TECHNOCOM'S COMMENTS

TechnoCom has tried to group its comments into relevant sections so as to address the key points of the Hatfield Report with minimal redundancy. Thus, in some cases, the group names used by TechnoCom will not exactly match the section description or order of the Hatfield Report. These comments are intended to assist the Commission in its efforts to assess E911 service deployment issues and consider methods to overcome obstacles and accelerate deployment efforts. TechnoCom looks forward to assisting the WTB in this effort.

Advisory Committee

The Hatfield Report recommends the creation of an Advisory Committee. Citing a variety of current challenges, including the lack of end-to-end system engineering strategy, lack of plug-and-play standards and lack of neutral test-beds, the Hatfield Report recommends that the Advisory Committee create a technical framework for the necessary changes, including changes to the network elements, interfaces and data required to take advantage of improving technologies and changing requirements.

TechnoCom strongly concurs with this recommendation and would welcome the opportunity to sit on such a committee and offer its unique perspective drawn from years of experience in addressing many of the relevant issues that the committee could address. The Advisory Committee could provide significant guidance ranging from examining how the parts of the system fit together to exploring design and configuration alternatives aimed at reducing costs and/or improving performance. TechnoCom believes this would help advance the Commission's objectives to fully realize the benefits of wireless E911.

PSAP Readiness

The Hatfield Report cites the "false positive" problem where a PSAP, in good faith, certifies that it is ready to use Phase II location information only to find out that it is not ready. TechnoCom has experienced this situation first-hand on several occasions and seen how it negatively impacts deployment efforts, resulting in significant delays, higher implementation costs, and bad will among stakeholders. Thus, we strongly concur with the Hatfield Report's recommendation to create an independent third party certification program to validate PSAP readiness prior to attempting to begin integration efforts. The Hatfield Report also makes references to "a vendor who has developed equipment that, it claimed, could emulate and test a wide variety of equipment and interfaces employed in wireless E911 systems. Equipment of this type . . . could be used to verify readiness."

TechnoCom currently provides software and systems that address this issue.

TechnoCom's PSAP InterOps™ (offered through its InterOps Safeguard Platform) provides the ability to verify system readiness. To date, PSAP InterOps has been used by a variety of carriers to verify the readiness of their system prior to interfacing with live

PSAPs. This same product can be used to verify PSAP readiness by validating operation at key Emergency Services Network interface points. TechnoCom can demonstrate this functionality to interested parties and is willing to work with the Commission and the various stakeholders to develop a cost-effective readiness program that can verify PSAP readiness. Such a program and associated methods of automation would allow the limited resources of all stakeholders to be employed more effectively and economically than is currently possible through existing methods.

Lack of Well-Defined, Standardized Tests for Compliance

TechnoCom strongly concurs with the Hatfield Report's recommendation that the Commission encourage the development of an industry-wide testing and certification (and re-certification) program. TechnoCom can assist other participants to develop a standardized test methodology used to establish a common reference point(s) from which to evaluate the performance of different technologies across varied network environments. Such a test methodology will need to accommodate a variety of factors, including varied base station distances, network geometries, intra-system interference characteristics and wireless networks (e.g. CDMA, GSM, etc), multiple/hybrid location technologies, real-world environmental characteristics (e.g. dense foliage, urban canyons, etc.), statistical analysis methods, and appropriately defined performance metrics/criteria.

Plug and Play Standards

The Hatfield Report recommends that the Advisory Committee establish a framework from which standards can be further developed to promote 'plug and play' functionality

between system components, resulting in faster integration, better performance and lower deployment costs. TechnoCom supports this recommendation and can offer its extensive experience to this process as a result of working with ten of the largest carriers in North America.

Implementation/Project Management

The Hatfield Report recommends that the Commission continue to urge the creation of entities to serve as project managers to assist and coordinate deployment efforts.

TechnoCom strongly supports this recommendation that will serve to coordinate efforts between stakeholders, accelerate deployments and reduce implementation costs.

Need for End-to-End Testing

The Hatfield Report also suggests that the Advisory Committee develop recommendations concerning the longer-term need for neutral test-beds. TechnoCom strongly concurs with this suggestion. TechnoCom has seen first-hand the need for end-to-end system testing in a ‘real world’ environment. Too often, testing is limited to sub-system verification typically performed in a lab environment, resulting in unreliable findings, end-to-end system interoperability and performance problems, time delays and cost overruns. In fact, to address this need, TechnoCom – through the use of its InterOps Safeguard Platform – is offering carriers ‘real world’ end-to-end system testing solutions, including interoperability testing and handset verification. TechnoCom can draw on this experience to assist the Commission and other stakeholders in establishing a ‘real world’ neutral test-bed environment.

Other Challenges

In addition to all of the issues raised in the Hatfield Report, stakeholders need to be aware of the need for calibrating and managing the performance of these systems over time.

The Hatfield Report focuses primarily on the deployment status of E911 without referencing the need for on-going system optimization and management. If left unmanaged, location system performance will degrade over time due to a variety of factors including infrastructure changes, environmental effects, equipment degradation, etc. Thus, location systems must be maintained using a set of appropriately developed “best practices” to ensure proper ongoing performance. We encourage the Commission to consider these issues as part of the charter of the Advisory Committee proposed in the Hatfield Report.

TechnoCom hopes that these comments and suggestions will help the Commission evaluate the status of E911 and take the necessary actions to expedite Phase II service and help assure its long-term viability.

Respectfully submitted,

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