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

In the Matter of	)	
	)	
	)	
Administration of the North American Numbering Plan	)	CC Docket 99-200
	)	

PETITION OF VIXXI SOLUTIONS, INC.
FOR LIMITED WAIVER OF NUMBER ACCESS RESTRICTIONS

Vixxi Solutions, Inc. ("Vixxi"), hereby requests a limited and transitional waiver of Section 52.15(b)(2)(i) of the Commission's Rules, 47 C.F.R.§52.15(g)(2)(i), to permit it to obtain directly certain telephone-style numbers essential to its principal business of connecting 9-1-1 calls from VOIP customers to appropriate Public Safety Answering Points ("PSAPs").[1] VIXXI Solutions' major business is providing Virtual Positioning Center ("VPC") services to other VoIP services providers, cable operators, and cellular companies.

Background. Located in Irving, Texas, Vixxi offers complete enhanced 9-1-1 ("E911") solutions to VoIP providers and established carriers. These include service order processing, ALI updates, MSAG management,[2] geo-spatial lookup, call routing, and provision to the PSAP of precise location and emergency service information. In addition, VIXXI's patented hardware solutions provide a comprehensive VoIP answer for both the small and large PSAP. VIXXI's Network Operating Center ("NOC") in Richardson, Texas_and its mirrored, geographically diverse hot-standby facilities in Aurora, Colorado operate every day to serve a broad spectrum of the industry. .

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[1] *See, e.g.,* the definition of "Pseudo-ANI" at Section 9.3 of the Rules, also designated as "ESQK" in the glossary attached to the statement of the National Emergency Number Association ("NENA") at Exhibit A, hereto.

[2] ALI stands for automatic location information, MSAG for Master Street Address Guide.

When the Commission issued more than three years ago its rulemaking decision to require certain VOIP customers to have access to enhanced 9-1-1 calling, it recognized technical limitations of the time by providing for pre-registration of "nomadic" users shifting from their permanent or previously registered locations.[3] Left for a simultaneously released further notice was the question of how to deal with mobile VOIP customers whose constant changing of locations would not permit pre-registration.[4]

Vixxi's technologies have solved the problem of the mobile VOIP customer. Vixxi's solutions to emergency caller location also free the PSAP from the tie to "selective routers" in legacy telephone networks, without which the current VOIP E-9-1-1 rules do not even apply.[5] Exhibit B hereto is a summary of Vixxi capabilities which, if supplemented by direct access to Pseudo-ANIs/ESQKs, would make Vixxi's services more efficient and affordable – especially in extending the reach of enhanced 9-1-1 into those areas not served by selective routers.

Need for Waiver. Because the rule adopted in 2005, reinforced by a subsequent staff interpretation,[6] does not permit direct assignment of numbers to non-telecommunications carriers such as Vixxi, Vixxi has sought other means of securing the numbers it needs, from carriers or by applying, itself, to become a competitive local exchange carrier ("CLEC"). Either of these means is expensive, time-consuming and ultimately inefficient, as shown by the analysis at Exhibit C.

Nor is the waiver process laid out by the Commission in the SBCIS order working as promised. Despite the FCC's declared intent (¶11) – "to the extent other entities seek

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[3] FCC 05-116, released June 3, 2005, Section 9.5 of the Rules.
[4] FCC 05-116, at ¶57.
[5] Section 9.5(a).
[6] Letter of Chief, Wireline Competition Bureau, to North American Numbering Council and Pooling Administrator, September 8, 2006, at 3.

similar relief we would grant such relief to an extent comparable to what we set forth in this Order" – none of the more than 20 waiver requests submitted after the SBCIS grant has been acted upon, despite the lapse of more than three and one-half years in some cases. Moreover, there is no apparent movement toward the permanent decision referenced in the same paragraph of the SBCIS order:

> We also request the NANC to review whether and how our numbering rules should be modified to allow IP-enabled service providers access to numbering resources in a manner consistent with our numbering optimization policies. We grant this waiver until the Commission adopts final numbering rules regarding IP-enabled services.

Waiver requests so long delayed are, in effect, waiver requests denied. This is legally untenable. The Commission cannot avoid the "hard look" at such requests commanded by the courts.[7]

Justification for Waiver. Since the *WAIT Radio* decision, the Commission has sought to codify in its regulations the showing required for grant of a waiver. Among these is this excerpt from Section 1.925 of the Rules:

> (3) The Commission may grant a request for waiver if it is shown that:
>
> * * *
>
> (ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.

Vixxi believes that application of Section 52.15(g)(2)(i) to its factual circumstances is unduly burdensome because of its costs in time and resources, and contrary to the public interest because it impedes or slows the provision to PSAPs and VOIP providers, especially, of effective and reliable enhanced 9-1-1 interconnection, particularly in the more difficult cases where selective routers are not present and where nomadic or mobile

[7] *WAIT Radio v. FCC*, 418 F.2d 1153 (USCA-DC, 1969).

callers are not pre-registered to their new locations.

The undue expenditures of time and resources are amply illustrated by Exhibit C. Were Vixxi allowed by waiver to acquire without charge numbers that it now pays for at the rate of thousands of dollars per month, it would be well able, and would intend, to pass the savings on to PSAPs in the form of reduced bills for interconnection services.

Ordinarily, the Commission's rules are presumed to represent the public interest, but that is not the case where regulations act to restrain an interconnection service provider such as Vixxi, who already has overcome the constraints of legacy selective routers and callers unable to pre-register new locations. Rather, the rules are contrary to the public interest because they are not in step with technological advances. To waive these rules in favor of encouraging providers such as Vixxi would restore the public interest.

Furthermore, Vixxi's current need for numbers poses no great threat to finite numbering resources which the Commission must conserve. With only a handful of VPCs, CLECs, and ILECs passing E9-1-1 calls to the PSAPs in any given Number Plan Area ("NPA"), there are sufficient ESQK numbering resources in each NPA to include the VPC providers. This is because the quantity of numbers required is determined by the trunking capacity of the PSAPs within the same jurisdiction, not the number of subscribers or the size of the provider.

There are 20,000 ESQK's per NPA (using 211 and 511 codes), probably no more than three ILECs, 20 CLECs, 20 Wireless Carriers, and 4 VPCs who all need ESQK's (less than 50 carriers total, but let's say 100 for an extreme). If there are 40 PSAPs in that NPA, then the pool should support PSAPs at two numbers each (80) times 100

carriers, or 8,000 total. There would still be 12,000 numbers to spare in the NPA. If a big city like Dallas wants all carriers to use 100 ESQK's, this is not a problem because they already have their own separate NPA code (214). In this context, Vixxi's draw on the pool of available numbers would be infinitesimal.

Conclusion. For the reasons discussed above, the Commission should grant the requested waiver. Vixxi would be willing to have its grant conditioned on the adoption of final numbering rules for IP-enabled services. It would also accept a grant subject to the outcome of the Commission's pending rulemaking to implement HR 3403, "The Net 911 Improvement Act of 2008," P.L. 110-283.

Respectfully submitted,

VIXXI SOLUTIONS, INC.

By _____

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September 8, 2008

ITS ATTORNEY

EXHIBIT A

NENA Statement on VoIP E9-1-1 Implementation Issues

Issued March 6, 2006, Revised March 20, 2006

NENA issues this statement to clarify its position on the complex issues affecting the deployment of VoIP E9-1-1 services.

In the nine months since release of the Commission's Order on VoIP E9-1-1,[8] VoIP service providers ("VSPs"), Public Safety Answering Points ("PSAPs"), 9-1-1 System Service Providers ("SSPs) and vendors have actively reviewed various methods to meet the FCC's Order and provide E9-1-1 to all VoIP customers.

NENA believes that it is imperative that all entities involved in the delivery of VoIP E9-1-1 operate from common principals and understanding. This is an evolving issue that will continue to require diligence and cooperation to assure that the quality of VoIP meets that of traditional wireline E9-1-1 service.

MSAG Application for VoIP E9-1-1

Ensuring that the PSAP is provided an accurate and unambiguous location of an emergency is critical to the functioning of the E9-1-1 system. Public safety utilizes an addressing validation method called the Master Street Address Guide ("MSAG"). For the E9-1-1 system to work properly from end to end, any address registered by the subscriber must be validated against the MSAG, an Emergency Services Number (ESN) must be identified for routing and the MSAG valid address must be transmitted to the PSAP. To do so, VSP's or their third party providers must have access to the MSAG data.

MSAG validation must be applied to all VoIP fixed and nomadic (non-wireless) subscriber records in preparation for 9-1-1 calling, equivalent to wireline treatment. Optimally, MSAG processes should be used for call routing definition as well.

Access to MSAG data is typically arranged through the 9-1-1 Governing Authority and/or the 9-1-1 System Service Provider (SSP) providing E9-1-1 to the Governing Authority, for each type of originating service provider.

Pseudo Automatic Number Identification (pANI)

NENA asserts its earlier recommendation that the FCC take immediate steps to establish an interim, followed by a permanent, national administration function for E9-1-1 routing control codes for both VoIP E9-1-1 and wireless E9-1-1 services.[9] VSP's have neither direct number assigning authorization, nor the ability to readily acquire numbers for 9-1-1 calling routing control purposes on a national scale. This circumstance creates a roadblock in accomplishing the FCC's VoIP E9-1-1 Order, as the use of routing codes is critical for nomadic and non-local NPA subscribers in E9-1-1 service. NENA's published Migratory solution (i2) standard for VoIP service interface to the current E9-1-1 systems assumes and depends upon the use of ESQKs. Both for current VoIP needs, and as an improvement for the wireless arena, NENA believes that a

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[8] *E911 Requirements for IP-Enabled Service Providers*, FCC 05-116, released June 3, 2005.

[9] Letter of Roger Hixson to Thomas Navin, August 2005.

national Routing Number Administrator (RNA) is critical.

VoIP Emergency Service Number (ESN) Selection

Where Selective Transfer is utilized for the PSAP, "detail" ESNs are required for VoIP E9-1-1.[10] If the Public Safety Authority agrees to temporary use of a single ESN per PSAP for simplification of VoIP E9-1-1 implementation, an agreement should be included for later conversion to detail ESNs to support full replication of wireline equivalent E9-1-1 service for fixed/static and nomadic (non-wireless) VoIP subscribers.

ESGW to Selective Router Trunk Group Sizing, and Geographic Relationships

Trunk groups from Emergency Services Gateway (ESGW) to Selective Router (SR) should typically be sized at the county or equivalent level and sized consistent with standard network engineering principals based on expected call loads. This approach provides a degree of congestion control, and is consistent with default call handling within a county set of PSAPs, where one-button transfer to adjacent PSAPs is likely to be available. One button transfer is especially important in the initial stages of VoIP E9-1-1 deployment when automatic location technology is not available and a high percentage of subscriber registered locations are inaccurate creating a potential for misrouted calls. See NENA 03-006, E9-1-1 Call Congestion Management Standard, Section 2.3, for recommendations on network engineering methods and geographic considerations.

Intentional Misrouting

The use of shell records to support directed, accurate call routing is the minimal level of E9-1-1 service consistent with FCC Order content, and applies where dynamic data update (ALI steering) capability is not available to involved PSAPs

Utilizing default settings to "complete" calls to Selective Routers and then to a default PSAP is inappropriate, and amounts to intentional misrouting of 9-1-1 calls, which can cause significant delays in emergency response and will create serious operational difficulties for the PSAPs that have the misfortune to be the recipient of these intentionally defaulted calls. This is inconsistent with the FCC Order, which requires that 9-1-1 calls be routed to the appropriate PSAP for the caller's Registered Location.

Private Call Center use during VoIP E9-1-1 Deployment to PSAPs

Private call centers should never be utilized as the primary option for delivery of VoIP 9-1-1 calls in E9-1-1 service areas. However, handling of 9-1-1 calls by private call centers to provide human interface and support for 9-1-1 call completion is appropriate during the deployment process until 9-1-1 calls can be accurately routed through the E9-1-1 systems to the appropriate PSAP for the caller's location. Under any circumstances, private call centers should only be considered as a means of last resort.

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[10] Selective Transfer is an E9-1-1 feature that allows the capability to transfer a 9-1-1 call to a response agency by operation of one of several buttons typically designated as police, fire, and emergency medical, based on the stored ESN of the caller. Detail ESNs are defined by unique combination of law enforcement, fire, and EMS jurisdictions, and support the logic required to identify and display that jurisdictional detail to the PSAP telecommunicator and allow the use of the Selective Transfer feature. A Glossary of terms is attached.

Glossary of Terms

ALI Steering – redirection of an ALI query through the serving ALI servers to other or remote databases for retrieval of ALI related data.

Default PSAP – a pre-designated PSAP used to receive a 9-1-1 call when the call cannot be properly selectively routed due to an ANI failure, missing call routing data, or other cause.

ESGW – Emergency Service Gateway, an inter-network router used to interface an IP network to a TDM (time division multiplexing) network for delivery of VoIP 9-1-1 calls.

ESN – Emergency Service Number, a three to five digit number which facilitates selective routing through Selective Routing switch translations to the trunk group for a specific PSAP.

Detail ESN – (this is a conceptual term for purposes of this document) - a three to five digit number representing a unique combination of emergency service agencies (Law Enforcement, Fire, and Emergency Medical Service) designated to serve a specific range of addresses within a particular geographical area, or Emergency Service Zone (ESZ). The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper service agency(ies). In order for an SR based selective transfer function to work properly, the ESN used by the SR must be "specific to the ESZ" of the caller. Existing NENA Technical documents define this as a "Routing ESN".

ESQK – Emergency Service Query Code, a 10 digit routing code representing the target PSAP for a 9-1-1 call. The ESQK is delivered to the E9-1-1 Selective Router (SR) and to the PSAP. The ESQK is used by the SR as the key to the Selective Routing data associated with the call. The ESQK is subsequently used by the PSAP to request ALI information for the call.

Selective Router - The switch that provides the tandem switching of 9-1-1 calls. It controls delivery of the voice call with ANI to the PSAP and provides Selective Routing,
Speed Calling, Selective Transfer, Fixed Transfer, and certain maintenance functions for each PSAP.

Selective Transfer - The capability to transfer a 9-1-1 call to a response agency by operation of one of several PSAP equipment buttons typically designated as police, fire, and emergency medical, based on the detail ESN of the caller.

Shell Record – an ALI record manually established in the ALI servers to represent a pANI code and which have generic data field content meant to be dynamically updated during 9-1-1 call processing to provide call-specific ALI data for subscriber information and callback number.
For VoIP E9-1-1 calls, the term pANI is synonymous with ESQK.

EXHIBIT B

The following may be found at http://www.vixxisolutions.com

Markets

PSAP

NENA has estimated that over one third of all the registered PSAPs do not have selective router based E9-1-1 today; they use either direct trunks or they do not offer E9-1-1 at all. With VIXXI technology and patented device, PSAPs can receive VoIP calls quickly and easily, without the major capital improvement costs their current providers are recommending.

VIXXI also provides "reverse" routing for telephone service providers that no longer wish to pay for direct trunks to the PSAP's on their own. By sending their E911 calls to VIXXI Solutions' VoIP call routing service, we terminate all their E911 calls for them.

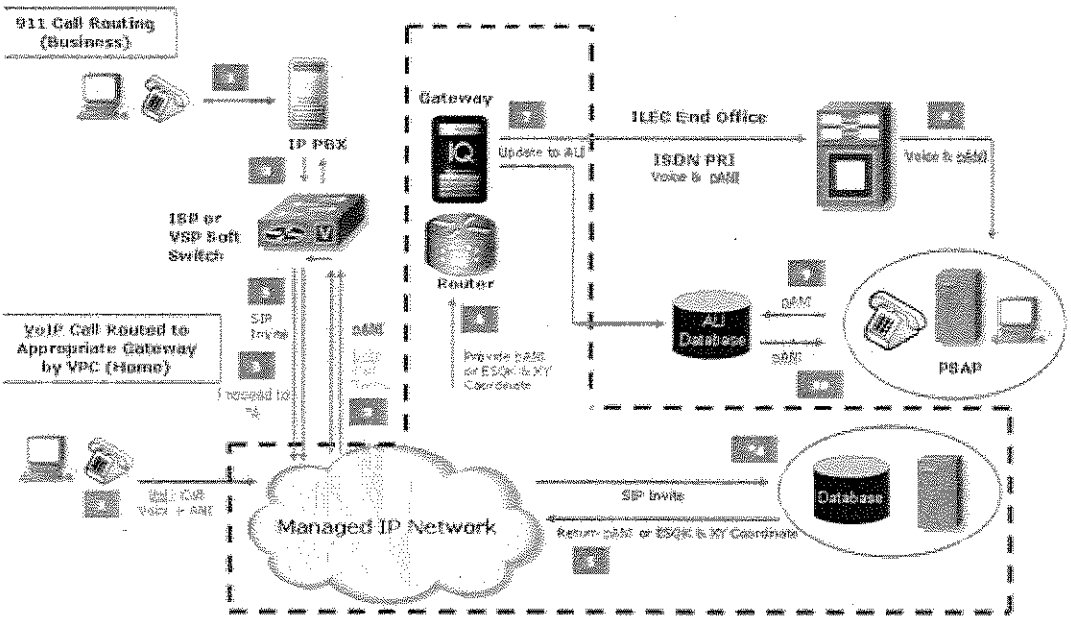
VOIP

The VIXXI-Link bundled service is for service providers that need the whole E9-1-1 package in new markets and can include not only emergency call routing, but also ALI management.

Services

VIXXI-LINK℠

VIXXI-Link provides E911 for any size services provider and is a bundled service for providers that need the whole E9-1-1 package in new markets. It includes a web portal for end user registration; total ALI management with MSAG validation and ERDB functions; and emergency call routing. VIXXI-Link is perfect for expanding CLEC's, and VoIP service providers, or for traditional ILECs converting their platforms to IP based switching infrastructures who want to avoid the costs of E9-1-1 hookup under the old business models while accommodating new technology subscribers.



Key features include:

- Quick, easy deployment
- Web portal for subscriber registration, moves, adds, and changes
- Batch registrations for large conversions
- End user or Call Center PSAP lookup service
- Address geo-coding
- MSAG validation
- ALI management (both self-contained or 3rd party management across multiple jurisdictions) for both static ALI systems and dynamic ALI systems
- Emergency Call Routing to the correct PSAP
- PSAP and Telco coordination and administration
- Full compliance with all regulatory agency requirements
- VIXXI Solutions uses the most accurate and proven PSAP boundary files to support accurate VoIP call routing, nationwide. Contact VIXXI Solutions now to get connection details!

VIXXI-ALI[SM]

VIXXI-ALI is always tied to a telephone number and works with the service providers existing call routing service, and is an unbundled element of VIXXI-Link.

Key features that may be included:

- STATIC or DYNAMIC ALI delivery and management
- Hooks into the client's IP selective router for ESQK (or P-ANI) delivery and queries in a dynamic environment
- Web portal for subscriber registration, moves, adds, and changes
- Batch registrations for large conversions

- End user or Call Center PSAP lookup service
- Address geo-coding
- MSAG validation
- ALI management (both self-contained or 3rd party management across multiple jurisdictions)

VIXXI-ALI can be added to customer sign-up procedures via the service representative or internet and will ensure every new customer has a MSAG-validated address and accurate ALI database entry when service is turned up.

VIXXI-PSAP℠

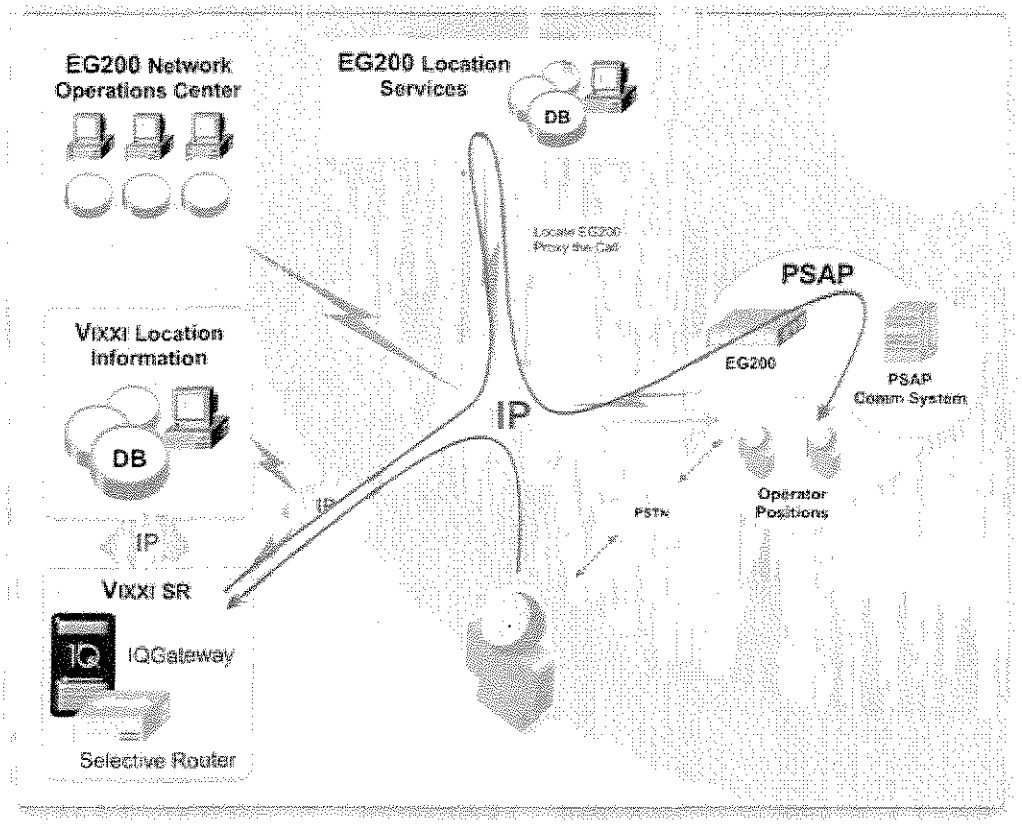
VIXXI-PSAP is a hosted applications service providing a customized, geocoded static ALI database, MSAG, or address look up service, which may or may not be tied to a particular subscriber's phone number. It can be used as the Master Address Guide database that is owned and operated by the PSAP, or, as a "virtual" ALI database by commercial clients who need to query the same type of information for their subscribers across multiple PSAP jurisdictions or within their own private domain.

- On demand manual queries can locate callers against a boundary map of many possible PSAP's (travel assistance centers)
- On demand manual queries can locate subscribers against a boundary map of many possible ESN's (fire, police, security or ambulance coverage areas)
- It provides a web portal or bulk uploads for end user (subscriber) address registration, where only batch data entry uploads by a trained staff were allowed previously.
- As a PSAP, Campus Security department, or industrial complex operator, you can build a Master Street Address Guide (MSAG) with boundary maps instead of (or alongside traditional MSAG flat files).
- While each sale is customized to your unique needs, (e.g. only activated with one county, one region, etc.) the web portal, the boundary mapping, the hosted ASP service model, and the query capabilities remain the keys to quick and easy administration.

Products

VIXXI-EG200™

Developed by VIXXI Solutions and Solacom, this adaptable, breakthrough premise device, the EG200, provides low-cost conversion from VoIP SIP calls to premise switch trunk protocols at the PSAP with no change in existing PSAP equipment, or Security Provider PBX. It works with VIXXI-Link call routing to terminate E911 VoIP calls at any emergency service provider.



- EG200 device that operates with the VIXXI-Link service and also Solacom's IQGateway Selective Router
- A flexible SIP appliance that supports interconnection to existing PSAP equipment via analog CAMA interfaces
- Multi-line SIP appliance certified to operate in North America, (UL, EMC and telco certifications)
- Compliant with FCC i3 specifications for E911 VoIP calls
- Easy installation by PSAP supervisor
- Operation behind PSAP firewall systems
- Implementation of a fault-tolerant network
- Remote 24/7 monitoring capabilities to detect and resolve faults quickly with the need for PSAP personnel to be involved.

VIXXI-ROUTER™

Carrier Services – Geospatial Routers (CS-GSR) route 9-1-1 calls from any network

VIXXI Solutions and SolaCom Technologies have teamed to combine the VIXXI Call Management and VoIP Positioning Center (VPC) with SolaCom's Selective Router to reduce the costs of terminating/accepting E911 calls at smaller Public Safety Answering Point (PSAP) locations. This solution is compliant with the NENA I2 standard today, and, is ready for the emerging NENA I3 specifications for E911 VoIP calls, with no

capital expenditures A new-generation selective router, the Carrier Services - Geospatial Router bridges the gap between the conventional PSTN and the latest technology VoIP/VoIM[11] networks. It enables accurate E9-1-1 call routing regardless of the network access used by the caller.

- Convert PSTN/Cellular E9-1-1 calls to VoIP to increase flexibility and decrease costs.
- Easily integrated with systems currently deployed, the IQGateway also provides a ready-made connection to new services as they become available with the accelerating deployment of VoIP/VoIM technologies.

[11] Voice Over Instant Messaging, a subset of VOIP.

EXHIBIT C

The Economics of Direct Number Access

1) Direct access from the Pooling Administrator — No Charge
2) (a) PRI/ISDN from a LEC

(i) Per Selective Router/NPA:	$2,400 monthly (average)
(ii) For Desired Qwest Footprint:	$108,000 monthly (total)
(iii)For Desired Embarq Footprint:	$12,000 monthly (total)

(b) purchase from a CLEC — $ 15,000 monthly (minimum)

(c) pursuing a CLEC application in, say, Florida: $3,500 one-time, plus the costs from 2(a)(i) through (iii)

(d) Purchase DIDs on-line:1530 desired DIDs at $6.00 each is $9,180 monthly (total)