

### **BANDWIDTH.COM COMPANY & VoIP SOLUTION OVERVIEW:**

Bandwidth.com is a telecommunications services company based out of Cary, NC targeting small-to-medium businesses (SMBs) exclusively with no consumer VoIP customers. The company has traditionally served as a wholesaler of business IP solutions. On March 15<sup>th</sup>, we expanded our product portfolio to include VoIP services over our own wholly-owned soft switch infrastructure.

### **PARTNERSHIP WITH LEVEL 3**

Bandwidth.com's VoIP origination and termination capabilities (i.e. access to/from the PSTN) are currently provided exclusively via Level 3. For customers utilizing bi-directional, two-way VoIP service, we have largely standardized and limited our fixed VoIP offering to markets in which Level 3 provides its Enhanced Local Service (ELS) product.. Bandwidth.com and Level 3 strongly believe this solution constitutes a fixed E911 solution that is fully compliant with the FCC's order for customers located in those markets. 98.5% of our existing fixed subscriber base for bi-directional, two-way VoIP service is utilizing Level 3's ELS service in their local market. The remaining 1.5% who does not have a fully compliant E911 service is largely made up of our earliest subscribers many of which were provisioned prior to any formal guidance from the FCC regarding E911. Going forward, we have strictly limited our offering for bi-directional, two-way VoIP services to only utilize Level 3's ELS footprint and are confident that 100% of our future subscribers will be provided with a fully-compliant fixed E911 solution.

### **STATIC vs. NOMADIC SUBSCRIBERS**

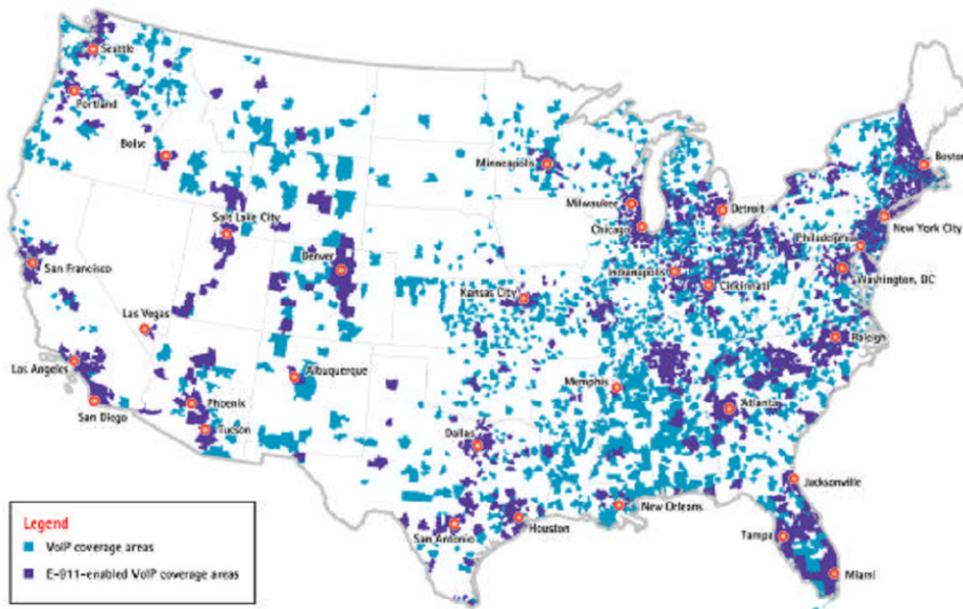
It is important to note that Bandwidth.com's bi-directional, two-way VoIP service is not a consumer service. All of our customers are either small, medium or enterprise-level business customers. Consequently, our default solution is positioned as a fixed or static service which does not provide customers the inherent ability to freely move their solution between locations. The fixed nature of our service is largely enforced by the infrastructure we deploy on our customers premise. Unlike consumer services, which only consist of a small analog adapter (i.e. ATA) which can be seamlessly moved from one location to the next, our solution consists of an enterprise-class integrated access device (IAD), which functions not only as a VoIP gateway but also frequently serves as the company's edge IP router. In our implementations, the customers' phones (typically VoIP phones) do not have public IP addresses and are configured to only operate from behind the IAD device. Moreover, because the IAD is typically the business customer's edge router, our service is bound to a static IP address that is specific to the customer's location. Consequently, with this type of implementation, the IAD device cannot be moved to another site's IP connection and function properly without overhauling the underlying configuration – thus in this implementation, our VoIP service is fixed

The key exceptions to the aforementioned scenario are customers utilizing softphones as the end point for their VoIP service. Softphones typically reside on an end-user's mobile computing device, have a public IP address and do not operate behind an IAD. Consequently, a softphone is inherently nomadic. It is our estimation that softphones do not represent more than 5% of our overall subscriber base. Early in November 2005, Level 3 announced its partnership with Intrado (as a VPC) to jointly provide a compliant nomadic E911 solution. Bandwidth.com is currently in the process of evaluating this solution and securing an agreement with both Level 3 and Intrado that will allow us to provide a fully compliant for current and future nomadic users by early 2006.

### **911 SOLUTION**

As previously outlined, 98.5% of Bandwidth.com's subscribers are currently receiving fixed E911 services which are fully compliant with the FCC's order. Further, we estimate that 5% of our subscribers are utilizing nomadic softphone endpoints, all of which are currently not provided with a FCC compliant nomadic E911 solution – however, we are in the process of implementing a nomadic solution jointly with Level 3 and Intrado which is outlined in detail further in this letter.

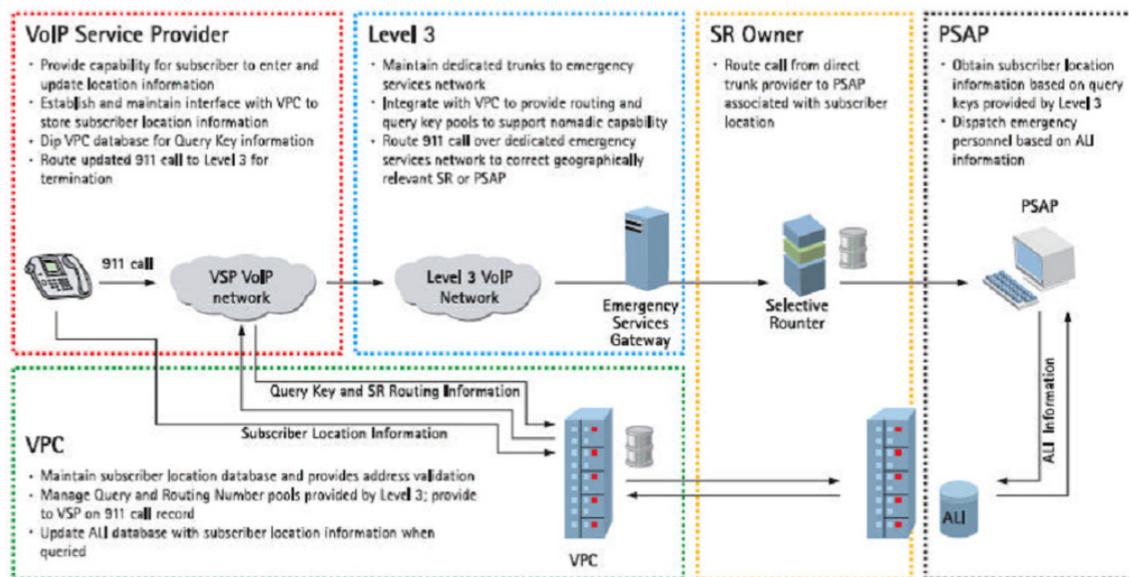
Our E911 solution which is based on Level 3's Enhanced Local Service product provides E911 service in the United States that reaches approximately 68% of US households and expects this number to increase by November 28, 2005. The following illustration is a map of the United States showing the geographic scope of Level 3's E911 coverage:



[http://www.e911direct.com/coverage\\_map.php](http://www.e911direct.com/coverage_map.php)

### **911 ROUTING INFORMATION/CONNECTIVITY TO WIRELINE E911 NETWORK:**

The E911 solution we leverage from Level 3 provides direct connectivity to all Selective routers within its 911 service area. All 911 calls are routed by the Selective Routers to the appropriate PSAP on dedicated trunk lines or are otherwise directly routed to the appropriate PSAP. Our solution via Level 3 currently has direct connectivity to approximately 315 Selective Routers, and expects this number to increase by November 28, 2005. The following image illustrates Level 3's connectivity to elements on the Wireline E911 Network:



### TRANSMISSION OF ANI & REGISTERED LOCATION INFORMATION:

#### *Fixed Location VoIP Services:*

Our E911 service via Level 3 provides inbound and outbound calling as well as fixed location E911 as part of a bundled service, for which Level 3 and consequently, Bandwidth.com, issues only geographically relevant telephone numbers based on the end-user address provided by our customers. For fixed-location E911, Level 3 will transmit ANI to the appropriate PSAP as forwarded to us from our wholesale customers.

#### *Nomadic VoIP Services:*

With respect to VoIP services we offer on a nomadic or non-geographically relevant basis, Level 3's network is capable of transmitting E911 calls to any of the Selective Routers to which Level 3 is connected. Further, in accordance with the NENA Interim VoIP Architecture for Enhanced 911 Services (i2) to support nomadic E911, Level 3 is capable of transmitting, via Wireline E911 network connections, the Emergency Services Query Key ("ESQK") that allows an answering point to query the ALI database for the 911 caller's Registered Location.

However, as reflected in prior diagram, transmission is only one element needed to implement E911 capability for nomadic or non-geographically relevant services. In order for those E911 calls to be properly routed and for location information to be provided, Bandwidth.com must also contract with a voice positioning center (“VPC”), and Level 3 or the VPC will obtain Emergency Services Query Keys (“ESQs”) in each area. (As previously outlined, Bandwidth.com has begun discussions with Intrado to act as the VPC for our nomadic E911 solution, working in concert with Level 3’s existing E911 architecture components). Furthermore, although it is technically possible to route E911 calls for nomadic or non-geographically relevant VoIP services to PSAPs without going through pre-scheduled PSAP testing, Bandwidth.com and Level 3 believe that testing is prudent from both an operating and a public safety perspective and is, as a result, required by most PSAPs. At this time, Level 3 believes that Bandwidth.com has access to query keys and PSAP testing has been successfully completed with approximately 330 PSAPs, or approximately 10% of the PSAPs with which Level 3 connects. Level 3 has also indicated to us that it expects this number to increase by November 28, 2005.

**OBTAINING AND UPDATING REGISTERED LOCATION INFORMATION:**

***Fixed Location VoIP Services:***

Bandwidth.com obtains customers registered addresses as part of our standard provisioning process. Once the customer provides this address, we then interface with Level 3’s provisioning systems to secure DIDs from the native MSA for the customer’s address. Customers can update their registered address by contacting our VoIP customer support group either via phone or submit a request to via email. For fixed users, an updated address would require the provisioning of new DID.

***Nomadic VoIP Services:***

As previously outlined, Bandwidth.com does not currently support nomadic subscribers. However, we are currently in discussions with Intrado and Level 3 to provide a fully compliant nomadic E911 solution.

**TECHNICAL SOLUTION FOR NOMADIC SUBSCRIBERS:**

For nomadic VoIP services, the solution we are planning to implement from Level 3 is based on the NENA i2 architecture. In this architecture, Level 3 functions as an Emergency Services Gateway (“ESGW”), which is the signaling and media interworking point between the IP domain and conventional trunks to Selective Routers. As an ESGW, Level 3 transmits ESQs passed to them by Bandwidth.com to the appropriate PSAP using routing information received from Bandwidth.com which is provided to us via our VPC (i.e. Intrado). In turn, Level 3 uses the routing information provided to select the appropriate trunk and signals call setup to the Selective Router

using an ESQK to represent the Calling Party Number/Automatic Number Identification information. Routing information to support the routing of VoIP emergency calls is provided by the appropriate VPC (i.e. Intrado); the VPC (i.e. Intrado) also cooperates in delivering location information to the PSAP using the existing ALI database.

It is our intent to have this solution fully implemented and available to our subscriber base in early 2006.