24Wave Application System Overview

CONNECT. MANAGE. PREDICT

TRAVELER™

24WAVE™

Public Safety

Today's men and women in the public safety field face more challenges and more danger than ever before. Whether police, fire fighters or rescue, our first responders often don't know what they're going to be facing from one minute to the next. That's why all across the information technology field, work is being done to put systems in place to deliver rich data to them quickly and better prepare them for that next call..

Many applications are in the pipeline to put rich, context based information at the fingertips of our first responders. More applications and tools are coming to allow real time, visual support through video and audio. But the one common denominator is the need for a mobile wireless network throughout the area to keep the data flowing. Without a reliable wireless network, our responders don't have access to rich situational data, and our access to them is limited to the traditional voice radio technology.

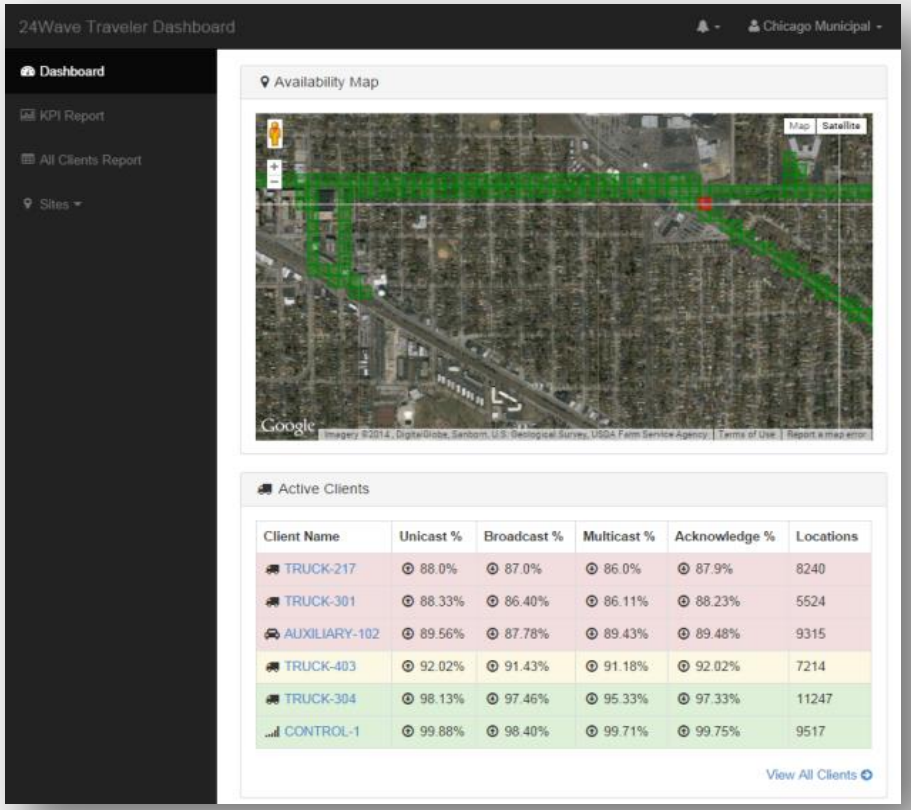
Rich data coverage for a wireless network in both urban and wide ranging rural areas is often problematic. In the city, the landscape can change overnight with construction or demolition, rendering both cellular and your public safety Wi-Fi in a constant catch up mode. Out in the more rural areas, coverage is often not as dense as needed in key areas off of the major roadways. Meeting current and future demand on wireless public safety networks take a lot of oversight to maintain properly. Without a holistic view of the mobile network situation, an IT organization may find themselves constantly fighting to stay ahead of the needs of the departments.

Mix in integrators, hardware vendors and application providers all having different views of network problems and sometimes no clear solutions, and things can quickly become a support quagmire that both costs money and puts our police, fire fighters and rescue at a disadvantage.

The 24Wave Traveler system

The 24Wave Traveler system changes the way you manage your mobile wireless network in key ways:

Deploying always on sensors on your vehicles that continually collect synthetic data – just like the data your applications depend on – and chart the success of the transmission to and from your vehicles. In other words, no more surveys; your vehicles themselves are building this 24x7 as they operate. Data from the wireless sensors is compiled into an easy to use map overlay with the precise areas of your city or county where connectivity problems exist today and areas where they are projected to develop.



First, you can *respond more quickly to mobile wireless network issues as the coverage degrades but before they cause a problem* – meaning your first responder's applications will run better. But that's just the first and most obvious thing. You will quickly realize that 24Wave Traveler will show you which of your vehicles is performing better than the others, allowing you to perform proactive maintenance on loose on board antenna cables, malfunctioning radios, long before an outage occurs.

Second, once 24Wave Traveler is installed, a single analyst sitting remotely in the headquarters can review your data from the entire area of responsibility and use the 24Wave system to quickly sort through and triage the issues identified. Instead of dealing with vague problem reports and inaccurate locations, problems become obvious. Instead of the role of periodically assessing and adjusting the coverage being left to only the wireless experts, personnel with less wireless experience can spot problems and make changes.

Third, you will find your spend on wireless will go down and your availability will go up as you fully integrate 24Wave Traveler into your wireless maintenance process. Instead of buying new access points for your areas of troublesome coverage, you will be able to easily identify areas to redeploy and antennas reoriented. If you contract connectivity services from a carrier, you will be able to pinpoint areas where availability issues are emerging and work with the carrier to make sure availability does not suffer.

These are just three of the many ways that this unprecedented visibility into your mobile wireless network through 24Wave Traveler will drastically improve both the availability of your applications and the way you manage your wireless spend.

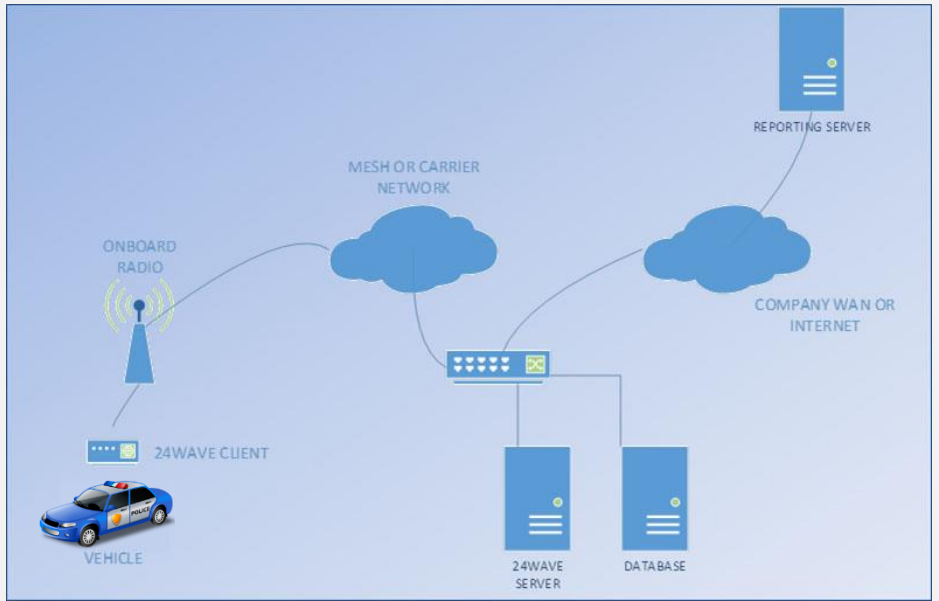
The 24Wave Traveler system is composed of four main parts:

1. The onboard client. A system hosting the client software is installed temporarily or permanently on a vehicle and connected via a switch to the vehicle's radio system. This serves as the sensor unit for wireless coverage and GPS location.

2. The traffic generation virtual machine or server. This server sits in the local datacenter on the office side of the wireless network and sends unicast, broadcast and multicast traffic out over the wireless network to the clients. It also receives their acknowledgement messages to assess the two-way communications health.

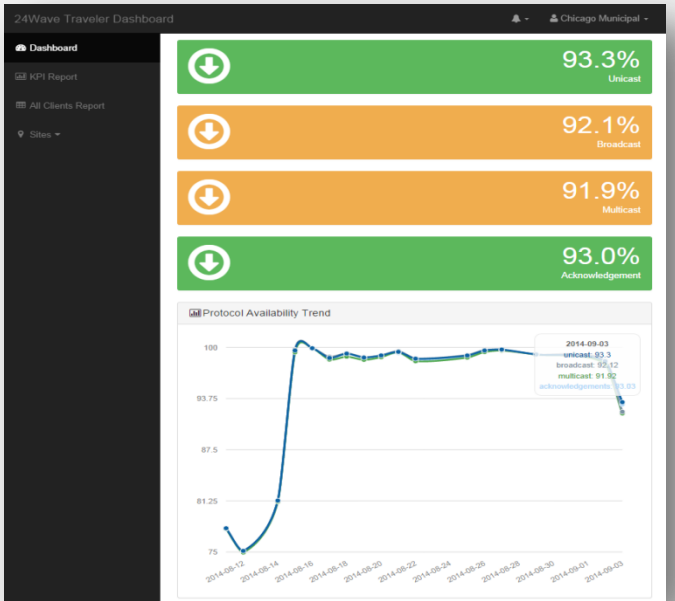
3. The database virtual machine or server. This is where the data from the client and the server is stored. It typically sits on the same area of the network as the traffic generation server.

4. The reporting virtual machine or server. The 24Wave system has a very flexible reporting system that ranges from HTML5 dashboards to the use of any corporate data analysis tools that can connect to the database server as 24Wave provides a full data specification. Typically the reporting server would sit in a corporate datacenter as it can be used by many sites.



In normal use, the 24Wave Traveler clients contact the database to get their configuration information and then send an "online" message to their configured server. The server begins sending the types of packets (unicast, multicast or broadcast) that it is configured to send over the chosen ports. The rate of sending these packets is configurable based on your site's goals and circumstances.

The client, which is traversing the area of operations, is continually receiving and acknowledging these messages and at the same time writing a GPS location. Over hours and days, the clients build a picture of where the connectivity is good and where it is poor in your mine area of operations. Once the baseline is built, 24Wave aggregates and runs statistical analysis to see the deviations from day to day that are outside the norms of probability for both geographic areas and vehicles. This gives a clear leading indicator of areas where network problems are likely to occur.
The system is designed to be very bandwidth friendly and will work flexibly with your already deployed applications.



Contact and Company Information

To find out more about how our 24Wave solutions can address your mobile wireless needs, please call or send us an e-mail via the link below. A 24Wave representative will contact you within 24 hours.

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