PROJECT CASE STUDY

Mass Notification System Activation by Web Portal via Satellite Communications

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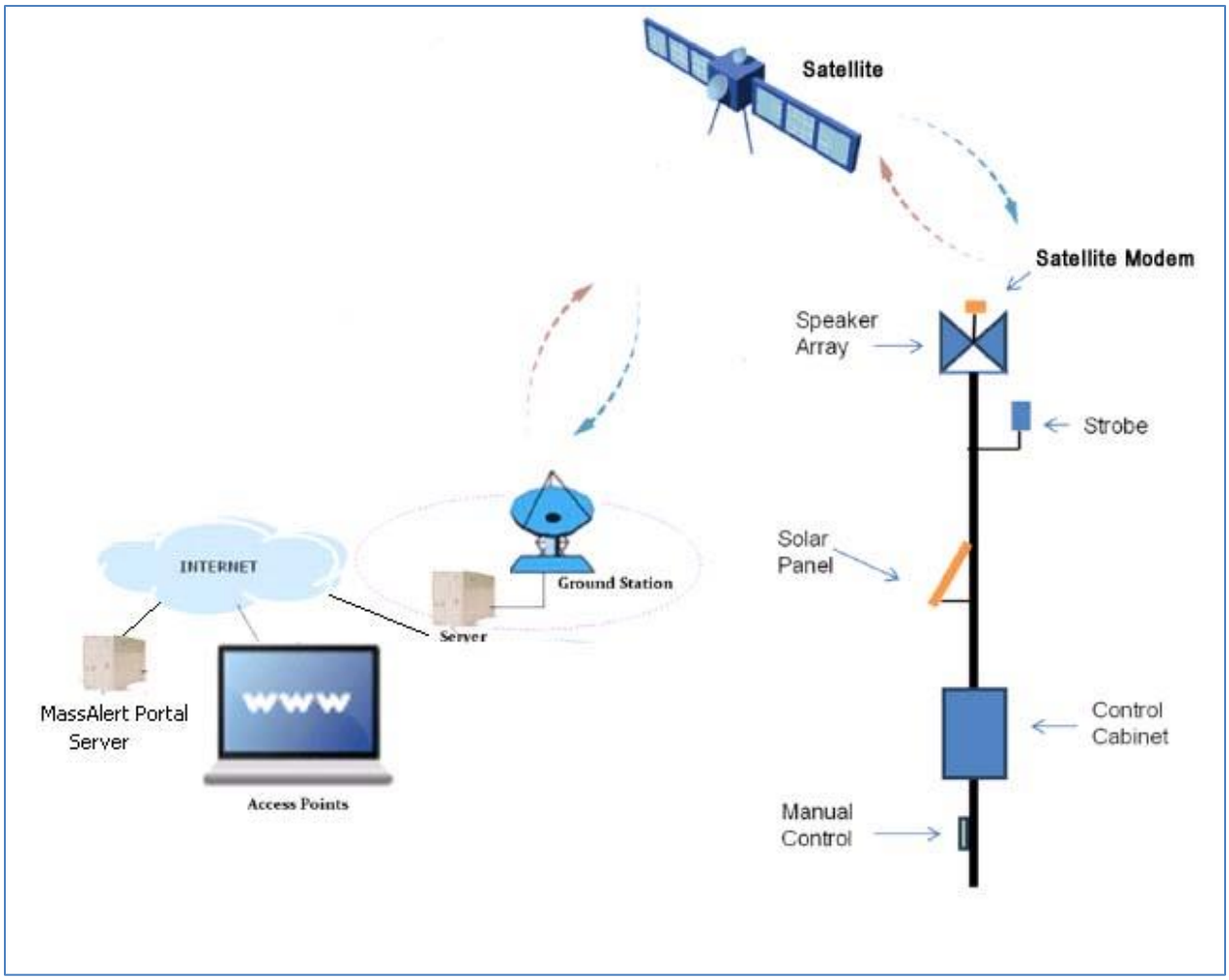
ATI Systems has developed a web based version of its MassAlert® software. The new software can control system components with a cloud based application accessible through a web browser using satellite communications, and without using the central station. The remote units, such as high powered speaker stations, are equipped with a satellite modem that allows them to communicate directly to a satellite. The satellite sends the message to a ground station, which uses the Internet to connect to the ATI Systems' MassAlert® Web Portal application server. The software running in the cloud performs all the same functions as the software in a central station, including activation and keeping track of the status of each remote unit.



The diagram above illustrates the communication pathway for messages between the remote siren & strobe units, the cloud based MassAlert® application, and the end users.

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The Web Portal can be effectively used for tsunami warning systems that send alert tones and prerecorded voice messages over a long coastline. It utilizes the latest advances in cloud computing and satellite technology to create the most efficient and cost-effective paradigm for controlling a warning system such as this one that spans hundreds of miles. ATI Systems' Web Portal can activate all of the sirens in this system as in the case of a massive tsunami wave, or only parts of the system as required by the nature of the emergency. The Web Portal is designed as a web based version of the ATI's MassAlert® control software. Its functionalities include continuous monitoring of the entire system between emergencies, which eliminates the need for check-up visits to the remote units. The remote units report their status back to the Web Portal application on a regular basis, so they only need to be visited for repairs. The remote units can be tested as well as activated through the Web Portal, and will immediately report any kind of unauthorized intrusion attempt. The Web Portal is accessed through a web browser and is secured by a login screen using encrypted communications to prevent eavesdropping and to securely identify the web server.

The remote units in this system are ATI's High-Powered Outdoor Speaker Stations which can cover the largest area per unit in community settings. In addition to the speaker station and satellite modem, each remote unit can have a strobe, all of which can be powered by solar power with battery backup. This setup insures that they will be continuously available regardless of any local power failures that may accompany a tsunami or other emergency. In addition, the remote units can be placed as required for community notification, independent of the availability of local power lines. The fact that the system is controlled by a cloud-based application adds another layer of insulation against local emergency conditions.

Many remotely controlled systems use radios for communication, but the signals can become unreliable and require expensive repeaters when dealing with distances over 20 miles or about 30 kilometers. In addition to the expense of the additional equipment, a radio-based system that spanned over hundreds of miles would require more components and therefore more maintenance work. Other forms of communication, such as fiber optics, coaxial cable or twisted pair require building and maintaining large wired networks, or limiting the system to areas where they already exist. Satellite communication, on the other hand, is possible from anywhere to anywhere on the planet, as long as the two points communicating have a line of sight to the communications satellite.

Communications satellites use a variety of orbits including geostationary orbit and low Earth orbit. A satellite in a geostationary orbit appears to be in a fixed position to an earth-based observer and is the best choice for data communications between fixed points because ground based antennas, which must be directed toward the satellite, can operate effectively without the need for expensive equipment to track the satellite's motion. Low earth orbit provides

shorter lag times because of the shorter distances, but also results in less reliable data connections because the satellites are always moving with respect to Earth positions. For this system, ATI chose to use satellite communications by the provider Inmarsat, which maintains three geostationary satellites and can provide the most reliable and cost effective communication with the remote units for this application. However, ATI's equipment can interface with satellite modems from many different providers, as well as cell modems, for maximum flexibility. It uses industry standards and state-of-the-art technology which can be integrated with whatever communications equipment is best suited for the project.

About ATI Systems

Founded in 1981, ATI Systems (Acoustic Technology, Inc.) designs, manufactures, and installs dependable emergency warning and notification systems. ATI's advanced technology is currently protecting military bases, industrial facilities, campuses, and communities worldwide, with an innovative and flexible wireless system that reliably provides audible and visual warning messages. The systems utilize a compact hardware design, user-friendly software, and the latest advances in communication methods, including radio frequency, IP Ethernet, and satellite technology. Through product design enhanced by years of experience in acoustic modeling, ATI Systems' products provide exceptional sound coverage and voice intelligibility in both outdoor and indoor settings. Their systems can be found throughout North America, Europe, the Middle East, and Asia. To learn more about ATI Systems, visit http://atisystems.com.