# Leader Alert™ Alert Dissemination Services

## The Problem

> The greatest structural cause for the terrorist attacks of September 11th were impediments to communication and information sharing among men and women charged with keeping Americans safe.
>
> —Attorney General John Ashcroft in testimony before the 9/11 Commission, April 13, 2004

Emergency response systems have seen very little development since the implementation of the air raid and tornado warning sirens of the 1950's. By contrast, the Homeland Security market is flooded with event detection and analysis systems ranging from sophisticated long-range video cameras and motion detectors that see through walls to biometrics and face recognition. These devices typically send their data to a security monitoring person who analyzes the data and takes appropriate action. The reality is different. Studies show that approximately 60% of all monitored events that require attention are missed. Billions are spent each year on elaborate security environments, only to see their effectiveness neutralized by human error or less-than-timely notice to responders.

In addition to the problem of human error in event response, event detection and analysis technologies are each their own "data silo"[1]. Each silo has its own data standard, operating system and platform. Coordinating resource information across these data silos is costly. Add this data silo problem to the need to modernize event notification and one can understand why our emergency and intelligence services were ineffective in preventing a coordinated attack such as that of 9/11.

In today's threat environment, response timing is critical. Leader puts it all together: information management, multi-path notice media, and ongoing communication using your present systems. Leader stands behind you and your communications needs with automated services that complement your planning and systems. We help make planning easy, automated, organized and manageable.

A manifestation of the "data silo" problem is our use of a myriad of communications devices including wired phone, mobile phone, PDA, fax, email, voice mail, instant messaging… as well as word of mouth. "9/11 taught the first responder community something critical: word of mouth is a poor means of communication in a large scale crisis. It's too slow and too prone to error, interpretation and miscommunication," says Russ Keat, the rescuer who found the flag at Ground Zero." Keat goes on to say, "Our emergency radios were not effective either since none of them talked across agency… and for sure email wouldn't have worked. We couldn't have been reading email in the midst of the dust and dirt and mayhem of Ground Zero… I was first on the scene at Ground Zero. I didn't even know for nine days that the Pentagon had been attacked. We need to greatly improve our alert communications. What we have now failed us on 9/11."

### Summary

**Security systems are generally proficient in:**

- Monitoring
- Detection
- Analysis

However, once a target or security problem has been detected/analyzed, the process of effectively deploying the appropriate personnel to respond to an issue can be slow and labor intensive.

**Response typically involves:**

- Follow-on from responders with critical instructions and reports
- Phone
- Email
- Voice mail
- Fax
- Pager
- PDA
- Radio

In today's threat environment, response timing is critical.

> "We need to greatly improve our alert communications. What we have now failed us on 9/11."
>
> —Russ Keat, Security Consultant. White House Security Task Force. Found the US Flag at Ground Zero

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1.  "Data silos" or "information silos" exist whenever computer data is collected, analyzed, stored and retrieved in proprietary ways, thus making information sharing across these silos costly and time consuming.

## The Need

Homeland Security needs an integrated security platform for *human and signals intelligence gathering*, event *analysis*, alert *dissemination* and alert *collaboration*—a system that seamlessly handles phone, email and fax alerts.

Security events vary from the sensational to the everyday, from 9/11 to weather alerts. Each event requires a response by a unique set of responders and notification to a unique set of stakeholders. Further, each event has a unique collaboration requirement before, during and after the event. Still further, each person notified needs to be contacted and kept informed by some combination of phone, fax, pager, PDA, voice mail, bulletin board, instant messaging, document sharing, file sharing, video conferencing, web conferencing or teleconferencing. This two-way, interactive event communication feeds decision making in a managed way all through the event, until all responders have retired from the scene.

Scalability of Homeland Security technology, that is, how many people can be accommodated without bringing the system down, plays a crucial role in the ability to handle large-scale events. Most security response systems cannot handle large scale.

The integrated security platform can seamlessly support both *voice* and *data* every step of the way, from pre-planning through event management and post-event assessments, all with the push of a button. Current event management technologies are a hodgepodge of different technologies linked by the software equivalents of duct tape and super glue.

Although text messaging (email on small handled devices like PDAs and mobile phones) is the quickest and easiest Internet option, it has limitations. First, it must be read. Second, although a text message provides information, it does not reassure. When people are in the midst of a threat, they want knowlegable people to talk to and tell them how they should be reacting. Third, roughly half of Americans do not use email.

A modern alert system should go beyond simply further reinforcing the storied Digital Divide by discriminating against half the American population that does not use email. In other words, certain citizens should not be rendered alert-less simply because they don't have a particular digital device, or because they do not have 24-hour access to such devices. Current alert systems are heavily email notification based. Email notifications, at best, can satisfy only a subset of the population. Many important constituencies are left out. The statistics below show the priority that should exist for alerting support.

A full-featured alert system must be able to simultaneously alert constituents by phone, email, page, fax, and video clips, but most importantly by *phone* and *email.* One might reason that the newer mobile phones have become email devices. While this is true, one cannot rely on email alerts alone as your alert constituency may never have enough of a critical mass of email-enabled mobile phones to insure complete coverage.  Your alert strategy can be assured of almost complete coverage (at 98%) if it supports a scalable voice broadcast environment. Email creates an important redundancy that helps insure that no constituent or household fails to receive an alert, at home or at work. Fax support is a distant third choice, although as the movie Air Force One illustrated, faxing should not be relied upon as an alerting device.[2]

**Human and signals intelligence gathering**

**Pre-emptive notice of conditions**

**Planned event reaction**

**Alert dissemination**

**Ongoing notice to and from responders**

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2.  The President faxed emergency instructions to the Situation Room from Air Force One, but nobody in the room saw the fax sitting in the machine.

Alert systems should be evaluated based upon the kind of alerting environment required to meet your stakeholder's communications and response needs. Simple systems might involve alerts only without any need to follow-up or even confirm if the person received the alert. These systems generally involve one approach such as email, voice or fax broadcast. A step up from the simple systems might involve voice or email systems that allows the person to confirm that they had received the alert. This might be important if you are trying to find out which healthcare workers in your area are available to respond. A system that enables two-way communications among those alerted is ideal. The choice of systems depends upon the level of readiness desired. The following tables list options to be considered when evaluating your alert requirements.

## Alert System Capabilities

| LEVEL 1 | Outbound alerting |
| LEVEL 2 | Outbound alerting | Inbound confirmation & menuing |
| LEVEL 3 | Outbound alerting | Inbound confirmation & menuing | Two-way collaboration |

## Alert Media Capabilities

| LEVEL 1 | One media only: voice, email, fax, radio |
| LEVEL 2 | Any two media systems working together |
| LEVEL 3 | All media, working in a single system, simultaneously |

## Alert System Installation Options

| LEVEL 1 | Subscription based ASP[3] version |
| LEVEL 2 | Subscription based ASP version with Alert Integration Software Development Kit |
| LEVEL 3 | Premise based version with Alert Integration Software Development Kit |

## Relevant Alert System Planning Statistics

**293,177,865** Americans[4]
**105,480,101** American households[5]
**2.59** Average American household[6]

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**98%** American households have **phone service**[7]
**67%** American households are **online**[8]
**66%** American households have one or more **mobile phones**[9]
**37%** Working Americans are **online**[10]
**29%** American households have a **fax machine**[11]



American Accessibility to Communications Tools
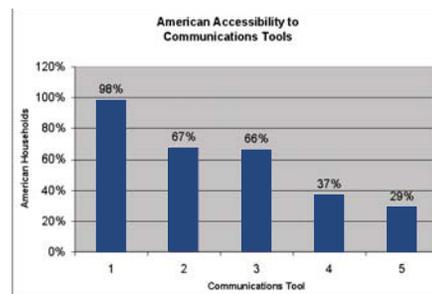
**Legend**

1. American households have phone service

2. American households have one or more mobile phones

3. American households are online

4. Working Americans are online

5. American households have a fax machine

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3.  Application Service Provider—a Service Bureau.

4.  Source: US Census Bureau, 18:59 EDT May 05, 2004.

5.  Source: Table DP-1. "Profile of General Demographic Characteristics for the United States: 2000", US Census Bureau: 2000.

6.  Ibid.

7.  103,370,499 households. Source: Census 2000 Summary File 3, Table H43, U.S. Census Bureau: 2000.

8.  Source: "A NATION ONLINE: How Americans Are Expanding Their Use of the Internet", February 2002: Washington D.C., U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration National Telecommunications and Information Administration. The 2001 Department of Commerce finding of 53.7% indicated a 20% annual growth rate for the three previous years. Assuming a slowing growth rate due to recession and market saturation of 12% compounded for 2002 and 2003 would put the 2003 estimate at 67.4%.

9.  63,288,060 households. Source: Scarborough Research, October 2003. 2.2 cell phones per household (Forrester).

10. Source: "Nearly 40 percent of US workers online", Feb 20, 2003: eMarketer and Wall Street Journal.

11. 30,100,000 households (est.). Source: "Residential Energy Consumption Survey (RECS)", Energy Information Administration (EIA), 2001: Department of Energy. 24 million households had a fax machine in 2001, much of that tied into all-in-one copier, scanner, printer, fax devices. Assuming a slowing growth rate due to recession of 12% for 2002 and 2003 would put the 2003 estimate at 30,100,000 households or 28.5% of households.

## The Solution

Leader Technologies has developed Leader Alert™—a rapidly deployable, scalable, two-way alert dissemination and collaboration platform. The system is web-based and can be quickly integrated into any existing security system. Leader Alert™ can be accessed from anywhere on the planet. It is a unified event processing system that can automatically notify 1 to tens of million of people by any combination of phone, fax, email, voice mail or pager.

Leader Alert™ is only part of the revolutionary Digital Leaderboard™ software engine developed by Leader Technologies. This engine enables secure two-way voice and data communications through its Leader2Leader® platform, all in the same system.

Leader Alert™ removes critical human "single points of failure" in existing security systems. At the same time, it immediately enhances the ability of people to get timely information so that their decision making is well-informed and targeted.

When an event occurs—such as a video security camera recognizing a known terrorist—Leader Alert™ can simultaneously telephone stakeholders in Government Agencies, State Department, state and local police, as well as email Homeland Security and the local terror task force. No valuable time is lost waiting for the classical security monitoring person to telephone each agency one at a time. More than that, Leader Alert™ provides an instant, scalable, high-encryption web collaboration environment so that these stakeholders can log on and get all the current data available on this incident. Why is scalability important? Because multiple stakeholders need to get involved. If your collaboration technology is local or home grown, it might be able to handle 10 or 20 people, but it could never handle hundreds or thousands at a time.[12]

The Leader Alert™ platform has five *fully integrated* components: (1) Receive, (2) Store, (3) Analyze, (4) Send and (5) Collaborate.

- **Receive and Store**—Securely receive any kind of human or signals intelligence and any data type and store in a common data repository using the public Internet as the delivery medium.
- **Analyze**—Process human and signals data, including video, for desired patterns.
- **Send**—Alert the appropriate people and groups automatically via phone, pager, Blackberry, email, fax, voice mail or online notification, etc.
- **Collaborate**—Use encrypted web-based work areas and communications tools, including audio conferencing, video conferencing, whiteboarding, documents sharing, file sharing, responder file repositories, and bulletin boards for responders to collaborate in the ongoing management of the incident.

## Leader Alert™

**A rapidly deployable, scalable, two-way, multiple-party alert dissemination and collaboration platform.**

The Leader Alert™ system is powered by Digital Leaderboard™ technology invented by Leader Technologies. Patents are pending. The Digital Leaderboard™ technology has technological validation by the US Department of Energy's Lawrence Livermore National Laboratory for use as a "Rapidly Deployable Security System" (CRADA No TC2030-01). The US Department of Energy (DOE) has issued special licenses to Leader for combining the *DOE's "smart camera" scene management and detection technology* with Leader's platform.

**Quoting from the DOE's technical abstract: "This [Leader] effort resulted in a wired security shield for communicating, storing, retrieving, collaborating and analyzing signals and human intelligence input that can be rapidly deployed."**

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12. New York's response was one of huge "organizational complexity" said John Harrald, of the Institute for Crisis, Disaster, and Risk Management at George Washington University, who tracked a list of as many as 449 organizations responding to the emergency, including 159 from the public sector alone. ...Many telephone, power and computer lines were down... That left the first responders reeling in their initial response." With this kind of complexity, only a system like Leader Alert™ that has the capacity to handle "many-to-many" data relationships and many data media simultaneously can even have the capability of handling the demands of a large scale emergency. Source: *Messages in the Dust*, September 2003: National Environmental Health Association.

# Leader Alert™ Provides Level 3 Capabilities, Immediately

Leader Alert™ enables Homeland Security to deploy a robust cross-agency alert dissemination and notification in months, not years, thus saving lives and securing our country from threats both foreign and domestic. Other alert systems can do one thing such as send one email to many people or broadcast 40 faxes an hour or send 60 voice mails in a minute. They tend to rely on dedicated, homegrown systems that require a lot of set-up and maintenance. These systems can work adequately for discrete, tightly controlled security environments. But the new threats we face emerge from many fronts, and we cannot predict in advance how coordinated a terror threat might be. Russ Keat points out that " 9/11 taught us that our discrete emergency response systems are woefully inadequate."

A Level 3 system solves the critical needs of scalability and security. Leader Alert™ is driven by the Digital Leaderboard™ software engine. This system was built from the ground up by seasoned, large system experts with scalability and security as foundational design specifications.

**Cross-agency alert dissemination**

**Deploy in weeks, not years**

## Leader Alert™ = Level 3 Capabilities
(without having to build it yourself)

### Alert System Capabilities

| | | |
|---|---|---|
| ✓ | LEVEL 1 | Outbound alerting |
| ✓ | LEVEL 2 | Outbound alerting \| Inbound confirmation & menuing |
| ✓ | LEVEL 3 | Outbound alerting \| Inbound confirmation & menuing \| Two-way collaboration |

### Alert Media Capabilities

| | | |
|---|---|---|
| ✓ | LEVEL 1 | One media only: voice, email, fax, radio |
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### Alert System Installation Options

| | | |
|---|---|---|
| ✓ | LEVEL 1 | Subscription based ASP version |
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| ✓ | LEVEL 3 | Premise based version with Alert Integration Software Development Kit |

Leader Alert™—One Leader Alert™ cabinet can accommodate 1 to 8,124 ports. The cabinets are modular, allowing for any port capacity required. This means that Leader Alert™ can support tens of million of alerts per hour if required. There are no technical limitations other than the amount of hardware and number of phone lines available. The Leader Alert™ system is available in two forms: (1) ASP subscription (Leader-managed), (2) Premise installation (Client-managed).

## Summary of Leader Alert™ Features and Benefits

- **Easy implementation, low cost.**
- **Level 3 Capabilities**—Supports voice, email and fax broadcasts simultaneously.
- **Web-Based XML User Control Console**—Supports simultaneous voice, email and fax broadcast.
- **Single Hardware Cabinet**—Can accomodate 1 to 8,124 voice ports; scalable across hardware cabinets.
- **Single Data Repository**—Available in relational and object-oriented forms.
- **Highly Secure**—128-bit encryption comes standard; DoD-approved encryption available for government applications.
- **Scalable**—Can handle up to tens of millions of messages at once.
- **Citizen Access**—Customizable.
- **Easily Integrated**—Leader Alert™ Software Development Kit enables linking of Leader Alert™ services to third party security applications for event detection, analysis, monitoring and staffing.
- **Rules-Based**—Leader Alert™ Software Development Kit enables customization of standard alerting features for specific alert automation requirements.
- **Collaboration-Ready**—Handles Conference Calls, Web Conferences, Video Conferences, Video Security, File Sharing, Documents, Bulletin Boards, Calendars, Tasks.
- **Two-way** (broadcast and collaborate).
- **Responder File Repositories**—Allows government agencies to better share intelligence.

Leader Alert™ has Level 3, two-way collaboration capabilities. To illustrate the importance of this feature, imagine the following scenario: Leader Alert™ has automatically alerted a state's first responders based upon rules set by state leaders. A state official wants to talk immediately to those alerted in order to give them further information and ask questions. This is not a problem. He simply uses LeaderPhone® Teleconferencing Services, which are seamlessly tied to Leader Alert™. If the state official wants to do an online web conference to display important first responder illustrations, he can use Leader WebDemo™, also seamlessly tied to Leader Alert™. The official can even post status reports as the event unfolds by using the secure bulletin boards and file and document sharing available through Leader2Leader®, also seamlessly tied to Leader Alert™. All these functions are part of the same scalable, secure Digital Leaderboard™ system engine.

## Alert Policy and Procedure Development
## Who gets the messages? When?

Alert technologies can have unintended negative affects if not implemented and managed properly. An ill-advised alert might cause widespread panic. Or, a mistaken alert might cause people to be put in harm's way unnecessarily. It is one thing to have the capacity to alert people quickly, it is another thing to do so responsibly. Leader Technologies has allied with a number of seasoned security and emergency management experts who can assist you in your alert system planning, implementation, training and ongoing management. Used wisely, Leader Alert™ is designed to save lives.

State-of-the-art alert dissemination capabilities raise important questions that the users themselves must answer. Questions such as:

- Who makes the decision about when an alert gets sent (or not sent)?
- Who keeps the contact list current?
- Who provides and keeps current the resource material that is made available?
- How are alerts worded and sent so as to avoid widespread panic?
- Who are the go-to people who will create and manage alerts?
- Which alerts are need-to-know vs. to the general public?

**Homeland Security Systems**
(current)
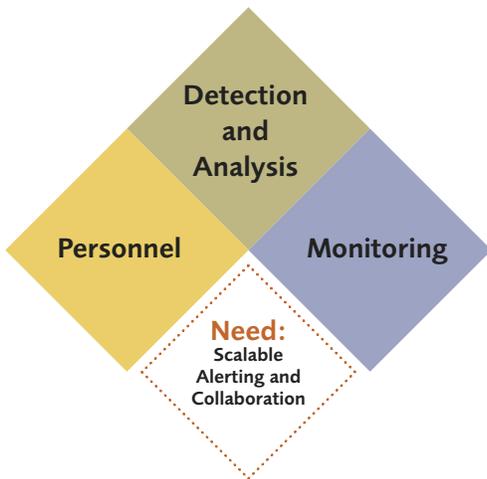
**Homeland Security Systems**
with Leader Alert™
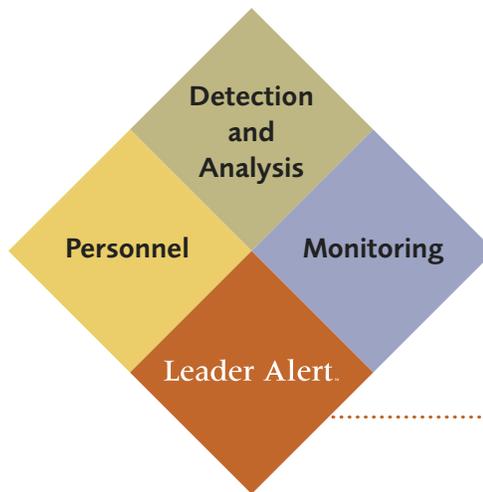


Leader Alert™ is the missing building block in a secure, scalable, web-based rapidly deployable Homeland Security system.

FIGURE 1: Leader Alert™ technology provides a vital building block for improving Homeland Security response and collaboration.

## Homeland Security Systems

Event Detection Systems
- Video
- Motion
- Biological
- Nuclear
- Fire
- Weather

Monitoring Personnel
- Site Specific
- Analysis
- Response
- Alerts
- Site Surveillance
- Non-scalable

*limited*

Event Monitoring Systems
- Site Specific
- Analysis
- Archiving

**Alert Dissemination and Collaboration**

**Leader Alert™**

**Leader Alert™ is the missing building block in a secure, scalable, web-based rapidly deployable Homeland Security system.**

- Site independent
- Scalable
- Secure, Encrypted
- Rules-based Notification
- Rapidly Deployable
- DOE/DOD Validated
- Phone, Fax, Email, Voice Mail, Pager, Video, Web, etc.

Security Stakeholders
- Anywhere
- Anytime
- Anybody
- Any number
- Immediately

### Benefits

- Removes human error in event monitoring & response
- Facilitates immediate, coordinated response on a scaled basis
- Eliminates rumors and hearsay in event response
- Unifies multi-agency information on an event
- Immediate response times

FIGURE 2: Leader Alert™ provides alert dissemination and collaboration that helps remove the element of human error in event detection and notification. It also provides faster and more comprehensive alert notification and confirmation.

**Leader Alert**  **For more information, contact a Leader Alert™ Sales Representative at:**