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GOOD STORY

Portland, Oregon's Regional Alliances for Infrastructure and Network Security (RAINS)-Net: Connect and Protect™

SUMMARY

The Portland, Oregon 9-1-1 Center launched the Connect and Protect™ network, based on Regional Alliances for Infrastructure and Network Security (RAINS) technology, in August 2003 to foster information sharing between the public and private sectors. Connect and Protect enables Portland 9-1-1 to rapidly gather and distribute sensitive information and incident alerts among public safety agencies, hospitals, schools, critical infrastructure owners and operators, and other homeland security stakeholders.

BACKGROUND

After the September 11, 2001 terrorist attacks, Charles Jennings, founder and CEO of Swan Island Networks, organized a series of meetings between Portland-area public safety and information technology (IT) representatives. The group formed the Regional Alliances for Infrastructure and Network Security (RAINS), a non-profit, public-private partnership dedicated to the accelerated development and deployment of homeland security-related technologies. The RAINS partnership includes private sector IT firms, research universities, public institutions, and emergency responders. The partnership is overseen by the RAINS Board, a committee made up of leaders from the public and private sectors.

In 2002, the RAINS Board coordinated efforts between Portland public safety agencies and local IT firms to develop a set of integrated, interoperable technologies that enable public and private sector groups to share sensitive information and incident alerts. The resulting set of technologies, named the "[RAINS-Net Solution](#)", was distributed to over fifty homeland security organizations in Oregon for a six month trial to test its utility and adaptability. Portland 9-1-1 decided to use the tested RAINS-Net Solution to better share sensitive information and incident alerts with schools and other private sector groups. In August 2003, Portland 9-1-1 established Connect and Protect by integrating the RAINS-Net Solution into its Computer Aided Dispatch system.

GOALS

Portland, Oregon's Connect and Protect program incorporates the public and private sectors into a secure network that distributes targeted incident alerts during emergencies and serves as a sensitive information sharing tool during non-emergency situations.

DESCRIPTION

Portland's 9-1-1 Center runs Connect and Protect to share information with and issue alerts to public safety agencies, private sector groups, critical infrastructure, hospitals, and schools. In its first year, Connect and Protect has linked over fifty private sector and public safety organizations and more than one hundred local schools. Information is delivered through a network of personal computers, phones, pagers, and handheld wireless devices.

Local Central Authority

Portland's 9-1-1 Center, as the local central authority, administers the Connect and Protect network. The local central authority is responsible for validating and managing network members, assigning security features to published data, and distributing incident alerts.

Members

Connect and Protect members represent a wide variety of public and private sector groups that actively participate in emergency planning and response efforts, including:

- State and local public safety agencies;
- Local federal agencies;
- Hospitals;
- Transportation firms and organizations;
- Financial firms;
- Manufacturers;
- Large employers;
- The Portland University system;
- Building owners and managers;
- Public and private schools; and
- Hotels.

Membership is reference-driven; new users typically must be invited by the local central authority to the system through an e-mail containing a link to a secure signup page. The 9-1-1 Center validates applicants as members of an organization with a public safety or homeland security interest by verifying the applicants' given contact information. The 9-1-1 Center also reserves the right to deny or revoke membership.

The RAINS-Net Solution

Connect and Protect's information sharing and incident alert capabilities run on a set of integrated technologies called the RAINS-Net Solution. The RAINS-Net Solution's foundational technology is an automated information processing tool called "Secure Wide Area Response Management" (SWARM). The SWARM tool defines all members, information, and alerts through three attributes: the security level as determined by Portland 9-1-1, geographic location, and job function. SWARM then targets information and alerts only to those members with matching attributes. Targeting data through attributes limits the dissemination of sensitive information to appropriate members. Because the process is automated, information and alerts are delivered to authorized members in only 10 to 60 seconds. Connect and Protect is thus able to share sensitive information rapidly with a limited group of authorized individuals.

Connect and Protect's capabilities are further enhanced by several supporting technologies. These technologies protect the network from unauthorized access, help ensure that resources are both protected and readily accessible, tag materials to incident alerts, and allow responding members to engage in two-way situational reporting.

Information Sharing

The RAINS-Net Solution enables Connect and Protect to share information securely and rapidly. Types of sensitive information shared through the network include:

- **Public safety and emergency management plans:** Public sector members can share emergency plans to coordinate and train a multi-disciplinary response. Private sector members can also access these plans to inform their own planning process.
- **Proprietary business information:** Businesses can share proprietary or sensitive information, such as the location of backup sites or facility layout maps, with public sector members.
- **Critical infrastructure data:** Maps, security plans, and other restricted information on critical infrastructure can be distributed to authorized network members for emergency planning efforts.

Connect and Protect has several capabilities that assist information sharing efforts while protecting sensitive information. Network administrators train authorized members on using these tools to protect sensitive materials.

Publishing tools

Connect and Protect's members must be authorized by Portland 9-1-1 to publish information on the network. Once authorized, network members use publishing tools to limit others' ability to access, save, copy, or edit sensitive information they have submitted. This feature builds private sector members' confidence in the information sharing process by protecting shared sensitive and proprietary information.

Version control

The network also allows authorized publishers to exert "version control" over documents distributed through the network. This feature updates all authorized end-users' versions of time-sensitive documents, including emergency response plans and private records. Version control helps ensure that all authorized members can refer to the most recent version of a document.

End-user cache system

Members sharing sensitive information are allowed to save these protected resources in an encrypted area of their own hard drives. This "end-user cache system" helps ensure that authorized users will have access to resources even when disconnected from the network. Encrypting the saved documents on the user's hard drive protects sensitive information from unauthorized access.

One-on-one information sharing

Members are given secure e-mail accounts and have access to other members' contact information to promote one-on-one information sharing. One-on-one information sharing fosters the development of cooperative personal relationships.

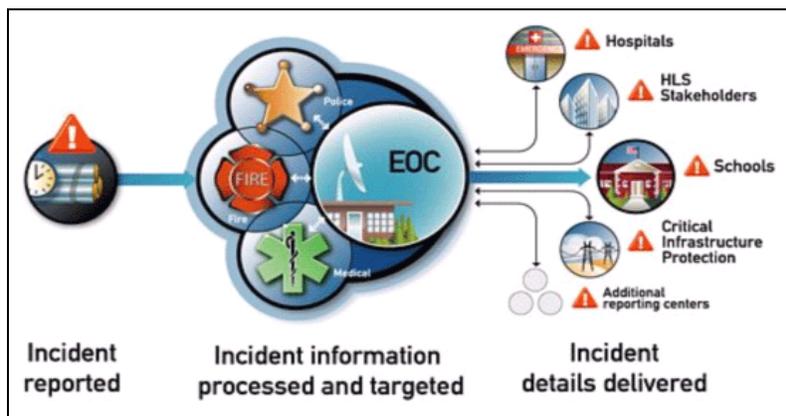
Situational reporting

During an incident, authorized network members use pre-generated forms to engage in secure, aggregated situational reporting. The network produces automated incident reports from these situational reports that are made available to authorized members.

Targeted Incident Alerts

Incidents reported to Portland's Emergency Operations Center (EOC) are distributed to Connect and Protect through an automated process. The 9-1-1 Center logs the incident and

converts it into a standard Internet Extensible Markup Language (XML). XML format allows messages to be issued through personal computers, phones, pagers, and handheld devices.



The Connect and Protect Incident Alert Process

Members logging in to the network are greeted with a Summary screen with an up-to-date incident log listing all recent and ongoing incidents. The listing includes details on incidents' severity, type, and the time posted to the system. Members can then click on a specific incident to access its incident screen, which gives the scene's location and the number of dispatched emergency response units.

The network's Geospatial Information System (GIS) technology creates automated maps of incident scenes, which are tagged to outgoing incident alerts. The tagged GIS maps allow network members to locate the incident site in relation to their own positions. The RAINS-Net solution also includes SWARM Scout, an automated tracking and tagging tool that attaches users' related library materials to incident alerts. SWARM Scout tags emergency plans, satellite imagery, and other resources to give users automatic access to a variety of related information during incidents. These tagged materials are listed on the incident screen.

Future Plans

In light of Connect and Protect's success in Portland, plans have been developed to expand the network into other communities in Oregon. The RAINS-Net Board also plans on promoting the adoption of the RAINS-Net Solution in communities nationwide.

REQUIREMENTS

Keys to Success

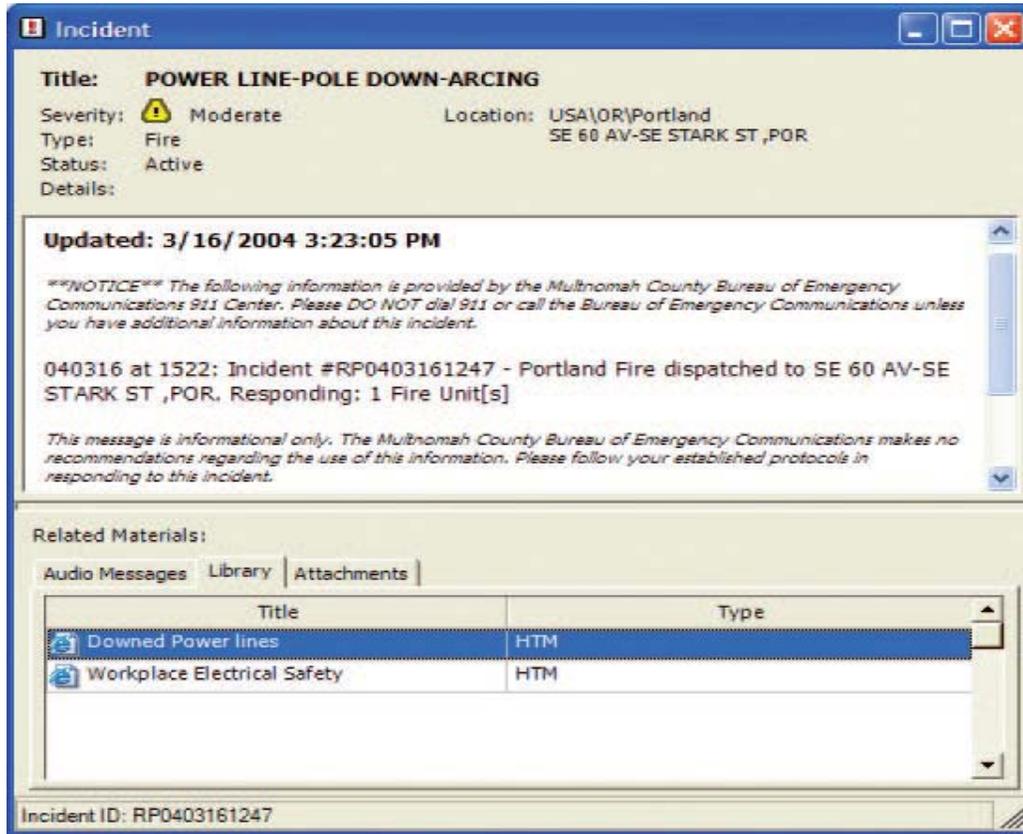
Connect and Protect's information sharing and incident alert capabilities enable public and private sector partners to coordinate emergency response efforts. The network's extensive security features give public and private sector partners the needed confidence to share sensitive information with each other. In addition, Connect and Protect is based on:

- **Local public-private cooperation:** The RAINS-Net Solution was developed and tested locally by IT firms and public safety agencies. Public-private cooperation on the local level helped ensure that the technology met Portland's needs and interests.
- **Existing technology:** Gaining access to the network requires no new or specialized hardware; users simply download a software package. This approach encourages

participation by minimizing the amount of training and equipment necessary to begin sharing information.

Resources

RAINS distributed its software to members of Portland, Oregon's Connect and Protect free of charge. In the future, RAINS plans on asking interested jurisdictions for reasonable compensation for the software.



Example of a Connect and Protect Incident Screen

Links

- Portland, Oregon 9-1-1 Center: <http://www.portlandonline.com/911/>
- RAINS-Net: Connect and Protect™ Program: http://www.rainsnet.org/programs/connect_and_protect.asp
- RAINS-Net Solution Blueprint: http://www.rainsnet.org/downloads/Intel_RAINS-Net_Solution_Blueprint.pdf

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