ICOM®

EMERGENCY DIGITAL VOICE / DATA

DISASTER COMMUNICATIONS

DIGITAL VOICE & DATA

Team with skilled amateur radio operators to provide low and high speed emergency voice & data, around the block ...to around the world!

POWER GRID REQUIRED

CELL PHONE REQUIRED

- Fast Deployment 128kbps Data
- Automatic Human Asset Tracking
- FCC-Licensed, Robust Amateur Radio

Icom America Inc

128kbps High Speed Wireless Data via D-STAR

– What Does it Mean?

Damage Assessment
With 128 kbps data, see what your in-the-field staff sees during windshield surveys. It's a useful tool to provide real-time, on-scene visuals.

Wide Area Networking
Complements existing emergency management networks; covers miles, not meters. Embedded position information links digital maps, charts, and more.

Shelter Management
New tool, enables shelters to share vital information digitally:

- Inventory, such as medical supplies, fuel supplies, food and water availability, bed-counts, etc.
- Logistics and Coordination
- Staff and Schedule

Determine if shelters are filled or empty, in need of supplies or can spare them. Personal information is not transmitted in the clear, satisfying HIPAA standards.

Field Digital Data
Link field, shelter, and EOC staff with digital data.
- Keyboard to keyboard chat
- E-mail in the field
- Site to site digital comm
- HIPAA compatible

Visual Asset Tracking
D-STAR integrates GPS information automatically with tactical communications. Position is included with every voice transmission. On a computer running Automatic Position Reporting System (APRS®) software provides real-time map plots of where your resources are deployed. Allocate efficiently, at-a-glance! Send pre-programmed status reports from a PDA without saying a word.

D-STAR Bridges the GAP
D-STAR and amateur radio provide the crucial first- and last-mile communications to enable effective emergency response.

What is D-STAR?

D-STAR: an open protocol
D-STAR is an acronym for Digital Smart Technology for Amateur (Ham) Radio. The D-STAR technology is an open protocol designed in Japan. The English version of the protocol is published on the ARRL website (www.ARRL.org). D-STAR is quickly growing in popularity with U.S. ham operators.

Amateur Radio
While D-STAR's sole application is Amateur Radio, recent events have made Amateur Radio a primary focus for disaster relief communications by the International Telecommunications Union, or ITU. In its latest update, February 2, 2006, the ITU created recommendation ITU-D13, encouraging international government administrations *"to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief."*

128k D-STAR is available on select Icom equipment. Backbone D-STAR repeaters are already in place in numerous states throughout the U.S. More and more are coming online!

D-STAR is being deployed throughout the U.S., such as:

... in Dallas/Fort Worth, TX

In 2003, Jim McClellan, N5MIJ and Bill Moore, N5ZPR, became the first D-STAR customers in the U.S. Since then, and together and with their club, the Texas Interconnect Team, they've expanded their D-STAR presence to cover the entire Dallas/Fort Worth area – over 8,300 square miles and 5.8M population – while working with Icom and other amateurs all over the country and world to advance D-STAR technology. The club hosts critical functions for the D-STAR network, including the main D-STAR Trust Server, and a popular web site, www.D-STARUsers.org.

Jim says: "We've made presentations and demonstrations for amateur clubs, relief or-ganizations, emergency services organizations, the U.S. military, and government agencies. Everyone we talk to is interested in D-STAR's use of simultaneous voice and data."

"This is a capability unique to the amateur service today, and gives us the opportunity to provide a service not available anywhere else. Emerging D-STAR applications that allow significantly better visibility to Command and Control assets will make a huge impact in Emergency Communications incidents."

... in Washington, DC

In 2006, race organizers for the 31st annual Marine Corps Marathon once again turned to the National Capital Amateur [Radio] Council (NCAC) for race day communications help. Radio operators utilized D-STAR digital data to provide broadband communications support to 4 AID stations from Georgetown to the Pentagon and Crystal City in addition to NCS at the Lincoln Memorial and the COC at the Iwo Jima National War Memorial – all part of an ops readiness demonstration to race officials.

The delivered performance was so stunning that the D-STAR demo stations became the primary method to manage runner medical info using the native, interactive race web application. At 10 to 100 times the bandwidth of previously used packet systems and supporting native TCP/IP applications, D-STAR allowed AID station officers to retrieve info not available in previous years.

Photo courtesy USMC

Hams also used a D-STAR network chat application for ops coordination that in one case handled sensitive crisis info in a very private, quiet manner. Because of 2006's success, all the AID stations for the 2007 Marathon will upgrade to D-STAR digital.

... and throughout Alabama, Mississippi, and (soon) to Louisiana

Amateur radio operators working with radio and emergency organizations, the Alabama Section of the American Radio Relay League (ARRL) and the Southern Baptist Disaster Relief Group have together launched a D-STAR technology project. This is an aggressive project which plans to use D-STAR as part of the Disaster Relief package. Internet access, digital data, automatic ID and position coordinates are just a few of the enhanced capabilities the Amateur Radio Emergency Services provides in disaster relief ops.

Alabama is a leader in D-STAR systems, infrastructure, users and activity. Innovation, networks, applications, tools, training, users, and emergency disaster readiness are essential parts of the Alabama project.

The team provides expertise and personnel to help amateur operators in the Hurricane zone, before the next disaster. In Alabama, Mississippi, and Louisiana, two portable and four hardened gulf coast systems are in various phases of completion. To date, the Alabama system is 100% complete, Mississippi is 80% complete, and the Louisiana system is now in the final planning stage.

D-STAR's popularity and use is growing fast!

DIGITAL

Q & A: How do I get started?

To learn more about amateur radio, or to find a ham radio club in your area, contact the American Radio Relay League (ARRL.org). Most amateur radio operators will welcome the chance to discuss emergency communications.

Who can use D-STAR equipment?

Any ham station requires a licensed operator to act as controller. With a controller present at all times and managing the equipment, anyone may use the amateur airwaves.

Who owns and maintains the system?

While anyone may purchase the D-STAR equipment, by law it takes an amateur radio operator (ham) to transmit. Hams may purchase D-STAR equipment in cooperation with local or state agencies.

What range will the system offer (footprint?)

Range always varies due to terrain and antenna height, but 20-40 miles from the repeater is normal. Due to digital technology, benefits of up to 20% have been experienced over comparable analog systems.

Does D-STAR tie-in with P25 interoperability?

D-STAR and P25 are both digital-based standards. D-STAR complements agency interoperability. But D-STAR is not compatible with P25 mode communications.

FCC RULES, Part 97 – Amateur Radio Service
For a complete listing of the rules, visit the FCC Website.

"Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications."

DHS

A section of the Department of Homeland Security (DHS) 2007 Appropriations Act, HR 5441 formally includes Amateur Radio operators as a part of the emergency communications community. President Bush signed the bill into law October 4, 2006.
http://thomas.loc.gov/cgi-bin/bdquery/z?d109:h.r.05852:

Amateur Radio is included within the legislation's Subtitle D, Section 671, known as the "21st Century Emergency Communications Act." Radio amateurs are among the entities with which a Regional Emergency Communications Coordination Working Group (RECC Working Group) must coordinate its activities. Included within the DHS's Office of Emergency Communications -- which the measure also creates -- RECC Working Groups attached to each regional DHS office will advise federal and state homeland security officials.
http://www.arrl.org/news/stories/2006/10/04/100/

HURRICANE KATRINA

The amateur radio emergency service received favorable mentions in the WHAT WENT RIGHT section of "The Federal Response To Hurricane Katrina Lessons Learned" report recently submitted to the President of the United States.
http://www.whitehouse.gov/reports/katrina-lessons-learned/

Example D-STAR Emergency Ham Radio Communications Flow
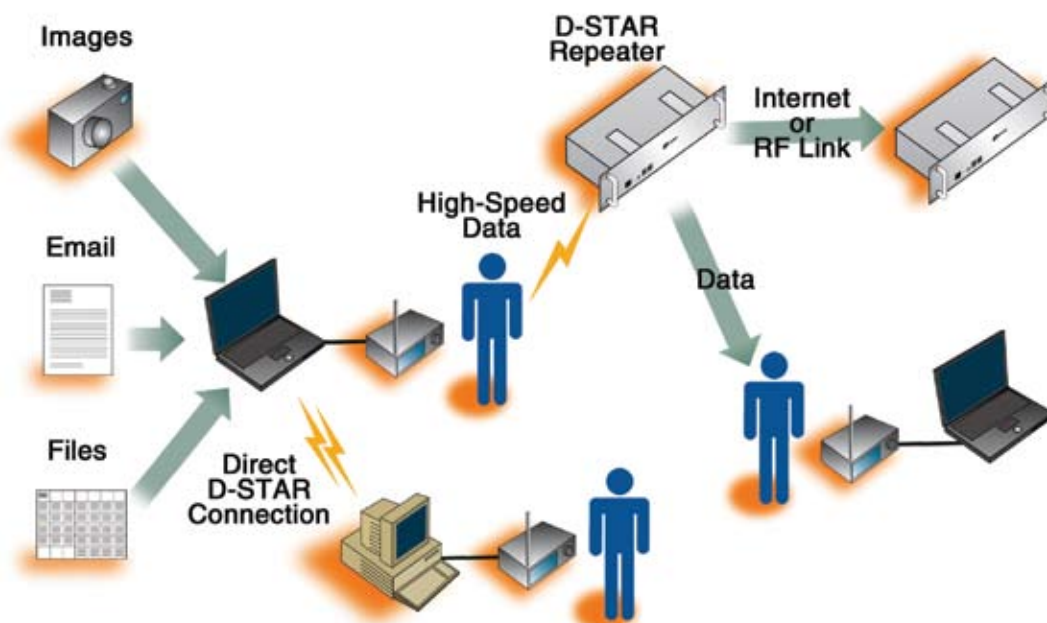
"[International government administrations should] take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief."

- International Telecommunications Union, February 2, 2006

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