

SECTION 5: ARES SERVICES

A number of specific services are available to ARES clients, letting them tailor ARES communications support to fit their organizational and operational needs.

Once you complete this section, you will be able to identify the types of support that ARES can make available for supporting emergency communications.

EMERGENCY COMMUNICATIONS STATIONS

This is the most commonly requested service. Emergency communications stations provide voice and data communications between specific locations (for example, emergency operations centres, aid stations, shelters, hospitals, and other key locations). These stations augment existing communications, adding capacity and flexibility. (In the unlikely event that existing communications infrastructure fails, these stations can also serve as a backup.)

SHADOWING

Shadowing involves attaching telecommunications operators to specific 'high-value' personnel in an organization. This ensures that key personnel are kept in touch, regardless of location, communications overloads or failures, or other factors.

MOBILE COMMUNICATIONS SERVICE

ARES *mobile communications service* attaches telecommunications operators to mobile units (such as evacuation buses, assessment units, search and rescue teams, or other mobile units requiring communications support). Telecommunications operators ensure connectivity between the mobile units and EOCs or coordination points.

Mobile communications services could also use a mobile positioned to act as a relay station when there is poor coverage on simplex or repeater networks.

DATA MESSAGING

Data messaging service is provided using D-STAR, ad-hoc packet radio LANs, Wifi networks, and point-to-point Ethernet radio links (using higher power and gain antennas in the shared amateur radio portions of the 900 MHz and 2.4 GHz bands). Data messaging stations are set up at key sites such as evacuation centres and EOCs, allowing the efficient transfer of large quantities of data.

In situations where you need to move formal data or files from one site to another and the Internet is not available, ARES data messaging may be useful. ARES data stations at each site use data radio channels and networks to send text messages (such as lists of names) or actual files.

While the data rate of traditional packet radio is quite low, the AX.25 protocol is very efficient and when combined with B2F compression used with Winlink 2000 or FBBS type bulletin boards, throughput efficiency can approach that of dial-up ISP connections.

D-STAR in Digital Data mode can approach the capability of commercial "DSL-Lite". Wifi or Ethernet radio links can approach the efficiency of a wired LAN.

For a more detailed discussion of digital communications, see [“Digital communications” on page 17.1.](#)

RAPID COMMUNITY ASSESSMENT

During many types of emergency, getting information about conditions in the community at large can be crucial. The ARES network provides an easy way to get basic information very quickly. During community emergencies (for example, during severe weather events), the ARES network can provide rapid assessment of conditions at a large number of locations throughout the region.

The types of information that could be requested include the status of electrical and telephone service, wind and weather conditions, road conditions, or even reporting of physical damage (for example, flood damage).

This service augments existing procedures for community assessment, providing rapid feedback of basic data from a large number of points.

BACKUP COMMUNICATIONS

ARES *backup communications service* places ARES emergency communications stations at or near existing high-value communications stations (such as those at City Hall, EOCs, hospitals, etc.) to provide backup service in case of problems or overload in key communications links. In this mode, the backup communications stations and networks are staffed and ready but idle unless needed.

INTEROPERABLE COMMUNICATIONS (INTER-AGENCY BRIDGING)

In situations where aid, response and recovery efforts are being hampered by incompatible communications systems, ARES can assist by providing a communications ‘bridge’. This need may arise when:

- groups that do not normally work together are required to communicate, but are using different radio systems or incompatible frequencies
- a key system used to interconnect communications system becomes overloaded by traffic levels
- communications systems are working normally, but a back-up solution is required in case of failure or overload.

WIDE-AREA COMMUNICATIONS RELAYS

ARES can provide communications connectivity outside the local area when required. This service is useful during emergencies that disrupt telephone and Internet communications over a wide area.