

SECTION 30: GLOSSARY

This section lists terms that are used in ARES activities or may arise during discussions of ECOM issues.

Note: This glossary section is shared across all ARES guides and documents, including those provided to served agencies and clients. You may see very basic terms explained in very simplistic ways in this glossary, for the benefit of agency personnel and others. In addition, you may see terms defined here even though those terms do not appear in this training manual.

2-point safe

A measure of the redundancy of a process or system. Two-point safe means that the process or system can tolerate a single critical 'failure' and still achieve its purpose. For example, a callout procedure is 2-point safe if it will succeed even if one of the designated ECs is unavailable.

3-point safe

A measure of the redundancy of a process or system. Three-point safe means that the process or system can tolerate double critical 'failures' and still achieve its purpose. For example, a callout procedure is 3-point safe if it will succeed even if two of the designated ECs are unavailable.

AEC

See ["assistant emergency coordinator" on page 30.2.](#)

amateur radio operator

A person who has been certified and licensed by the Government of Canada (Industry Canada) to install and operate non-commercial radio systems on allocated frequencies. As part of their certification, amateur radio operators are tested on operating procedures, systems design, radio theory, interference prevention, and other key subjects. Operators are legally allowed to build and implement systems without the need for type acceptance, and are permitted to use a wide range of frequencies suitable for local, point-to-point, long distance, and even satellite communications. The term 'amateur' refers to the provision that these operators must not accept any financial compensation for their services, and cannot transmit commercial communications (communications as part of 'for profit' enterprises).

APCO

The Association of Public Safety Communications Officials, International, is made up of law enforcement, fire and public safety communications personnel.

APRS

See ["automatic position reporting system" on page 30.2.](#)

ARES operator

A licensed amateur radio operator who is trained and qualified to participate in an ARES operation.

assistant emergency coordinator

AEC. An ARES volunteer who shares some or all of the emergency coordinator's responsibilities and duties. See [“emergency coordinator” on page 30.5](#).

automatic position reporting system

APRS. A system that broadcasts a station's position by radio, allowing automated tracking and plotting. In most cases, position data is generated by a GPS unit attached to the broadcasting station.

authentication

The process used to ensure that a party is actually who they say they are, and that they are authorized to send or receive specific types of information.

availability net

See [“standby net” on page 30.15](#).

AX25

A data transmission protocol used on amateur packet connections. AX25 is very similar to the X25 protocol commonly used on commercial data circuits.

automated traffic

Automated traffic is any form of communications that does not involve operators at both ends of the connection (for example, a semi-permanent amateur television transmission, or a packet relay of Internet weather information).

Blackberry

A digital messaging device used by many businesses and by some officials at the municipal, provincial and federal level. Blackberry units are specialized digital assistants (PDA) that operate on an Aliant wireless data network. Blackberry PDAs and Blackberry cellphones allow the efficient exchange of emails and text messages.

client

A client is a specific organization (a municipality, aid agency, or government entity) whose emergency communications needs are met using ARES resources. See also [“served agency” on page 30.14](#).

challenge-response authentication

Challenge-response is a form of [authentication](#) that uses secret code tables issued only to authorized communications stations. A station receiving critical messages, information or instructions challenges the sender to authenticate by reading out a reference code. The challenged station reads back the alphanumeric response code corresponding to the challenge code in their code table. (In certain situations, a sending station may choose to challenge a receiving station, in order to ensure that a message or instruction has been received by the intended station.)

command net

A form of task-specific net used to support senior executives and primary stakeholders.

COMMS

An acronym for communications. ARES operators are encouraged to use the term COMMS on all station identification signs at emergency response sites, and to wear COMMS-labelled identification vests or caps.

communications officer

An official responsible for communications for a served agency, government department, or other entity. The role of communications officer is not used in ARES, but ARES operators may have to interact with communications officers working for the provincial government, municipalities, or served agencies during emergency operations.

communications supervisor

An ARES role responsible for managing the overall health and functioning of ARES operations on an hour-by-hour basis. A communications supervisor ensures that client needs are met, troubleshoots logistics and communications problems by assigning operators to locations and nets, and escalates issues to the EC when required. (The role of communications supervisor is often filled by the EC or AEC, particularly during the beginning phases of an ARES operation.)

CW

A mode of communications where text is sent using a series of tones. Long tones are called dashes, and short tones are called dots. CW is slower than other modes, but is useful in situations where low-power HF stations must communicate, or in cases of poor propagation. CW can be sent and received manually by skilled operators, or can be sent and received using a CW console (often a PC equipped with appropriate software).

DCO

District Communications Officer

DEC

See [“district emergency coordinator”](#) on page 30.4.

deputy incident commander

DIC. An officer who is assisting an incident commander or has been delegated incident commander duties. See [“incident commander” on page 30.9.](#)

DIC

See [“deputy incident commander” on page 30.4.](#)

digital data messaging

Digital communications is used in situations where messages need to reach their destinations without any errors, and need to be logged and recorded. Digital messaging is particularly well suited to formal traffic that is lengthy in nature.

directed net

A formal net with a net controller, who directs all communications on the net. Stations request permission from net control before calling other stations or passing traffic.

disaster welfare inquiry

DWI. A Red Cross term for [welfare traffic](#). Most disaster welfare inquiries are carried over telephone networks. DWI traffic is not normally carried over ARES channels, except in situations where a ‘local hop’ is required to reach a telephone network. (Red Cross welfare traffic is not normally carried on the NTS.)

district emergency coordinator

The RAC District Emergency Coordinator (DEC) is appointed by the SEC to supervise the efforts of local Emergency Coordinators in the defined district.

duplex

Communications using more than one frequency. Typically, duplex communications take place over a repeater. All stations transmit on one frequency, and listen on a second frequency. A repeater rebroadcasts the transmissions from the first frequency onto the second frequency, at greater power and range.

DWI

See [“disaster welfare inquiry” on page 30.4.](#)

EC

See [“emergency coordinator” on page 30.5.](#)

ECOM

Emergency communications.

EMC

Emergency Measures Coordinator. This is an [Emergency Management Organization](#) officer responsible for disaster planning and response in a specific region.

EMCG

Emergency Management Communications Group. This is a volunteer group of amateur radio operators attached to the New Brunswick provincial [Emergency Management Organization](#). Similar groups are attached to provincial EMO groups elsewhere in the Maritimes.

ECOM

Emergency communications.

emergency coordinator

EC. An ARES emergency coordinator has a number of responsibilities before, during and after ARES operations. In summary, an EC manages ARES exercises and operations, training of ARES personnel, maintenance of relationships with ARES served agencies and clients, management of ARES infrastructure, public communications, and RAC reporting.

Emergency Management Organization

The Emergency Management Organization (EMO) is an organization that operates at the federal, provincial or municipal level to provide disaster planning, logistics and response coordination during national, provincial, regional or municipal emergencies.

emergency operating procedure

A procedure used in unusual, emergency conditions to perform a task.

emergency operations centre

An emergency operations centre (EOC) is a location that has been set up to support disaster response officials performing planning, coordination, communications and other control processes during an emergency. Pre-configured, designated EOCs exist in many locations.

emergency pack

See [“ready pack” on page 30.13](#).

emergency response vehicle

A vehicle configured to provide an emergency service (for example, an ambulance) or serve a specific function during an emergency (for example, a command trailer).

EMO

See “[Emergency Management Organization](#)” on page 30.5.

EOC

See “[emergency operations centre](#)” on page 30.5.

EOP

See “[emergency operating procedure](#)” on page 30.5.

ERV

See “[emergency response vehicle](#)” on page 30.5.

extended ready pack

A pack or kit that contains everything an ARES operator will need to operate comfortably for several days. Ready packs may be prepared by individual operators to meet their specific needs, or may be prepared by [jump team](#) leaders to support a group of operators. See also [ready pack](#).

FEMA

The Federal Emergency Management Agency – a federal organization in the United States that supports state and local civil-preparedness and emergency management agencies.

formal voice communications

Formal voice communications is used in situations where messages need to reach their destinations without any errors, need to be logged and recorded, or are being relayed by intermediate stations.

free net

An [EMCG](#) term for an [open net](#).

FRS

Family Radio Service (FRS) radios are simple, low-powered two-way radios that can be operated by anyone without the need for a license. FRS radios are cheap and readily available, making them ideal for situations where communications needs to be extended over a local site by giving two-way handheld radios to unlicensed runners, officials, and volunteers. FRS radios have 14 channels and a range in a typical site environment of about 1.5 km. (Longer range, unlicensed [GMRS](#) radios are now also available in Canada.) Although many FRS radios offer ‘privacy codes’ (CTCSS tone squelch), FRS communications are inherently insecure and can be easily monitored by anyone with a scanner or FRS/GMRS radio. FRS radios cannot communicate with radio systems used

by amateurs, emergency services, or businesses, although they can communicate with GMRS radios on FRS channels.

GMRS

General Mobile Radio Service (GMRS) radios are simple two-way UHF radios that can be operated by anyone without the need for a license. GMRS radios are more expensive than [FRS](#) radios, but are still reasonably affordable. They are ideal for situations where communications needs to be extended over a local site, or between adjacent sites, by giving two-way handheld radios to unlicensed runners, officials, and volunteers. GMRS radios have 22 channels (14 of which will interoperate with FRS radios) and a range in a typical site environment of about 5 km (1.5 km when communicating with FRS radios). Some GMRS radios are repeater-compatible, but most are simplex only. GMRS radios cannot communicate with radio systems used by amateurs, emergency services, or businesses.

GMT

Another term for [universal coordinated time](#).

ground truth reports

Reports provided by trained or untrained observers located in (or resident in) an affected area.

ham

An archaic term for [amateur radio operator](#). This term is less formal and its use is no longer encouraged. Similarly, the term 'ham radio' is now less commonly used than 'amateur radio'.

hardship conditions

Hardship conditions may be encountered when operating in the field, or at shelter locations after a major disaster. If you are operating under hardship conditions, assume that you will have to be completely self-sufficient, and operating without any support or infrastructure. This means bringing your own power (for example, generator and fuel), camping gear, station setup gear, and even several days worth of food and water.

health and welfare traffic

See [“welfare traffic” on page 30.17](#).

HF

See [“high frequency” on page 30.8](#).

high frequency

HF. A range of frequencies that typically allow [simplex](#) communications over extended ranges (from tens of km to worldwide coverage). HF radio systems (mobile or base) typically use more complex antennas than [VHF](#) or [UHF](#) radio systems, and may be equipped to use both voice communications and [CW](#).

IC

See [“incident commander” on page 30.9.](#)

ICS

See [“incident command system” on page 30.8.](#)

identification vest

An identification vest uses [ICS](#) colour-coding and labels to identify the wearer’s function, making it easier to coordinate resources onsite. Identification vests worn by communications personnel are typically yellow or lime coloured, and have a label that reads EMERGENCY COMMUNICATIONS, ECOM, ECOMM or COMM. See [“Tactical and identification vests” on page 14.18.](#)

incident command system

ICS. A formal system used for managing emergencies. ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure that can meet the needs at hand without being hindered by jurisdictional boundaries. ICS was developed to address the following problems:

- Too many people reporting to one supervisor
- Different emergency response organizational structures
- Lack of reliable incident information
- Inadequate and incompatible communications
- Lack of structure for coordinated planning among agencies
- Unclear lines of authority
- Terminology differences among agencies
- Unclear or unspecified incident objectives

ICS enables integrated communication and planning by establishing a manageable span of control. ICS divides an emergency response into five manageable functions essential for emergency response operations: Command, Operations, Planning, Logistics, and Finance and Administration.



In the ICS, the incident commander wears a green vest. Other command staff wear red vests. Operations personnel wear orange. Logistics personnel (including communications personnel) wear yellow or lime vests. Planning officers wear blue. And finance and administration personnel wear grey.

incident commander

IC. The public safety or law enforcement officer responsible for an operation (for example, a police operation, search and rescue operation, or evacuation). The IC is responsible for all aspects of the response, including developing incident objectives and managing all incident operations.

JEOC

Joint Emergency Operations Centre

jump kit

See [“ready pack” on page 30.13](#).

jump team

A group of operators that are completely self-contained and able to transport themselves to required locations, establish communications, and function without external support for extended periods. See [jump team operator](#).

jump team operator

An operator that is completely self-contained and able to transport himself to a required location, establish communications, and function without external support for extended periods.

liaison station

A liaison station acts as an answering service and filter between the primary net and a served agency. It can also monitor activity on a sub-net that is serving a particular agency using a secondary channel.

In some cases, a liaison station acts as an informal net control station for those ARES operators assigned to support a specific agency. (This is done only on open nets. See [“open net” on page 30.12.](#))

Liaison stations are very important in many nets, especially large-scale nets or those spread over a wide area. They are invaluable in a net that is serving several different agencies. The net controller can create liaison stations “on the fly” as requirements arise.

MDOC

See [“multidisciplinary operational team” on page 30.10.](#)

MGRS

A form of [universal transverse mercator](#), a mapping coordinate system. MGRS can be selected as a display option on most modern GPS units, and is used primarily in search and rescue and land tracking situations.

Morse

A ‘language’ used to exchange text using [CW](#) mode. Morse uses an alphabet consisting of ‘dits’ and ‘dashes’, combined to form individual characters, digits and symbols. See [“CW” on page 30.3.](#)

MP3

A very efficient digital file format used to record and archive audio recordings. In ARES, MP3 format is often used to record on-air traffic for later review, either for training or forensic purposes.

multidisciplinary operational team

MDOC. This is a Red Cross term for a group that performs assessments of need in specific areas.

National Interagency Incident Management System

An American emergency management system that is based on the [incident command system](#).

NCS

See [“net control station” on page 30.11.](#)

near vertical incidence skywave

Near Vertical Incidence Skywave (NVIS) HF communications uses high-angle skywave paths between stations instead of ground-wave or surface-wave propagation. Mobile stations using whip antennas bent parallel to the ground can communicate more reliably over ranges of several hundred miles. Signal strengths with high-angle skywave are weaker, but communications is more reliable, less subject to fading, and more consistent between stations. Intervening terrain and obstructions between stations such as hills, mountainous areas, and built-up areas with tall buildings do not interfere with NVIS communications.

net, command

See [“command net” on page 30.3.](#)

net, directed

See [“directed net” on page 30.4.](#)

net, open

See [“open net” on page 30.12.](#)

net, tactical

See [“tactical net” on page 30.16.](#)

net control station

A station designated to control or manage traffic on a radio net. A net control station may be located at an EOC or other central location, or it may be located offsite at a fixed, home station. In some situations, even a mobile or handheld station may be used for net control (though this is not recommended).

net controller

See [“net control station” on page 30.11.](#)

NIIMS

See [“National Interagency Incident Management System” on page 30.10.](#)

NVIS

See [“near vertical incidence skywave” on page 30.11.](#)

OEC

Offsite Emergency Centre. This term has been replaced by [emergency operations centre \(EOC\)](#).

OES

See [“Official Emergency Station” on page 30.12.](#)

Official Emergency Station

OES. A Canadian licensed radio amateur may be appointed as an OES by RAC if they are a RAC member and are interested in setting high standards of emergency preparedness and operation. An OES must meet the following requirements:

- Regular participation in the local ARES, if any, including all drills and tests, emergency nets and emergency situations.
- Ability to operate without commercial power.
- Ability to operate on at least one emergency-useful band while mobile.
- Must be fully acquainted with standard NTS and local municipal message forms and capable of using them to handle third-party messages.
- Reports monthly to RAC.

one-time pad

A list or table of codes that are used in ARES operations for [challenge-response authentication](#).

open net

A net that allows informal communications, with or without a net controller. If there is a net controller, the controller acts to provide coordination, record keeping, and other support. On an open net, stations do not need to get net control permission before calling or passing traffic.

PCO

[EMO/EMCG](#) Provincial Communications Officer.

point safe

A measure of redundancy in a process or system. See [“2-point safe” on page 30.1](#) and [“3-point safe” on page 30.1](#).

RAC

See [“Radio Amateurs of Canada” on page 30.12.](#)

Radio Amateurs of Canada

RAC. The organization that represents radio amateur operators in Canada, and provides a single interface between the Government of Canada and the radio amateur community.

rapid emergency deployment

A highly urgent deployment of a small number of operators and stations, following a simple, streamlined plan to meet short-term needs. See [“RED team” on page 30.13](#).

ready pack

A pack or kit that contains everything an ARES operator will need to operate comfortably for up to 12 hours. Ready packs are prepared by individual operators to meet their specific needs. It is recommended that ready packs be prepared in advance so that they contain most or all of the items needed, and can be grabbed in a hurry when needed. (Also called an emergency pack or jump kit.) See also [extended ready pack](#).

RED team

A rapid emergency deployment (RED) team is made up of operators who commit to being available anytime, day or night, weekday or weekend, on call to quickly respond to communications callouts. RED team members keep ready packs on hand and ensure that they are able to respond to requests for assistance. The purpose of the RED team is to provide core communications in the short term, allowing a more controlled, planned activation of other operators to meet sustained needs.

relay stations

Situations are encountered where the distance from one area to another is too great for effective direct communications and repeater linking is either not available or is at capacity.

A relay station may be used to relay specific information between two sites. The relay station may also monitor repeater activity and report appropriate information to a second site by way of telephone or Internet communications.

repeater

A radio system that receives weak signals from mobile or handheld transceivers on one frequency, and instantaneously rebroadcasts the signals at higher power on a second frequency. Repeaters give low-power transceivers extended range and reliability, allowing convenient communications over a wide area.

SATERN

The Salvation Army’s emergency radio network, used to coordinate aid during recovery operations. SATERN is activated to support shelters and aid stations in affected regions after disasters, but use affiliated stations far outside the affected region to serve as net control stations, and to originate traffic to and receive traffic from the affected region. SATERN uses ARES-compatible message protocols and forms, and is interoperable with ARES, but SATERN registered operators receive specific guidelines and job aids from their SATERN coordinator.

SAR

See [“search and rescue” on page 30.14](#).

sartech

Search and rescue technician.

SARTEX

Search and rescue technician.

search and rescue

SAR. An operation to locate a missing person, vessel, or object. SAR operations in our area are typically conducted by the police and by the River Valley Ground Search and Rescue (RVGSAR) group. ARES may be involved in larger SAR operations that exceed existing capacity, or require specialized communications support.

self-deployment

Self-deployment occurs when radio operators mobilize to a post without receiving a request or instruction to do so. Self-deployment may be appropriate depending on the situation, but is not recommended if communications is available between the operator and the 'chain of command' (either municipal officials, the ARES EC, the EMO communications officer, or direct contacts at served agencies).

served agency

A served agency is an agency or entity (such as the Canadian Red Cross) who are 'clients' of ARES. ARES provides services to these served agencies as required, under its mandate to provide emergency communications services.

shelter in place

Shelter in place is an approach to sheltering individuals during emergencies that involves keeping individuals in safety areas and relying on safety supplies and practices to provide protection.

shoutcast

An Internet protocol and application used to broadcast audio over the Internet. In the context of ARES and emergency communications, shoutcast can be used to let stakeholders, and even the general public, listen in on emergency traffic over the Internet (if Internet connectivity is available). A receiver is connected to a shoutcast-configured computer, which in turn transmits the received audio to any user that connects to it. Shoutcast can be scaled up to serve large audiences, if needed, and can also provide secure access. Shoutcast may serve as an alternative to IRLP and Echolink in some situations.

simplex

Communications on a single frequency, with all stations transmitting and receiving on that one frequency.

simplex repeater

A transceiver that has been configured with a specialized audio module to retransmit any received signals. The simplex repeater records the audio from a received signal on a digital recording chip, and when the signal stops, immediately begins retransmitting that recorded audio on the same frequency ([simplex](#)). This provides a ‘dirty’, simple way of extending communications range. The disadvantages of simplex repeating include the following:

- Audio is broadcast twice in a row (once during the initial transmission, and once during the retransmission), which can be time consuming and confusing.
- Each station using a simplex repeater must be aware of the likelihood of ‘doubling’, where two stations that cannot hear each other on simplex are transmitting at the same time.
- Simplex repeaters cannot be used in tandem to further extend range.

SOP

Either a [standard operating procedure](#) or, less commonly, a [station operating procedure](#).

standard operating procedure

SOP. A procedure used under normal conditions to perform a task.

standby net

A standby (availability) net is used as an on-air rallying point for off-duty or unassigned operators, or for operators just joining the operation. The standby net is used to deploy operators to specific duty stations and to perform other ARES-specific coordination.

station operating procedure

SOP. A procedure that apply to a specific communications station.

TAC

A channel designation (for example, TAC-2, for Tactical Channel 2).

tactical vest

A tactical vest is a vest that includes features to support the tasks performed by the wearer. For example, a tactical communications vest includes pockets for radios and battery packs, pass-throughs and hoops for cords, and velcro strips and clips for microphones. See [“Tactical and identification vests” on page 14.18](#).

tactical voice communications

Tactical voice communications is used in situations where messages need to pass back and forth between stations without delays, and do not need to take the form of [formal voice communications](#).

tactical net

A form of task-specific net used to support specific operations or projects.

terminal node controller

TNC. A modem that interfaces with a two-way radio to allow the exchange of text and data files.

TNC

See [“terminal node controller”](#) on page 30.16.

UHF

See [“ultra high frequency”](#) on page 30.16.

ultra high frequency

UHF. A range of frequencies suited to local communications in urban areas. UHF radio equipment may be handheld, mobile or fixed (base). Unit-to-unit range is typically 1 to 30 km, but is often extended through the use of a [repeater](#).

unified command

Unified command was created in recognition that most incidents (spills, forest fires, floods) have impacts that cross jurisdictional boundaries such as local, federal, provincial, international, and First Nations.

universal coordinated time

UTC. A time standard used in operations and communications that extend outside a single timezone. UTC does not change with daylight savings time.

universal transverse mercator

UTM. A mapping coordinate system used instead of latitude and longitude for land tracking and land-based military operations.

UTC

See [“universal coordinated time”](#) on page 30.16.

UTM

See [“universal transverse mercator”](#) on page 30.16.

very high frequency

VHF. A range of frequencies suited to local communications in urban areas outside buildings, and in rural or forested areas. VHF radio equipment may be handheld, mobile or fixed (base). Unit-to-unit range is typically 2 to 40 km, but is often extended through the use of a [repeater](#).

vest

A vest is worn over other clothing to provide identification or carry gear. See [“identification vest” on page 30.8](#) and [“tactical vest” on page 30.15](#).

VHF

See [“very high frequency” on page 30.17](#).

welfare traffic

Message traffic that is intended to provide ‘comfort’. Welfare traffic includes family inquiries and responses, and other personal communications that do not relate to emergency operations or safety. During ARES operations, welfare traffic is assigned the lowest precedence (priority).

Zulu

Another term for [universal coordinated time](#).