# Terms and Definitions for ACES Basic Certification

**10 codes**
Code words typically used by law enforcement during voice communications to represent common phrases. Ten codes allow for the standardization of message traffic and were initially developed in 1937 and later expanded by the Association of Public-Safety Communications Officials-International (APCO).

**Auxiliary Communications Emergency Service (ACES)**
A program that exists to promote the standardization of training, certification and accreditation of emergency communication operators. ACES develops training which is consistent with NIMS/ICS resource typing and in consideration of all organizations including municipal, county, state, federal, and private served agencies.

**Auxiliary Communications Service (ACS)**
A term used to describe all communications-related volunteer organizations, including ARES, CAP, MARS, RACES, and REACT.  In some locations, such as California, the ACS moniker is used in official documents and state law and is a defined organization with specific rules and procedures similar to ARES or RACES groups in other locations.

**Anderson Connector (also called Power Poles)**
The standard 12-volt DC power connector generally adopted by the amateur radio community used to power all equipment from radios to accessories. Anderson connectors are genderless making them convenient and easy to use.

**American Radio Relay League (ARRL)**
The national membership association for amateur radio operators in the US. The ARRL represents the interests of amateur radio operators before federal regulatory bodies like the FCC.

**Amateur Radio Emergency Communications Course (ARECC)**
Training courses offered in two levels by the ARRL for amateur radio emergency communications.

**Amateur Radio Emergency Service (ARES)**
Organized by the ARRL and consists of licensed amateurs who have voluntarily registered their qualifications and equipment for communications duty in the public service when disaster strikes. Every licensed amateur, regardless of membership in ARRL or any other local or national organization, is eligible to apply for membership in ARES. Training may be required or desired to participate fully in ARE. Because ARES is an Amateur Radio service, only licensed radio amateurs are eligible for membership. The possession of emergency-powered equipment is desirable, but is not a requirement for membership.

**APCO P25 (Association of Public-Safety Communications Officials-International)**
A set of digital radio communication standards for use by federal, state/province and local public safety agencies used to communicate with each other and mutual aid response teams

during an emergency.

## Civil Air Patrol (CAP)
A Congressionally chartered, federally supported, non-profit corporation that serves as the official civilian auxiliary of the United States Air Force. CAP is a volunteer organization with an aviation-minded membership that includes people from all backgrounds, lifestyles, and occupations. It performs three congressionally assigned key missions: emergency services, which includes search and rescue (by air and ground) and disaster relief operations; aerospace education for youth and the general public; and cadet programs for teenage youth. In addition, CAP has recently been tasked with homeland security and courier service missions. CAP also performs non-auxiliary missions for various governmental and private agencies, such as local law enforcement and the American Red Cross.

## Community Emergency Response Team (CERT)
An organization of volunteer emergency workers who have received specific training in basic disaster response skills, and who supplement existing emergency responders in the event of a major disaster.

## Chain of Command
A series of command, control, executive, or management positions in hierarchical order of authority.

## Citizens' Band (CB)
Historically, a system of short-distance radio communications between individuals on a selection of 40 channels within the 27-MHz (11 m) band. Technically, other services like FRS are included in the Citizens' Band, although usually the term refers to the original 40 channel service. Unlike amateur radio, CB does not require a license and it may be used for business as well as personal communications.

## Command Staff
In an incident management organization, the Command Staff consists of the Incident Command and the special staff positions of Public Information Officer, Safety Officer, Liaison Officer, and other positions as required, who report directly to the Incident Commander. They may have an assistant or assistants, as needed.

## Communications Plan
A plan developed ahead of time that ensures responders can communicate with one another during an incident. It details the equipment, procedures and systems that will be used for communications and should allow for operation across jurisdictions.

## Communications Unit
An organizational unit in the Logistics Section responsible for providing communication services at an incident or an EOC. A Communications Unit may also be a facility (e.g., a trailer or mobile van) used to support an Incident Communications Center.

**Continuous Tone-Coded Squelch System (CTCSS)**
Reduces the annoyance of listening to other users on a two-way radio communication channel or bursts of interference from other equipment. Instead of opening the receive audio for any signal, the radio receiver's audio is opened only in the presence of the normal RF signal AND the correct sub-audible tone. This allows multiple groups on the same frequency to filter out other operators of the same channel using a different CTCSS tone or no CTCSS tone at all. Motorola's trademark name for this technology is Private Line (PL).

**Datum**
Provides a frame of reference for measuring locations on the surface of the Earth; defines the origin and orientation of latitude and longitude lines. The coordinate values are different for each datum. NAD27 (North American Datum) and NAD83 are common for US and Canadian maps.

**Direct Current (DC)**
Direct current (DC) is the unidirectional flow of electric charge. It is produced by such sources as batteries, thermocouples, solar cells and some generators.

**Department of Homeland Security (DHS)**
A department of the federal government with the primary responsibilities of protecting the US from terrorist attacks and responding to natural disasters.

**Digital-Coded Squelch (DCS) (also called DTCS)**
A digital selective call technology.

**Dual-Tone Multi-Frequency (DTMF) signaling**
Used for telecommunication signaling over analog telephone lines in the voice-frequency band between telephone handsets and other communication devices and the switching center.

**Duty Cycle**
In telecommunications and electronics, the duty cycle is the fraction of time that a system is in an "active" state. In relation to radio communications, this means the ratio of time spent transmitting to the time spent receiving. This may be important for cooling of a device, or estimating exposure to RF radiation.

**Emergency Alert System (EAS)**
A national warning system in the US that is coordinated by the FCC, FEMA, and NWS.

**Emergency Operations Center (EOC)**
The physical location at which the coordination of information and resources to support domestic incident management activities normally takes place. An EOC may be a temporary facility or may be located in a more central or permanently established facility, perhaps at a higher level of organization within a jurisdiction. EOCs may be organized by major functional disciplines (e.g., fire, law enforcement, and medical services), by jurisdiction (e.g., Federal, State, regional, county, city, tribal), or some combination thereof.

### Family Radio Service (FRS)
A personal radio service that utilizes UHF frequencies. FRS has seen significant adoption by business interests as an unlicensed, low-cost alternative to the business band. FRS radios are limited to 0.5 watts unlike its GMRS counterpart which is restricted to 5 watts.

### Federal Emergency Management Agency (FEMA)
An agency of the Department of Homeland Security whose primary responsibility is to coordinate the response to a disaster that has occurred in the US and that overwhelms the resources of local and state authorities.

### General Mobile Radio Service (GMRS)
A licensed land-mobile FM UHF radio service in the US available for short-distance, two-way communication. It is intended for personal or business communications and requires a license by the FCC, though no exam is required. GMRS shares some frequencies with FRS and GMRS radios are limited to 5 watts.

### Government Emergency Telecommunications Service (GETS)
Supports federal, state, local, and tribal government, industry, and non-governmental organization personnel during crises or emergencies by providing emergency access and priority processing for local and long distance calls on the public switched telephone network. GETS is intended to be used in an emergency or crisis situation when the public switched telephone network is congested and the probability of completing a call over normal or other alternate telecommunication means is reduced.

### Go Kit
A portable amateur radio station that the operator can take when deployed for an event that needs support with radio communications. A go kit is not limited to radio gear and accessories, but may also include power and light sources, office supplies, personal items, food, and water. The minimum operational period a go-kit should be able to sustain is 24 hours.

### Health Insurance Portability and Privacy Act (HIPPA)
An act of Congress that requires the establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans, and employers. HIPPA also addresses the security and privacy of health data, including the electronic transmission of health information.

### Incident Action Plan (IAP)
An oral or written plan containing general objectives reflecting the overall strategy for managing an incident. It may include the identification of operational resources and assignments. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods.

### Incident Command System (ICS)
A standardized on-scene emergency management construct specifically designed to provide for the adoption of an integrated organizational structure that reflects the complexity and

demands of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small as well as large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field-level incident management operations.

### Incident Commander (IC)
The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

### Internet Radio Linking Project (IRLP)
A project that links amateur radio stations around the world by using Voice over IP (VoIP). Each gateway consists of a dedicated computer running custom software that is connected to both a radio and the Internet.

### International Telecommunication Union (ITU)
An agency of the United Nations which regulates standards, information and communication technology issues, and the global focal point for governments and the private sector in developing networks and services.

### Long Tone Zero (LiTZ)
A simple method to indicate to others on an amateur radio frequency that you have an immediate need to communicate with anyone regarding a priority situation or condition. The LiTZ signal consists of transmitting DTMF (Touch-Tone) ZERO for at least 3 seconds. After sending the LiTZ signal the radio system executes a pre-programmed DTMF control sequence.

### Military Auxiliary Radio System (MARS)
Sponsored by the Department of Defense and established as a separately managed and operated program by the US Army, Navy and Air Force. The program is a civilian auxiliary consisting primarily of licensed amateur radio operators who are interested in assisting the military with communications on a local, national, and international basis as an adjunct to normal communications.

### Memorandum of Understanding (MOU)
A document describing an agreement between two or more parties. It expresses a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where parties either do not imply a legal commitment or in situations where the parties cannot create a legally enforceable agreement. It is a more formal alternative to a gentlemen's agreement.

### Multi-Use Radio Service (MURS)
A private, two-way, short-distance voice or data communications service for personal or

business activities of the general public. It consists of five frequencies in the VHF spectrum regulated by Title 47 of the Code of Federal Regulations Part 95. Radios are restricted to 2 watts of power (four times that of FRS radio). MURS stations may not be connected to the public telephone network, may not be used for store and forward operations, and radio repeaters are not permitted.

**National Oceanic and Atmospheric Administration (NOAA)**
A scientific agency focused on the conditions of the ocean and atmosphere. NOAA warns of dangerous weather, charts seas and skies, guides the use and protection of ocean and coastal resources, and conducts research to improve understanding and stewardship of the environment.

**National Warning System (NAWAS)**
A system used to convey warnings to United States-based federal, state and local governments, as well as the military and civilian population. NAWAS is used to disseminate warning information concerning natural and technological disasters to over 2000 warning points throughout the continental United States, Alaska, Hawaii and the Virgin Islands. This information includes but is not limited to acts of terrorism including Weapons of Mass Destruction (WMD) after aircraft incidents/accidents, earthquakes, floods, hurricanes, nuclear incidents/accidents, severe thunderstorms, tornadoes, tsunamis and winter storms/blizzards. NAWAS allows issuance of warnings to all stations nationwide or to selected stations as dictated by the situation.

**National Weather Service (NWS)**
One of six scientific agencies that makes up the National Oceanic and Atmospheric Administration (NOAA). It is tasked with providing weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy.

**Net Control Station (NCS)**
A radio station that performs net control functions, such as controlling traffic and enforcing operational discipline. This NCS controls the flow of messages according to priority and keeps track of where messages come from and where they go. The NCS also keeps a current list of which stations are where, their assignments and what capabilities they have.

**National Incident Management System (NIMS)**
A system mandated by HSPD-5 that provides a consistent nationwide approach for federal, state, local, and tribal governments; the private-sector, and nongovernmental organizations to work effectively and efficiently together to prepare for, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. To provide for interoperability and compatibility among federal, state, local, and tribal capabilities, the NIMS includes a core set of concepts, principles, and terminology. HSPD-5 identifies these as the ICS; multiagency coordination systems; training; identification and management of resources (including systems for classifying types of resources); qualification and certification; and the collection, tracking, and reporting of incident information and incident resources.

**National Registry of Certified EmComm Volunteers (NRCEV)**
An organization that promotes and provides a valid, uniform process to assess the knowledge and skills required for competent practice required by amateur radio and other emergency communications  volunteers. The NRCEV maintains a public registry of individual operations and communication support teams.

**National Traffic System (NTS)**
An organized network of amateur radio operators sponsored by the ARRL for the purpose of relaying messages throughout the US and Canada.

**Original Equipment Manufacturer (OEM)**
A common term used to refer to an equipment manufacturer, which is distinct from a solution provider, radio operator, etc.

**Public Safety Answering Point (PSAP)**
A call center responsible for answering calls to an emergency telephone number for police, firefighting and ambulance services. Trained telephone operators are usually responsible for dispatching these emergency services.

**Personal Protective Equipment (PPE)**
Protective clothing and gear (i.e. helmets, goggles, gloves) or other garment designed to protect the wearer's body from injury by blunt impacts, electrical hazards, heat, chemicals and infection.

**Power Poles – see Anderson Connectors**

**Private Line (PL) – see Continuous Tone-Coded Squelch System (CTCSS)**

**Procedure Words (Prowords)**
Words or phrases used to facilitate communication by conveying information in a condensed standard form.

**Plan to Talk (PTT)**
Planning what you intend to say on the air before speaking. This allows for clear and concise communication while keeping the airwaves free for stations to break in with emergency traffic.

**Push to Talk (PTT)**
Communications via radios that require a button to switch from receive mode to transmit mode. The operator pushes the transmit button while they speak.

**Q codes (also called Q signals)**
A standardized collection of three-letter message encodings, all starting with the letter "Q", initially developed for commercial radiotelegraph communication, and later adopted by other radio services, especially amateur radio. Although Q codes were created when radio used Morse code exclusively, they continued to be employed after the introduction of voice transmissions.

**Radiogram**

A formal written message routed by a network of amateur radio operators through traffic nets. It is a plaintext message that includes header information that is placed into a traffic net by an amateur radio operator. Each radiogram is relayed through one or more radio operators where the final operator volunteers to deliver the radiogram content to its destination.

**Radio over Internet Protocol (RoIP)**

Similar to Voice over IP, but augments two-way radio communications rather than telephone calls. From the user's point of view, it is essentially VoIP with PTT (Push To Talk). With RoIP, at least one node of a network is a radio (or a radio with an IP interface device) connected via IP to other nodes in the radio network. The other nodes can be two-way radios, but could also be dispatch consoles either traditional (hardware) or modern (software on a PC), telephones, softphone applications running on a computer such as Skype phone, PDA, smartphone, or some other communications device accessible over IP. RoIP can be deployed over private networks as well as the public Internet. It is useful in land mobile radio systems used by public safety departments and fleets of utilities spread over a broad geographic area.

**Radio Amateur Civil Emergency Service (RACES)**

A radio service using amateur stations for civil defense communications during periods of local, regional or national civil emergencies. RACES is defined by the FCC in Part 97.407.

**Radio Emergency Associated Communications Team (REACT)**

Assist in an emergency by furnishing radio communications in cooperation with authorities and other volunteer organizations. REACT uses CB, Family Radio Service, General Mobile Radio Service, amateur radio, Multi-use Radio Service, trunked radio systems and business band.

**Resource Typing**

The categorization and description of response resources that are commonly exchanged in disasters through mutual aid agreements. It allows emergency management personnel to identify, locate, request, order, and track outside resources quickly and effectively and facilitate the response of these resources to the requesting jurisdiction. Resource typing is a key component of NIMS

**Salvation Army Team Emergency Radion Network (SATERN)**

A network of amateur radio operators that provide emergency communications between Salvation Army posts, and pass messages with health and welfare information between the Salvation Army and the general public.

**Selective Calling**

A technique using an advanced squelch system (such as CTCSS or DCS) to use a single channel for multiple groups of operators, calling only specific people as selected by the code or tone used by the transmitter.

**Served Agency**

A group or organization (often a governmental agency) that is served by auxiliary or amateur

radio communications volunteers.  A relationship with this entity is developed for the purposes of providing additional or backup communications capabilities.

## Shared Resources High Frequency (SHARES)
An HF Radio program that brings together the assets of over 1,000 HF radio stations worldwide to voluntarily pass emergency messages when normal communications are destroyed or unavailable. SHARES uses common radio operating and message formatting procedures and more than 250 designated frequencies. Participation in SHARES is open to all federal departments and agencies and their designated affiliates on a voluntary basis

## Skywarn
A program of the National Weather Service (NWS) whose mission is to collect reports of localized severe weather. These reports are used to aid forecasters in issuing and verifying severe weather watches and warnings and to improve the forecasting and warning processes and the tools used to collect meteorological data. It consists of a network of severe storm spotters that observe weather conditions and make reports of severe weather to their local NWS offices.

## Telecommunications Service Priority (TSP)
Provides service vendors with an FCC mandate for prioritizing service requests by identifying those services critical to national security or emergency preparedness communications. A telecommunications service with a TSP assignment is assured of receiving full attention by the service vendor before a non-TSP service.

## Trunked Radio System (TRS)
An advanced radio system using a small number of independent frequencies to service a large number of distinct groups of operators.  One or more "control channels" serve to coordinate which groups are talking on which frequency at any given moment. The system is a gamble, betting that not all groups will need to use the radio at the same time.

## Unified Command
An application of ICS used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the UC, often the senior person from agencies and/or disciplines participating in the UC, to establish a common set of objectives and strategies and a single Incident Action Plan.

## Unity of command
The concept by which each person within an organization reports to one and only one designated person. The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective.

## Universal Transverse Mercator (UTM)
A grid-based method of specifying locations on the surface of the Earth that is a practical application of a 2-dimensional Cartesian coordinate system. It is used to identify locations on the earth, but differs from the traditional method of latitude and longitude in several respects.

The UTM system is not a single map projection. The system instead employs a series of sixty zones, each of which is based on a specifically defined secant transverse Mercator projection.

**World Radio Relay League (WRRL)**
Provides emergency communications on behalf of governmental and non-governmental agencies as well as the general public through networks of fixed station and field deployable Amateur Radio Communications Teams (ARCT). WRRL does not rely on existing infrastructure or commercial services.

**Wireless Priority Service (WPS)**
Provides priority cellular network access. The WPS was approved by the FCC for National Security/Emergency Preparedness (NS/EP) requirements on a call-by-call priority basis. The National Communications System executes the program on behalf of the Executive Office of the President. Only individuals in NS/EP key leadership positions are authorized use of WPS.