



Santa Clara County ARES®/RACES/ACS

Amateur Radio Operator Credentialing Program Handbook

Version 3.2

Revised: 11-August-2025

Credentialing Program Handbook

Copyright © 2025 by

Jim Clark, Jeff Grafton, Judy Halchin, Tim Howard, Mark Laubach, Andreas Ott

All rights reserved.

Contents

ABBREVIATIONS AND ACRONYMS	7
EXECUTIVE SUMMARY	8
PERFORMANCE STANDARDS.....	9
PROGRAM OVERVIEW	10
PROGRAM GOALS	10
FUNCTIONAL ROLES VS. CAPABILITY LEVELS	10
CREDENTIAL OVERVIEW	11
ENDORSEMENT OVERVIEW.....	13
USE OF CREDENTIALS AND ENDORSEMENTS FOR RESOURCE ASSIGNMENT	14
PARTICIPATION IS VOLUNTARY	14
INDIVIDUAL OPERATOR RESPONSIBILITIES	15
PERFORMANCE	15
TRAINING	15
PARTICIPATION	15
TIMELINE FOR PROGRESS	16
MINIMUM PARTICIPATION REQUIREMENTS	16
TRACKING AND DOCUMENTING PROGRESS.....	17
ANNUAL WALLET CARD RENEWAL.....	18
MAINTAINING SKILLS AND PERFORMANCE CONSULTATION	18
COMMON REQUIREMENTS.....	19
TWO YEAR TIMEFRAME	19
<i>Exceptions</i>	<i>19</i>
MINIMUM OPERATING TIME PER ACTIVITY	19
PERFORMANCE ACCORDING TO STANDARDS.....	20
STANDARD GO KIT	20
TRAINING COURSES	20
EXERCISES AND PUBLIC SERVICE EVENTS	20
<i>Operations-based Exercises</i>	<i>21</i>
<i>Public Service Events.....</i>	<i>22</i>
APPROVED ACTIVITIES (EXERCISES, EVENTS, AND INCIDENTS)	23
<i>Requirements for Approved Activities.....</i>	<i>23</i>
<i>Approval Process for Activities (Exercises, Events, Incidents)</i>	<i>24</i>
<i>“Credential Credit” Flag in Database</i>	<i>24</i>
FCC RF SAFETY EVALUATION	24
CREDENTIAL DETAILS	25
STRUCTURE OF REQUIREMENTS.....	25
CREDENTIAL AWARD PROCESS	26
COMMUNICATOR TYPE IV CREDENTIAL.....	28

<i>Summary</i>	28
<i>Requirements</i>	28
<i>Verification Process</i>	31
FIELD COMMUNICATOR CREDENTIALS	33
<i>Summary of Field Communicator Credentials</i>	33
<i>Field Communicator Type III (F3)</i>	35
<i>Field Communicator Type II (F2)</i>	38
<i>Field Communicator Type I (F1)</i>	42
NET CONTROL OPERATOR CREDENTIALS	45
<i>Summary of Net Control Credentials</i>	45
<i>Net Control Operator Type III (N3)</i>	47
<i>Net Control Operator Type II (N2)</i>	50
<i>Net Control Operator Type I (N1)</i>	53
PACKET OPERATOR CREDENTIALS	56
<i>Summary of Packet Operator Credentials</i>	56
<i>Packet Operator Type III (P3)</i>	58
<i>Packet Operator Type II (P2)</i>	61
<i>Packet Operator Type I (P1)</i>	65
SHADOW COMMUNICATOR CREDENTIALS	68
<i>Summary of Shadow Communicator Credentials</i>	68
<i>Shadow Communicator Type III (S3)</i>	70
<i>Shadow Communicator Type II (S2)</i>	72
<i>Shadow Communicator Type I (S1)</i>	75
ENDORSEMENTS DETAILS	78
ENDORSEMENT AWARD PROCESS.....	78
MUTUAL AID COMMUNICATOR (MAC).....	79
COUNTY FIRE STATION RADIO OPERATOR (FRO).....	81
COUNTY EOC RADIO OPERATOR (ERO)	82
COUNTY EOC SHARES RADIO OPERATOR (SRO)	83
COUNTY EOC RACES UNIT LEADER (RUL).....	85
LOSS AND REINSTATEMENT OF CREDENTIALS AND ENDORSEMENTS	86
VOLUNTARY WITHDRAWAL	86
<i>Voluntary Withdrawal Process</i>	86
INVOLUNTARY REMOVAL	86
<i>Maintaining Administrative and Participation Requirements</i>	87
<i>Behavior and Security Issues</i>	87
TRANSITION TO INACTIVE STATUS	87
REINSTATEMENT	87
<i>Reinstatement Timeframe</i>	87
<i>Reinstatement Process</i>	88
EVALUATIONS.....	90
SUMMARY	90
KEY ATTRIBUTES OF CREDENTIAL EVALUATIONS.....	90

<i>Efficient</i>	90
<i>Relevant</i>	90
<i>Objective</i>	90
<i>Consistent</i>	91
<i>Scalable</i>	91
EVALUATION OPPORTUNITIES AND LOCATIONS	91
REQUESTING AN EVALUATION	91
PREPARING FOR AN EVALUATION	92
PARTICIPATING IN AN EVALUATION	93
EVALUATION SCORING	94
PREMATURE TERMINATION / NON-COMPLETION OF AN EVALUATION	96
THE CREDENTIAL EVALUATOR	96
<i>Advanced Credentials</i>	96
<i>Evaluation Process Training</i>	97
<i>Avoiding Impropriety</i>	97
TEAMS	97
OVERVIEW	97
THE TEAM CONCEPT	98
<i>Examples of Teams from Other Disciplines</i>	98
<i>ICS Strike Teams and Task Forces</i>	98
<i>Individual Operators vs. Teams</i>	98
TYPES OF RESPONSE TEAMS	99
<i>Team Structure Will Probably Be Dynamic in Nature</i>	99
<i>Communications Support Strike Teams</i>	99
<i>Communications Support Task Forces</i>	99
ICS, SEMS AND NIMS	100
SUMMARY	100
ICS & SEMS	100
<i>ICS & SEMS Training</i>	100
<i>ICS & SEMS Operations</i>	100
NIMS	100
<i>Applicability of NIMS</i>	100
<i>Adherence to NIMS Credentialing Requirements</i>	101
<i>Inter-County or Inter-State Mutual Aid</i>	102
FOCUS AND PRIORITY OF FUTURE EFFORTS	102
RECORDS MANAGEMENT	103
INDIVIDUAL RESPONSIBILITY	103
ONLINE COUNTY RECORDS	103
<i>County Activities Database</i>	103
<i>Personal Records</i>	103
<i>Training Records</i>	103
<i>Event Records</i>	104
<i>Incident Records</i>	104

WALLET CARD	104
PROGRAM MANAGEMENT	105
ORGANIZATION.....	105
PROGRAM INFORMATION	105
PROGRAM DECISIONS	105
PROGRAM UPDATES	106
PROGRAM FEEDBACK.....	106
CREDENTIAL PROGRAM MANAGER	106
REVISION HISTORY.....	107

Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

ARES®	Amateur Radio Emergency Service (Registered trademark of the ARRL)
ARRL	Amateur Radio Relay League
CE	Credential Evaluator
CRO	Chief Radio Officer (called a DEC in the ARES program)
CSTI	California Specialized Training Institute
DOC	Department Operations Center
DSW	Disaster Service Worker
DSWV	Disaster Service Worker Volunteer
EC	Emergency Coordinator
EOC	Emergency Operations Center
ERO	EOC Radio Operator - Credential Endorsement (at County EOC)
FEMA	Federal Emergency Management Agency
FRO	Fire Station Radio Operator - Credential Endorsement (at County-operated Fire Station)
ICS	Incident Command System
MAC	Mutual Aid Communicator - Credential Endorsement
NIMS	National Incident Management System
OA	Operational Area
OEM	Office of Emergency Management
RACES	Radio Amateur Civil Emergency Service
RO	Radio Officer (called an EC in the ARES program)
RUL	RACES Unit Leader - Credential Endorsement (at County EOC)
SCCo	Santa Clara County
SEMS	Standardized Emergency Management System
SRO	SHARES Radio Operator - Credential Endorsement
UASI	Urban Areas Security Initiative

For a more detailed description, see a the glossary on our website.

<https://www.scc-ares-races.org/reference/glossary>

Executive Summary

The Santa Clara County (SCCo) Amateur Radio Operator Credentialing Program provides two main benefits for Emergency Managers at both the local jurisdiction and operational area levels:

1. Resource Typing
 - Available communications capabilities are defined by role and capability levels
 - Requests for amateur radio resources can be clearly made using the resource types
2. Qualified Operators
 - Served agencies know that the resource they receive has the needed capabilities
 - Amateur radio operators know what capabilities are expected from them

Credentials are based on the following criteria:

- Administrative
- Training
- Experience (exercises, public service events, and/or real incidents)
- Demonstrated knowledge
- Demonstrated performance

Operators are evaluated for credentials in a peer-review process using objective criteria and a consistent methodology. The evaluations are conducted by other amateur radio operators who have achieved the same or higher credential level and are trained on how to deliver a consistent and objective evaluation.

In addition to technical credentials, agency- or role-specific endorsements identify individuals that have both the technical ability and the agency- or role-specific capability to handle unique assignments. The requirements for each endorsement vary, but generally include additional agency- or role-specific training and experience.

Credentials and endorsements are used at the local jurisdiction level to identify qualified operators. They are also used across the Santa Clara County operational area for requesting amateur radio mutual aid.

The program is managed by the Credential Program Manager, who is a member of the SCCo ARES/RACES leadership team. The program maintains alignment and compliance with ICS, SEMS and NIMS.

For more details about the program consult the SCCo ARES/RACES website:

<https://www.scc-ares-races.org/credentials>

Performance Standards

An important part of any organized emergency response is a set of performance standards to which all responders are committed. Standards allow planners to anticipate the resource requirements of various situations because the performance of each resource can be anticipated. Standards allow teams of responders to work together seamlessly, even if they have never met before. Standards help each responder prepare and train because they are able to understand exactly what is expected of him or her in a real situation.

This handbook frequently references the “Santa Clara County ARES®/RACES Performance Standards and Best Practices” (hereafter called the “Performance Standards”). The Performance Standards include best practices in emergency communications as well as a distillation of the important points from the Santa Clara County ARES/RACES training courses. These standards cover a wide range of performance criteria, including Professionalism and Training, Communications Technique, Safety, Methods and Procedures, Equipment, and Documentation.

The Performance Standards are maintained as a separate document to make it easy to keep a copy in the Go Kit. The document may be updated from time to time to correct errors or omissions, improve clarity, or align with new procedures.

The Performance Standards are recommended best practices for all ARES®/RACES communicators in Santa Clara County. These standards apply equally well at any organizational level: city, county, state or other.

The Performance Standards are the **minimum required standard** for all Santa Clara County ARES/RACES credentialed operators. All credentialed operators should periodically check to make sure that they have the latest version.

Similar to the way the Credentialing Program is updated, revisions to the Performance Standards take effect two weeks from notification. Notices of updates to the “Performance Standards” are sent to the e-mail lists for Santa Clara County Radio Officers (and Emergency Coordinators) and Credentials. The “Performance Standards” document is posted on the www.scc-ares-races.org website. Updates are published no later than two weeks before a scheduled exercise or event where they will be used and are not released more frequently than 30 days from the previous version.

Refer to the “Program Management” section of this document for URLs and pointers to document locations.

Program Overview

Program Goals

The Credentialing Program has four principal goals:

Standardization (a.k.a. “Resource Typing”): Establish county-wide standard levels of performance of the skills and capabilities required to be an effective emergency communications resource. These standards help to ensure that operators arriving from one place in the county will fit in and work well alongside those from elsewhere in the county.

Identification: Designations based on resource category and type can make it easy to identify and communicate the specific type of resource needed and to match individuals to the resource requests. If an exact match is not available, both the requesting agency and the person assigning the resource have a common language to use when discussing alternatives.

Qualification: Train, evaluate, and “qualify” individual operators who meet standard, objectively measurable levels of performance and knowledge. The operators know, in advance, exactly what is expected and are free to choose the qualifications that interest them.

Recognition: Everyone appreciates a “job well done.” Certificates and other awards contribute to a sense of pride and achievement and make the extra effort that much more rewarding.

Functional Roles vs. Capability Levels

There are multiple roles in emergency communications. Some examples include: Field Communications, Net Control Operations, Shadow Communications, Packet Communications, and HF Communications. Each role has its own unique operational challenges and equipment needs. Operators can earn credentials in each of these roles. Some operators may be interested in broadening their skills to all roles. Others may prefer to focus on a few roles or just one.

Some assignments are tougher than others: some involve higher traffic rates, while others involve more complicated equipment configurations. So, within each role, operators may earn higher credentials by demonstrating higher levels of proficiency and performance.

This two-dimensional approach to defining credentials, including multiple roles as well as multiple levels of capability within each role, provides an excellent platform for resource typing. It is the same method used for resource typing in NIMS and by the State of California for issuing EOC position credentials. Resources can be requested by role and type. These requests can then be matched to operators who have the appropriate credentials. The agency requesting the resource knows what they’re getting, and the operator who accepts the assignment knows what he/she is expected to be able to do.

Credential Overview

The Santa Clara County RACES credentialed resource types are summarized in the diagram below. Credentials are awarded for Types IV through I.

Expertise	Role			
	Field	Net Control	Shadow	Packet
Type I Specialist	Field I	Net Control I	Shadow I	Packet I
Type II Advanced	Field II	Net Control II	Shadow II	Packet II
Type III Independent	Field III	Net Control III	Shadow III	Packet III
Type IV Basic	Communicator IV			
Type V Unknown	Licensed Amateur Radio Operator (w/ DSW), Not Credentialed			

Type V Operator

- The Type V resource type applies to all uncredentialed, licensed amateur radio operators that are registered as a Disaster Service Worker Volunteer in whatever jurisdiction might activate them. It is not role specific.
- Resources of this type can operate amateur radio (because they are licensed) and can be activated and assigned by a served agency (because they are registered DSWs with that agency).
- Beyond that, little else is known about their capabilities. They may or may not have the equipment, knowledge, skill level, or experience needed to properly perform emergency communications duties.
- A credential is not awarded for this resource type.

Type IV Operator

- This credential level indicates basic operating capabilities. It is not role specific.
- The Type IV operator has the basic skills, standard equipment, and a moderate amount of experience, all of which enables him/her to operate safely in an assignment, perhaps with coaching.
- Typical assignments include basic information gathering and status reporting or supporting a more experienced operator.

Type III Operator

- This credential level indicates the ability to operate independently in a specific role
- This operator has all the capabilities of a Type IV operator, plus is skilled at 3rd party message handling and has role-specific capabilities (knowledge, skills, equipment) that enables them to perform the indicated role efficiently and effectively, without the need for coaching or assistance.
- Typical assignments include:
 - Field: Hospitals, shelters, smaller department operations centers (DOCs)
 - Net Control: Smaller DOCs, smaller Emergency Operations Centers (EOCs)
 - Packet: Hospitals, shelters, smaller DOCs, smaller EOCs
 - Shadow: Event officials at smaller events/incidents

Type II Operator

- This credential level indicates the ability to operate in a role at an advanced level
- This operator has all the capabilities of a Type III operator, plus advanced, role-specific capabilities (knowledge, skills, equipment) and experience that enable them to operate in higher traffic levels, on multiple nets, and in more complicated environments including Field Post set-up and operation and advanced troubleshooting knowledge.
- We expect Type II operators to be familiar with the scc-ares-races.org website to readily find appropriate information. They should also have a thorough understanding of all credential types and levels.
- Typical assignments include:
 - Field: Larger department operations centers (DOCs)
 - Net Control: Larger DOCs, Larger Emergency Operations Centers (EOCs)
 - Packet: Larger DOCs, larger EOCs
 - Shadow: Event officials at larger events

Type I Operator

- This credential level indicates a specialty in the role and the ability to be the lead operator
- This operator has all the capabilities of a Type II operator, plus the added capability (knowledge, skills, equipment) to plan and lead a multi-operator, multi-net, multi-operational period response.
- Typical assignments include planning, designing, deploying and operating complex, multi-radio, multi-antenna equipment configurations for larger events and incidents.

Endorsement Overview

The role-based technical credentials provide a means to identify and request amateur radio resources with a specific set of technical skills. But some assignments require an operator with more than generic technical skills. These assignments have additional, agency-specific requirements, such as: agency-specific training, security checks, and/or experience.

Endorsements

Additional Agency-specific Requirements • Administrative • Training • Experience • Other ...
Prerequisites • Technical Credentials • Other Endorsements

The addition of endorsements makes it easy to document the completion of agency-specific requirements. This makes it easier for agencies to order resources. And it makes it easier to program manage the various agency-specific requirements.

The following Endorsements are currently defined:

- Mutual Aid Communicator (MAC)
 - Credentialed operators who are also willing and able to be assigned to another city in the county.
- County Fire Station Radio Operator (FRO)
 - Credentialed operators who are also prepared for the specific conditions of operating within a county fire station.
- County EOC Radio Operator (ERO)
 - Credentialed operators who are also prepared for the specific conditions of operating in the county EOC.
- County EOC SHARES HF Radio Operator (SRO)
 - Credentialed operators who are also prepared for operation of the SHARES HF radio station in the county EOC.
- County EOC RACES Unit Leader (RUL)
 - Credentialed operators who are also prepared to serve as the RACES Unit Leader at the county EOC.

Use of Credentials and Endorsements for Resource Assignment

The Credentialing Program provides the key components necessary for served agencies to request resources:

- Standardization – “Resource typing” standardizes the operational roles and the level of capabilities used to describe resources. Each served agency can use these standard resource types when requesting the resources that they need.
- Credentialing – The credentialing (and endorsement) process identifies which operators have the necessary training, equipment, knowledge, experience, and operational ability to perform the duties of a particular resource type.

Agencies requesting resources will typically specify the preferred and minimum credentials required for each role. When fulfilling the request, resources that have the preferred credentials will be assigned first, followed by those with lesser credentials that still meet the minimum credential level requested. Those with credentials less than the requested minimum will not be considered for that assignment.

Participation is Voluntary

Participation in the Credential Program is voluntary. But agencies expect that the radio operator(s) assigned to them are qualified and capable of performing the job. And credentialing is the accepted method of demonstrating proficiency. Agencies also need to request resources by type. And credentialing makes it easy to match operators to requests. So, all operators involved in emergency communications are strongly encouraged to participate.

There are several advantages to the way the program is organized:

- Earning credentials does not take additional time or resources. Credentials can be earned by participating in training classes, exercises, and events.
- The evaluation process used in the credential program is open, objective, and consistent. There are no “gotchas” and everyone is held to the same standard.
- Credentials simplify resource assignment by creating resource types and identifying the operators that can perform the duties of each resource type.
- Credentialed operators can be considered for assignments even though they are not personally known to the person making the assignment.
- Credentialed operators are more likely to receive assignments that match their specific capabilities because those capabilities will be known to the people making resource assignment decisions. That usually results in assignments which are more enjoyable.

Individual Operator Responsibilities

Operators that have earned credentials and, optionally, endorsements, are expected to continue to maintain their skills and capabilities at the level required to earn those credentials and endorsements. This is best accomplished by always operating at the highest level possible through continued training and participation in exercises and events.

Performance

All operators are expected to perform their duties according to the “Santa Clara County ARES®/RACES Performance Standards and Best Practices”.

Training

All operators are encouraged to continue to learn more about emergency communications by regularly participating in the county emergency communications training classes. In order to receive credit for attending a course, the individual must be present and actively participating in the course for at least 90% of the scheduled course time, and meet other individual course requirements. There are many aspects to emergency communications, and it takes many classes to cover so many different topics. All operators are encouraged to learn as many of the subjects as possible. Even if a particular subject is not of prime interest to an individual operator, they may have a need to communicate with someone who specializes in that subject. Often, communication is enhanced if both parties know at least a little about what the other is doing. So, everyone benefits if all operators know at least a little about each subject.

Each time the classes are taught, they are improved. The next version of the class may include information about new technologies, new procedures, or may incorporate interactive feedback and participation based on recent experiences. Therefore, all operators are encouraged to retake classes at least every two years and to add their own experience to the interaction that occurs during the class. In this way, everyone learns from everyone else’s experience. Even the most experienced operators have found that they continue to learn new things each time they attend a training class.

Participation

All credentialed operators are encouraged to continue to practice and improve their operator skills by regularly participating in exercises, public service events, and actual emergency incidents (if they occur).

Participation in exercises provides an opportunity to focus on particular skill areas in a pre-planned, controlled environment. They are a good time to gain experience with new roles and operating procedures without the chance of doing harm to a served agency.

Public service events provide the opportunity to put learned skills into action in a real situation. Interaction with a real served agency and, potentially, the public at large, adds another dimension to the assignment and more opportunity to improve people skills.

Hopefully, actual emergency incidents are few and far between. But when they do occur, credentialed operators are encouraged to participate when appropriate. After all, that's what the training is all about. Real incidents are not a time to experiment. But operating "under fire" is a sure way to continue to build experience and improve operating skills.

Timeline for Progress

Each person can progress through the credentials at their own pace. Those who attend a few classes and events per year can expect to make the following progress upward in the credentialing ranks:

- First Year: Communicator Type IV
- Second Year: At least one Type III Credential
- Third Year: At least one Type II Credential
- Fourth Year: At least one Type I Credential

Obviously, those who attend more classes and events can progress much faster.

Minimum Participation Requirements

The Credentialing Program is a purely volunteer program. All participants have other priorities in their lives, including family, jobs, and other hobbies. So, credentialed operators are not expected to be able to attend all training courses and participate in all events. However, being a credentialed operator carries with it the responsibility to maintain at least a minimum level of training and participation in order to continue to perform at the level identified by the credentials held.

To maintain an active status in the Credentialing Program, all credentialed operators must continue to meet the following minimum requirements:

Performance:

All credentialed operators are expected to perform all activities according to the "Performance Standards".

Radio Operator Duty

To receive participation credit at an exercise, event, or incident, the individual must be operating the radio for a minimum of one hour, or actively involved in the supervision of radio operators and monitoring radio traffic for a minimum of one hour.

Training and Participation:

All credentialed operators are expected to maintain their currency in standard procedures and operations. Two options are available:

1. Radio operator duty participating in at least two credential-approved activities (exercises, events, or incidents) within each two-year period. Activities are approved by the Credential Program Manager when they are conducted according to our standard operating procedures and provide sufficient operating experience for those involved. See the definition of approved activities elsewhere in this handbook.

(Note that this is an average participation of just one activation per year but provides more flexibility in the case of travel or other scheduling limitations.)

OR

2. Radio operator duty participating in at least one credential-approved activity (exercise, event, or incident) and participation in at least one county “End of Year Summary class” within each two-year period. (Note that this option will still ensure the minimum level of currency with county standards and procedures but is more difficult to schedule since there is only one “End of Year Summary” class each year.)

Participants who, for whatever reason, are unable to meet these requirements over any given two-year period will be considered inactive. A one-year extension may be granted, by and at the sole discretion of the county’s Chief Radio Officer, for medical, family emergency or other unusual circumstances.

Tracking and Documenting Progress

Candidates are responsible for tracking their own progress toward completion of the credential requirements.

Credential Progress Record Forms are available on the SCCo ARES/RACES website. They are used to obtain signoffs and track progress toward credentials. They also provide the candidate with a “receipt”, which can be useful if there is ever a loss of data in the online database.

See: <https://www.scc-ares-races.org/credentials/progress>

Progress can be viewed by logging into the SCCo RACES web site activities database. Allow approximately a week for each training or exercise organizer to input their participation records and for Credential Evaluators to input the results of evaluations. Then follow up if anything is missing.

See: <https://www.scc-ares-races.org/activities> > My Profile > My Credentials

Credentialed and endorsement holders are also responsible for monitoring their own participation and ensuring that they continue to meet at least the minimum requirements for each credential and endorsement that they hold. The SCCo RACES web site activities database provides a report for each operator to show them their qualifying activity.

Annual Wallet Card Renewal

Individuals can log in and print their own wallet card. The wallet card includes the individual's name, call sign, credentials and endorsements earned. The wallet card should be laminated and kept with the operator's other badges and credentials, for easy access during an assignment.

See: <https://www.scc-ares-races.org/activities> > My Profile > My Credentials Print Wallet Card

The wallet card expires annually at the end of January. During the month of January, participation records are reviewed and those who have not kept up the minimum participation as of December of the previous year will lose their credentials. Those who continue to meet minimum participation requirements will maintain their credentials and endorsements and can print a new card on February 1st that will be good through January of the following year.

Maintaining Skills and Performance Consultation

As mentioned in the beginning of this section: *credentialed operators are expected to continue to maintain their skills and capabilities at the level required to earn those credentials and endorsements.* The Credential Program Manager may, at their discretion, have a performance consultation with any individual that is demonstrating consistent and continued degradation of their skills required to hold a credential level. Possible outcomes may range from no action, an agreed to plan and timeframe to return demonstrated skills and capabilities to the required level for the credential, a reduction in credential level (e.g., from a Type II to a Type III), and lastly elimination from the Credential Program.

See also: Loss and Reinstatement of Credentials and Endorsements

Common Requirements

The following requirements apply to all credentials and endorsements.

Two Year Timeframe

Except as noted in the details for each credential or endorsement and below, all requirements and evaluations for a given credential or endorsement must be completed within a two-year period. This is required to ensure that the training, participation, and evaluations are conducted according to reasonably current standards and that the candidate has reasonably current experience implementing these standards.

Requirements or evaluations older than two years will need to be repeated. For example, suppose a candidate completes all requirements and evaluations for a given credential, but it takes him/her longer than two years to do so. The requirements that were completed more than two years earlier will need to be repeated such that all requirements and evaluations are current within the last 2 years.

Exceptions

Knowledge, Equipment, and Radio Familiarity Checks

Knowledge and Equipment checks are valid for 1 year. After that time, they will need to be repeated. Except for the C4 Credential, the Radio Familiarity Check is good for 1 year for the same radio equipment. After either an equipment change or 1 year, it will need to be repeated.

Prerequisite Credentials and Endorsements

Credentials and endorsements do not expire if the individual maintains the minimum participation requirements (defined earlier). So, they are not subject to the two-year timeframe.

Emergency Management Courses

There is no expiration date on the emergency management courses from FEMA and CSTI. They can be applied more than two years later to any SCCo RACES credential or endorsement.

Minimum Operating Time per Activity

To receive participation credit for an activity (exercise, public service event, or incident), the individual must be an active participant engaged in radio operations during the activity for at least one hour. For example, if the requirement specifies a radio operating position, the candidate must be the radio operator for at least one hour during the activity. If the requirement is to act in a supervisory capacity, then the candidate individual must be actively monitoring radio traffic while actively supervising other operators for at least one hour. Individuals that who only observe, or that are the radio operator for shorter time periods of timeperiods, do not receive sufficient operating experience and will not receive participation credit.

Those who participate in a support, runner, or similar role will not get participation credit. These are places to get good experience and understanding of radio room operation, but do not meet credential participation requirements.

Performance According to Standards

All training, participation and evaluation activities must be performed according to the “Performance Standards”. The Credential Evaluators will use the “Performance Standards” document as the objective criteria for the evaluation. Any activities which are not performed according to the “Performance Standards” do not count toward completion of a credential.

Standard Go Kit

One of the reasons why amateur radio works “when all else fails” is because amateur radio operators bring their own equipment to an event or incident. It’s critical that each operator comes prepared with the equipment that will keep them safe and enable them to perform typical duties over a typical operating period. The SCCo ARES/RACES standard Go Kit checklist has been developed over many years and with countywide input to identify the equipment needed by all operators to deal with what they may face in the real world.

All credentials include the requirement for maintaining a county standard Go Kit, which includes the standard 2-hour “Carry Kit” and the standard 12-hour “Go Kit”. Some credentials may require additional equipment.

Training Courses

Santa Clara County ARES/RACES training courses continue to evolve and improve every year. Course content changes over time, as do course names. At this time, the credential requirements specify training course names based on the current course offerings. Prior courses of similar content may be approved for substitution by the Credential Program Manager if they occurred within the required time interval.

Emergency management training courses (ICS, SEMS, and NIMS) require attending the full course, either online or instructor led. The online courses are usually high quality and work best for most people. Abbreviated courses are not accepted. Completion certificates must be from the agency that offers the course or one of its approved providers. For example, the SCCo Office of Emergency Management is approved to teach some FEMA (Federal Emergency Management Agency) and CSTI (California State Training Institute) courses. And training providers such as TEEX (Texas A&M Engineering Extension) are approved providers of some FEMA ICS courses. Certificates from unapproved providers cannot be accepted due to the extremely high overhead of determining which courses from which providers met the original course developer’s requirements at the time they were taught. If in doubt, ask before signing up for a course.

If FEMA certificates for on-line classes have been lost or misplaced, there is a service where you can retrieve copies of training certificates and Student Identification Numbers (SID) numbers.

<https://training.fema.gov/student/sssp.aspx>

The FEMA site only has certificates for more recent years since the SID was established.

Exercises and Public Service Events

Most credentials require participation in both exercises (operations-based exercises) and public service events. These two types of activities provide complimentary types of experience for the credential candidate. Both types of experiences help to prepare the credential candidate for a real-world emergency communications role. Generally, an event cannot be used for more than one Credential or Endorsement. A new event is required for

each credential level. The exception to this is for an event that has multiple qualifying shifts, e.g. the annual SCC fall drill that has two shifts, where a different credential type or level was performed in a different qualifying shift, e.g., Field Operator in Shift 1 and Net Control Operator in Shift 2.

For event participation, the duties (role) performed must be applicable to the credential it is being applied to and may not be substituted for credential attainment of another role. For example, the net control credential requires that the duties performed at a qualifying event are those of a net control operator.

Operations-based Exercises

Several types of operations-based exercises are available throughout the year. For the purposes of this program, the generic word “exercise” will be used to refer to any of the operations-based exercise types listed in this section. Where a specific type of exercise is required, the more specific terms (described below) will be used. Non-operations-based exercises, such as tabletop exercises, do not provide operating experience and do not count toward participation requirements.

Exercises allow the message traffic to be scripted. The exercise planners can create a specific scenario involving specific types of message traffic occurring at a particular pace. This can be helpful in building or testing specific skills at different levels of capability.

Drills

A drill is a coordinated, supervised activity usually employed to test a single, specific operation or function within a single entity. Drills are commonly used to provide training on new equipment, validate procedures, or practice and maintain current skills.

Examples of drills:

- Quarterly Drills
- Drills targeted at specific skills, such as: Radio Direction Finding, Pop-Up Packet Practice, Message Passing, Net Control, etc.

Functional Exercises

Functional exercises are designed to validate and evaluate capabilities, multiple functions and/or sub-functions, or interdependent groups of functions. They are typically focused on exercising plans, policies, procedures, and staff members involved in management, direction, command, and control functions. A functional exercise is conducted in a realistic, real-time environment; however, movement of personnel and equipment is usually simulated.

Examples of functional exercises:

- Statewide Medical Health Exercise (most)
- Bay Area Urban Area Security Initiative (Bay Area UASI) Yellow Command exercises (most)
- EOC exercises (most)

Full-Scale Exercises

Full-scale exercises are typically the most complex and resource-intensive type of exercise. They involve multiple agencies, organizations, and jurisdictions and validate many facets of preparedness. Full-scale exercises often include many players operating under cooperative systems such as the Incident Command System (ICS) or Unified Command.

In a full-scale exercise, events are projected through an exercise scenario with event updates that drive activity at the operational level. Full-scale exercises are usually conducted in a real-time, stressful environment that is intended to mirror a real incident. Personnel and resources may be mobilized and deployed to the scene, where actions are performed as if a real incident had occurred. Throughout the duration of the exercise, many activities occur simultaneously.

Examples of full-scale exercises:

- Statewide Medical Health Exercise (some)
- Bay Area Urban Area Security Initiative (BAUASI) Yellow Command exercises (some)
- The SCCo ARES/RACES Countywide Communications Exercise

Public Service Events

Public service events are similar to full-scale exercises plus the added complexity of dealing with the public. They provide an excellent training opportunity because they involve real fieldwork in support of a served agency, and the real-world, public-facing nature of the event adds a bit of unpredictability.

Public Service Events usually dictate the type and pace of message traffic. But they provide an opportunity to interact directly with the public and with public safety and other served agencies, and to face a different set of real-world, real-time challenges.

Approved Activities (Exercises, Events, and Incidents)

Many types of exercises, events and incidents involve the use of amateur radio. Even activities as small as local neighborhood pet parades and fun runs can benefit from having amateur radio operators for observation and status reporting. But some types of activities do not properly prepare operators for the difficulty and complexity of operating on behalf of a served agency, handling third-party communications.

Requirements for Approved Activities

To ensure a consistent level of experience for credentialed operators, exercises, public service events and incidents that will be used for participation credit for credentials must be approved for that purpose. The criteria for approval are:

Overall activity:

- Operational period must be at least two hours
- Message traffic must be realistic and relevant to the exercise, event, or incident scenario
 - If 3rd party message traffic (which may be simulated) is part of the activity, it must use the appropriate standard county forms and include realistic content
 - Operator-to-operator message traffic must be necessary and appropriate for the scenario
- Must be entered into the SCCo ARES/RACES events database calendar and participation must be logged in the events database
- The activity supervisor must have a minimum of an F3 Credential or be advised by someone with an F3 or greater credential to ensure procedures required for a Credential Approved Event are followed.

Operations must be conducted according to “Santa Clara County ARES/RACES Performance Standards and Best Practices”, including:

- Proper check-ins and check-outs on nets
- Proper hand-offs between nets so individuals are always under supervision
- Proper health and welfare checks performed throughout the event on all nets
- Proper message passing procedures used, including use of Prowords, phonetics, forms, etc.
- Must use standard county forms and documentation for all formal message traffic and logging
- All county “Performance Standards and Best Practices” are adhered to by all positions
- If travel to/from the activity is part of the activity itself, then operator travel must be tracked and managed on a Resource Net
- If participants are traveling to or from another jurisdiction/city a Resource Net must be utilized

Documentation must be completed according to “Santa Clara County Performance Standards and Best Practices”, including:

- Resource Net (if used) tracking via form, T-cards or similar method
- Individual assignments tracked via form, T-cards or similar method
- Standard county ICS forms used
 - ICS 205 Communications Plan distributed before assignment begins
 - ICS 211A Communications Sign-in used to sign in/out all participants
 - ICS 214 Unit Activity Log completed by all participants

- ICS 309 Communications Log completed by all operators (shadows can use ICS 214)
- ICS 213 Message form or other county-standard message forms used for all 3rd party message traffic
- Operator-to-operator messages written on 2-part phone message or other suitable forms
- All participants turn in all logs and documentation at the end of shift/event
- An After-Action Report must be produced and submitted as outlined in the “AAR Report Requirements” document. <https://www.scc-ares-races.org/credentials/activities>

Should it be determined after the event that the activity was not conducted per the Approved Activity Request worksheet, and per the Credentialing Program Handbook, approval may be withdrawn. Unless otherwise noted, all events and exercises run by SCCo ARES/RACES meet the above requirements and are considered “approved” exercises or events.

Approval Process for Activities (Exercises, Events, Incidents)

A request for a Credential Approved activity needs to be submitted not less than 30 days before the event date. Submitting a request for an approved event is a simple, three-step process:

1. The local jurisdiction’s Radio Officer (RO) reviews the plan for the activity against the requirements above. When satisfied that the activity meets all of the requirements, they the RO fill fills out and sign signs a “Request for Approved Activity worksheet” form.
2. The local jurisdiction’s Radio Officer and the Jurisdiction Emergency Manager (or their designee) review the activity plan together. This ensures that the Emergency Manager is aware of the comprehensiveness of the activity. It is also an excellent opportunity for the Emergency Manager to make sure that local needs are also met by the plan. When the Emergency Manager is satisfied that the activity meets all requirements, they sign the form.
3. The local jurisdiction’s Radio Officer scans and emails the form to the Credential Program Manager.

The Credentialing Program Manager reviews the form and may contact the Radio Officer if there are any questions. The Credential Program Manager will then notify the Radio Officer, usually by email, if the activity is approved or, if not approved, the reason for not being approved.

“Credential Credit” Flag in Database

When an activity is approved, the Credential Program Manager will set the “Credential Credit” flag for the activity in the activities database. That will allow all program participants to see that the event has been approved for participation credit toward credentials.

FCC RF Safety Evaluation

Your license requires an RF Safety Evaluation for each station you are operating. The FCC changed the rules and existing stations had until May 03, 2023 to comply. New stations needed to always evaluate (since 2021), note that this might have applied to you each time when you set up an emergency operation station.

Reference:

1. <https://docs.fcc.gov/public/attachments/FCC-19-126A1.pdf>
2. Articles in ARRL QST September 2021, pp. 60-62; ARRL QST May 2023, pp 64-66
3. ARRL RF Exposure Web page: <https://www.arrrl.org/rf-exposure>
4. ARRL Online RF Exposure Calculator: <http://www.arrrl.org/rf-exposure-calculator>

Credential Details

Structure of Requirements

The following pages define a set of detailed requirements for earning SCCo RACES Credentials.

The following types of credentials are currently defined. If additional needs are identified, additional credential types may be added.

- Basic Communications (Type IV)
- Field Communications (Type III, II, I)
- Net Control Operations (Type III, II, I)
- Shadow Communications (Type III, II, I)
- Packet Operations (Type III, II, I)

Each credential is defined in specific detail. This level of detail is important for three main reasons:

1. It provides served agencies with a clear and specific definition of the capabilities of the resource type
2. It makes it clear to the credential candidate exactly what is expected of him/her so there are no surprises or misunderstandings
3. It ensures an objective and consistent review process, regardless of who performs the evaluation

The details of each credential include the following attributes:

- **Capabilities and Services:** a high-level statement about what an operator with this credential can do
- **Typical Assignments:** a list of assignments that are commonly performed by an operator with this credential
- **Experience Criteria:** These activities are usually performed by the candidate prior to requesting an evaluation. Doing so gives the candidate the best preparation for being evaluated. However, for flexibility, evaluations may be performed before all of these criteria are complete.
 - **Prerequisites:** a list of the training, credentials, licenses, or other credentials that are required prior to earning this credential.
 - **Required Training:** a list of the training that must be completed as part of this credential
 - **Required Participation:** the minimum participation required for this credential. Note that all participation must be completed according to the “Performance Standards”.
- **Evaluation Criteria:** These criteria are reviewed in the presence of a qualified Credential Evaluator.
 - **Required Equipment:** The minimum equipment required as part of this credential
 - **Knowledge:** A list of the items to be discussed or reviewed in either an interactive interview format or a written, quick-answer format, depending on the situation present at the evaluation.

NOTE: knowledge items will be periodically reviewed and updated to match both current training and actual experience obtained during past events appropriate for the Credential type and level evaluation. The recommendation is to be current with the most recent training course material including the end-of-year summary material before you take a Credential evaluation.

- **Operator Skills:** a list of the activities to be performed during the evaluation for this credential. All evaluation activities must be performed according to the “Performance Standards”.

Evaluations:

- Verification of requirements for Type IV credentials are performed by the local jurisdiction Radio Officer
- Evaluations for Type III, Type III and Type I credentials are performed by Credential Evaluators (CEs)
- Verification of requirements for Endorsements are performed by the Credential Program Manager.

Credential Award Process

The process for submitting and being awarded a credential is as follows:

1. Track Progress

The candidate is responsible for tracking their own progress toward all credentials. A “Credential Progress Record” form is available on the SCCo ARES/RACES web site for each credential. The forms provide a place for the appropriate person to sign off on each requirement as it is completed.

2. Obtain Sign Offs

For Communicator Type IV:

- The local jurisdiction Radio Officer or designee will initial each requirement as the candidate completes it.
- When all requirements are completed, the candidate and the Radio Officer (not designee) sign the form.

For Type III, II, I Credentials:

- A Credential Evaluator will initial each requirement as the candidate completes it.

3. Submit Documentation

The candidate is responsible for submitting all completed documentation to the Credential Program Manager or Credential Evaluator. This includes copies of licenses, recommendations, training certificates, progress records, and documentation of any other requirements.

For Communicator Type IV:

- The candidate submits a copy of the following to the Credential Program Manager
 - Credential Progress Record
 - Emergency Management training certificates (FEMA, CSTI, etc.)
 - Recommendation from local jurisdiction Radio Officer
- The Radio Officer may elect to send the recommendation directly to the Credential Program Manager

- The Credential Program Manager will update the data into the Credential Program tracking system.

For Type III, II, I Credentials:

- The candidate submits records of achievement of the credential requirements to the Credential Evaluator. This includes:
 - Emergency Management training certificates (FEMA, CSTI, etc.)
 - Any required recommendations
- Credential Evaluator can enter the data directly into the tracking system with exceptions noted in Avoiding Impropriety later in this document. (see sentence Below).
- All ICS training certificates and recommendations need to be submitted to the Credential Program Manager for filing. If the credential evaluator is entering this information into the database, it is their responsibility to ensure the CMP gets copies.

4. Records Review and Update

The Credential Program Manager or Credential Evaluator will review the documentation provided by the candidate and enter the information into the Credentialing Program tracking system.

5. Receive Notification

When all requirements for a credential have been completed and updated in the tracking system, the Credential Program Manager or the Credential Evaluator will inform the candidate, usually by e-mail, that they have earned the credential with a copy to the EC.

6. Print Updated Wallet Card

The candidate is responsible for printing and laminating an updated version of the wallet card showing their newly earned credentials.

Communicator Type IV Credential

Phonetic designation for radio transmission is “Charlie Four”

Summary

Capabilities and Services

- Capable of performing basic communications assignments, perhaps with coaching
- Capable of handling low-to-medium traffic levels and simple operator-to-operator content
- May be deployed for up to 8 to 12-hour shift (but is prepared for 12 hours in the event of unforeseen problems)
- Equipped for portable and low-power mobile operations

Typical Assignments

- Field checkpoints and observations posts; rovers
- Damage surveys: Windshield surveys, Modified Mercalli surveys; flood level observations
- Crowd observation and reporting; public information assistance
- Lost child / lost parent assistance

Requirements

Administrative

- Must live or work in Santa Clara County or be an active participant in RACES activities within Santa Clara County, and must be willing and able to respond to requests for amateur radio support in their primary jurisdiction within Santa Clara County.
 - Individuals will pick a primary jurisdiction, which is the jurisdiction that will have first priority if the individual is needed. This is typically the individual’s home city or the city where the individual works.
 - Note: Those seeking the Mutual Aid Communicator Endorsement can pick any primary jurisdiction within Santa Clara County, but if their primary jurisdiction doesn’t need them, they must be willing and able to respond to requests elsewhere within Santa Clara County.
- Must be 18 years of age or older
- Must have a valid Technician class or higher Amateur Radio license
- Must have a valid California Driver’s license or California State-issued Identification card
- Must have or be able to obtain reliable transportation capable of meeting the needs of the assignment
- Must have read and be familiar with the entire “SCCo ARES/RACES Radio Operator Credentialing Program Handbook” (this document)
- Must have read and be familiar with the entire “SCCo ARES/RACES Performance Standards and Best Practices”
- Must be registered as a Disaster Service Worker Volunteer with their primary jurisdiction (the jurisdiction that is signing off on this credential)

Training

- Santa Clara County ARES/RACES training
 - Introduction to Emergency Communications
 - At the local jurisdiction Radio Officer's discretion, equivalent training or experience can be substituted
 - Fundamentals of Emergency Communications (attendance required)
 - There is no requirement for completing any of the other ARES/RACES training courses prior to becoming a Type IV Credentialed operator. However, attending the monthly training courses will greatly improve the operator's knowledge of performance standards and operations and will help to accelerate readiness.
- Emergency Management training:
 - ICS-100 (or IS-100) – Introduction to the Incident Command System
 - ICS-200 (or IS-200) – ICS for Single Resources and Initial Action Incidents
 - IS-700 – Introduction to the National Incident Management System
 - SEMS G606 – Standardized Emergency Management System Introduction Online Course

Equipment

- The candidate will demonstrate that he/she maintains a standard go kit in a deployable condition
 - Deployable means organized, stored in a container or containers that can be used in the field, and ready to go at all times
 - Examples of deployable containers are backpacks, transport cases (Pelican, Storm, etc.), or other containers capable of being transported, carried and used in the field under a variety of conditions. They provide protection for and organization of the many small parts.
 - Grocery bags, cardboard boxes and similar containers are not "deployable" because they are difficult to transport and carry and will break or deteriorate with real-world use and in adverse weather conditions.
- The go kit must contain the following equipment:
 - At a minimum all required items in the SCCo ARES/RACES standard 2-hour Carry Kit
 - At a minimum all required items in the SCCo ARES/RACES standard 12-hour Go Kit

Radio Familiarity

- The candidate demonstrates personal HT radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]

Participation (within the last two years)

Candidates must complete the following activities to provide them with enough varied experience to demonstrate their readiness for the Type IV credential. At the discretion of the local jurisdiction's Radio Officer, equivalent participation from other types of activities can be substituted if they provide equivalent experience.

- Minimum of 8: Check into weekly city net
- Minimum of 8: Monitor SPECS or SVECS net
- Minimum of 2: Radio operator duty at quarterly ARES/RACES communications drills (participating at city or county)
 - Provides experience in basic communications, usually in support of a single operational function (Field status reports to local EOC, local jurisdiction EOC to county EOC message handling, ...)
- Minimum of 1: Radio operator duty at approved functional or full-scale exercise
 - Provides experience with more complex, multi-dimensional, perhaps multi-location communications situations. Activities can be scripted to provide more concentrated radio operations activity than might normally happen in real time.
- Minimum of 1: Radio operator duty at approved public service event or real emergency incident
 - Provides experience in unscripted, perhaps unpredictable situations which require interaction with the public and/or event officials.

Note that Type IV candidates may enter the program at varying levels of experience and capability from other locations. Therefore, these activities need not be completed within the county or local jurisdiction.

It is up to the local jurisdiction's Radio Officer to determine if the candidate has completed activities equivalent with the above recommendations and has sufficiently demonstrated their ability to perform according to the "Performance Standards". Some candidates may require more participation than the above minimums. But no candidate should be recommended for the Type IV credential without at least the above minimum participation.

Performance

The candidate has demonstrated:

- That he/she has functioned effectively and professionally in support of a served agency
- The he/she has the maturity, professionalism, and experience to perform all assignments according to the "Santa Clara County ARES/RACES Performance Standards and Best Practices"

Ongoing Participation

Maintaining a credential involves ongoing training and participation. Procedures improve and evolve. Forms are updated and added. Equipment is added or changed. Skills and knowledge degrade over time. Regular training and participation help to ensure that all operators maintain their proficiency with current standard operations. Prior to being awarded a credential, the candidate must agree to maintain his/her proficiency by participating in at least the minimum required training, exercises, and events, as defined in this document.

Verification Process

Step 1: Verify Requirements

The local jurisdiction Radio Officer (or designated deputy radio officer) will verify that the candidate has met each of the above requirements by initialing and dating the corresponding entry on the candidate's Type IV Communicator Credential Record. The dates entered on the form should correspond to the dates of the class, event, or other activities. Do not enter one date for all items, enter the appropriate date for when each requirement was completed. The individual's Participation Report from the Activities Database can provide many of these dates.

To accomplish this step, follow the process below:

General

- Read the Communicator Type IV requirements (previous section) and make sure each requirement is understood. No one should sign off on a requirement that they don't understand.
- Note: The checklist on the Communicator Type IV Credential Record form is a very abbreviated version of the requirements. The Credential Program Handbook (this document) always takes precedence over all other program documents.

Administrative

- Verify that the candidate meets each of the requirements

Training

- Verify that the candidate has completed each of the required SCCo ARES/RACES courses within the prior 2 years
- Verify that the candidate has completed each of the required Emergency Management courses

Equipment

- Verify that the candidate has all required items for the SCCo ARES/RACE Standard 2-hour Carry Kit
- Verify that the candidate has all required items for the SCCo ARES/RACE Standard 12-hour Go Kit
- Verify both kits are in a deployable condition (see description in requirements above)

Knowledge

- Have the candidate demonstrate they can set their HT to each of the required configurations using only the keypad (no computer), without delay or hesitation
- To verify simplex with tone squelch
 - Candidate sets correct tone and tone squelch
 - Person verifying sets tone and tone squelch, first with wrong tone to verify no communication in either direction (it is common for new operators to not properly set tone squelch)
 - Then person verifying sets correct tone to verify communication in both directions

Participation

- Verify that the candidate has completed the minimum quantity of nets
- Verify that the candidate has operated the radio for at least one hour at each of the minimum quantity of each type of approved drill, exercise and public service event or incident. (Monitoring or observing, while useful, is not sufficient to satisfy the participation requirements.)

Performance

- Verify that the candidate operates effectively and professionally with a served agency
- Verify that the candidate has the maturity and experience to perform according to the SCCo ARES/RACES Performance Standards and Best Practices.

Ongoing Participation

- Verify that the candidate commits to the minimum participation level for training and participation. See the “Minimum Participation Requirements” section, earlier in this document.

Step 2: Candidate Signature

When all requirements have been verified and initialed, the candidate signs the form, committing to maintain at least the minimum participation level and to operate according to standard procedures.

Step 3: Radio Officer Signature

The local jurisdiction Radio Officer (no deputy or other designee) signs the form, indicating that they have verified that the candidate has completed all the requirements. If the Radio Officer previously delegated the responsibility for verifying each requirement to a deputy, then the Radio Officer should confer with that deputy before signing. Return the Credential Record to the candidate.

Step 4: Submission

When the Credential Record is completed and signed, the candidate submits it according to the “Credential Award Process” section, earlier in this document.

Field Communicator Credentials

Summary of Field Communicator Credentials

	Type III	Type II	Type I
Expertise	Independent	Advanced	Specialist
Prerequisite	Type IV Communicator	Field Comm Type III	Field Comm Type II
Capabilities & Services	- Basic field communications - Fully independent - Low-to-medium traffic	- Type III, plus: - Medium-to-high traffic - Simultaneous participation in 2 nets - Cross-band repeat - Plan small events - Helps plan large events	- Type II, plus: - Most critical, complicated assignments, highest traffic levels - Plan, design, deploy, operate complex multi-radio, multi-antenna for larger events, incidents
Assignments	- Field checkpoints, observation posts, rover - Damage surveys - Crowd observation & information assistance - CERT team communicator - Shelter	- Lead operator for advanced assignments - Mobile operator - Large checkpoint, shelter - Served agency HQ or ICP	- Lead operator for largest, most complex assignments - Primary liaison for planning field communications ops
Equipment	- Std 2-hour carry kit, including dual-band HT - Std 12-hour go kit - Copy of Performance Standards	- Type III, plus: - Dual-band, 25W radio w/ cross-band repeat - Mobile antenna, portable base antenna with mast, base, coax - Field Post set-up and tear-down 12 hrs. power	- Type II, plus: - DC supply - Battery charger - Sustained power > 12 hrs.
Training	- SCCo Field Operations Type IIIA - SCCo Field Operations Type IIIB & II - SCCo Message Passing	- SCCo Field Operations Type IIIA - SCCo Field Operations Type IIIB & II - SCCo Cross-band Repeat - IS-800	- Field Type II, plus: - ICS-300 - SCCo Event Planning

	Type III	Type II	Type I
Participation & Experience	• 8 SPECS/SVECS • 8 City Nets • 1 Approved exercise * • 1 Approved public service event or emergency incident	• Type III, plus: • 8 SPECS/SVECS • 8 City Nets • 1 Approved exercise • 1 Approved public service event or emergency incident	• Type II, plus: • 8 SPECS/SVECS • 8 City Nets • 1 Approved exercise • 1 Approved public service event or emergency incident
Knowledge	• Radio familiarity • County Nets • Mike-Mike reports • Managing problems • Describe how to conduct an FCC RF Safety Evaluation	• Type III, plus: • Radio familiarity • Cross-band repeater ops • Managing problems • Perform an FCC RF Safety Evaluation	• Type II, plus: • Radio familiarity • Managing problems
Evaluation	• Performance Standards • Mobilization/demob • Low-to-medium traffic • 3rd party and operator-to-operator messages • ICS-211, ICS-214, ICS-309	• Type III, plus: • Medium-to-high traffic • 3rd party and operator-to-operator messages • ICS-205 • Field Post set-up and tear-down	• Type II, plus: • Plan, design, setup an event • ICS-201, ICS-202

* Approved exercise must be outside of the individual's own city.

Field Communicator Type III (F3)

Phonetic designation for radio transmission is “Foxtrot Three”

Capabilities and Services

- Fully independent operator
- Capable of performing basic field communications assignments without assistance or coaching
- Capable of handling low-to-medium traffic levels
- May be deployed for up to an 8 to 12-hour shift (but is prepared for 12 hours in the event of unforeseen problems)
- Equipped for portable and low-power mobile operations

Typical Assignments

- Field checkpoints and observation posts
- Damage surveys: Windshield surveys, Modified Mercalli surveys,
- Rover
- Crowd observation and information assistance
- Lost child / lost parent assistance
- CERT team communicator
- Communicator at a shelter

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Communicator Type IV

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Field Operations Type III A
 - Field Operations Type IIIB & II
 - Message Passing

Required Participation:

- Minimum of 8: monitor weekly SPECS or SVECS net
- Minimum of 8: check-in on weekly city net
- Minimum of 1: field communicator duty (at least 1 hour) at an approved drill/exercise outside individuals own city.
- Minimum of 1: field communicator duty (at least 1 hour) at an approved public service event or emergency incident

Evaluation Criteria

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. For more information about evaluations, consult the "Evaluations" section of this handbook.

Note: For Type C4 Credential holders, your equipment and radio familiarity familiarity will be rechecked by a Credential Evaluator even if done previously by your city's EC or an evaluator authorized by the city EC. (The one-year timeframe for previous Knowledge or Equipment Checks does not apply for earning the F3 Credential.)

Equipment:

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Communicator Type IV (C4)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal **HT** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone.
 - Demonstrate turning off the automatic shift and storing the repeater frequency for simplex with CTCSS operation to a memory channel.
 - Save configurations to and recall from memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Explain the purpose and appropriate usage for the following main net types:
 - Resource Net Level 1
 - Resource Net Level 2
 - Resource Net Level 3
 - Message Net
 - Command Net
 - Hospital Net
 - City/Tactical Net
 - EOC Net
- Explain the Mike-Mike (Modified Mercalli) scale and the correct use of the scale to report damage
- Explain how to deal with problems, such as but not limited to:
 - Loss of commercial power (including lights, heat or A/C, ATM machines, gas pumps, etc.)
 - Loss of telephone connectivity (including ATM machines, gas pumps, store registers, etc.)
 - Loss of repeater (how to recognize, how to handle)
 - Explain how to recognize a problem and how to check and reset the frequency offset for a stored memory channel.
 - Excessively hot environmental conditions which affect equipment performance
 - Heavy rain
 - Insufficiently defined assignment

- Need to transmit/receive a form that you have not seen before
- Explain how to conduct an FCC RF Safety Evaluation using the ARRL on-line calculator.
 - Explain the difference between a controlled and uncontrolled environment.
 - Explain or demonstrate how you will keep the public out of the uncontrolled environment.
 - Refer to Page 24 – “FCC RF Safety Evaluation” for more information.

Operator Skills

Operator skills will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Demonstrate the proper county process for mobilization/demobilization
 - Documentation of assignment
 - Proper Resource Net usage during mobilization
 - Proper Resource Net usage during demobilization
 - Proper safety observed at all times
- Function as a Field Communicator to accurately and effectively manage **low to medium** rate traffic for at least one hour
 - If deployed as part of a field team, functions for at least one-half hour as the primary field communicator for the team
- Demonstrate ability to prioritize and handle the following traffic
 - Send and receive at least two (in each direction) 3rd party messages, all of which are forms
 - Send and receive at least two (in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.
 - F3s must be able to send and receive the following message contents: words to be spelled (Heterographs and hard to spell words), single and multi-digit numbers, mixed group, mixed group figure(s), mixed group symbol(s), initial(s), symbol(s), telephone figures, amateur call, email address, and use of punctuation. If an F3 is receiving a message with a Proword not on this list, they are expected to process it as best they can but will not be evaluated on that Proword. This reduced list is only applicable to the F3 Credential, all other credentials require use of the complete list of Prowords.
- Properly and accurately maintain logs and records:
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Submit logs and records to supervisor at end of shift/event

Field Communicator Type II (F2)

Phonetic designation for radio transmission is “Foxtrot Two”

Capabilities and Services

- All Field Communicator Type III (F3) capabilities and services, plus:
- Advanced level operator
- Capable of performing advanced field communications assignments
- Capable of handling medium-to-high traffic levels
- Capable of providing cross-band repeater service
- Capable of simultaneously participating in two nets (one active; one light duty/occasional)
- Capable of planning small events; helping plan larger events
- Equipped for portable and high-power mobile or base operations

Typical Assignments

- Lead operator at a large checkpoint
- Lead operator at a shelter
- Lead operator at served agency headquarters, communications unit, or incident command post
- Coordinates communications for smaller events
- Assist with communications coordination for large events

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Field Communicator Type III (F3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Field Operations Type III A
 - Field Operations Type III B & II
 - Cross-band Repeating
- Emergency Management Training
 - IS-800 – Introduction to the National Response Framework

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 8: monitor weekly SPECS or SVECS net
- Minimum of 8: check-in on weekly city net
- Minimum of 1: field communicator duty (at least 1 hour) at an approved exercise
- Minimum of 1: field communicator duty (at least 1 hour) at an approved public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type III (F3)

The following additional equipment is also required for this credential:

- 2m/70cm dual-band radio, 25 Watt minimum (typically, a mobile-style radio)
 - Dual-VFO required (dual-receive recommended)
 - Cross-band repeat capability required
 - Must be capable of deployment independent of vehicle (may be easily removable mobile rig)
- Headphones for the above radio (headset and foot switch or hand switch recommended)
- Charged batteries for 12 hours of operation (For SLA: 20 Ah minimum; 26 Ah recommended)
- Power cable adapters to connect mobile radio to the following types of connectors:
 - Anderson Powerpole
 - Cigarette lighter (12 VDC accessory) socket
 - Vehicle battery terminals
- 2m/70cm dual-band portable base antenna (such as a roll-up or portable J-pole)
- Portable push-up antenna mast; must raise base of antenna at least 10 feet above ground
- Tripod or other self-supporting base for mast (must be independent of vehicle). For tripods: leg weights for wind protection
- Minimum of 25 feet of 50 Ohm coaxial cable (50 feet recommended)
- Coax adapters to connect mobile unit, via the above coaxial cable, to the following types of antenna connectors:
 - BNC plug (male) and BNC socket (female)
 - UHF plug (PL-259) and UHF socket (SO-239)
 - N-type plug and N-type socket
- A Field Type II operator is expected to either self-own or have ready-access to Field Post equipment that can be used if required for a field deployment assignment. Such equipment includes, but is not limited to:
 - "Pop-up" canopy recommended 8'x8' or 10'x10', with leg weights for wind protection, or equivalent (e.g. tent). Must be durable for expected weather, considerations include sun, rain, and wind.
 - One or more folding tables and folding chairs
 - Bright orange traffic cones (small), caution tape, etc. for marking any cable runs
 - Lighting as needed for night-time or reduced daylight operation
 - Means to transport equipment from their starting location to the assignment destination.
 - Means to move equipment from their parked vehicle to the setup location: e.g. dolly, hand truck, cart, etc. if none is available at the destination.

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal HT and/or **mobile** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Demonstrate ability to set-up personal mobile unit as cross-band repeater without hesitation or delay. Use of a cheat sheet, notes, or documentation is allowed.
- or use of any documentation
 - Local HTs access cross-band repeater
 - Cross-band repeater accesses city or county frequency
- Explain how to deal with problems, such as but not limited to:
 - Loss of commercial power (including lights, heat or A/C, ATM machines, gas pumps, etc.)
 - Loss of telephone connectivity (including ATM machines, gas pumps, store registers, etc.)
 - Loss of repeater (how to recognize, how to handle)
 - Excessively hot environmental conditions which affect equipment performance
 - Heavy rain
 - Insufficiently defined assignment
- Demonstrate that you know how to conduct an FCC RF Safety Evaluation
 - Describe why power, duty cycle, frequency, antenna gain, and cable loss affect the calculation.
 - A printout from the ARRL on-line calculator using your station's characteristics is sufficient to demonstrate the above.
 - The station being used needs to provide adequate marking and/or physical barriers to keep the public out of the uncontrolled area.
 - Refer to Page 23 – "FCC RF Safety Evaluation" for more information.

Operator Skills

Operator skills will be evaluated by observing performance in the following areas. The candidate will:

- Properly perform any of the Field Communicator Type III (F3) evaluation criteria if asked
- Perform all duties in accordance with the "Santa Clara County ARES/RACES Performance Standards and Best Practices"
- Function as a Field Communicator to accurately and effectively manage **medium to high** rate traffic for at least one hour
 - If deployed as part of a field team, functions for at least one-half hour as the primary field communicator for the team

- Demonstrate the ability to prioritize and handle the following traffic
 - Send and receive multiple (at least three in each direction) 3rd party messages, at least two of which (in each direction) are forms
 - Send and receive multiple (at least two in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.
- Demonstrate the ability to operate on one frequency while monitoring and participating in light activity on another frequency
- Properly and accurately maintain logs and records:
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Submit logs and records to supervisor at end of shift/event
- Demonstrate ability to set-up their Field Post as required for the event assignment.
- Demonstrate ability to plan individual arrival and set-up time necessary to begin operation at the start of the Served Agency's Operational Period

Field Communicator Type I (F1)

Phonetic designation for radio transmission is “Foxtrot One”

Capabilities and Services

- All Field Communicator Type II (F2) capabilities and services, plus:
- Specialist level operator
- Capable of the most complicated, highest traffic levels and most critical assignments
- Capable of planning, designing, deploying, and operating complex multi-radio, multi-antenna equipment configurations for larger events or incidents.
- Equipped as for Field Communicator Type II (F2)
- Also equipped for and capable of out-of-county and extended deployments

Typical Assignments

- Plan, design, set-up, and operate a field operation involving multiple frequencies and multiple operators
- Primary resource and liaison for planning of information flow and communications for a large event involving multiple operators and multiple frequencies
- Lead or primary operator for large, complex field communications assignments
- Out of county assignments

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Field Communicator Type II (F2)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Event Planning
- Emergency Management Training
 - ICS-300 – Intermediate ICS for Expanding Incidents

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 8: monitor weekly SPECS or SVECS net
- Minimum of 8: check-in on weekly city net
- Minimum of 1: field communicator duty (at least 1 hour) at an approved exercise
- Minimum of 1: field communicator duty (at least 1 hour) at an approved public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment:

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type II (F2)

The following additional equipment is also required for this credential:

- Regulated DC power supply
- Battery charger
- Ability for sustained operation without commercial power for extended periods (> 12 hours), such as with a generator, solar, or other alternate power source.

Radio Familiarity and Knowledge :

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal radio familiarity by configuring radio to perform any of the following without hesitation or delay.
 - Any Field Communicator Type III radio familiarity capabilities
 - Any Field Communicator Type II radio familiarity capabilities
- Explain how to deal with problems, such as:
 - Loss of commercial power (including lights, heat or A/C, ATM machines, gas pumps, etc.)
 - Loss of telephone connectivity (including ATM machines, gas pumps, store registers, etc.)
 - Loss of repeater(s) (how to recognize, how to handle)
 - Excessively hot environmental conditions which affect equipment performance
 - Inter-county, inter-section traffic flow
 - Staffing shortages
 - DSW – responsibilities for RACES IC/Command Staff

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Field Communicator Type II (F2) evaluation criteria, if asked
- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Plan, design, and set-up field information flow and communications support for an approved county exercise, event or incident
- Properly and accurately maintain logs and records:
 - ICS 201 Incident Briefing
 - ICS 202 Incident Objectives
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Submit logs and records to supervisor at end of shift/event

Net Control Operator Credentials

Summary of Net Control Credentials

	Type III	Type II	Type I
Expertise	Independent	Advanced	Specialist
Prerequisite	Field Comm Type III	Net Control Type III	Net Control Type II
Capabilities & Services	- Net control or scribe - Fully independent - Low-to-medium traffic	- Type III, plus: - Medium-to-high traffic - Simultaneous participation in 2 nets - Cross-band repeat - Plan small events - Helps plan large events	- Type II, plus: - Most critical, complicated assignments, highest traffic levels - Plan, design, deploy, operate complex multi-radio, multi-antenna for larger events, incidents - Primary resource for planning, operating
Assignments	- Small city nets - Small staging area net - Small tactical nets	- Lead operator for advanced assignments - Large city net - County nets - Large staging areas nets - Liaison between 2 nets	- Lead operator for largest, most complex assignments - Primary liaison for planning net control operations
Equipment	Field Comm Type III	Field Comm Type II	Field Comm Type I
Training	SCCo Net Control Type III, Parts A & B	- Type III, plus: - IS-800 - SCCo Net Control Type II - SCCo Cross-band Repeat	- Type II, plus: - ICS-300 - SCCo Event Planning
Participation & Experience	2 City Nets 1 SPECS/SVECS 1 Approved exercise 1 Approved public service event or emergency incident	- Type III, plus: 2 City Nets 1 SPECS/SVECS 1 Approved exercise 1 Approved public service event or emergency incident	- Type II, plus: 2 City Nets 1 SPECS/SVECS 1 Approved exercise 1 Approved public service event or emergency incident

	Type III	Type II	Type I
Knowledge	• HT radio familiarity • Mike-Mike reports • Managing problems • Describe how to conduct an FCC RF Safety Evaluation	• Type III, plus: • Mobile radio familiarity • Cross-band repeater ops • Managing problems • Perform an FCC RF Safety Evaluation	• Type II, plus: • Radio familiarity • Managing problems
Evaluation	• Performance Standards • Low-to-medium traffic • 3rd party and operator-to-operator messages • ICS-211, ICS-214, ICS-309	• Type III, plus: • Medium-to-high traffic • 3rd party and operator-to-operator messages • Operate on 2 frequencies • ICS-205 • Field post set-up and tear-down	• Type II, plus: • Plan, design, setup an event • ICS-201, ICS-202

Net Control Operator Type III (N3)

Phonetic designation for radio transmission is “November Three”

Capabilities and Services

- Fully independent operator
- Capable of performing basic net control assignments without assistance or coaching
- Capable of handling low-to-medium traffic levels
- Equipped as for Field Communicator Type III (F3)

Typical Assignments

- Low-to-medium traffic city nets
- Small staging area net control
- Low-to-medium traffic tactical net

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Field Communicator Type III (F3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Net Control Operator Type III (Part A & B)

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 2: net control for weekly city net or hospital net
- Minimum of 1: net control for weekly SPECS/SVECS net or other approved net
- Minimum of 1: net control duty (at least 1 hour) at an approved exercise
- Minimum of 1: net control duty (at least 1 hour) at an approved public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the “Evaluations” section of this handbook.

Equipment:

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type III (F3)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal **HT** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Explain
 - The Mike-Mike (Modified Mercalli) scale
 - The proper way for Net Control to collect and summarize damage reports using the M-M scale
 - How to properly send an all-station or multi-station message
 - How to transition a net to new remote net control
- Explain how to deal with problems, such as but not limited to:
 - Loss of power at the net control station
 - Field operator with poor skills disrupting or slowing down the net
 - Sending same message to multiple stations (selecting one station to pace)
 - Loss of repeater (how to recognize, how to handle)
 - High environmental temperatures affecting equipment performance
 - Need to transmit/receive a form that you have not seen before
 - You are net control taking Mike-Mike reports for moderate earthquake. Reports coming in faster than you can record them. Describe two methods of handling the traffic overload
 - You are net control during a parade and one station has an intermittent open mike. You can still transmit but some stations are blocked on receive.
 - You are taking messages on a low-to-medium volume net with no scribe and no runner when an EMERGENCY (life threatening) message comes to you from the field and must go to Incident Command immediately.
 - You have been net control for 6 hours of your 12-hour shift and because of exhaustion you cannot complete your assignment.
 - Your net is being disrupted by deliberate harmful interference.
- Explain how to conduct an FCC RF Safety Evaluation using the ARRL on-line calculator.
 - Explain the difference between a controlled and uncontrolled environment.
 - Explain or demonstrate how you will keep the public out of the uncontrolled environment.
 - Refer to Page 24 – “FCC RF Safety Evaluation” for more information.

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Function as a Net Control Operator to accurately and effectively manage a **low-to-medium** rate traffic net for at least one hour
 - If a scribe is present for the net, function at least one-half hour in the net control position and one-half hour in the scribe position.
- Demonstrate ability to prioritize and handle the following traffic
 - Send and receive multiple (at least two in each direction) 3rd party messages, all of which are forms
 - Send and receive multiple (at least two in each direction) operator-to-operator messages, such as Check-In/Out, health & welfare, status reports, etc.
- Properly and accurately maintain logs and records:
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Properly maintains status for field operators, including assignment and time of last H&W check using T-cards, note cards, computerized logging, or other appropriate method
 - Submit logs and records to supervisor at end of shift/event

Net Control Operator Type II (N2)

Phonetic designation for radio transmission is “November Two”

Capabilities and Services

- All Net Control Operator Type III (N3) capabilities and services, plus:
- Advanced level operator
- Capable of handling medium-to-high traffic levels
- Simultaneous participation in two nets (one active; one light duty/occasional)
- Capable of providing cross-band repeater service
- Plans and coordinates nets for smaller events; helps plan larger events
- Equipped as for Field Communicator Type II (F2)

Typical Assignments

- Large city net control
- County net control
- Large staging area net control
- Liaison operator between 2 nets
- Medium-to-high traffic tactical net control
- Resource Net Control during medium-to-high traffic event

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Net Control Operator Type III (N3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Net Control Operator Type II
 - Cross-band Repeating
- Emergency Management Training
 - IS-800 – Introduction to the National Response Framework

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 2: net control for weekly city net or hospital net
- Minimum of 1: net control for weekly SPECS/SVECS net or other approved net
- Minimum of 1: net control duty (at least one hour) at an approved exercise
- Minimum of 1: net control duty (at least one hour) at an approved public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type II (F2)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal HT and/or **mobile** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Demonstrate ability to set-up personal mobile unit as cross-band repeater without hesitation or delay. Use of a cheat sheet, notes, or documentation is allowed.
 - Local HTs access cross-band repeater
 - Cross-band repeater accesses city or county frequency
- Explain:
 - Message prioritization method
 - Role of network/traffic manager
- Explain how to deal with problems, such as but not limited to:
 - Loss of power at the net control station
 - Field operator with poor skills disrupting or slowing down the net
 - Loss of repeater (how to recognize, how to handle)
 - High environmental temperatures effecting equipment performance
 - You are net control taking Mike-Mike reports for moderate earthquake. Reports coming in faster than you can record them. Describe two methods of handling the traffic overload.
 - You are net control during a parade and one station has an intermittent open mike. You can still transmit but some stations are blocked on receive.
 - You are taking messages on a low-to-medium volume net with no scribe and no runner when an EMERGENCY (life threatening) message comes to you from the field and must go to Incident Command immediately.
 - You have been net control for 6 hours of your 12-hour shift and because of exhaustion you cannot complete your assignment.
 - Your net is being disrupted by deliberate harmful interference.

- Demonstrate that you know how to conduct an FCC RF Safety Evaluation
 - Describe why power, duty cycle, frequency, antenna gain, and cable loss affect the calculation.
 - A printout from the ARRL on-line calculator using your station's characteristics is sufficient to demonstrate the above.
 - The station being used needs to provide adequate marking and/or physical barriers to keep the public out of the uncontrolled area.
 - Refer to Page 24 – "FCC RF Safety Evaluation" for more information.

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Net Control Operator Type III (N3) evaluation criteria if asked
- Perform all duties in accordance with the "Santa Clara County ARES/RACES Performance Standards and Best Practices"
- Function as a Net Control Operator to accurately and effectively manage a **medium-to-high** rate traffic net for at least one hour
 - If a scribe is present for the net, function at least one-half hour in the net control position and one-half hour in the scribe position.
- Demonstrate ability to prioritize and handle the following traffic
 - Send and receive multiple (at least three in each direction) 3rd party messages, at least two of which are forms
 - Send and receive multiple (at least three in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.
- Demonstrate ability to operate on one frequency while monitoring and participating in light activity on another frequency
- Properly and accurately maintain logs and records:
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Status for field operators and city/agency EOC status, including assignment and time of last H&W check using T-cards, note cards, computerized logging, or other appropriate method
 - Submit logs and records to supervisor at end of shift/event
- Demonstrate ability to set-up their Field Post as required for the event assignment.
- Demonstrate ability to plan individual arrival and set-up time necessary to begin operation at the start of the Served Agency's Operational Period.

Net Control Operator Type I (N1)

Phonetic designation for radio transmission is “November One”

Capabilities and Services

- All Net Control Operator Type II (N2) capabilities and services, plus:
- Specialist level operator
- Capable of the most complicated, highest traffic levels and most critical assignments
- Capable of planning, designing, deploying, and operating complex multi-radio, multi-net configurations for larger events or incidents
- Equipped as for Field Communicator Type I (F1), plus
- Capable of out-of-county and extended deployments

Typical Assignments

- Plan, design, set-up, and operate a radio room (multi-operator net control station) handling multiple radios, frequencies, and nets
- Primary resource and liaison for planning of information flow and communications for a large event involving multiple operators and multiple frequencies
- Lead or primary operator for critical nets for large city or county during major event or incident
- Out of county assignments

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Net Control Operator Type II (N2)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Event Planning
- Emergency Management Training
 - ICS-300 – Intermediate ICS for Expanding Incidents

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 2: net control for weekly city net or hospital net
- Minimum of 1: net control for weekly SPECS/SVECS net or other approved net
- Minimum of 1: net control duty (at least 1 hour) at an approved exercise
- Minimum of 1: net control duty (at least 1 hour) at an approved public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type I (F1)

Knowledge

An interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal radio familiarity by configuring radio to perform any of the following without hesitation or delay
 - Any Net Control Type III radio familiarity capabilities
 - Any Net Control Type II radio familiarity capabilities
- Explain how to deal with problems, such as:
 - Loss of power at the net control station
 - Field operator with poor skills disrupting or slowing down the net
 - Loss of repeater (how to recognize, how to handle)
 - High environmental temperatures affecting equipment performance
 - You are net control taking Mike-Mike reports for moderate earthquake. Reports come in faster than you can record them. Describe two methods of handling the traffic overload
 - You are net control during a parade and one station has an intermittent open mike. You can still transmit but some stations are blocked on receive.
 - You are taking messages on a low-to-medium volume net with no scribe and no runner when an EMERGENCY (life threatening) message comes to you from the field and must go to Incident Command immediately.
 - You have been net control for 6 hours of your 12-hour shift, and because of exhaustion you cannot complete your assignment.
 - Your net is being disrupted by deliberate harmful interference.
 - Staffing shortages
 - DSW – responsibilities for RACES IC/Command Staff

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Net Control Operator Type II (N2) evaluation criteria if asked
- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Plan, design, and set-up net control/radio room information flow and communications support for an approved county exercise, event or incident
- Properly and accurately maintain logs and records:
 - ICS 201 Incident Briefing
 - ICS 202 incident Objectives
 - ICS 205-SCCo Communications plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Status for field operators and city/agency EOC status, including assignment and time of last H&W check using T-cards, note cards, computerized logging, or other appropriate method
 - Submit logs and records to supervisor at end of shift/event

Packet Operator Credentials

Summary of Packet Operator Credentials

	Type III	Type II	Type I
Expertise	Independent	Advanced	Specialist
Prerequisite	Field Comm Type III	Packet Operator Type III	Packet Operator Type II
Capabilities & Services	- Fully independent - Set up existing, pre-installed packet station (PC, TNC, radio, antenna, cables) - Operate Outpost & PackItForms - Send, receive, print, log - Low-to-medium traffic	- Type III, plus: - Medium-to-high traffic - Install Outpost & PackItForms - Send/receive without Outpost - Helps build & test packet networks - Plans small events - Helps plan large events	- Type II, plus: - Most critical, complicated assignments, highest traffic levels - Plan, design, deploy, operate complex multi-radio, multi-antenna for larger events, incidents
Assignments	- Small city EOC - Small staging area - Small aid station or shelter	- Lead operator for advanced assignments - County EOC - Large city EOC - Large staging area or shelter - Served agency HQ or ICP	- Lead operator for largest, most complex assignments - Install, troubleshoot BBS - Plan, design, set-up, operate packet network - Primary liaison for planning, operating
Equipment	Field Comm Type III	- Field Comm Type II, except cross-band and headphones, plus: - Packet computer - Outpost, PackItForms - Terminal Emulator - TNC, cables - Power for 1 hr. operation - USB flash drive	- Field Comm Type I, except cross-band and headphones, plus: - Packet computer - Outpost, PackItForms - Terminal Emulator - TNC, cables - Power for 1 hr. operation - USB flash drive
Training	SCCo Packet Op Type III Parts A & B	- Type III, plus: - IS-800 - SCCo Packet Op Type II	- Type II, plus: - ICS-300 - SCCo Event Planning

	Type III	Type II	Type I
Participation & Experience	• 4 weekly practice messages • 1 Approved exercise or public service event or emergency incident • Min 2 Monthly Packet Practice sessions	• Type III, plus: • 6 weekly practice messages • 1 Approved exercise or public service event or emergency incident • Min 2 Monthly Packet Practice sessions	• Type II, plus: • 6 weekly practice messages • 1 Approved exercise or public service event or emergency incident
Knowledge	• HT radio familiarity • Operations of standard county packet station • Diagnose, repair basic problems • Describe how to conduct an FCC RF Safety Evaluation	• Type III, plus: • Mobile radio familiarity • Setup, config, operate radio, TNC, computer, software • Diagnose, repair problems • Perform an FCC RF Safety Evaluation	• Type II, plus: • Radio familiarity • Set-up TNC-based BBS • Set-up digipeater • Set-up software BBS • Manages problems
Evaluation	• Performance Standards • Low-to-medium traffic • 3rd party and operator-to-operator messages • ICS-211, ICS-214, ICS-309	• Type III, plus: • Medium-to-high traffic • 3rd party and operator-to-operator messages • With & without Outpost • ICS-205 • Field post set-up and tear-down	• Type II, plus: • Plan, design, setup an event • ICS-201, ICS-202

Packet Operator Type III (P3)

Phonetic designation for radio transmission is “Papa Three”

Capabilities and Services

- Fully independent operator
- Set-up an existing, pre-installed system which is currently disconnected and stored
 - Connect PC to TNC, connect TNC to radio, connect radio to antenna, all using pre-assembled and supplied cables
- Turn everything on and verify connectivity (between TNC and radio, and between TNC and PC)
- Operate a PC that has Outpost and PackItForms already pre-installed
- Configure Outpost options like call sign, tactical call, polling, etc. to county standard
- Operate a packet station to send, receive, print, log and track packet messages
- Properly send PackItForms messages
- Capable of handling low-to-medium traffic levels
- Equipped as for Field Communicator Type III (F3)

Typical Assignments

- Locations with low-to-medium traffic and pre-installed packet station
- Small city EOC
- Small staging area
- Small aid station or shelter

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Field Communicator Type III (F3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Packet Operator Type III (Part A and B)

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 4: weekly packet practice messages
- Minimum of 2: monthly packet practice
- Minimum of 1: packet operator duty (at least 1 hour) at an approved exercise or public service event or emergency incident

Evaluation Criteria

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment:

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type III (F3)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal **HT** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Demonstrate familiarity with basic functionality of a county standard packet station. These tests to be conducted using any packet station which meets the county standard:
 - Demonstrate how to tune radio to proper frequency, simplex, no tone, etc.
 - Demonstrate how to verify proper connectivity between TNC and radio, including: audio level, squelch/carrier detect settings, reset to factory defaults
 - Note: Various types of TNCs exist (hardware, software, built-into-radio, etc.) Packet Operator Type III is only required to understand the County standard KPC-3+ TNC.
 - Demonstrate how to verify proper connectivity between TNC and PC using Ipserial, PuTTY, HyperTerminal, or other terminal emulation tool, including serial baud rate
 - Demonstrate how to configure Outpost settings to county standard settings, including
 - Configure a BBS for County backbone node using a tactical call
 - Configure at least one other BBS not using a tactical call
 - All other settings as defined in the county packet station standards
 - Demonstrate monitoring packet traffic on the intended channel prior to operating the packet station.
- Demonstrate ability to diagnose and repair basic problems or errors, such as but not limited to:
 - Radio tuned to the wrong frequency
 - Radio or TNC has wrong audio level or squelch or carrier detect setting
 - Computer not connected to TNC; wrong baud setting; etc.
 - TNC/radio not on
 - Outpost configured to wrong BBS and/or call sign
 - County standard Kantronics KPC 3+ troubleshooting:
 - enabling the full command set
 - wrong output audio level and how to recover
 - exiting KISS mode

- reset procedures
 - dead battery recognition and replacement procedure
- Explain how to conduct an FCC RF Safety Evaluation using the ARRL on-line calculator.
 - Explain the difference between a controlled and uncontrolled environment.
 - Explain or demonstrate how you will keep the public out of the uncontrolled environment.
 - Refer to Page 24 – “FCC RF Safety Evaluation” for more information.

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Function as a Packet Operator to accurately and effectively manage **low to medium** rate traffic for at least one hour
 - If a scribe/assistant is present for the net, function at least one-half hour in the lead packet operator.
- Accurately and effectively pass message traffic
 - Format packet message subject lines correctly with message number, priority, severity
 - Via Outpost & PackItForms
 - Send and receive at least two (in each direction) 3rd party messages, all of which are forms
 - Via Outpost
 - Send and receive at least two (in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.
 - Format packet message subject lines correctly with message number and handling order
- If a tactical voice frequency is assigned for the event for packet operators, promptly reply via HT to:
 - Operator-to-operator messages
 - Health and Welfare Traffic
- Properly and accurately maintain logs and records:
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Submit logs and records to supervisor at end of shift/event

Packet Operator Type II (P2)

Phonetic designation for radio transmission is “Papa Two”

Capabilities and Services

- All Packet Operator Type III (P3) capabilities and services, plus:
- Advanced level operator
- Capable of handling medium-to-high traffic levels
- Able to install Outpost and PackItForms
- Able to send and receive PackItForms and non-PackItForms messages without Outpost, including:
 - Manual conversion of PackItForms to text
 - Manual send via TNC commands
 - Manual receive via TNC commands
 - Manual conversion from text to PackItForms
- Assists with building and testing packet networks
- Can plan small events; help plan larger events
- Equipped as for Field Communicator Type II (F2), except for cross-band repeat, plus complete county standard packet station or equivalent

Typical Assignments

- County EOC
- Large city EOC
- Large staging area or shelter
- Served agency headquarters, main communications unit, or ICP
- Install and set-up packet station

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Packet Operator Type III (P3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Packet Operator Type II
- Emergency Management Training
 - IS-800 – Introduction to the National Response Framework

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 6: weekly packet practice messages
- Minimum of 2: monthly packet practice
- Minimum of 1: packet operator duty (at least 1 hour) at an approved exercise, public service event, or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type II (F2), except:
 - Mobile radio need not be capable of cross-band repeat
 - Headphone not required but recommended for voice communications

The following additional equipment is also required for this credential:

- Laptop, netbook or other portable, battery-operated style of PC capable of running Outpost and PackItForms (Currently supported version of MS Windows)
- One of the following radio configurations supporting both 2m and 70cm with SCCo BBS frequencies programmed into memory:
 - Dual-band mobile
 - Dual-band mobile with one side being used for packet and a mono-band mobile radio
 - Two mono-band mobile radios

Note: with pre-approval of the Credential Program Manager or the assigned Credential Evaluator (if known in advance) a 1.25m (220MHz) capability may be substituted for either 2m or 70cm

- Outpost and PackItForms installed and properly configured according to county standard settings
 - Required: the most recent General Release Version or Pre-Release Version
- Terminal emulator, such as PuTTY, installed and properly configured
- Configured and working Kantronics KPC-3+ 1200 baud or equivalent (may be built into the radio, hardware, or software)
- All appropriate radio, audio and data cables
- Sufficient battery power to operate entire packet station (including PC and printer, if present) continuously for at least one hour (to handle AC power gaps, generator refueling, etc.)
- USB flash drive (i.e. "USB Key")
- Printer for printing messages (recommended but not required)
- Dummy load (recommended for short distance "parking lot" drills but not required)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal HT and/or **mobile** radio (for each mobile radio used) familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Demonstrate ability to setup, configure and operate personal packet station
 - Power, audio and serial cabling
 - Set up Radio: band, frequency (simplex, no tone)
 - Set up TNC: baud rate, date, time, MYCALL, carrier detect, audio level calibration, restore to factory defaults (as applicable)
 - Install and configure Outpost according to county standards.
 - Install PackItForms according to county standards
 - Verify operation of Outpost and PackItForms by sending and receiving plain text and PackItForms messages
 - Show that SCCo packet notices are properly saved in Outpost
 - Demonstrate monitoring packet traffic on the intended channel prior to operating the packet station.
- Demonstrate ability to diagnose and repair basic problems or errors, such as but not limited to:
 - Radio tuned to the wrong frequency
 - Radio or TNC has wrong audio level, or squelch, or carrier detect setting
 - Computer not connected to TNC; wrong baud setting; etc.
 - TNC/radio not on
 - Outpost configured to wrong BBS and/or call sign
- Demonstrate that you know how to conduct an FCC RF Safety Evaluation
 - Describe why power, duty cycle, frequency, antenna gain, and cable loss affect the calculation.
 - A printout from the ARRL on-line calculator using your station's characteristics is sufficient to demonstrate the above.
 - The station being used needs to provide adequate marking and/or physical barriers to keep the public out of the uncontrolled area.
 - Refer to Page 24 – "FCC RF Safety Evaluation" for more information.

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Packet Operator Type III (P3) evaluation criteria if asked
- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Function as a Packet Operator to accurately and effectively manage **medium to high**-rate traffic for at least one hour
 - If a scribe/assistant is present for the net, function at least one-half hour in the lead packet operator
- Accurately and effectively pass message traffic without using Outpost:
 - Send and receive at least two (in each direction) 3rd party messages, all of which are forms
 - Send and receive at least two (in each direction) operator-to-operator messages, such as Check-In/Out, health & welfare, status reports, etc.
- If a tactical voice frequency is assigned for the event for packet operators, promptly reply via HT to:
 - Operator-to-operator messages
 - Health and Welfare Traffic
- Demonstrate switching packet operations from the primary BBS (in one frequency band) to a secondary BBS (different frequency band):
 - Without hesitation
 - Re-sending any messages as needed
- Properly and accurately maintain logs and records:
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions
 - Submit logs and records to supervisor at end of shift/event
- Demonstrate ability to set-up their Field Post as required for the event assignment.
- Demonstrate ability to plan individual arrival and set-up time necessary to begin operation at the start of the Served Agency’s Operational Period.

Packet Operator Type I (P1)

Phonetic designation for radio transmission is “Papa One”

Capabilities and Services

- All Packet Operator Type II (P2) capabilities and services, plus:
- Specialist level operator
- Capable of the most complicated, highest traffic levels and most critical assignments
- Capable of designing, deploying, operating, and coordinating complex multi-radio, multi-band, multi-node packet networks for larger events or incidents
- Equipped as for Packet Operator Type II (P2), plus
- Equipped for and capable of out-of-county and extended deployments

Typical Assignments

- Install or troubleshoot a city or county packet BBS
- Set up and operate the W5XSC BBS for a training or exercise event
- Plan, design, set-up and operate a packet operation involving multiple nodes and multiple operators
- Primary resource and liaison for planning of information flow and packet communications for a large event involving multiple operators and multiple frequencies
- Lead or primary operator for large, complex packet assignments

Experience Criteria

All of the following criteria must be met in order to qualify for this credential

Prerequisites:

- Credential: Packet Operator Type II (P2)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Event Planning
- Emergency Management Training
 - ICS-300 – Intermediate ICS for Expanding Incidents

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 6: weekly packet practice messages
- Minimum of 1: packet operator duty (at least 1 hour) at an approved exercise or public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type I (F1), except:
 - Mobile radio need not be capable of cross-band repeat

The following additional equipment is also required for this credential:

- Laptop, netbook or other portable, battery operated style of PC capable of running Outpost and PackItForms (Currently supported version of MS Windows)
- Outpost and PackItForms installed and properly configured according to county standard settings
- Terminal emulator, such as PuTTY, installed and properly configured
- Configured and working 1200 baud Kantronics KPC-3+ TNC (may be hardware or software or built into the radio)
- All appropriate radio, audio and data cables
- Sufficient battery power to operate entire packet station (including PC and printer, if present) continuously for at least one hour (to handle AC power gaps, generator refueling, etc.)
- USB flash drive (i.e. "USB thumb-drive")
- Printer for printing messages (recommended but not required)

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal radio familiarity by configuring radio to perform any of the following without hesitation or delay
 - Any Packet Operator Type III radio familiarity capabilities and knowledge
 - Any Packet Operator Type II radio familiarity capabilities and knowledge
- Digipeaters and nodes
 - Describe the difference between a digipeater, a KA-NODE, and a K-NET node and explain when to use each
 - Demonstrate the ability to set up a digipeater and explain the meaning of all essential configuration parameters used
 - Demonstrate the ability to set up each type of a node and explain the meaning of all essential configuration parameters used
- Demonstrate the ability to set up a TNC-based BBS (multi-user) and explain the meaning of all essential configuration parameters used, e.g., Kantronics Personal Bulletin Board System (PBBS).

- Demonstrate the ability to set-up and operate the existing W5XSC BBS system (or equivalent) for a training or exercise event based on SCCo-provided instructions. This includes demonstrating:
 - An understanding of basic Ubuntu administrative commands including editing configuration files, starting and stopping the JNOS process, and safely shutting down the system.
 - Starting, stopping, any necessary configuration changes, and sysop tasks for JNOS in preparation for the exercises :e.g., clearing mailboxes and old notices, posting new notices, etc.
 - Adjusting any security or administrative permissions as needed to support local access via WiFi (e.g., login, password, fail2ban, etc.) for instructor access and potentially student access via telnet.
 - Configure radios and demonstrate operation on multiple bands (e.g., 2m, 1.2m, and 70cm).
 - Basic troubleshooting
- Explain how to deal with these issues, but not limited to:
 - Staffing shortages
 - DSW – responsibilities for RACES IC/Command Staff

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas:

- Properly perform any of the Packet Operator Type II (P2) evaluation criteria if asked
- Performs all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Plan, design, and set-up packet information flow and communications support for an approved county exercise, event or incident
- Properly and accurately maintain logs and records:
 - ICS 201 Incident Briefing
 - ICS 202 Incident Objectives
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications Check-in
 - ICS 214-SCCo Unit Activity Log
 - ICS 309-SCCo Communications Log
 - Submit logs and records to supervisor at end of shift/event

Shadow Communicator Credentials

Summary of Shadow Communicator Credentials

	Type III	Type II	Type I
Expertise	Independent	Advanced	Specialist
Prerequisite	Field Comm Type III	Shadow Comm Type III	Shadow Comm Type II
Capabilities & Services	- Communications shadow for small or low complexity events - Fully independent - Low-to-medium traffic	- Type III, plus: - Medium-to-high traffic - Simultaneous participation in 2 nets - Cross-band repeat - Plans small events - Helps plan large events	- Type II, plus: - Most critical, complicated assignments, highest traffic levels - Plan, design, deploy, operate shadow comms for larger events, incidents
Assignments	Shadow for: general event staff or general city or county staff	- Lead operator for advanced assignments - Shadow for: primary event officials or primary city or county staff - Shadow net liaison - Combination portable & mobile assignments	- Lead operator for largest, most complex assignments - Shadow for: senior government officials - Plan, design, set-up, operate shadows - Primary liaison for planning, operating
Equipment	- Field Comm Type III, plus: - Backpack, vest or harness for portable operations	- Field Comm Type II, plus: - Backpack, vest or harness for portable operations 2nd HT required	- Field Comm Type I, plus: - Backpack, vest or harness for portable operations 2nd HT required
Training	SCCo Shadow Comm Type III	- Type III, plus - IS-800 - SCCo Cross-band Repeat	- Type II, plus: - ICS-300 - SCCo Event Planning
Participation & Experience	1 approved exercise or public service event or emergency incident	- Type III, plus: 1 approved exercise or public service event or emergency incident	- Type II, plus: 1 approved exercise or public service event or emergency incident
Knowledge	- HT radio familiarity - Performance standards for shadows - Managing problems	- Type III, plus: - Mobile radio familiarity - Cross-band repeater ops - Managing problems	- Type II, plus: - Radio familiarity - Manages problems

	Type III	Type II	Type I
Evaluation	• Performance Standards • Low-to-medium traffic • 3rd party and operator-to-operator messages • ICS-211, ICS-214, ICS-309	• Type III, plus: • Medium-to-high traffic • 3rd party and operator-to-operator messages • ICS-205	• Type II, plus: • Plan, design, setup an event • ICS-201, ICS-202

Shadow Communicator Type III (S3)

Phonetic designation for radio transmission is “Sierra Three”

Capabilities and Services

- Fully independent operator
- Non-critical, small or low complexity events
- Capable of handling low-to-medium traffic levels
- Equipped as for Field Communicator Type III (F3), plus shadow-specific equipment

Typical Assignments

- Shadow for general event staff
- Shadow for general city or county staff

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Field Communicator Type III (F3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Shadowing Type III

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 1: shadow duty (at least 1 hour) at an approved exercise or public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the “Evaluations” section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type III (F3)

The following additional equipment is also required for this credential:

- Small backpack, vest, chest harness or other similar method for carrying HT radio and other items while operating portable

Radio Familiarity and Knowledge:

Subject to the rules under Common Requirements-Exceptions, an interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal **HT** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Explain the Performance Standards for Shadowing
- Explain how to deal with problems, such as but not limited to:
 - Loss of repeater
 - Loss of principal
 - Lost (took wrong turn/path and now don't know where you are)
 - High environmental temperatures effecting equipment performance
 - Heavy rain

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform all duties in accordance with the "Santa Clara County ARES/RACES Performance Standards and Best Practices"
- Function as a shadow to accurately and effectively manage **low**-rate traffic for the assigned principal for at least one hour
- Accurately and effectively pass message traffic
 - Send and receive multiple (at least two in each direction) 3rd party messages
 - Send and receive multiple (at least two in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.
- Properly and accurately maintain logs and records:
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; messages sent/received (optional); actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions (if appropriate)
 - Submit logs and records to supervisor at end of shift/event.

Shadow Communicator Type II (S2)

Phonetic designation for radio transmission is “Sierra Two”

Capabilities and Services

- All Shadow Communicator Type III (S3) capabilities and services, plus:
- Advanced level operator
- Capable of handling medium-to-high traffic levels
- Capable of handling large or complex events
- Simultaneous participation in two nets (one active; one light duty/occasional)
- Capable of providing cross-band repeater service
- Can plan small events; help plan larger events
- Equipped as for Field Communicator Type II (F2), plus shadow-specific equipment

Typical Assignments

- Shadow for primary event officials
- Shadow for primary/senior city or county officials
- Shadow net liaison

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Shadow Communicator Type III (S3)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Cross-band Repeating
- Emergency Management Training
 - IS-800 – Introduction to the National Response Framework

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 1: shadow duty (at least 1 hour) at an approved exercise or public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the “Evaluations” section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type II (F2)

The following additional equipment is also required for this credential:

- Small backpack, vest, chest harness or other similar method for carrying HT radio and other items while operating portable
- A second HT radio is required to participate in and/or monitor a second frequency.

Knowledge

An interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal **mobile** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with CTCSS tone and offset and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from radio memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]
- Demonstrate ability to set-up personal mobile unit as cross-band repeater without hesitation or delay. Use of a cheat sheet, notes, or documentation is allowed.
 - Local HTs access cross-band repeater
 - Cross-band repeater accesses city or county frequency
- Explain how to deal with problems, such as:
 - Loss of repeater
 - Loss of principal
 - Lost (took wrong turn/path and now don't know where you are)
 - High environmental temperatures effecting equipment performance
 - Heavy rain

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Shadow Communicator Type III (S3) evaluation criteria if asked
- Perform all duties in accordance with the "Santa Clara County ARES/RACES Performance Standards and Best Practices"
- Function as a shadow to accurately and effectively manage **medium to high** traffic rates for the assigned principal for at least one hour
- Accurately and effectively pass message traffic
 - Send and receive multiple (at least two in each direction) 3rd party messages
 - Send and receive multiple (at least two in each direction) operator-to-operator messages, such as check-in/out, health & welfare, status reports, etc.

- Demonstrate ability to operate on one frequency while monitoring and participating in light activity on another frequency
- Properly and accurately maintain logs and records:
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications check-in form for all operators at the location
 - ICS 214-SCCo Unit Activity Log, including time on scene; messages sent/received (optional); actions taken; events that occur; and time when assignment ends
 - ICS 309-SCCo Communications Log of incoming and outgoing transmissions (if appropriate)
 - Submit logs and records to supervisor at end of shift/event

Shadow Communicator Type I (S1)

Phonetic designation for radio transmission is “Sierra One”

Capabilities and Services

- All Shadow Communicator Type II (S2) capabilities and services, plus:
- Specialist level operator
- Capable of the most complicated, highest traffic levels and most critical assignments
- Capable of designing, deploying, operating and coordinating complex multi-radio, multi-band, multi-shadow configurations for larger events or incidents
- Critical situations involving senior officials and advanced training from the served agency
- Equipped as for Shadow Communicator Type II (S2)
- Also equipped for and capable of out-of-county and extended deployments

Typical Assignments

- Plan, design, set-up, and operate a shadowing operation involving multiple frequencies and multiple operators
- Primary resource and liaison for planning of information flow and communications for a large event involving multiple operators and multiple frequencies
- Shadow for senior state officials or senior public safety officials
- Shadow for situations where advanced training from served agency is required
- Out of county assignments

Experience Criteria

All of the following criteria must be met in order to qualify for this credential.

Prerequisites:

- Credential: Shadow Communicator Type II (S2)

Required Training:

- Santa Clara County ARES/RACES Training (or approved equivalents)
 - Event Planning
- Emergency Management Training
 - ICS-300 – Intermediate ICS for Expanding Incidents

Required Participation:

The following participation is required in addition to the participation required by any prerequisites:

- Minimum of 1: shadow duty (at least 1 hour) at an approved exercise or public service event or emergency incident

Evaluation Criteria:

Candidates must undergo an evaluation where they must demonstrate the following in the presence of a qualified Credential Evaluator. The evaluator may also review any of the prerequisite criteria. For more information about evaluations, consult the "Evaluations" section of this handbook.

Equipment

Equipment will be evaluated by sampling the required items from the equipment listed below:

- All required equipment for Field Communicator Type I (F1)

The following additional equipment is also required for this credential:

- Small backpack, vest, chest harness or other similar method for carrying HT radio and other items while operating portable
- 2nd HT required

Knowledge

An interactive review will assess knowledge in the following areas. The candidate will:

- Demonstrate personal radio familiarity by configuring radio to perform any of the following without hesitation or delay
 - Any Shadow Communicator Type III radio familiarity capabilities
 - Any Shadow Communicator Type II radio familiarity capabilities
- Explain how to deal with problems, such as:
 - Loss of commercial power (including lights, heat or A/C, ATM machines, gas pumps, etc.)
 - Loss of telephone connectivity (including ATM machines, gas pumps, store registers, etc.)
 - Loss of repeater(s)
 - Excessively hot environmental conditions which affect equipment performance
 - Inter-county, inter-section traffic flow
 - Staffing shortages
 - DSW – responsibilities for RACES IC/Command Staff

Operator Skills

Operator skill will be evaluated by observing performance in all of the following areas. The candidate will:

- Perform any of the Shadow Communicator Type II (S2) evaluation criteria if asked
- Perform all duties in accordance with the “Santa Clara County ARES/RACES Performance Standards and Best Practices”
- Plan, design, and set-up shadow information flow and communications support for an approved county exercise, event or incident
- Properly and accurately maintain logs and records:
 - ICS 201 Incident Briefing
 - ICS 202 Incident Objectives
 - ICS 205-SCCo Communications Plan
 - ICS 211A-SCCo Communications Check-in
 - ICS 214-SCCo Unit Activity Log
 - ICS 309-SCCo Communications log
 - Submit logs and records to supervisor at end of shift/event

Endorsements Details

Endorsement Award Process

The process for submitting and being awarded an endorsement may vary because different agencies have different requirements. The specific process is outlined in the “Award Process” section of each endorsement. In general, the process is as follows:

1. Track Progress

The candidate is responsible for tracking their own progress toward all endorsements. An “Endorsement Progress Record” form is available on the SCCo ARES/RACES web site for each endorsement. The forms provide a place for the appropriate person to sign off on each requirement as it is completed.

2. Obtain Sign Offs

The candidate obtains the appropriate sign offs. See the “Award Process” section under each endorsement for details about who signs off on each requirement.

3. Submit Documentation

The candidate is responsible for submitting all completed documentation to the Credential Program Manager.

4. Records Review and Update

The Credential Program Manager will review the documentation provided by the candidate and enter the information into the Credentialing Program tracking system.

5. Receive Notification

When all requirements for an endorsement have been completed and updated in the tracking system, the Credential Program Manager will inform the candidate, usually by e-mail, that they have earned the endorsement.

6. Print Updated Wallet Card

The candidate is responsible for printing and laminating an updated version of the wallet card showing their newly earned endorsement.

Mutual Aid Communicator (MAC)

Mutual Aid Communicators (MACs) are credentialed operators who are willing and able to be assigned to operate outside their home city. A typical situation is when an incident or event only impacts a portion of the county and an agency in the affected area requests mutual aid. The county activates and assigns MACs from other parts of the county to help the affected agency.

Typical Assignments

- Provide credential-specific, mutual aid support anywhere in the county

Requirements

Prerequisites:

- Credentials
 - Communicator Type IV (or higher)

Administrative:

- Agree to accept assignments anywhere in the county
- Registered as Santa Clara County Disaster Service Worker (DSW)
- LiveScan and background check by Santa Clara County Sheriff (local, State DOJ, FBI)
- Recommendation from local jurisdiction Radio Officer

Participation:

- Minimum of 1: Participation as a radio operator in an approved county ARES/RACES drill/exercise that is held outside the individual's own city.

Knowledge:

Any prior Knowledge Check from a C4 Credential must be redone by a Credential Evaluator.

- Demonstrate personal **HT** radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay and without the use of any documentation
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone, and repeater output frequency only on simplex with CTCSS tone
 - Save configurations to and recall from memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]

Award Process

- Candidate completes all requirements except for background check and recommendation.
- Candidate requests recommendation from local jurisdiction Radio Officer.
- Local jurisdiction Radio Officer determines that the candidate has the maturity and experience to perform their assignments according to the "Performance Standards."
- Local jurisdiction Radio Officer nominates the candidate to be awarded the MAC endorsement. The nomination can be in the form of a letter, fax or e-mail to the Credential Program Manager.
 - Note: It is strongly recommended that the local jurisdiction Emergency Manager or their delegate be notified of the nomination, such as by copying them when the nomination is sent to the Program Manager. This keeps the local jurisdiction authorities informed and acts as a reminder to the Emergency Manager that the county mutual aid program exists and serves all jurisdictions.
- Credential Program Manager notifies Sheriff's Office staff of request for the LiveScan background check.
NOTE: The candidate should NOT contact the Sheriff's office until instructed to do so.
 - The Program Manager will provide the candidate with a form package to be completed. The Candidate will follow the instructions provided with that package.
 - Candidate attends LiveScan background check when they are scheduled.
 - Sheriff's office notifies OEM and Credential Program Manager of pass/fail results
- If the background check is passed, Credential Program Manager notifies the candidate that they are now a Mutual Aid Communicator, usually by e-mail
- Candidate prints and laminates updated Wallet Card
- Candidate sends picture for County MAC badge
- Credential Program Manager presents MAC Badge to new MAC

County Fire Station Radio Operator (FRO)

County Fire Station Radio Operators are credentialed operators who are able to operate inside a County Fire station, even when all fire personnel are out on calls. In order to do this safely and effectively, the operator needs additional training in station operations.

Typical Assignments

- Operate voice and packet at a County Fire station

Requirements

Prerequisites:

- Credentials
 - Field Operator Type III (F3)
 - Packet Operator Type III (P3)
- Endorsements
 - None
 - Note: The SCCo RACES Mutual Aid Communicator (MAC) endorsement is required for deployment to a location outside one's home city (including other County Fire stations). This is because deployments outside one's home city are done in response to a mutual aid request and are managed by the county ARES/RACES team in coordination with the County Office of Emergency Management and the county DSW Volunteer program.

Administrative:

- LiveScan and background check by Santa Clara County Sheriff (local, State DoJ, FBI)
 - Note: This requirement is already covered if the individual has the SCCo RACES Mutual Aid Communicator (MAC) endorsement. Follow that procedure to get the background check.
- Recommendation from local jurisdiction Radio Officer (or designated deputy)

Training:

- County Fire
 - Auxiliary Communications Emergency Service (ACES) Fire Station Operations

Mentored Experience:

- Minimum of 1: Mentored operation of voice and packet in a county fire station for approved exercise, public service event or incident. Must successfully operate according to the "Performance Standards" and all applicable training.

Award Process

- Local jurisdiction Radio Officer (or deputy) provides a recommendation to the candidate
- Candidate submits proof of completion of all requirements to Credential Program Manager
- Credential Program Manager approves endorsement and notifies candidate, usually by e-mail
- Candidate prints and laminates updated Wallet Card

County EOC Radio Operator (ERO)

County EOC Radio Operators are credentialed operators who can operate in the county EOC or alternate EOC without assistance or coaching. In order to do this safely and effectively, the operator needs additional training in ICS and EOC operations.

Typical Assignments

- Operate without coaching or assistance at the county/operational area EOC

Requirements

Prerequisites:

- Credentials
 - For Net Control Positions: Net Control Type III (N3)
 - For Packet Operator Positions: Packet Operator Type III (P3)
- Endorsements
 - Mutual Aid Communicator (MAC) (this includes a Background check)

Administrative:

- Recommendation from SCCo RACES Chief Radio Officer (or designated deputy)

Training:

- Santa Clara County ARES/RACES Training
 - SCCo EOC Radio Room Orientation
- Emergency Management Training
 - County EOC Orientation
 - IS-800 – Introduction to the National Response Framework

Mentored Experience:

- Minimum of 1: Mentored operation as net control or packet operator in county EOC during approved exercise or incident after taking the SCCo EOC Radio Room Orientation class. Must successfully operate according to the “Performance Standards” and all applicable training.

Award Process

- SCCo Chief Radio Officer (or designated deputy) provides recommendation to candidate
- Candidate submits proof of completion of all requirements to Credential Program Manager
- Credential Program Manager approves endorsement and notifies candidate, usually by e-mail
- Candidate prints and laminates updated Wallet Card

County EOC SHARES Radio Operator (SRO)

SHARES Radio Operators (SROs) are trained and experienced working in the County EOC Radio Room providing communications capability using the SHARES Codan HF Radio system and Winlink Express.

Typical Assignments

- Provide voice and digital (Winlink) message traffic using the SHARES Codan HF Radio system. Communications would normally be with the Region and/or State Operation Centers.

Requirements

Prerequisites:

- EOC Radio Operator Endorsement which includes:
 - Mutual Aid Communicator Endorsement
 - County DSW registration

Administrative:

- Recommendation from SCCo RACES Chief Radio Officer (or designated deputy)

Training:

- SCCo EOC SHARES HF Radio Operator Orientation

Participation:

One set of these can be done during each of the weekly nets held on Wednesday mornings.

Participation at two weekly nets will satisfy the requirement if all 4 activities are completed during each net.

- Minimum of 2: Weekly check-in on California Emergency Services Net (CESN)
- Minimum of 2: Weekly check-in on CalLink SHARES HF Voice Net
- Minimum of 2: Check-in on Winlink SHARES via HF
- Minimum of 2: Check-in on Winlink SHARES via Telnet

Radio Familiarity and Knowledge:

Must be checked by a Credential Evaluator, approved by the Credential {Program Manager, who holds the SHARES Radio Operator (SRO) Endorsement.

- Demonstrate personal radio knowledge by performing each of the following without hesitation or delay.
 - Making a Selective Call using Contacts
 - Making a Message Call (text message) using Find
 - Using the Desk Console or Handset
 - Using the Virtual Control Point (VCP) on a computer
 - Making a ALE Call and explain why this might be used
 - Free Tune (manually tune) a Frequency
 - Sending a Winlink standard form (213, 213RR, or EMMA)
 - Generate an ICS-309 using Winlink Express
 - Demonstrate checking the SWR on one channel and on a channel group
- Explain how you would answer an incoming ALE Call
- Explain the use of a Circuit Merit Report and give an example
- Describe what equipment is included in the Transportable Kit and how operation differs from the base station
- Define LQA and ALE and describe how they determine which channel to use for communications.

Award Process

- SCCo Chief Radio Officer (or designated deputy) provides recommendation to candidate
- Candidate submits proof of completion of all requirements to Credential Program Manager
- Credential Program Manager approves endorsement and notifies candidate, usually by e-mail
- Candidate prints and laminates updated Wallet Card

County EOC RACES Unit Leader (RUL)

County EOC RACES Unit Leaders are credentialed operators who are able to operate as the RACES Unit Leader in the county EOC or alternate EOC without assistance or coaching. This position interfaces primarily with the Operations section and the Planning & Intelligence section. The position is responsible for all RACES activities in the EOC. To do this effectively, the operator needs additional training in ICS and EOC operations.

Typical Assignment

- Operate as the RACES Unit Leader position at the county/operational area EOC or Alternate EOC.

Requirements

Prerequisites:

- Credentials:
 - Net Control Type II (N2)
 - Packet Operator Type II (P2)
- Endorsements
 - Mutual Aid Communicator (MAC) (this includes a Background check)
 - County EOC Radio Operator (ERO)
 - County EOC SHARES Radio Operator (SRO) (those holding the RUL Endorsement have a temporary exemption until Dec 31, 2026 to complete the SRO Endorsement)

Administrative:

- Recommendation from SCCo RACES Chief Radio Officer (or designated deputy)

Training:

- Santa Clara County ARES/RACES Training
 - SCCo RACES Unit Leader Orientation
- Emergency Management Training
 - G191: ICS / EOC Interface
 - IS-2200: Basic Emergency Operations Center Functions
 - Note: The RACES Unit Leader has the same training as other county employees who work in the EOC have, which is called Core 100. Core 100 includes: County EOC Orientation, IS-100, IS-700, IS-800, G606, G191 and IS-2200. All but G191 and IS-2200 should have already been completed as part of the prerequisite credentials and endorsements.

Mentored Experience:

- Minimum of 1: Mentored operation as RACES Unit Leader in county EOC during approved exercise or incident. Must successfully operate according to the "Performance Standards" and all applicable training.

Award Process

- SCCo Chief Radio Officer (or designated deputy) provides a recommendation to the candidate
- Candidate submits proof of completion of all requirements to Credential Program Manager
- Credential Program Manager approves endorsement and notifies candidate, usually by e-mail
- Candidate prints and laminates updated Wallet Card

Loss and Reinstatement of Credentials and Endorsements

The loss of credentials or endorsement status can be voluntary or involuntary. Anyone can voluntarily withdraw from the program at any time. Involuntary loss of credentials or endorsements can occur if the individual no longer meets the requirements of the program.

Voluntary Withdrawal

Participation in the Credentialing Program is voluntary. An individual may withdraw from the program at any time and for any reason. Some examples of reasons why an individual might need to withdraw from the program include: moving out of the area, a change in family situation or, perhaps, an illness or injury that prevents the person from performing the duties of a credentialed operator.

Voluntary Withdrawal Process

Withdrawal from the Credential Program is initiated in one of two ways:

- 1) A credentialed operator may withdraw from the program by sending an email to the Credential Program Manager requesting withdrawal.
- 2) A credentialed operator who permanently moves out of the area or is otherwise unable to perform the duties of a credentialed operator in the future will be deemed to have voluntarily withdrawn from the program.

In either case, the Credential Program Manager will remove the credential (and endorsement) status from the individual's record in the activities database. An email will be sent to the individual confirming that they have been removed from the program.

The Credential Program Manager will also record the date that the individual originally achieved each credential and endorsement. This information may be used to reinstate status, as described below.

Individual operators should also maintain their own record of participation and status to protect against data loss.

Involuntary Removal

When a credentialed operator no longer meets the requirements of the program, he/she will be considered Inactive and his/her credential (and endorsement) status will be removed. Examples of involuntary removal criteria include:

- Administrative, such as loss of amateur radio license, loss of transportation, etc.
- Inactivity, such as failing to maintain minimum participation requirements
- Inappropriate behavior, such as refusal to abide by the program standards and tenets
- Security issues, such as criminal activity

Once inactive, the individual has a limited time window during which to achieve reinstatement. Involuntary removal due to behavioral or security issues may prevent reinstatement, depending on the specifics of the issue.

Maintaining Administrative and Participation Requirements

All credentialed operators are responsible for monitoring their own adherence to all administrative and participation requirements. The administrative requirements are straight-forward. The county ARES/RACES activities database currently provides two helpful views for monitoring participation:

- My Activity Record: Shows all activities in which the operator participated since the database was created.
- My Qualifying Events: Shows the events over the last two years that will be used to determine if the individual is meeting the minimum participation requirements of the credentialing program.

Shortly after the end of each calendar year, the Credential Program Manager will review the activities database to determine if any credentialed operators have failed to meet the minimum requirement participation level over the previous two years. Any credentialed operators who fail to meet those criteria will be considered “Inactive”.

Behavior and Security Issues

The Credential Program Manager or ARES/RACES leadership may also observe or receive reports of inappropriate or unlawful behavior. Any of these situations may result in removal from the program. Appeals can be made to the Credential Program Manager. The final decision rests solely with the County RACES Chief Radio Officer.

Transition to Inactive Status

When a credentialed operator becomes Inactive or otherwise needs to be removed from the program, the credential (and endorsement) status of the individual will be removed from the activities database. The individual will receive a notification email at his/her address as listed in the activities database. The email will contain the reason for the loss of status.

The Credential Program Manager will also record the date that the individual originally achieved each credential and endorsement. This information may be used to reinstate status, as described below.

Individual operators should also maintain their own record of participation and credential status, including proof of any credentials and endorsements earned, to protect against data loss.

Reinstatement

Note: Reinstatement after involuntary removal due to behavioral or security issues may not be possible, depending on the specifics of the issue. Individuals will need to consult with the Credential Program Manager.

Reinstatement Timeframe

An individual may be reinstated within a two-year period after becoming Inactive. For example, suppose a credentialed operator has not met the minimum participation requirements for two calendar years. Shortly after the end of the second calendar year (usually, within the first two weeks of January), the individual’s credential (and endorsement) status will be removed, and he/she will be considered Inactive. The individual has the remainder of that calendar year and the next calendar year to complete the reinstatement process described below.

Reinstatement more than two years after a credentialed operator has become Inactive is not possible. The individual will have not been participating at the minimum level for at least four years (two years prior to

becoming inactive plus two years after becoming inactive) and far too much will have changed in that timeframe. Therefore, the individual will need to start the process over again, beginning with the Communicator Type IV credential.

Reinstatement Process

To be reinstated to Active status, the individual must meet the minimum participation requirements and pass a reinstatement review. Both must be accomplished within two calendar years of becoming Inactive.

The reinstatement review for Active status will verify that the individual meets all the following requirements:

- Administrative
 - All administrative requirements for being a credentialed operator
- Training
 - There is no specific training requirement for reinstatement, but ...
 - Training classes are updated with new information and procedures every year. Anyone who has been inactive for two years or more is not prepared with the latest information and should resume a regular training schedule.
 - Training will be reviewed, and if it is not current, you may be asked to take the classes before reinstatement
- Equipment
 - 2-hour Carry Kit maintained to county standards
 - 12-hour Go-Kit maintained to county standards
- Participation
 - The individual currently meets the minimum participation requirement for maintaining active status
- Knowledge
 - Purpose and usage of county nets
 - See the Fundamentals of Emergency Communication course
 - Mobilization, Tracking and Demobilization process
 - See the Fundamentals of Emergency Communication course
 - Demonstrates personal radio familiarity by manually (via the keypad) configuring radio to perform each of the following without hesitation or delay or use of any documentation
 - Simplex without tone
 - Simplex with tone and tone squelch
 - Repeater with offset and CTCSS tone
 - Save configurations to and recall from memory
 - Lock keypad or mic controls, if so equipped
 - Full/factory reset (clear all settings) [explain only; demonstration not required]

If the individual also possessed any credentials at the time they became Inactive, those credentials may also be reinstated by extending the reinstatement review to cover the following items

- Equipment
 - Any additional equipment required for each credential (see the credential requirements)
- Knowledge
 - All knowledge items required for each credential (see the credential requirements)
- Participation
 - Any participation requirements for each credential (see the credential requirements)
- Training
 - Any training requirements for each credential (see the credential requirements)
- Evaluation
 - An evaluation will be conducted to address the set of credentials (and endorsements) to be reinstated. At the discretion of the Credential Evaluator, the evaluation may be abbreviated and cover multiple credentials in session.

When the minimum participation requirements have been met and the reinstatement review has been successfully completed, the Credential Program Manager will update the activities database to reinstate Active status and any applicable credentials and endorsements.

Evaluations

Summary

A critical component of the Santa Clara County Credentialing Program is the individual performance evaluation that is part of each advanced (Type III or higher) credential. Performance is evaluated according to relevant and objective criteria and the evaluations are conducted in a consistent and fair manner. Trained and qualified Credential Evaluators are responsible for conducting the performance evaluations.

Key Attributes of Credential Evaluations

Efficient

The Credentialing Program includes performance evaluations that are designed around the key principle of: “what we already do, where and when we already do it.” Simply put, evaluations are conducted without the need for separate test environments. The program uses existing exercises, public service events and real incidents as the evaluation venue (“where and when we already do it”). Candidates for credentials are monitored and evaluated as they perform their normal functions (“what we already do”). When needed, additional evaluation sessions can also be created.

Relevant

Performance evaluations must be designed in a manner that tests the actual skills to be used. The Credentialing Program includes performance evaluations that test the candidate’s ability to perform the specific duties required, at the specific level of performance required, for each type of credential. This ensures that the candidate will be able to deliver the specific services expected of individuals who hold that credential. The evaluations verify the candidate’s ability to perform the specific traffic handling role associated with the credential, including sending and receiving traffic effectively and efficiently. They check for equipment readiness and proper use of documentation. They also examine the candidate’s understanding of and ability to solve problems that are likely to be encountered. Served agencies are encouraged to review the evaluation criteria and make suggestions for how to make them even more relevant.

Objective

Credential performance evaluations are conducted according to objective criteria. All activities are to be performed according to the “Performance Standards”. These standards objectively define how radio operators are to perform their work. The “Performance Standards” cover such areas as: Professionalism, Communications Technique, Safety, Methods and Procedures, Equipment, and Documentation. Throughout the performance evaluation, the Credential Evaluator will be checking to see that the candidate adheres to all the “Performance Standards”.

Consistent

Evaluations are conducted in a consistent manner in order to achieve consistent and meaningful results. Credential performance evaluations are conducted according to a defined list of evaluation criteria. These criteria are open and available to candidates to review prior to the evaluations (although they won't know which problems or what specific traffic situations they'll be dealing with). The individuals who conduct the evaluations are trained and qualified to conduct the evaluations fairly, objectively and consistently.

Scalable

A county-wide (or larger) program needs to be scalable and evaluations are the largest scalability challenge. The Credential performance evaluations are performed by a "Credential Evaluator" (CE). These volunteers come from the ranks of the those with higher level credentials (Types II and I). So, the more credentialed operators that join the program, and the more the higher they rise in the credential ranks, the larger the pool of people that will be available as potential Credential Evaluators.

Evaluation Opportunities and Locations

Evaluations are conducted at approved exercises and events or at specially arranged evaluation sessions. For an exercise or event to include evaluations, it must use standard operating practices and procedures (as defined in the "Performance Standards"), standard county ICS documentation and forms, and must provide sufficient operating time and traffic levels for the candidate's performance to be accurately assessed. Finally, one or more Credential Evaluators must be present to conduct the evaluations. Therefore, not all exercises or events will include evaluations and some exercises or events may include evaluations of only a subset of the credential types.

Specially arranged evaluation sessions may also be used. These sessions create more opportunities for candidates to be evaluated, thereby making the program more flexible and accommodating of busy schedules. Some examples include a group go-kit check or a net simulation.

Candidates for credentials are encouraged to attend different types of events in different cities throughout the year so that they can be better acquainted with the various operating environments, facilities and personnel throughout the county. Most operators find that it adds to the enjoyment and challenge of the assignment if they are operating in a new or unfamiliar location.

Requesting an Evaluation

The following criteria have been established to ensure that candidates are properly prepared for an evaluation:

For any Type III or higher evaluation:

- The candidate must already hold an SCCo RACES Type IV credential
- Unless an exception is approved by the Credential Program Manager, the candidate must have already completed all training and participation requirements defined for that credential prior to or at the same time as the evaluation. (The evaluation can count toward the participation requirement.) The Credential Program Manager may approve an evaluation before other training and participation is completed if the candidate has exhibited sufficient knowledge and skill through other means.

- Unless an exception is approved by the Credential Program Manager, the candidate must have already passed the evaluation for any prerequisite credential(s).

To request an evaluation at an exercise or event:

- Check the county activities sign-up entry for the exercise or event. It will list which types of evaluations will be available. Follow the instructions.

To request a specially arranged evaluation session for a large group, contact the Credential Program Manager.

Preparing for an Evaluation

Preparing for an evaluation involves little more than properly preparing for any exercise, event or real incident. The two main concepts are having the right equipment and making sure that all operating activities are done according to the “Performance Standards”. The only real added requirement for an evaluation is that the candidate bring along some extra documentation, such as training or participation certificates. Following is a recommended way to prepare for an evaluation:

1. **Go-Kit List:** Candidates should download and print out a current copy of the county standard Go Kit list. The candidate should make sure they have all of the required items in the required minimum quantities. By design, the text in the list is brief to keep the list short. If a candidate has any questions about the meaning of any of the items on the list, they should seek answers on the available Credentialing discussion group prior to the evaluation. The county standard Go-Kit list can be found in the Operations section of the county ARES/RACES website.
2. **Program Handbook:** Candidates should download and print out a current copy of the Credentialing Program Handbook (this document). It is in the Credentialing Program section of the county ARES/RACES website. In particular, candidates should read the specifics of the desired credential. Be sure to add any additional equipment required for the desired credential to the Go-Kit.
3. **Performance Standards:** Candidates should download and print out a current copy of the “Performance Standards”. The document is in the Operations section of the county ARES/RACES website. Candidates should read through the standards carefully, make sure they understand them fully, and make sure they perform all duties according to the standards. Candidates are free to refer to the standards as they perform their assignments. This is a great way to make sure assignments are completed correctly.
4. **Training Materials:** Candidates should review the training materials associated with the type of credential they are pursuing.
5. **Message Passing:** Candidates should review all message passing standards (voice or packet, depending on the credential being pursued) and practice until they can pass messages correctly, without hesitation or error. For voice messages, knowing and using all the Prowords correctly is essential. For packet, knowing and using the proper subject line format and other form-specific details is essential. For both voice and packet, knowing how to use a radio routing slip and the recommended routing cheat sheet are essential.
6. **Personal Records:** Candidates should print out the “My Activity Record” report from the county activities database and bring it with them to the evaluation. This report lists the training and activities completed by the candidate.
7. **Other Certificates:** Candidates should bring any FEMA, CSTI, or other agency certificates required for the desired credential

8. **Credential Record:** Candidates should print out and bring a copy of the appropriate credential record form to the evaluation. This form acts as a receipt for the completed parts of the evaluation and serves as a backup in case the county records become lost or are in error.

Another tip for preparing for an evaluation is to talk with other credential holders. Candidates can learn about the experiences of others and share best practices. Most candidates will discover that success is easily achieved by having the right equipment and by following the “Performance Standards”.

Participating in an Evaluation

The evaluation process is simple and straight-forward. The process is designed to fit within the constraints of typical activities, such as exercises, events and incidents, without impacting the activity. The goal is to mimic real-world processes as much as reasonably possible. The specific details depend on which part of the credential criteria are being evaluated:

- Prerequisites
 - The Credential Evaluator will consult the county activities database to determine whether the candidate has met the prerequisites.
- Mobilization and Demobilization
 - Candidates will be monitored on the Resource Net for proper mobilization/demobilization process and use of the Resource Net according to the “Performance Standards”. The arrival and check-in process will also be monitored.
- Training and Participation
 - These items are typically reviewed at a staging area or other location where the candidate meets with the Credential Evaluator. Candidates should bring a copy of the “My Activity Record” report from the county activities database, as well as any other required certificates, such as FEMA training certificates. This is similar to the real world, where staging is often used to verify credentials and qualifications prior to making an assignment.
 - Santa Clara County training course attendance will be verified using the “My Activity Record” report from the county activities database.
 - For other training requirements, such as FEMA courses, the candidate must show a certificate of completion to the Credential Evaluator.
 - Participation in certain nets, such as city nets and SPECS or SVECS nets will be verified by the Credential Evaluator asking the candidate, on their honor, if they have completed the requirement.
 - Exercise and event participation will be verified using the county activities database. But the database does not always record what duties were performed at each event. The evaluator should check if participation in a specific duty was logged in the database, such as for the annual county-wide exercise. Otherwise, the candidate will be asked, on their honor, to indicate at which event they performed the required duty.

- **Equipment**
 - Equipment is usually checked at a staging area, where there is easy access to vehicles. This reduces or eliminates the time and effort involved in moving Go-Kit gear around. This is also similar to the real world, where staging may be used to assemble and check equipment prior to deployment.
 - The Credential Evaluator will examine the candidate's equipment to ensure it meets the requirements.
 - Some credentials require the same equipment as another credential. If the equipment was previously evaluated for another credential within the past year, the Credential Evaluator is not required to recheck the equipment.
- **Knowledge**
 - Knowledge is usually checked at a staging area where it is easy to conduct a one-on-one or small group interview. This is also similar to the real world, where staging can be used to assess individual capabilities.
 - Radio familiarity will be checked by having the candidate configure various settings on the radio, as listed in the credential requirements.
 - The Credential Evaluator will pass out a written set of questions or conduct an interactive discussion covering certain knowledge areas such as radio operation, managing problems and other areas listed in the credential requirements.
- **Traffic Handling and other performance-based skills**
 - The Credential Evaluator will monitor performance as the candidate goes about their assignment. The Credential Evaluator will usually try to remain out of the way so as not to impede normal activities. For some requirements, like evaluating relief briefings, direct observation may be used. For most traffic handling activities, the Credential Evaluator will monitor via radio.
 - Messages will include a variety of content types (words, numbers, addresses, phone numbers, email addresses, etc.). The Credential Evaluator will monitor that proper message passing procedures are followed for both voice and packet.
- **Logs and Records**
 - The Credential Evaluator may have the opportunity to review the various forms, logs and other records during the candidate's operational shift. Otherwise, these items will be reviewed after the shift is completed.

Throughout the evaluation process, there are no trick questions and no "gotchas." Candidates who follow all the "Performance Standards" will do just fine.

Evaluation Scoring

Evaluations are scored based on the candidate's ability to perform all evaluation activities in an efficient and effective manner and without the need for any coaching or help. Scoring of performance is based on the objective standards defined in the "Performance Standards". By relying on the objectivity of those standards, the candidate knows exactly what is expected in advance of the evaluation, and the Credential Evaluators have a fair and consistent way to score evaluations.

- Training and Participation
 - Training and participation are not really a part of the evaluation. But the evaluation setting is used as a convenient time and place to verify training and participation records. If the required training or participation has been performed, the candidate will receive credit for these portions of the credential.
- Equipment
 - If all required items are present, the candidate passes this portion of the evaluation. If a required item is missing, the equipment portion of the evaluation will need to be repeated.
 - Equipment requirements for one credential which are the same as the equipment requirements for another credential can be credited by the Credential Evaluator if the candidate passed the equipment evaluation for the other credential within the past year. Otherwise, they will need to be evaluated again.
- Knowledge
 - Radio Familiarity
 - If the candidate can properly and efficiently configure his/her radio without delay or hesitation and without the use of any documentation (manuals, cheat sheets, etc.), the candidate passes this portion of the evaluation. If the candidate has difficulty configuring his/her radio or is not able to complete the exercise without hesitation or delay or documentation, then this portion of the evaluation will need to be repeated.
 - Managing Problems
 - If the candidate can clearly and concisely define a solution to each problem presented, the candidate passes this portion of the evaluation. If the candidate does not know how to solve one of the problems, hesitates, or has difficulty articulating a clear and concise solution to the problem, then this portion of the evaluation will need to be repeated.
 - The candidate is expected to know “managing problems” knowledge at the current credential type and level being evaluated and any pre-requisite credential level for the same type. For example: an F2 candidate should remember their F3 problem solving, likewise and N1 should remember their N2 and N3 problem solving, etc.
 - Other knowledge areas
 - If the candidate can efficiently and effectively demonstrate his/her knowledge in the required area, the candidate passes this portion of the evaluation. If the candidate displays hesitation or has trouble with the required area, the evaluation will need to be repeated.
- Operator Skills
 - Performance of all operator skill areas will be evaluated according to the most current version of the “Performance Standards”.
 - If the candidate performs his/her duties according to all the “Performance Standards” which are applicable and/or relevant to that activity, the candidate passes the operator skills portion of the evaluation. If the candidate has difficulty completing the assignment according to the “Performance Standards”, or displays hesitation, or otherwise fails to effectively and efficiently meet at least 90% of each of the applicable areas of the “Performance Standards”, then the operator skills portion of the evaluation will need to be repeated.

Premature Termination / Non-Completion of an Evaluation

The Operator Skills assessment portion of a credential evaluation may be prematurely terminated due to a number of reasons, such as, but not limited to:

- The candidate requested the termination
- The Credential Evaluator has observed a scoring issue or Performance Standards issue that would prevent passing
- Event management removed the candidate from their assignment before end of their shift for one of several reasons, e.g., medical issue, higher priority needs for the individual in another role, lack of performance in current role, etc.

For Non-Completion: the assignment period for the candidate may not have provided enough time during their planned shift before all skills could be assessed properly, e.g., not enough messages passed to meet credential level requirements, or insufficient medium-to-high traffic load, etc.

In all cases, the Credential Evaluator will discuss the situation with the candidate, provide feedback, and decide a course of action going forward for each situation as appropriate.

The Credential Evaluator

Credential Evaluators (CEs) are credentialed amateur radio operators who are also trained and qualified to perform evaluations of other radio operators. Credential Evaluators are the key to scaling up the program. As the number of people in the program grows, a larger pool of people will be available to become Credential Evaluators. The Credential Evaluator program is patterned after the very successful Volunteer Examiner program which is used to administer Amateur Radio license examinations.

The Credential Evaluator program is based on two main concepts which are taken from the successful Amateur Radio Volunteer Examiner program: advanced credentials and evaluation process training. These two key concepts ensure that candidates for SCCo RACES credentials will receive consistent, fair and objective evaluations, regardless of who is performing the evaluation.

Advanced Credentials

The Amateur Radio Volunteer Examiner program requires that VEs hold a General class license in order to administer a Technician class examination. VEs must hold an Extra Class license in order to administer a General or Extra class examination.

Similarly, Credential Evaluators must hold a Type II credential in a particular skill area (such as Field Communicator) in order to evaluate a candidate for a Type III credential in that skill area. Credential Evaluators must hold a Type I credential in a particular skill area to evaluate a candidate for a Type I or Type II credential in that same skill area. If a Credential Evaluator with a Type I credential is not available in a particular skill area, two or more Credential Evaluators with a Type II credential can evaluate a Type II candidate in that same skill area.

In limited cases, an experienced Type III CE can evaluate other Type IIIs in the same skill area under the supervision of a Type II CE in that skill area. This requires the Credential Program Manager's approval. The Type II can be doing other tasks if they can hear message traffic and observe other aspects of the evaluation (knowledge,

equipment checks, etc.). An example might be an F3 CE is doing an F3 evaluation while the F2/N2 CE is doing an N3 eval on the same net.

Evaluation Process Training

The Amateur Radio Volunteer Examiner program requires that VEs study the procedures for administering Amateur Radio license examination and pass a review which is similar to an open book test. They may then join a local VE team and the team will determine the role most suitable for them.

Similarly, Credential Evaluators must take a training class on the process of administering Credential evaluations. Upon completing the class, they must perform at least one evaluation under the supervision and review of an existing CE. If the evaluation is performed correctly, the candidate may be granted Credential Evaluator status.

Credential Evaluators must also maintain currency by attending at least one CE update class per year and by conducting at least one county-level evaluation per year in the presence of other Credential Evaluators. This ensures that Credential Evaluators can share their lessons learned and helps to keep the evaluation process consistent from Evaluator to Evaluator.

Avoiding Impropriety

Performing evaluations on one's own friends, teammates, or family members should be avoided because it could create an improper situation for either the candidate or the Credential Evaluator. Therefore, unless approved by the Credential Program Manager, Credential Evaluators may not perform a Type III, Type II, or Type I evaluation if they reside in the same jurisdiction or are a member of that jurisdiction's ARES/RACES team. Credential Evaluators from the same city may perform Communicator Type IV item signoffs with pre-approval from the jurisdiction's Radio Officer.

In some cases where sufficient Credential Evaluators are not available, a Credential Evaluator from the same jurisdiction (city) can conduct an eval if a second Credential Evaluator from a different jurisdiction can monitor the evaluation; this requires the Credential Program Manager's approval.

Teams

Overview

The Credentialing Program provides a way to "type" individual operators according to their capabilities and the services they can offer. But the program also provides a methodology for assembling meaningful amateur radio communications support teams.

The Team Concept

Examples of Teams from Other Disciplines

In order to understand how communications support teams can be assembled and deployed it is useful to examine a few examples from other emergency service agencies as well as commercial entities.

When an airline orders a crew for a particular aircraft type, they don't simply order a set number of employees who have attended a training session on that aircraft. They order a specific combination of trained and certified individuals for that aircraft type. The crew for a given aircraft type might include a "pilot-in-command" or "Captain", a first officer, a purser and several flight attendants. Each of those individuals has met specific licensing, certification and other criteria for their particular role (e.g. pilot vs. flight attendant) and has been specifically "checked out" on that particular aircraft type (e.g. 737 vs. 747).

When fire departments assign individuals to an engine company, they typically assign a Captain (or Lieutenant), an engineer/driver and one or more firefighters. If HazMat or EMT capabilities are required, a separate company, or a specially trained company may be used. In each case, the individuals that make up the team have had specific training and have passed an evaluation for their particular role and the specific equipment they are using.

In both of the above examples, each individual is highly trained, and their capabilities and performance are assessed for their particular position. Once the individual resource types are well defined, they can be grouped together into teams. The teams may be predefined, as above, when the requirements are known in advance. Ad-hoc and dynamic teams may also be assembled when the requirements are not known in advance or change over time.

Because each individual is trained not only on how to perform their specific job, but also on how to work as part of a team, each individual could also be re-assigned to another team or crew, and that new team would still perform well. This works because the specific capabilities and qualifications required of each position on the team are well defined and standardized and because each individual filling a position on the team has been individually evaluated and found to be competent in their particular role.

ICS Strike Teams and Task Forces

The Incident Command System defines a "Strike Team" as multiple units, often five in number, of the same resource category that have an assigned strike team leader. ICS defines a "Task Force" as any combination of single resources, but typically two to five, assembled to meet a specific tactical need.

Individual Operators vs. Teams

Most of the intra-county mutual aid requests will be for individual resources. Individual cities or agencies will typically need an individual to fill in at one or more particular roles in one or more specific locations. The resource net provides a mechanism to assign, activate, track and deactivate individual operators within the county borders.

Depending on the situation, mutual aid outside the county may be handled as individuals or as teams – either strike teams or task forces. It may be simple enough to dispatch one or more individuals to a neighboring county. But if mutual aid is to be provided further away, or on a larger scale, or for an extended period of time, then the structure and mutual support of a strike team or task force response may be more appropriate.

Types of Response Teams

Team Structure Will Probably Be Dynamic in Nature

Amateur Radio provides backup communications capability to a variety of agency types including both government and non-government organizations. Communications services are provided for a variety of situations, ranging from public service events such as parades and bike-a-thons, to full-scale emergency incidents such as tornadoes, earthquakes, and other natural and man-made disasters. Therefore, a one-size-fits-all approach to organizing communications resources into static, predefined teams will not be very practical or effective for many, if not most situations.

Most situations where amateur radio communications are involved will be dynamic in nature. Agencies are constantly evolving their own planning and capabilities and their communications needs will change over time. Real emergency incidents tend to be very dynamic in nature and communications needs can change many times over the course of the incident.

Credentials provide a way to dynamically assemble the category and type of communications resources needed for a particular situation. That response can be adjusted over time on an individual communicator basis as the situation changes. Where more static needs can be defined, then either predefined or ad hoc teams can be deployed.

Communications Support Strike Teams

Depending on the type of mutual aid request received, the county ARES/RACES staff may assemble a strike team of credentialed operators and appoint a team leader to manage the team and report on their health and welfare. An example might be a request for 5 field communicators to provide communications at a particular out-of-county event or incident.

Communications Support Task Forces

A mutual aid request for a specific set of communications requirements may be better served by a Task Force which includes a variety of skill sets. A county ARES/RACES official, working with the served agency, can pre-define the typical complement of resources required. In some cases, the requesting agency knows exactly what is needed and can order the right number of resources for the job. As an example, a local jurisdiction Radio Officer who is familiar with the Credentialing Program designations could easily make a specific resource request such as:

- Qty 1 of N2 (advanced net control)
- Qty 2 of N3 (independent net control)
- Qty 1 of P2 (advanced packet operator)
- Qty 4 of F3 (independent field communicator)
- Qty 2 of S3 (independent shadow)

- Because each of the team members has already been individually typed and qualified, Task Forces can be quickly assembled for any number of unique situations.

ICS, SEMS and NIMS

Summary

The Santa Clara County Credentialing Program is aligned with and complies with ICS (Incident Command System), SEMS (Standardized Emergency Management System) and NIMS (National Incident Management System) principles. This is important because credentialed operators will regularly interact with and support individuals and agencies which are operating within and according to the ICS, SEMS and NIMS structure.

ICS & SEMS

ICS & SEMS Training

ICS training is central to the training of all credentialed operators. All credentialed operators are required to complete at least the following ICS training classes. FEMA certificates are required for credentials.

- ICS-100 (or IS-100) – Introduction to the Incident Command System
- ICS-200 (or IS-200) – ICS for Single Resources and Initial Action Incidents
- IS-700 – National Incident Management System, An Introduction
- G606 SEMS – Introduction to the Standardized Emergency Management System (California specific)

Additional ICS training courses may be required for higher credentials. The Credentialing Program management team keeps an eye on current ICS requirements at the federal, state, and local level and may add additional ICS training requirements in the future.

ICS & SEMS Operations

All credential-qualifying exercises are conducted according to ICS principles. ICS principles are used to define the organizational structure, documentation, and procedures to be used. ICS forms are regularly used in exercises and are required in each credentialed operator's go-kit.

NIMS

Applicability of NIMS

Although the Credentialing Program is designed to serve the needs of Santa Clara County, there is nothing inherent in the program definition that limits its use to Santa Clara County or even to the State of California. For example, by adding additional specialty areas, the program could easily include SKYWARN, Hurricane Watch Net, or other

emergency operations topics which are more commonly found in the Southeastern United States. Because the program can be used elsewhere and because credentialed operators will likely interact with other agencies which function within the NIMS framework, the program was designed such that it meets the requirements for NIMS credentialing.

Adherence to NIMS Credentialing Requirements

The following points are summarized from “NIMS Guideline for the Credentialing of Personnel, August 2011” (https://www.fema.gov/pdf/emergency/nims/nims_cred_guidelines_report.pdf).

Applicability

Compliance with the NIMS guideline for credentialing is voluntary but recommended for non-Federal agencies to promote interoperability, commonality, and consistency. For these reasons, the Credentialing Program includes both technical credentials and agency-specific endorsements.

Identification

The NIMS guidelines suggest that personnel identity should be vetted. The Credentialing Program performs identity and security vetting through the Santa Clara County Sheriff’s office, including Live Scan, local wants and warrants, State Department of Justice, and the FBI.

Qualifications

The NIMS guidelines suggest that personnel and volunteers should be identified and qualified in accordance with the organization’s standard. The Credentialing Program uses the “Santa Clara County ARES/RACES Performance Standards and Best Practices” as its standard and identifies function-specific credentials.

Certification

The NIMS guidelines suggest that personnel be certified based on completion of identity vetting and meeting the qualifications of the position. The Credentialing Program awards credentials and endorsements based on both identity vetting and meeting the qualification requirements.

Badging

The NIMS guidelines suggest that personnel should only receive a badge after their identity and qualification has been determined. The Credential Program awards the Credential Wallet Card after identity and basic qualifications have been verified. Advanced credentials are only awarded after the individual demonstrates that he/she is qualified at that level.

Other Important Activities

The NIMS guidelines make additional suggestions regarding authorization, access, affiliation, and revocation. The Credentialing Program includes training in how to deploy with the proper authorization. The program is affiliated with the county Office of Emergency Management to ensure that the program participants will have the proper access. And the program includes provisions for revocation of credentials when the individual no longer meets the requirements of the program.

Inter-County or Inter-State Mutual Aid

When an incident is larger than any one county can handle, resources from other counties within the state may be used. If the incident is even larger, resources from other states may become involved. In both cases, the capabilities of the incoming resources must be quickly assessed so that they can be used in the most effective manner. If those resources are already typed according to a common system, then they can be deployed quickly. But even if the incoming resources are not typed, or are not typed the same way, then the resource typing program in place within our county can be used as the framework for quickly assessing the incoming resource capabilities and assigning them to appropriate jobs.

Focus and Priority of Future Efforts

In the near term, the bulk of the effort in the Credentialing Program will be on meeting the needs of Santa Clara County. This includes fine tuning the credential requirements to meet the needs of our served agencies and managing the program to streamline administrative overhead through improved procedures and automated database tracking. Nevertheless, alignment with and support of ICS and NIMS is an important component of how the program is structured and will continue to be part of the planning effort as the program develops.

Records Management

Individual Responsibility

Every operator is responsible for maintaining their own personal records. This includes keeping printed copies of licenses, training certificates, event participation records, credential and endorsement records, and other records. The county RACES group provides an online activities database to assist with this process. But in a disaster situation, the database may not be readily available to everyone. If documentation of a credential or endorsement is needed, the individual should be able to produce printed documentation of their training, activities, and achievements.

Online County Records

County Activities Database

The county maintains an online activities database for tracking contact information and individual participation in various activities. The database includes a variety of information, such as: personal contact information, training courses, event and incident participation, and credential status information. The database is located at:

<http://www.scc-ares-races.org/activities>

Personal Records

Certain personal information, including contact information, is stored in the Santa Clara County activities database. Each operator is responsible for keeping their personal information in the activities database up to date. It is especially important that address, e-mail, phone, and SMS (text) records be kept up to date since these are all methods that may be used to alert operators when an incident has occurred. Everyone should verify their contact information is up to date at least once each year. A privacy policy is published on the website and the activities database limits the distribution of this information according to the privacy policy.

Training Records

A record of each training course attended by each operator is maintained in the Santa Clara County activities database. After each training class is completed, the Training Coordinator updates the database to record attendance for those meeting the course requirements. Each person should check to make sure they received credit for the class and should print out a course completion certificate and keep it as part of their individual records.

Once attendance has been recorded, certificates are available for printing from the Santa Clara County activities database. Each operator may log into the database and print his or her own certificates.

Event Records

A record of each event attended by each operator is maintained in the Santa Clara County activities database. Events may include exercises or public service events or other approved types of events. After each event is completed, the event coordinator will update the activities database to show attendance. Each person should check to make sure they received credit for attending the event.

Incident Records

A record of each incident attended by each operator is maintained in the Santa Clara County activities database. Incidents may include natural or man-made disasters or other situations where operators are activated for an emergency situation. After an incident is completed, the county RACES staff will update the activities database to show attendance. Each person should check to make sure they received credit for participating in the incident.

Wallet Card

Credentialed operators can download and print a wallet card from the Santa Clara County ARES/RACES web site activities database. The wallet card includes the name, call sign, and a list of the credentials and endorsements that the individual has earned. The wallet card should be cut-out, laminated and placed in a wallet, or an ID holder along with other ID cards. The wallet card is useful as a communications tool to quickly show a staging manager, local jurisdiction Radio Officer, or other official which credentials and endorsements the operator has earned. This card can help speed up the check-in process at events.

The wallet card expires on January 31st each year. Credentialed individuals should print out a new card soon after that date.

Program Management

Organization

The Santa Clara County RACES Credentialing Program is by amateur radio operators, and for amateur radio operators and the agencies they serve. It is managed by the Credential Program Manager, who is a member of the Santa Clara County ARES/RACES leadership team.

SCCo ARES/RACES coordinates and cooperates with the county Office of Emergency Management and with various served agencies, including both governmental and non-governmental organizations. This relationship ensures that the needs of both government and non-government agencies are considered in the development of the program.

Program Information

All documentation and information about the Santa Clara County RACES Credentialing Program is available on the Santa Clara County ARES/RACES website, at:

<http://www.scc-ares-races.org/credentials>

Individual operator status information is maintained in the Santa Clara County ARES/RACES activities database, at:

<http://www.scc-ares-races.org/activities>

General operations information, such as the “Performance Standards” and the Go Kit checklist, is available on the Operations page of the Santa Clara ARES/RACES website, at:

<http://www.scc-ares-races.org/operations.shtml>

A “Credential” discussion/e-mail group is available for credentialed operators and those interested in becoming credentialed operators. One need not hold a credential to join. Recommended membership includes Radio Officers, Deputy Radio Officers, credentialed operators and those interested in becoming credentialed. To join the group: Visit our Discussion Groups page to learn how to subscribe to our main Announce group. Once approved for the Announce group, subscribe to the Credential group.

<https://www.scc-ares-races.org/discuss-groups.html>

Program Decisions

Since the inception of the program in 2009, there have been rare occasions where a unique situation was not covered by the program rules. If such a question arises, the Credential Program Manager may seek input from Credential Evaluators, the county ARES/RACES leadership team, jurisdiction radio officers, and others. The Credential Program Manager will make a decision that is consistent with the goals and values of the program. This usually triggers an update to the Credential Program Handbook so that the question doesn’t arise again. A decision by the Credential Program Manager may be appealed to the County ARES/RACES Chief Radio Officer, whose decision is final.

Program Updates

Revisions to this program take effect two weeks from the notification. Notices of updates to this program are sent to the e-mail lists for Santa Clara County Radio Officers (and Emergency Coordinators) and Credentials. All program documents are posted on the www.scc-ares-races.org website. Updates are published no later than two weeks before a scheduled exercise or event where they will be used and are not released more frequently than 30 days from the previous version.

Program Feedback

This program will only succeed if it satisfies the needs of the Santa Clara County radio operators and their served agencies. Feedback is welcome and appreciated. Please submit feedback via the Credential discussion list described at this link: <https://www.scc-ares-races.org/about/email-lists>

In that way, new ideas, comments, suggestions, and criticism can all be shared and reviewed collectively.

Credential Program Manager

The Credential Program Manager is responsible for the ongoing administration of the program and maintenance of program documentation. The Credential Program Manager can be reached via e-mail at: credmgr @ scc-ares-races . org

Revision History

Version Date	By	Description
3.2 Sep-2025	KE6TIM Tim Howard	Removed HF Credential, Added SRO Endorsement, and updatesother clarifications or corrections. Significant changes are noted with change bars.
3.1.3 Mar-2024	KE6TIM Tim Howard	Added FCC RF Safety Evaluation requirement. Other minor changes and clarifications. See Change Bars in left-hand column.
3.1.2 Feb-2023	KE6TIM Tim Howard	Added a limited list of Prowords required for the F3 Credential. This list only applies to F3, all other credentials require the complete list. Fixed a few typos.
3.1 Nov-2022	KE6TIM Tim Howard	Numerous updates, corrections, and clarifications. See Change Bars in left hand column.
3.0 Jan-2020	N6MEF Michael Fox	Convert from MAC Program Handbook to Credentialing Program Handbook. "Qualifications" become "Credentials" and can now be earned by non-MACs. MAC becomes one of several "Endorsements".
2.3 Jun-2018	N6MEF Michael Fox	Added higher-power radio requirement to N2, P2. Added cross-band repeat training, equipment, and knowledge requirement to F2, N2, S2. Added Event Planning training requirement for all type 1 qualifications. Updated Field Communicator training course names. Added Loss and Reinstatement of MAC Status section. Rewrote NIMS Credentialing section. Corrected a few typographical errors. Updated discussion group info.
2.2 Apr-2014	N6MEF Michael Fox	Program entrance requirements updated to require attendance of training course Fundamentals of Emergency Communications.
2.1 Mar-2014	N6MEF Michael Fox	Clarified F2 equipment section. Fixed typo in Yahoo groups URL. Added dates to Revision History section.
2.0 Apr-2013	N6MEF Michael Fox	Renamed qualifications according to standard resource typing order: Type I is now the highest qualification (specialist), Type II is the middle qualification (advanced), and Type III is the lowest qualification. Renamed training courses to align with new qualification names.
1.1 Jul-2010	N6MEF Michael Fox	Clarified program entry process. Defined "approve public service events." Replaced training topics list with new training course names. Clarified participation requirements as in addition to participation for prerequisites. Clarified operator skills time requirements for situations involving a team or a scribe. Removed "preliminary" status for F3, N3, P3, S3 qualifications. Various other minor edits.
1.0.3 Dec-2009	N6MEF Michael Fox	Adjusted text to refer to renamed "Performance Standards". Added description of "MAC in Training" status. Updated minimum participation requirements. Clarified and expanded the Evaluations section. Updated the managing problems section of N1. Updated the N2 evaluation criteria. Added more details for Level 3 and HF qualifications (still preliminary). Added URLs to county database.
1.0.2 Oct-2009	N6MEF Michael Fox	Minor typographical corrections. Added clarification of N2 traffic handling. Changed Mike-Mike scale requirement from traffic handling to explanation. Reorganized evaluation items to make it clearer which items were involved in the MAC evaluations. Added "Preparing for an Evaluation" and "Participating in an Evaluation" sections. Changed name to "... Program Handbook".
1.0.1 Oct-2009	N6MEF Michael Fox	Minor typographical corrections. Clarified headphones vs. headset requirement in equipment sections. Added "Evaluation Method and Process" section. Added several clarifications to packet equipment section
1.0 Sep-2009	N6MEF Michael Fox	First public release of document