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	Title / Subject **COMMUNICATION ASSETS SURVEY & MAPPING (CASM) USER MANUAL**	Effective Date 4/10/10	Revision Date 1/01/12
	References		

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1. Introduction

The Communication Assets Survey and Mapping (CASM) tool provides the ability for representatives of public safety agencies within a state or urban area to collect, store and visualize data about agencies, communication assets and how agencies use these assets. The CASM tool is composed of two components: the Communication Assets Survey (CAS) and the Communication Assets Mapping (CAM) tool. The CAS component provides a means to enter, edit and delete information about agencies, communication assets (such as radio systems, dispatch centers, mutual aid channels/systems, gateways and radio caches) and agency usage of the assets. The CAM component provides a means to display this information in a map-based interface and analyzes the data to display agency-to-agency interoperability in various ways.

The CASM tool is web-based and requires the user to have an active internet connection in order to access both the CAS and CAM components. CAS is a website that may be accessed via any internet browser, such as Internet Explorer, Netscape Navigator or Firefox. CAM is a client application that must be downloaded, installed and executed on the user's computer, and must have access to the internet in order to operate. Authorization to view data for a particular state or urban area is controlled by the state/urban area; each user must have a user name and password in order to login.

The CAS web forms include pick lists and automated data validation to assist users in entering data that is accurate, consistent and in keeping with other data they have entered. In addition, the CAS component includes an extensive Help section that includes a Tutorial, Frequently Asked Questions, and User Manual that may be accessed from any web form.

2. CASM Data Collection Methods

2.1 Data Entry through CAS

The primary method of data entry is through the Communication Assets Survey (CAS) component of the CASM tool. The CAS website provides a series of forms in which to enter data about agencies, communication assets and how the agencies use these communication assets.

The CAS web forms include pick lists and automated data validation to assist users in entering data that is accurate, consistent and in keeping with other data they have entered. In addition, the CAS component includes an extensive Help section that includes a Tutorial, Frequently Asked Questions, and User Manual that may be accessed from any web form.

2.2 Federal Communications Commission (FCC) Data Import

Within the CAS component, users may take advantage of the FCC Data Import feature that enables users to view, select and import data based on their FCC licenses. This provides a fast, efficient method to populate the channels, structures, and transmitters for a defined radio system.

Here is how it works: Once a radio system is named and the high-level attributes have been saved, the user may initiate the FCC Import process. The process begins with the user providing a FCC call sign or using the advanced search feature to find their call sign(s). Once the call sign is verified, the user will be able to proceed through other windows that present the channels, structures, and ultimately the repeater / base station information from which they may select, edit, and import into the CASM database.

2.3 Data Import Service

Oftentimes, the data that is collected in CASM is already stored in different databases in a state or urban area. If this is the case, users may take advantage of the CASM Data Import Service. The Data Import Service provides a set of flat-file templates and instructions so that users may export data from their own databases and prepare it for import to CASM by formatting it into the provided templates. Once this is done, the populated templates may be submitted to the CASM team to upload into the database. It is important to understand that data entry via the Data Import Service is best for large amounts of data and initial entry of the data. CASM cannot be synchronized with external databases at this time.

Data may be imported using this service in the areas listed below. Some data import templates may only be used in correlation with data first having been entered via the CAS data entry forms (e.g., the radio system definition must exist before its channels can be imported).

- Agencies
- Channels, as they are related to radio systems, agencies and/or radio caches
- Talk Groups, as they are related to radio systems, agencies and/or radio caches
- Structures, as they are related to radio systems
- Repeater / Base Stations as they are related to radio systems and structures
- Dispatch Centers
- Points of Contact

More information on the Data Import Service, including the templates and instructions, can be found in the CAS Help.

Required Fields

The tables in this section indicate whether a data field is required or optional. This means that if the user begins entering data in this area, they must provide data for the required fields. If the user does not have data to enter for a particular area, then the required fields are not applicable. To illustrate, if the user is going to enter data about an agency, they must provide the name of the agency, the discipline (police, fire, etc.) and that agency's primary jurisdiction in order to complete the form to enter new agency data. On the other hand, if the user does not have gateway data to enter because the agencies they represent do not own or manage a gateway, then they do not have to enter any data in the gateway area and the required fields are not applicable.

3. Data Descriptions

This section describes each basic data collection area and lists the main data fields per area. By reviewing this list, the user can get a good idea about the type of data they can enter into CASM and how it is organized.

3.1 Agency

Entering data for an agency involves entering data in the following areas, if applicable:

1. Agency Definition, high-level attributes (Table 1)
2. Radio System(s) that the agency owns/manages/uses (Section 3.2)
3. Channels and talk groups that the agency uses (Section 3.2)
4. Mutual Aid channels that the agency uses (Section 3.3)
5. Gateways that the agency owns/manages (Section 3.4)
6. Radio Caches that the agency owns/manages (Section 3.5)
7. Dispatch Centers that the agency owns/manages (Section 3.6)
8. Point(s) of Contact must be entered for an agency (Section 3.7)
9. Radio equipment that the agency uses (Section 3.8)

NOTE: You are only allowed to entered information for your Jurisdiction level and below. Example: if your Jurisdiction level is County level then you cannot enter information at the State level but you can enter information at the City level.

Table 1: Agency Data

Data	Notes
Agency Name	**Required**; enter the agency name in the following format - Jurisdiction level [Space] then agency name – this will help with filtering information See (Table 15,Table 16) for appropriate agency jurisdiction names, abbreviations, and examples
Discipline	**Required**; options provided are: EMS, Fire, Government, Health Care, Highway Patrol, Police, Public Health, Public Safety Communications, Public Works, Sheriff, Other
Primary Jurisdiction	**Required**; a jurisdiction is a specific city, county or state
Agency Address	Optional
Other Entities Served	Optional; other jurisdictions that the agency serves
Comments	Optional

3.2 Radio System

Entering data about a radio system involves entering data in the following areas:

1. Radio System Definition, high-level attributes (Table 2)
2. Agencies that use the system
3. Channels, if system is conventional or trunked (Table 3)
   a. Agencies that use each channel, if the system is conventional (non-trunked)
4. Talk Groups, if the system is trunked (Table 4)
   b. Agencies that use each talk group, if the system is trunked
5. Structures that support the system (Table 5)
6. Repeater/Base Station (RBS) information, for each structure, identifying the channels that are transmitted (Table 6)
7. Point(s) of Contact must be entered for a radio system and for a structure (Table 12)

Table 2: Radio System Data

Data	Notes
Radio System Name	**Required**; use the same appropriate format as for Agency Name and add the radio system short name (i.e. Grant County EMS VHF HB) Use the following abbreviations only: HB = High Band, LB = Low Band UHF =Ultra High Frequency, VHF = Very High Frequency 700 = 700 MHz, 800 = 800 MHz
Owner/Responsible Agency	**Required**; options are provided from agencies entered previously
Agency use of system	**Required**; options are: Primary System (default), Secondary System
Number of Mobile Radios	Optional
Number of Portable Radios	Optional
Notes on Agency Use	Optional
Primary Make (Mfg)	Optional; options are provided
System Type	Optional; options provided are: Conventional (default), Trunked or Both
Model Name	Optional
Trunking Type	Optional, if trunked; options are provided
Frequency Band	**Required**; options are provided
Project 25 Compliant	**Required**; options are provided
Number of Channels	Optional
Encryption Protocol	Optional; options are provided
Year Installed	Optional; options are provided
Repeated / Simplex	Optional; options provided are: Repeated (default), Simplex, Both
Analog / Digital	Optional; options provided are: Analog (default), Digital, Both
Wideband / Narrowband	Optional; options provided are: Wideband (default), Narrowband, Both
Voted	Optional; yes (default) or no
Simulcast	Optional; yes (default) or no
Service Area Comments	Optional
Notes on System	Optional

Table 3: Channel Data

Data	Notes
Type of Tones	**Required**; options provided are: None, CTCSS, CDCSS, NAC, and Mixed Mode. The selected default is based on information about the radio system.
Frequencies to be entered	**Required**; options provided are: Tx Only, Rx Only, Both (default)
Transmit Frequency	**Required** for a Transmit Only or repeated channel from the Repeater perspective
Transmit Tone	Optional; options are provided based on selection above
Receive Frequency	**Required** for a Receive Only or repeated channel from the Repeater perspective
Receive Tone	**Required**; options are provided based on selection above
Channel Name	Optional, but highly recommended as users often identify with this rather than the Tx/Rx frequency pair
Channel Description	Optional

Table 4: Talk Group Data

Data	Notes
Talk Group ID	**Required**
Talk Group Name	Optional, but highly recommended as users often identify with this rather than the talk group ID
Talk Group used by all	**Required**; yes or no (default). If the talk group is used by all agencies that use the radio system, then select “yes”

Table 5: Structures Data

Data	Notes
Structure Name	**Required**
Structure Owner	**Required**
Structure Address	**Required**
Latitude	**Required**; if an address is provided, CASM lookup feature may calculate the latitude
Longitude	**Required**; if an address is provided, CASM lookup feature may calculate the longitude
Structure Type	Optional
Ground Elevation	Optional; in meters
Structure Height	Optional; in meters
Receive Only Site	Optional; yes or no (default)
Room for more antennas?	Optional; yes (default) or no
Notes	Optional

Table 6: Repeater / Base Station Data

Data	Notes
For each structure that supports a radio system, the user may select one or more channels from the list already entered for the radio system. This step enables the user to identify the following repeater / base station attributes for each channel on a structure:	
Call Sign	Optional
Make (Mfg)	Optional; options are provided
Model	Optional
RBS - Type	Optional; options are provided
RBS - Name	Optional
Antenna Type	Optional; options are provided
Antenna Height	Optional; in meters
RBS - Power	Optional; in Watts
RBS - Effective Radiated Power (ERP)	Optional; in Watts
Notes	Optional

3.3 Mutual Aid

Entering data about a Mutual Aid channel or system involves entering data in the following areas:

1. Mutual Aid Definition, high-level attributes (Table 7)
2. Agencies that use the mutual aid
3. Channels, if the set of channels is conventional (non-trunked) (Table 3)
   a. Agencies that use each channel
4. Talk Groups, if the mutual aid is trunked (Table 4)
   a. Agencies that use each talk group
5. Structures and Repeater/Base Station information may be entered for mutual aid channels in the same way as for Radio Systems (Table 5, Table 6)

Table 7: Mutual Aid Data

Data	Notes
Mutual Aid Name	**Required**
Frequency Band	Optional; options are provided
P25 Compliancy	**Required**; options are provided
Repeated or Simplex	Optional; options provided are: Repeated (default), Simplex, Both
Conventional or Trunked	Optional; options provided are: Conventional (default), Trunked or Both
Analog or Digital	Optional; options provided are: Analog (default), Digital, Both
Service Area	Optional
Primary Use	Optional

3.4 Gateway

Entering data about a gateway involves entering data in the following areas:

1. Gateway Definition, high-level attributes (Table 8)
2. Selecting channels and talk groups that are configured on the gateway from the channels and talk groups on radio systems and mutual aid channels/systems that have been entered previously.
3. Point(s) of Contact must be entered for a gateway (Table 12)

Table 8: Gateway Data

Data	Notes
Gateway Name	**Required**; use the same appropriate format as for Agency Name and add Gateway to the end (i.e. Milton Fire Department Gateway)
Gateway Owner / Responsible Agency	**Required**; options are provided from agencies entered previously
Gateway Usage	**Required**; options provided are: Day-to-Day or Incident/Event
Gateway Make / Model	Optional; options are provided
Gateway Type	Optional; options provided are: Fixed or Mobile (default)
Number of Simultaneous Nets	Optional
Number of Active Ports	Optional
Address where gateway is stored	Optional
Mobile Service Area	Optional
Notes	Optional

3.5 Radio Cache

Entering data about a radio cache involves entering data in the following areas:

1. Radio Cache Definition, high-level attributes (Table 9)
2. Radio equipment that comprises the cache (Table 10)
3. Agencies that may deploy the cache
4. Selecting channels and talk groups that are configured on the cache from the channels and talk groups on radio systems and mutual aid channels/systems that have been entered previously. Channels that are configured on the cache, but do not appear in the select list may be entered at this point. (Table 3)
5. Point(s) of Contact must be entered for a radio cache (Table 12)

The Add New Cache Channel page, launched from the Radio Cache Channel page, enables you to enter channels (i.e., Tx/Rx pairs) programmed on the cache that are not part of a radio system. You may use this page to enter talk-around channels, for example.

Table 9: Radio Cache Data

Data	Notes
Radio Cache Name	**Required**; use the same appropriate format as for Agency Name and add Radio Cache to the end (i.e. Harrison County Metro 911 Radio Cache)
Cache Owner / Responsible Agency	**Required**; options are provided from agencies entered previously
Cache Radio Frequency Band	Optional; options are provided
Address where cache is stored	Optional
Cache Service Area	Optional
Notes	Optional

Table 10: Radio Cache Equipment

Data	Notes
Radio Make (Mfg.)	**Required**; options are provided
Radio Model	**Required**; options are provided
Number of Programmable Channels	Optional; per make/model
Number of Radios	Optional; quantity per make/model
Number of Spare Batteries	Optional; per make/model

3.6 Dispatch Center

Entering data about a dispatch center involves entering data in the following areas:

1. Dispatch Center Definition, high-level attributes (Table 11)
2. Agencies that are served by the dispatch center
3. Other dispatch centers that are connected to the dispatch center.
4. Point(s) of Contact must be entered for a dispatch center (Table 12)

Table 11: Dispatch Center Data

Data	Notes
Dispatch Center Name	**Required**; in this format – County Name and Agency name - (i.e. Harrison County Metro 911)
Dispatch Center Owner / Responsible Agency	**Required**; options are provided from agencies entered previously
Address	Optional
PSAP	Optional; yes or no
Dispatch Center Equipment Make / Model	Optional; options are provided
Number of Simultaneous Console Patches	**Required**
Comments	Optional

3.7 Point of Contact

Entering data about a point of contact involves entering data in the following areas:

1. Point of Contact Definition (Table 12)
2. The communication asset(s) that the person is the POC for.

Table 12: Point of Contact Data

Data	Notes
Contact Last Name	**Required**
Contact First Name	**Required**
Contact Middle Initial	Optional
Contact Suffix	Optional; e.g. Jr. III
Contact Personal Title	Optional; e.g. Capt., Lt., PhD
Company / Organization	**Required**
Job Title	Optional
Address	**Required**
Email Address	**Required**
Office Phone	**Required**
Cell Phone	Optional
Fax Number	Optional
Pager Number	Optional
Category of Communication Asset that person is the POC	**Required** (if user is entering a POC without first selecting a communication asset), options are provided
Specific Communication Asset that person is the POC	**Required** (if user is entering a POC without first selecting a communication asset), options are provided
POC Type	**Required**; options are provided

3.8 Agency Radios

Entering data about radios involves entering data in the following areas:

1. Radio Definition (Table 13)

Table 13: Radio Equipment Data

Data	Notes
Radio Make (Mfg)	**Required**; options are provided
Radio Model	**Required**; options are provided
Quantity of Fielded Radios	Optional
Notes	Optional
Year Purchased	Optional
Quantity Purchased per year	Optional

3.9 Talk Partners

Entering data about talk partners involves selecting an Agency from Agency Usage and entering data in the following areas:

1. Agency Talk Partners (Table 14)

Table 14: Talk Partner Data

Data	Notes
Select Jurisdiction	**Required**; list of jurisdictions is provided
Agency Name – Need to Talk	**Required**; all agencies within selected jurisdiction are listed; options provided are: Daily/Often, Sometimes, Rarely/Never, and Undecided/Unknown (default). At least one partner/relationship required.

Table 15: Agency Name and Examples

Agency Jurisdiction Level	Abbreviation and Example
Federal	Start name with **US** (i.e. US Division of Forestry)
State	Start name with **WV** (i.e. WV State Police)
County	Start name with **County** (i.e. Putnam County 911)
City/Town/Community	Start name with **City/Town/Community** (i.e. Charleston PD)

Table 16: Agency Name Abbreviations

Agency	Abbreviation
911	911
Board of Education	BOE
Correctional Facility	CF
Emergency Management Agency	EMA
Emergency Medical Services	EMS
Fire Department	FD
HAZMAT	HMT
Homeland Security and Emergency Management	HSEM
Hospital	HOSP
Narcotics Task Force	NTF
Office of Emergency Management	EMA
Office of Emergency Services	EMA
Police Department	PD
Public Service District	PSD
Public Works	PW
Regional Jail Authority	RJA
Sheriff Office	SO
Volunteer Fire Department	VFD

Acronyms

Acronym	Meaning
CAM	Communication Assets Mapping component
CAS	Communication Assets Survey component
CASM	Communication Assets Survey and Mapping Tool
CDCSS	Continuous Digital Controlled Squelch System
CTCSS	Continuous Tone Coded Squelch System
EMS	Emergency Medical Services
EOD	Explosive Ordinance Device
ERP	Effective Radiated Power
FCC	Federal Communications Commission
HAZMAT	Hazardous Materials
ICTAP	Interoperable Communications Technical Assistance Program
LMR	Land Mobile Radio
NAC	Network Access Code
NPSPAC	National Public Safety Planning Advisory Committee
POC	Point of Contact
PSAP	Public Safety Answering Point
RBS	Repeater / Base Station
USAR	Urban Search and Rescue

Definitions

Definitions can be found at SIRN website under Standard Operating Procedures as SIRN Definitions.

CASM SOP

CASM SOP can be found at SIRN website under Standard Operating Procedures as SIRN CASM SOP.