



Homeland Security



Office of Emergency Communications

Communication Assets Survey and Mapping (CASM) Tool

Short Introduction



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Security

Office of Emergency Communications

ICTAP/CASM-PRES-007-R1 - Updated 07/14/08 - CASM Release 1.4.2

Outline

- **Overview**

- General Information
- Purpose
- Security
- Usage

- **CASM Benefits**

- **CASM Features**



Communication Assets Survey component



Communication Assets Mapping component

- **Future Outlook**



CASM: General Information

- **CASM tool was released 18 July 2005 for general use by Urban Areas that received grants from the Department of Homeland Security, Office of Grants and Training and who had requested ICTAP services.**
- **CASM is composed of two web-based software components:**
 - Communication Assets Survey – CAS (data collection)
 - Communication Assets Mapping - CAM (interoperability analysis)
- **Access to the CASM tool may be initiated by an urban area or state. Once initiated, individual access to the data that is entered for an urban area or state is managed by the initiating party.**

CASM: Purpose

- **Provide a tool to assess public safety communications and interoperability.**
 - A single database to collect information about land mobile radio systems, other interoperability methods and how they are used by public safety agencies within an urban area or state.
 - A method to display the data.
 - Tools to analyze the data and visualize interoperability gaps in accordance with the SAFECOM Interoperability Continuum framework.

CASM: Security

- **Three primary components to security**
 - Data is stored on a server at a DoD facility, subject to standard DoD security measures, including periodic internal probes.
 - Utilizes HTTPS (http protocol with secure sockets layer) which encrypts the data as it travels over the internet.
 - Controlled Data Access; all users have individual user accounts
 - Each account has access only to the urban area or state they are associated with.
 - Strong passwords are enforced.
 - 3 Strikes Rule: after three unsuccessful attempts to login with an incorrect password, the account is locked until the user requests an administrator to unlock it.
 - User account creation is controlled by the urban area or state.

CASM: Usage (as of May 2009)

- **56 Urban Areas (UAs), States and Territories setup in CASM**
 - 48 States and Territories
 - 44 have agency data
 - 4 have requested access, but have not begun entering data
 - 8 Urban Areas
 - 8 have agency data
- **3 Special Datasets**
 - CEDAP, National Guard, and FEMA
- **2300 CASM user accounts**



CASM: Benefits

- **Using CASM, your Urban Area or State will benefit by:**
 - **Sharing Data.** CASM makes communication assets and interoperability data available to authorized users within an urban area or state. Assists participating public safety agencies in understanding the interoperability methods used by neighboring agencies.
 - **Access to Up-to-Date Data.** Repetitive data collection efforts need not be conducted once data has been entered into CASM. Maintenance of existing data is easy and may be done at any time.
 - **Identifying Gaps.** CASM provides a number of different ways to visualize potential interoperability between agencies in an urban area or state. This information may be used to design solutions to interoperability gaps.
 - **Reporting Options.** CASM provides eight different pre-formatted reports that may be converted to standard word processing or spreadsheet documents for further customization by individual users.

CASM: CAS Features

Communication Assets Survey (CAS)
For Official Use Only

Radio Cache List

0 Radio Cache(s) Associated with My State / Urban Area: Lake Tahoe

The table below contains a list of all radio caches that have been entered for Lake Tahoe. Please review the list before adding a new one to prevent duplicate data entry.

Radio Cache Name	Make/Model	Owner/Agency	View	Edit	Delete
AMS cache	Multiple	El Dorado County PS	VIEW	EDIT	DELETE
Carson City Radio Cache	Multiple	Carson City Police	VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE
Cache			VIEW	EDIT	DELETE

Users are only able to edit and delete data owned by their agencies. Data is viewable by all users.

Add / Edit Radio Cache

Assign the Radio Cache Name

Instructions: A radio cache is a set of similar radios that are programmed with a common set of channels. If you have multiple sets of radios that are configured differently, treat each set of similarly configured radios as a separate cache.

Naming Conventions: Assign the cache a name that may be recognized in the state/urban area, such as the name of your agency and the frequency band the radios are using. Example: MyTown VHF Radio Cache.

*Radio Cache Name:

Define Radio Cache

Alphabetical by Agency Jurisdiction Hierarchy

*Cache Owner/Responsible Agency:

Cache Radio Frequency Band:

Address where the cache is stored:

Describe the Cache Service Area? (available area for d

Notes on Radio Cache Equipment:

Latitude / Longitude Data:

Show Data Fields

*Required Field

RESET SAVE

Data entry form showing example pick list.

Assets Inventory

- Web-based data collection component. All that is required is a web browser, such as Internet Explorer or FireFox.
- Data is entered into a single database by geographically disparate users, where and when it is convenient.
- Form-driven data entry with numerous pick-lists and prompts to assist users in entering uniform data.
- Data duplication is minimized; data entered on one form reappears on other forms as selection choices.
- Data entry process is organic; when one user enters data, it is viewable and, in some cases, selectable to other users.
- Many opportunities to enter notes and comments.
- All assets may include a Point of Contact for reference.

CASM: CAS Features

FCC Data Import

- Import data from the FCC database into CASM to populate channels, structures and repeater/base station information for a radio system.
- Data may be selected, validated and modified before it is imported into CASM.

Data Export

- Data may be exported from the CASM database to tab separated files for use in MS Excel or your own custom application.

Radio System: Carson City 800MHz Trunked

FCC Data Import

System Home: Enter the FCC Call Sign that you wish to import and associate FCC data to the given Radio System. Click the Search button to search against the FCC Database and if the Call Sign is found, a list of Import Procedures will be provided. Click on the desired import procedure to get a listing of FCC information that is associated with the given Call Sign.

Notes: Currently the FCC Data is being limited to Location Type Code Y - Fixed. If the Call Sign you enter is not associated with any Fixed Locations, the import procedures will not be available.

Call Sign:

Search

Your Call Sign, **WNC2015**, has been found. The

Licensee: CALIFORNIA STATE OF

Attention Line: GENERAL SERVICES DE

Address: 601 SEQUOIA PACIFIC SACRAMENTO, CA 958

Import Procedures:

- [Channel Information](#)
- [Structure Information](#)
- [Repeater/Base Station Information](#)

Latest FCC Data Download: 02/04/2008 at 02:45.

This is the last time the FCC data was downloaded from the FCC Universal Licensing System (ULS) website and imported into the CAS Database. This data is downloaded and imported every Sunday night.

Previously Imported Call Signs (0)

Call Sign	Channels Imported Date	Structures Imported Date	Repeaters/Base Station Imported Date
WNC2015	12/02/08 at 15:18		

FCC Import Main Page
Click the Channel Information link to begin importing channel data for the radio system.

Communication Assets Survey (CAS)

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State/UA Homepage | State/Urban Area | Summary Information | Points of Contact | Accounts | Community Forum | Logout

State/UA: **STATE/URBAN AREA: Lake Tahoe**

Radio System

Method Add

Gateway

Radio Cache

Dispatch Center

Agency Group

Reports

Data Export

CASM Tutorial

E-LA Release Notes

E-LA Enhancements

Feedback

Get Help

Data Export

Export Database Information for Lake Tahoe

Data Data Table

Select Data Center(s):

Select Name(s): Select All

(Must the "Ctrl" key to select multiple entries)

For Export: Remove All Available data has been selected for Export.

- California Highway Patrol
- Carson City Police
- Carson City County Sheriff
- Carson City Department of Health
- Carson City Dispatch
- Carson City Fire
- Carson City Jail
- Carson City Police

CASM Data Export
Select type of data to export then click the Export Data button

CASM: CAM Features

Assets Display

- Web-based application installed on user's computer. CAM retrieves the newest data entered through the CAS component each time it is launched.
- Agencies, communication assets and interoperability methods are viewable in a map-based interface.
- Detailed information is available by clicking map icons and "drilling-down" through text screens.

Drill down to detailed information

Agencies, towers, radio systems and other interoperability methods may be layered on the map

Agency Information

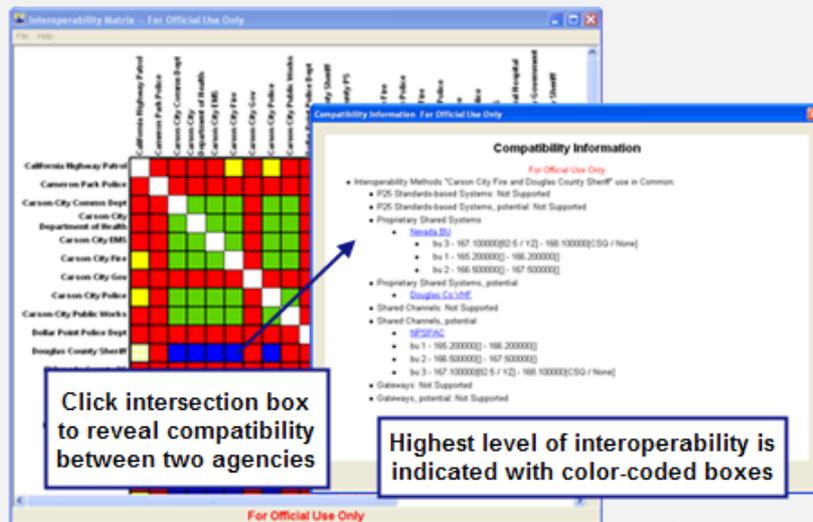
- Agency Name: Tahoe City Police
- Agency Fleet or Contact Area
- State: Tahoe City
- Interoperability Methods Covered by ICM
 - Programs Shared Systems
 - Shared Channels
 - Shared Channels, protocols
 - Common
- Radio Systems Used

System Name	Number Mobile	Number Fixed	Agency Use of System Comments
Trk (Shared, Inc. 2012001)	0	0	
Public (Shared, 2012001) (Shared)	0	0	None
Tahoe City (ICM, 2012001)	20	20	All work is done on-site in buildings
- Dispatch Center Used: None
- Emergency Contact: None

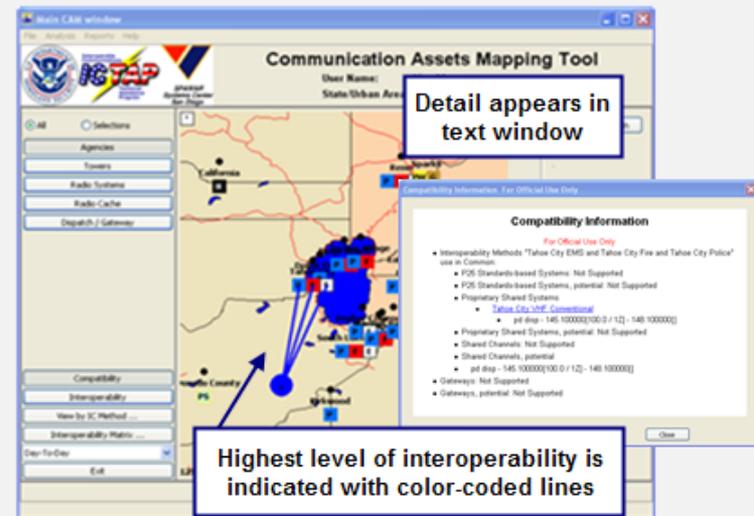
For Official Use Only

CASM: CAM Features

Interoperability Matrix



Compatibility Tool



Interoperability

- Urban area or state Interoperability is displayed in a clear, color-coded format.
- Inter-agency Interoperability is illustrated using the *Interoperability Matrix* or *Compatibility Tool* and is calculated based on data entered by agency representatives.

CASM: CAM Features

TICP

- Interoperable Equipment portion of the Tactical Interoperable Communications Plan (TICP) Report can be generated directly from CASM data [Section 3 and Appendices B-E]
- Finalized TICP documents may be uploaded and stored in CASM

Section 3. Interoperability Equipment

SAFECOM defines communications interoperability as the ability of public safety agencies to talk across disciplines and jurisdictions via radio communication systems, exchanging voice and/or data with one another on demand, in real time, when needed, and as authorized. Interoperability resources for this urban area are summarized below.

3.1 Swap Radio

"Swapping radios" refers to maintaining a cache of regional radios. These radios may be from a region allows all responders to use a common, compatible set within the region are listed in the table below. More detailed information on each channel is documented in Appendix B.

Owning/Managing Agency	Radio Cache Name	Frequency Band	Quantity
Carson City Police	CC old radio cache		
Carson City Police	new CC Cache UHF / 800 dual	Dual Band UHF and 800 MHz	24
Carson City Police	test cache		
Kingsbury Police	Kingsbury VHF Radio Cache		

3.2 Shared Channel

"Shared channels" refers to common frequencies or channels that have been established and are programmed into radios to provide interoperable communications among agencies. Specific shared interoperable communications channels available within the region are listed in the table below. More detailed information on each channel is documented in Appendix C.

Shared Channel Name	Channel Detail
CC Digital Mutual aid	453.3[23 / 47] - 458.3[26 / 464] 455 - 465

Example - All Data is Fictitious

TICP Report Generation and Storage

CASM: CAM Features

What-if Feature

- Enhances Interoperability Planning and Disaster Recovery Planning
 - Model new systems considered for acquisition, optimize existing systems or plan elimination of systems/devices. Visualize changes to interoperability.
- Easy to use. Enables users to make temporary changes to data without impacting the “real” data in the database.

The image displays two screenshots from the Communication Assets Mapping Tool (What-If) software. The left screenshot shows the main interface with a map of California and a large interoperability matrix. The matrix is a grid where each cell is colored (red, green, yellow, blue) to represent different interoperability levels between various agencies. A text box overlaid on the matrix reads: "Make changes in the What-if Workspace and view the new data and interoperability on the matrix and map". The right screenshot shows the "What-If Workspace" window, which is a diagrammatic interface for configuring talk groups and channel assignments. It includes a "Talk Group Name" list, a "Talk Group ID" list, and an "Agency Usage" table. Below this is a "Channel Assignment" window with a table for "Frequency Assignments" and "Talk Group Assignments".

Talk Group Name	Talk Group ID	Agency Usage
South Lake	33	<input type="checkbox"/>
DINCA	122	<input type="checkbox"/>
DMS 722	119	<input type="checkbox"/>
DMS 722	120	<input type="checkbox"/>
MTSAK	426	<input type="checkbox"/>
HS/SC	121	<input type="checkbox"/>
New Talk Group	34	<input type="checkbox"/>
HS-PS Interg	45	<input type="checkbox"/>
numberp	35	<input type="checkbox"/>

CASM: Other Features

General Data Import Service

- **Import data from local databases into CASM**
 - Agencies, Channels, Talk Groups, Towers, Repeaters, Dispatch Centers and Points of Contact lists may be imported.
 - Users convert data from their database(s) to a CASM flat-file template and submit for import.
 - Data imported into CASM is not synched with local databases.

Data Import Service

Agency Import Spreadsheet Instructions

Purpose and General Guidance

The purpose of creating a list of agencies on the Agency Import spreadsheet is to pre-populate the CASM database with agency names for those agencies or organizations that we expect will participate in the data collection effort and whom we wish to be part of the TICP process. More agencies may be added in the future; this list is intended to be a starting point.

Definition of an Agency / Organization in CASM: Typically, a first responder agency or organization such as a police department, sheriff, or fire department. Can also be a governmental agency, organization or Emergency Management group. Think of an agency as a group of people providing a service in the interest of public safety that other public safety agencies need to interoperate with. An Agency may own, maintain, or use communication assets.

Each row in the Agency Import Spreadsheet will represent a single agency that we want to import into the CASM tool. We should not add agencies as separate and distinct agencies that are actually sub-divisions of a single agency. For example, if we include the San Diego Fire Department as an agency, we would not also include an agency called San Diego Fire – Point Loma Fire Station. All the fire fighters who work at the Point Loma Fire Station are employed by the San Diego Fire Department and use radios for a common system, therefore they are already covered by the instance of San Diego Fire Department in CASM. If a sub-division does in fact use a separate communications system, it would be worth including them as their own agency record.

The table below describes each data element that is represented by a column in the Agency Import Spreadsheet.

Data Element	Reqd	Notes	Enumerated Values	Example
Agency Name	X	Type the Agency Name to be added		La Mesa PD
		Agency discipline – you	Police, Fire, Sheriff,	

Example of Agency Import Instructions and flat-file template

	A	B	C	D	E	F	G
1	Agency Name	Discipline	Address	State	County	City	Comments
2	California Highway Patrol	Highway Patrol	Street Address City, State	California			Fictitious state agency data
3	Placer County Government	Government	Street Address City, State	California	Placer County		Fictitious county agency data
4	Placer County Sheriff	Sheriff	Street Address City, State	California	Placer County		Fictitious county agency data
5	Carson Park Police	Police	Street Address City, State	California	El Dorado County	Carson Park	Fictitious city agency data
6	Carson City Coroner Dept	Public Safety Coroner		Nevada	Carson City	Carson City	Fictitious city agency data
7	Carson City Department of Health	Public Health		Nevada	Carson City	Carson City	Fictitious city agency data
8	Carson City EMS	EMS		Nevada	Carson City	Carson City	Fictitious city agency data

CASM: Other Features

Reports

- Comprehensive reports can be generated, printed and saved.
- TICP Report (Section 3 and Appendices B-E) may be generated directly from CASM data.

User Feedback

- CASM is continually improving to meet the needs of the user community. You can assist by submitting your ideas and suggestions directly to the CASM development team.

The image displays a screenshot of the CASM software interface. At the top, a window titled "Basic Report and TICP Report Selection Windows" is open, showing two panes. The left pane, "CASM Reports", lists various report types such as "Report by State/Urban Area", "Report by Agency", "Report by Radio System", "Report by Tower", "Report by Dispatch Center", "Report by Gateway", and "Report by Radio-Cache". The right pane, "TICP Report", shows a map of a region with various locations marked and a list of "Selected Agencies" including "California Highway Patrol", "Cameron Park Police", "El Dorado County PS", "South Lake Tahoe", "Racer County", "Duke Point", "Kings Beach", "Racer County Sheriff", "Tahoe City", "Tahoe City EMS", "Tahoe City Fire", and "Tahoe City Police". Below the map, there are buttons for "Zoom In", "Zoom Out", "Original View", "Select Box", and "Map Legend". A red warning message at the bottom of the map area reads "Example - All Data is Fictitious For Official Use Only".

Below the report selection windows, a "User Feedback" form is visible. The form has a red header and contains the following text: "Dear User: Please use the area provided below to communicate any comments concerning 'Data Export Feature' page." It includes fields for "Subject:" and "Comments:", a "RESET" button, and a "SUBMIT" button.

CASM: Other Features

Help & Tutorial

- Online, printable Help from every CAS page and from the CAM menu.
- Self-paced Tutorial available for you to use at any time.

CASM Community Forum

- Access the Community Forum to share information with other CASM users across the country.

The image displays three screenshots from the Communication Assets Survey (CAS) and Mapping (CASM) system. The top screenshot is the 'CAS Help' page, titled '2.5 Radio System', which provides instructions on how to use the system and includes a 'CAS Help' callout box. The middle screenshot is the 'CASM Tutorial' page, titled 'Introduction', which provides an overview of the system and includes a 'CASM Tutorial' callout box. The bottom screenshot is the 'CASM Forums' page, which displays a list of forum topics and includes a 'CASM Community Forum' callout box.

TOPIC	POSTS	LAST POST	
Announcements Announcements are posted here. This is a read-only forum.	0	0	No posts
Frequently Asked Questions (FAQ) The most commonly asked questions answered here. This is a read-only forum.	0	0	02 pm
Overall CASM Enhancements Describe features you would like to see included in future CASM releases.	0	0	
CASM Usage Share your ideas on how you use CASM.	0	0	
Software Bugs Report errors or unusual software behavior.	0	0	No posts
Documentation Please describe any discrepancies in the CASM documentation here.	0	0	No posts

CASM Support/Help Desk

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