



Homeland Security



Office of Emergency Communications

Communication Assets Survey and Mapping
(CASM) Tool
Short Introduction



Homeland Security

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 Feb 2009)

- **Currently 60 Urban Areas (UAs), States and Territories setup in CASM**
 - 48 States and Territories
 - 16 Urban Areas
 - 3 National Views (National Guard, CEDAP, and FEMA)
- **Currently more than 2100 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	State, 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

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: [Text Field]

Define Radio Cache

Alphabetical by Agency Jurisdiction Hierarchy

*Cache Owner/Responsible Agency: [Dropdown]

Cache Radio Frequency Band: [Dropdown]

Address where the cache is stored: [Text Field]

Describe the Cache Service Area? (available area for [Text Field])

Notes on Radio Cache Equipment: [Text Area]

Latitude / Longitude Data: [Text Field]

Show Data Fields

*Required Field

RESET SAVE

Data entry form showing example pick list.

Select Agency: [Dropdown]

Select Band: [Dropdown]

Select Band

- VHF Low Band (25-50MHz)
- VHF High Band (150-174MHz)
- UHF (400-512MHz)
- 700 (754/794 - 776/806 MHz)
- 800 (806/901 - 817/862 MHz)
- Dual Band VHF
- Multi-Band UHF and VHF
- Dual Band 700 MHz and 800 MHz
- Dual Band UHF and 800 MHz

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.

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

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

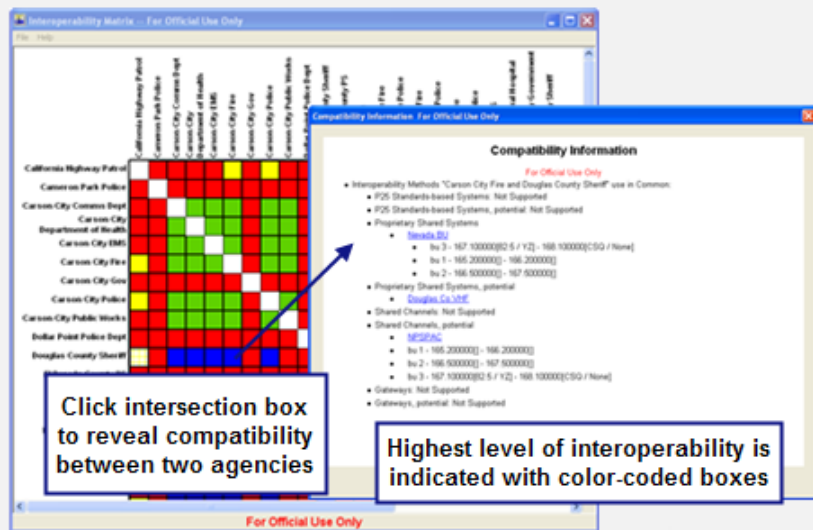
System Name	Number Mobile	Number Handheld	Agency Use of System Comments
San Diego, CA, 2005	0	0	
San Diego, CA, 2005	0	0	none
San Diego, CA, 2005	20	20	All users in this profile in California

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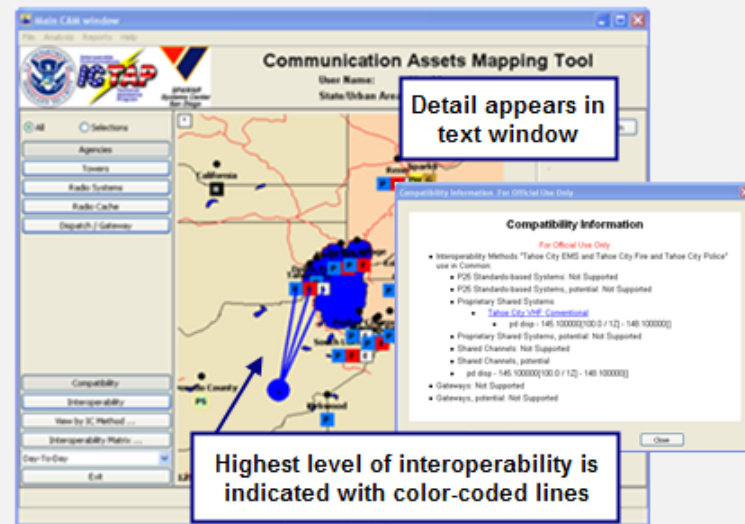


CASM: CAM Features

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 cache 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 of the CASM software interface. The left screenshot shows the 'Communication Assets Mapping Tool (What-If)' with a map of California and a grid of communication assets. The right screenshot shows the 'What-If Workspace' with a diagram of communication assets and a 'Channel Assignment' table.

Communication Assets Mapping Tool (What-If)

User Name: State Urban A...

Example - All data i...

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What-If Workspace

Make changes in the What-if Workspace and view the new data and interoperability on the matrix and map

Talk Group Name	Talk Group ID	Agency Usage
South Storage	34	<input type="checkbox"/>
SWPC	102	<input type="checkbox"/>
DMS 102	102	<input type="checkbox"/>
DMS 102	102	<input type="checkbox"/>
MTAC	408	<input type="checkbox"/>
MTAC	315	<input type="checkbox"/>
New Talk Group	34	<input type="checkbox"/>
HS-PS Storage	95	<input type="checkbox"/>
Accounting	88	<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 a tree view of 'CASM Reports' and 'TICP Report' options. Below this, a 'TICP Report' window is visible, featuring a map of a region with various colored markers and a list of 'Selected Agencies' on the left. A 'User Feedback' form is overlaid at the bottom, with a text area for comments and a 'SUBMIT' button. A red banner at the bottom of the map area reads 'Example - All Data is Fictitious For Official Use Only'.



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 radio system page. The middle screenshot is the 'CASM Tutorial' page, titled 'Introduction', which welcomes users and lists key features like data entry and import. The bottom screenshot is the 'CASM Forums' page, which shows a list of discussion topics such as 'Announcements', 'Frequently Asked Questions (FAQ)', and 'Overall CASM Enhancements'.

CAS Help

CASM Tutorial

CASM Community Forum



CASM: Support / Help Desk

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