

# SPACE-TRACK HANDBOOK FOR OPERATORS

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## Operator Panel on [www.Space-Track.org](http://www.Space-Track.org)

COMBINED FORCE SPACE COMPONENT COMMAND (CFSCC)

**8/28/2020**

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## INTRODUCTION

Satellite Owner/Operators (O/Os) have expressed a desire to exchange contact information with other O/Os for coordination in spacecraft operations and conjunction assessments. The Operator Panel on [www.Space-Track.org](http://www.Space-Track.org) provides the mechanism to exchange this contact information with other O/Os quickly and easily. It contains the O/O Directory (or “O/O phonebook”) that will help enhance coordination among O/Os in the event of a conjunction warning between two active satellites. Our goal for the O/O Directory is to improve space flight safety and space situational awareness using [www.Space-Track.org](http://www.Space-Track.org). This voluntary service enables O/Os to search, view, and populate a listing of contact information including O/O phone numbers and email addresses. Timely coordination should help reduce the probability of orbital collisions and facilitate effective responses to conjunctions, orbital break-ups and other events that might increase the probability of an accidental collision.

The Operator Panel is for O/Os only (basic users do not have access to this panel). It also allows an organization’s Primary Representatives (PRs) to manage Conjunction Data Message (CDM) and Close Approach Notification (CAN) privileges for their members, contact information for assigned satellites in the O/O Directory and visibility of their organization’s Intra-Constellation CDMs. Additionally, the Operator Panel allows PR(s) to identify the Hard Body Radius (HBR), status (operational condition) and maneuverability of their organization’s satellite(s). Contact information designated as “Public” will also be included in CDMs to further aid in coordination between applicable O/Os.

# CHAPTER 1 – OPERATOR PANEL ON SPACE-TRACK

1. The Operator Panel (See Figure 1) is a private section of Space-Track.org that is only accessible by satellite Owner/Operators. The panel includes 4 tabs:

- CDM - Conjunction Data Messages (CDMs) - conjunction warnings
- Directory - the O/O Directory with organizations' shared contact information
- Manage - allows Primary Representatives (PRs) to manage their organization's members' CDM and CAN privileges, satellite and contact information and visibility of Intra-Constellation CDMs
- Maneuver - allows O/Os to view their public and private organization's predicted maneuver information as well as other organization's public satellites
- Help - Help menu

2. The O/O Directory allows organizations to:

- Directly contact other participating organizations in the event of a conjunction warning
- Search for contact information that organizations have shared

3. The 18th Space Control Squadron (18 SPCS) designates PRs to control:

- Organization members and their organization's members' Space-Track CDM and CAN privileges
- Sharing of their organization's satellite information in the O/O Directory
- Their organization's contact information in the O/O Directory and in CDMs
- Visibility of their organization's Intra-Constellation CDMs

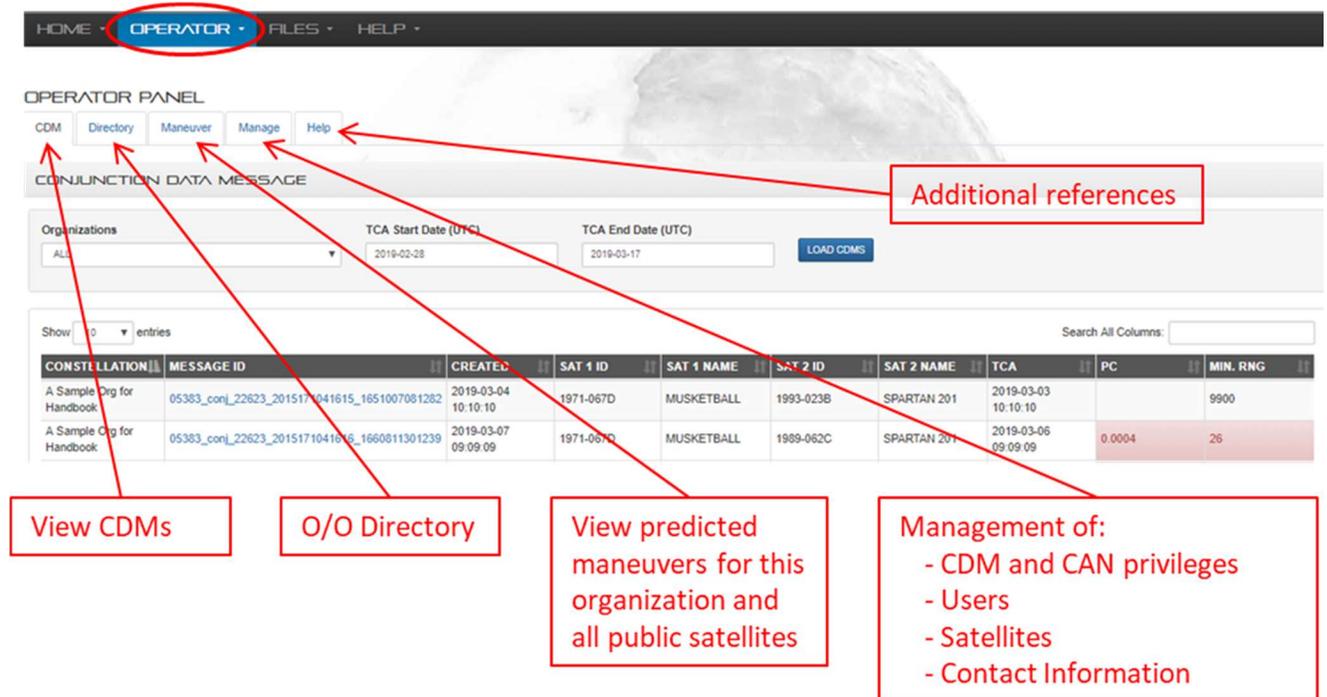


Figure 1. Operator Panel

## CHAPTER 2 – LEVELS OF PRIVILEGES AND THE OPERATOR PANEL

1. There are four levels of privileges (See Figure 2) when using the Operator Panel (See Figure 3):

- “View CDM online” privilege allows users to:
  - View CDMs online
  - View or search the O/O Directory for contact and satellite information
  
- “CDM notification” privilege allows users to:
  - View CDMs online and users will receive an email notification for each new CDM
  - View or search the O/O Directory for contact and satellite information
  
- Users designated by the 18 SPCS as an Organization’s PR are allowed to:
  - Grant themselves “View CDM online” or “CDM notification” privileges
  - Add or delete members from their organization
  - Manage their organization’s members’ CDM and CAN privileges
  - Designate an organization’s assigned satellites and associated satellite status (operational condition) and maneuverability as public (viewable/shared in the O/O Directory by any user with CDM privileges) or private (not viewable/not shared in the O/O Directory)
  - Maintain their organization’s contact information and designate it as public (viewable/shared in the O/O Directory and CDMs by any user with CDM privileges) or private (not viewable/not shared in the O/O Directory and CDMs)
  - Manage visibility of their organizations Intra-Constellation CDMs
  
- The 18 SPCS has all the privileges above, and can also:
  - Add or delete organizations from Space-Track.org
  - Add or delete PRs from an organization
  - Add or delete satellites from an organization

**NOTE: All users must be registered on Space-Track.org to receive these privileges.**

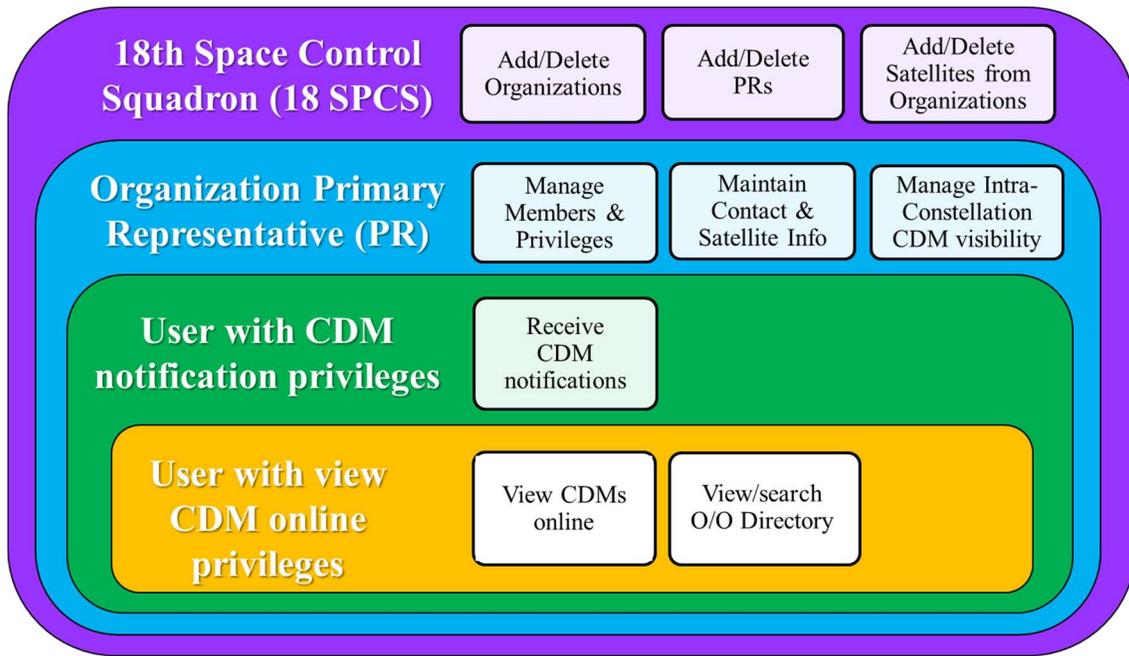


Figure 2. Levels of Privileges

2. The Operator Panel (See Figure 3) provides users and PRs access based on granted privileges.

HOME - **OPERATOR** - FILES - HELP

OPERATOR PANEL

CDM Directory Maneuver Manage Help

CONJUNCTION DATA MESSAGE

Organizations: A Sample Org for Handbook TCA Start Date (UTC): 2019-03-01 TCA End Date (UTC): 2019-03-18 LOAD CDMS

Show 10 entries Search All Columns:

CONSTELLATION	MESSAGE ID	CREATED	SAT 1 ID	SAT 1 NAME	SAT 2 ID	SAT 2 NAME	TCA	PC	MIN. RNG
A Sample Org for Handbook	05383_conj_22623_2019171041616_1660811301239	2019-03-07 09:09:09	1971-067D	MUSKETBALL	1989-062C	SPARTAN 201	2019-03-06 09:09:09	0.0004	26
A Sample Org for Handbook	05383_conj_22623_2015171041616_1651007081282	2019-03-04 10:10:10	1971-067D	MUSKETBALL	1993-023B	SPARTAN 201	2019-03-03 10:10:10		9900

Users with CDM online/notification privileges can view CDM tab, O/O Directory, Maneuver tab, and Help

Manage tab can only be accessed by a PR

Figure 3. Operator Panel Privileges

## CHAPTER 3 – PRIMARY REPRESENTATIVE (PR) RESPONSIBILITIES

1. The PR makes updates to CDM and CAN privileges, members, satellites, contact information and Intra-Constellation CDM visibility that take effect immediately. PR responsibilities include:

- Adding, deleting, and editing Space-Track users and their CDM and CAN privileges for an organization
  - PRs should only share their conjunction warnings (e.g. CDMs, CANS) with the members of their organization or other entities under direct contract to their organization per the Space-Track.org User Agreement
- Designating assigned satellites as private or public in the O/O Directory
  - Share as much information as possible to allow maximum communication between all O/Os and improve ability to resolve issues quickly
- Designating assigned satellites as active, dead or unknown status, and maneuverable, not maneuverable or unknown maneuverability in the O/O Directory
- Entering HBR values in the O/O Directory
- Maintaining up-to-date contact information for your organization in the O/O Directory
- Managing visibility of their organization's Intra-Constellation CDMs

2. PRs **cannot** do the following functions:

- Add/Delete satellites from the organization (18 SPCS's role)
- Add/Delete PRs from the organization (18 SPCS's role)
- Add users who do not have a Space-Track.org account

3. The PR role is voluntary. The 18 SPCS will manage CDM privileges, members, satellites, contact information, and Intra-Constellation CDM visibility for organizations without a PR but cannot guarantee timeliness or accuracy of updates.

4. If you have questions or concerns about your information, please contact the 18 SPCS at [18SPCS.DOO.CustomerService@us.af.mil](mailto:18SPCS.DOO.CustomerService@us.af.mil)

5. PRs manage users and permissions under the "Members" tab below the "Manage" tab on the Operator Panel (See Figure 4).

- Navigate to the "Members" tab to add or edit users and privileges or to delete users
  - Select the "Manage" tab in the Operator Panel
  - Select your organization from the drop-down menu and click "Load"
  - The "Members" tab opens by default
- Add new users to the organization and grant them privileges
  - Enter the Space-Track member's username or email address in the "Username" box
  - Select user's privileges
    - "CDM Notification" = View CDMs online & receive CDM notifications via email
    - "View CDM Online" = View CDMs online only; no notifications
  - Click "Save"--the new user will appear in the table

**NOTE: PRs must grant themselves CDM privileges if required.**

- Edit users and manage their privileges
  - Click the "Edit" button to the right of the user who needs privileges updated--the user will appear in the "Username" box
  - Select or deselect the privilege(s) in the "Privilege" box. Use the control or shift key to select multiple values. Click "Save" -- the user's updated privileges will appear in the box at the bottom of the Members tab
- Delete Users (except PRs)
  - Click the "Delete" button to the right of the user who needs to be removed--the user will be removed from the box at the bottom of the Members tab

**NOTE: To update or delete PRs from your organization, contact the 18 SPCS18 SPCS at [18SPCS.DOO.CustomerService@us.af.mil](mailto:18SPCS.DOO.CustomerService@us.af.mil)**

The screenshot shows the OPERATOR PANEL interface. The top navigation bar includes HOME, OPERATOR, FILES, and HELP. The OPERATOR PANEL section contains tabs for CDM, Directory, Maneuver, Manage, and Help. The Manage tab is circled in red, with a callout box stating: "Members tab is under the Manage tab (PR access only)".

Below the Manage tab is the MANAGE OPERATOR ORGANIZATIONS section. It features an "Organizations" dropdown menu with "A Sample Org for Handbook" selected and a "LOAD" button. A callout box points to the "LOAD" button: "Select organization and click LOAD". To the right, there is a link for "Space-Track Handbook for Operators" with a callout box: "Link to guide for PRs (this handbook)".

Under the selected organization, there are tabs for Members, Satellites, Contact Information, and Data Control. The Members tab is circled in red, with a callout box: "Enter user's registered Email address, select privilege(s), and click SAVE".

The Members tab displays a form with a "Username" field (containing "Single Username or Email address") and a "Privilege" dropdown menu (containing "CDM Notification" and "View CDM online"). A "SAVE" button is next to the form.

At the bottom, a table lists users with their Name, Email, and Privileges. Each row has "EDIT" and "DELETE" buttons. A callout box points to these buttons: "Use EDIT or DELETE to update table".

Name	Email	Privileges	EDIT	DELETE
test_user	userfest1@space-track.org	CDM Notification, Primary Representative, View CDM online	EDIT	DELETE
test_user	userfest2@space-track.org	CDM Notification, View CDM online	EDIT	DELETE
test_user	userfest1c1@space-track.org	CDM Notification, View CDM online	EDIT	DELETE

**Figure 4. Manage Users and Privileges**

6. PRs manage satellite information under the “Satellites” tab under the “Manage” tab in the Operator Panel (See Figure 5).

- The 18 SPCS will generate the list of satellites that your organization has access to. PRs are responsible for managing the disclosure of this list.

**WARNING: By designating satellites as PRIVATE, only the 18 SPCS will be able to see those satellites and the associated contact information for your organization. No other users will be able to contact you using information in Space-Track.org’s O/O Directory in the event of a conjunction involving your PRIVATE satellites.**

- Manage Satellites

- Select the “Manage” tab in the Operator Panel
- Select your organization from the drop-down menu and click “Load”
- Select the “Satellites” tab
- Select the Edit button to the right of the satellite. A pop up window allows you to enter a Hard Body Radius (HBR), update/confirm Directory Visibility, and satellite condition (Status & Maneuverable) for your satellite

HBR\*: Satellite HBR in meters. (**\* HBR is only visible to other organizations through a CDM.**) Enter a value in the HBR box per instructions on the pop up window. (See SAVE button below)

Directory Visibility (Public): Display your satellites in the O/O Directory (Directory Visibility = PUBLIC); to make a satellite PUBLIC (i.e. other Owner/Operators can use the Directory to find your organization)--select PUBLIC in the Directory Visibility box. (See SAVE button below)

Directory Visibility (Private): Do not display your satellites in the O/O Directory (Directory Visibility = PRIVATE); to make a satellite PRIVATE (i.e. other Owner/Operators cannot use the Directory to find your organization)--select PRIVATE in the Directory Visibility box. (See SAVE button below)

Status: Identify your satellite's ability to perform its mission/function and whether it can be controlled. Set the Status to ""Active" when it is able to perform its mission/function and can be controlled, to "Dead" when it cannot perform its mission/function and cannot be controlled, or to "Unknown" if the status cannot be confirmed. To change a satellite’s Status--select Active, Dead or Unknown in the Status box. (See SAVE button below)

Maneuverable: Identify whether your satellite is able to avoid conjunctions (Maneuverable = YES), unable to avoid conjunctions (Maneuverable = NO) or unconfirmed maneuverability (Maneuverable = Unknown); to change a satellite Maneuverability--select Yes, No or Unknown in the Maneuverable box. (See SAVE button below)

SAVE button: If you changed HBR, Directory Visibility or satellite condition (Status or Maneuverable), click the SAVE button in the pop up window.

**NOTE: A satellite cannot be described as both Dead and Maneuverable**

**NOTE: If you believe your satellite list is incorrect or inaccurate, please contact 18 SPCS at [18SPCS.DOO.CustomerService@us.af.mil](mailto:18SPCS.DOO.CustomerService@us.af.mil)**

HOME OPERATOR HELP WWW.SPACE-TRACK.ORG

OPERATOR PANEL  
Conjunctions Directory **Manage** Help

**Satellites tab is under the Manage tab**

**Change Directory Visibility to make an object (including Status and Maneuverable info) Public or Private**

MANAGE OPERATOR ORGANIZATIONS

Organizations  
00 AA TEST [LOAD]

00 AA TEST Members **Satellites** Contact Information Data Control

Show 10 entries

NORAD CAT ID	Object Name	Hard Body Radius	Directory Visibility	Status	Maneuverable	Edit
5383	MUSKETBALL		Private	Active	NO	

Showing 1 to 1 of 1 entries

**Satellite Hard Body Radius (HBR)**

**Satellite condition: Status (Active, Dead, Unknown) and Maneuverable (Yes, No, Unknown)**

**Click Edit to change a satellite's HBR, Directory Visibility, Status or Maneuverable info**

**INSTRUCTIONS:**

- \* Another organization's Hard Body Radius is only visible through a CDM
- An Object is Dead when it cannot perform its mission nor function and cannot be controlled.
- An Object is Maneuverable if it can avoid conjunctions.
- Public Satellites will allow other Owner/Operators to find your organization by searching the Directory.
- Owner/Operators cannot use private satellites to search for your organization.
- To make changes to multiple satellites at a time for large constellations, contact [admin@space-track.org](mailto:admin@space-track.org) for assistance or make use of the API, please visit <https://www.space-track.org/documentation#api>

Update [ 5383 : MUSKETBALL ] Attributes

Public Attributes

HBR\*  \* Hard Body Radius is only visible to other organizations through a CDM

**Pop up to change a satellite's HBR, Directory Visibility, Status or Maneuverable info**

Public/Private Attributes

Directory Visibility: Private  
Status: Active  
Maneuverable: NO

All fields are required except for HBR [SAVE] [CANCEL]

**INSTRUCTIONS:**

- HBR value may be blank or a floating point number between 1 and 30 meters.
- For instructions on how to calculate HBR, please reference annex A of the [Space Flight Safety Handbook](#)
- The Directory Visibility setting also applies to the Status and Maneuverable attributes.
- Public Satellites will allow other Owner/Operators to find your organization by searching the Directory.
- Owner/Operators cannot use private satellites to search for your organization.
- An Object is Dead when it cannot perform its mission nor function and cannot be controlled.
- An Object is Maneuverable if it can avoid conjunctions.
- A satellite cannot be described as both Dead and Maneuverable.
- To make changes to multiple satellites at a time for large constellations, contact [admin@space-track.org](mailto:admin@space-track.org) for assistance

Figure 5. Manage Satellite Information

7. PRs maintain an organization’s contact information under the “Contact Information” tab under the “Manage” tab in the Operator Panel (See Figure 6).

- Manage Contact Information:
  - Select the “Manage” tab in the Operator Panel
  - Select your organization from the drop-down menu and click “Load”
  - Select the “Contact Information” tab
  - In the “Label” box enter a description of the information (See examples in Table 1 below)
  - Select the “Type” of information from the drop-down menu
  - Enter the appropriate information in the “Value” box (See examples in Table 1 below)
  - Select “Public” or “Private” from drop-down menu (Default value is Public)
  - Click “Save”
  
- Edit Contact Information: (See below for tips and examples in Table 1 & Figure 6)
  - Click “Edit” button for the information that needs to be updated--information will be repopulated in the “Label,” “Type,” and “Value” fields for editing
  - Once finished editing, click “Save” and the table will update automatically
  
- Tips on adding relevant contact information to O/O Directory:
  - Acceptable values: Alphanumeric (A-Z, 0-9, #, -, ., \$, and \_)
  - Include your Country Code with your phone number
  - Use UTC or GMT for time zone
  - “Label” and “Value” are free-text fields; please use relevant titles for clarity; Labels are limited to 40 characters; Values are limited to 50 characters
  - Avoid leaving “Label” and/or “Value” fields blank
  - Only entries with the CLOSE\_APPROACH “Type” will receive CANs
  - If a new “Type” of information is needed, please contact admin@space-track.org for assistance
  
- Delete Contact Information
  - Click “Delete” button to remove information--it will be removed from the table
  
- Table 1 Example inputs for the “Label” and “Value” fields associated with a given “Type.”

TYPE	LABEL (Examples)	VALUE (Examples)
PHONE	<i>Preferred Contact, 24/7 Ops Center, Orbital Analyst, Conjunction Assessment Team, Help Desk, etc.</i>	<i>+49-69-1234-5678, 555-123-456, +1-123-456-7899, COMM: 765-432-1111, DSN: 555-1111, etc.</i>
EMAIL	<i>Primary Ops Center, CEO, President, Chief of Operations, etc.</i>	<i>ops@center.com, go@now.mil, xyz@center.gov, etc.</i>
FAX	<i>Primary, Secondary, etc.</i>	<i>+1-555-234-5678, etc.</i>
WEBSITE	<i>Company, Ops Center, etc.</i>	<i>www.abc.org, www.anycompany.com, etc.</i>
LANGUAGE	<i>Primary, Secondary, Preferred, etc.</i>	<i>English, Spanish, French, etc.</i>
TIME_ZONE	<i>Headquarters, Ops Center, etc.</i>	<i>GMT-8, UTC+1, etc.</i>
COUNTRY	<i>Ops Center, Headquarters, etc.</i>	<i>Australia, USA, Japan, etc.</i>
CLOSE_APPROACH	<i>CA1, CA2</i>	<i>ops@center.com, go@now.mil, etc.</i>

**Table 1. List of Types with Label/Value Examples**

HOME OPERATOR FILES HELP

OPERATOR PANEL

CDM Directory Maneuver **Manage** Help

'CA1' was successfully created!

MANAGE OPERATOR ORGANIZATIONS

Organizations

A Sample Org for Handbook

**A Sample Org for Handbook** Members Satellites **Contact Information** Data Control

Label: Contact Info Entry Name    Type: PHONE    Value: Phone, EMail, or Fax, etc.    Visibility: PUBLIC   

Label	Type	Value	Private	
CA1	CLOSE_APPROACH	usertest1@space-track.org	PRIVATE	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Ops Center Phone	PHONE	+1-555-123-4567	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Ops Center Time	TIME_ZONE	GMT-8	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Org HQ	COUNTRY	United Federation of Planets	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Org Primary Language	LANGUAGE	English	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Org Secondary Language	LANGUAGE	Vulcan	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>
Org Website	WEBSITE	http://www.startrek.com/	PUBLIC	<input type="button" value="EDIT"/> <input type="button" value="DELETE"/>

Annotations:

- Contact Information tab is under the Manage tab (PR access only)
- Enter relevant information in Label field
- Select type of information
- Enter information according to type chosen
- Select whether information will be publicly visible
- Click SAVE when data is complete
- Click EDIT for any line to change previously entered information

**Figure 6. Maintain Organization's Contact Information**

8. PRs manage visibility of their organization’s Intra-Constellation CDMs under the “Data Control” tab under the “Manage” tab in the Operator Panel (See Figure 7). When the “Hide Intra-Constellation CDMs” checkbox contains a checkmark, Space-Track will not send conjunction notifications in which both objects belong to the selected organization, and will hide the corresponding CDMs from all users assigned to the selected organization CDM account, in both the Graphical User Interface (GUI) and Application Program Interface (API). When the “Hide Intra-Constellation CDMs” checkbox does not contain a checkmark, Space-Track will send conjunction notifications and display corresponding CDMs even if both objects belong to the selected organization.

- Manage Intra-Constellation CDMs:

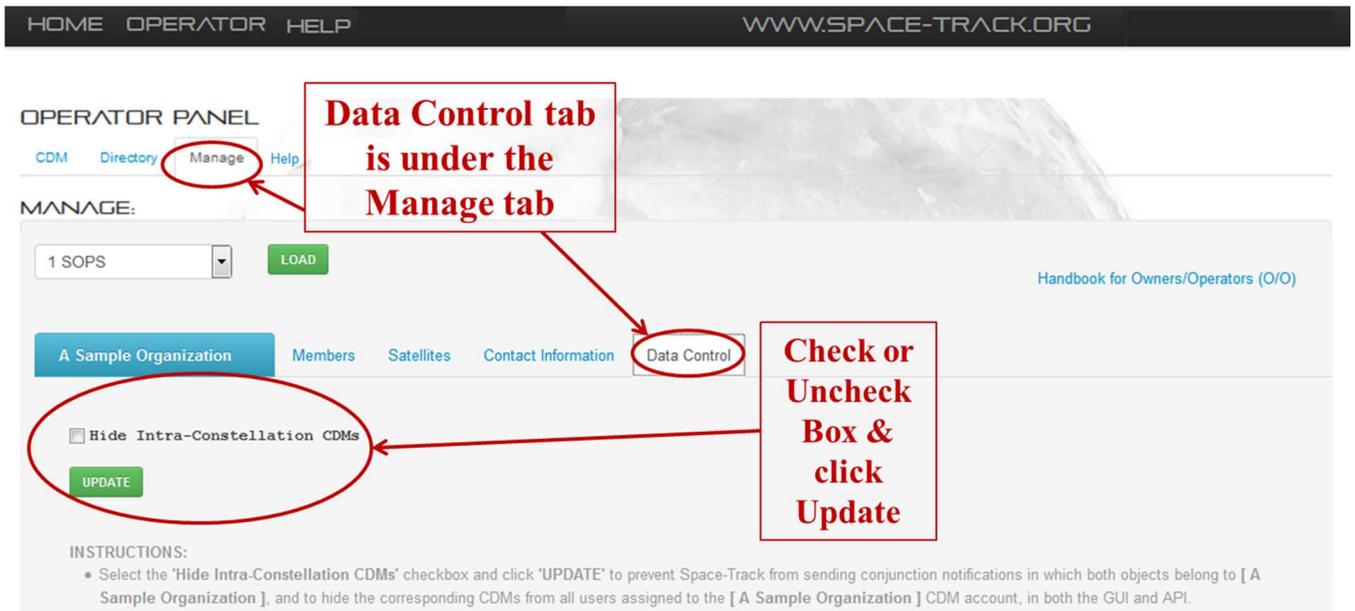
- Select the “Manage” tab in the Operator Panel
- Select your organization from the drop-down menu and click “Load”
- Select the “Data Control” tab

- Hide Intra-Constellation CDMs:

- Select the “Hide Intra-Constellation CDMs” checkbox (ensure the box contains a check mark)
- Click “Update”

- Receive notifications/View Intra-Constellation CDMs:

- Select “Hide Intra-Constellation CDMs” checkbox (remove the check mark; box should be empty)
- Click “Update”



**Figure 7. Manage Visibility of Organization’s Intra-Constellation CDMs**

## CHAPTER 4 – OWNER/OPERATOR (O/O) DIRECTORY

### 1. When O/Os receive CDMs.

- O/Os can search the O/O Directory for the contact information of the secondary object by:
  - Organization
  - Satellite ID, International Designator, or Satellite Name
- If no contact information is displayed for the secondary object, then:
  - The O/O of the secondary object did not provide any contact information for the secondary object
  - The secondary object is not assigned to any organization (e.g. debris, rocket body, inactive satellite, etc...)
  - The O/O of the secondary object designated the secondary object as PRIVATE

**The O/O Directory is only as good as the contact info provided by PRs**

### 2. The O/O Directory is under the “Directory” tab (See Figure 8).

- Search O/O Directory:
  - Select the “Directory” tab in the Operator Panel
  - To search by:
    - ORGANIZATION: select an organization from the drop-down menu, click “Load”
    - SATELLITE: enter the satellite ID, INTLDES, or satellite name in the “Object” box, click “Search”
  - The top table lists the organization’s “public” contact information; the bottom table lists the “public” satellites (including status/maneuverability) assigned to the organization

**NOTE: If a user searched for a satellite that was designated as private, no contact information will be displayed for that associated organization.**

**NOTE: If a satellite is operated by more than one organization, multiple tabs will appear next to the satellite ID number.**

- To obtain a public list of the entire O/O Directory, go to the following link:  
<https://www.space-track.org/expandedspacedata/query/class/organization/format/html>

HOME **OPERATOR** HELP WWW.SPACE-TRACK.ORG

OPERATOR PANEL  
 CDM **Directory** Manage Help

DIRECTORY:  
 RESOLVED [ 25544 ] to CATALOG ID [ 25544 ] SUCCESSFULLY!

Organizations  
 A ST TEST 00  **Search by organization**

OR

Object  
 Sat ID, INTL DES, or Sat Name  **Search by satellite**

25544 CIS ( 132 ) A ST TEST 00 ( 7 ) **Note that a satellite may be associated with two or more organizations**

LABEL	TYPE	VALUE
Company Website	WEBSITE	www.atest.org
Ops Center 1	COUNTRY	United States
Ops Center 1	EMAIL	ops1@atest.org
Ops Center 1	TIME_ZONE	GMT-8
Ops Center 2	COUNTRY	Australia
Ops Center 2	EMAIL	ops2@atest.org
Ops Center 2	TIME_ZONE	GMT+9
Primary	LANGUAGE	English
Public Affairs	PHONE	+1-555-123-4567
Secondary	LANGUAGE	Spanish

**Public contact information for organization**

SATELLITE ID	NAME	INT'L DESIGNATOR	STATUS	MANEUVERABLE
1	SL-1 R/B	1957-001A	Unknown	Unknown
2	SPUTNIK 1	1957-001B	Unknown	Unknown
3	SPUTNIK 2	1957-002A	Unknown	Unknown
50	DELTA 1 R/B	1960-009B	Unknown	Unknown
60	EXPLORER 8	1960-014A	Unknown	Unknown

**List of public satellites (including status/maneuverability) assigned to that organization**

INSTRUCTIONS:  
 • Select an organization from the 'Organizations' box to load all the Contact Info for that Organization.  
 • Use the search box to look for contact info by Satellite ID, International Designator, or Satellite Name. Your search box entry must match exactly in order to resolve successfully.

LEGEND:  
 • An Object is Dead when it cannot perform its mission nor function and cannot be controlled.  
 • An Object is Maneuverable if it can avoid conjunctions.

Figure 8. O/O Directory

## CHAPTER 5 – HELP MENU

1. The Help menu has useful information that may assist PRs and other satellite O/Os (See Figure 9):

### On-Orbit Information:

- Space Fence Conjunction Assessment Integration Plan: describes the Space Fence data trial period.
- Spaceflight Safety Handbook for Operators: describes the processes 18 SPCS uses for Satellite Conjunction Assessment & Collision Avoidance.
- Launch Conjunction Assessment Handbook: describes the processes 18 SPCS uses for identifying close approaches between the planned trajectory(s) of a launch vehicle and other man-made objects on orbit.
- Example Maneuver Notification - minimum information: an example containing obligatory entries.
- Example Maneuver Notification - expanded information: an example containing both obligatory and optional entries.
- How the 18 SPCS Calculates Probability of Collision: explains the probability of collision calculations for a conjunction between two objects in earth orbit.
- CCSDS Conjunction Data Message (CDM) Blue Book: Specifies a standard message format for use in exchanging spacecraft conjunction information between originators of Conjunction Assessments (CAs) and satellite owner/operators and other authorized parties. The CDM is an ASCII formatted message which contains information about a conjunction between a high interest space object and another resident space object
- CCSDS Orbit Data Messages (ODM) Blue Book: Specifies three standard message formats for use in transferring spacecraft orbit information between space agencies and commercial or governmental spacecraft operators: the Orbit Parameter Message (OPM), the Orbit Mean-Elements Message (OMM), and the Orbit Ephemeris Message (OEM).

### New CDM (Effective Date):

- List of changes: describes the changes to the CDM as of the effective date.
- Examples: Sample CDMs for near earth and deep space objects in various file formats.

### Space-Track Information:

- Space-Track Handbook for Operators: Provides a link to this document. It contains guidelines for PRs regarding how to navigate through the Operator Panel.
- How to upload/download/delete files through Space-Track's API: a link to the Help panel.

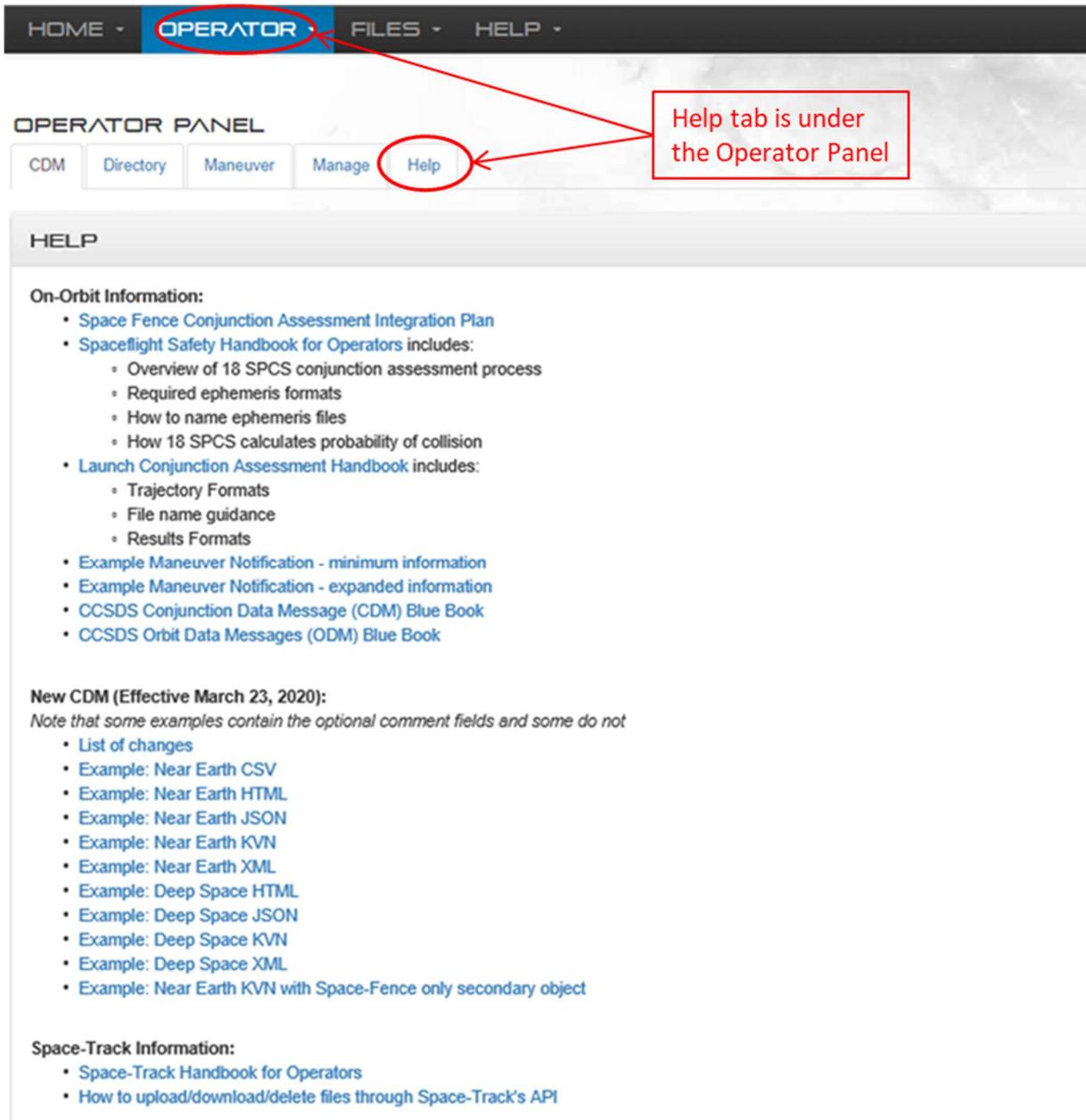


Figure 9. Help Menu

## APPENDIX A – LIST OF DEFINITIONS AND ACRONYMS

### ***Definitions:***

Accounts - Users may have individual or entity email accounts on Space-Track.org, but these may also be linked to an organization's "CDM" account

Active - Indicates the satellite is able to perform its mission, function and can be controlled/not dead

“CDM Notification” Privilege - Users will receive CDM notifications via email from Space-Track.org and will have access to CDMs online

“CDM Online” Privilege - Users have access to CDMs online, but will not receive email notifications from Space-Track.org

Dead - Indicates the satellite cannot perform its mission/function and cannot be controlled

International Designator (INTLDES) - A format for uniquely identifying a space object using the launch year, also known as “COSPAR” or “NSSDC ID” (e.g., 1958-002B, 1998-067A, etc.)

Intra-Constellation CDMs - Conjunction warnings in which both objects belong to the same organization

Maneuverable - Identifies whether a satellite is able to avoid conjunctions (See Yes, No, and Unknown)

No - Indicates the satellite is not able to avoid conjunctions (Maneuverable = NO)

Organization - A group of individuals associated with a list of satellites. Also referred to as “CDM Group” or “CDM Account”

Private - Data (contact information and satellite condition information) is only viewable by the 18 SPCS and is not displayed in the O/O Directory or in CDMs

Public - Data (contact information and satellite condition information) is viewable in the O/O Directory and CDMs by any Space-Track user who has CDM Notification or CDM Online privileges

Satellite Identification - Satellite catalog number (e.g., 25544, 60, etc.)

Satellite name - The name associated with the satellite based on the Satellite Catalog. Also referred to as “Common name” or “Object name” (e.g., ISS (ZARYA), EXPLORER 1, etc.)

Status - Identifies whether a satellite is able to perform its mission/function and can be controlled (See Active, Dead, and Unknown)

Unknown - Indicates the satellite status or maneuverability is unconfirmed

Yes - Indicates the satellite is able to avoid Conjunctions (Maneuverable = YES)

**Acronyms:**

18 SPCS – 18th Space Control Squadron

CA – Conjunction Assessment

CAN – Close Approach Notification

CCSDS – Consultative Committee for Space Data Systems

CDM – Conjunction Data Message

HBR – Hard Body Radius

ID – Identification

INTLDES – International Designator

ODR – Orbital Data Request

O/O – Owner/Operator

PR – Primary Representative

SSA – Space Situational Awareness

USG – United States Government

UTC – Universal Time Coordinated

## **APPENDIX B – LIST OF POINTS OF CONTACT (POC)**

1. General inquiries (account settings, Primary Representative support, etc.):  
[18SPCS.DOO.CustomerService@us.af.mil](mailto:18SPCS.DOO.CustomerService@us.af.mil)
2. ODR Support (non-USG): [18SPCS.doo.SSAsharing@us.af.mil](mailto:18SPCS.doo.SSAsharing@us.af.mil)
3. ODR Support (U.S. Gov't and FVEY): [18SPCS.doo.OrbitalDataRequest@us.af.mil](mailto:18SPCS.doo.OrbitalDataRequest@us.af.mil)
4. Website Support: [admin@space-track.org](mailto:admin@space-track.org)
5. 18 SPCS Support (24/7): [18SPCS.doo.Orbitalsafety@us.af.mil](mailto:18SPCS.doo.Orbitalsafety@us.af.mil)