



United States Space Force (SMC / ECX / EGS)

Space Enterprise User Experience Design System (UXDS)

Wireframes For Flight Dynamics Service (FDS)

April 9, 2020



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Orbit Determination

- Mission Access
- Mission Access
- Mission Access
- Preferences
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SPACECRAFT #

Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #
Spacecraft #

- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties

Catalog ID: #####

Semi-Major Axis (km): ##.#####

Perigee (km): ##.#####

Inclination (deg): ##.#####

Eccentricity: ##.#####

Mass: ##.#####

Inputs Outputs

Update database file to initialize new orbit

Database File:

Orbit Source: Ephemeris

Epoch:

Epoch Range:

Epoch Span:

Thrust Profile:

Processed Track File:

Determine Orbit

OD Solution OD Performance

OD Successfully Completed on MM/DD/YY 00:00

5 Deviations Warning (4) Critical (1)

Secondary Action Primary Action

View Table View Graph More

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Critical #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT #

Inputs Outputs

⚠️ Update database file to initialize new orbit

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

OD Solution OD Performance

OD Successfully Completed on MM/DD/YY 00:00

5 Deviations ⚠️ Warning (4) ❌ Critical (1)

Secondary Action Primary Action

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	#.###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	❌ #.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	#.###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit

- Action Item
- Action Item
- Action Item
- Action Item
- ⚙️ Display Settings

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT #

Inputs **Outputs**

Select the products you need to output

- Product Output
- Product Output
 - Format A
 - Format B
- Product Output
- Product Output
- Product Output
 - Include
 - Include
 - Include
- Product Output
- Product Output

Determine Orbit

OD Solution OD Performance

OD Successfully Completed on MM/DD/YY 00:00

5 Deviations Warning (4) Critical (1) Secondary Action Primary Action

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning: #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Critical: #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning: #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning: #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning: #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning: #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT

Inputs Outputs

Update database file to initialize new orbit

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

OD Solution OD Performance

OD Successfully Completed on MM/DD/YY 00:00

5 Deviations Warning (4) Critical (1)

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Critical	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	Warning	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit

Applied Method of Deviation [More Info >](#)

- Scenarios
- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Scenario B
 - Scenario C
 - Scenario D

SPACECRAFT

Inputs Outputs

⚠ Update database file to initialize new orbit

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Spacecraft Properties

Catalog ID: #####

Semi-Major Axis (km): ##.#####

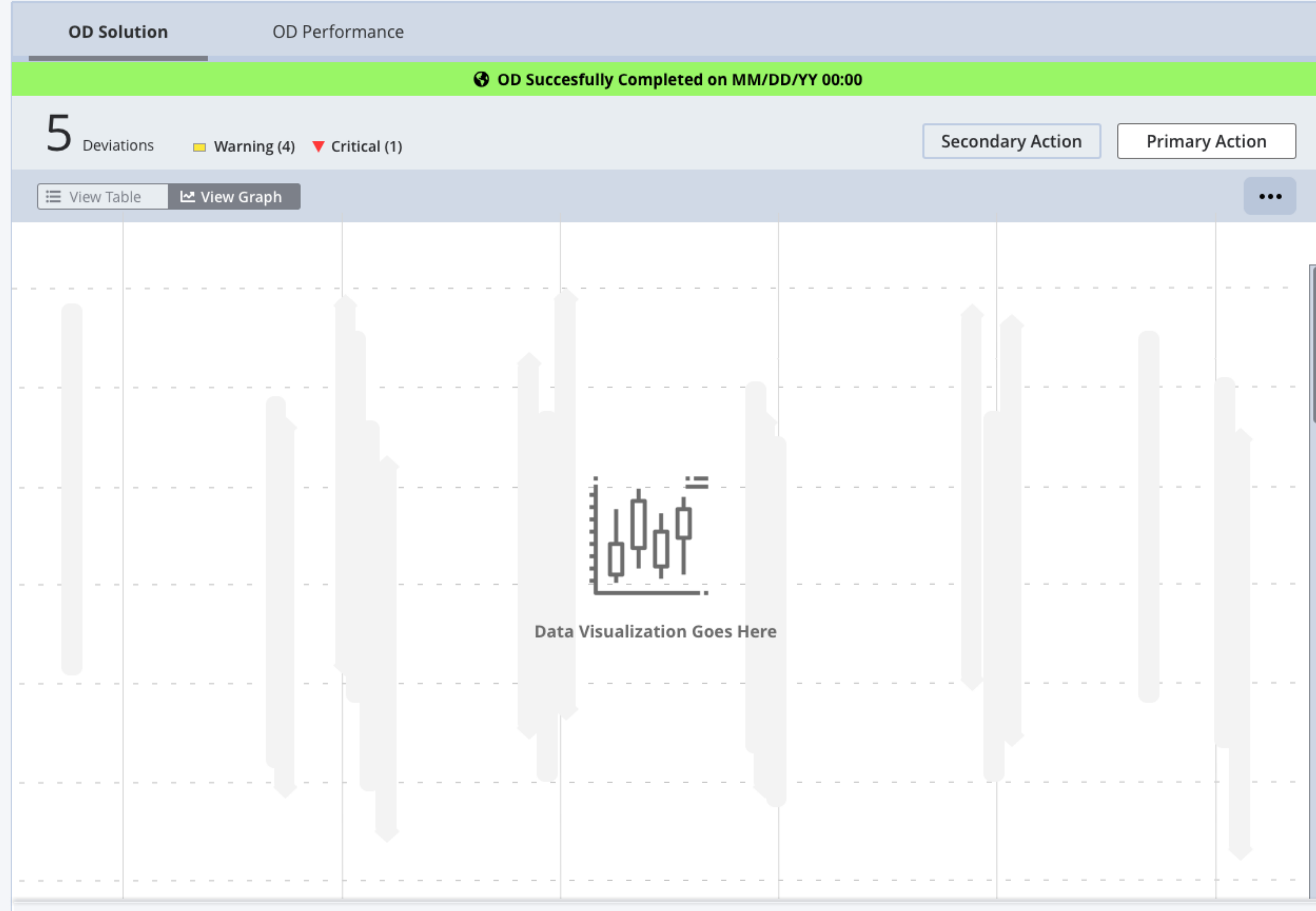
Perigee (km): ##.#####

Inclination (deg): ##.#####

Eccentricity: ##.#####

Mass: ##.#####

Determine Orbit



Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

Catalog ID: #####

Semi-Major Axis (km) ⚡
#.#####

Perigee (km) ⚡
#.#####

Inclination (deg) ⚡
#.#####

Eccentricity:
#.#####

Mass:
#.#####

SPACECRAFT

Inputs Outputs

⚠️ Update database file to initialize new orbit

Database File

Latest Track File

Recent Track Files

track_12242019_1.trk

track_12212019_2.trk

track_12212019_1.trk

track_12182019_1.trk

track_12122019_3.trk

track_12182019_2.trk

Locate Track File

MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span

Days

Thrust Profile

input_file_name.abc

Processed Track File

input_file_name.abc

Determine Orbit

OD Solution OD Performance

🟢 OD Successfully Completed on MM/DD/YY 00:00

5 Deviations ⚠️ Warning (4) 🔴 Critical (1)

Secondary Action Primary Action

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	🔴 #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	###-##	Unit
<input type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	⚠️ #.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	###-##	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT

Inputs Outputs

Database file is up to date ✓

Database File
input_file_name.abc ✓

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

Orbit Initialized

5 Deviations Warning (4) Critical (1)

Secondary Action Primary Action

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit

Catalog ID:
#####

Semi-Major Axis (km) ⚡
#####

Perigee (km) ⚡
#####

Inclination (deg) ⚡
#####

Eccentricity:
#####

Mass:
#####

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

Catalog ID: #####

Semi-Major Axis (km): ##.#####

Perigee (km): ##.#####

Inclination (deg): ##.#####

Eccentricity: ##.#####

Mass: ##.#####

SPACECRAFT

Inputs Outputs

Database file is up to date ✓

Database File
input_file_name.abc ✓

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

Orbit Initialized

5 Deviations Warning (4) Critical (1)

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit

Orbit Determination in Progress..

Cancel OD

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT #

Inputs Outputs

Database file is up to date ✓

Database File
input_file_name.abc ✓

Orbit Source
Ephemeris input_file_name.abc

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

X OD Failed to Complete on 03/10/2020 10:00 [view details](#)

5 Deviations Warning (4) Critical (1)

Secondary Action Primary Action

View Table View Graph

<input type="checkbox"/>	Solve For	Initial State	Final State	Difference	Std Dev	Units
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	-	-	###-##	Unit

Catalog ID:
#####

Semi-Major Axis (km) ⚡
#####

Perigee (km) ⚡
#####

Inclination (deg) ⚡
#####

Eccentricity:
#####

Mass:
#####

Toolkit: Track Data Utility

FDS DSCS
J. Smith

Orbit Determination Maneuvering Reporting

070 00:00:00 UTC
Date Time



Scenarios +

- Scenario A
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

Catalog ID: #####

Semi-Major Axis (km): ##.#####

Perigee (km): ##.#####

Inclination (deg): ##.#####

Eccentricity: ##.#####

Mass: ##.#####

SPACECRAFT #

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - M

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit

Tracking Data Utility: IRON ####

Select Files Filter/Edit Data

Raw Track Files Filter By: Last 7 Days

<input type="checkbox"/> File Name	Date ↓	File Size ↓
New track file was added		
<input type="checkbox"/> trackfile_03a	MM/DD/YYYY	565 kb
<input checked="" type="checkbox"/> trackfile_01	MM/DD/YYYY	18 kb
<input type="checkbox"/> trackfile_02	MM/DD/YYYY	743 kb
<input checked="" type="checkbox"/> trackfile_03	MM/DD/YYYY	1245 kb
<input type="checkbox"/> trackfile_04	MM/DD/YYYY	458 kb
<input checked="" type="checkbox"/> trackfile_05	MM/DD/YYYY	790 kb
<input checked="" type="checkbox"/> trackfile_01	MM/DD/YYYY	499 kb
<input checked="" type="checkbox"/> trackfile_07	MM/DD/YYYY	7 kb
<input type="checkbox"/> trackfile_08	MM/DD/YYYY	2343 kb
<input type="checkbox"/> trackfile_09	MM/DD/YYYY	800 kb
<input checked="" type="checkbox"/> trackfile_10	MM/DD/YYYY	459 kb
<input checked="" type="checkbox"/> trackfile_11	MM/DD/YYYY	195 kb
<input checked="" type="checkbox"/> trackfile_12	MM/DD/YYYY	195 kb
<input checked="" type="checkbox"/> trackfile_13	MM/DD/YYYY	195 kb
<input checked="" type="checkbox"/> trackfile_14	MM/DD/YYYY	195 kb
<input checked="" type="checkbox"/> trackfile_15	MM/DD/YYYY	1245 kb

trackfile_03 Cancel Save As

Edit Track File

Compare Create Report

Log Track Data Propagator

Secondary Action Primary Action

Std Dev	Units
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties

SPACECRAFT #

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

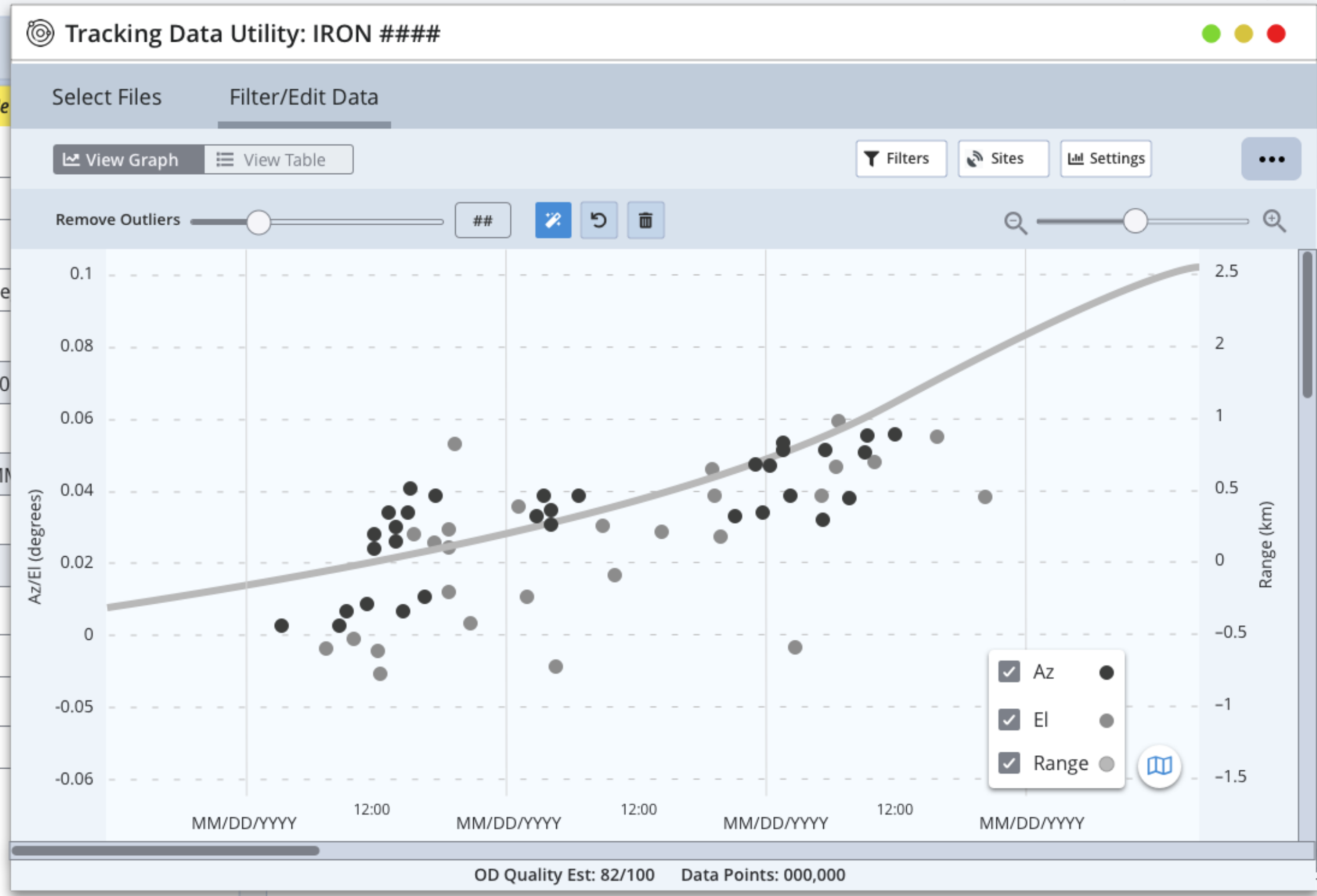
Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit



Log Track Data Propagator

Secondary Action Primary Action

Std Dev	Units
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit
###-##	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	###-##	Unit

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Orbit Determination

Maneuvering

Reporting

070

00:00:00 UTC

Date

Time



Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Scenario B
 - Scenario C
 - Scenario D
- Spacecraft Properties

SPACECRAFT #

Inputs

⚠ Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Catalog ID: #####

Semi-Major Axis (km) ⚡
#.#####

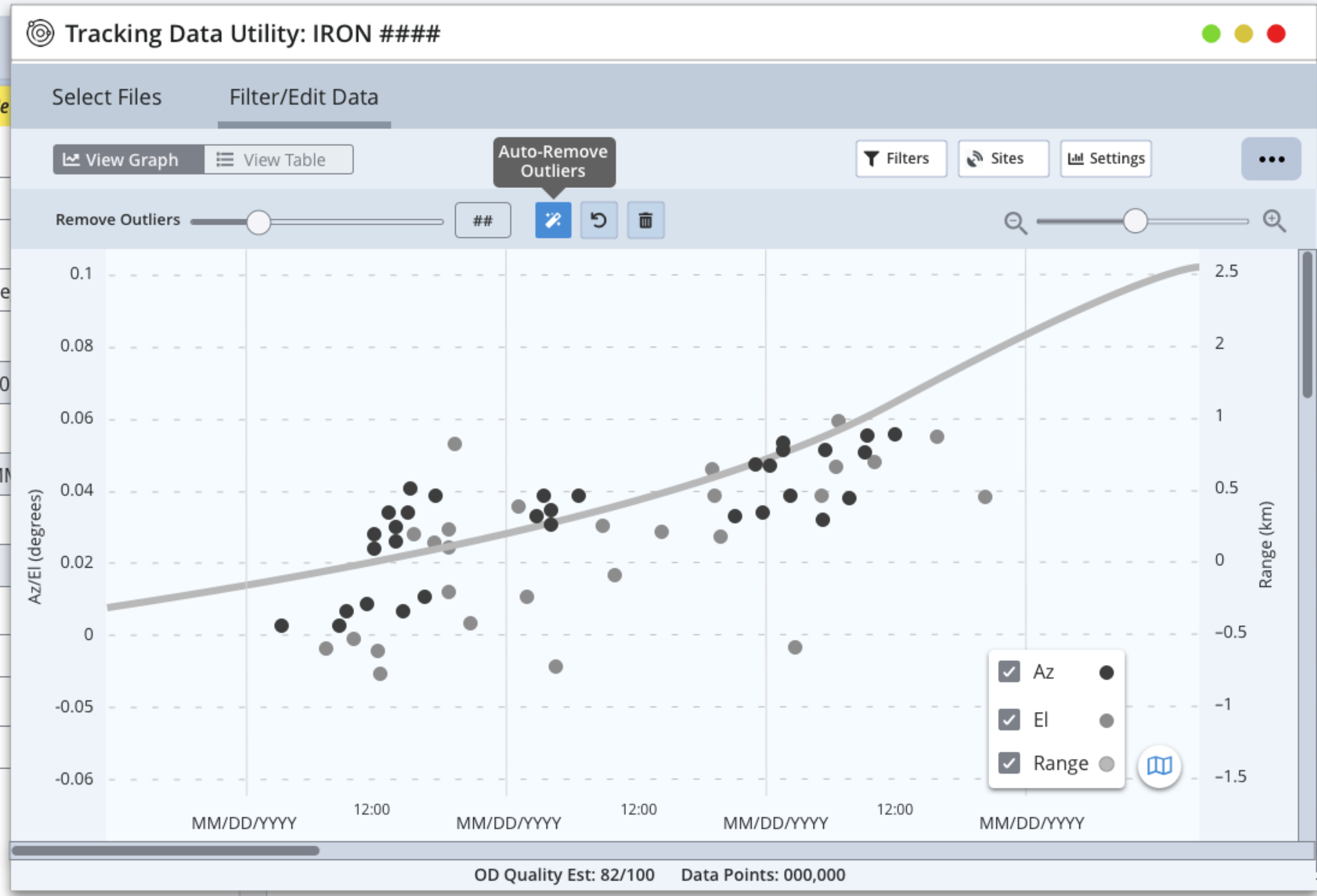
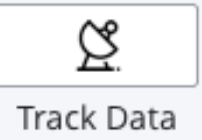
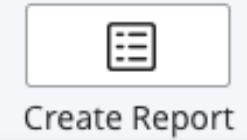
Perigee (km) ⚡
#.#####

Inclination (deg) ⚡
#.#####

Eccentricity:
#.#####

Mass:
#.#####

Determine Orbit



Secondary Action Primary Action

Std Dev	Units
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT #

Inputs

⚠️ Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Catalog ID: #####

Semi-Major Axis (km): #.#

Perigee (km): #.#

Inclination (deg): #.#

Eccentricity: #.#

Mass: #.#



Compare Create Report

Log Track Data Propagator

Secondary Action Primary Action

Std Dev	Units
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

Determine Orbit

Scenarios

+ Scenario A

- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #

Scenario B

Scenario C

Scenario D

Spacecraft Properties

Catalog ID: #####

Semi-Major Axis (km): ####.#####

Perigee (km): ####.#####

Inclination (deg): ####.#####

Eccentricity: ####.#####

Mass: ####.#####

SPACECRAFT

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

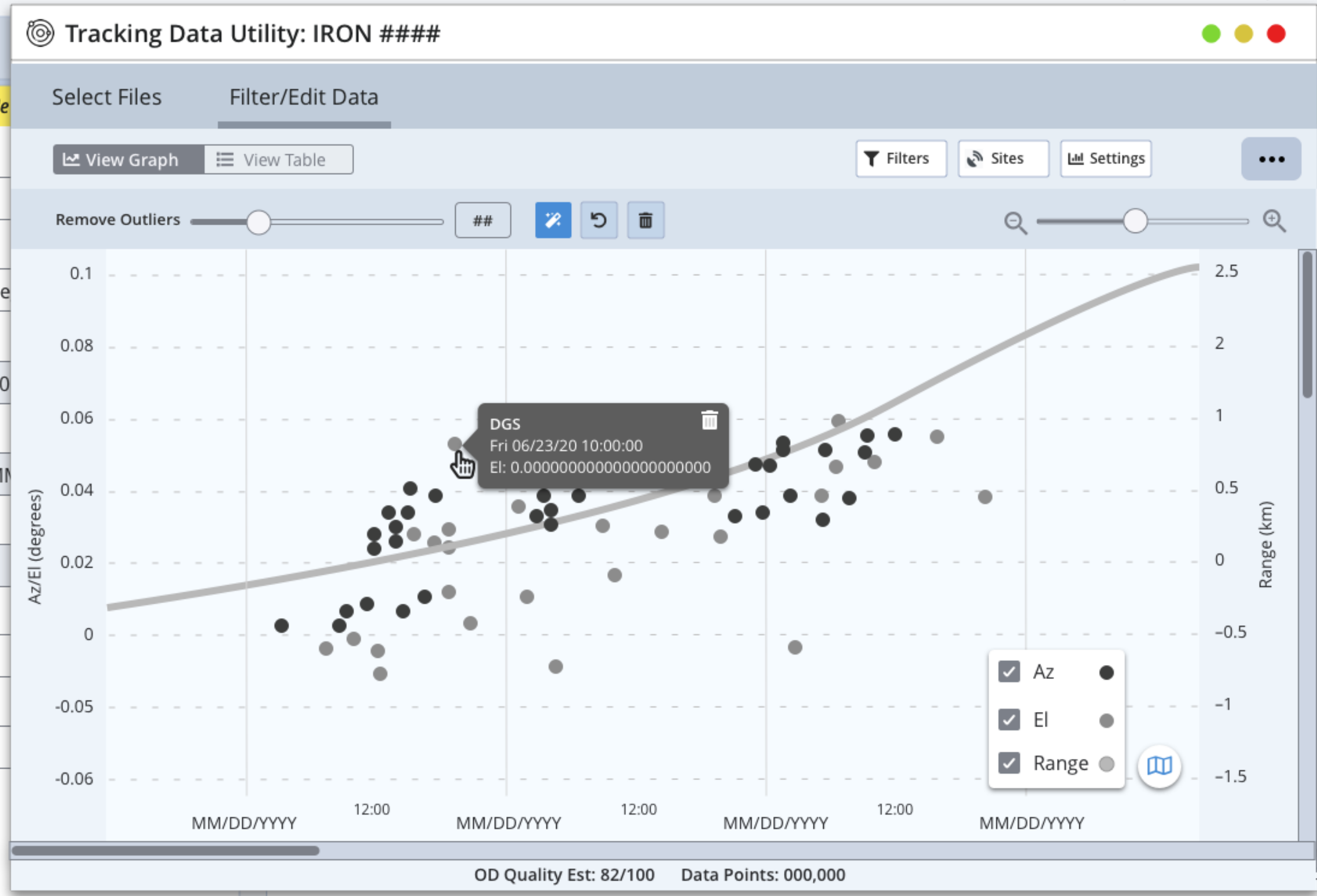
Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Determine Orbit



Compare Create Report

Log Track Data Propagator

Secondary Action Primary Action

Std Dev	Units
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit
#####	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties ⚙️

SPACECRAFT

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Catalog ID:
#####

Semi-Major Axis (km) \updownarrow
#####

Perigee (km) \updownarrow
#####

Inclination (deg) \updownarrow
#####

Eccentricity:
#####

Mass:
#####

Determine Orbit



Data Filters

Antenna
Cumulative

- Data Filter
- Data Filter
- Data Filter
- Data Filter
- Data Filter

Value: ##### secs

Value: ##### secs

Value: ##### secs

Apply

Secondary Action	Primary Action	Std Dev	Units
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

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Orbit Determination Maneuvering Reporting

070 00:00:00 UTC
Date Time



- Scenarios
- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Scenario B
 - Scenario C
 - Scenario D
- Spacecraft Properties

SPACECRAFT #

Inputs

Update database file

Database File: input_file_name.abc

Orbit Source: Ephemeris input_file

Epoch: MM/DD/YY 00:00:00 .000

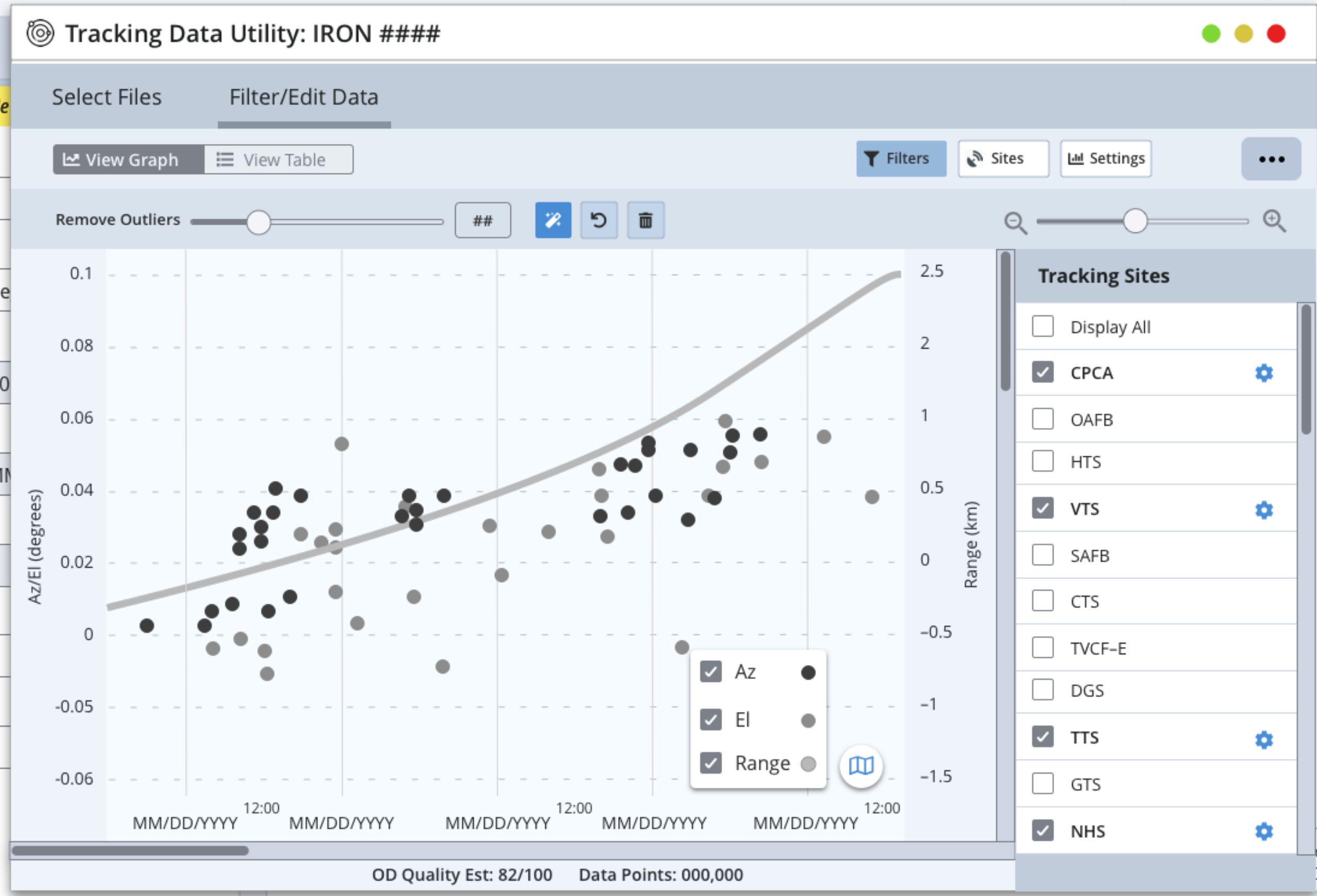
Epoch Range: MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span: # Days

Thrust Profile: input_file_name.abc

Processed Track File: input_file_name.abc

Determine Orbit



Secondary Action	Primary Action	Std Dev	Units
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit
[...]	[...]	####-##	Unit

<input checked="" type="checkbox"/>	Orbit Property	####-##	####-##	####-##	####-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	####-##	####-##	####-##	####-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	####-##	####-##	####-##	####-##	Unit

FDS DSCS
J. Smith

Orbit Determination Maneuvering Reporting

070 00:00:00 UTC
Date Time



Compare Create Report Log Track Data Propagator

- Scenarios
- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Scenario B
 - Scenario C
 - Scenario D
- Spacecraft Properties

SPACECRAFT

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Catalog ID: #####

Semi-Major Axis (km): #####

Perigee (km): #####

Inclination (deg): #####

Eccentricity: #####

Mass: #####

Tracking Data Utility: IRON

Select Files
Filter/Edit Data

View Graph
View Table
Filters
Sites
Settings

Remove Outliers ##

OD Quality Est: 82/100 Data Points: 000,000

Solve for CPCA

- Solve Property
- Solve Property
- Solve Property
- Solve Property

Bias: ##### deg

Uncertainty: #####

- Solve Property
- Solve Property
- TTS
- NHS

Cancel Save

Secondary Action	Primary Action	Std Dev	Units
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit
		#####	Unit

Determine Orbit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####	Unit

Scenarios +

- ▼ **Scenario A**
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- Spacecraft #
- ▶ **Scenario B**
- ▶ **Scenario C**
- ▶ **Scenario D**

Spacecraft Properties ⚙️

SPACECRAFT #

Inputs

⚠️ Update database file

Database File: input_file_name.abc

Orbit Source: Ephemeris | input_file

Epoch: MM/DD/YY 00:00:00 .000

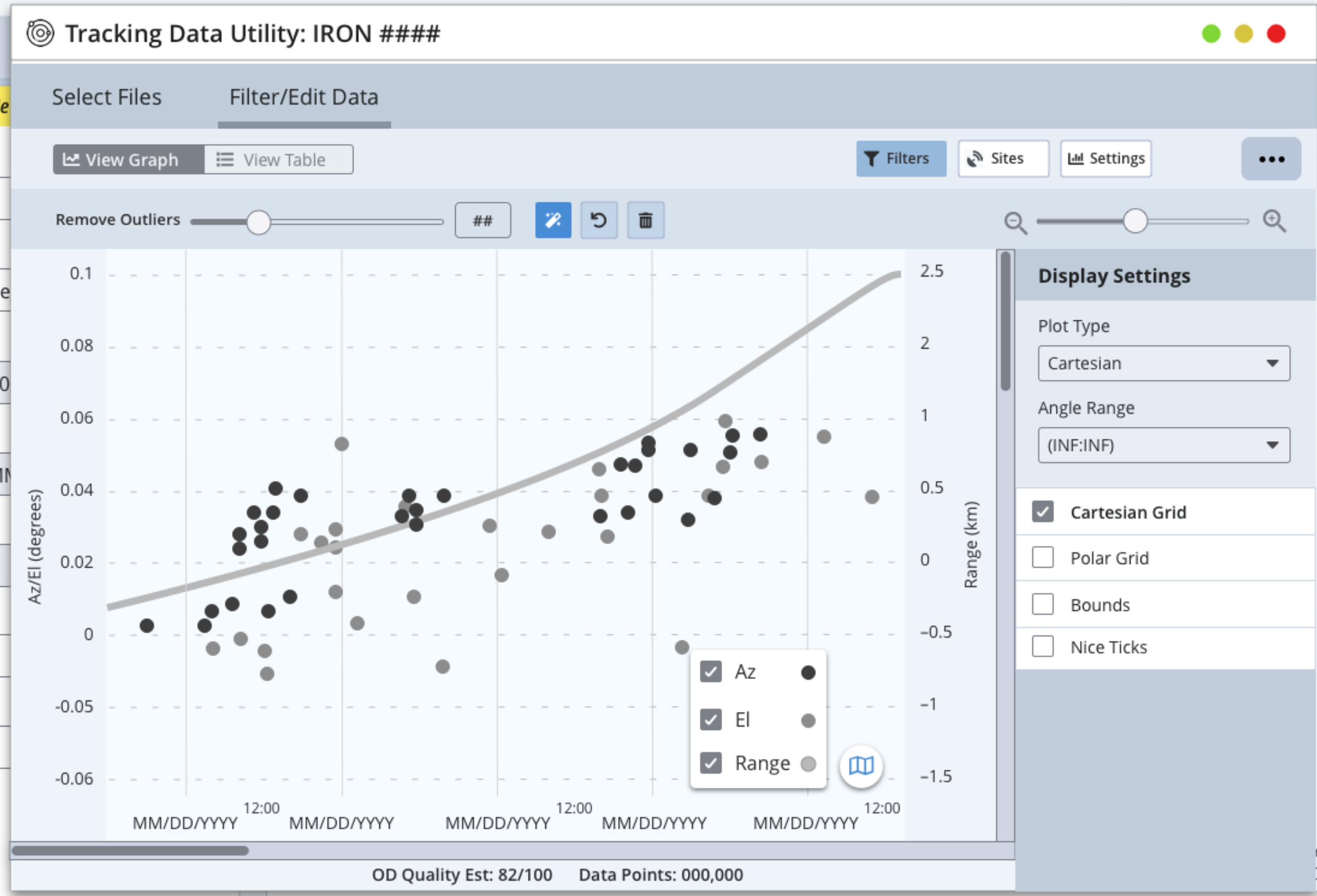
Epoch Range: MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span: # Days

Thrust Profile: input_file_name.abc

Processed Track File: input_file_name.abc

Determine Orbit



Secondary Action	Primary Action	Std Dev	Units
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit
		#####-##	Unit

<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#####	#####	#####	#####-##	Unit

Toolkit: Propagator Utility

- Scenarios
- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D
- Spacecraft Properties

SPACECRAFT #

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Catalog ID: #####
Semi-Major Axis (km): ##.#####
Perigee (km): ##.#####
Inclination (deg): ##.#####
Eccentricity: ##.#####
Mass: ##.#####

Determine Orbit

Propagator Utility

Input Source View Orbit

Controls

Source Settings

Orbit Source: TLE

Epoch Settings

Epoch: YYYY/MM/DD

Date & Duration Settings

Date Format: UTC YmdHMs3

Start Date: YYYY/MM/DD Start Time: HH:MM:SS Span (Days): #

Include Item:

Recent TLE Files

- tle_12242019_1.tle
- tle_12242019_1.tle
- tle_12242019_1.tle
- tle_12242019_1.tle
- tle_12242019_1.tle

Import TLE File

Secondary Action Primary Action

	Std Dev	Units
<input checked="" type="checkbox"/> Orbit Property	#####	Unit
<input checked="" type="checkbox"/> Orbit Property	#####	Unit
<input checked="" type="checkbox"/> Orbit Property	#####	Unit

Toolkit: Log Utility

Scenarios +

- Scenario A
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
 - Spacecraft #
- Scenario B
- Scenario C
- Scenario D

Spacecraft Properties

SPACECRAFT #

Inputs

Update database file

Database File
input_file_name.abc

Orbit Source
Ephemeris input_file

Epoch
MM/DD/YY 00:00:00 .000

Epoch Range
MM/DD/YY 00:00:00 - MM/DD/YY 00:00:00

Epoch Span
Days

Thrust Profile
input_file_name.abc

Processed Track File
input_file_name.abc

Log Utility: Satellite

Log A Log B

Controls

Time	Event
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu
12:23:32	ut venenatis tellus in metus vulputate eu

Compare Create Report

Log Track Data Propagator

Secondary Action Primary Action

Std Dev Units

#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit
#.###-##	Unit

<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit
<input checked="" type="checkbox"/>	Orbit Property	#.#####	#.#####	#.#####	#.###-##	Unit