MarkPoint

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Explore

Known Bugs

JIRA Bugs:

I did a bug search in JIRA by selecting MarkPoint (FRC-24) under components and found that there are no P1 or P2 open bugs for FRC-24 feature.

Failing Tests

There are no failing tests in the nightly regression reports for MarkPoint feature.

Other Findings

Issue 1: In either the GUI or Script mode, in the Mission Tree, when you try to plot: Propagate>MarkPoint OR MarkPoint>Propagate>MarkPoint, then MarkPoints do not show up on the XYPlots. For more details, consult **GMT-3232.**

Recommendation: Fix (Fix by: R2013a, Priority: P2 **GMT-3232** was created in JIRA to address this issue.

Requirements

Accepted by CCB 30 Oct 2013.

FRC-24.1	The system shall have a command named Mark Point that allows the user to add a special mark point character to highlight an individual plot data point in an XY-Plot.

Interface/Functional Spec

Overview

The MarkPoint Command allows you to add a special mark point character on an XYPlot

Script Syntax

MarkPoint *OutputNames*

OutputNames

- *OutputNames* is the list of subscribers and a special mark point will be added to each subscribers' XYPlot. When mark points need to be added to multiple subscribers, then the subscribers need to be separated by a space.

Description

The MarkPoint Command allows you to add a special mark point character to highlight a single data point on an XYPlot. MarkPoint command works only for XYPlot subscriber. This command also allows you to add special mark points on multiple XYPlot objects. MarkPoint command can be used through GMAT's GUI or the script interface.

Fields

See the User Interface Spec spreadsheet for reference information for fields. This section is usually empty other than the hyperlink.

GUI

Figure below shows default settings for MarkPoint command:

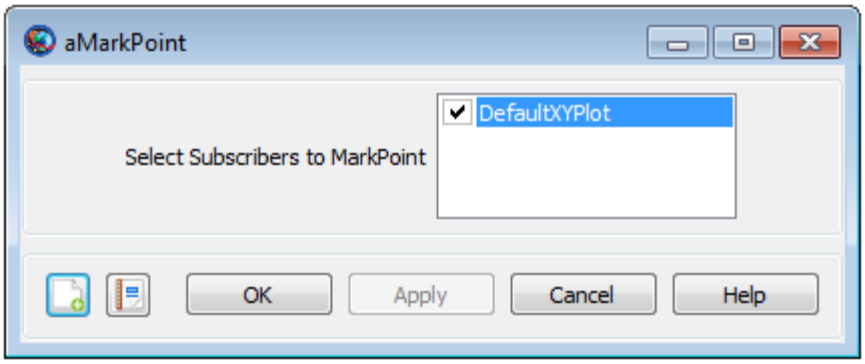

Figure: Default Name and Settings for MarkPoint command Dialog box

Remarks

GMAT allows you to insert MarkPoint Command into the Mission tree at any location. This allows you to add special mark points on an XYPlot at any point in your mission. The XYPlot subscriber plots data at each propagation step of the entire mission duration. If you to want to place mark points on an XYPlot at specific points, then a MarkPoint command can be inserted into the mission sequence to control when mark points are placed onto an XYPlot. See the Examples section below to see how MarkPoint command can be used in the Mission tree.

Examples

This example shows how to use MarkPoint Command on multiple subscribers. Mark points are added on two XYPlots after every 0.2 days through an iterative loop:

```
Create Spacecraft aSat;
Create Propagator aProp;

Create XYPlot aPlot1 aPlot2;

GMAT aPlot1.XVariable = aSat.A1ModJulian;
GMAT aPlot1.YVariables = {aSat.EarthMJ2000Eq.X};

GMAT aPlot2.XVariable = aSat.A1ModJulian;
GMAT aPlot2.YVariables = {aSat.EarthMJ2000Eq.VX};

BeginMissionSequence;
```

```
While aSat.ElapsedDays < 1.0
  MarkPoint aPlot1 aPlot2;
  Propagate aProp(aSat) {aSat.ElapsedDays = 0.2};
EndWhile;
```

This example shows how to use MarkPoint on a single subscriber. In this example, mark points are placed on the XYPlot the moment spacecraft's altitude goes below 750 Km. Note that mark points are placed on the XYPlot at every integration step:

```
Create Spacecraft aSat;
Create Propagator aProp;

Create XYPlot aPlot1;

GMAT aPlot1.XVariable = aSat.A1ModJulian;
GMAT aPlot1.YVariables = {aSat.Earth.Altitude};

BeginMissionSequence;

While aSat.ElapsedDays < 2
   Propagate aProp(aSat);
   If aSat.Earth.Altitude < 750
      MarkPoint aPlot1;
   EndIf;
EndWhile;
```

Test Procedures

Assumptions

- All tests use non-default values

File Naming Conventions

The goal of the naming convention is to allow people to intuitively understand the purpose of the test by the name of the test file. The file naming conventions in this section are guidelines to be used when they “make sense” and are to be modified when they don’t “make sense”. They’re not strict rules.

MarkPoint command uses the following format for nominal tests:

GMAT_MarkPoint_<*description of test*>

MarkPoint command uses the following format for validation tests:

GMAT_MarkPoint_Validation_<*description of test*>

Nominal Tests

Priority	**Status**	**Summary**
P1	Done RHQ	Test whether the system allows the user to add a special mark point character to highlight an individual plot data point in an XYPlot.
P1	Done RHQ	Test whether MarkPoint command is used properly when using it on multiple XYPlot subscribers

Edge/Corner/Miscellaneous Tests

I cannot think of any as of yet.

Priority	Status	Summary

Unique Validation Tests

These are unique validation tests that are required for special field or object couplings.

Priority	**Status**	**Summary**
P1	Done RHQ	Test whether MarkPoint command accepts OrbitView subscriber. It should only accept XYPlot
P1	Done RHQ	Test whether MarkPoint command accepts ReportFile subscriber. It should only accept XYPlot
P1	Done RHQ	Test whether MarkPoint command accepts GroundTrackPlot subscriber. It should only accept XYPlot
P1	Done RHQ	Test whether MarkPoint command accepts Ephemeris subscriber. It should only accept XYPlot
PI	Done RHQ	Test other range constraints on MarkPoint command

Unique Mode Tests

I cannot think of any unique mode tests for this object.

Priority	Status	Summary

Unique GUI Tests

These are tests that are unique to the GUI interface for this feature that are not covered by the standard GUI test template and procedures. I cannot think of any at this point.

Priority	Status	Summary