

DRAT a brief overview

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Overview

- Where to find information?
- How do I tell what version of DRAT I am running?
- How to run DRAT?
- How to configure DRAT?
- Filter vs. Factory

Overview Continued

- Pass Through – How to use, notes, and suggestions
- How to process data using DRAT?
- Which mode should I use?
- What files do I need to run DRAT?
- What is the difference between the various files?
- What should I do if I have problems?

Where to find information?

Information on DRAT

- This presentation
 - Available as a PDF at <http://www.faa.gov/go/tgf/> under “DRAT a brief overview ”
- DRAT Manual
 - Online as a PDF file from <http://www.faa.gov/go/tgf/> under “TGF Data Reduction and Analysis Toolkit (DRAT)”
 - Through DRAT’s *Help* menu as HTML

DRAT Help Menu



How do I tell what version of
DRAT I am running?

DRAT version

- Under the *Help* menu there is an *About* option.



- If you click on it a dialog will be displayed. The information displayed is important for helping to troubleshoot problems.

About Box



More on About Box

- The SVN Version Number is useful if there is a problem running DRAT. This Number is found on the About Box next to “SVN Version:”. For example in the previous slide the SVN Version Number is 30132.

How to run DRAT?

Running DRAT

- The easiest way to run DRAT is to create a shortcut that points to the DRAT jar. This will run DRAT in GUI mode.

Running Drat (2)

- From Command Line

- The command line to run DRAT in GUI mode:

```
java -Xmx1000M -cp <tgf jar file> faa.tg.dra.gui.Drat
```

- Where <tgf jar file > is replaced with a TGF jar file for example /tgf/lib/tgf.jar. In this case the command line would look like:

```
java -Xmx1000M -cp /tgf/lib/tgf.jar  
faa.tg.dra.gui.Drat
```

Running Drat (3)

- For more information on how to run DRAT using command line options see Appendix D. Command Line Options of the DRAT Manual.

How to configure DRAT?

Configure DRAT

- Start DRAT in GUI mode this makes creating a configuration file easier.
- *Recordable Reader* usually goes 1st
 - **Note:** The only tool that can appear before a Recordable Reader is a Comment.
- If PTT data is desired then the *PTT Reader* should go next.
- Any *Filters* or *Factories* in the order you wish to apply them.

More configuration

- *Writers* go at the end of the configuration (can have more than one).
 - Most commonly used
 - Delim – generates comma separated output that can be read into Excel or similar programs.
 - Text – generates plain text output.
- *Comments* allow you to type in a brief comment about a configuration. They are not sent to the data and can go anywhere you want.
- Once you have DRAT set up the way you like it you should save the configuration.

Filter vs. Factory

Difference between Filter and Factory

- A Filter will filter out data that contains a given item that does not meet a set criteria.
- A Factory creates requested data such as statistical averages.

Pass Through

Pass Through (2)

- *Pass Through* is an option on most Filters and Factories that allows the user to specify how to deal with extraneous information.
- *Readers* and *Writers* automatically will allow all data received through onto the next tool in the configuration.
- By default Factories and Filters pass onward time updates and simulation termination data.

Pass Through for Filters

- Determines whether to send onward data that does not have the type of information the Filter is interested in.
- For example the *Runway Filter* filters data with a runway like an “Aircraft”. If for example data about a command issued during a run is received and Pass Through is:
 - **Not** checked then this data is **not** sent onward to other tools.
 - **Is** checked then this this data is sent onward to other tools.

Pass Through for Factories

- Determines whether data not generated by the Factory is passed onward.
- For example the *SP Cmd Count Factory* generates information about the commands issued during a run. If for example data about “Aircraft” is received and Pass Through is:
 - **Not** checked then this data is **not** sent onward to other tools.
 - **Is** checked then this this data is sent onward to other tools.

Pass Through Notes

- If Pass Through is enabled on filters/factories than:
 - You will get lots of data/files that you may not be interested in.
 - But all of the filters and factories will get the data that they need to run.
- If Pass Through is **not** enabled on filters/factories than:
 - You will get only the data/files interested in.
 - But all of the filters and factories may not get the data that they need to run.

Suggestion Pass Through

- Turn off pass through
- Set up a configuration to do one specific thing
- Run your set of configuration files in batch mode

How to process data using DRAT?

Two ways to process Data

- GUI – a Graphical User Interface
- Batch
 - Command Line – batch job run via a command entered into a terminal.
 - Batch Wizard – GUI designed to make running batch jobs easier.

Using Mode to process data

- GUI mode
 - Load configuration
 - Make any necessary changes to input and output file names
 - Press Run
 - Repeat
- Batch mode
 - Use Command Line
 - Set up command line with
 - Configuration files
 - TGF Recording files
 - PTT Log files
 - Run command
 - Use Batch Wizard
 - Follow steps

Advantages

- GUI
 - Easy to create/view DRAT configurations.
 - Easy to use for single configuration files without many changes.
- Batch
 - General
 - Can run multiple files at one time.
 - Run configuration files on multiple recording files.
 - Output file names are created based on input file and configuration file run.

Disadvantages

- GUI
 - Can only run one thing at a time.
 - Have to change input file name for each recording you wish to run.
 - If the name of the output file name is not changed then the output is overwritten.
- Batch
 - General
 - Requires the use of pre-existing configuration files.
 - Output files are saved in the same directory as input files.
 - Command Line
 - Complex

Suggested Uses

- GUI
 - Create/View DRAT configuration files
 - Run small jobs that do not require many changes to configuration files.
- Batch
 - General
 - Run large jobs
 - Command Line
 - Rerun batch job created using Batch Wizard.
 - Batch Wizard
 - Create and run initial batch job.

What files do I need to run
DRAT?

Required Files

- A TGF recording file
- If you want PTT data then use the corresponding PTT log file.

What is the difference between the various files?

PTT Log

- PTT log files contain data on Communications between pilots and controllers.
- A PTT log file typically ends in .log
- A PTT Log file may contain data from more than one run.
- Input into DRAT via PTT Reader
- They can be read by humans

Sample PTT Log

Wed Jan 27 06:04:05 EST 2010 PTT: ON IcscController01 0 0 "Wed Jan 27 06:04:05.810"

Wed Jan 27 06:04:05 EST 2010 PTT: OFF IcscController01 0 0 "Wed Jan 27 06:04:05.872"

Wed Jan 27 08:31:39 EST 2010 PTT: ON TgfPilot16 17 6 "Wed Jan 27 08:31:38.803"

Wed Jan 27 08:31:39 EST 2010 PTT: OFF TgfPilot16 17 6 "Wed Jan 27 08:31:38.888"

TGF Recording Files

- Name of the TGF recording file is typically C<offset>-<date as yyyy-mm-dd>-<flight plan>-R<run number (in this case it is the number of times the flight plan was run)>
 - Example C07-2011-03-06-EASTHITL_COMP-R002
- The name of a recording file can be configured
 - For example the name can be configured to include the local time the recording file is created instead of the run number.
- Not Human Readable!!!!!!!!!!
- Contain data for one Simulation Run/Problem
- Input into DRAT via Recordable Reader

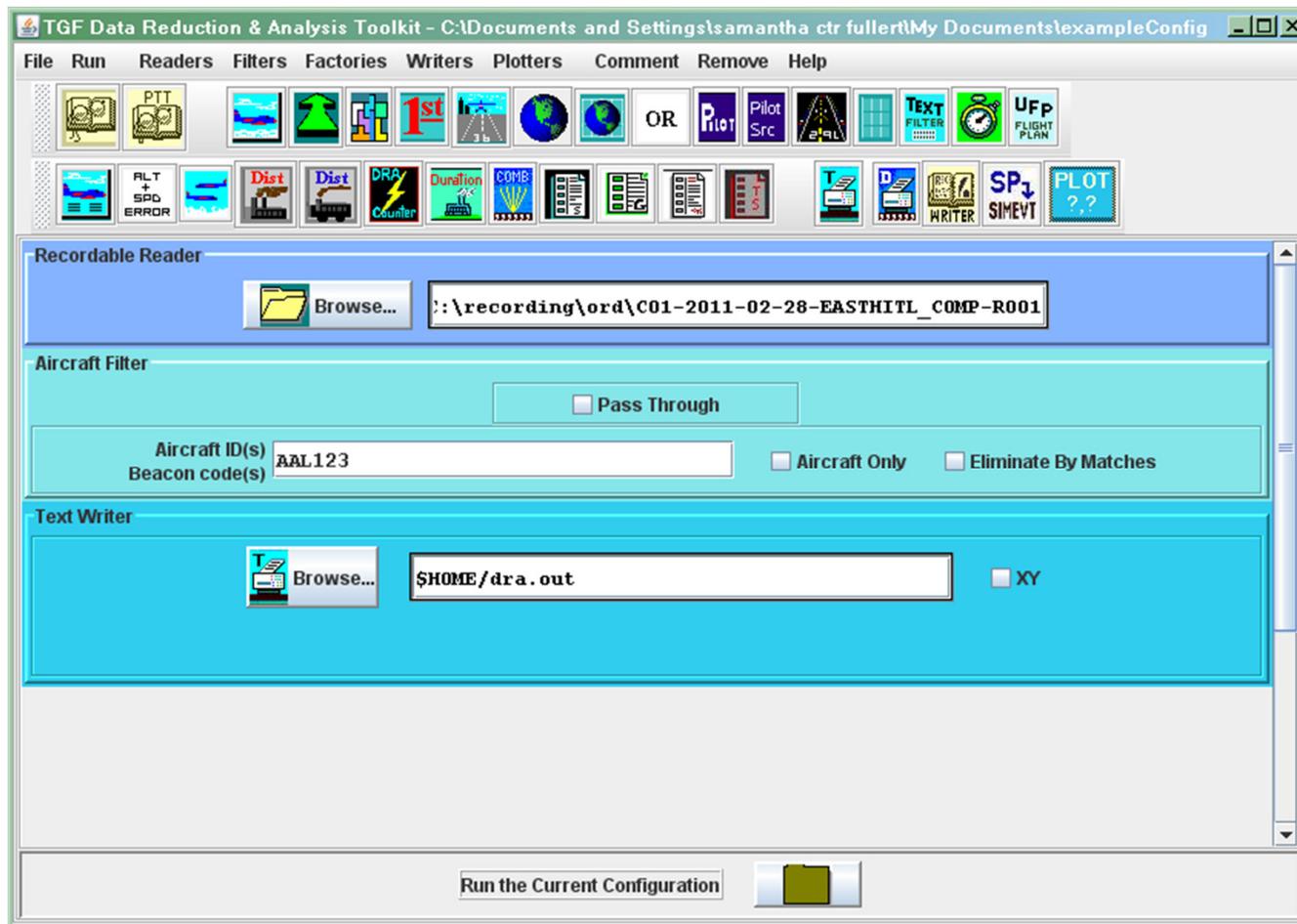
DRAT Configuration File

- Contains data on how to configure DRAT.
- Semi-human readable
- Typically name ends in .drat
- Input into DRAT via *File* menu's *Open* or *Open Recent* menu options.

Example Configuration File

```
className="faa.tg.dra.gui.RecordableReaderPanel"  
readerClass="faa.tg.dra.tools.RecordableReader"  
inputFileName="C:\recording\ord\C01-2011-02-28-EASTHITL_COMP-R001"  
title="Recordable Reader"  
eliminateMatch="false" className="faa.tg.dra.gui.AircraftFilterPanel"  
acid="AAL123" aircraftOnly="false" passThrough="false"  
className="faa.tg.dra.gui.TextWriterPanel" outputFileName="$HOME/dra.out"  
Center="" XY="false"
```

Example Config. loaded into DRAT



What should I do if I have
problems?

Problems/Questions?

- Contact the TGF or NIEC Project Lead for your scheduled simulation.
- For Problems with DRAT you will need to send the following:
 - If you used command line options to run DRAT then you will need to provide the exact command line you used.
 - Drat configuration file used
 - Drat version
 - Description of what happened