

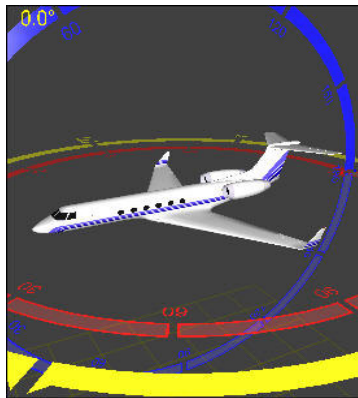
### INTEGRATED DISPLAY, ANALYSIS, DATA DELIVERY, AND DATA ARCHIVE SYSTEM

- Complete Data Scroll Back for Replay and Analysis
- Every Data Point Stored and Available to All Clients
- Critical Analysis Accomplished in Real Time
- Integrated Analysis - Not Clunky Add-On
- Tuned for High Performance Test Programs
- Identical User Interface in Real Time and Post Test
- Event and Test Point/Maneuver Marking
- Derived Equations Added or Modified On-the-Fly
- Data Point Selection and Logging
- Client/Server Architecture, Workgroup Environment
- Wide Range of Display and Analysis Choices
- Connects to Widely Available Telemetry Systems
- Runs on Windows PC Platform - COTS Network
- Walk Away Media - Full Data Set
- User Add-in Processing
- Scalable - Runs on Multiple Computer Architectures

#### IADS DISPLAYS

##### Active X Controls

- 2D Moving Map
- 3D Models
- Altimeter
- Audio Player
- Bar Graphs
- Dial Graphs
- Event Monitor
- GPS Clock
- HTML Viewer
- ICAW Display
- LED Display
- Multi-Graph
- Stop Watch
- Video Player



##### Drawing Primitives

- Circle
- Mesh
- Polygon
- Rectangle
- Triangles
- Text
- Picture
- Line
- Overlays
- Stick Force
- Force Gauge
- Standard Gauge
- Heading Indicator

##### Situational Awareness

- Attitude Direction Indicator
- Horizontal Indicator
- 3D Moving Map with Terrain



##### Core Analysis Displays

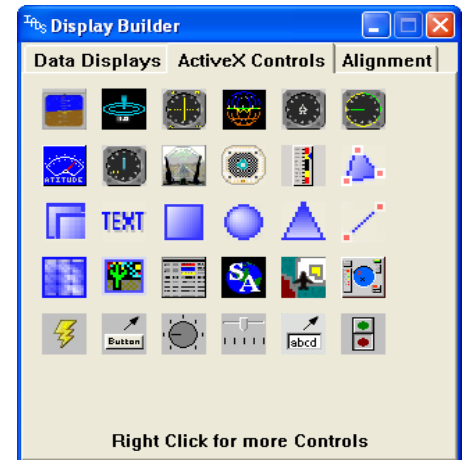
|                    | Auto scale | Peak Hold | Envelopes | Thresholds |
|--------------------|------------|-----------|-----------|------------|
| Digital Stripchart | ★          |           |           | ★          |
| Cross Plot         | 2D         | Max Load  | 2D LL     |            |
| Frequency Plot     | ★          | ★         | 1D        |            |
| Nyquist            | 2D         |           |           |            |
| Octave Band        | ★          | ★         |           |            |
| Slider             | ★          | ★         | 1D        | ★          |
| Alphanumeric       |            | ★         |           | ★          |
| Annunciator        |            | ★         |           | ★          |
| Frequency Response | ★          | ★         | 1D        |            |

##### Misc.

- Display Panels
- Display Folders
- Summary Plots
- Labels

##### Input Objects

- Action Control
- Button
- Dial
- Drop Down
- Slider
- Spin Box
- Text
- Toggle Switch



##### Display Building

- Display Builder Drag and Drop User Interface
- Easily Add or Modify Displays at Any Time
- Save Complex Objects to the Toolbox Library
- Build Complex Screens with Layers
- Generate Visual Signals via the Dynamics Wizard
- Use ActiveX Properties as Parameters
- Create Text Inputs that Drive Displays
- Dynamic Display Customization via the Property Sheet
- Zoom, Translate and Point Selection Reset
- Alignment, Z Order and Grouping
- Global Menu Options

## ANALYSIS

### Data Reduction Techniques

- Random Decrement (Real time and Fixed Block)
- Pseudo Randomdec (Auto and Fixed Block)
- Auto Correlation (Fixed Block)
- Wavelet Denoise (Fixed Block)

### Modal Analysis Techniques

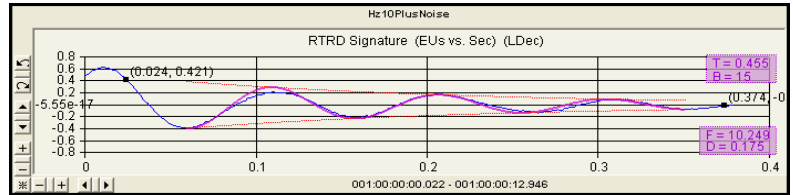
- Logarithmic Decrement (1DOF)
- Logarithmic Decrement Averaging (1DOF)
- Logarithmic Amplitude Picking (1DOF)
- Time History Curve Fit (MDOF)

### Frequency Plots

- Fast Fourier and Chirp-Zoom Transform
- Multiple Block Sizes 64 thru 65536
- Selective Area Sum Algorithm
- Half Power Damping with Peak Picking
- 2D, 3D or Waterfall Plots
- Peak Hold can Hold Indefinitely or Decay
- Rational Fraction Polynomial Curve Fit
- Phase and Gain Margin Assessment
- Octave and 1/3 Octave Band Displays
- Magnitudes Scaled in RMS or SP-dBL
- Coherence for FRF Data Validity Assessment
- Identify Modal Parameters (SDOF, MDOF)
- Power Spectral Density and Auto Spectrum Scaling

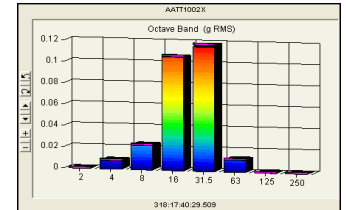
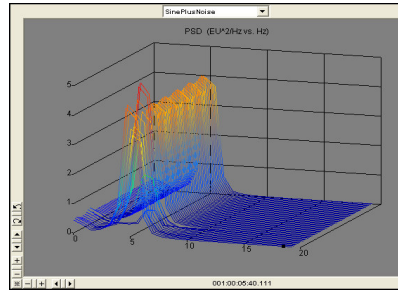
### General Features

- Data Comparison
- Global Cursor
- Matlab Plug-ins
- Bus Messages
- Load Limits



### Feedback/Stability Analysis

- Nyquist Plot Unit Circle
- Phase and Gain Margins
- Closed/Open Loop Analysis



### Windowing Types

- Rectangular
- Hanning
- Hamming
- Blackman
- Flat Top
- Kaiser-Bessel

## DERIVED EQUATION ENGINE

- Arithmetic
- Bitwise
- Conversions
- Interpolation
- Boolean
- Signal Generation
- Byte Swap
- Statistics
- Concatenation
- Time Functions

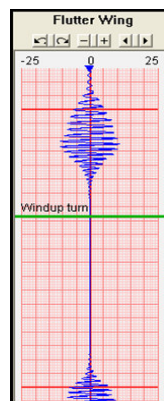
Derived `SineWave(5,1,0,0,0.1,2.0)*10.0 + (Rand()*2.0-0.5)`

- Conditional
- Parameter Default Get/Set
- Exponential/Logarithmic
- Trigonometric
- Decimation
- Add-in Functions

## DATA EDITING

### Spike Detection/Correction

- Correct Single Spurious Data Points
- Slope Detection
- Absolute Value Change Detection



### Wild Point Editing

- Replaces Bad Data with User Specified Value

### Digital Filtering

- Butterworth
- Elliptic
- Sign Change
- Nulling
- Custom

## DATA MARKING

### Event Marking

- Create Visual Markers Dynamically
- Add Dynamic Event Markers
- Add a Pre-defined Comment
- Go To Time Feature

### Test Point/Maneuver Marking

- Mark by Test Point ID, Maneuver, Description or None
- Import and Display Auxiliary Test Point Information
- Auto Stop
- Log Settings
- Drop Down Settings
- Actions on Start
- Actions on Stop
- Group Settings

## DATA EXPORT

- Define Data Groups in Advance

### Export to Excel

- Specify Number of Rows; Multiple Worksheets

### Export to Matlab

- Export Directly into Matlab or .Mat File
- IADS Provides "MEX" Interface to IADS Data Files

### Export Default Options

- Decimation Factor
- Time Format
- Time Precision
- Disable Filters
- Name Modification
- Set Sample Rate
- Parameter Naming
- Export Directory
- Data Precision
- Header Type
- Separator Character

### INFORMATION LOGGING

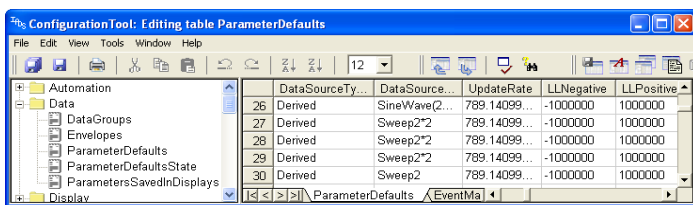
- Information from Analyses Automatically Recorded
- Recall and Display Logged Data
- Record Data Values of Pre-selected Parameters
- Save Logged Data to a File, Window or Clipboard

### IADS Logs

- Event Markers
- Test Points
- Thresholds
- Data Edit
- Selections
- Analysis
- Loads Summary
- Flutter Summary

### THE CONFIGURATION TOOL

- Single Database System
- File can be Accessed by Multiple Users Simultaneously
- Organized by Tables
- Import/Export Table Information
- Editing Capabilities Similar to Excel



### Tools

- TMATS Import and Validation
- Create Mission Attribute Parameters
- Global Parameter Search and Replace
- Automate Parameter Selection for Data Groups
- Validate Equations, Data to Parameters, and Displays
- Test Point Import Wizard
- Create Desktop Summary Reports
- Create Dynamic Envelopes

### The Parameter Defaults Table

- Stores all Default Parameter Attribute Information
- Apply Equation Changes to all Applicable Displays

### ORGANIZATION

#### The Desktop

- Define by User, Group and Subgroup
- Create Multiple Analysis Windows on a Desktop
- Create Multiple Desktops in the Same Config File
- Import/Export

#### Analysis Windows

- Create Multiple Displays
- Assign Classifications
- Print Display or Window
- View on Other Desktops
- Freeze/Unfreeze
- Toolbar Buttons
- Play Speed
- Import/Export

#### Analysis Window Scrollbar

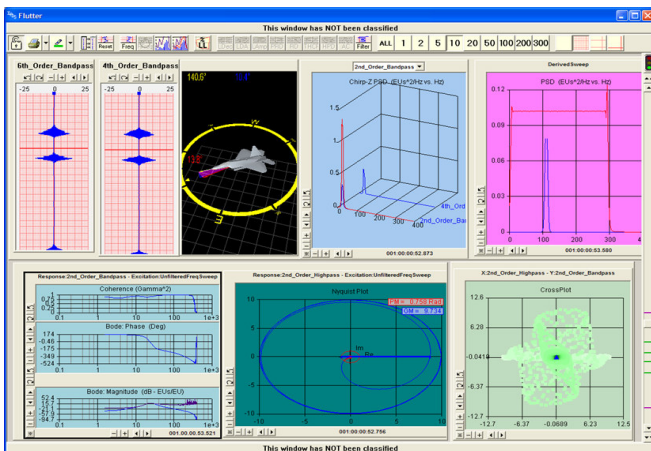
- Go To Time
- Global Scrollbar
- Data Search Tool
- Play From Here

#### Dashboard - IADS Taskbar

- Access Tools Quickly
- Enable Thresholds
- Start/Stop Test Points
- Monitor Performance
- View IRIG Time
- Enable Data Editing
- Change Windows
- Save Config File

#### The Parameter Tool

- Add Parameters to Displays and Controls Easily
- Identify Displays with a Selected Parameter
- View Parameter Defaults for a Selected Parameter
- Quick Find Feature



### SYSTEM EXTENSIBILITY

#### Automation Interface

- Build Scripts using VB, C++ or C#
- Create Analysis Plug-ins
- Add Derived Parameter Functions
- Matlab Interface

#### Application Programming Interface (API)

- IADS Configuration File API
- ActiveX Displays
- IADS Data File API
- Sample Projects