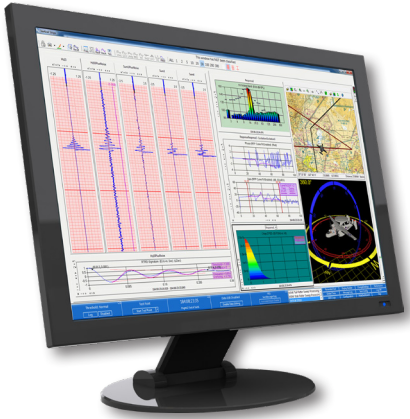


# IADS-TELEM-CLIENT

Real-Time and Post-Test Display and Analysis Software

**CURTISS-  
WRIGHT**

CURTISSWRIGHTDS.COM



## Key Features

- Optimized to meet the needs of flight test programs
- Identical wide range of display and analysis choices for real time and post test
- Every data point stored with real-time data scroll back for replay and analysis
- Integrated real-time analysis with derived equations added or modified on-the-fly
- Event and test point/maneuver marking
- Scalable with a client/server architecture and workgroup environment
- Playback mode with identical real time features

## Applications

- Flight test
- Post test analysis

## Overview

IADS telemetry client software is the integrated display and analysis portion of the IADS data display, processing, delivery and archive software suite. IADS Client software facilitates real-time mission analysis and raises situational awareness, safety monitoring, and test point clearance capabilities to a new level.

This is accomplished by utilizing tools previously available only within post-test environments. The IADS toolset includes high fidelity strip charts with threshold checking, frequency response plots with predicted data overlays, 2D and 3D moving maps, 3D models with system-wide visualization, XY plots with envelope calculations, and a test point system that allows the user to easily mark events and automate batch processing.

All displays have the ability to instantly recall any portion of the test data for display and analysis without affecting real-time data performance. Derived equations can be added or modified on-the-fly for use throughout the system. All support data can be input using a familiar spreadsheet interface. This flexibility allows displays, data, and analysis techniques to be built, tested and saved with little effort at any time during the mission or at the engineer's desktop.

IADS ease of use, depth of display capability, and powerful analysis techniques can be used to save time and effort on any test program. The IADS product line is comprised of software and hardware components that can be combined to create a tailored solution for every need. Such systems include a single portable solution such as a tablet or laptop, to a complete multi-user control room with dozens of clients.



Curtiss-Wright's IADS client has an extensive range of display and analysis options

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## IAD 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

### Situational Awareness

- Stick force
- Attitude direction indicator
- Horizontal indicator
- Standard gauge
- 3D moving map with terrain
- Heading indicator
- Force gauge

### Misc.

- Display panels
- Display folders
- Summary plots

### Drawing Primitives

- Circle
- Mesh
- Polygon
- Rectangle
- Triangles
- Text
- Picture
- Line
- Overlays

TABLE 1		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		

### 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

- Matlab plug-ins
- Data comparison
- Bus messages
- Global cursor
- 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
- Conversions
- Boolean
- Byte Swap
- Concatenation
- Bitwise
- Interpolation
- Signal Generation
- Statistics
- Time Functions
- 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

- Sign change
- Butterworth
- Nulling
- Elliptic
- 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
- Actions on start
- Log settings
- Actions on stop
- Drop down settings
- 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
- Parameter naming
- Time format
- Export directory
- Time precision
- Data precision
- Disable filters
- Header type
- Name modification
- Separator character
- Set sample rate

## 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
- Selections
- Test Points
- Analysis
- Thresholds
- Loads summary
- Data edit
- 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
- Freeze/unfreeze
- Assign classifications
- Toolbar buttons
- Print display or window
- Play speed
- View on other desktops
- Import/export

### Analysis Window Scrollbar

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

### Dashboard - IADS Taskbar

- Access tools quickly
- View IRIG time
- Enable thresholds
- Enable data editing
- Start/stop test points
- Change windows
- Monitor performance
- 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

## Ordering Information

Please contact [Curtiss-Wright Defense Solutions](#) for further information.