

VISTA 4



Vista

Features

- Common software foundation supports multiple L-3 products
- Windows, UNIX, and Linux multi-platform support
- Intuitive, easy-to-use GUI
- Telemetry data acquisition & decommutation
- True Real-time processing & storage of raw and processed data
- Data display and visualization in Real-time or Playback modes
- Replay IRIG 106 Chapter 10 files
- Event and alarm monitoring
- Full logging support
- Custom user processing algorithm development in C or Java
- Robust API for embedded applications
- Modern Java-based object-oriented software
- Industry-standard SQL-compliant databases
- Integrated user environment for setup of data and acquisition and ground processing systems
- Project/mission database setup management w/version control
- XML import/export and database connections for archiving/ versioning

Applications

- Flight Test
- Launch Vehicle Operations
- Satellite Ground support
- Avionics Test & Integration
- Space Communications
- Simulation & Training



L-3 Telemetry-West's (L-3 TW) Vista™ 4 is a complete applications software suite for the management and setup of both PCI and VME telemetry processing system configurations. Vista 4 provides a full featured operating environment for setup and operation of the MFT, Avalon, and 550 families of ground station products and can also support the ground setup and configuration of L-3's airborne equipment

Vista 4 is ideally suited to provide support for the full range of telemetry data processing applications from simple quick look applications up to and including major control center installations.

Vista 4 can be operated standalone on a workstation, acquiring data from a network for "desktop" telemetry processing without additional hardware — or expanded through addition of appropriate supporting PCI or VME processing hardware to provide a solution matched to the specific need of each customer application.

Vista 4 comes with a powerful, multiplatform, intuitive graphical user interface (GUI) for manual operation and a robust application programming interface (API) for the integration of other software and embedded applications. Vista 4 can setup and operate hardware locally or remotely, and a distributed, network-oriented architecture allows functions to be split across different computers on a network providing flexibility to adapt to a variety of ground system designs.

The API Module Framework supports the integration of external hardware and software modules, while the Application Framework supports the integration of custom or third-party software applications.

Excellence You Can Measure



Vista 4 Overview

L-3's Vista 4 is a single integrated application software system supporting a seamless hardware and software solution from airborne data acquisition and encoding to ground support units and ground station systems. Each Vista 4 license (VISTA-BASE-X) includes

- System Manager
- Project Manager
- Database Explorer
- Parameter Viewer
- Db Import-Export
- Processing Algorithms
- Data Exporter
- Standard Displays
- Event/Alarm Handling
- Archiving and Playback

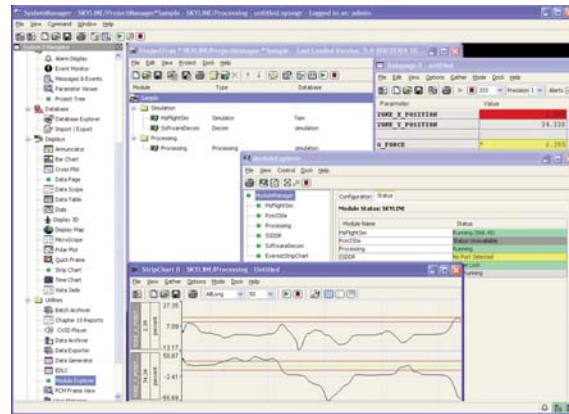
Vista 4 is developed in Java and C++ objected-oriented languages and utilizes industry standard database and real-time graphics applications to ensure platform independence.

System Manager

The Vista 4 System Manager is the main system user interface used to work with Vista modules and applications. It provides an easy-to-use interface with features such as a toolbar, the Navigation Tree, multiple workspaces, and window docking/tiling/cascading.

Project Manager

The Project Manager is the version control system that uniquely defines and maintains the database for each test or mission. The Project Manager is used to create, compile, load, and save Vista 4 projects from module databases as well as to monitor module status once running.



Database Explorer & Parameter Viewer

These two GUI applications provide useful tools for viewing saved database and parameter information.

DB (Database) Import/Export

The Vista 4 Importer/Exporter is a GUI application providing the following functions:

- Import/Export project and module databases from/to eXtensible Markup Language (XML) files
- Import/Export module databases from/to TeleMetry Attributes Transfer Standard (TMATS) files
- Convert non-versioned project databases to versioned project databases

Vista Processing

Vista 4 supports optional I/O hardware modules for typical telemetry data sources for processing. Examples of these data types include:

- PCM
- Analog I/O
- ARINC 429
- Mil Std 1553
- Network I/O
- IRIG Time
- IRIG Chapter 10 data
- CVSD Voice

Vista 4 supports parameter processing of all data in real-time or during playback of data archives. The distributed processing architecture allows network-wide processing resources to be allocated as needed.

Standard algorithms are provided with Vista 4 for the following general functions

- Software Decommuation
- Data Compression
- Digital Signal Processing
- Engineering Units Conversion
- Logical conversions
- System (i. e. time stamping & synchronization)
- Number (i.e. statistical, log & trig)

Processing algorithms can use multiple inputs and outputs and multiple algorithms may be chained to create a unique process. Other algorithms and modules can use any of the output parameters. Algorithm arguments may be updated in real time singularly or in multiple parameter groups defined in a file without recompiling and downloading.

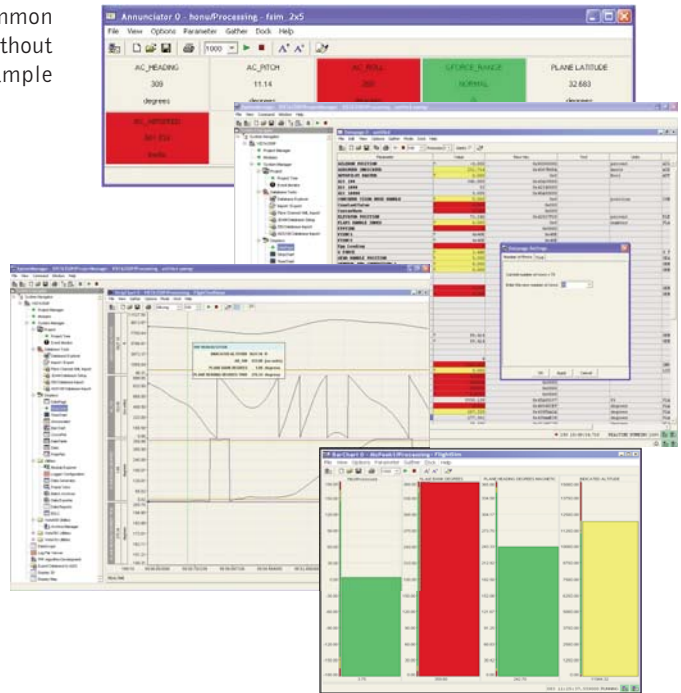
Data Exporter

The Vista 4 Data Exporter application converts HFS archive files or a "live" data stream (from a Vista Data Gather algorithm) to ASCII or Matlab files. ASCII files can be CSV or TSV file types.

Standard Displays

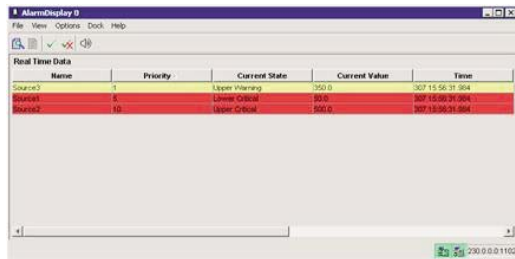
Standard displays allow data to be displayed in the most common forms. The user can quickly display data in easy to use formats without requiring development of any display types beforehand. Example formats include:

- Annunciator
 - Displays data gather CVT results
 - Normal, warning, critical color ranges
- Data Page
 - Real Time tabular format display
 - Display can Replay from History buffer
- Strip Chart, Time Chart
 - Data driven or time driven charts
 - Display can "back up" using history data buffer
 - Grid and ruler
- Data Table
 - Scrolling historical display with time
- Dial, Bar Chart, Cross Plot, Polar Plot
- Quick Frame (PCI Systems Only)
 - Displays telemetry frame data in spreadsheet format
 - Normal, warning, critical color ranges



Event/Alarm Handling

The Event Monitor allows the user to monitor various types of events, such as setup events, error messages, and alarms occurring in the system. Alarms may be recorded and displayed in an Alarm Monitor view.



The out-of-limits data, as well as system errors and operator input commands, can be logged to history files. Users can select logged data of interest through a graphical-based query tool. Users can also define traditional alarm bands or utilize the Algorithm Development Environment to create unique criteria limits.

Events are broadcast on a multicast basis on selected event channels over the local area network (LAN). Any application or process can "listen" to a given event channel to receive the events broadcast over that channel.

Archiving and Playback

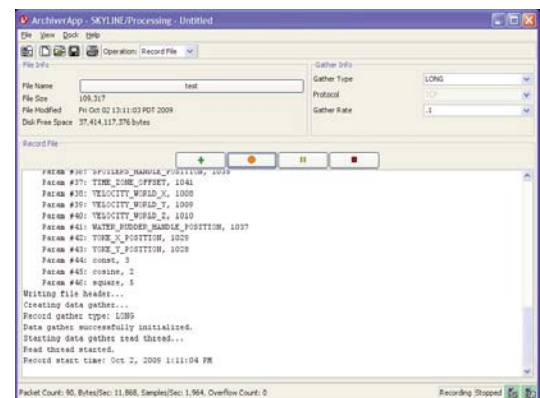
Incoming real-time data may be captured to mass storage allowing access to all systems on the network via NFS™. Drag-and-drop GUI features allow the user to easily select groups and/or parameters for archiving and file management tasks.

Playback can be viewed directly on user screens or can be distributed for additional processing or viewing concurrently with real-time data. Time-tagging permits direct entry to data of interest without scanning the entire file.

The Real-Time Storage Subsystem graphical user interface (GUI) enables the user to configure the Real-Time Storage Subsystem for a record or playback operation, and then start and stop the operation at will.

Data may be stored or recorded on disk or RAID systems using SCSI, Ethernet or Fibre channel transfer methods. Data may be stored on any Vista 4 network workstation and separate ring buffer storage in workstation RAM provide Vista 4 displays the ability to scroll back data displays while continuing to record data in the archive file.

IRIG 106 Chapter 10 recorder data files may be replayed for processing, archiving, distribution and display by Vista 4.



VISTA 4 OPTIONS

PCI Product Support (VISTA-SUP-VTS)

- Provides support for MFT-733A-PCI Multifunction Telemetry Module
- Data archive on workstation disk or via network Manager
- Supports recreation of PCM telemetry streams



PCI Product Support (VISTA-SUP-AVA or VISTA-SUP-550)

- Provides support for Avalon and 550 Front-End Processors
- Data archive on Fibre Channel or SCSI disk/ RAID, workstation disk or transfer via network



Algorithm Development (VISTA-ALG-X)

Users can develop new custom algorithms in a high level language (C or Java) and apply to any data parameter without creating additional software code.

Applications Programmer Interface (VISTA-API-X)

Vista 4 API's provide a robust Java-based direct link between the telemetry hardware front-end and servers or workstations on the network.

Vista View (VISTA-VIEW)

Vista View provides all standard displays included with VISTA-BASE-X, but is installed on workstations that do not include the full version of VISTA-BASE-X.

Vista Advanced Displays (VISTA-DISP-ADV)

Vista Advanced Displays includes 4 separate data display applications provided as a bundled package.

- Vista Advanced Mapping Display (VISTA-DISP-MAP)
- Vista 3D Display (VISTA-DISP-3D)
- Vista Java Display Environment Editor and Viewer (JADE™) (VISTA-JADE-EDIT)
- Vista Microscope (VISTA-MICRO)

DataViews (VISTA-DV-DRAW & VISTA-DV-DISP)

Integrated DataViews application provides Vista 4 users with the ability to create & view custom data displays using DVDraw.

IRIG 106 Chapter 10 Playback Software (VISTA-CHAP10-SW)

Software application allows playback of recorded Chapter 10 data files to the Vista software data bus, allowing for time correlated data from individual channels to be played back and then processed and gathered using the standard Vista APIs and displays.

Enhanced Data Limit Check (VISTA-EDLC)

EDLC provides historical limit check and graphical reporting of data parameters in an IRIG 106 Chapter 10 data file.

TMATS Database Converter (VISTA-TMATS)

Translation utility converts IRIG 106 TMATS flat files to Vista 4 database tables and vice-versa.

CCSDS (VISTA-CCSDS)

A telemetry algorithm library supports decoding of embedded parameters formatted in accordance with CCSDS standards.

Database (VISTA-DB & VISTA-DB-MSSQL-W)

Standard SQL database options include Derby and MS Access.

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