

# Advanced 1553/ARINC Application Program Interface (API) Support Package: *AltaAPI*™

Alta's 1553 and ARINC products come standard with the most advanced Application Program Interface (API) library tools in the avionics industry. *AltaAPI*, provides the most modern software technologies for avionics data activity and system analysis. The API architecture is an extremely flexible design to provide quick porting to various operating systems, such as VxWorks 5.X/6.X/MILS (non RTP), Integrity, LynxOS RTOS, Linux 2.6 32/64, Solaris 10, NI LabVIEW™, RTX Shared/Windows and Windows XP/2003/Vista/07.

#### **Key Features of** *AltaAPI*

- Layered Design to Maximize a Flexible and Quick Integration
- Most Popular OS Environments Including Linux 2.6 32/64, Windows XP/2003/Vista/07 and Solaris.
- RTOS support for VxWorks, Integrity, Lynx OS, RTX Windows/Shared Mode.
- Windows Managed .NET 2.0 DLLs Provides Quick Integration with Visual Basic, .Net, C++, etc...
- Key ANSI C Layer 1 with source code provides easy integration and porting

   over 80 example programs to jump start your application (regardless of OS).
- Same API Used for Multiple Protocols (1553 and ARINC).
- Easily port from other avionics vendors to AltaAPI – Porting Guides Provided.
- See AltaAPI-LV™ for LabVIEW™ support.

Layer 0 (zero) of the API is where all OS dependencies reside. This layer is kept as simple as possible to make the API as portable as possible. This is an ANSI C layer and source code, when possible, is provided. In most cases the user never needs to interface to the Layer 0 files unless special porting is required.

#### AltaAPI Architechture

Layer 3 Module Windows GUI Analyzer (.NET 2.0 C#)

Layer 2 Module for Microsoft Visual Studio 2005 .NET 2.0: C++, C#, VB, etc. Layer 2 Modules for Other – i.e. Future Native ADA or LabVIEW

Layer 1 API Module (ANSI C)

General Operations and Device Management

OS-Specific Layer 0 API Module (ANSI C)

OS-Specific Device Driver

Backplane (PCI, PCIe, etc.)

Alta Interface Card

Layer 0 (Low Level – OS Specific) API Model ANSI C

Memory Mapping and Unmapping

Memory Read and Write Interrupt Handler Attach and Detach

OS-Specific Device Driver

Backplane (PCI, PCIe, etc.)

Alta Interface Card

#### **AltaAPI™**

#### Advanced Avionics API Tool Set



Layer 1 Module - ANSI C

Layer 1 (one) is where most applications start their program calls/interface. This layer has all the advanced library options for device management and functional setup and control. Source code and DLLs are provided for this layer. Example builds/makefiles and application programs are provided for all OSes

General Bullt in Test Memory Mangmnt Interrupts Protocol 1553 BC, RT, BM, SG, PB Protocol ARINC-429 Other...

Layer 0 (Low Level – OS Specific) API Model - ANSI C

OS-Specific Device Driver

Backplane (PCI, PCIe, etc.)

Alta Interface Card

#### Layer 2 Model

Layer 2 Module for Microsoft Visual Studio 2005 (Managed DLL Assembly) .NET 2.0: C++, C#, VB, etc

AltaDataTech:API Namespace

Layer2 Namespace

Layer1 Namespace (Managed Wrappers for Layer 1 API Functions)

Layer 1 Module (General Operations) - ANSI C

Layer 0 (Low Level - OS Specific) API Model - ANSI C

OS-Specific Device Driver

Backplane (PCI, PCIe, etc.)

Alta Interface Card

Layer 2 (two) of the API provides the Windows .NET interface. .NET offer powerful object oriented advancements in application development. See *AltaAPI-LV™* for LabVIEW™ support. This layer provides the user an unprecedented choice of local and network controls. *AltaView™* and *AltaRTVal™* are developed with these same tools.

## AltaView & AltaRTVal Reduce Integration/Test. Explore the possibilities with these advanced software programs.

- Next Generation in Analyzer and Validation Software
- Download Upgrades Via Alta Web New Features are Added to Support Your Requirements
- XML Setup Files Allow External Configuration
- Windows XP/2003/Vista/07 (no NT) 1GByte/System RAM

### *Alta*/dt

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