AIM
Right on Target
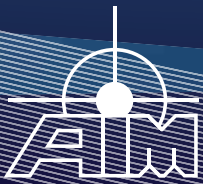
Avionics Databus Solutions

PBA.pro

AIM
Right on Target

PBA.pro™ - get on board

MIL-STD-1553
STANAG3910/ EFEX
ARINC429
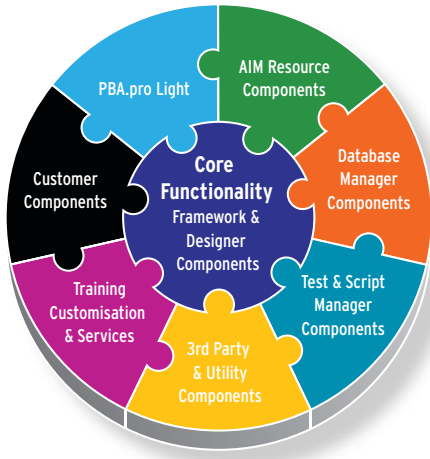AFDX/ ARINC664/ ETHERNET/ GigE
ARINC825 (CAN bus)
PANAVIA Serial Link
Fibre Channel

PBA.pro

testing for the future - Today!

PBA.pro™
Product Overview

The PBA.pro™ is AIM's prominent software for Test and Analysis for use with AIM's family of high performance avionics test and simulation modules plus a wide range of 3rd party hardware.

The PBA.pro™ software runs on Windows and Linux platforms and integrates more functions and features ever seen in one software product focussing on Avionics test, development, simulation, monitoring and analysis applications.

The PBA.pro™ is the powerful yet cost effective solution, covering almost all application needs from a standalone databus analyser or visualiser tool to a complete systems test bench or advanced avionics integration facility integrating multiple hardware interfaces.

The PBA.pro™ uses an elegant 'component based' software approach allowing users to configure, customise and tailor their solution by selecting the required hardware and software resources/ components within one common framework. This approach gives users the ability to invest in systems which are flexible, expandable, well organised and open keeping pace with future requirements.

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The PBA.pro™ offers scripting, display building and the visualisation of data using a variety of default dialogs and controls (buttons, sliders, text displays, dials and indicators) which can be interactively created within a dialog. This gives users the capability to create real world aircraft or other dialog instruments as well as dedicated user interfaces without requiring specialist programming skills!

PBA.pro™
Product Overview

The PBA.pro™ offers enormous possibilities of customisation and system configurations using scripts, dialogs or even user specific components and widgets with the seamless integration into the PBA.pro™ framework. System configuration, testing as well as analysing tasks can be automated, represented and evaluated to the specific user desires and preferences.

Since the PBA.pro™ is a flexible and integrated software solution the linking and intercommunication possibilities between the different components is inherent within its design. This enables users to combine different hardware in one system, where the PBA.pro™ framework offers flexible and comfortable interfaces to share component specific information and events between the components.

Core Functionality

● Modular, Scalable and Integrated Software Approach

● Support for Windows and Linux

● Fully automatable and customisable via Scripts, Remote Control and User Dialogs

● Low and High Level Protocol/ Network Analysers

● Bus/ Network Visualisers

● Recording/ Monitoring/ Data Logging Systems

● Special-To-Type Test Equipment (STTE)

● Test Benches and Integration Rigs

● 'Hardware in the Loop' Simulation Rigs

● Networked Cluster of Test Resources

● PBA.pro™ supports the usage of foreign character sets (i.e. Japanese, Chinese) under country specific Windows Operating System

Core Functionality
Framework & Designer Components
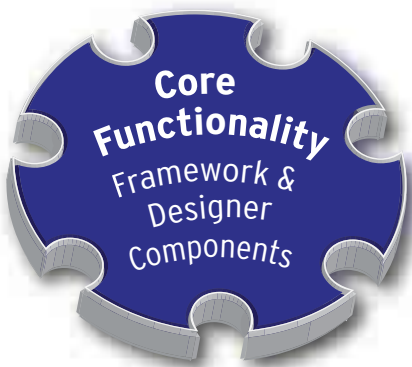
PBA.pro™
Designer Component

Included within the framework the PBA.pro™ Designer component is representing the core of any PBA.pro™ application. The Designer is an easy to use Drag and Drop tool to design and build user-defined dialogs for visualisation and control of any PBA.pro™ information or data source. This gives the ability to tailor the PBA.pro™ display and control features to meet individual and unique needs for any user application.

The PBA.pro™ Designer offers an extensive set of widgets that can be added interactively or completely automated. Dialogs can be created, modified, arranged and controlled by PBA.pro™ scripts to create user defined/ customised dialogs and displays.
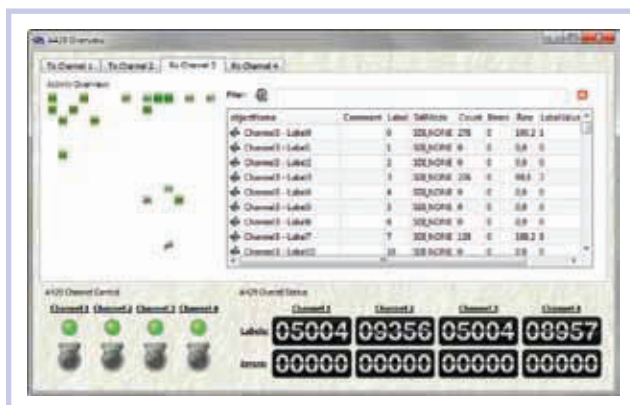
features:

- Easily build dialogs for visualisation, display and control using Drag & Drop
- Extensive, expanding and dynamic widget library
- Simple to use GUI to build custom dialogs
  - Display/ control of any PBA.pro™ object information/ value
  - Embed existing PBA.pro™ views (e.g. Standard/ Default views provided by a resource component)
  - ActiveX support (Windows only)
  - Layouts auto resize and arrange widgets
  - Automated dialog creation for parameters with context menu
- Flexible connection definitions between PBA.pro™ objects and/ or widgets
- No coding required
- Fully scriptable
- Standalone or frameless execution of dialogs outside the PBA.pro™ main window

AIM Resource Components

PBA.pro™

AIM Resource Components

The PBA.pro™ Resource Manager provides easy access to view and control all resources available within the PBA.pro™ system. AIM interfaces include MIL-STD-1553A/B, STANAG3910/EFEX, ARINC429, AFDX/ARINC664/Standard Ethernet/Gigabit Ethernet, ARINC825 (CANbus), Fibre Channel and PANAVIA. Utility resources like standard serial COM Ports, TCP/IP or UDP network sockets and many more are supported as well.
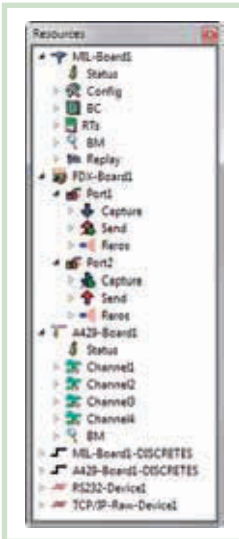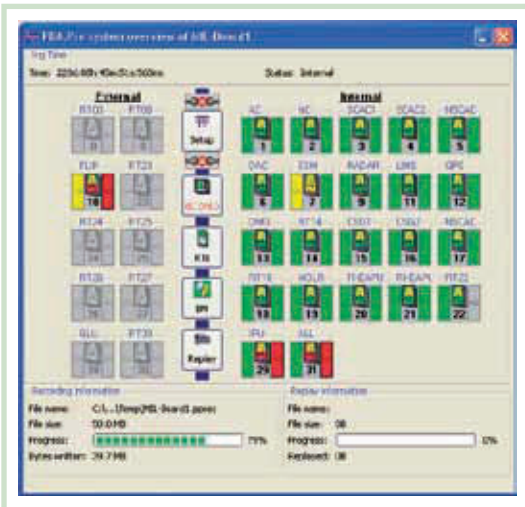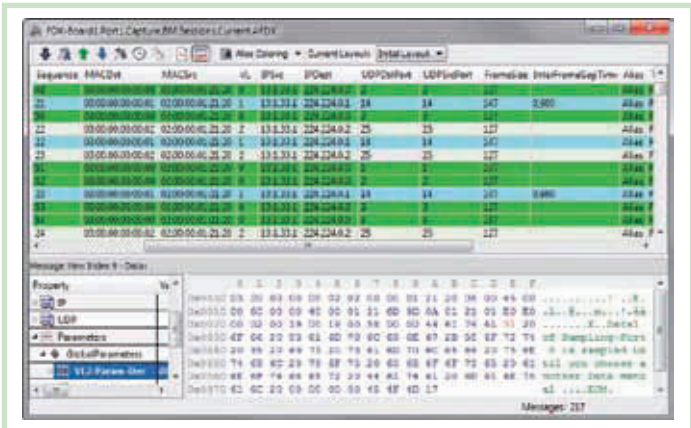

All resources are accessible from the PBA.pro™ framework by the 'Resource Tree'. Visualisation and control of each resource is provided by standard and dedicated display. These can be customised, configured and automated easily using the powerful PBA.pro™ Designer or scripting components.

In addition to real interfaces, AIM hardware can be simulated as so called NTG (No Target) boards. The PBA.pro™ simulates the hardware to enable the user to setup and configure a system or even analyse hardware specific information like recordings without the need of the real physical hardware interface.

features:

- Support for all AIM interface types, current and future
- Simulation of AIM hardware via so called NTG (No target) licenses
- Hierarchical Resource Handling
- Manage, Control & Display resources in real time
- Add new resources as required
- Integrate & facilitate AIM, 3rd Party and Utility Resources
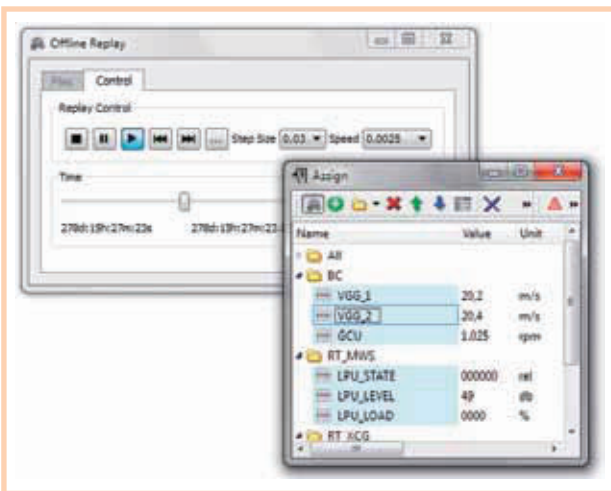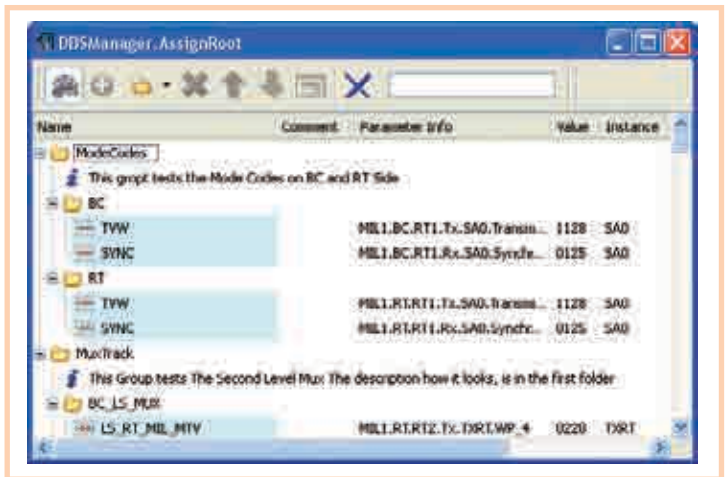- Intercommunication between different resources

Database Manager Components
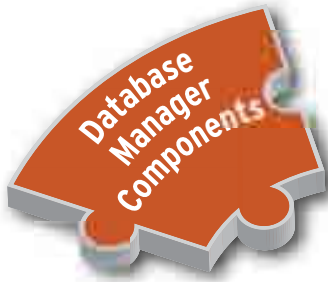
PBA.pro™

Database Manager

The PBA.pro™ Database Manager offers functionality to define conversion rule routines to visualise and modify the raw data of a buffer or message, acquired by various resources, into Engineering Units as 'Parameters'.

For quick visualisation and modification of Parameter information or status information a powerful 'Assign' window is included. Any Parameter information can be added to the Assign window by Drag & Drop and - if added once - graphically visualised and controlled by a designer dialog. Parameters in the Assign window can be individually animated with PBA.pro™ generated f(t), supported via a comprehensive formula editor.

For post recording analysis purposes, recorded data of a Resource can be used to perform off line replay as well as to show the parameters in a time history plot.

The PBA.pro™ Database Manager is interactively accessed via the PBA.pro™ framework and is also fully scriptable. Custom database formats can be supported using simple import or conversion scripts (to be generated by the user).

features:

- Defines Engineering Unit Conversions of the Raw Data
- Fully scriptable
- Expandable for future data sources
- Quick and easy drag and drop information display (Assign window)
- Higher level protocol support via conditions and parameter structures
- Available to convert online (buffers/ messages) and offline data (recording files)
- Fully controllable offline parameter replay
- Graphical parameter representation of a recording file in a time plot
- Import of any custom databases via scripts
- Storage in XML format
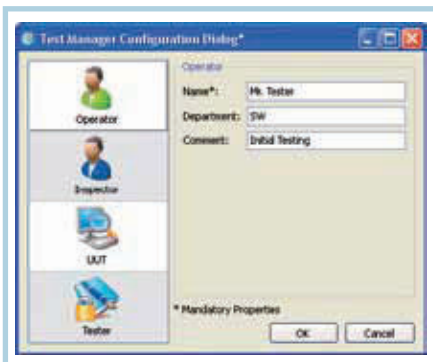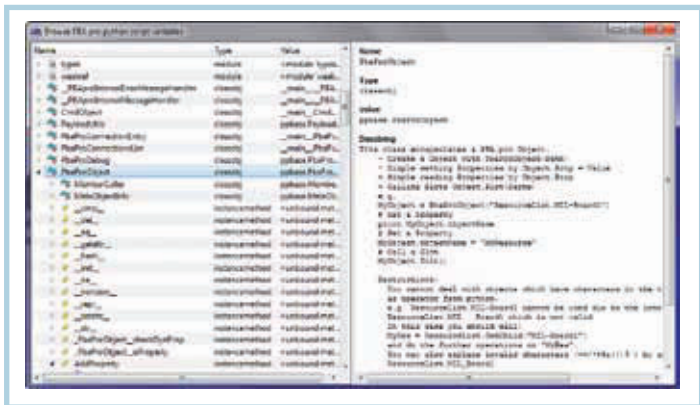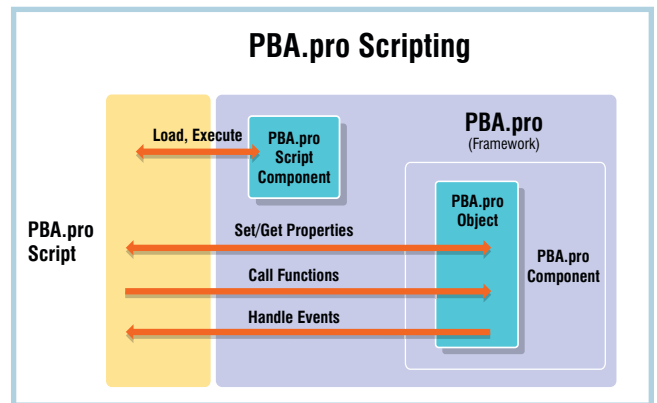- Built-in import of AIM legacy databases in PDI format

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Test & Script Manager Components

PBA.pro™

Test & Script Manager

The PBA.pro™ Test and Script Manager offers access to any PBA.pro™ object as well as to the PBA.pro™ framework. The Test and Script Manager component combines a Script Manager and a Test Manager component including an interface for PBA.pro™ Remote Control over TCP/IP.

PBA.pro Scripting

Scripts can do everything the user would do interactively:

- Python and Tcl scripts supported
- Setup and control PBA.pro™ Resource Components
- Import and Creation of Engineering Unit Databases to PBA.pro™ Database Manager
- Access & Customisation of PBA.pro™ Framework
- User Interaction (message boxes, input dialogs)
- Interactive Message Modification
- Evaluation & Export of recorded Data into User Definable Formats
- Execution of Test Cases and Simulations
- Building user dedicated dialogs via the PBA.pro™ Designer
- Optional Script packages are available off-the-shelf to support:
  - MIL-STD-1553 Protocol & Waveform Validation (AS4112 RT Production Test Plan)
  - MIL-STD-1553 Protocol Validation (AS4111 RT Validation Test Plan)
  - ARINC664 End System Compliance Test
  - ARINC664 Switch Compliance Test

The Script Manager provides a simple interface to setup and run individual test scripts whilst the Test Manager executes automated or semi-automated test procedures including handling of configuration data and the execution/ evaluation of tests by documenting test results with fully user customisable test reports in ASCII, XML or PDF format.
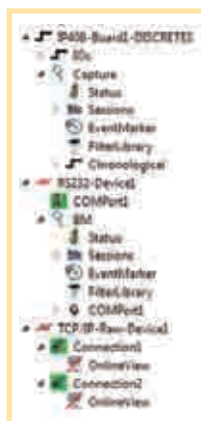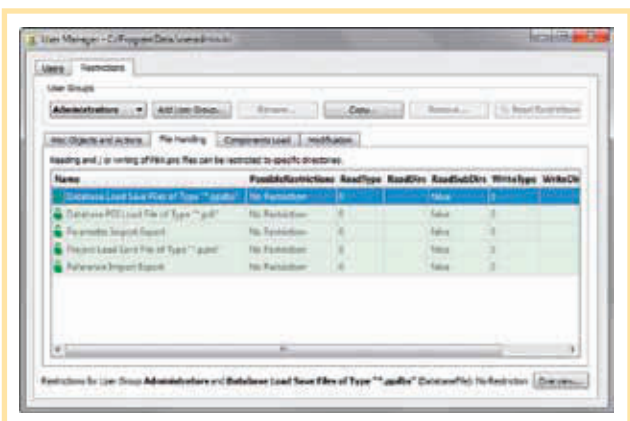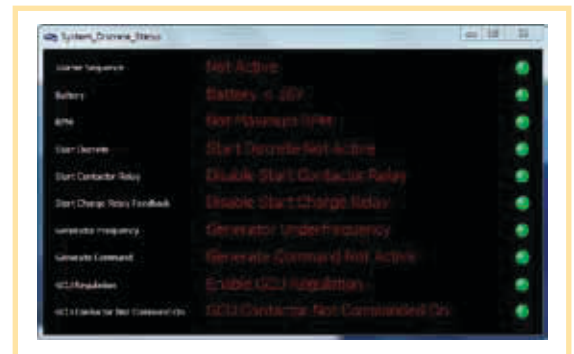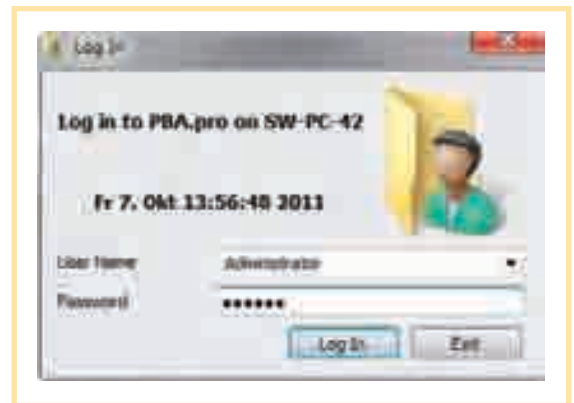
PBA.pro™

3rd Party & Utility Components

Setting PBA.pro™ apart from any tool is the open PBA.pro™ concept which allows an efficient and smooth integration of 3rd Party and utility interfaces via corresponding components.

This extends the PBA.pro™ for use with additional hardware and functionality to cover your unique system needs. Starting for various 3rd party (COTS) hardware like digital and analogue I/O devices a wide and steadily growing range of 3rd party hardware and utility components can be added to the PBA.pro™ to meet your specific needs. Utility components like our user administration support or data exchange with the MS Flight Simulator are provided.

All PBA.pro™ 3rd party and utility components are available inside the PBA.pro™ framework for Visualisation, Scripting and Control as well as for intercommunication with other hardware components.

Extract of currently supported PBA.pro 3rd party and utility components:

- Ethernet UDP/ TCP Sockets
- Serial RS232, RS422, RS485 Com Ports
- Digital I/O
- Analogue I/O
- GPIB
- Ground Telemetry Station Decommutation
- Digital Multimeter
- User Administration Component
- Utility components to exchange Data with:
    - Matlab
    - Microsoft Flight Simulator
   - LabView
    - And many more

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PBA.pro™

PBA.pro Light

As the name implies the PBA.pro™ Light is the reduced function option for the PBA.pro™. The 'cut back' version has been deployed to realise simple or reduced application and system needs.

Pre-configured displays are offered to visualise and control the essential information and data of interest providing only a subset of the full PBA.pro™ functionality using Runtime Mode.

The PBA.pro™ Light is the simple to use, quick and easy one click solution covering many typical user cases with the underlying core features of the PBA.pro™. Upgrade to the full PBA.pro™ functionality is possible at any time.
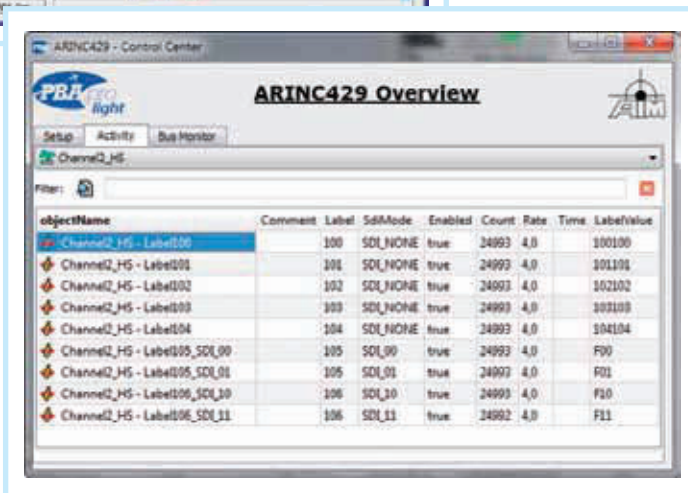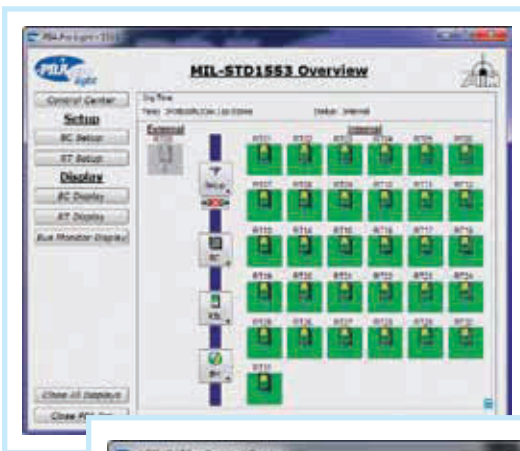
**The main features of the PBA.pro™ Light include:**

● One click solution solves typical use cases like:
- ● Basic Resource resp. Interface Board setup
- ● Basic Resource resp. Interface Board control
- ● Data Monitoring and Recording
- ● Data Visualisation
● No in depth PBA.pro™ knowledge needed for fast and effective solutions
● Performance remains the same – reduced function set only
● Look and feel of the displays just like the PBA.pro™ full version for an easy upgrade to the full version
● Can be further customised
● Upgrade to full version available

PBA.pro™
PBA.pro Applications

For today and into the future – the key challenges are typically performance related combined with the demand for flexibility and an easy to use GUI for filling system needs and the continued demanding user expectations. This requires an all-purpose and very powerful tool which takes into account these challenges. In such a context, PBA.pro™ is the perfect software solution to meet these needs and expectations. **Look and see – nothing comes close!**
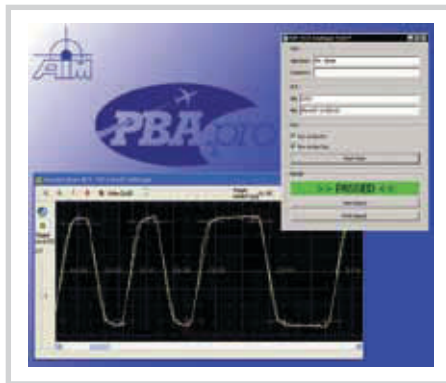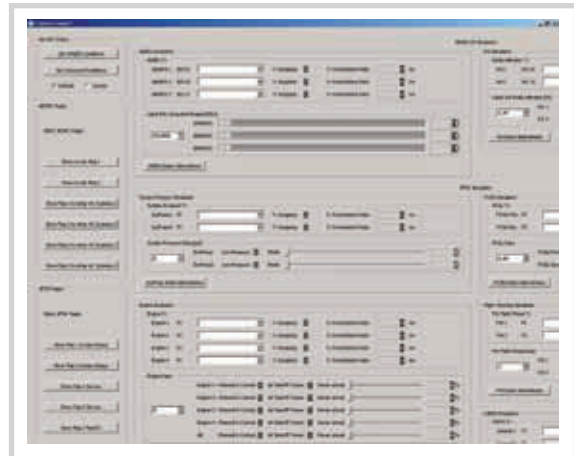
AIM - **HLBA** Test System

AIM - **Rugged** Test Set

AIM - **PBA.pro** Laptop Application

AIM - **1760** Test System

AIM - **HLBA-P** Test System

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Training Customisation & Services

PBA.pro™
Training & Services

Our comprehensive training courses are conducted by expert trainers and can be adapted to individual needs and requirements. Furthermore, we offer special tool customisation and development services as an optional, costed item.

Certificate

PBA.pro Training Courses

- Basic PBA.pro™ tool Introduction - (1 Day)
- In depth PBA.pro™ workshop focussing on the customer's specific interests - (2 Days)
- PBA.pro™ Component Programming Workshop for writing your own PBA.pro™ add-on component - (2 Days)

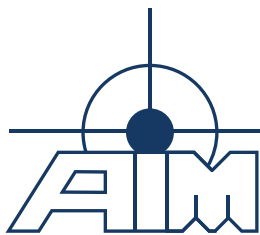### PBA.pro™ module resource components

PBA.pro™ - get on board

MIL-STD-1553
STANAG3910/ EFEX
ARINC429
AFDX/ ARINC664/ ETHERNET/ GigE
ARINC825 (CAN bus)
PANAVIA Serial Link
Fibre Channel

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