PBA.pro /
PBA.pro-Light

Release Notes

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V02.82
June, 2023

PBA.pro/
PBA.pro-Light

PBA.pro Document

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AIM - Gesellschaft für angewandte Informatik und Mikroelektronik mbH

TABLE OF CONTENTS

Introduction

PBA.pro is a scalable and flexible application framework focusing on Test, Simulation and Integration of Systems based on Avionics Data buses and other peripheral interconnections and hardware. The PBA.pro core consists of the Framework with Resource Explorer and Display Designer. Furthermore, basic setup load and save capabilities by XML formatted files are supported by the Framework. PBA.pro Scalability is given via the Component based approach, implementing the functionality in dedicated functional entities.

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.

This PBA.pro software version is released for the following operating system / PBA.pro combinations:

1. W32/P32 (Windows 32 Bit / PBA.pro 32 Bit, see below)

2. W64/P32

3. L64/P64

The following abbreviations are used above and in the document:

- Windows 32 bit (W32)

- Windows 64 bit (W64)

- Linux 64 bit (L64)

- PBA.pro 32 bit (P32)

- PBA.pro 64 bit (P64)

For further information, whether a component is excluded from any operating system or not, see the component descriptions below. If no remark is added to the component description, the component is available for all listed operating systems.

This commercial, non open source software uses QT as underlying C++ library. While QT is licensed under the terms of the GNU Lesser General Public License versions 2.1 and 3.0 ("LGPL") and/or the GNU General Public License versions 2.0 and 3.0 ("GPL") (as applicable), this software is not. Copies of the LGPL and GPL can be obtained from

- *http:// www.gnu.org/ licenses/ old-licenses/ lgpl-2.1.html*

- *http:// www.gnu.org/ licenses/ lgpl-3.0.en.html*

- *https:// directory.fsf.org/ wiki/ License:GPL-2.0-only*

- *http:// www.gnu.org/ copyleft/ gpl.html*.

A copy of the LGPL V3 and GPL V3 can be found in the documentation directory of the PBA.pro installation.

Supported Operating Systems

PBA.pro V02.82 is available and supported on following Operating Systems.

- Supported Windows 32 & 64 bit OS Versions:

    – Windows 7[1]

    – Windows 8 / 8.1

    – Windows 10

- Supported Linux 64 bit OS Versions:

    PBA.pro has been tested with Debian 8. Though it should run on all Linux Distributions that ship with a libstdc++ version of at least 4.8. If you want to make use of AIM hardware devices with PBA.pro, consult the release notes of the corresponding BSP to make sure it also supports your favourite distribution.

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[1]Service Pack 1 or higher required.

PBA.pro Options Overview

PBA.pro-FD (PBA.pro Framework & Designer)

- PBA.pro core framework and components, which are provided by every PBA.pro installation.

- Included components:

    - PBA.pro core component
        * Binary file name: ppbase.dll (Windows), libppbase.so (Linux)
        * Description: PBA.pro core framework component

    - Designer component
        * Binary file name: ppdesigner.dll (Windows), libppdesigner.so (Linux)
        * Description: Allows to Create User defined Displays

    - KDC widgets
        * Binary file name: ppkdc.dll (Windows), libppkdc.so (Linux)
        * Description: AIM Library to integrate KDC Widget collection

    - LGPL widgets
        * Binary file name: pplgpl.dll (Windows), libpplgpl.so (Linux)
        * Description: Provides Designer Widgets

    - ActiveX widgets (Windows only)
        * Binary file name: ppactivex.dll (Windows)
        * Description: Contains dedicated ActiveX widgets for use with the designer component and a Generic ActiveX Widget. This component allows the usage of any available ActiveX Control on the PC. Provides the GMS Aircraft and Instrumentation displays as well.

    - QWT widgets
        * Binary file name: ppqwt.dll (Windows), libppqwt.so (Linux)
        * Description: Contains dedicated widgets for use with ppdesigner The PBA.pro qwt component is partly based on the work of the Qwt project *https://qwt.sourceforge.io/*

    - Analogue widgets
        * Binary file name: ppanawdg.dll (Windows), lib ppanawdg.so (Linux)
        * Description: AIM Library to integrate Analogue Widget collection of 3Electronics

    - QML widget
        * Binary file name: ppqml.dll (Windows), libppqml.so (Linux)
        * Description: Provides widget to use Qt Modeling Language elements on user definded displays.

    - Saver component
        * Binary file name: ppsave.dll (Windows), libppsave.so (Linux)
        * Description: This component is used to save and restore PBA.pro project designer template and database files.

    - Example component
        * Binary file name: ppexamples.dll (Windows), libppexamples.so (Linux)

* Description: Provides some examples for the different active and licensed components

– Optional USB dongle component Dongle required

* Binary file name: ppdongle.dll (Windows), libppdongle.so (Linux)
* Description: Support for PBA.pro Dongle Licensing

PBA.pro-MIL (MIL-STD-1553 support)

• Binary file name: ppmil.dll (Windows), libppmil.so (Linux)

• This Component requires and supports BSP V14.4.x (Windows) and BSP V14.4.x (Linux)

• Requires a PBA.pro-MIL license, which needs to be licensed to the related Board Serial Number(s).

• The PBA.pro Database option "PBA.pro-MIL-DBM" is required for database parameter usage resp. payload decoding.

• Compatibility components for Windows are available for BSP V12.x.x & BSP V11.4x & BSP V11.2x. The required Compatibility Component will be determined at startup or may be selected via the Help About Dialog (Component Load Order Tab)

• For Hardware, providing a MIL-Scope, a PBA.pro-MIL-DS option needs to be present.

• For usage of 3910 or Efex resources the ppefa Export Licence Component is required, which is not included in the standard PBA.pro Setup. This component is delivered together with the PBA.pro Export Licence for 3910/Efex. Please contact factory if you require to use Efa or Efex.

PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

• Binary file name: ppmil.dll (Windows), libppmil.so (Linux)

• This Component requires and supports BSP V14.4.x (Windows) and BSP V14.4.x (Linux)

• Requires a PBA.pro-STANAG license, which needs to be licensed to the related Board Serial Number(s).

• The PBA.pro Database option "PBA.pro-STANAG-DBM" is required for database parameter usage resp. payload decoding.

• Includes the option PBA.pro-MIL (MIL-STD-1553 support)

• Compatibility components for Windows are available for BSP V12.x.x & BSP V11.4x & BSP V11.2x. The required Compatibility Component will be determined at start-up or may be selected via the Help About Dialog (Component Load Order Tab)

PBA.pro-AFDX-2 (ARINC664 / AFDX support)

• Binary file name: ppfdx.dll (Windows), libppfdx.so (Linux)

• This Component requires and supports BSP V19.5.x (Windows) and BSP V19.5.x (Linux)

- Requires a PBA.pro-AFDX license, which needs to be licensed to the related Board Serial Number(s).

- The PBA.pro Database option "PBA.pro-AFDX-DBM" is required for database parameter usage resp. payload decoding.

- Compatibility Components for Windows available for BSP V16.1xand V17.1x. The required Compatibility Component will be determined at start-up or may be selected via the Help About Dialog (Component Load Order Tab)

- An Extra Key Option (PBA.pro-AFDX-REROS) is required for the Reros (VL-Rerouting and Parameter-Modification) usage.

PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

- Binary file names: ppfdx.dll & ppethextension.dll (Windows) , libppfdx.so & libppethextension.so (Linux)

- This Component requires and supports AFDX BSP V19.5.x (Win) and BSP V19.5.x (Linux)

- Compatibility Components for Windows available for BSP V16.1xand V17.1x. The required Compatibility Component will be determined at start-up or may be selected via the Help About Dialog (Component Load Order Tab)

- Requires a PBA.pro-ETH license, which needs to be licensed to the related Board Serial Number(s).

- The PBA.pro Database option "PBA.pro-AFDX-ETH" is required for standard Ethernet Database Parameter usage resp. payload decoding of TCP and UDP frames and messages.

PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Binary file name: ppfc (Windows), libppfc (Linux)

- This Component requires and supports BSP V06.0.x (Windows) and BSP V06.0.x (Linux)

- Requires a PBA.pro-FC-2 license, which needs to be licensed to the related Board Serial Number(s).

- The PBA.pro Database option "PBA.pro-FC-2-DBM" is required for database parameter usage resp. payload decoding.

PBA.pro-FC-ASM (FC-AE-ASM support, includes PBA.pro-FC-2)

- Includes PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Provides additional ASM specific extensions for the PBA.pro-FC and PBA.pro-FC-DBM options.

- Requires a PBA.pro-FC-ASM license, which needs to be licensed for the related Board Serial Number(s).

PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

- Includes PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Provides additional A818 specific extensions for the PBA.pro-FC and PBA.pro-FC-DBM options.

- Requires a PBA.pro-FC-A818 license, which needs to be licensed for the related Board Serial Number(s).

PBA.pro-FC-RDMA (FC-AE-RDMA support, includes PBA.pro-FC-2)

- Includes PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Provides additional RDMA specific extensions for the PBA.pro-FC and PBA.pro-FC-DBM options.

- Note that this option is automatically included if the hardware supports RDMA.

PBA.pro-ARINC429-x (ARINC-429 support)

- Binary file name: ppa429.dll (Windows), libppa429.so (Linux)

- This Component requires and supports BSP V12.3.x (Windows) and BSP V12.3.x (Linux)

- Requires a PBA.pro-ARINC429 license, which needs to be licensed to the related Board Serial Number(s).

- The PBA.pro Database option "PBA.pro-ARINC429-DBM" is required for database parameter usage resp. payload decoding.

- Compatibility components for Windows are available for BSPs V09.4x & V10.x. The required Compatibility Component will be determined at startup or may be selected via the Help About Dialog (Component Load Order Tab)

PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

- Binary file name: ppcan.dll (Windows), libppcan.so (Linux)

- This Component requires and supports BSP V01.1.x (Windows) and BSP V01.1.x (Linux)

- Requires a PBA.pro-ARINC825 license, which needs to be licensed to the related Board Serial Number(s).

PBA.pro-AIM422 (AIM-RS422 Serial Interface support)

- Excluded from Linux

- Binary file name: ppaim422.dll (Windows)

- This Component requires and supports BSP V01.0x

- Requires a PBA.pro-AIM422 license, which needs to be licensed to the related Board Serial Number(s).

PBA.pro-AIM485 (AIM RS485 component)

- Excluded from Linux

- Support for upper layer protocols: ADB and EADIN

- ADB Support

    – Binary file name: ppaim485.dll (Windows)

    – This Component requires and supports BSP V01.01

    – Requires a PBA.pro-ADB license, which needs to be licensed to the related Board Serial Number(s).

    – The PBA.pro Database option "PBA.pro-ADB-DBM is required for database parameter usage respectively payload decoding.

- EADIN Support

    – Binary file name: ppaim485.dll (Windows)

    – This Component requires and supports BSP V01.00

    – Requires a PBA.pro-EADIN license, which needs to be licensed to the related Board Serial Number(s).

    – The PBA.pro Database option PBA.pro-EADIN-DBM" is required for database parameter usage respectively payload decoding.

Generic Database component

- Binary file name: ppdbs.dll (Windows), libppdbs.so (Linux)

- Description: Provides raw value conversion of Engineering Units of all licensed Database options like PBA.pro-MIL-DBM or PBA.pro-AFDX-DBM as well as the PBA.pro Assign.

PBA.pro-TSM (Test and Script Manager component)

- The PBA.pro Test- and Script Manager components including:

- Requires the PBA.pro-TSM key option.

    – Embedded TCL script component

        * Binary file name: pptcl.dll (Windows), libpptcl.so (Linux)
        * Description: TCL Scripting Language, based on the work of the TCL/TK project http://www.tcl.tk/.

    – Embedded Python script component

        * Binary file name: pppythonxx.dll (Windows), libpppythonxx.so (Linux)

* Description: Python Scripting Language component based on the work of the Python project http://www.python.org. The component supports Python 2.7.x and 3.3.x to 3.11.x. The PBA.pro Windows installer offers to install a bundled Python 3.11.4 interpreter. Other supported versions can be downloaded from http://www.python.org and installed separately.

– Test- and Scriptmanager component

* Binary file name: pptestman.dll (Windows), libpptestman.so (Linux)
* Description: Test Script Sequencer with automatic Report Generation capabilities, based on the provided scripting languages TCL and Python.

– Remote control component

* Binary file name: ppremote.dll (Windows), libppremote.so (Linux)
* Description: Allows to Remote Control the PBA.pro by external applications either local or over the network

PBA.pro-UA (User administration component)

• Binary file name: ppuseradmin.dll (Windows), libppuseradmin.so (Linux)

• Description: This component allows to restrict the access to the PBA.pro objects on user level with a password.

Further utility components

Additional utility components, which can be used as add on components are:

• Legacy Analyser file import component (Windows only)

– Binary file name: ppimport.dll (Windows)

– Description: Allows to load

* PBA-2000 / PBA-3910 BC and RT Setups.
* The import of PBA BM Setups is partially supported.
* ParaView Assigns and the Database Stream Assign of ParaView projects

• Generic discrete component

– Binary file name: ppdiscretes.dll (Windows), libppdiscretes.so (Linux)

– Description: Discrete resource component, which will host AIM onboard Discrete channel of for example an ARINC429 or MIL hardware. Furthermore, this component is used as generic hardware abstraction layer to access third party discrete interface components of the PBA.pro.

• Recording File Converter

– Binary file name: pprecconv.dll (Windows), libpprecconv.so (Linux)

– Description: Export and import PBA.pro Recording files to RAW and DACFF format and import PCAP and Chapter 10 (up to IRIG 106-9) recordings. Also fixes non closed pprec files.

Third Party Support Components

NAPATECH SmartNIC

- Binary file name: ppnapatech.dll (Windows), libppnapatech.so (Linux)

- Requires a PBA.pro-NAPATECH license for each board/hardware.

- Description: NAPATECH Component for PBA.pro using Napatech SmartNICs (e.g. NT20E3-2-PTP SmartNIC 2x1G/10G).

ARINC 708

- Binary file name: ppa708.dll (Windows)

- Requires a PBA.pro-A708 license for each board/hardware.

- Description: ARINC 708 Weather Radar Component for PBA.pro using a Ballard USB 708 / UA1710 Device.

Generic analogue component

- Binary file name: ppanalogue.dll (Windows)

- Requires a PBA.pro-ANA license for each board/hardware.

- Description: This component is used as generic hardware abstraction layer to access third party analogue interface components of the PBA.pro.

PBA.pro-RS232 (Serial COM port support)

- Binary file name: pprs232.dll (Windows), libpprs232.so (Linux)

- Requires a PBA.pro-RS232 license for each board/hardware.

- Description: Access to local COM ports. For full access to the component, including a configurable chronological monitor, a PBA.pro-RS232 license is required.

UDP component

- Binary file name: ppudp.dll (Windows), libppudp.so (Linux)

- Requires a PBA.pro-UDP/TCP license for each board/hardware.

- Description: UDP Socket access. Without a license up to two UDP ports can be accessed. For full access to the component, including database manager functionality for Engineering Unit Conversion, a PBA.pro-UDP/TCP license is required.

TCP component

- Binary file name: ppeth.dll (Windows), libppeth.so (Linux)

- Requires a PBA.pro-UDP/TCP license for each board/hardware.

- Description: TCP Socket access. Without a license up to two TCP ports can be accessed. For full access to the component, including database manager functionality for Engineering Unit Conversion, a PBA.pro-UDP/TCP license is required.

IP408 / IP470

- Binary file name: ppip408.dll (Windows), libppip408.so (Linux)

- Requires a PBA.pro-DISC license for each board/hardware.

- Description: PBA.pro component for

    – Acromag IP408 Module with 32 digital I/O Channels
    – Acromag IP470A Module with 48 digital I/O Channels

- Excluded from W64/P32.

- Based on Generic discrete component

- Can be used/controlled by the ASP support component for real time recording

Microsoft Flight Simulator interface component

- Binary file name: ppmsflight.dll (Windows)

- Description: Free of charge PBA.pro utility component supporting the Microsoft Flight Simulator (FS) Interface Component. This allows to view and control parameters of the FS, which can be used to control other hardware resource parameters (e.g.MIL/ARINC429/AFDX).

- Requires an installed and activated Microsoft flight simulator software.

- Excluded from W64/P32 and Linux.

Generic analogue and discrete component for National Instruments hardware

- Binary file name: ppnidaqmx.dll (Windows)

- Requires a PBA.pro-DISC and/or PBA.pro-ANA license for each board/hardware.

- Description: PBA.pro component for the following Analogue/Digital IO boards from National Instruments

    – PCI-6225
    – PCI-6511
    – PCI-6513

    – PCI-6514

    – PCI/PXI-6515

    – PCI-6517

    – PCI-6722

    – PCI-6723

- Excluded from W64/P32 and Linux.

- Based on Generic discrete and analogue component.

ARINC-629 component

- Binary file name: ppa629.dll (Windows)

- Requires a PBA.pro-ARINC629 license for each board/hardware.

- Description: PBA.pro component for monitoring-only support of the following Sycos A629 boards:

    – Sy629PCIe-BPT
    – Sy629PCIe-BPTE

- This component requires and supports BSP V01.0.0

- Excluded from W64/P32 and Linux.

Version and Change History

V02.82

- Build Date: June 2023

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  – Use Visual Studio 2022 as compiler on windows

  – Allow to drag tabbed and workspace windows out of the workspace

  – Allow to drop standalone widgets to a Main-Window Tab

  – Add a "Move to Tab" system menu entry to standalone widgets

  – Harmonized window titles and shorter titles for Main Window Tabs

  – Selecting "Copy" in a Context Menu (when a Property is selected) copies the property value instead of the entire object, so copy and paste is supported also for simple values or strings now

  – Faster network devices (ANET) detection via Broadcast message. Scanning of entire network may be disabled via settings.

  – Fixed a few dead web-links in documentation and source code

  – Bug Fix: PBA.pro Window can cover Windows Task Bar

  – Bug Fix: Some Context Menu entries may missing on Favorites

  – Bug Fix: DBS View not saved in View Layout

  – Bug Fix: Only one Browser View present, when moving back a widget to Workspace from Tab

  – Bug Fix: Filter in Resource Tree only filters first node of a resource type after restart

  – Designer related

    * Designer Worksheets, a base dialog for combining different widgets

    * Bug Fix: Selecting a picture for a Label on a Designer Panel does set the picture to the Label

- Bus Monitor (All Resources)

  – IRIG 106 Chapter 10 Export for MIL-STD-1553 and ARINC429

  – Recording File Converter also for Linux

  – Drag and drop pcap, prc, hrc and dacff files to the PBA.pro main window, opens the Recording File Converter

  – Bug Fix: Export Start/Stop Trigger Display not shown after clicking to the button in the export dialog

  – Bug Fix: IRIG 106 Chapter 10 ARINC 429 Imports may show a wrong Time Tag

  – Bug Fix: Fix a crash when trying to start an export before data is present

  – Bug Fix: If a recording display is opened standalone, and a message is opened via double click the message view is displayed embedded

  – Bug Fix: Tool Buttons for setting up filter conditions in Filter Library window vanish

- Parameter Database (All Resources)

  – Assign Display "Add Parameter" button is now disabled, when no parameter is selected in DBS Tree

  – Show Missing Assign parameter message also, when an new DBS is loaded to an existing Assign

  – Bug Fix: Assign Display not re-filtered after new parameter drop

  – Bug Fix: PBA.pro hangs if closed while a Parameter recording with Signal is running

- PBA.pro-MIL (MIL-STD-1553 support)

  – Show MilScope Setup and Analysis view related to MilScope Display

  – Fix an possible crash during 1553 Recording

  – Mil Test Dialog shows Board Name and Serial Number

  – 100MHz and 2x50MHz modes disabled for APX related platforms

- PBA.pro-ARINC429-x (ARINC-429 support)

  – "Force usage of PBA pro delivered API-librairies" from Trouble Shoot Dialog may not work

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  – Support generic FIFO Send Mode

  – Enabled more features when running with ASC-FDX devices, configurable via settings FDX/AscAllow

  – Do not show pprec export in Sampling and Queueing History

  – Connection Matrix for Standard Ethernet

  – Dynamic Message Feature removed

  – Bug Fix: PBA.pro may crash when switching FDX board mode and recording files are loaded

  – Bug Fix: FDX Bus Monitor may return false on stop

  – Bug Fix: Searching and filtering does not work in VL Activity list

  – Bug Fix: A664 MsgView must not use IP-Fragments without UDP-Header as messages

  – Bug Fix: Set MDI mode only if really changed, wait after change to get a link

- PBA.pro-TSM (Test and Script Manager component)

  – Windows Python 3.11 Support for Windows

  – Windows installer comes with Python 3.11.4

  – Windows has the default version Python 3.11

  – Windows Python 3.10 Support for Linux

- PBA.pro-NAPATECH (Napatech SmartNIC support)

  – Napatech Component also available for Linux

  – PCAP Export from Napatech recordings

  – Added ConnectionInfo display for chronological recordings

V02.81

- Build Date: December 2022

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - Tabbed Main Window Interface.
    * Widgets may be placed in an separate Tab.
    * The Tabs are saved within the View Layout
    * Tabs may be moved back to Workspace by a double click or the corresponding Tab Context Menu
    * If a Workspace Window is maximized it is shown in a Tab.
    * It is possible to switch between the Workspace and Tabs via CTRL-Tab

  - Basic context sensitive Online Help
    * Pressing F1 now displays a list with related chapters from the PDF Documentation
    * A click to the related chapter will open the Browser and jump to the related Chapter or Page in the PDF Document
    * An up-to-date Browser (Edge, Firefox or Chrome) supporting display of PDF's is required (will not work with e.g. Internet Explorer). Alternatively you may use the application associated with PDF files without displaying the correct page.
    * Scripting help is now shown via Shift-F1 (May be changed within the Settings - MainWindow/KeyboardShortCuts)

  - Edit Properties in a view requires less clicks

  - On windows it is possible to hide the Main Window title

  - Updated Qt Framework to 5.12.12

  - Option to hide always Output Window on Startup

  - Better Context Menus in case of Multiselection

  - Browser View shows back and forward buttons at the top left position

  - Favourites may be accessed from Browser View

  - Utility Widgets like Selftest Panels, DACFF Converter etc. may be stored in a View Layout

  - Menus show tooltips instead of only status tips

  - It is possible to hide/show all toolbars via the View Menu or the Main Window Context Menu

  - Designer related
    * Dropping an Object from the resource to a designer panel while holding down the shift key allows now also to create a class view widget
    * Autosetup of Resources in case of Parameters are used as data source for Designer Elements
    * Bug Fix: Deleting items from a Designer Dialog in Edit and Standalone Mode is not possible
    * Bug Fix: Designer Template Directory not reset after project load
    * Bug Fix: It is not possible to set a widget shortcut via script

- Bus Monitor (All Resources)

- It is possible to set several local reference times per recording
- Event Marker- and Bookmarktext is also shown in Info Column
- Copy data between PBA.pro HexView and text editor
- Better Coloring Handling in Recording Display
- It is possible to export a merged recording to a pprec again. The resulting recording file can only used for viewing purposes.
- Allow to Start/Stop BM Online List via a related context menu action.
- Bug Fix: Filtering for MAC Addresses may not work
- Bug Fix: Mil Recording does not stop after MaxMsgFileSize was reached

• Parameter Database (All Resources)

- It is possible to configure a Message about missing Parameters in an assign after load (PPDB-S/Assign/ParamSourceWarningType)
- It is possible to add the Assign to Favorites
- The Parameter Condition Reference gets an Valid Property showing the current state of the condition for usage e.g. in the Designer
- Add Copy/Paste actions to the Database Edit Table
- Bug Fix: Assign filter for Missing Parameters not setup
- Bug Fix: Main Window Shortcut for Parameters Menu not working
- Bug Fix: Misleading Assign Icon in Database Edit View
- Bug Fix: Assign not immediately connected after project load
- Bug Fix: Assign Tabs may stay invisible if the Tab is already signalled on creation of the Assign Display

• PBA.pro-MIL (MIL-STD-1553 support)

- RT Status Queue allowing to set a Status Word Bit or No Response for dedicated response indicies

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- Added VL Activity and Size Distribution info to chronologic recordings
- Added Connection info to chronologic recordings
- Start all Bus Monitors Button shall start SQ-Receiver if the Receive Mode is SamplingAndQueuing instead of switching to chronologic recording mode
- Some adaptions to the ASC-FDX Board
- BusLoad display of generic Send List now also works with mixed IFG and PGWT messages
- Added CalcStartTimeForFrame slot for scripting to generic send list to calculate the expected sendtime of a frame
- Use a minimal emergency interframe-gap-time, when timing of PGWT is impossible
- UDP checksum 0 is accepted now for StdEth mode and the correct UDP checksum != 0 for A664 mode
- Support MDI modes (Rx/Tx Pin Assignment of network-connector, Automatic/Cross/StraighThrough) for new boards and when new BSP is installed

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

    - Bug Fix: Fix Update problems of Can Parameters after Channel restart

    - Bug Fix: Parameter Timeout not shown

- PBA.pro-TSM (Test and Script Manager component)

    - The internal Script editor can now be accessed from the Script Menu.

    - Bug Fix: API Documentation for pputil.py not showing up

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    - FCI Board Support

    - Added FCI Primitives and Header Fields

    - Support new Windows and Linux FC-BSP 6.0.x, is not compatible anymore with older BSP versions

V02.80

- Build Date: June 2022

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    - Network Resource Searching is more reliable

    - Output Window is hidden by default

    - Display an Error and Warning icon in Status Bar informing about new Errors or Warnings

    - Support of new PBA.pro Dongle types

    - Component versions not longer included in ppro/ppdbs files

    - Designer related

        * Widget Design Explorer vanishes if not needed

        * Bug Fix: Dropping a Parameter to the Workspace does not create a custom widget any more

        * Bug Fix: Qwt Polar Diagram Pixmap Support does not work

- Bus Monitor (All Resources)

    - New Recording file Macro %h for the Home Directory

    - Raw Recording performance improvements

    - pprec file may now refer to a external raw file (prc, hrc, xrc or nt) to remove the need to copy the data in for big raw files.

    - Recordings have a "MessageCountChanged(old_count, new_count)" signal for easy implementing scripts following the recording.

    - Bug Fix: Recording display cannot display more than 2.147.483.647 messages

    - Bug Fix: Search for value at any word position not working

    - Bug Fix: Stored Recording filter may be gone after second save

- – Bug Fix: Detailed View may not show selected object, in case only one message is in

- Parameter Database (All Resources)

  - – Assign Placeholder allows to define an Unit

  - – Example script how to implement an dynamic tag checker via Python and Assign (<PBA.pro Directory>\examples\python\mil\tagcheck.py)

  - – Added "Shared Parameter definitions" chapter to Getting Started manual to have a unique description for parameters shared by different components

  - – Bug Fix: Assign Placeholder does not allow to specify the precision by script

  - – Bug Fix: Assign "Show In Tab" not working after converting Folder to Tab

  - – Bug Fix: PBA.pro may crash if a Message with Ethernet Database Parameter is displayed and the database is deleted

- PBA.pro-MIL (MIL-STD-1553 support)

  - – Support MIL 1553/3910 BSP 14.1.x

  - – C-Code generation supports now Interrupts, Acyclic Messages, BC Start Modes and Error Injection

  - – MIL Board System Overview is now resizable

  - – Support BC Traffic override feature

  - – Status Word Modification may be changed during Runtime of the RT

  - – Bug Fix: Possible crash when displaying a 1553 Message with Errors in Recording Display

  - – Bug Fix: Possible long delay when sending two consecutive acyclic frames by script.

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – Bug Fix: Possible Crash when switching EFA/EFEX from PBA.pro System Overview

  - – Bug Fix: Cannot Change the Wordcount field of a HS Message if an electrical Interface is used

- PBA.pro-ARINC429-x (ARINC-429 support)

  - – Support A429 BSP 12.3.x

  - – Bug Fix: Replay Channels not stopped when using sync replay

  - – Bug Fix: Configuring multiple A615 data loader busses to use the same channels or discretes does not work correctly

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – Support A664 BSP 19.4.x

  - – A664/Ethernet mode may now be switched via a Context Menu of the A664 resource

  - – A664/Ethernet mode is stored in setup file and automatically restored on load of the project

  - – First edition Capturing for APE boards

  - – Error messages derived via function FdxGetErrorDescription if present

  - – Message View performance improved

  - – Bug Fix: Frames created with Generic Send List and Payload Generation Full/FullWith-TimeTag show IPChecksum error

– Bug Fix: Ethernet Database may not be Loaded correctly

• PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

– Support A664 BSP 19.4.x

– Moved Ethernet Parameter description from Standard Ethernet manual to the common Parameter Database manual

• PBA.pro-TSM (Test and Script Manager component)

– Updated Python Getting Started Manual

– Bug Fix: Idle Debugging not working for Python 3.6 or newer

– Bug Fix: Switch Python via the "Python Installation Info" widget may not work correctly

• PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

– Bug Fix: PBA.pro may crash after can messages with no acknowledge is send. Requires CAN BSP >= 1.1.30 which may be downloaded from www.aim-online.com.

• PBA.pro-RS232 (Serial COM port support)

– Added setting to specify the number of COM-Ports to be added to the resource-tree

• PBA.pro-NAPATECH (Napatech SmartNIC support)

– New Napatech component for NT20E3-2-PTP SmartNIC 2x1G/10G Device

V02.79

• Build Date: December 2021

• Applicable for Windows and Linux

• PBA.pro-FD (PBA.pro Framework & Designer)

– Fixes with -cfg and -ini command line options

– Timed License timeout information is not displayed in the PBA.pro Main Window any more. 10 days before the timed licence is expired, a message is shown.

– Bug Fix: Search Resources and Create NTG Resource Menu is missing when using licence server

– Bug Fix: When specify a command line using only one stream of a board (e.g. -svrppmil:local:(1)) a wrong message may be displayed (no boards found).

– Designer related

* Designer panel gets a Resized signal

* Bug Fix: Custom Layouts from older PBA.pro Versions may not be imported correctly

* Bug Fix: Designer panel containing a ledmatrix widgets crashes application on longer runs

– Dropped support for the AIM Analogue Interface Processing Module (ppaipm)

– Dropped support for the TEWS TCP862 4-channel interface (pprs422)

– Dropped support for the Brandywine IRIG-G interface (ppirigg)

– Dropped support for the Great River Gravity 64 FCAV Interface (ppvideo)

• Bus Monitor (All Resources)

– Recording View Follow Mode may be enabled by default and stopped on a click to the Recording Display

– Various Bug Fixes related exporting Merged/Correlated Recordings to pprec

– Added a DACFF recording file format to the PBA.pro Recording File Description

– Bug Fix: Fix Possible crash when loading corrupt recording files

– Bug Fix: Recording file compare action may stay disabled after trying to compare an online recording

– Bug Fix: Suppress confusing "Export To File" Context Menu action on a recording

• Parameter Database (All Resources)

– Assign signal now offers a Min/Max value latch

– The Function Format gets TO2SCOMPL, FROM2SCOMP and FROMBCD, TOBCD functions

– The Function Format gets a LENGTH variable showing the current bit length of the parameter

– Bug Fix: Parameter plot not working in some instances

• PBA.pro-MIL (MIL-STD-1553 support)

– Creating parameters from Buffer Display now uses selected word position in Buffer Display

– C-Code generation from 1553 resources to be used as base for an standalone executable (requires TSM licence)

– PBA.pro is delivered with BSP 13.7

– Bug Fix: System state actions that sets board coupling do not work, when created on a board that offers different coupling options

– Bug Fix: Gap Error Injection can only be set in 1 us steps instead of 0.5 us

– Bug Fix: Fixed saving/export of filtered correlated stream

• PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

– Efex NTG Emulation

– Bug Fix: Importing an HS CSV may show up no Response Errors on Low Speed

• PBA.pro-ARINC429-x (ARINC-429 support)

– A429 Add a LoopGap property to the Replay object allowing to specify an extra gap between two consecutive repetitions when doing an repeated replay

– Bug Fix: CreateChannel() slot may cause wrong channel number to be set

– Bug Fix: Possible Crash after a 429 Resource was closed.

– Bug Fix: Inaccurate Timing when doing a repeated replay

– Bug Fix: A429 Sync Replay may not be restartable

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- – ASC-FDX-2 Support. ASC currently supports chronological monitor, capturing form sampling and queuing ports and sending from queueing ports. Other functions are not explicitly disabled in the PBA.pro user interface and may fail currently, but may work with an ASC BSP update.
- – Single occurrence update from sampling and queueing ports with Assign

- • PBA.pro-TSM (Test and Script Manager component)

  - – Support Python 2.7 and 3.3 to 3.10 (3.9 on Linux)
  - – Some fixes using python threads within PBA.pro

- • Panavia

  - – Allow faster polling of Rx Tags via an Update slot

- • Further utility component changes

  - – A825/CAN: Assign Auto Setup
  - – A825/CAN: Bug Fix: TX Parameter show always the Timeout Flag
  - – RS232 component now also available for Linux. Due to this the component was partially re-written, and not all properties of the former RS-232 Component are supported any more. Contact factory, if you are missing functionality.
  - – Bug Fix: Analog Component is lacking Icons for some objects

V02.78

- • Build Date: January 2021

- • Applicable for Windows and Linux

- • PBA.pro-FD (PBA.pro Framework & Designer)

  - – Add an option to always claim a Remote Resource, even if somebody else is using the board via resource/force_unlock_on_used_resource setting
  - – Improve behaviour of script edit window in some instances
  - – Allow to omit bar graph from global bar plots via settings (ViewSettings/<Mil/Can/A429>StatusView/StatisticEnabled=false)
  - – Bug Fix: ActiveX Widgets can not be deleted from Designer panels
  - – Bug Fix: Analogue gauge displays wrong range after changing majorTicks property
  - – Bug Fix: Analogue gauge displays wrong values
  - – Bug Fix: When loading a corrupt recording file, PBA.pro does not show an error message
  - – Bug Fix: Parameter plot does not work correctly when using Assign functions:
    When creating a bus monitor plot for a parameter manipulated by an 'Assign Window' function, the range determination of the plot seems not to work correctly.
  - – Bug Fix: PBA.pro does not run when started via SSH session forwarding X11
  - – Bug Fix: File Selection Widget does not correctly abort the selection process on user cancel
  - – Bug Fix: Unable to start PBA.pro on Ubuntu 18.04

- Bug Fix: Application might crash when trying to load a Project Template File (pptml)

- Bug Fix: Parameter export to json format produces wrong record separators and line feeds

- Bug Fix: KDC Widgets may show an empty folder in Designer Widget

- Bus Monitor (All Resources)

  – Bug Fix: PBA.pro might hang when starting/stopping BM feeding an online parameter plot.

  – Bug Fix: Recording display may show incorrect message indices for recording sessions with more than 1 million messages

  – Bug Fix: Manually adding bookmark in a recording session may cause the automatically created, existing events to disappear

  – Bug Fix: When recording in online mode, saving the recording does not work if an export creating a setting entry has been made before

- Parameter Database (All Resources)

  – Bug Fix: Context menu on parameter plot does not work after loading layout

- PBA.pro-MIL (MIL-STD-1553 support)

  – Support MIL 1553/3910 BSP 13.5.0/13.5.1

  – Allow to Import 1553 CSV files lacking the TransferType column

  – Bug Fix: Command, Status and Error Word trigger does not work with embedded MIL1553 boards

  – Bug Fix: Possible crash when loading recording file

  – Bug Fix: PBA.pro hangs when analysing a 25 MHz signal via MilScope functionality

  – Bug Fix: PBA.pro does not detect/report overflow condition from API

  – Bug Fix: MIL Tracks: Using two second level tracks does not work correctly

  – Bug Fix: CSV Import does not import 1553 No Response Errors

  – Bug Fix: Possible crash when starting/stopping BM in quick succession on slow systems

  – Bug Fix: MilScope icons may not be visible

  – Bug Fix: PBA.pro may crash if there is a hardware error (NACK) on BM Start

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  – Bug Fix: PBA.pro might crash in A->B coupling mode if high-speed bus connection is missing

  – Bug Fix: Efex Recording File compare may falsely detect difference in Efex Status Frame

- PBA.pro-ARINC429-x (ARINC-429 support)

  – Support ARINC429 BSP 11.1.1

  – Bug Fix: Creating Label 0377 in parameter database using CreateLabel() slot from script does not work

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

  – Bug Fix: APS-FC-2: Mapping between physical port and board name may change arbitrarily

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- – Support ARINC664 BSP 19.3.1

- – Show assumed BSP version in Help About dialogue

- – Bug Fix: Needless 'RunTime-Setup' is available as data source for A664 parameters in assign window

- – Bug Fix: NTG and Runtime created FDX Resources are lacking toolbar or toolbar actions

- – Bug Fix: Frames created with Generic Send List and Payload Generation Full/FullWith-TimeTag show IPChecksum error

- – Bug Fix: Switch Test Application crashes during Mixed Bag Tests

- • PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

  - – Support ARINC825 BSP 1.1.28

- • PBA.pro-TSM (Test and Script Manager component)

  - – Bug Fix: Start-up scripts containing a call to QuitWithoutWarning may not quit PBA.pro

- • Recording File Converter:

  - – Bug Fix: Possible crash when converting recording files > 4 GByte with converter tool

  - – Bug Fix: Recording File Converter does not log messages on 'info' and 'error' level

V02.77

- • Build Date: November 2019

- • Applicable for Windows and Linux

- • PBA.pro-FD (PBA.pro Framework & Designer)

  - – Always open default View on double click on the Resource Tree

  - – Designer related

    - * Bug Fix: Designer Panel may show empty MDI child if hidden by script
    - * Bug Fix: Layout sections get highlighted when non displayable widgets are shown
    - * Bug Fix: Designer shows invisible label when dropped object was not found

- • Bus Monitor (All Resources)

  - – Chunk Combo Box moved to Export Toolbar

  - – Bug Fix: Filter Action text may be messed up, if follow mode is selected

  - – Bug Fix: Crash when exporting live data on interval

  - – Bug Fix: Hide "Colourize according to Selection..." in Index View if no Alias container can be found

  - – Bug Fix: Filtering monitor data based on diff time does not work

  - – Bug Fix: Possible crash when scrolling through corrupted recording file

  - – Bug Fix: Table Header Layout Dialog does not allow to select columns

- • Parameter Database (All Resources)

- – Bug Fix: Signal colouring may not work correctly in Parameter Recording Display

- – Bug Fix: Parameter Replay set position via slider may not work correctly

- – Bug Fix: Possible wrong value format when doing a CSV Export from Parameter Recording Display

- – Bug Fix: Possible crash, when deleting the last Assign entry

- – Bug Fix: Cannot change font size of Assign window without mouse wheel

- – Bug Fix: When loading a recording, it may be attached to wrong resource (causing e.g. wrong parameter display and plots)

- – Bug Fix: Filter Container cannot be deleted from Assign Signal

- PBA.pro-MIL (MIL-STD-1553 support)

  - – BSP 13.0.x Support

  - – BC Frame Edit allows to delete entire frame via context menu

  - – Streamlined some view names

  - – Do not display the *BufStat* property of a Transfer in green, due to it may be misleading, if there are errors on the transfer

  - – Better Single Function board support

  - – Bug Fix: Mil DBS Stream Assign may not be loaded correctly

  - – Bug Fix: Frame edit looses selection after adding element

  - – Bug Fix: Hang when loading 3910 PDI and no 3910 Licence is available

  - – Bug Fix: Command Sync error may be injected at wrong position

  - – Bug Fix: Deleting a Major Frame may corrupt other Minor Frames

  - – Bug Fix: Possible Crash when opening Mil Status view and a collapsed splitter

  - – Bug Fix: Dropdown menu for sync pattern error not working always

  - – Bug Fix: RT status does not display status word exceptions for virtual devices

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – Introduced *IllegalLSWordCount* Error Injection

  - – Allow to specify bit position for *Gap* errors on high speed bus

  - – Bug Fix: 3910 Mode codes may not be displayed correct in Bus Monitor

- PBA.pro-ARINC429-x (ARINC-429 support)

  - – BSP 11.1.x Support

  - – Allow to loop Low Speed channels to High Speed channels via Loop Pollution

  - – Bug Fix: SDI Setting on reception may not be saved for certain labels

  - – Bug Fix: FIFO Queue may hang on APU Devices

  - – Bug Fix: References to 429 RX Activity labels (e.g. on Designer or Assign) may not be restored correctly

  - – Bug Fix: Framing setups containing delay can not be loaded any more

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- – Bug Fix: ASM message decoding may not work for smaller messages

- – Bug Fix: Second Port of FC-ASM boards is not disabled when in TAP mode

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – BSP 19.2.x Support

  - – Bug Fix: Start of transmitter after user defined delay time does not work correctly

  - – Bug Fix: Don't use Fragments for SQ Setup from Recording

  - – Bug Fix: On-the-fly update of UDP sampling ports payload leads to hang

  - – Bug Fix: Capture actions in toolbar display wrong tooltips

  - – Bug Fix: Possible crash when importing fdXplorer send setups

  - – Bug Fix: Erroneous initialization of transmit ports for FdxTap

  - – Bug Fix: Detection of BAG violation on receive VLs did not work correctly

- PBA.pro-TSM (Test and Script Manager component)

  - – Remote Control

    - * Installation of PBA.pro engine shall enable 'Remote Control' component by default

  - – PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

    - * Transmitter can not be stopped any more, when in bus error state

V02.76

- Build Date: March 2019

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - – Bug Fix: Escape does not clear selection in System States Dialog

  - – Bug Fix: Gui may be blocked for 500 ms if dongle is connected

  - – Bug Fix: Possible Crash on User Administration Login

  - – Bug Fix: Possible crash when closing the System States Dialog

  - – Bug Fix: Wrong Error Output when setting Dynamic Properties via System State

  - – Bug Fix: Column width of System States View is not saved in the layout

  - – Bug Fix: Engine-Install forces the Remote-Scripter component to be installed

  - – Bug Fix: Embedded view below resoruce tree not updated with a tree selection change via the "Highlight in Tree" action

  - – Bug Fix: PBA.pro is closed if main window is hidden and the last display is closed. A hidden PBA.pro may be closed via the Tray Icon Menu.

  - – Bug Fix: PBA.pro may hang if a second project/dbs is loaded while an other is still loading

  - – Bug Fix: Settings comments and default values may not be stored

  - – Designer related

    - * Tab Elements can be accessed via script by omitting the "wdgstack" hidden member

- PBColorButton gets a toggled(bool) signal so it may be used to switch on/off standard Run(bool) operations
  - *Property to Property connections using Designer AboutToBeClosed() and Established() signals are not automatically syncronized on startup of the panel
  - *Bug Fix: Designer F1 Help not available
  - *Bug Fix: Possible hang when selecting an Active X control

- Bus Monitor (All Resources)

  - When calling Bus Monitor BM.Run(False) Slot it is ensured that all data is in the recording. To switch of the BM without blocking you can call BM.Run(False,False).
  - Bug Fix: Possible time glitches during discrete recording
  - Bug Fix: Filter Button may be visible even filtering is not possible
  - Bug Fix: Memory hole with Parameter Recording to ReadRecording slot
  - Bug Fix: CSV export may use wrong Column Separator
  - Bug Fix: Recording Compare Detailed view may not highlight differences
  - Bug Fix: 429 Recordings cannot be exported to raw (*.arc) files.

- Parameter Database (All Resources)

  - Assign: Double click to an Assign entry opens a new Parameter Info Dialog
  - Assign: Pressing Alt-Enter opens the database parameter
  - Assign: Tooltip shows parameter position
  - Bug Fix: Escape does not clear selection in Assign Display
  - Bug Fix: Object create Action for global Parameters displayed more than once
  - Bug Fix: Assign Signal with Change Condition may be signalled after reset
  - Bug Fix: Merged Databases allow to create new elements

- PBA.pro-MIL (MIL-STD-1553 support)

  - Amplitude Voltage display removed on Mil Resources due to it was only a misleading estimation.
  - Bug Fix: Sense Efex and Switch Resource type actions visible even on 1553 Boards
  - Bug Fix: MilScope may show wrong "Scope wait did timeout" message
  - Bug Fix: Mode Code data and Mode Code direction not imported from PBA-2000 Setups
  - Bug Fix: Higher Priority for the matching BC/RT Parameter Type when dropping a Parameter to the Assign and both Parameter (BC/RT) instances are present.
  - Bug Fix: Buffer Queue mode may not be restored correctly if BC Transferlist has Transfers with out of order ID's

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - Automatically correct block count when opening a HS Mid via Bus Monitor Activity
  - -mil1553 command line switch to start a 3910/Efex Board as a pure 1553 board

- PBA.pro-ARINC429-x (ARINC-429 support)

  - Bug Fix: Possible wrong gaps and API Errors when replaying text files

- – Bug Fix: Data glitch when sending 429 labels from file
- – Bug Fix: 429 DBS Labels cannot be sorted by BitPos
- – Bug Fix: Recording Import form CSV does not re-generate Parity bit
- – Bug Fix: Check failure when copy/paste Tx Labels
- – Bug Fix: Channel Type Menu may be stayed disabled
- – Bug Fix: Possible assertion failure when using Tx Label Queue reloading and polling the Label Value to the same time by script
- – Fix some discrete problems

• PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- – Linux BSP 5.1.0 Support
- – Bug Fix: Prevent usage of self connections

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- – Prepared ANS Support with BSP 19.2.x
- – Linux BSP 19.1.5 Support
- – Bug Fix: NetSpeed setting of 1000MBit lost after PBA.pro restart
- – Added new sample that checks time synchronization of boards, see examples/python/a664/misc/checkirigtimes
- – Revised reading of BSP-version information and onboard-software versions

• PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

- – Linux BSP 19.1.5 Support
- – Bug Fix: Parameter filtering not possible with MAC address 0
- – Bug Fix: Std-Eth-BMStream does not find correct matching DBS-Stream

• PBA.pro-TSM (Test and Script Manager component)

- – Python
  - * Bug Fix: Change of Python version via PyGui breaks python startup
  - * Bug Fix: Fixed python example scripts
- – Remote Control
  - * Changed input/output processing behaviour:
    - · Binary size prefix no longer accepted or sendable
    - · New mode "send as received": Messages sent in the same format as the incoming requests (with or without length prepended as 4 ascii characters)
  - * Changed command rem_size to fit new format options.
  - * Old pre-pending settings have been removed and replaced by a new one fitting the new reply mode options.

• PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

- – Bug Fix: Incorrect message ID when extended ID flag is cleared

• PBA.pro-AIM485 (AIM RS485 component)

- – Bug Fix: Default values of messages not set

V02.75

- Build Date: August 2018

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    – Treeview Context Menu cleanup

    – Treeview Shortcut Handling Cleanups

    – Treeviews allow Multi Selection

    – Removed Build Number

    – Bug Fix: Copy to Clipboard in Help About Dialog may not copy all information

    – Bug Fix: PBA.pro hangs when selecting a large range of cells in a table (e.g. DBS Edit with 200000 parameters)

    – Bug Fix: PBA.pro Project not marked modified after layout was saved

    – Designer related

        * Bug Fix: Designer Dialog position not restored with Layout Load

        * Bug Fix: Some object ID's restored wrong, so the source object cannot be found (e.g. Mil BC Transfers)

        * Bug Fix: String based widgets might not correctly display scaled parameter values

- Bus Monitor (All Resources)

    – Bug Fix: Persistent Exporter property StartWithRecording and WarnOverwrite not saved in setup

    – Bug Fix: Call BM Flush may not set BM Activity state

    – Bug Fix: Possible Deadlock related to BM Online View

    – Bug Fix: Analogue Parameters might show wrong values when added as addinals column to BM Online View

- Parameter Database (All Resources)

    – Function formats get an REVERSEBITS and SWAPENDIAN functions

    – Better hint for Parameter replay requires Assign Parameters

    – Bug Fix: Assign does not allow to select different parameter with same name, if original parameter was deleted

- PBA.pro-MIL (MIL-STD-1553 support)

    – BSP 12.6.x Support

    – Resource Selection allows to select Single Streams of remote 1553 Dual Stream Boards. This allows e.g. to use the Single ANET-1553 Streams from two different PC's.

    – Removed distinction between BC and RT Parameter if only one is present

    – Callback (Interrupt) support via ANS (BSP 12.5 or higher)

    – Statistic Display in BC/RT Status Widget may be collapsed

    – Installed API Libraries from BSP are used if present (instead of PBA.pro delivered)

- – Bug Fix: Error description not shown in tooltip of Activity Display

- – Bug Fix: MIL Import with DiffTime only CSV File produces always an 0 Irig Time

- – Some PXI Trigger related fixes

- PBA.pro-ARINC429-x (ARINC-429 support)

  - – BSP 11.0.x Support

  - – Statistic Display in Channel Status Widget may be collapsed

  - – Installed API Libraries from BSP are used if present (instead of PBA.pro delivered)

  - – Bug Fix: Recording not working with BSP 9.4x Compat Component

  - – Bug Fix: Tx Label Fill dialog not working

  - – A615 loader related

    - * A429 Channels can now be used by several loader buses (in the same direction)
    - * User interface improvements

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

  - – Installed API Libraries from BSP are used if present (instead of PBA.pro delivered)

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – BSP 19.1.2 Support

  - – Added Support for ACE- and ACXX-boards

  - – Added Support for EDE Revision-E

  - – Added some slots callable by script: FdxPort.InitHW and FdxBoard.TimeDelay4Start

  - – Check actual received firmware-header format against expected one

  - – Changed time resolution for Delay/Duration of Sampling-Queuing Messages to 1ms

  - – Some cleanups in Light-Panels

  - – Capture allows to select a Strobe Output Line

  - – Installed API Libraries from BSP are used if present (instead of PBA.pro delivered)

  - – Added VerificationMode to settings

  - – Disable Reros and Replay function preliminary for APE-FDX

  - – Improved Multi-Selection handling in some actions

  - – Added and revised Python examples

    - * python/a664/txrx_all.py Send and Capture on all available Ports
    - * python/a664/bm2gensendlist.py Extract Frames from BM and add them to Generic Send-List
    - * python/a664/dl_target.py Emulate a 615A-Target by using an existing pprec-File

  - – Bug Fix: Crash on SQ-Message-History view

- PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

  - – BSP 19.1.2 Support

  - – Added Support for ACE- and ACXX-boards

- PBA.pro-TSM (Test and Script Manager component)

– Embedded Editor improvements

– Improved Report-Lab installation

– Double Click to an error in the Script Console allows to open editor and jump to dedicated line in the editor (editor command line can be specified via settings)

• Panavia

– Removed Bus Monitor

– Allow Resource selection via related dialog

V02.74

• Build Version: 188

• Build Date: February 2018

• Applicable for Windows and Linux

• PBA.pro-FD (PBA.pro Framework & Designer)

– Corrected Mouse Press behaviour in Startup Dialog

– Recursive Browser Sort not working for columns with a format specifier (e.g. Label (Oct))

– Display a warning, if designer template cannot be saved

– Added bar charts to several resource status displays

– Bug Fix: Designer Widgetsets not working

– Bug Fix: Display Container may not exchange view, if a secondary view is already in.

– Bug Fix: Some possible crashes of parameter online plot

– Bug Fix: Weird flickering of Progress dialog in Engine Mode

– Bug Fix: View layout does not save standalone widgets

– Bug Fix: Crash if huge amount of text is copied to clipboard

– Bug Fix: Open Licence File Location from Licence Dialog does not work, if licence file is not present

• Bus Monitor (All Resources)

– Various Export improvements

* Persistent Exporters, allowing to save Exporters in Setup and re-start with a few mouse clicks

* Exports can be started automatically with Bus Monitor, so export is finished when recording is finished.

* Exports may run from live Bus Monitor data (without recording)

* Export to network (TCP server, TCP client, UDP and named pipes on windows)

* Export Start/Stop Trigger and Filter

* Export from multiple streams to one file without merge first

* Raw Recording Export for Mil (prc,hrc,xrc) and A429 (arc)

* Mil Buffer Extraction moved to Exporter functionality

* Various Export output file name macros similar to BM Recording File
* Post Export Action to start e.g. automatically Excel after the Export is finished
* Standalone Export Setups
* Faster Export in many cases
* Parameter Export to json. This allows e.g. parameter data to external application, if you use a network export.

- Bug Fix: Recording Filter cannot be be started when selected from Resource Tree

- Bug Fix: PBA.pro hangs when filtering an Correlated/Reassembled stream when pausing and stop monitor

- Bug Fix: Cannot export over display chunk boundaries.

- Bug Fix: CSV Export may cause corrupted (shifted columns) CSV files, if property value contains the selected CSV separator (e.g. ErrorType == SWExc,WCLow).

- Bug Fix: Weird behaviour when selecting the Text Property of an event marker in the index view

- Bug Fix: Bookmarks may not work, if the Display Chunk is greater than the maximum rows to display

- Bug Fix: Save Recording file does not copy the ppana file

- Expanded stream object paths in Merge Dialog

• Parameter Database (All Resources)

  - Added an Assign Export Example Script

  - Add a "Browse Assign" Functionality

  - Assign Print to PDF also on Landscape format

  - Allow to specify Assign Placeholder number of displayed digits

  - Allow to set Assign Placeholder read-only

  - Bug Fix: Assign Tab Signal not reset with Assign Restart

  - Bug Fix: When Changing Parameter values manually, the change is not reflected within e.g. a Designer Widget

• PBA.pro-MIL (MIL-STD-1553 support)

  - Support Replay for Single Function Boards

  - Bug Fix: Compat Component load does not work automatically

  - Bug Fix: Board Irig Times not set, if external Irig Time is used by default

  - Bug Fix: Increased APE Scope Wait time to get rid of "Scope wait did timeout" error Message during Calibration of Amplitude Variations Test

  - Bug Fix: Setup RT From Xfer not working, if multiple Xfers from Multiple Streams are selected in Browser View

  - Bug Fix: Resize problem of Mil System Overview Widget

• PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - Bug Fix: Possible API Nack when setting up HS Function from DBS

• PBA.pro-ARINC429-x (ARINC-429 support)

- – Frame based Tx Setup

- – Allow to display all Label Hex Values with leading zeros

- – Allow to disable 429 Tx Load Balancing (force the labels in the order as they are in the Label List)

- – Allow to Switch between Binary and Transmission Bit Order in 429 Binary Label Display

- – Interrupt Support via ANET boards

- – Add a Setting to set Channel Types to Rx by default

- – Moved all Properties from the StartMode object to the Setup node, to have all Tx related properties at one place

- – Full PAA Tx Setup Import (including frame based Tx Setups)

- – Direct modification of Tx Amplitude Property

- – Added an Resource overall label and error counter

- – BSP 10.3.x Support

- – Bug Fix: Compat Component load does not work automatically

- – Bug Fix: Memory Hole, when exporting from All Recording Stream

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – Added A664 BSP 19.1.1 Support

  - – Add and support TAP-Mode for APE, AMCX and AXC boards

  - – Revised A664 Getting Started Manual

  - – Removed extra Message Editor Dialog for Online Sampling-Queuing Messages

  - – Bug Fix: Fixed BSP detection for USB based boards, do not load ppfdx-17 for APU-Boards

  - – Bug Fix: Added missing TxPortInit call on Replay-Start

  - – Bug Fix: Support Parameters in reassembled A664Msg stream when position is beyond first fragment

- PBA.pro-TSM (Test and Script Manager component)

  - – Show Run Buttons is true by default in Test Manager

  - – Bug Fix: Memory hole, when using PPFunction Python Callback SCRIPT(py,<some call>)

  - – Bug Fix: Test Manager Tests can be started without entering UUT Serial Number, Part Number and Modification State. The requirement for those properties may be defined via the settings TestManager/RequiredForTest/...

  - – Bug Fix: Text Report switches to * border after first test group. Note: you have to replace the report_lib.py in your test manager project with the one form the examples/testmanager/simple/library/report_lib.py to fix the problem.

- Further utility component changes

  - – ARINC 629: Introduced a setting to configure the polling rate of the BM data

  - – PPL4450A: Multi Module Support

  - – UDP: UDP Component does not allow to specify Source Port

- TEWS TIP501

- **–** Added commponent supporting TEWS TIP501 analogue modules (Linux only)

- Acromag IP408

  - **–** Added commponent supporting Acromag IP408 discretes modules to Linux version

- PBA.pro-CMRB485 (AIM RS485 component)

  - **–** First official version of HDLC and Isochron Protocol.

V02.73

- Build Version: 183

- Build Date: August 2017

- Applicable for Windows and Linux

- General

    – Fixed signature / authentication issue of setup for several Windows versions

- PBA.pro-FD (PBA.pro Framework & Designer)

    – Merge Output Window and Script Console

    – Added Tile Horizontal/Vertical Window Menus again

    – Allow to add NTG Resources via the Resources Menu or via the Resource Selection dialog.

    – Changed Hash-Calculation for SecureSript packages

    – Provide Context Menu entry for standalone action in System Menu Bar

    – Resource selection dialog improvements; added multi columns for resources

    – Offer Browser view context menu if no other menu available for the dialog.

    – Show connected Clients immediately on Workspace Background

    – Designer related:

        * Added a global menu to open designer displays via drop down list
        * Assign Colours are shown in Designer Table Widget (without frame)
        * Bug Fix: Drag & Drop of Designer Dialog does not resize as expected.
        * Bug Fix: Designer display does not paint layout grid in design mode any more
        * Bug Fix: Designer display, opened via assign, can not be stored or edited by context menu any more
        * Bug Fix: Label Stack text color resets after preview

    – Bug Fix: Online plot might crash when option "Freeze display" is activated

    – Bug Fix: Fixed scaling/painting of lower diagrams if different y-axis resolution than 1. y-axis

- Bus Monitor (All Resources)

    – Pause/Resume recording

    – Added automatic event marker possibility to scanner filter.

    – Filter Stream Scanner gets a Trace Before/Trace After Trigger option

    – Stop Trigger Stream Scanner gets a restart option

    – Start/Stop and Filter Stream Scanner get an Option to write an event Marker

    – Ok/Cancel buttons removed from Stream Scanner dialog. Changes take effect at once (like every other editor within PBA.pro).

    – Added possibility to add the event number via '%n' to the event marker label of start and stop trigger events

    – Bug Fix: Wrong Index Number may be displayed in merged stream.

    – Bug Fix: Possible Crash when adding/removing columns in Recording Display

- – Bug Fix: List of applied colouring rules can not be changed directly

- Parameter Database (All Resources)

    - – Alarm Logging based on Parameter Recording
    - – Assign Colours shown in Parameter Recording
    - – Assign Signal may be used as Parameter Recording Start Trigger
    - – Assign Signal store last time option.
    - – Assign Signal Colour only option (not signalled, e.g. to define a good state)
    - – Assign Print to PDF
    - – Assign Signal Hold-off / Every occurrence check
    - – Improved number of digits of Assign Placeholder value
    - – Bug Fix: Parameter Recording cannot be saved
    - – Bug Fix: Assign Readonly flag defined by User Administration component is not applied, when assign is setup by script.
    - – Bug Fix: Property Assign Entry changed name not saved.

- PBA.pro-MIL (MIL-STD-1553 support)

    - – MIL BSP 12.2.4 Support
    - – Added overall test button for MIL Self-test utility Dialog to test all streams at once.
    - – Added all messages and error counter to BM Status
    - – Bug Fix: PBA-2000 Import Pop-up Menu Entries not present, if Resource opened via Resource Selection dialog.
    - – Bug Fix: Bus Monitor Stream Counters not working for Client Recording

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

    - – Bug Fix: EFA/EFEX Switch causes corresponding discrete resource to fail

- PBA.pro-ARINC429-x (ARINC-429 support)

    - – Display Functional Status colour also in BM Label Value Property
    - – A429 BSP 10.2.2 Support
    - – Support for EasyDLE 3.0.1 on Windows and first time on Linux
    - – Added all messages and error counter to BM Status
    - – Bug Fix: Bus Monitor Alias not working, when the physical board channel was changed.
    - – Bug Fix: Rx response not working after a Tx Channel Restart (may happen accidentally when using the All Tx Control buttons)
    - – Bug Fix: Set Default Channel Mapping for A615 Dataloader if available.
    - – Bug Fix: PBA.pro Client Recording not working for 429 Boards with fixed Tx Channels
    - – Bug Fix: Bus Monitor Stream Counters not working for Client Recording

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

    - – Do not start automatically BM when A818 Receiver is started, configurable by setting Fc/A818/StartBMAlso

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- A664 BSP 19.0x Support

- Added compatibility component ppfdx-17 for A664 BSP 17.1x

- Renamed compatibility component for A664 BSP 16.1x ppfdx-16 instead ppfdx-x1

- Added support for APE-FDX board

- Extended Sync to Parameters on different levels

- Added System-DBS/Parameter support

    * Capture- and Send-Sampling&Queuing-Setups can be completely generated by the DBS/Parameters-Tree

    * A664-DBS-Streams can be enabled or disabled for System-DBS

    * Capture and Send can be directly started from DBS side

    * Added various properties to A664 DBS/Parameters-Tree for System-DBS

- Added A664 VerificationMode on Board-Level

- Added properties for MAC- and IP-Subfields, dependent on used VerificationMode these sub-fields are valid or invalid

- Reros can operate simultaneously with a chronologic capture/BM or start and stop BM (only possible with BSP 19.0.1 or later)

- Bug Fix: Corrected VerificationMode Names, old A664 VerificationMode was rather more AFDX

- Bug Fix: Suppress VL Already exists TSW-error code in some cases

- Bug Fix: Do not ignore submicroseconds for PLSentAt property in payload generation mode timetag

• PBA.pro-TSM (Test and Script Manager component)

- Bug Fix: Test Manager does not allow to select multiple files via File Open Dialog

• Further utility component changes

- MSF: MS Flight components supports Flight Simulator X

- DISCRETE: Discrete Resources might not re-initialize on New Project / Reset call

V02.72

- Build Version: 180

- Build Date: April 2017

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - Qt Version changed to Qt 5.6.2
  - Dropped Windows XP Support
  - Context menu changes
  - Faster startup when using ANET's and the .local device name instead of the IP Address
  - Command Line -sn:-<device serial number> (negative Board Serial Number) allows to suppress the load of a dedicated device.
  - Added Browser View to enhance the common GUI
    * Browser View provides all actions and functions of displayed object in a toolbar
    * Navigate to parent-, child- and sibling-nodes
    * Provides a history and Previous- and Next-Toolbuttons to walk in the history
    * Direct enter or copy the objectpath to/from an edit-line
    * If the displayed view holds other objects, provide a 'Browse To' entry in the context-menu
    * Ctrl-Key + Double Click in a tree opens the old classview without Browser View
    * To disable the Browser View in general, see setting MainWindow/UseBrowserViews
    * If you want to track the Browser View automatically to the current tree selection, rightclick to a toolbar and click 'Track Tree Selection'
    * If displayed object has multiple views, views can be switched by toolbutton
  - Added property docked editor display for "System States".
  - Support for System states, Scripts and Test Manager nodes like Application, Group or Test script nodes in Favorites
  - Support sorting of "Favorites".
  - Various File Compare Enhancements
    * Index Based File Compare (without looking at the time tags -just compare 1:1)
    * Synchronize lines from left and right side.
    * Relative diff-time compare.
    * Improved usability.
  - Designer related:
    * Add Checkable option to object tree view of designer
    * Added possibility to drag and drop a resource tool-bar to a designer display (via shift)
    * Allow to limit child depth for recursive table in designer
    * Show data types (oct, hex, bin) after property name for non decimal values
    * Add a designer dialog configuration option to specify whether it shall be closed on loading another project or not.
    * Bug Fix: Avoid crash due to possible NULL Pointer in GetWidgetAsString slot.

- Bug Fix: Keep order of "Favorites" on reload.

- Bug Fix: Show remove action for invalid "Favorites" node.

- Bug Fix: A664 Board cannot be selected in resource selection dialog if the board is licensed as Ethernet device only

- Bug Fix: HexView: correct wrap to next line on end of hex section if ASCII was disabled

- Bus Monitor (All Resources)

  - BusMonitor StreamScanner gets a MessageReceived(PPMessageInterpreter* pMsg) signal, which allows to hook into Bus Monitor Traffic by script

  - Added capability to create a statistics display counting the occurrences of values in columns via a context menu entry.

  - Improve Displayed IRIG Time string

  - Recording Coloring: list of applied coloring rules can now changed directly in the "Change Colors" dialog

  - Automatically find the right Bus Monitor and attach after recording file open

  - Online Recordings can be saved via "Save Recording File" Context Menu from the recording

  - Bug Fix: PBA.pro might crash or freeze during recording resp. on closing the recording session.

- Parameter Database (All Resources)

  - Parameter Recording via Assign may store data directly to csv file format.

  - Parameter Recording via Assign may use an interval output.

  - Parameter Recording to memory, allowing to read the data via the ParameterRecording.ReadRecording() slot

  - Parameter Recording performance improvements

  - Auto open editor in assign if a writeable value cell is selected.

  - Added option to show hide multiple assign columns at once via a configuration dialog.

  - Some minor default view class improvements if docked and standalone.

  - Added Assign format option to prepend format type (0x,b,d,o).

  - Added binary notation to separate into readable blocks (0101 1010).

  - If assign signal HoldState is used, a coloured frame is painted around the value, if the value was signalled

  - Assign (Folder) signal showing that any Assign Signal beyond has changed (with option ShowInTab option)

  - Bug Fix: Possible Crash when edit multiple Assign Options at once.

  - Bug Fix: Corrected auto length option of place-holder format.

  - Bug Fix: Do not show context menu "Change Temporary Parameter Format" for place-holder objects.

- PBA.pro-MIL (MIL-STD-1553 support)

  - MIL-BSP 12.2.x Support

  - Reject the load of boards with unknown onboard software versions

- – Resource Coupling property accepts "Coupled" and "Transformer Coupled" from script
- – MIL-BSP V12.xx support for real time Discrete I/O monitoring add on component: "AspExtension"
- – Bug Fix: Crash when scope cannot be started
- – Bug Fix: Wrap Around Subaddresses stay enabled when setting EnableWA to false again
- – Bug Fix: Beat frequency on the Parameter Update
- – Bug Fix: PBA.pro might crash if connection to Server (e.g. ANET) is lost during recording

- • PBA.pro-ARINC429-x (ARINC-429 support)

  - – A429-BSP 10.2.x Support
  - – SSM Value is reflected as ValueFlags in the Values on the same label, e.g. Displayed as warning (yellow), if SSM shows "Failure,Warning"
  - – Added an All channel to the ARINC 429 Bus Monitor merging automatically all enabled Rx Monitor channels
  - – Independent 429 Channel Start/Stop with recording (BSP >= 10.00)
  - – 429 Database Label gets an Rate Property allowing complete setup of 429 Tx Channel and use Rate for the BM Online List as Rate Check
  - – Tx Label Rate shows Rate in Hz as tooltip
  - – Reject the load of boards with unknown onboard software versions
  - – OptionSSMSign may be set to UseBit29 as a Value Sign bit. This allows to use a 2 Bit SSM as Status and the Bit29 as Sign Bit
  - – Show the property OptionSSMSign of Scaled formats in DBS Editor, so value may be changed on several objects at once
  - – A615 Loader related:
    - * Added option to save data loader configuration as file via GUI
    - * Support for EasyDLE 3
    - * Allow to record 615 Dataloading
    - * Redesign of Data Loader Configuration GUI
  - – Bug Fix: Visibility of Channel TxAmplitude always wrong

- • PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – Revised Functional Data Set Support
    - * Parameter-Values in a Functional Data Set (FDS) or Data Set (DS) check the Functional Status (FS) and update the ValueFlags property accordingly
    - * Additional Data Sets (DS) can be created beneath a Functional Data Set, each Data Set can have its own Functional Status and Parameters
  - – Bug Fix: PBA.pro might crash or freeze during recording resp. on closing the recording session.
  - – Reassembly shows negative time differences

- • PBA.pro-AIM485 (AIM RS485 component)

  - – Introduced Slave Replay from PBA.pro recording file or custom CSV file.

- – Introduced Master Replay from PBA.pro recording file or custom CSV file.
- – Some performance improvements for Slave FIFO and Master channel start.
- – Dynamic tag support on different message types
- – Re-Enabled "send" action for slave tx message preparation.
- – Support of FW 1.0.x and API Dll. 1.1.x for ADB
- – Bug Fix: Added ADB/EADIN manuals to setup
- – Bug Fix: PBA.pro might crash on recording stop.

• PBA.pro-TSM (Test and Script Manager component)

- – Perform direct call if we are in the same thread as the addressed object for property get/set and member calls.
- – Some improvements on the multi line script console.
- – Offer multi line script console as default class view for script files via context menu and on double click. Some features:
  - * Syntax highlighting
  - * Display Line numbers
  - * Display Script Scrollbar map
  - * Search
  - * Mark and highlight items in scrollbar map
  - * Load, save and execute a script.
- – New Test Manager PDF sample to be used with Python 3.x as well.
- – Bug Fix: PBA.pro Assign does not support binary notation for Placeholder object.
- – Bug Fix: Add all library scripts for a new project on an existing folder as well

• Further utility component changes

- – ARINC 629: Added Tx Terminal functionality
- – ARINC 629: Added Mailbox Terminal functionality
- – ARINC 629: Added an automatic Bus Scan functionality for auto-setup the capture label list
- – Common icons for all discrete and analogue resources
- – Bug Fix: Some slots of the generic discrete resource are not displayed in the dynamic help.

V02.71

- Build Version: 175

- Build Date: December 2016

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    – New functionality to compare recorded files (menu Tools/File Compare Tool) and messages (e.g. by selecting two messages of a recording and context menu "Compare ...")

    – Added a "Save as Default" button to the Main Window Save Layout Display.

    – Introduced some PBA.pro startup (display) improvements:

        * Allow to specify the licence server is on the selected network device. Use this option only, if you own special configured ANET devices with a licence server.

        * Support for startup options order change (by drag and drop in edit mode.)

        * Add a "-nostartopt" command line option suppressing the Startup Display in any case.

        * Allow to use environment variables as server name. Example: "-svrmil:

        * Streamlined start button of startup display.

        * Show PBA.pro version in startup display.

        * Speed up startup/resource detection if non compatible network resource is located in the network.

    – Introduced Favorites section in "Resources". Currently supported:

        * Any Resource Node

        * Designer Templates/Displays

    – Auto resize resource button splitter according to width / height on resize.

    – Corrected PBA.pro-Light display headers.

    – Streamlined some icons.

    – Application Icon support for Windows 10 "Pin to start" (small and medium) .

    – Bug Fix: Possible Crash when closing Resource Selection Display.

    – Bug Fix: Runtime mode not working with Licence Server.

    – Bug Fix: Do not clear multi selection when dragging from table.

    – Designer related changes:

        * Introduced extended Designer display tool-tip and preview.

        * Offer description editor if designer template/display is saved.

        * Added possibility load a designer display in design mode from script.

        * Update QWT library to V6.1.3.

        * Update of QWT Polar library to V1.1.1.

- Bus Monitor (All Resources)

    – Do not allow to export from an empty Recording

    – Prevent wrong Recording File Extension causing BM not to start in Raw Recording mode

- – Recording Sections: based on Event Markers parts of a recording can be viewed. By default a section will be created between two consecutive events. Furthermore sections can be added interactively (time and index based).

- – Bug Fix: crash during Recording Export of unknown type by script (Slot PrepareExport(sType))

- – Bug Fix: Corrected selection mode for parameter tree of message display.

- Parameter Database (All Resources)

  - – Added Print Action to Assign tool-bar

  - – Add an option to show the Assign Signal State in Tab Bar

  - – Display no exclamation mark when parameter is not signalled

  - – Allow to rename Main Assign Tab

  - – Allow to delete assign options via a sub menu of the related delete toolbutton

  - – Allow to assign Parameter from database Tree

  - – Recording File Modification based on Parameter Export can be performed without exact time information; the Difftime property can be used as well.

  - – Removed misleading "Edit Assign" Action from database Tree

  - – Bug Fix: Do not clear multi selection when dragging from table

  - – Bug Fix: Assign Column Layout may not be restored correctly from layout

  - – Bug Fix: Parameter may be created when a PDI is loaded

- PBA.pro-MIL (MIL-STD-1553 support)

  - – MIL-BSP V12.0.0 support

  - – Dropped MIL-BSP V10.x and V11.0x support

  - – Automatic compatibility Component load during start up without restart of PBA.pro

  - – Support of new Hardware Types (Mixed ANET, ASC)

  - – Repeated/Endless Physical Replay

  - – Allow to setup Resource from DBS Side

  - – Allow to suppress the usage of DBS Init Values on Assign/BC/RT Start on Buffer level or on BC/RT Level via Settings

  - – Allow to import PBA-2000/3910 Datasetfiles (dts,dst) via the context menu of the Buffer (ppim-port component must be loaded)

  - – Bug Fix: RT Stops working if Assign Dyntags are used. However due to an Onboard Software Bug, the Dyntags cannot be created/removed during RT Runtime.

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – Bug Fix: HS Per Bus Activity not updated during recording

- PBA.pro-ARINC429-x (ARINC-429 support)

  - – Automatic compatibility Component load during startup without restart of PBA.pro

  - – Automatic Channel Re-Assignment when loading incompatible setups.

  - – Allow to send an automatic Tx response on the reception of an Rx Label (A429 BSP >= V10.0.1)

- Allow switch Channel Speed during Channel is active (channel is restarted) (A429 BSP >= V10.0.1)

- Support of new Hardware Types (Mixed ANET, ASC) (A429 BSP >= V10.0.1)

- Basic Strobe Instruction Support. If the strobe is not the first instruction, it may come to early.

- Added Sub Actions to control single Channels from the 429 Toolbar

• PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Bug Fix: Start Operation Toolbuttons stay disabled although start is possible

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- Automatic compatibility Component load during startup without restart of PBA.pro

- Repeated/Endless Physical Replay

- Bug Fix: Use normal frame RecordingData stream for BMOnlineList and MsgView instead of Reassembly-Stream due to update reasons

- Bug Fix: Start Operation Toolbuttons stay disabled although start is possible

- Bug Fix: Changes due to possible crash after SwitchToEthernetType

- Bug Fix: Crash if a message is fragmented into more than 64 packets and reassembled (during recording or file load). Size of ppana-file reduce by factor 20.

- Bug Fix: Long Start-Up time if many Boeing Boards are used

- Bug Fix: Sync with Parameters created wrong Capture- and Send-Sampling/Queuing-Setups

• PBA.pro-TSM (Test and Script Manager component)

- Test Manager: Allow Multi Selection of tests and run only the selected ones.

- Bug Fix: avoid crash in remote server / client on PBA.pro close

• PBA.pro-AIM485 (AIM RS485 component)

- First official version of EADIN Protocol.

- Changes/improvements compared to preliminary beta version:

  * Direct Memory read to get tx counter for bidirectional channels.
  * Support for error frame type.
  * Start Rx channels first.
  * Rx counter shall count logical messages per default (Counted per by sw for bidirectional master).
  * Highlight sub command type in yellow if value is not valid for given type.
  * Start bidirectional slaves as soon as possible and stop them late.
  * Fixed possible crash on channel start due to accidentally removed "install" flag.
  * Support for new PBA.pro-AIM485 (AIM RS485 component) API Library, V01.1.1.
  * Extended BSP check for version overview.
  * Performance improvement: Pre-load message list for master if in auto reload mode.
  * Avoid heap corruption for Checksum calculation.
  * On-board Discrete support.
  * Corrected dynamic receive message sorting by property.
  * Changed all "IFG" occurrences to "IMG" as "IFG" is misleading.

* First version of PBA.pro-AIM485 (AIM RS485 component) manual.
* Corrected "Alias" handling.

- Further utility component changes

  – Discrete Components (AIM onboard discrete channels & 3rd party HW)

    * Rename DISCRETES to DISCRETE
    * Auto update improvements

V02.70

- Build Version: 171

- Build Date: July 2016

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  – Introduced PBA.pro Environment Variable

  – Some stability and performance improvements related to the tree filtering

  – "Data" Property of messages are always upper-case now

  – Network Resource selection requires to enter a random number, if the user intents to use an device, which is already in use by an other user in the network. This is due too many users click away the corresponding warning without reading it.

  – New embedded/docked editor and information displays for direct modification of selected resource and database tree node.

  – Changed default layout for docked views, left and right bottom corners are used now for resource- or parameter-trees

  – Print hex digits upper case; Align Data columns left.

  – Improved Resource Filter buttons to show Hide Resources in Resource Tree/as Tool-bar and in Database.

  – Designer related

    * Final shape of bar chart widget

    * Display Container: search for resource/object in background if missing

    * Improved performance of online parameter plot

    * Bug Fix: Fixed possible crash while zooming a parameter plot

- Bus Monitor (All Resources)

  – Recording Display: keep Parameter columns after Filter and Merge

  – Recording Display: enable default search (F3) based on current selected message. Show search key in action text also for predefined filter.

  – User defined recording partitions

  – Allow to filter Database Parameter in Recording Display

  – Dedicated navigation dialog for recordings (up/down/jump index or time based)

  – simple parameter and parameter value access slots for script usage. Just specify the parameter name for the addressed message.

  – Increased default for MBFreeOnRecordingDisk to 500MB, if the free harddisk space goes below this limit recording is automatically stopped

- Parameter Database (All Resources)

  – Bug Fix: Crash when closing DBS View and Tree Filtering is used

- PBA.pro-MIL (MIL-STD-1553 support)

- – More clear Message when a Network resource is already used by an other user. Make it impossible to ignore the messagebox due to a random number must be entered when the resource should be taken from the other user.
- – Raw Recording import via Bus Monitor has been Removed (RawRecordingFileName property). Use Recording File Converter instead
- – Create NTG Resources in order as they are given in the command line.

• PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

- – Bug Fix: Follow mode does not work in Correlated Recording Display

• PBA.pro-ARINC429-x (ARINC-429 support)

- – BSP V10.0.x Support (Windows)
- – Note: If you want to use an ANET-429, you have to select the ppa429_94x compatibility component in Help → About → Component Load Order
- – Support for data loading according to ARINC615-3 standard (Windows)
- – CSV/Text file Replay (BSP 10.0.x only)
- – More clear Message when a Network resource is already used by an other user. Make it impossible to ignore the messagebox due to a random number must be entered when the resource should be taken from the other user.
- – Allow to change Enabled property of 429 Tx Label also from Setup Side (during channel is active)
- – Allow and Display Global parameters on sources with SDI sorting enabled
- – Display the Alias of the 429 DBS Label if the SSM DBS Node has not set any Alias
- – Protocol Decoding enabled by default. Added MDDU and MCCU Protocol Decoding Script
- – Allow to switch channel type, if an other channel is already active (BSP 10.0.x only)
- – Bug Fix: CSV imported 429 Recordings cannot be replayed
- – Bug Fix: Tx Label data displayed wrong, in case of Tx Label is disabled

• PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- – Support now FC-BSP V05.01
- – Bug Fix: Detection of second APS-FC Port

• PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

- – Enable A818 Image Receiver on APS-FC Port, configurable via settings, because the BSP 5.01 supports now this function

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- – All "AFDX" Strings renamed to "A664"
- – Switched default SQ-HW-ReadMode to Single, configurable via settings
- – Bug Fix: Handle and ignore empty SQ-Receive messages

• PBA.pro-AIM485 (AIM RS485 component)

- – First version of the component, supporting the EADIN protocol.

- – Support for Short BUW (less 6 Bytes payload) for ADB protocol type boards.
- – Support for Following Message Types:
    - * Bulk Unicast Write (BUW)
    - * Bulk Unicast Read (BUR)
    - * Bulk Unicast Read Response (RSP)
    - * Atomic Unicast Write (AUW)
    - * Atomic Multicast Sub Command Write without data (AMSC)
    - * Atomic Multicast Sub Command Write with common data (AMSW)
    - * Bulk Multicast Sub Command Write with common or unique data (BMSW)
- – Extended DBS support for standard protocol header fields.
- – Streamlined icons.
- – Slave node support for unidirectional/bidirectional slave channels.
- – Dedicated channel status display as multi bar chart display.

- PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

    - – Bug Fix: don't show VL and Quintuplet based Filter

- PBA.pro-TSM (Test and Script Manager component)

    - – Improved script line edit: drag and drop of properties:

```
>>> obj = PbaProObject("ResourceList.MIL-Board1").Type
>>> obj
'Type1553'
```

    - – Python Updates: 2.7.12 and 3.5.2 (default)
    - – Bug Fix: do not close all views after loadPbaProProject is called
    - – PDF Reportlab Toolkit: note that admin rights might be needed for Reportlab installation

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

    - – Added Comment field to CAN DBS ID
    - – Create Parameter from selected bytes in Hex View of a CAN Message Interpreter

- Further utility component changes

    - – New ARINC 629 Component for Sycos Boards
    - – New ARINC 708 Weather Radar Component (Monitor only)

V02.60

- Build Version: 167

- Build Date: April 2016

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - PBA.pro Project Export and Import

    * New PBA.pro Compressed Project (pprj). This is a file in the zip format, containing a ppro file and further referenced files like ppdbs, pdi, displays or scripts. When loading such a file, the file is uncompressed to a subfolder (or temp directory), and the related ppro file is loaded.
    * A Zip file with a ppro file may be loaded to PBA.pro
    * All referenced external Files are now stored relative to the PBA.pro Project File

  - Streamline Resource icons and provide resource type filter

  - Introduced possibility for silent PBA.pro installation via batch file or script.

  - Resource Selection Dialog sorts items by IP Address

  - Revised several context-menus and added context-menu to standard class view

  - Added menu-entries to highlight related nodes and objects in the resource- or parameter-tree

  - Added menu-entry to highlight the object itself in the resource- or parameter-tree

  - New Resource Icons

  - Show Filters as text-representation

  - Column alignment for standard tables

  - Various stability fixes

  - Dropped 32 Bit Linux support

  - Bug Fix: Discrete I/O Update not started when opening views

  - Bug Fix: System states may not restore correct object

  - Bug Fix: PDF and Print - text color was printed gray for TimeTag and DiffTime, possible wrong column sizes.

  - Bug Fix: ASIN function can not be used

  - Designer related

    * All referenced external Files are now stored relative to the designer Template File

- Bus Monitor (All Resources)

  - No difference in GUI between Bookmark (offline / after recording) and Eventmarker (online / during recording) handling.

  - Markers can be added with a timetag either based on the current selection or the actual IRIG Time.

  - Recording Display Enhancements:

    * Added an "Info"-Property showing key information about the message
    * More intuitive Property Show/Hide concept by context menu

- ∗ Allow to split recording display into two or four parts
- ∗ IRIG Time with left elide
- ∗ New Minimal Default Layout
- ∗ Improved coloring handling: fore- and background colors, change of status colors, colorize by selection etc.
- ∗ Status icons in Index column
- ∗ Enable / disable Data Column by checkbox...
- ∗ Bug Fix: Merge Stream selection - select none selects all
- ∗ Bug Fix: Merge of stream with reassembled messages invokes assertion failure

- Parameter Database (All Resources)

  – Assign now also stores Property Assign Entries, when the source is missing
  – Fix a PDI Import Problem with Scaled Parameters where the scaling has a comma as digit separator instead of a dot

- PBA.pro-MIL (MIL-STD-1553 support)

  – Acxx Boards may have a MilScope
  – Command Line hint missing for Single Function Boards
  – Bug Fix: RT Setup Action not available in BM

- PBA.pro-ARINC429-x (ARINC-429 support)

  – PAA Assign and Format File Import
  – Some Williamsburg Protocol Related Fixes
  – Prevent API NAK, when changing the Tx Label Enabled Property
  – Bug Fix: Binary Label Editor allows to change SDI when Active even it is not written to HW
  – Bug Fix: 429 Channel View does not update Counters of Channel Status

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

  – Update to new BSPs V05.0x (Windows and Linux)
  – Fixed problems in Bus Monitor MsgView
  – Parameters on frames of the Generic Send List can be displayed in the resource tree, configurable via setting Fc/DBS/ShowMsgParamsInResourceTree
  – Parameters on Generic Send Frames can be assigned
  – Added the common Info property to a message-interpreter to decode a Fibre Channel frame according to chapter 9, 11 and 12 of FC Framing and Signaling spec ANSI INCITS 373-2003
  – ULP related operations are hidden when the ULP is not enabled for a clearer arrangement. This can be also configured with the setting Fc/Misc/HideNodesOfDisabledULPs
  – When an ULP is enabled or disabled (see FcBoard property EnabledULPs) the system/PC must be restarted to boot the Fibre Channel board in the correct mode. Therefore a message box is displayed, which can be suppressed with the setting Fc/Misc/MsgBoxOnChangedULPs.

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

  – Image-Receiver Window maintains its view-settings and scaling when a new image is received

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

    – Parameters on frames of the Generic Send List can be displayed in the resource tree, configurable via setting Fdx/DBS/Options/ShowMsgParamsInResourceTree

    – Parameters on Generic Send Frames and single Sampling-Queuing-Messages can be assigned and used in the Assign-Display

    – Support BM-Scanning Mode, use Reassembly/Msg-Stream in Non-Scanning-Mode and normal Stream in Scanning-Mode for BM-Online-View

    – Fixed Enable/Disable Logic of Start/Stop-Toolbuttons

    – Added Sync to offline setup function to the context-menu of an online GenericSendList- or SamplingAndQueuing-Node, this function can be also called automatically via the setting Fdx/Misc/SyncOnlineSetupsAlways. The function checks the offline-setup and online-nodes for differences and adapts and synchronizes the online-objects to the offline-setup if possible.

    – Bug Fix: FDX Message-Interpreter, invalidate all IPv4 properties if MACProto or IPVersion indicate no IPv4

    – Bug Fix: 32 bit EDE Source ID on Tx Com Port is limited to 16 bit by GUI

- PBA.pro-TSM (Test and Script Manager component)

    – PDF Reportlab Toolkit installation of latest Python Wheels supporting Python 3.5

    – Supported Python Versions: Python 2.7.10 and 3.5.x. Note that Python 2.7.11 is explicitly not supported (see bugs.python.org/issue25824)

    – Bug Fix: sys.path might be set wrong

    – sys.argv does now contain all PBA.pro specific start arguments (setting: defaultcmdargs)

    – Replaced DBSFindBuddy slot by more general FindBuddies slot to find all related corresponding objects

- Further utility component changes

    – UDP/TCP component

        * Added convenient slot "DisableByteSeparator" for UDP / TCP Ports to write (hex) buffers on ports without any separator.
        * Added missing context menu for UDP Ports (same as for TCP/IP).

V02.59

- Build Version: 165

- Build Date: December 2015

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    - Bug Fix: Demo Licence does not allow PBA.pro Clients
    - Added "FindBuddies" slot to several components to find related objects
    - Designer related

        * Bug Fix: Designer crash on multiple cell reference

- Bus Monitor (All Resources)

    - Recording Display shows Event Markers and (editable) Bookmarks within a common tree. Selection jumps to the related timetag.
    - Some CSV import related fixes

- Parameter Database (All Resources)

    - New Database Time and Angle Format
    - Bug Fix: Parameter Edit Widget does not show format if it is a shared format

- PBA.pro-MIL (MIL-STD-1553 support)

    - Introduced new per board settings keys to define the states of board discrete channels at program start:

        * Mil/Resource/DiscretesResource_<board SN>_IOStates for definition of direction (in/out) of the channels
        * Mil/Resource/DiscretesResource_<board SN>_InitOutStates for definition of the initial state (true/false) of the channel set as output channels

    - Introduced new settings key Mil/Resource/DiscretesResource_<board SN>_<board name>_invertMask to define an inversion of the value/state displayed in the GUI to facilitate mimicing the state of devices connected to the channels.
    - Support some newer Board Types

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

    - Introduced new per board settings keys to define the states of board discrete channels at program start:

        * Mil/Resource/DiscretesResource_<board SN>_IOStates for definition of direction (in/out) of the channels
        * Mil/Resource/DiscretesResource_<board SN>_InitOutStates for definition of the initial state (true/false) of the channel set as output channels

    - Introduced new settings key Mil/Resource/DiscretesResource_<board SN>_<board name>_invertMask to define an inversion of the value/state displayed in the GUI to facilitate mimicing the state of devices connected to the channels.

- PBA.pro-ARINC429-x (ARINC-429 support)

    – Introduced new per board settings keys to define the states of board discrete channels at program start:

        * A429/Resource/DiscretesResource_<board SN>_IOStates for definition of direction (in-/out) of the channels
        * A429/Resource/DiscretesResource_<board SN>_InitOutStates for definition of the initial state (true/false) of the channel set as output channels

    – Introduced new settings key A429/Resource/DiscretesResource_<board SN>_<board name>_invertMask to define an inversion of the value/state displayed in the GUI to facilitate mimicking the state of devices connected to the channels.

    – Do not disable all 429 Rx Labels during autosetup for assign

    – Support some newer Board Types

    – Bug Fix: NAK when changing Tx Label data during runtime and KeepLast option is set

    – Bug Fix: NAK when changing Tx Label data after changing queue size and data

    – Bug Fix: Wrong SDIMode Property display in 429 Bus Monitor

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    – BM: Increased default buffer size and preload count, using now 16 8MB buffers by default (see ini-settings Fc/BM/BufSizeContCapSE and Fc/BM/BufPreloadCntContCapSE)

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

    – Bugfix: Reassemble Images in BM/Recording-Display in NTG-Mode

    – Bugfix: Swap Pixeldata for 16- and 32-bpp Images to network-byte order (big endian) before sending, resp. vice versa to host-byte order (little endian) after reception.

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

    – Bug Fix: fixed possible crash in EDE Subscriber Simulation.

- PBA.pro-AIM485 (AIM RS485 component)

    – First version of the component, supporting the ADB protocol only.

- PBA.pro-TSM (Test and Script Manager component)

    – Bug Fix: under certain circumstances a SyntaxError was raised for Slot-Connections containing string arguments.

    – Bug Fix: TestManager Autosource Option not working

    – Support of Python 3.5 which is now the default Python Interpreter.

    – Python Interpreter can be switched during runtime, if more than one Python version is installed.

V02.58

- Build Version: 163

- Build Date: October 2015

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - Bug Fix: CSV Export "Use current visible table column" was not working.

  - Bug Fix: CSV Import issues reading files containing more than 5000 messages. No 2 GB limit for Recording CSV Import

  - Bug Fix: Recursive Browser does not show Root Groups if present

  - Bug Fix: System State may not use Objects Default Interface when dropping object (e.g. Assign Entry) causing the system state type has to be selected manually

  - Bug Fix: Run script from menu or Script Manager does not execute scripts with upper-case file suffix.

  - Use internally nanoseconds time resolution as default instead of microseconds, many IRIG-Time-related slots provide an optional parameter to define the time-resolution:

    * msg.GetAbsIrigTime() = nanoseconds (default)
    * msg.GetAbsIrigTime("itfMicroSec") = microseconds
    * msg.GetAbsIrigTime("itfMilliSec") = milliseconds
    * . . .

  - Added script example: how to show and configure a recursive browser view.

  - Show "Add Recording" on Standalone Recording Display

  - Recording Display: select a message (row) by vertical header (Index column).

  - Index column is fixed and shows Book Marks and Events with icon.

  - Enable drag and drop of messages from the Recording Display to script command line

  - Save script from (Multi-line) Script Editor

  - Table copy of selection without '#' character as property prefix, Index column is always added.

  - Shortcuts changed to common, OS typical ones.

  - Changed start and stop text for run action, instead of start/stop e.g. show Action Text "Start Bus Monitor" if inactive and "Stop Bus Monitor" if active.

  - New C++ sample, how to read Raw data from a recording /*.pprec file.

  - Allow one PBA.pro Client in case of Network Licence.

  - Automatically show Resource Selection, when a Network licence is entered, but no local resources are present.

  - Windows 10 detection.

  - Improve Look & Feel of Startup- and Resource Selection Dialog

  - Resource Selection Dialog caches the devices found the last time for faster detection

  - Designer related

    * Bug Fix: Connections of Designer dialogs might not be properly restored if used in a mainwindow layout.

> - ∗ New QML view for designer component.
> - ∗ Sort case insensitive within designer property tree.
> - ∗ Use shift modifier instead of alt-modifier to remove a script from the recent list

- Bus Monitor (All Resources)

  - Bug Fix: Stream Evaluation may not start correctly.

  - Bug Fix: Recording Display Chunks not updated when follow mode is active

  - Editable Event Markers in Recording Display

  - Recording Display shows now dotted Number for Index and MessageCount

- Parameter Database (All Resources)

  - Bug Fix: Assign Display may not store column order correctly.

  - Bug Fix: Assign Copy / Paste of parameters not working correctly.

  - Bug Fix: System State may not use Objects Default Interface when dropping object (e.g. Assign Entry) causing the system state type has to be selected manually

  - Bug Fix: Temporary Assign Format Change is not reflected while editing the value.

  - Support to import of previously exported Parameter-Recordings.

- PBA.pro-MIL (MIL-STD-1553 support)

  - Bug Fix: Extra column Address/Tx/SubAddress not shown in DBS View

  - Bug Fix: Mailbox RT's are responding to BC Transfers in No Target Simulation Emulation

  - Bug Fix: Do not show Mil Offline Activity in MIL-BM Toolbar Sub Actions

  - Bug Fix: BC Status displaying wrong number of major frames before BC was started

  - CSV to Recording File Import now uses Source info instead of Command Word Columns

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - Bug Fix: Efex Bus Monitor Activity may not show MID Counters

  - Bug Fix: Wrong HS Activity Display, when LS recording is disabled

  - Bug Fix: PBA BC/RT and BM Setups cannot be imported after a EFA/EFEX Switch

  - CSV to Recording File Import for EFA and EFEX

  - Allow to import Efex CSV Recordings on Efa Resources and vice versa to convert recordings.

- PBA.pro-ARINC429-x (ARINC-429 support)

  - Bug Fix: 429 Channel Counts not updated in PBA.pro Client Mode

  - Bug Fix: Extra column Label not shown in DBS View

  - Keep Last Option for 429 TX Labels

  - Tx Label data may be derived from a File

  - Allow to use a different SSM Parameter (than a dedicated SSM parameter) delivering the Sign

  - Tx Labels may be setup from Bus Monitor Message

  - Some Williamsburg Protocol Decoding related changes

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

– Update to new BSPs V04.40 (Windows and Linux)

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

    – Added A818 Image Compare Tool Display

    – Added dedicated A818 Image Stream in BM and Recording Display

    – Added option to write a CSV-File Summary File to A818 Image Export from BM

    – Added more statistic output and analysis to A818 Image Export from BM

    – Disabled start of Image Receiver for APS-Boards

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

    – Bug Fix: fixed possible crash while many operations starting and stopping at the same time.

    – Switch AFDX Board Type from AFDX to Ethernet and back during runtime from script slot "SwitchToEthernetType".

    – Added offset time SyncStartOffsetMillis to settings to define an offset time for a synchronized transmitter start

    – Statistics are visualized as Pie Charts (e.g. for error and frame size distribution).

- PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

    – See above PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- PBA.pro-TSM (Test and Script Manager component)

    – Improved error output in case of failed Test Manager scripts or functions.

    – "Edit Script" of Test Manager Python functions will find the used script file.

    – Extended support of complex properties (like size, pos, geometry, font etc.) in Python. For example if the size property of a dialog (d) returns '486 362'. Sub-properties for height and with can be accessed and modified by d.size_height or d.size_with. '_' is used as delimiter between main- and sub-property.

    – Reportlab pdf generation improvements:

        * compatible to version 3.x with support for Python 3.

        * added hyper-links in Table Of Contents (TOC).

        * use of automatic Word Wrap functionality.

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

    – Windows only: support of CAN-USB devices (BSP 1.1.23 or newer required)

    – Now available for L64/P64

V02.57

- Build Version: 160

- Build Date: May 2015

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    – PBA.pro Startup Options Selection (Command line option -startopt)

    – PBA.pro Resource Selection (Command line option -ressel)

    – PBA.pro for Linux now comes as an installer binary, not as package/tarball any more.

    – Various Client Server related Bug Fixes

    – File Save Dialog shows default directory of Project file, in case no different location for file type is given

    – Keep the selection in the Settings Editor after a Key was deleted

    – Designer related

        * Introduced new Qwt Bar Chart widget able to plot several groups of bars displaying the same properties for different objects

        * PBGridLayout::AddWidget slot does an automatic reparent if widget is not on the parent widget

        * Bug Fix: Updated to new version of KDChart removing a few display bugs in the Display Widget/XY-Plot.

- Bus Monitor (All Resources)

    – Bug Fix: Parameter Highlighting not working reliable in Index View

    – Bug Fix: Index View Data Range "all" is hidden by default

    – Bug Fix: Default Hidden Properties are shown in the Initial Layout

    – Bug Fix: Wrong Messages may be displayed when merging a filtered Index

    – Bug Fix: CSV and Text Recording Export restricted to first 32 Properties.

    – Bug Fix: Search and Filter for specific property types (e.g. TimeTag) are not working if a new value is entered.

    – Bug Fix: Revised HexView Data- and Parameter-Selection

    – Bug Fix: Wrong time for Parameter export

    – Bug Fix: Raw Socket Recording might not work

- Parameter Database (All Resources)

    – Bit Filed parameters provide an Alias for a not set bit.

    – Assign System States can now also edited in a table

    – Hide the OptionSigned property of the Scaled format type for Float and BCD

    – Toolbar provides a new toolbutton to start / stop all bus monitors

    – Bug Fix: Tailing white spaces not trimmed during PDI Import

    – Bug Fix: Prevent Crash on Assign start, if Assign Elements are assigned in the Assign itself

- PBA.pro-MIL (MIL-STD-1553 support)

    – CSV Import file import to 1553 Recording File, which may be replayed

    – Issue a warning when a stream is already used (e.g. ANET)

    – MIL-BSP 11.40

    – Single Function Boards always allow BM and RT Mailbox (>= MIL-BSP V11.40)

    – Optimized MilScope analysis

    – PBA-2000 Setup Import uses object selector dialog

    – Allow to omit reset, if other application is connected to the board via settings Mil/ComponentOptions/NoBoardReset = 3

    – APE and ACEPXI Based MilScope Cards allow concurrent recording and MilScope usage

    – Speed up Acyclic Frame send with APU Boards

    – NTG Boards show also Discretes

    – Bug Fix: Mil RT Status Word not visible in Mailbox Mode

    – Bug Fix: Mil RT SubAddresses may not be saved, when setup by Database and afterwards modified a child

    – Bug Fix: Detailed Frame View from Frame Edit not working

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

    – The usage of EFA (STANAG 3910) and EFEX requires an dedicated export licence.

    – Bug Fix: 3910 DDL/FODDL not working on Dual Stream 3910 card

    – Bug Fix: Possible Crash when selection changes in Correlated Recording Display during Correlation is active.

- PBA.pro-ARINC429-x (ARINC-429 support)

    – CSV Import file import to Recording File, which may be replayed

    – Wiliamsburg and ARINC615 Protocol Decoding. The decoding must be enabled via the settings key A429/DataLoader/BusDecodingEnabled=true

    – Decoding of further 429 protocols via Script

    – Issue a warning when a stream is already used (e.g. ANET)

    – Allow to replay 429 Errors

    – Support Loop Pollution StartDelay and Duration Mode

    – Provide a native A429 binary label editor

    – NTG Boards show also Discretes

    – Bug Fix: 429 Data Column shown Left Aligned in Recording Display

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    – Update to new BSPs V04.31 (Windows and Linux)

    – Dedicated Bus Monitor System State

    – Generic Frames can be changed and sent on the fly now

    – Added ULP-Switching Option, see EnabledULPs in Board-Resource

    – Sync with local PC-Time if Day<0 in SetIrigTime

- – Improve FC-2 Field Decoding Encoding
- – Display also meaning of unset bits

• PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

- – Added A818 Image Export to Recording Dialog
- – Added Export Image to Generic Send List function
- – Mirror received image dependent on Pixel Array Order in Object0
- – Removed obsolete ASVI Example-Script

• PBA.pro-FC-ASM (FC-AE-ASM support, includes PBA.pro-FC-2)

- – Added BM-Filter function for ASM-Message Ids
- – Support acyclic transmission of ASM-Messages

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

- – CSV Import file import to FDX chronological recording File, which may be replayed
- – Dedicated Bus Monitor System State
- – Added function to start all Send-Operations time synchronized, which use StartMode=StartAfterTimeOffset
- – When a fdxplorer setup file holds multiple portmap-ids, an interactive dialog is displayed to select the portmap-id to import
- – Bugfix: PayloadSize of an Online-Queueing-Tx-Message cant be changed
- – Sync with local PC-Time if Day<0 in SetIrigTime

• PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

- – CSV Import file import to Ethernet Recording File, which may be replayed

• PBA.pro-TSM (Test and Script Manager component)

- – Python: allow non ASCII characters in scriptpath

• Further utility component changes

- – remote: Set default value for "Confirm Connection Dialog" to false.

V02.56

- Build Version: 156

- Build Date: December 2014

- Applicable for Windows

- PBA.pro-FD (PBA.pro Framework & Designer)

    – First Version of PBA.pro Server / Client option.

    – Allow renaming and deletion of Virtual Streams from GUI

    – The converter tool DACFF is now part of the PBA.pro

    – Help About / Component Load: Show Commercial Option as extra column

    – Help About / Component Load: Highlight component load status by colours.

    – Context menu improvements of Recursive Browser

    – Recursive browser allows to browse any object by "Browse this" Menu entry in the tree

    – Removed Build numbers of components

    – Enable the read only cells of the property table top be able to select it and use if for copy / paste operations.

    – Change of workspace area appearance.

    – Introduced Object Tracker window to automatically display the default view of the currently selected node of a tree (Resource or Parameter tree).

    – Rename objects directly in tree if allowed (by F2)

    – Make the CSV Separator selectable in Export Dialog (e.g. for CSV export)

    – Allow to use Tab Sign during export to allow Exports similar to ParaView's export format

    – Table header resize behaviour improvements

    – Streamlined right/left alignment of numbers in horizontal tables

    – Prevent Index View header reset on BM Restart

    – System States "Show View" actions allow to open the view standalone

    – Bug Fix: Crash in ObjectBrowser if invalid objects are displayed

    – Bug Fix: Selected items in object trees are not readable in Windows Classic Mode

    – Bug Fix: Recording display - Auto swap of current tab on tree selection change only works for the first selection of a node.

    – Bug Fix: Possible crash when Filtering in tree

    – Bug Fix: Prevent crash on malformed PBA.pro settings (ini files)

    – Bug Fix: Label Stack in designer does not save/restore background fill property correctly.

    – Bug Fix: Light Mode shows 'Filter Recording' actions while filtering is not supported.

- Parameter Database (All Resources)

    – Allow Function Parameter as parent for Parameter Condition of type "Repeat".

    – Introduced an option to remove duplicate Parameters after PDI Import (Settings Key PPDB-S/RemovePdiDuplicates)

- – Prevent a too long name for the session, when exporting or recording parameters

- – Parameter Recording, started via Popup Menu automatically removes Recording after display is closed. This may be changed within the settings (PPDBS/ParameterRecording/RemoveOnDisplayClose)

- – Bug Fix: Assign entry may not reflect an eventually changed DBS Parameter Comment

- – Bug Fix: Default Assign Preset Values may not be written on assign start, if duplicate parameters are present

- – Bug Fix: Parameter Support of some resource components (FDX, FC, ARINC825,...) may be dependent from component load order

- • PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  - – Using FDX-API Library of V17.1x Patch 1

  - – Enabled Second Edition Capturing for GNET Boards

  - – Allow to configure QueueMemorySize for Second Edition Capturing by INI settings.

  - – AFDX recording hook to pre-parse recorded data (e.g. by a custom library) during data acquisition.

  - – Bug Fix: Handle "out of memory situation" during fast capturing (e.g. in case of GNET)

  - – Bug Fix: Restart of SQ Capture may not always show the correct Diff Time in History

- • PBA.pro-MIL (MIL-STD-1553 support)

  - – AcePxi Board Support

  - – PBA.pro Client/Server option

  - – Improve MilScope Display usability and look & feel

  - – MilScope: Export picture, using inverted colours

  - – MilScope: Print Waveform

  - – MilScope Waveform Analysis improvement to works with Non Milbus Signals

  - – First release of new Manual V02.00

  - – Added an "Use for all" checkbox to the Setup RT from Xfer button

  - – Allow to setup also RT's from Bus Monitor Statistic

  - – Allow to setup also RT's from Activity (Low and High Speed)

  - – Added an MIL-BSP 11.2x Compatibility component. It must be selected via the Help About dialog, if you want to go via Network on a Remote PC installed BS 11.2x

  - – Bug Fix: MilScope may show 2 Trigger Positions

  - – Bug Fix: Possible crash, when executing "Enable all RT's from DBS" on a MIL RT's Node

  - – Bug Fix: RT Setup not installed after Build In Test

  - – Bug Fix: Possible crash when adding a recording without .ana file to BM.

- • PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – ANET3910 Board support

  - – Bug Fix: Efex Message does not show HsBus Property in Bus Monitor Display

  - – Bug Fix: Possible Wrong EFEx correlation in case of pure 1553 and EFEx Transfers

- PBA.pro-ARINC429-x (ARINC-429 support)

  - AcePxi Board Support

  - PBA.pro Client/Server option

  - Stop the RX Channel if it was started by Bus Monitor Start

  - Bug Fix: Crash on creation of an Assign Default Value on an 429 Database Parameter

  - Bug Fix: Dyntags only saved in setup when enabled

  - Bug Fix: Parameter Init Values not written on start

  - Bug Fix: Changing Data on 429 TX Activity Label may change value of other labels too

  - Bug Fix: 429 Database Parameter do not detect time out conditions

  - Bug Fix: 429 "Sync with parameters" does only work on first channel

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

  - Introduced Linux support

  - Allow to apply changed A818 image on the fly by script while sending

  - Bug Fix: Increased max byte position for FC-Parameters, important especially for ASM

  - Bug Fix: Using PortSpeedCapabilities info now to support switching portspeed

  - Bug Fix: Revised exclusive run-logic of operations and enable/disable behaviour of toolbuttons

- PBA.pro-TSM (Test and Script Manager component)

  - TestManager: Allow to continue with the next test on script crash, instead of aborting the entire test

  - Extension of Remote Component Interface API

  - Remote Control Scripter: Now supports QObjectList and QWidgetList Parameter Types

  - Remote Control Scripter: Omit the last space when returning lists

  - Bug Fix: Test Manager may show wrong Project Name (e.g. GlobalStates.ppref) in Text Report

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

  - Allow to set individual user baud rate to program and configure directly the Bittime Prescaler of the CAN Controller. Option BaudRateType = User and UserBaudRate.

- Further utility component changes

  - Analogue: PBA.pro crash if two analogue resources (e.g. TIP850 and National Instruments PCI 6722) are used together

  - Legacy Import component Bug Fix: PBA setups cannot be imported correctly.

  - RS232 & RS422: Increased read buffer for better read performance.

  - Bug Fix: MS Flight Simulator Parameters may not work if Database Stream Assign is used

V02.55

- Build Version: 155

- Build Date: August 2014

- Applicable for Windows, Linux and Engine

- PBA.pro-FD (PBA.pro Framework & Designer)

  – Use same Icon for Object Browser in Toolbar and Object Browser Window

  – Filter Support in various Object Trees like the Resources- and Parameter-Tree. After entering a text-based filter, only objects matching the filter-condition are displayed.

  – Toggleable System States show LED Icon for determination between on and off

  – Bug Fix: Multi Resource Toolbar does not show actions (via right click) of the original Toolbar

- Bus Monitor (All Resources)

  – Resize to Contents action also for Index View

- Parameter Database (All Resources)

  – Added a Global Database Format

  – Assign Show/Hide Folder sometimes takes a long time to have an effect

  – Bit Field Format Type

  – Enums an Bit Fields allow to define a description for each state

  – Bug Fix: Assign does not show the change of connection state, causing "No source for Parameter found" to be displayed when using with designer panels

  – Bug Fix: Assign Preset Value may show wrong current state for String Parameters

  – Bug Fix: When using Assign Calc Formulas on Assign Placeholder the functions may not be executed when reading the result properties via Designer or Script

- PBA.pro-MIL (MIL-STD-1553 support)

  – MIL-BSP V11.3x Support

  – BC Error Injection can be installed on the fly (requires BSP>=V11.30)

  – Boards with Packed coupling support only Primary Channel single lane coupling

  – Do not save PxiTriggerList when no triggers are defined

  – Some Fixes related to User Administration

  – Broadcast Sub Addresses can also be illegalized

  – Bug Fix: Acyclic Frames may not be saved

  – Bug Fix: MilFunction NTG Emulation may start at wrong Init Value (e.g UCS Dyntag from 0x4000 to 0x40FF)

  – Bug Fix: MilScope Over/Undershoot may not detect some waveforms

  – Bug Fix: 3910 and Efex Hardware Filter is lacking the last MID

  – Bug Fix: Default HS Init Timeout Value is 128 instead of 185

  – Single Function MilScope Board support

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

    – MIL-BSP V11.3x Support

    – 3910 Production Test Plan support

    – Allow to change the Number of HS RT Preambles during Runtime

    – Faster LS/HS Correlation Flush if possible

    – Bug Fix: 3910 and Efex Hardware Filter is lacking the last MID

- PBA.pro-ARINC429-x (ARINC-429 support)

    – ARINC429 BSP V09.40 Support

    – Added a python script converting CSV Export data to a PBA.pro Recording, which may be used for Replay

    – 429 SSM PDI Support

    – Bug Fix: 429 Hardware Filter displays Label Number in Decimal instead of Octal

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

    – Bug Fix: Crash while sending without receiving

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    – Fibre Channel BSP V04.2x Support (Linux BSP V04.0x)

    – ASM ULP support.

    – Renamed FrameSize to Size

    – Improved exclusive Start/Stop logic of FC Operations (e.g. Generic Send List, ARINC818 Send, RDMA, ...)

    – Revised Getting Started Manual

- PBA.pro-FC-ASM (FC-AE-ASM support, includes PBA.pro-FC-2)

    – Initial ASM ULP Support

    – Added Sample examples/Fibrechannel/ASM

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

    – Added ARINC818 Recording files images.zip to examples/fibrechannel/a818 to search/re-assemble images within the Bus Monitor Recording Dialog

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

    – AFDX -BSP V17.10 Support

    – GNET Built In Selftest, available via the menu: Tools - FDX-Board X Hardware Selftest

    – From a loaded or captured chronologic recording it is now possible to create a Sampling / Queuing Setup

    – Bug Fix: Reassembling of IP fragments does not consider redundant configurations

    – Bug Fix: Changing Port or Board Names does not change Tool or Status Tip of related toolbar actions

- PBA.pro-AIPM

- – Initial Version, supporting the ACX-AIPM hardware.

- PBA.pro-TSM (Test and Script Manager component)

  - – Allow to repeated run Test Manager Tests (until failed or given number of times)
  - – Bug Fix: Test Manager may show wrong Project Name
  - – Bug Fix: Python callback may write return value of connected function into script window
  - – Improved style file inclusion for XML reports
  - – PBA.pro Remote Control Component
    - ∗ Example script extension for 429 and 1553 examples and file up load example.

- PBA.pro-Engine

  - – Initial Version

- PBA.pro Web Interface

  - – Initial Version

- Further utility component changes

  - – MS Flight simulator component: Bug Fix: Parameters may not work if Database Stream Assign is used

V02.54 P1

- Build Version: 153

- Build Date: May 2014

- Parameter Database (All Resources)

    – Bug Fix: Init values for parameters, stored in the database might be interpreted/imported wrong

- PBA.pro-RS232 (Serial COM port support)

    – Bug Fix: RS232 does not work via ANS anymore.

V02.54

- Build Version: 152

- Build Date: April 2014

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    – Allow to change Font Size of the User Interface
    – -view:<Object> command line parameter to open a dedicated view on start-up
    – Bug Fix: Cannot use a Light and a Normal Licence for different Boards
    – Bug Fix: BM View does not save size
    – Bug Fix: Environment Variables in File names may not be expanded if more than one is present
    – Bug Fix: Global Connection Manager cannot reopen log when closed
    – Designer related
        * Provide a polar plot widget for the designer component
        * Re-enable Zoom of qwt plots (Time plot and X/Y plot)
        * Plot from a recording does no longer interpolate if there are fewer values than pixels
        * Added a Python Library and Sample for easier creation of designer templates

- Bus Monitor (All Resources)

    – Trace Before/Trace After Trigger support via Stream Scanner

- Parameter Database (All Resources)

    – A double click to the DBS file name in the DBS View opens the file location

- PBA.pro-MIL (MIL-STD-1553 support)

    – MilScope Analysis: Separate values for 500,1000,1500 and 2000 Zero Crossings
    – MilScope Analysis: Separate values for Sync and Data Rise and Fall Times

- – Bug Fix: Search According to Selection on a 1553 Status Word from Index View will not work, in case any Status Word Bit is set

- – Bug Fix: Faulty error description for Mil Messages with error in Data Word 0.

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – Force Efex RT's EfaEfexMode=Both when loading a ParaView setup containing PBA-3910 Setups and DBS AutoRtSetup

  - – Disable Wrap Around HS Coupling Modes in case a Electrical FOFE is connected

  - – Bug Fix: When Loading a MilResource Project, which causes the Board Type to be switched, the Resource Name was reset to the default state.

- PBA.pro-ARINC429-x (ARINC-429 support)

  - – The ARINC429 SSM Sign is reflected in the Parameter Value

  - – Bug Fix: 429 Bus Monitor status may not show Recording even Traffic is recorded

- PBA.pro-TSM (Test and Script Manager component)

  - – First support of Python 3 in PBA.pro starting with Python 3.3 (or newer). Python 2.7 remains the current default Python Version. Use of Python 2 and 3 is possible.

  - – Rework of ppbase.py where utilities are moved into a new pputil.py module, containing PayloadUtils etc.

  - – Resource specific libraries (e.g. ppmil.py, ppfdx.py etc) will be executed if only needed / related resource is available.

  - – New Python helper classes for PBA.pro Settings access and a HTML Logger (see pputil.py for details)

  - – New ppcompat.py module containing utilities for writing code that runs on Python 2 and 3 based on six.py.

V02.53

- Build Version: 151

- Build Date: February 2014

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  – Changed layout of help menu browser and extended displayed documentation.

  – Bug Fix: Files with a ' in the filename (or path) cannot be loaded (character is valid on windows)

  – Bug Fix: Recursive Browser table did not restore column width if a Default layout was saved

  – Bug Fix: Recreation of Parameters on Messages might cause a crash if two messages are recreated at the same time (non thread safe)

  – Designer related

    * Update of QWT widget library to QWT V06.1.0
    * Plots can now contain parameter values from different sources/streams
    * Changed behaviour of online plots: Will no longer change data source. Plots with BM as data source grey out parameters with no active data source
    * Plots on designer templates now ask which data source is to be used on template load
    * Bug Fix: Designer connections from script might not work
    * Bug Fix: Label stack palette information is gone after saving/loading a designer template
    * Bug Fix: Zooming on online plots can produce erroneous results

- Parameter Database (All Resources)

  – Performance Improvements with 1553/3910 Parameters in the Assign

  – Bug Fix: Saving a new PPDBS file on Linux may cause the creation of the wrong extension (PDI), causing the file is not readable

- PBA.pro-MIL (MIL-STD-1553 support)

  – Some Performance Improvements related to Parameters

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  – Introduced a "fixsize:<blc count>" comment on Efex Sub Addresses, causing the Buffer Size from HS Status is ignored.

- PBA.pro-ARINC429-x (ARINC-429 support)

  – Use the same Icon Size for 429 Resource Display than in the main window

- PBA.pro-TSM (Test and Script Manager component)

  – Updated ReportLab Libraries and Installation Package for pdf report generation. The report lab installation can be found for Python 2.5 and 2.7 below the PBA.pro installation directory: ~\examples\testmanager\simple_pdf\reportlab.zip
  Further information can be found on the ReportLab homepage www.reportlab.com.

  – Added functionality to create sub-projects for a test manager project.

– Performance Improvement with the Python PbaProObject Slot Calls

- Further utility component changes

  – IRIG-G component: Use us time resolution for capturing

  – IRIG-G component: Use IRIG-B time for events

  – AIMRS422: Byte Order Patch

V02.52

- Build Version: 150

- Build Date: December 2013

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - By default omit thousands group Separators and use C locale for number displays
  - Right alignment for numbers in tables for better readability
  - AddWidget/AddSpacer slot of Designer Layout accepts -1 for the first free position
  - Bug Fix: prevent possible crash, if a dialog is closed in designer

- Bus Monitor (All Resources)

  - Add tool-bar to BM Setup View
  - Do not show Parameter Export options when no parameters (and Database component) are present
  - Bug Fix: Fixed some merging problems
  - Bug Fix: Possible Crash, when searching in Recursive Browser
  - Bug Fix: Embedded Detailed View does not save Settings
  - Bug Fix: Possible Deadlock when starting Monitor in Scanning mode
  - Bug Fix: Prevent Deadlock when adding Bookmarks and Event Markers are already present
  - Bug Fix: Allow temp recording on streams with equal naming
  - Bug Fix: Merge Action from Sessions node not working

- Parameter Database (All Resources)

  - Optimized memory usage during pdi load
  - Assign Format option allows to use define Enumerations
  - Assign Format can now be applied to Assign Placeholder Entries
  - Added generic condition mode
  - Allow parameter off-line replay of analysed file streams
  - Classification-Log only Assign load, if assign contains parameters marked for Log
  - New Action Types for Parameter Conditions:
    * Generic: Evaluation by a script function which creates all sub nodes.
    * Reliant: Parameters below a Reliant-condition will start directly after the last valid repeated Parameter.
  - Bug Fix: Assign Signal Value Condition may not be stored with scaled formats
  - Bug Fix: Parameters below Relative Conditions are evaluated even if the condition is not valid
  - Bug Fix: Parameters below relative Conditions cannot be replayed
  - Bug Fix: Prevent crash, when loading Parameter Recording File referring to missing parameters.

- – Bug Fix: When selecting an Assign Folder containing parameters with pre-set value the Toolbar Action does not show the related actions

- PBA.pro-MIL (MIL-STD-1553 support)

    - – Also Init BM Activity Values when Init BM

    - – Do not display not applicable MilScope Trigger Options

    - – Also Init BM Activity Values when Init BM

    - – Bug Fix: Selftest on APU 1553 Cards may fail with an Irig Time Problem

    - – Bug Fix: CS may also accept BCR Bit

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

    - – Do not reduce HS Buffer size on Autosetup, due to it may be setup manually

    - – Bug Fix: Efa Efex switch for NTG Boards not working.

    - – Bug Fix: HS Buffer Header may show wrong values in NTG mod

    - – Bug Fix: HS part of RT may not be updated in system overview dialog

- PBA.pro-ARINC429-x (ARINC-429 support)

    - – Improved Tx frame creation algorithm causing less jitter

    - – Added Slots allowing direct Firmware memory modification

    - – Bug Fix: On some board types PBA.pro shows wrong message "Set ChannelX of Board to Tx only"

    - – Bugfix: Output Discrete channels for A429-AMC do not work anymore

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    - – Support simple profiling and logging API-Calls, see setting
      Fc/Misc/XDumpApiCalls
      Fc/Misc/XTimeApiCalls

    - – Bug Fix: Change FCPortId and WWNumbers only for a Self-Connection

    - – Bug Fix: Revised FcConnections.CheckConnections in ppfc.py

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

    - – A818-Image Search Widget within the Recording Dialog/BM is dockable

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

    - – Support simple profiling and logging API-Calls, see setting
      Fdx/Misc/XDumpApiCalls
      Fdx/Misc/XTimeApiCalls

- PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

    - – Support of TCP Port Nodes in Parameter Database

- PBA.pro-TSM (Test and Script Manager component)

    - – Added a script possibility to combine multiple test reports (XML) to one common PDF

    - – Re-layout the PDF report, supporting an optional front page and a table of contents section.

- Bug Fix: Python built-in command raw_input() is not working in PBA.pro
- Bug Fix: Do not crash when no file filter is given with the file selection script command (e.g. tclqt_select_file)
- Support of Python 2.7.6

V02.51

- Build Version: 145

- Build Date: September 2013

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  – Extended PBA.pro startup directory and (default) settings configuration possibilities: Extended default.ini to support PBA.pro settings, located in common user folder or even on the network.

  – New Light key enabling ANET.

  – 64 Bit support (Windows)

  – Allow to change the PBA.pro used Locale (number format) during runtime via script

  – Designer: Added a slot "GetPixmapPath" for the label to get the path of the pixmap from script.

  – Designer: Introduced a "Color Button" widget

  – Designer: Added an Absolute File Path Property to the File Selection Widget

  – Designer: Empty plots on Designer templates now accept parameters per drag& drop

  – Designer: Plots opened from the Assign or BM now have the same standalone status as the calling dialog

  – Designer: Texts in plots can now be edited after they have been added

  – Bug Fix: dynamic properties fix if props are not grouped and displayed in tree

  – Bug Fix: Fixed crash when trying to plot parameters imported from PDI from BM.

  – Bug Fix: fixes for manual datasets

  – Bug Fix: PBA.pro crashes, if exporting from other table than the Recording displays

  – Bug Fix: Search & Filter for timetags in nanoseconds resolution

  – Bug Fix: Sub Filter not Reset when changing Object type in Recursive Browser

  – Bug Fix (Designer): Label Stack with one label only does not restore the position properly.

  – Bug Fix (Designer): Embedded widgets are displayed under certain circumstances to small

  – Bug Fix (Designer): Loading horizontal & vertical cell stretch did not work any more.

  – Bug Fix (Designer): Drag & Drop from assign to plot

  – Bug Fix (Designer): Plot parameter action now available in context menu of correlated stream

- Bus Monitor (All Resources)

  – Virtual stream support

  – Read IRIG time tag of a message/frame in different formats by a slot GetTimeTag(itf)

  – Show recorded time in recording display

  – Bug Fix: %f Place holder not working in BM File name

  – Bug Fix: Filtered Recordings may not be restored correctly

- Parameter Database (All Resources)

- First Implementation of Parameter Recording

- New Manual

- Change Parameter colouring for conditions to show time out colour for conditional parameters as well.

- Bug Fix: Corrected Big / Little Endian handling of Parameters, placed on a byte stream. (e.g. STD-ETH)

• PBA.pro-MIL (MIL-STD-1553 support)

- Allow to plot parameters from correlated recording as well.

- ANET support

- BM recording Sessions is now accessible by a top level menu action of the BM button of the MIL system overview display. Note: There exists a combined display for all (current & added) sessions of the BM, which makes selection of an individual session stream obsolete.

- Do not analyse scope data when no signal is present (except voltage)

- Bug Fix: Strobe not added to an existing trigger, when BIU Trigger is used in the Scope

- Bug Fix: Prevent possible crash when filtering online from Correlated Recording and BM is stopped

• PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

- Allow create Efex Parameters from Buffer

- Parameter support on Efex Mode Codes (RT Side only)

- Streamlined HS error names (same as BM errors)

- Allow start Scope with Biu Trigger when BM is Active

- Bug Fix: Fix some crashes if Recording display is open and the resource is switched (efa/efex)

- Bug Fix: Efex Mode Code MID Status not read

- Bug Fix: Do not show an Efex status frame exception for Efex TX Vector Word and Tx Bit Word Mode Codes

- Bug Fix: AI (Additional Info) property of an Efex Status frame may have 2 Bits instead of one bit bool value.

• PBA.pro-ARINC429-x (ARINC-429 support)

- Dynamic Tag Support (with BSP V9.30)

- Onboard Wrap Around (if supported by Board)

- ANET429-x support

- A429 quick access of channel type by context menu

- Activity labels do now provide a context menu entry to create a parameter.

- Error Property of 429 Messages show an Description

• PBA.pro-FC-2 (Fibre Channel Layer 2 support)

- Added BM Filter Actions for RDMA-Buffers and received ARINC818 images

- Added Login Status property to Port, so it can be checked if Implicit or Explicit Login was used

- – Removed LoginCtrlPort IniSetting and replaced with the DefaultLogin Option available for the LoginCtrl property of a Port
- – Added Toolbuttons and menu items in the Toolbar
- – Added various FC related objects and classes to the recursive object browser

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

  - – Added ImageReceiver / Snapshot mode
    The ImageReceiver polls the Hardware in a predefined update time (see IniSettings Fc/A818/RxPollingTime) and reads and displays the received image. As soon as an image was read by the PBA.pro the hardware receives and reassembles the next image, which will be stored until the next read-access by the PBA.pro.
  - – Added Status information to A818 node and ImageSender
  - – Added ImageViewer widget
    This widget provides various functions via context-menu
  - – Support to add multiple images for the sender from a directory
  - – Support colour table/Palette in picture header
  - – Search for and display a picture in the recording trace. Features:
  - – find and display picture
  - – find and display next/previous picture
  - – select the first frame / all frames of the picture in the recording
  - – Subimages of a Tx-ImageSequence are not stored/holded in memory with their pixel data anymore to save memory
  - – Added various testimages as image-lib to the PBA.pro internal resources. These images can be uses as filename for a Tx-Image.

- PBA.pro-ETH (Standard Ethernet support, based on AIM Hardware)

  - – IP message re-assembling support (For PBA.pro-AFDX as well)
  - – Bug Fix: PBA.pro Ethernet Extension/Payload Parameters: Automatic detection of payload begin in case of TCP messages fails
  - – Bug Fix: UDP-Checksum calculation in STD-ETH mode
  - – Bug Fix: Use STD-ETH Frame Verification mode as default in STD-ETH mode

- PBA.pro-TSM (Test and Script Manager component)

  - – Scripting:
    - ∗ Slots accept NULL Pointers as Parameters now.
  - – Test Manager:
    - ∗ Provide Means to automatically add the Output window information to the Test report file.
    - ∗ Streamlined enumerated values (enable/enabled pass/passed, etc.)
    - ∗ Prevent Crash on Project Load and no valid Scripter is present
    - ∗ Introduced Test scopes (by script and PBA.pro Settings). The scopes can be reused in the test scripts to be able to distinguish between different test scenarios, the test is executed for.

- Discrete Components (AIM onboard discrete channels & 3rd party HW)

  - – Support to create a bit parameter for a discrete channel or for all discrete channels below a container node by context menu

V02.50

- Build Version: 142

- Build Date: May 2013

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

  - New PBA.pro Installer

  - Changed Qt Framework to Qt 4.8.4

  - Linux version now supports dongle licensing

  - Enhancement of Dock widgets to interactively specify the position of the tabs

  - You may place a "default.ini" file in the PBA.pro Application Directory The contents of that file is merged to the PBA.pro Configuration on startup

  - Designer: Enhance LED designer widget to be able to have an optional Text inside the LED

  - Designer: Add Timing options to label stack to automatically loop the labels with a given time

  - Designer: Use Dialog as Parent for File Selection Dialog instead of Main Window

  - Bug Fix (Designer): remove modified flag if dialog is executed.

  - Bug Fix: Color selection by combo box editor in ini settings dialog does not work any more.

- Bus Monitor (All Resources)

  - Always allow to load Projects and Reference Files, even if a Capture/Recording is active

  - Enhance Export capabilities of recording files to export to a fix, equidistant time interval

  - Streamlined Default CSV Separator for Exports

  - Various improvements and optimisations for parameter online plot

  - Bug Fix: Search according to selection in Recording Display for Data properties do not use the selected value

  - Bug Fix: it is now possible do add parameters by drag and drop to a Recording Display with

  - msg. interpreter property names (e.g. TimeTag)

  - equal parameters names, where the parameter source info is displayed as tooltip.

  - The temporary recording index may be stored at the recording file location. This may save space on the system drive (at the temp file location). This may be enabled with the setting BusMonitor/TempIndexFileAtRecFileLocation=true

  - Bug Fix: Fixed erroneous parameter plot display for recordings containing fewer data points than pixels in plot curve.

  - Bug Fix: Fixed possible hang of parameter plot when starting an online plot.

- Parameter Database (All Resources)

  - Re-Organised Assign Menu and Icons

  - Re-Organized Database Manager Menu

  - Prevent Setup Modification Question, when using Assign Functions or Formula's

  - Linux version now supports Ethernet database

- – Bug Fix: Prevent possible crash with big Assigns and System States
- – Bug Fix: Prevent possible deadlock when assigning a parameter
- – Bug Fix: Database Save always shows File Selection Dialog
- – Bug Fix: Import/Export Parameter Actions in DBS manager not visible

- PBA.pro-MIL (MIL-STD-1553 support)

  - – ANET1553-X Support
  - – Single Lane Coupling for all Board Types
  - – Bug Fix: Prevent RT Activity Mode Code SA's from having same name for Rx and Tx Mode Code
  - – Bug Fix: RT SW may not be visible
  - – Bug Fix: MilBuffer::WriteData Slot ignores the StartPos parameter
  - – Bug Fix: Errors cause by the BC are not reflected on the ErrorBusX property of the BM RT Activity.
  - – Bug Fix: Foddl object may not be visible after a project load

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  - – Bug Fix: HS Mid Block count not set, when using SetupRT From Xfer

- PBA.pro-TSM (Test and Script Manager component)

  - – General:
    - ∗ Use Persistent Editors in Script Manager
  - – Python:
    - ∗ Get properties sorted by name or id
    - ∗ Allow to start IDLE Shell from menu (Scripts -> Open Python IDLE Shell)
    - ∗ Allow to enter Python module names in help browser to show generated Python API documentation.
    - ∗ Show Python API doc. for base libs from main help menu: Help -> Scripting -> Python API Documentation -> ...
    - ∗ Support of Python 2.7.5. Note that Python must be installed with the option "for all users". Installation of Python is under the responsibility of the PBA.pro user.
  - – Test Manager:
    - ∗ Allow dynamic modifications of the config dialog and the PDF Report: From Settings or via Dynamic Properties
    - ∗ Bug Fix: Open Containing Folder will not show the correct Report folder/file, if sub directories are used
  - – Remote Scripter:
    - ∗ Input commands accepted in all three formats:
      - · without size prefix
      - · Ascii size Prefix
      - · Binary size Prefix
    - ∗ Added new command rem_size allowing to modify the size prefix during runtime

- PBA.pro-ARINC429-x (ARINC-429 support)

  – Loop Pollution may now be modified by Parameters

  – Improved Loop Pollution: Change during runtime

  – Added a 429 Selftest Panel (accessible from Tools Menu)

  – Support Boards with different Input and Output Trigger Line Counts

  – Bug Fix: RX Activity Labels may not be visible in the Recursive Browser

  – Bug Fix: 429 Bus Monitor may miss some messages after recording was stopped

  – Bug Fix: Possible Wrong Parameter Source created when using "Create Parameter" Functionality from a Label

  – Bug Fix: Do not try to DBS Autosetup a Tx Only Channel

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

  – Introduced Fibre Channel ULP Key options

  – Renamed Board- and Port "Login" to "Sign In" to avoid confusion with FLOGI- and PLOGI extended link service functions.

  – All connection settings of implicit or explicit created connections are available and displayed. Implicit connections are saved in IniFile and restored on next PBA.pro start (see key Fc/Boards/Settings/Board1/ImplicitConnections/Port1). All settings can be edited as long as the connection is not active.

  – The FLOGI/PLOGI Login function of the port can be controlled via the IniSetting Fc/Boards/Settings/Board1/LoginOptionPort1. For ARINC818 mode an implicit login must be used and the RxBBCredit must be zero.

- PBA.pro-FC-A818 (FC-AV / ARINC818 support, includes PBA.pro-FC-2)

  – Support the ARINC818 Transmitter mode
  If the used Board supports the ARINC818 ULP and the PBA.pro license key unlocks the ARINC818 option, one or more ImageLists can be defined and sent on the A818.ImageSender node beneath a Port. All parameters which are required in the Object0-Header and not defined by the image itself, can be defined by the user. For an image also sub images, which are sent in a cyclic list and sharing the same Object0-Header, can be defined, so that a small video can be emulated.

- PBA.pro-AFDX-2 (ARINC664 / AFDX support)

  – Continuous Capturing 2nd Edition is disabled by default on 64Bit operating systems

  – Added BoardType property for Board

  – Provide internal C-API Handles for Sampling- and Queuing-Ports for ctypes Python programmers

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

  – Support of CAN/ARINC 825 boards for Linux

- PBA.pro-RS232 (Serial COM port support)

  – Allow the first two RS-232 ports without a rs-232 licence

V02.48

- Build Version: 140

- Build Date: February 2013

- Applicable for Windows and Linux

- PBA.pro-FD (PBA.pro Framework & Designer)

    - Support of global style sheets file.

    - Add a Delete Action to the Settings Editor

    - Display the full Settings Path String when selected

    - Bug Fix: Prevent possible crash, when System State is deleted during Execution

    - Bug Fix: Directory selection dialog: The initial path was one level too high as the last directory had been interpreted as file.

    - Bug Fix: Irig Time is not shown in main window if no Irig Time is available.

    - Bug Fix: Search Condition Value property may be set wrong if a Double Property is used.

    - Bug Fix: Prevent Assert when Offline Replay is done with a Recording File containing not registered Resource Types

- Bus Monitor (All Resources)

    - Time chart improvement: Easier/extended configuration of time plots Introduced option to change colour of parameter in a chart

    - Do not close time plot of a recording even if closing BM

    - Bug Fix: Adding new data to time plot did not work properly

    - Bug Fix: Fixed crash when trying to plot parameters from a message which contains a high amount parameters.

- PBA.pro-FC-2 (Fibre Channel Layer 2 support)

    - Requires new Fibre Channel BSP V03.00

    - Revised the Getting Started Manual

    - Support Connections from one Port to other Ports As soon as a Fibre Channel Port is started, the Port sends a FLOGI and PLOGI message in order to establish a connection with the remote Port. Furthermore -if the parameters of the remote Port are already known- a Connection can be created and defined in the PBA.pro.

    - Added examples examples
    fibrechannel
    acyclic examples
    fibrechannel
    generic examples
    fibrechannel
    rdma

    - Added "Adapt" function to Generic Transmit Packets, which can be used to adapt the S_ID and D_ID to a specific connection

– Timetag PayloadGeneration is supported for a Generic Transmit Packet As soon as a packet is sent, the actual Irig-B Time is used to fill the payload of the Packet. On receive side the Timetag is decoded by the new Properties PLSentAt and PLLatency. PLLatency = TimeTag - PLSentAt

– Support the integer format option Many integer values and fields of the FC-2 Header can be displayed in hex, dec, oct or binary. E.g. Doubleclick on a Port to open it's classview, click on the FCPortId property to select it, rightclick and change the property to another format.

– Changed default location of FC-Parameters, so that it is at start of the Payload (after FC-2 Header)

– Framesize of a Generic Transmit Packet is checked and a red background color is displayed if the size is not valid.

– Revised the Initialization behaviour, read from IniFile in the Init() function

– Automatically activate connection to buddy port, configurable in Inifile

– Provide IrigTime to Framework if only Port is logged in

– Bug Fix: Restore correct Parameters for a Generic Transmit Packet after Project Load

– Bug Fix: Revise BM Stop behaviour, when BM is about to stop no further Buffers are provided to the board

– Bug Fix: Stop BM correct on high bandwidth error scenarios

– Bug Fix: Revised Update Problems in GUI

– Bug Fix: Increased Wait Times for Capture- or Send-Start after Reset

• PBA.pro-FC-RDMA (FC-AE-RDMA support, includes PBA.pro-FC-2)

– Support of RDMA operation. When the used hardware supports the RDMA protocol, Buffers can be created beneath the RDMA node and can be used in an RDMA Initiator- or Target-Role. See also new example files.

• PBA.pro-AFDX-2 (ARINC664 / AFDX support)

– Added ARINC615 Target simulation script in examples/python/fdx/dl_target This script simulates an 615A Target by sending/replaying frames from a Recording/pprec-file. See the readme.txt for more information

• PBA.pro-MIL (MIL-STD-1553 support)

– MIL BSP 11.2x Support

– Removed support for BSP 9.3x

– Create Directory when Exporting Buffers

– Checksum Calculation may not work for first run

– LS Buffers may be reserved by settings to enable own written software running beside PBA.pro

– Fixed Typo MilScope Property ColorBK renamed to ColorBG

– Bug Fix: MuxValue cannot be set to 1 on a Second Level Track

– Bug Fix: Second Level Track Size and Position may not be changeable if first Level Track was modified

– Bug Fix: RT Display in Mil Sysoverview is not updated after RTs have been initialized

– Bug Fix: Prevent BM Sub Address Activity Display from losing selection when updated.

- PBA.pro-STANAG (STANAG-3910 and Efex support, includes PBA.pro-MIL)

  – Efex Status Word Bit Tx renamed to TR to match the Efex Spec

  – Show Buffer also for HSRtToRt Transfers

  – New Efex Transfer Icons

  – No Warning Color for HS Header Properties

  – Bug Fix: Efex Status Fames not visible in BC Status View

  – Bug Fix: Efex Status Fames not visible in BC Status View

  – Bug Fix: 3910 Ntg Emulation may show wrong SwExeption Error in Bus Monitor

- PBA.pro-ARINC429-x (ARINC-429 support)

  – Bug Fix: Prevent the Display of all 429 Rx Activity Labels if Receive List Activity Display is opened

  – Disable recording trigger on recording stop

  – Prevent possible Recording Underrun on APU Boards

- PBA.pro-ARINC825 (ARINC 825 / CAN Bus support)

  – Support of Custom Baudrates

  – Preliminary support of error injection which can be enabled by the PBA.pro settings: Can/ErrorInjection/TriggerPatternMask = true

- AIM RS422

  – Distinguish between 422 tx and rx Parameters for offline replay

- Database / Parameters

  – Parameter can now be plotted from everywhere it is displayed

  – Offline Parameter replay can now display parameter values in a plot.

  – Only on Load Database Action instead of different PPDBS/PDI and User DBS

  – Support of repeatable structures within a frame/message

  – Bug Fix: Classification not printed when using Assign Tabs

  – Bug Fix: Assign printed rotated, when Classification is enabled

  – Bug Fix: Assign Column Order not reflected in Printout

  – Bug Fix: Condition Value property may be set wrong if a Double Property is used.

  – Bug Fix: Prevent Assert when Offline Replay is done with a Recording File containing not registered Resource Types

  – Bug Fix: Prevent collapse of all groups, if moving or adding Assign Entries by Drag and Drop

  – Bug Fix: On using the Assign Calc Function it is not possible to use different input/output parameters with equal names

  – Bug Fix: Highlighting of long parameters below conditions is not possible

  – Bug Fix: Discrete type parameters could not be created below a condition;

  – Bug Fix: Revised and fixed repeated conditions and parameter highlighting

- Test & Script Manager:

- – Support of Python 2.7.3

- – Python 2.7 is now the default Python Version

- – help(modulename) opens the PBA.pro internal helpbrowser showing the module documenta-tion (e.g help(ppbase)).

- – Test Manager can show Run Buttons for each Test

- – Added counter to display the amount of skipped scripts.

- – Warn user if Python is not installed correctly. This could be:

- – no Python at all

- – unsupported Python version (e.g. Python 2,6 or 3.x)

- – 32bit Python version and 64bit PBA.pro

- – Added a settings value to suppress the display of a message box in case a script is crashed. Setting: TestManager/ShowScriptExceptionMsgBox. This allows to continue with the next test

- – Bug Fix: Avoid crash on PBA.pro close/ Python scripter restart if there are still some global connections established

- – Bug Fix: Report Name (tmpReport) was not resetted after executing Single Test

- Designer

  - – Bug Fix: Toggle Button crash if Button Type is Custom and CustomPicOn / CutsomPicOff is selected.

  - – Resizeable Layout + Auto Alignment support

  - – Create custom Toolbars or duplicate an existing toolbar on a designer display

- GTSDEC

  - – GTS DECOM Card Windows 7 and SDK 3.X support

- User Administration:

  - – A user can be logged in automatically by command line arguments. Usage: ua"username" ua "password" (in this order name -> password) This command line arguments can be added startup/defaultcmdargs

LIST OF ABBREVIATIONS

AIM GmbH	Gesellschaft für angewandte Informatik und Mikroelektronik m.b.H.
L64	Linux 64 bit
P32	PBA.pro 32 bit
P64	PBA.pro 64 bit
PBA.pro	AIM PC based Bus Analyser
W32	Windows 32 bit
W64	Windows 64 bit