Vallen AE-Suite Software Changes History

New features and most important improvements

A software release can include, but is not limited to (a) new and / or enhanced features (b) improvements to performance (c) software bug fixes. The most prominent changes are documented in the list below.

R2022.0809.3

Fix: Printing to Physical Devices

Fixed a glitch in the VisualAE program related to printing out of tabs on a physical device. The glitch caused a suspension of the running program.

Fix: Location with 3 Sensors on Ellipsoidal Heads

The limitation of a minimum of 4 channels required for a location of AE source on ellipsoidal heads was removed in the patched Vallen AE Suite software version R2022.0809.3. The limitation to a minimum of 4 sensors was introduced with the first R2022.0809 version as an accidental byproduct of the cone location algorithm.

Fix: Display of Toggle Menu Data Processing Structure

For high-dpi displays a glitch in displaying the toggle menu of the Data Processing Structure was fixed. The glitch caused the menu to grow in size with every toggle operation.

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R2022.0809

NEW: Acquisition – Maximum Duration

The setup parameter Maximum Duration defines the period after which a time-out is issued by the Acquisition software for the sub-hit assembly. Per default and in the past the maximum hit-time-out period was fixed to 104.8576 ms. The Maximum Duration parameter can be set in the range of 100 ms to 1 000 ms. A detailed description can be found in the online help.

NEW: VisualAE Location Processor – New 3D Cylinder Object

A cylinder model with flat heads is added to the location processor. It is supported by the set-up wizard and can be used for visualizing location results e.g. in the volume of a drill core.

NEW: VisualClass – FFT Coefficient Aggregation

The default feature of the classification process is a single Fourier coefficient which has a certain value and can be assigned a specific frequency. The FFT coefficient aggregation allows to combine consecutive FFT coefficients to a single feature. The new feature takes on the average of all combined Fourier coefficient values and is assigned the average of combined frequencies.

NEW: VisualClass ONNX Export

A classifier can be exported as ONNX model for usage in linWave devices or machine learning engines that support ONNX protocol.

NEW: VisualAE Clusterlist Visual

The Clusterlist Visual is a tabular display of the cluster list that can be added to a page in the same way as a listing or diagram can be added. It displays the same information as the Cluster List dialogue that is available through the Cluster Processor's properties.

NEW: Automation Manager Queue Action and System-Stop Action

The Queue Action can be used to queue a set of Actions to be executed at a later point in time. The System-Stop Action is a special Queue Action. It is used to terminate the execution of the Automation Manager.

NEW: System Monitor in Vallen AE Suite SW

The System Monitor program is added to the Vallen AE Suite software. It can be used to monitor a set of system resources. The result data is only available through the Dashboard.

NEW: AcqCmd GetFile

The Acquisition software accepts the GetFile command. It returns the active pridb-file name. The Acquisition API has been extended by this command as well.

NEW: EULA

The EULA has been adapted to a standardized format. The content has been extended to cover also software for spotWave devices, linWave devices and the free-to-use Vallen AE Suite Lite software. Care has been taken that the new EULA has the same effect as the old one.

Improved: Automation Manager – pulser check

The Automatic Pulser Check Action of the Automation Manager has been extended and allows to check also CCT and AST pulsing tables.

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Fixed: VisualAE – Missing PA1 Data

An error was fixed that prevented the display of parametric data of a channel when the lower numbered channels were not activated in the Acquisition program.

Improved: VisualClass Auto Parameter Search - Recall/Precision as Quality Measures

The Auto Parameter Search routine of the VisualClass program allows to track the classification results on bases of a specified quality parameter. Precision and Recall of a specific class have been added to the list of available quality parameters.

VisualClass – Normalization Option

VisualClass routine allows normalization of waveforms. The normalization has been fixed to RMS as basis for normalizing. Energy normalization is not supported anymore.

VisualAE – module VAECPU is part of bundled module BDSWB

The VAECPU module, ECP user role, has been moved to the BDSWB module. It is therefore available in a basic software configuration.

R2021.1122.1

Fix: Vallen Smart Preamplifier Detection

Fixes to the communication protocol to account for disturbances in the data transfer with HP-Lo enabled in an ASIP-2 channel

Fix: VisualAE program – Duplication of Diagrams

Fixed possible Access Violations of VisualAE program, missing diagrams and wrong page references after duplicating of a diagram or processor nodes with attached diagrams.

Fix: spotWave Acquisition – Filter Dialogue

Fixed filter dialogue in the setup menu so that only valid cut-offs are accepted.

Fix: VisualAE program – Delete Pages in a Setup

Fixed the inability to delete a page in a VisualAE setup when the setup was edited without the reference to a pridb file.

IMPROVED: Pax-Modifier Supports spotWave Acquisition

PAx-Modifier utility program can read pridb-files written by the spotWave acquisition program and modify its PAx content.

R2021.1122

NEW: Windows 11 support

This Vallen AE Suite software version is the first one supporting the Windows 11 OS.

NEW: AMSY-6 Acquisition – Peak Detection Window

The Peak Detection Window (PDW) is a setting of the AMSY-6 Acquisition software. It defines a time window starting with the trigger of a burst signal in which the maximum absolute voltage excursion is detected and reported as peak amplitude of the AE data set.

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NEW: spotWave Acquisition

The spotWave Acquisition is the acquisition program that supports the spotWave device, a single channel AE measurement device. The spotWave Acquisition runs on Windows 10 and Windows 11 devices.

NEW: Automation Manager Support for spotWave Devices

The Automation Manager program of the Vallen AE Suite software supports the spotWave device and allows the operator to configure tasks, events and actions that control the spotWave Acquisition in the same way as in the case of an AMSY-6 system.

NEW: Location Algorithm for Cones and Truncated Cones

The VisualAE program of the Vallen AE Suite software is extended with new location algorithms that take wave propagation in the shell of a cone / truncated cone into consideration. The cone / truncated cone can be configured as stand-alone object or as a conical head, part of a pressure vessel structure.

NEW: Slope of Parametric Input dP/dt

The User processor of the VisualAE program is extended by a slope algorithm which calculates and straightens the slope of noisy parametric input signals as a function of time. The slope algorithm shall enable the operator to calculate and display the pressure increase with time (bar per minute) during a pressure vessel test.

IMPROVED: Formatting for Numeric Display

The formatting capabilities of the numeric display have been extended: size, type and color of fonts can be defined as well as the background color of the display.

IMPROVED: VisualAE Quick Start from the Acquisition Program

The GUI of the Acquisition program has been extended with a button for starting and running the VisualAE program on the currently acquired data.

R2020.1124.2

Fixed: SmartLine Preamplifier Communication

SmartLine communications protocol was adapted for a higher stability in the communication for AE systems with a large channel number, especially in a multi chassis setup.

Fixed: AEP3N Communication

The AEP3N programmable gain communication protocol was adapted in the light of the SmartLine communication protocol for correct gain information transmission to the AEP3N preamplifier.
Note: the AEP3N shall be used in combination with the Vallen Sensor Tester software with fixed gain setting only.

Fixed: Pulser Table Display Update

The pulser table display update in online state of the VisualAE analysis software was fixed. An issue with faulty update of pulser data emerged in a previous version of the VisualAE software.

Fixed: ACADT Listing Display

The listing display was fixed in the graphical user interface of the Aerial Device Testing Acquisition software (ACADT), so that data set information is displayed correctly.

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R2020.1124.1

Improved: Vallen Smart Preamplifier Detection

The Vallen Smart Preamplifier protocol was improved on a very low level to account for IC hardware tolerances so that misdetection of Vallen SmartLine sensors is effectively ruled out.

Improved: Synchronization Between Export Processor, Export Database and Vallen SHM Dashboard Application

Two minor glitches were corrected: (i) in some cases the Vallen SHM Dashboard setup could not be synchronized from a local export database and (ii) the export time interval of an export processor could not be edited in some cases.

Improved: Acquisition – Display of Long Filenames

Very long file names (e.g. in case of a deep folder hierarchy) in the Acquisition setup dialogue are displayed in the standard Windows way with standard ellipsis (three dots).

Improved: Eventbuilder – Disabled Channel Sorting While Editing

The channel sorting while editing the channel list in the Eventbuilder tab is disabled. Entries are only sorted after editing the table.

R2020.1124

NEW: Vallen AE Suite Software Lite Version

Vallen Systeme introduces a free-to-use Lite version of the Vallen AE Suite software. The Lite version can be used for viewing and displaying data. No data processing is enabled. The Lite version can be upgraded to a software version with data processing capabilities.

NEW: KeyFile Handling During SW Installation

A KeyFile is no longer required for the installation of the Vallen AE Suite software. In order to use the software it needs to be activated. The activation process is independent of the installation. For activating the installed software three options are available (i) use an existing KeyFile (previously installed with an earlier version), (ii) provide a KeyFile or (iii) use the Lite version.

NEW: Add Label to the Label List

Labels that are entered through the send label dialogue can now be appended to the labels.txt file through the same dialogue.

NEW: Support of the Coupling Check Pulsing

Coupling Check Pulsing is a feature of Vallen SmartLine sensors and preamplifiers. A Coupling Check puls is generated by the preamplifier and fed to a coupling check transducer connected to the preamplifier. The coupling check transducer, attached to the propagation medium in close vicinity to a sensor, excites the propagation medium and produces a highly reproducible artificial source. With the appropriate equipment the Coupling Check Pulsing can be used in the same way as the regular pulsing.

NEW: VisualClass Automatic Split in Training and Test Data

Prototype data fed to VisualClass program can be split in an automated manner into training and test data. The training data is used to build the classifier, the test data is used to test the classifier on unknown data.

NEW: VisualClass Automatic Hyperparameter Search

The Automatic Hyperparameter Search allows an automatic training of classifiers on different sets of features. The ranges in which features are generated are defined by the user in advance of the Automatic Hyperparameter Search. The procedure trains a classifier for all possible combinations and tracks the

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trainings as well as test results. After finishing the procedure the user can select the set of features which delivered the best results.

Note: TR Sets Rejected by VisualClass Program

The VisualClass program rejects TR sets that do not meet the user defined limit of number of samples in a TR set. Previous to this version a zero padding was applied to sets that did not meet the required number of samples. With this version, TR sets that do not meet the required limit of samples are rejected.

NEW: Export Processor

The Export Processor writes user defined and preprocessed features to a database file (file estension *.expdb). Data in the Export Database can be used in 3rd party tools or it can be pushed to a webserver running the Vallen Dashboard Webserver Software. Automatic cloud upload requires the Vallen Dashboard Uploader license and a Vallen Dashboard Webserver Software.

NEW: Dashboard Uploader

The Dashboard Uploader is a program that uploads data from the export database to a webserver. The webserver has to run the Vallen Dashboard software in order that the uploaded data can be used.

Note: Vallen Dashboard Software – not part of the Vallen AE Suite Software

The Vallen Dashboard Webserver Software is a web based application running on a webserver managing a database of results and visualization of AE data. The database can be synchronized via the Vallen Dashboard Uploader program with the Export Database of the measurement PC. It can be hosted by any Linux Ubuntu server on the premises or by a cloud server. It provides cross-platform web browser access to Export Database data without direct log-on to the measurement PC, supports user role management and up to 10 independent data acquisition projects. The visualization charts and diagrams can be easily adapted and customized by the user and accessed by web browser via PC, tablet or mobile devices.

IMPROVED: Filter Processor Filters Status Data and Parametric Data

The Filter processor can be configured to filter also status data and parametric data. In cases of filtering parametric data features like time, label and DSET can be used in filter conditions. For status data the additional feature of channel is also available.

IMPROVED: Export of Attenuation Profiler Results as Labels

The results of the attenuation profiler, the near field attenuation and the far field attenuation can be exported as labels to the pridb-file. The VisualAE software has to run in online mode.

R2019.0926.3

Fixed: Acquisition Parameter Setup Menu, Front End Filter

Corrected the captions for the AE-Frontend Filter and TR-Frontend Filter group in the Acquisition Parameter Setup menu, tab Frontend Filter.

Fixed: Acquisition Memory Usage

The Acquisition program of R2019.0926 could encounter memory allocation issues, leading to an out-of-memory error in circumstances when the status interval is very short, pulsing is done frequently and the recording is running for a long period of time.

R2019.0926.2

Fixed: Attribute Mapping to Co-ordinate Axes in 3D Wavelet Distribution

The mapping and labelling of attributes to co-ordinate axes in the 3D wavelet distribution is corrected.

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Fixed: Pulser Table Generation

The process of generating a pulser table in a fast way is made tolerant to deviations in setting of the flag which indicates the end of a pulsing run. The effect of split pulsing tables is corrected.

Fixed: Glitch in the Location Analyzer

The Location Analyzer of VisualAE is extended to take arrival time offset information into account. Only offset information that does not depend on the history of previous hits is considered.

Fixed: Location Processor Structure Assistant

The structure definition assistant of the Location Processor of VisualAE is extended to take the arrival time offset setting into account.

R2019.0926.1

Fixed: KeyCertificate

Corrected the format and layout of the KeyCertificate

Fixed: AGU Vallen Wavelet Installer

Updated the AGU Vallen Wavelet installer to avoid troublesome security messages upon installation

R2019.0926

NEW: Multi Language Support for the Acquisition

The dialogues and menus of the Acquisition program have been translated to 8 languages: Chinese, French, German, Italian, Japanese, Romanian, Russian and Spanish.

NEW: Location Processor - Define the Speed of Sound per Channel Group

The speed of sound can be given per channel group. This allows creating 2 channel groups with identical sensor positions but individual speed of sound per channel group. This feature can be used to study the difference between S0- and A0 source location in thin walled structures.

NEW: Location Processor - Define Arrival Time Correction per Channel Group

An offset can be added to the arrival time, whereby the arrival time is the time of the first threshold crossing of a hit. The offset can be a time result, e.g. the rise time, to achieve a peak time source location. The offset can also be a result derived from an ECP embedded code processor that applies e.g. the AIC picker to waveforms and comes up with an improved arrival time.

NEW: Automation Manager Maintenance Period

The Automation Manager allows defining maintenance periods in on-line mode. During a maintenance period tasks that are associated with Alarm Events are deactivated. These events are logged but tasks are not executed.

NEW: Automation Manager Uptime Log

The Automation Manager has a new tab labelled *Time Periods* which shows the uptime periods of the AMSY-6 system and maintenance periods in a sequence. The uptime is the time in which the Acquisition program is in record mode.

Improved Copy to Clipboard of Channel Positions.

The clipboard interaction has been improved. The channel positions can be copied to the clipboard.

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Improved Automation Manager Send Mail Action

Multiple send mail actions can be defined. If a send mail action fails because of network issues the message is stored to a database file. Depending on the send advanced send mail action properties retries are done periodically until the email can be sent.

Improved 3D Location Plots: Transparency Adjustable

The transparency of the faces of 3D objects defined in the Location processor can be set in three steps: invisible, 50% transparency and opaque. Setting a 50% transparency makes location results on hidden faces visible.

Improved VisualAE: Find Label on Mouse Click

Label markers in VisualAE diagrams display a balloon tip when they are clicked. The label ID and the label text are shown.

Improved the Data Transfer Speed

The data transfer volume from chassis to PC was increased to an average of 70 MB/s per chassis. In case of optimal Acquisition settings a data transfer volume of 80 MB/s can be realized.

Fixed SysVer2: Function Generator Settings

For smoothing purposes the Function Generator applies a filter to user defined waveforms by default. The filtering reduces the amplitude of the output below the set amplitude. This caused a test failure during the SysVeri2 procedure at low amplitude settings for the amplitude- and energy test. Since the smoothing is not required for the purposes of the SysVeri2, the output filter has been deactivated. As a consequence the tolerances for peak amplitude-, energy-, rms- and threshold test results were reduced.

R2018.0726

NEW: VSPA Support

VSPA is the abbreviation of Vallen Smart Pre-Amplifier, and indicates communication functionality of special preamplifiers and the AMSY-6 system. The hardware communication protocol is supported in the new software version.

NEW: VisualAE Numeric Display

The Numeric Display displays values in numeric format and is suited for measurement values that change only slowly, like the results of parametric inputs such as pressure or temperature or for statistical attributes such as Maximum, Minimum and Average (provided by the User Processor).

NEW: VisualAE Absolute Datetime on Horizontal Axis Supported

Diagrams supported only an incremental time scale in seconds or hours of a measurement. In the new VisualAE version absolute datetime can be selected as horizontal axis attribute. Long term monitoring projects often require showing the absolute datetime in diagrams.

NEW: Fast File Switch

The Acquisition program can execute a fast file switch which is basically a gapless file switch, meaning the measurement is not interrupted during the file switching action and thus no data is lost. The *fast file switch* has been implemented as a separate Action in the Automation Manager and can be invoked from the Record Control Menu of Acquisition.

NEW: Online Compression of TR Data

Acquisition can be configured to use FLAC for compression of TR data. FLAC compression is an option that can be chosen in the Acquisition Parameter Setup menu. FLAC compression achieves typical compression ratios of 50% and less in case of transient recorder data.

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Improved: Redesign of Acquisition Setup GUI

The Acquisition Parameter Setup has been streamlined and the GUI simplified preserving the principal way of working in order that the setup procedure and menus involved in it remain familiar. Less menus and clicks are necessary to make settings in the Acquisition program.

Improved: SysVeri2 Added Field for PC Information

The SysVeri2 report has been modified to be compliant to the requirements of EN 13477-2/2013. A field for specifying the PC used for system verification has been added to the GUI and is shown in the report.

Improved: Automation Manager Conditional Execution of Tasks

Tasks defined in the Automation Manager can be executed conditional; meaning the setup of a task allows defining a simple *if…then* condition. This can be used to execute a certain task if e.g. the pulsing table evaluation fails and to execute another task if the pulsing table evaluation yields no critical deviation.

Notice: LUCY=-1 no Longer Supported

The LUCY value of -1 is no longer supported. LUCY=-1 was an indication that the minimum number of required channels contributed to the location result. With the new software version LUCY always indicates the location uncertainty, the quality of a location result, even in cases when only the minimum number of required channels contributes to the location result. Use the result SIGS (number of signals of a located event) to check how many channels contributed to the location result.

Notice: Automation Manager License is Locked to an AMSY-6 System

The Automation Manager license is locked to a specific AMSY-6 system identified by the serial number issued by Vallen Systeme. Anyone who wants to use the Automation Manager in a project is given a specific KeyFile. The Vallen AE Suite software including Automation Manager can be installed on up to 5 PCs with the KeyFile. Acquisition and the Automation Manager in on-line mode will run only if the specified AMSY-6 is connected to the PC. Acquisition and Automation Manager can be run only in setup mode if the AMSY-6 system is not connected to the PC.

ATTENTION: Acquisition Support for AMSY-5 is Discontinued

Acquisition program support for AMSY-5 is discontinued. The Acquisition program of this software release and any following ones will not support the AMSY-5 hardware anymore.

Hardware for AMSY-5 is still available and defective AMSY-5 system can still be repaired.

R2017.0504.1

Improved: USB3.0 transfer speed

Settings for the USB3.0 interface have been tuned for a faster and more tolerant data transfer. It is recommended that all users of USB3.0 interface update their software version to R2017.0504.1 or later.

Improved: threshold-to-noise ratio handling

The issue was solved that hit cascading could effectively lock an AE-channel. If this situation persists for a longer period of time the channel is discarded by the Acquisition software. This could occur when an acquisition is done with floating threshold (the fixed threshold is set to relatively low value) and high activity is encountered.

Improved: resolved issue with TR Combi

Following errors have been resolved: in some cases the re-indexing of transients in the combined file was not done. Certain GUI settings could lead to a critical error.

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IMPORTANT NOTICE: stopping software support for AMSY-5 systems

R2017.0504 is the last Vallen AE-Suite software version that supports AMSY-5 acoustic emission measurement systems.

R2017.0504

NEW: Automation Manager

Vallen Automation Manager is a separate software module for continuous monitoring and automation of typical tasks thereof. Running on the acquisition PC, this program is the central instance which controls and supervises other programs, including Acquisition and VisualAE. Vallen Automation Manager executes a number of user defined actions which are grouped to a task when a defined event occurs (e.g. startup of PC, Warning or Alarm triggered by the Alarm Manager, scheduled events, etc.).

NEW: system controller with USB3

The R2017.0504 software supports the new system controller with USB3 interface. The new system controller (UD2) is equipped with reliable connectors for synchronization (Previous-/Next Ports) and Alarm. A multi chassis setup is possible even if some chassis are equipped with the old system controller (UD1) and some with the new system controller (UD2).

NEW: removed reference to AMSY-5 in all file names of executables and log files

With this software release all references to AMSY-5 are removed from executables; e.g. y5acq32.exe is now called acq.exe. If executables are called from scripts or external programs the change in names has to be accounted for. Additionally, a reference to a system generation is also removed from any log files; e.g: y5acq32.LastInitOK.log is now called acq.LastInitOK.log.

NEW: AcqCmd.exe accepts new command LoadSetup

The program AcqCmd.exe accepts a new command: LoadSetup. In contrast to the existing command LoadFile which loads a pridb file and appends new data to it, LoadSetup just loads the acquisition parameter settings of the last section of the specified file.

NEW: features of subhits of an event available in ECP embedded code processor

The features of subhits (peak amplitude, duration, risetime, energy, ring down counts, etc.) are available via a global Variable Hits of type table. All these attributes are available with the event dataset.

NEW: offline data replay in VisualAE with user specified speed

Data can be replayed in VisualAE's offline mode with a user defined speed. The replay speed is given as a fraction or multiple of the real acquisition speed. This feature helps in offline analysis understanding how location and clusters evolve or how AE signature changes when a monitored process changes.

Improved: SysVeri2

The SysVeri2 report template has been adjusted and now shows all information required by EN 13477-2 (name of operator, temperature and relative humidity added). Furthermore the report template can be modified to conform to individual corporate identities.

Improved: added TLS/SSL authentication for SMTP server to Alarm Manger email notification action

Authentication method TLS/SSL is enabled for an SMTP server in the Alarm Manager action of email notification.

Improved: omit ECP warning

The warning that an ECP processor is used in a VisualAE setup upon loading the setup is not displayed anymore.

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Fixed: corrected labelling of FFT frequency coefficients

The labelling of FFT frequency coefficients now starts with 0, the DC part of the spectrum. In previous versions the labelling started with half the frequency of resolution. This fix is going to have an effect on reporting frequency values, furthermore on setting of limits related to FFT features in filter processors and analysis based on frequency spectrum results such as the Spectral Ratios Extractor.

R2016.0811.1

Improved: Location Processor

Location processing has been improved, suppressing results that are artefacts from an ill-conditioned location problem (i.e. arrival time measurements are inflicted with a large error). This was achieved by implementing a smart guess for the starting point of the iteration.

Changed: Cluster Processor/Diagram reset

Before R2016.0811 it was possible to reset a diagram while results of a Cluster Processor remained visible (i.e. the clusters drawn in the diagram plane remained). With R2016.0811 a diagram reset also forced a reset of the Cluster Processor and thus Cluster Processor results were deleted as well. Upon feedback the old behavior was restored.

Fixed: DTA Converter

Parametric data was not converted correct in DTA files that were automatically split by data acquisition software. Reason was missing header information in subsequently split files. As a result parametric data sets received only zeros during conversion. R2016.0811.1 fixes this problem.

R2016.0811

NEW: SysVeri2

Software module SysVeri2 replaces the module SysVeri for verifying AMSY-6 and AMSY-5 (with ASIP-2 signal processor boards, only) measurement systems. SysVeri2 is fully compliant to EN 13477-2:2010. It has a new and easy-to-use GUI.
The software module SysVeri has to be used (last version: R2012.0509.5) for verification of an ASIPP board in an AMSY-5.

NEW: Location Processor: Structures

Simple structures as (i) a vessel with dished endcaps and a (ii) spherical vessel can be defined. Defining a structure is important for the new way location results are visualized. The correct location algorithms are selected automatically. Setting up a structure is supported by a wizard.

NEW: Location Processor: Welds and Nozzles

A structure can be defined with welds (circular and longitudinal) and nozzles (circular). These features are a visible part of the structure but have no influence on the location algorithm. This means a location algorithm does not consider these features.

NEW: Location Processor: Visualization

New 2D and 3D visualization methods for location results are introduced for structures. A 2D projection or a 3D representation of the structure is automatically inserted into a diagram that is configured to show location results (X-,Y- or Z-coordinates).

NEW: Location Processor: Algorithm for Dished Heads

A location algorithm for standard dished heads or customized dished heads is available. Currently a dished head is considered independently from the cylindrical hull of a pressure vessel. This means that an event on the hull that has been detected by the minimum number of required channels positioned on the head will be located on the head as well and vice versa. The location results are graded based on smallest LUCY value.

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NEW: VAEX File Format

VisualAE setups are no longer stored to files with extension *.VAE. The new file format for storing VisualAE setups is based on XML and thus is human readable. Setups are stored to files with extension *.VAEX. Old setups in VAE format can still be opened but saving setups is only possible in *.VAEX format.

NEW: Right Handed Coordinate System

By default diagrams are defined with a right handed coordinate system, now (note: up to now it was a left handed coordinate system; the difference is only visible in 3D diagrams but not in 2D diagrams). The vertical axis can be inverted if necessary, yielding a left handed coordinate system again.

NEW: Diagram Background Color

The drawing plane of AE-Diagrams can be configured with different background colors indicating individual y-axis limits.

NEW: Panning of diagrams and mouse wheel zoom

VisualAE offers the function of panning diagrams and zooming by using the mouse. All diagrams (2D- and 3D-, distribution- and correlation- as well as TR-diagrams) support panning and zooming. Panning is activated by holding Control Key while holding left mouse button and moving the mouse in the desired direction. Mouse wheel up direction will zoom into the diagram; while opposite direction will zoom out of the diagram.

NEW: Keysight Support

System verification software and sensor tester software support the new Keysight arbitrary function generator (recommended model type is of 33500B series).
Note: serial interface of an arbitrary function generator is no longer supported. Only USB and LAN interface are supported from now on.

IMPROVED: TR Streaming Performance

TR-data transfer speed has been increased. TR-data can be transferred with speeds up to 40MB/s.

NOTE: stopping Windows XP support

With R2016.0811 Vallen Systeme stops support for Windows XP operating systems.

R2015.0430.6

Fix: loading VAE setup with no Visuals defined

VisualAE can be run with a VAE setup that has no page defined, i.e. no Visuals (diagrams or listings) defined.

Fix: export to PRI-file with missing TR-data sets

Export to PRI-file is a command provided by VisualAE (menubar → Analysis → Export to PRI-file…) that lets one export certain parts of a PRIDB and TRADB file. Export of transient data is handled correct when TRAI is available but data sets are missing (e.g. when TR-pipe has been emptied before download was completed).

Fix: multiple triggering of TR File Watchdog Actions

Re-arming of TR File Watchdog has been improved so that an Action is not triggered multiple times, even when downloading of data in the TR-pipe takes longer than a second.

Fix: importing VAC setup data

Corrected behavior of enabling the storage of relevant features (see “Acquisition Parameter Setup” menu, tab Data) when importing an VAC setup.

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Fix: converting AMS3 files to database format

An incompatibility of data files generated by AMS3 Acoustic Emission measurement equipment was corrected that led to a wrong conversion to the database file format.

Fix: corrected modification of Parametric Data for files converted from DTA format

PAx Modifier correctly updates parametric data in files that were converted from DTA format to PRIDB.

R2015.0430

NEW: multiple Trigger Groups for transient recording

A specific trigger mode (Normal, Master, Slave or Pool) can be assigned to a transient recorder of a channel in an AMSY-6 chassis. Trigger Groups allows defining subsets of channels, even across multiple chassis. Trigger modes are applied per Trigger Group. The first hit channel of a Trigger Group triggers the other channels according to the selected modes. Each channel can be assigned to one Trigger Group, only.

NEW: time synchronous update of horizontal time axis in diagrams

Left- and right axis limit of horizontal time axes in different diagrams can be configured to update synchronously, so that each time axis shows the same left- and right axis limits at all times.

Improved: User Processor – make results available in same User Processor

In a User Processor several mathematical operations can be defined, each yielding a result. In the improved User Processor the order in which mathematical operations are carried out is given by the order of the list of operations that appears in the dialog. The top most mathematical operation is carried out first, followed by the next one in line. The improvement allows using results of a previous mathematical operation in subsequent mathematical operations in the same User Processor.

Improved: LogFile Viewer with “send...” button

A “send...” button has been added to the LogFile Viewer. In case of an hardware error in data acquisition, this feature allows sending the logfile via email without having to copy or append the LogFile text manually to an email.

Improved: Spectral Ratios Extractor – increased number of time windows

Up to now, the Spectral Ratios Extractor allowed definition of 4 time segments for which certain frequency features are extracted. With the improved Spectral Ratios Extractor 6 time segments can be defined.

Improved: Pax-Modifier – import via Clipboard

The Pax-Modifier allows updating parametric data sets in an off-line process. This is necessary if parametric data cannot be fed into the analogue PAX channels during data acquisition. An improved feature allows importing PAX-data via the Clipboard. In cases when parametric data is logged manually or automatically to an Excel spreadsheet this feature allows importing all parametric data with a single click.

Improved: automatic selection of next label

Labels can be predefined and saved to a file called labels.txt. Content of this file is displayed in the drop down combo box of the label dialog. An option can be enabled that automatically selects the next line in the labels.txt file and displays the result in the combo box.

Improved: data transfer rate

Transfer rate of data from ASIP-2 AE-signal processor to hard disk drive has been increased to at least 30MB/s (typical: 35MB/s). This increased speed greatly reduces the amount of time for downloading transient data from on board buffers.

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R2014.0414.2

Note:

Software Release R2014.0414.2 is a service release published in July 2014. It can be installed with KeyFiles expiring April 14th, 2014 or later.

Improved: signaling Sync-cbl (patch cable for synchronization of multiple chassis) malfunction

In a multi chassis setup, chassis have to be connected in series via a patch cable. Clock and control information is transmitted from Master chassis to all Slaves via this cable. A log file message is produced by a bad electrical contact of pin pair 3,6 transmitting control information but is not signaled otherwise. Interrupting control line is causing a record disable for all subsequent chassis. Operator has not been informed about this condition. Error handling has been changed in so far that this defect throws an Acquisition Error which is permanently displayed in status bar of Acquisition. Additionally Alarm LED on MBx chassis is switched on. This alarms an operator about a malfunction of patch cable and that no data is recorded for AE-channels in these chassis.

Fixed: SysVeri waits until function generator reaches steady-state output

For certain tests VeriStim of SysVeri has not waited long enough for function generator output to settle. This led to wrong measurements and failure of SysVeri during testing of channels. VeriStim of the new software release takes this behavior into account with a longer delay before starting a measurement.

Fixed and improved: moving/copying User Processors in VisualAE

Listings and diagrams lost the reference to attributes of a User processor or an ECP when this processor was moved or duplicated in the data processing structure. As a result attributes of affected listings and diagrams need to be reassigned to the output of a moved or duplicated User processor or ECP. Now, output attributes of a moved or duplicated User processor or ECP remain connected to the input attributes of listings or diagrams.

April 2014 – R2014.0414

NEW: Duration Adapted Transient Recording

Duration adapted transient recording describes a transient recording mode where each burst signal is stored from “PreTrg” samples before the first threshold crossing up to “PostD” samples after the last threshold crossing. “PreTrg” is the number of pre-trigger samples, “PostD” the number of post duration samples, both are user-defined parameters. Duration adapted transient recording ensures that the whole burst signal is recorded on a single TR-page. Even when hits of short and long durations occur in a high rate per second, each hit gets its own TR-page and its own TR-Index. TR-pages will be of different size, depending on the duration of each burst signal. This recording mode can substitute the continuous TR streaming mode and thereby save resources of the bus system and hard disk drive.
Fixed page length recording, which has been the standard way of recording transient signals in the past, is still supported.

NEW: Spanish interface for VisualAE

Spanish language interface has been added to VisualAE. As of this release VisualAE features a graphical user interface in nine languages: German, English, Italian, French, Romanian, Russian, Spanish, Chinese and Japanese.

NEW: support of the Agilent 335xxB arbitrary function generator family

Agilent arbitrary function generator is needed for system verification and AE-sensor testing. With this release the whole Agilent 335xxB family (for models 33509B/33510B the optional arbitrary waveform must be available for system verification) of arbitrary function generators is supported in addition to the previously supported models.

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Improved: Planar plane/cylinder location algorithm

The planar plane/cylinder location algorithm is an iterative algorithm. It tries to minimize a deviation function that compares the measured delta-t pattern to a delta-t pattern of an assumed source location with every iteration. The iteration process is stopped once the deviation result drops below a defined minimum. On the other hand, the iteration is stopped if a defined number of maximum iterations is exceeded. The last assumed source position before iteration is stopped was delivered as location result. In some cases it can happen that the algorithm produces a bi-stable solution that never drops below the defined deviation minimum. In such a case the algorithm is stopped after it exceeded the maximum number of allowed iterations. However, the last location result may not be the one with the smallest deviation. The improved location algorithm will keep the location result with lowest deviation in memory and delivers it as result in this case.

Improved: Location Processor ordering of results based on channel group

The results of a location processor with several channel groups were ordered based on the result RANK. Especially when evaluating the results of several channel groups of one location processor with ECP, a fixed order according to the channel group number is advantageous. This new way of ordering location results has been realized with this software version and will be visible in listings or during ECP processing.

Improved: Making VisualAE setup parameters available in ECP processors

Several setup parameters of a location processor can be read in by an ECP processor on the same branch. This enables to use location processor setup parameters in ECP code. These values are read only and cannot be set by an ECP processor

R2013.0809.1

NEW: Romanian interface for VisualAE

Romanian language interface has been added to VisualAE. As of this release VisualAE features a graphical user interface in eight languages: German, English, Italian, French, Romanian, Russian, Chinese and Japanese.

Improved: online behavior of VisualAE

Online behavior of VisualAE was improved. This applies when Acquisition is running and VisualAE reads data from active acquisition file. Two issues have been improved: (i) VisualAE remembers its running status when Acquisition is paused and restarted and (ii) when measurement results have been added or removed from being stored to acquisition file, VisualAE updates this information immediately.

Fixed: corrected scaling of parametric input range of 1V

Parametric input range of $1V_{pk}$ was scaled wrong by Acquisition. As a result stored values of voltage samples of a parametric channel were too high. This was troublesome with parametric record control. A recording could have been disabled even though parametric input was within user- or factory default set input range that should enabled recording.

Fixed: corrected assignment of channel numbers to TR slave channels

In the TR data records (hence TR-diagrams) channel numbers of slave channels were lost in a Master-Slave- or Pool-trigger transient recording setup. All slave channels received channel number of Master channel. Channel assignment of slave channels has been corrected.

August 2013 – R2013.0809

NEW: Free file format for storing acquired data

With the current release the Vallen AE-Suite software changes from a proprietary file format to a free file format for acquired data (AE-feature data as well as transient data). The free file format is based on SQLite and offers all the advantages of storing data to a database. Speed performance is kept at the same level.

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Data will occupy slightly more space on disk. A description of all changes in software related to the new, free file format can be found on the next page.

NEW: 16 parametric inputs

16 parametric inputs are supported in a multi chassis setup. The maximum number of parametric inputs an MB6 or MB19 and MB2 supports is 8 and 4, respectively. In a multi chassis setup, that is interconnecting up to eight MB2, MB6 or MB19 chassis a total number of 16 parametric inputs can be realized.

IMPROVED: new functions implemented in AcqCmd

AcqCMD and AcqCmdAPI have been improved by adding two more functions: change acquisition threshold and enable/disable transient data recording. Changing acquisition threshold performs the same way as on-line threshold control. The second feature is a software emulation of the hardware switch to enable/disable transient data recording.

IMPROVED: removed limit for maximum FFT window size in Feature Extractor

The limit for maximum number of samples of an FFT window has been removed from the FFT Feature Extractor- and the Spectral Ratio Extractor Plug In. A full TR-page (maximum size is 524,288 samples) can be transformed to frequency domain.

IMPROVED: attenuation profiler

Titles of attenuation profiles will be included in printout (only if there is more than one attenuation profile in a VisualAE Setup). Additionally attenuation profiles can be copied to clipboard as a bitmap for export.

STILL TO COME: full support of XTR writing to feature file functions for free file format

Currently XTR supports only reading out of transient data from a transient data file. It does not yet support writing features to a transient feature data file. This functionality will be implemented with an upcoming software release.

Changes because of new free file format

New file extensions „pridb“ and „tradb“

The new file format extensions are pridb and tradb for primary- and transient data, respectively. The first three letters of the file extensions indicate what kind of data is recorded: primary data or transient data. The last two letters indicate that the new file format is a data-base.
A VAC (acquisition setup) file is no longer necessary since acquisition setup data is stored to PRIDB file. Importing acquisition setups to a new file is done the same way as before.
VisualAE, VisualTR and VisualClass support both file formats. Mixing of file formats in data analysis (e.g. PRIDB and TRA or PRI and TRADB) is not possible, however.

No more preallocation of primary and transient data files necessary

Preallocation of data files was necessary in times when hard disk storage area was limited. This practice ensured that no other application could occupy storage space that was reserved for measurement data.
Nowadays preallocation is inconvenient, gives rise to errors in case of preallocating large space and may be troublesome in an automated data acquisition environment.
With nowadays storage capacity of hard disk drives, the risk of another application taking up storage capacity that was envisaged for measurement data is minimal. The risk is much large that a preallocation fails because file size has been chosen too large for the program to handle. Especially in automated environments a failure in preallocation may result in an unrecoverable error.

Define what data needs to be recorded

Only record data that is required for analysis, e.g. only one or two parametric inputs or disable cascaded hit features or parametric counters. Select the features that need to be stored from the “Data” tab of Acquisition Parameter Setup. Save some disk-space and tidy up VisualAE-menus.

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New way of handling time

Time measurement is unlimited by definition. The old file format had fixed size of records, even for time. As a result the maximum recording time in a single file was 320 days. No such limitation applies in case of the new file format, simply because the size of records can be adapted on-the-fly. For the operator it is no longer necessary to distinguish between “Absolute date/time of recording” and “Recording time” for the start time reference. All relevant information, absolute date-time or relative time, can be extracted from the recorded time data.

Using all frequency domain features

The new file format has no limitation for the number of records stored per dataset. All possible frequency domain features can be used simultaneously next to the classical AE-features in an analysis. No more limitation to a maximum of 14 frequency domain features – no more picking hexadecimal codes for frequency domain features. All frequency domain features can be selected by their name.

Record both Signal Strength and True Energy

In the past only Signal Strength or True Energy was recorded. An operator had to decide before starting the measurement what data he needed for on-line or post processing routines. While the hardware acquired both features, only one of it was stored because of the limited number of records per data set. When using the new file format both features are stored and there will be no more need to decide beforehand what feature is required.

Using data in old data format

VisualAE and VisualTR can read in and process old data format just the same way as before. Use the utility PRI2DB to convert primary data files and transient recording data files to the new free file format.

R2012.0509.4

Note:

R2012.0509.4 is the last AE-Suite software release that supports ASIPP Acoustic Emission Signal Processor boards.

Note:

Software Release R2012.0509.4 is a service release published in April 2013. It can be installed with KeyFiles expiring May 9th, 2012 or later.

All users are recommended to install this release!

Improvement: remember TRA File preallocation size

The file allocation dialog (when switching from Setup-Up Mode of Acquisition into Record Mode) initialized the preallocated size of the primary data file (PRI-file) with the last set value. The preallocated size of the transient data file (TRA-file) was automatically set to 8 times the size of the primary data file. In R2012.0509.4 size of the preallocated transient data file will be set to the last chosen value.

Improvement: SysVeri for AMSY-6

SysVeri program was designed for AMSY-5 system. It can be applied to AMSY-6 systems. Changes in the process of verification were documented in the System Verification manual. The new SysVeri program lets the user decide in the beginning whether he wants to verify an AMSY-5 or AMSY-6 system. The dialogs for AMSY-6 verification have been adapted to reflect the differences between AMSY-5 and AMSY-6.

FIX: SysVeri calculation of should-be value for energy comparison

For verification of energy measurement SysVeri generates some predefined AE-signals which are fed into the AE-channel. The Analyzer of the SysVeri module slightly overestimated the AE-signal energy of these signals. In some cases this lead to deviations larger than specified for low energy AE-signals (only for low

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energy signals!). The energy calculation of the should-be value inside the Analyzer module has been corrected.

FIX: Displaying 2D clusters in 3D diagrams

Clusters, which were defined for only 2 attributes were not properly drawn in 3D diagrams. In the new software version R2012.0509.4 2D clusters will be drawn as 2D objects in 3D diagrams.

NEW: command line argument for FFT Feature Extractor

The FFT Feature extractor supports a "/run" (or "-run") command line argument, similar to VisualAE. This allows automating FFT feature extraction (e.g. start and run the FFT Feature Extractor from the command line).

NEW: new command line parameters for AcqCmd.exe and new commands for Acquisition API

Four new command line parameters have been added to AcqCmd.exe that let one control the recording status of Acquisition in a similar way as the front panel switches "AE-enable" and "TR-enable" do. The according functions have also been made available to the Acquisition API.

October 2012 – R2012.0509.3

FIX: AMSY-5 DMA transfer issue

AMSY-5 data transfer from ASyC internal buffer to hard disk drive is done by use of DMA transfer. In some corner cases (using Windows XP running on a laptop, PCI Expansion, AMSY-5, data acquisition with long TR-pages and high data rate) TR-data was not properly transferred to hard disk and part of it was lost. This situation was indicated by an entry in the log file ("IOPTRReadData DMAfromIOP Error: 513" or "IOPTRReadData DMAfromIOP Error: 515"). This was only an issue for TR-data transfer. AE-data transfer was never affected. The new version of Acquisition has optimized and improved DMA access patterns.

FIX: missing 3D diagrams

Running Windows XP and using nVidia type graphic cards caused issues in some cases when exporting 3D diagrams (to bitmap or to printer) or viewing them. In case of exporting only a portion of the diagram is shown as a bitmap. In other cases 3D diagram was not shown at all in VisualAE. The new version of VisualAE omits any hardware acceleration that may affect the outcome depending on used graphic card chip.

FIX: copy-to-clipboard and printout of Attenuation Profiler page

Printout-page function has been fixed for Attenuation Profiler in order that it produces nice printouts of attenuation diagram, listing, amplitude vs. distance table and settings group. A copy-to-clipboard function has been added to the attenuation diagram.

FIX: printout of pages

Print-all-pages function of VisualAE was producing printouts where part of diagrams and listings were missing. The new version of VisualAE fixed this function and it produces nice and clean printouts of each page of a VisualAE setup.

FIX: export-to-pri of location processor data

The export-to-pri function of VisualAE is able to export processed data of a defined time window. If the source of data for export was a location processor, a hit could be incorrectly arranged before the very first Event data set. With the new version of VisualAE no more time sorting errors occur when data of a location processor is exported.

IMPROVED: performance enhancement of VisualAE

Very large setups (~50 pages, >200 Visuals) could seriously degrade the performance of VisualAE, meaning that it may take a long time for a new page to be displayed when switching between pages. Management of

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resource usage (RAM, CPU, graphic card) was improved to achieve a fluent way of changing between pages.

IMPROVED: rearming Acquisition Watchdogs

Acquisition Watchdogs are a feature of the Alarm Manager, triggering a Warning or Alarm when PC or Acquisition resources are running low (e.g. PRI- or TRA file running full, Acquisition not receiving data, data storage lagging behind data generation, etc.). Philosophy of Alarm Manager was to confirm and rearm every Warning or Alarm manually. However in case of autonomous data acquisition it makes sense to rearm Acquisition Watchdogs with every new start of Acquisition automatically. The new version of the Alarm Manager has this function implemented

R2012.0509

NEW: 13 new application specific filters

13 new application specific filters have been added for the low frequency range. These filters are included in ASIP-2/A and can be added to ASIP-2/S any time. The new application specific filters are 3 low pass filters at 55kHz, 67kHz and 82kHz and 10 band pass filters: 20-55, 25-55, 20-67, 25-67, 30-67, 20-82, 25-82, 30-82, 35-82 as well as 40-82 (all stated values given in units of kHz).

NEW: AEP3N input device

The AEP3N is the successor of the AEP3 preamplifier and supports the same features: Single ended and differential inputs, programmable gain 34 to 49 dB in six 3dB-steps, and sharp band-pass plug-ins. AEP3N is software compatible with AEP3. As an additional feature AEP3N offers the insertion of an internal 34 dB attenuator for a programmable gain of 0 to 15 dB.

NEW: SISO3 as input device

Similarly to topic above the introduction of the intrinsically safe AE-sensor system, ISAFE3, requires definition of an according input device. ISAFE3 input device is called SISO3. SISO3 input device supports AST (automatic sensor test), 50 Ohm input impedance and a power supply of 28V DC. SISO3 can be configured with three different gain settings: 14dB, 20dB and 26dB for a total gain of ISAFE3 measurement chain of 34dB, 40dB and 46dB, respectively. SISO3 input device is available with ASIP-2/S and ASIP-2/A, whereby AST is only possible with ASIP-2/A.

NEW: Shell Command Action class for Vallen AE-Suite Alarm system

The Vallen AE-Suite Alarm system supports predefined Actions. Up to now only Custom Action allowed to trigger execution of user code. The new Action Shell Command allows executing shell commands which can be used to start user defined scripts or programs. While the known Custom Action is based on an Application Programming Interface (API), the Shell Command Action has no additional interface which needs to be taken care of. The advantage of the Shell Command Action is its simplicity of use. The disadvantage is its fire-and-forget characteristic. Once a Shell Command Action is triggered no more interaction with Alarm system is possible (External Action class provides this functionality).

IMPROVED: ACQCmdAPI supports new command/function SetThreshold

ACQCmdAPI, short for Application Programming Interface (API) and Command Line Tool (Cmd) for Acquisition (ACQ) supports a new command/function: The SetThreshold command/function accepts two input arguments. One argument specifying the detection threshold, the other one defining which channel (one or all) is set to new threshold value. This command/function can be used in automation environment, where it is required that VisualAE delivers feedback during measurement if detection threshold needs to be changed.

IMPROVED: ACQCmdAPI supports new command/function LoadFile

ACQCmdAPI, short for Application Programming Interface (API) and Command Line Tool (Cmd) for Acquisition (ACQ) supports a new command/function: LoadFile. With this command/function an Acquisition

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setup file can be specified which is loaded and used for subsequent data acquisition. This is useful for automation to (a) start acquisition with a defined setup, (b) change between different acquisition modes conveniently and (c) record data to a specific folder.

IMPROVED: array support for ECP scripting environment

From this software version on Embedded Code Processor (ECP) supports array functions. Array functions are documented in the ECP User Manual which is shipped with ECP software modules.

IMPROVED: libraries for ECP scripting environment

Embedded Code Processor (ECP) has been configured to support libraries. Libraries are included in ECP code by according script commands. An example of using a library can be found at c:\Vallen\GStarted\ECP-Demo\IB-Acknowledged.ecp. Two libraries are already included in ECP software modules: Lists and Classes. Class library eases usage of classes and objects in ECP environment. List library provides queued – and stacked list types.

R2011.1115.5

Note:

Software Release R2011.1115.5 is a service release published in March 2012. It can be installed with KeyFiles expiring November 15, 2011 or later.

AMSY-6 users are urgently recommended to install this release!

FIX: issue with parametric recording (AMSY-6 only)

Under certain circumstances (e.g. operating equipment at elevated temperature), parametric channels deliver a fixed reading no matter what the input is. This behavior is related to a glitch in AMSY-6 firmware for parametric channels. The issue is fixed when installing the new AMSY-6 firmware delivered with this release.

FIX: 3D diagram plotting issues

Following issue has been fixed: update/refresh of 3D diagram during online analysis. Under some circumstances 3D diagrams were not updated and hence data not shown. This issue has been fixed.

FIX: issue with export to a new pri-file (only in SW version R2011.1115 and 2011.1115.1)

The export of data (pri-, tra-data) by the use of the “export to PRI-File…” function in VisualAE may be faulty when data source for export is an Event-/Location processor. Users running R2011.1115 or R2011.1115.1 should update their software to R2011.1115.5

IMPROVED: 2D diagram distribution plot updating

In some cases 2D diagrams (x-axis limit smaller than bin number * bin width) were not visually updated on screen when value of x-attribute exceeded x-axis limits. Update of diagram was postponed until distribution pins had to be resized. As an effect diagrams appeared to be frozen.

IMPROVED: RMS calculation at high hit rate

RMS of signal is calculated for the time period between last threshold crossing and first threshold crossing of a new hit. Integration interval for RMS is usually 13ms. In cases of high hit rate the RMS cannot be accumulated over the whole integration interval before a first threshold crossing occurs. In such cases, the accuracy of RMS calculation has been improved.

IMPROVED: removed limit of DDT (ASIP-2 only)

Up to now DDT was limited to 6.5ms. During hit based recording this limit was not a hindrance. In continuous mode this limit could be a hindrance when time window for AE-feature extraction should be larger than 6.5ms. In such a case ENY was only accumulated for the first 6.5ms neglecting the remaining part of the

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time window. Hence ENY differed from ENYS, whereby ENYS delivers the correct result. By removing the limit for DDT, ENY accumulation considers the whole time window even in cases when time window is larger than 6.5ms

R2011.1115

NEW: Import of sensor coordinates

Sensor co-ordinates can be imported from clipboard to channel position table of location processor. Calculate sensor positions on e.g. complex objects like spheres in an external application (e.g. Excel). Import results of external calculation via clipboard into channel position table of location processor

IMPROVED: Streaming of transient data (AMSY-6 only)

New AMSY-6 firmware enables streaming of transient data at a rate of 10MB/s per chassis. This data rate corresponds to streaming of 1, 2, 3 or 4 channels at a sample rate of 5MHz, 2.5MHz, 1.67MHz or 1.25MHz, respectively. One root USB port can process at least 30MB/s of data, i.e. data of three streaming chassis. Higher data throughput, up to the limit of hard disk drive controller, can be achieved by using more root USB hubs and chassis.

IMPROVED: fast download of TR-pipe (AMSY-6 only)

New AMSY-6 firmware accelerates download of TR-pipe. Download speed is doubled, i.e. it takes only half the time to download transient data from TR-pipe.

IMPROVED: Windows 7 / Windows Vista Compatibility

Windows 7 and Windows Vista compatibility has been improved: install and run Vallen AE-Suite software with active User Account Control (UAC).

IMPROVED: 3D diagrams

Improved mouse interaction lets one rotate and scale 3D diagrams interactively. While this is a small change we started implementing new 3D graphic engine which will be completed in several steps. More features will be added in the future such as importing complex geometries with used defined “skins” (e.g. skins showing welds, manholes, etc.). This will aid the perception of location results in 3D plots.

IMPROVED: Locating AE-sources close to sidewalls of tank floors

Event data set assembly is preceding step of locating AE-sources. Any hit sequence of an AE-source cannot be located if it cannot be grouped into an event data set with the required number of channels for a location algorithm. Up to now an event data set is closed when a sensor is hit twice. We observed that sensors are hit twice before any other sensor is hit when AE-sources on a tank floor are close to a sidewall. Event Builder processor lets users choose if multiple hits of a channel should terminate an event data set or not, improving location results.

IMPROVED: Display only sensor positions of a single channel group in a location diagram

Filtering for a single channel group after a location processor will only display sensor positions of that channel group in subsequent location diagrams (see also AMSY-6 Operation Manual, chapter 14).

IMPROVED: Diagram attributes of LATI vs LONG

A spherical location processor produces LATI and LONG (latitude and longitude) as location result. Up to now it was only possible to display LATI and LONG results in a 3D plot. With new software release LATI vs. LONG 2D plots can be created. Clustering data is also possible in such a diagram.

IMPROVED: ADT – test date field added

For our ADT customers we added a new test date field to ADT setup and ADT reports.

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R2011.0509.2

Note:

Software Release 2011.0509.2 is a service release published in July 2011. It can be installed with KeyFiles expiring May 9 2011 or later. It contains two important fixes and some performance improvements.

All AMSY-6 users who use transient recording are urgently recommended to install this release!

FIX (AMSY-6 only): transient recording blocking at high data load

During varied hit activity transient data recording software can become blocked, when using AMSY-6 and software release 2011.0509. Since AE data acquisition continues unaffected, the user might overlook this. While TRAI values are correctly shown in VisualAE, corresponding TR-data might partly not be stored. If this happens, the user is forced to clear TR Pipe manually to close the acquisition, what causes the loss of TR data. Software release R2011.0509.2 fixes this issue in the acquisition program.

FIX: lock up behavior of Auto Feature Selector in VisualClass

Under some circumstances function Auto Feature Selector in VisualClass cannot be aborted manually. Software release R2011.0509.2 corrects this behavior.

IMPROVED: speeding up tra-file export by use of VisualAE when waveforms are missing but corresponding indices (TRAI) exist

Downloading a lot of waveform data can take up much time. On user action (Clear TR-pipe) downloading the TR-pipe can be skipped (useful when transient data transfer is not desired). The waveform data in TR-pipe is lost. Nevertheless corresponding waveform indices (TRAI) are stored in primary data file. Using VisualAE export function on files containing TRAIs with missing waveforms takes exceptionally long. Software Release 2011.0509.2 speeds up export of data.

IMPROVED: VisualAE data export

VisualAE exported data in a slightly different format than acquisition. This may cause that label data appear before the data of an event, when analyzing exported data. If that label is used as start criterion, data analysis will start one event earlier than expected. Software Release R2011.0509.2 corrects the export function what establishes expected behavior for new exported data.

R2011.0509

NEW: AMSY-5 can be operated under Windows Vista and Windows 7, also

Current Vallen AE-Suite Software release contains a new ASyC driver which can be used under Windows Vista (32bit) or Windows 7 (32 bit), also. Hence data acquisition with AMSY-5 is supported for PC (or laptop with PCI Expansion) that runs Windows XP (32bit), Windows Vista (32bit) or Windows 7 (32bit).
Data analysis supports also 64 bit versions of Windows operating systems.

IMPROVED: fixed TR-pipe download (AMSY-6 only)

Acquisition of Vallen AE-Suite Software release R2011.0303 did not handle TR-pipe download correctly if an acquisition front-end filter, either for AE-data or TR-data only, was used. TR-data download stopped after some time. Current Acquisition version downloads TR-data in correct manner.

IMPROVED: fixed time offset in multi chassis setup (AMSY-6 only)

AE-data can show a time offset with respect to TR-data in a multi chassis setup. This may happen if Acquisition was restarted after pausing it. Acquisition version R2011.0509 removes time offset and synchronizes AE-data and TR-data in such cases.
Note: operating system Windows 2000 is not supported anymore.

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R2011.0303

NEW: AMSY-6 Support

Current Vallen AE-Suite software release is first one supporting USB2.0 PC interface. USB2.0 interface is available with new chassis MB2, MB6, MB19 and EB21.
USB2.0 interface guarantees user friendly connectivity. Connecting your chassis to PC is as simple as connecting a mouse to it.
In a multi chassis setup, all chassis are connected in parallel to PC utilizing full bandwidth of USB2.0. As a result data acquisition performance increases tremendously.
AMSY-6 acquisition software is approved for use under Windows XP, Windows Vista and Windows 7.

NEW: highlight filter of comparison results in coupling table

A coupling table displays response amplitudes of receiving sensors caused by a pulsing sensor. Response amplitudes can be compared pair-wise to reveal differences which may be a result of coupling or sensor degradation. A new feature allows highlighting automatically response amplitudes within a coupling table which exceed a user specified difference. Especially in large channel applications, finding deviations is much faster now, and more convenient.

IMPROVED: modified pulsing time

In the past pulsing time of a channel was fixed to four seconds, i.e. the period it takes a channel to complete its pulsing sequence. With this software release pulsing time can be specified by a user within a range between approximately 200ms to 4s. Short pulsing times allow for more precise monitoring of fast continuous changes of material properties such as speed of sound or attenuation.

IMPROVED: FFT result export

VisualAE supports ASCII-data export of AE-diagrams, listings and TR-diagrams. This kind of data export has been extended to frequency spectra produced by a TR-diagram. Export of data is supported as text to clipboard. Data can then be imported into another application for further analysis.

IMPROVED: data analysis software supports Windows 7

Vallen AE-Suite Software for data analysis is approved for use under Windows 7. As of now, supported operating systems are Windows XP, Windows Vista, and Windows 7.

R2010.0202

NEW: Preamplifier Saturation Flag

A new flag, the S-flag, has been introduced with ASIP-2 (/S and /A) to discover saturation of preamplifiers. Following example illustrates the usage of the S-flag: Assume a sensor-preamplifier combination with ±100mV ($100dB_{AE}$) measurement range. When an AE-sensor picks up a strong vibration of low frequency, assume around 5 kHz, the AE signal may go above 100mV and stay there for up to 100 µs, before it changes polarity and goes below -100mV for up to 100 µs. After a high pass filter the discontinuities in the signal caused by the sudden change from saturation to trailing- or rising edges (and vice versa) result in bursts with high frequency contents and moderate amplitude. One could assume the presence of high frequency AE and could end up with misinterpretations.

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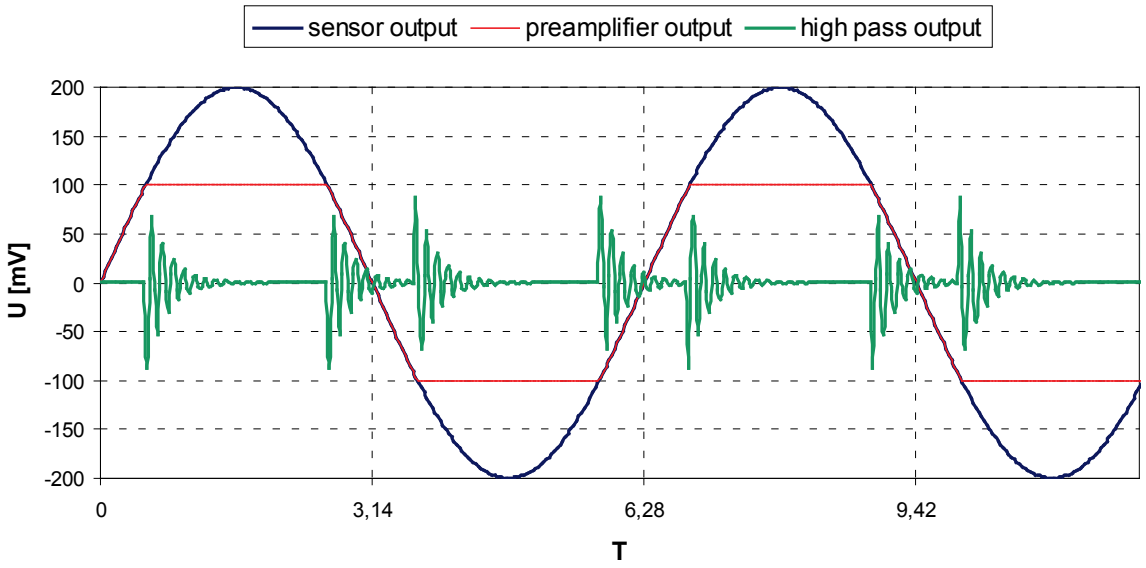

Note: blue graph: sensor output, red graph: preamplifier output, green graph: high pass output.

The S-Flag in the hit data set, in combination with burst amplitude below 97 dB_{AE}, may indicate such an occurrence. In addition, the usually green Threshold LED on the front panel of ASIP-2 will change to yellow, when the amplitude, before the band pass filter, exceeds 97dB_{AE}:

If such occurrences are identified, either the sensor sensitivity or the preamplifier gain must be reduced in order to avoid misinterpretations. Sensor sensitivity can be reduced by paralleling e.g. a 500R or 50R resistor to the amplifier input.

Be aware, high amplitudes of interesting signals within the bandwidth also may exceed 97dB_{AE} at the band pass input. Then the S-Flag will be set and amplitudes above 97dB_{AE} will be measured.

This unique Vallen feature shall secure that saturation effects will be discovered in an early stage, that proper actions can be taken before tests are performed. This will improve reliability of data interpretation and quality of data analysis.

NEW: time driven energy: ENYS

The time driven energy (stored as ENYS) is continuously and seamlessly acquired energy. ENYS accumulates the total energy of noise and hits within each status interval. ENYS, similar to RMSS, is a continuously monitored measure even in hit driven mode. ENYS is suitable for a comparison of results obtained in hit based - or continuous mode.

NEW: Background Image for 3D plots

Background images are a well known feature of 2D plots in VisualAE. Now, a background image can be set for 3D plots as well. Using an image of the structure under test within 3D-location plots based on e.g. Lin3D aids a better comprehension of AE-source locations.

NEW: VisualAE command line parameter

Data analysis can be started automatically (i.e. VisualAE with a specified pri-file) by external programs (i.e. Windows scheduler) using the new command line option. This is an important feature for e.g. permanent monitoring as it allows for periodical transmission of small size data volumes and continuous data analysis.

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NEW: Automatic start up batch file

A batch file for automatic start of Acquisition32 is included in the sample files of this release. It demonstrates the power of the command line interface, which can be used by other programs that do not have an ActiveX interface.

NEW: Choi Williams Transformation included in AGU-Vallen Wavelet

The Choi Williams transformation has been added to the AGU-Vallen Wavelet. The Choi Williams transformation is the time-frequency transformation as proposed by Hyung-Ill Choi and William J. Williams, first published in IEEE Transactions on Acoustic Speech and Signal Processing Vol. 37, No. 6, June 1989. The advantage of the Choi-Williams transformation is the better resolution of frequency vs. time.

IMPROVED: Online Threshold control

The Online Threshold control has been introduced with the previous release. Threshold for each channel can be changed one at a time during running acquisition. The improved Online Threshold control allows for changing the threshold of all channels simultaneously with a single click.

IMPROVED: Scientific Notation

As some of our customers had required, scientific notation (i.e. writing 1.000e4 instead of 10'000) is possible in input fields of diagram axis limits and filter processors.

IMPROVED: Alarm Manager stores user defined attributes in the log file

The Alarm Manager has the ability to store user defined attributes with each warning or alarm. This way the Alarm Manager can not only inform that a warning/alarm occurred but also inform about the characteristics of the hit that triggered the warning/alarm.

IMPROVED: Frequency projection in AGU-Vallen Wavelet

The 2D-frequency projection presents a histogram of the frequency distribution taken from a slice in the 2D time-frequency diagram parallel to the vertical frequency axis. This feature enables a more precise analysis of time-frequency transformations.

R2009.0414

NEW: 40 / 20 MHz waveform data sampling (ASIP-2/A only)

Waveform (TR) data can be stored with up to 20 million samples or 40 million samples per second. The TR sampling rate can be chosen **independently** from the AE-data sampling rate and has no influence on the maximum AE hit rate.

NEW: 40 / 20 MHz AE data feature extraction, 25ns / 50ns time resolution (ASIP-2/A only)

Until now the maximum sampling rate for AE data has been 10 MHz. With the new software release AE features (amplitude, rise time, duration, counts, energy and arrival time) can be extracted from AE data at sampling rates of up to 20MHz or 40MHz with ASIP-2/A. The advantage is a better time resolution of only 50 ns at 20MHz sampling, or 25 ns at 40 MHz, as it was requested by several parties for use on very small structures. Note: The higher AE data sampling rate reduces the maximum hit rate. For applications, where 100ns time resolution is sufficient, selecting 10 MHz AE sampling rate is recommended.

NEW: Notch Filter for clearing disturbing frequencies (ASIP-2/A only)

The new software release features a notch filter (IIR5). The notch filter is used to filter out undesired frequencies, e.g. continuous noise of an ultrasonic source of constant frequency. The notch filter consists of 1, 2 or 4 stages at AE sampling rates of 40 MHz, 20 MHz or 10 MHz, respectively. For each stage, the user can enter the desired frequency to be rejected (the notch frequency). Notch frequency can be up to 2.5% of the AE sampling rate, e.g. at 10 Mhz up to 250 kHz with a resolution of less than 400Hz.

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NEW: 496 digital bandpass filters with improved selection menu

The new software release provides 493 digital bandpass filters for use with 10 or 20 MHz sampling rate. Each filter consists of a 8th order high- and low-pass (48 dB/octave). 3 additional bandpass filters, with 4th order high- and low-pass, are for use with 40 MHz sampling rate. The interface for selecting bandpass filters has been completely reworked. The new design allows convenient selection of a bandpass filter from a filter table or an improved drop down list.
All bandpass filters are included in the ASIP-2/A price and are purchasable for ASIP-2/S.

NEW: TR data source selection (ASIP-2/A only)

The filter chain in ASIP-2 consists of a post-ADC anti-aliasing filter running at 40 MHz sampling rate, a chain of band-pass filters, running at 40, 20 or 10 MHz sampling rate, and a notch filter, followed by the feature extraction stage. Threshold detection is part of the feature extraction process and usually triggers the transient recorder. As source of transient recorder data, the user can select the output of either the notch filter, the bandpass filters, or the wideband anti-aliasing filter. This allows for wideband waveform capture with narrow banded trigger and AE feature extraction, as recommended e.g. by an Annex of ISO 16148:2006 (re-qualification of seamless steel cylinders and tubes).
This feature has already been implemented with previous release, however, it was not available due to a bug in the KeyCode handling.

NEW: Online Threshold Control

The new feature Online Threshold Control lets you manually change the threshold conveniently during acquisition. A bar-type display indicates the current threshold and the magnitude of recorded AE-hits per channel. By this means the threshold for acquisition can be changed and controlled on the fly.

NEW: Lin3D Location Algorithm

Lin3D extends the Vallen VisualAE Linear Location (VAELL) module. With Lin3D a chain of sensors can be arranged in space (e.g. as for a framework- or lattice structure). The location algorithm produces only linear location, i.e. events will be located only on a straight line between two sensors and the result is given in 3D-coordinates.

NEW: AcqCmdAPI

As an extension to the AcqCmd, the command line tool for controlling the acquisition, the new AcqCmdAPI provides an ActiveX interface for this task. The acquisition can be controlled from any application providing such an interface, e.g: MS Excel, Matlab, Labview, etc. This allows for easy integration of the AMSY-5 acquisition in a programming environment or for easy operation by an e.g. automation controller that supports the ActiveX interface.

IMPROVED: TRA file size limit increased to 64GB

Up to the last software release the TRA file size was limited to 16GB. Since there are 2GB memory TR-modules available for waveform recording, the increased TR-file size provides greater flexibility.

IMPROVED: AGU-Vallen Wavelet

The AGU-Vallen Wavelet is part of the Vallen AE-Suite software now. AGU-Wavelet allows for convenient wavelet transformation of your recorded waveforms. Additionally the new feature, **Time Projection**, is introduced, allowing you to analyze the frequency content of time slices.

IMPROVED: Alarm Manager

The improved Alarm Manager stores the data set number (DSET) for which an alarm condition had been triggered. You can trace back which hit actually has set off the alarm or warning.

IMPROVED: Listing shows whether you selected True Energy (TE) or Signal Strength (SS)

With the new release you can conveniently distinguish in VisualAE whether you selected TE or SS when you set up the acquisition. In listings, a special code (TE or SS) appears in the header of the energy column.

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IMPROVED: Legend for overlays in Vallen Sensor Tester (VST)

When using the Vallen Sensor Tester (VST) legends are automatically created for overlays. With this feature you can conveniently distinguish different overlays, e.g. when you compare the results of different sensors

R2008.0915

NEW: ASIP-2/A Support

Most of the new features of ASIP-2/A are now supported by software. Among are 130 selectable digital band pass filters, programmable input range ($10V_{PP}/5V_{PP}/2{,}5V_{PP}$), programmable preamplifier DC supply voltage (8-28V), wideband waveform capture with narrow band trigger and AE feature extraction. Still in preparation: 20 MHz and 40 MHz waveform recording and feature extraction as well as notch filter selection.
More information can be found in the System Specification document.

NEW: 2 GB TR-memory module available

2 GB memory module TR-2/2GB is now available for ASIP-2/A and ASIP-2/S. At 1 K sample per waveform, this offers space for half a million waveforms (500,000 hits) per channel! This is useful for testing high emissive objects. There is no bottle neck by limited transfer speed at large channel numbers.

NEW: Input Device definition in new "Channel configuration" dialog

"Input devices" are introduced for more user comfort. Select from a drop-down menu the preamplifier you are using with each channel. This automatically initiates the right DC supply voltage, the ASIP-2-input impedance, the gain, the available choice of pulsing functions, and other details. When connecting a preamplifier without pulse-through capability and telling this the software in the new channel configuration dialog, the software ensures that no pulses are sent to that preamplifier. This avoids inadvertent damage to connected devices. A high impedance and DC free input mode (AC@100K) can be selected for channels that are connected in parallel to another channel that supplies 28 V.
The new channel configuration dialog makes the acquisition set up faster, easier and safer.
Clients moving an individual acquisition PC to differently configured systems can export and import a complete configuration for fastest adaptation.
More information can be found in the online help and the Getting Started document.

NEW: Continuous Pulsing Cycles

With the new release "autocalibration" has been renamed to "pulsing". Additionally the Acquisition32 offers a continuous pulsing. In this mode, all enabled channels will send pulses subsequently until continuous pulsing is stopped by the user.
More information can be found in the online help.

NEW: AcqCmd – the command line tool for controlling acquisition even in autonomous mode

With AcqCmd the operator gets a powerful command line tool which can be invoked from batch files or scheduled tasks. The command line tool offers the same functionality as the Acquisition32 graphic user interface: create new files, stop -, suspend -, start acquisition, erase data, send labels, start and stop pulsing and – as a new feature – putting the acquisition to sleep. This powerful tool supports the excellent remote control functionality of the AMSY-5.
More information can be found in the online help.

NEW: ECP Updater

For our ECP Validator customers and their licensees, we have implemented the ECP updater tool. Now ECP code (and/or license) can be updated by the ECP Validator's licensee.

NEW: Log file copying

Now, every time the acquisition is closed the log file is copied to the folder of the pri-file. If there are already log files with same name present, new log files are numbered consecutively. The log files in the pri-folder are

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not deleted automatically. Now you have a complete and trackable record of log files and the possibility to access even old log files.

IMPROVED Continuous Mode (option ACCM): seamless waveform recording and increased time slice intervals

Seamless waveform recording (streaming) is now possible with ASIP-2. With 512 MB memory modules, the latency time to filter TR data from AE data is covered even at high data rates, now. This makes front-end filtering an efficient tool to prolong the overall recording time before the memory runs full. With the new 2 GB TR-memory modules you can stream waveforms for as long as 53 seconds at a sampling rate of 10 MHz, or 106 seconds at 5 MHz, etc., independently of the number of channels in use!

The maximum time slice interval has been increased from 6.5ms to 98ms (for ASIP-2 only, not for ASIPP). This allows convenient application development for ASCO-P. It is also possible to take e.g. one short waveform capture per 90ms, e.g. to monitor changes in the spectrum of a continuous manufacturing process.

In continuous mode, data acquisition is completely threshold independent. Features are extracted from the AE signal in time slices of fixed intervals and threshold is only used for counts counting.
This is helpful for new applications, where the right threshold setting is not known. Waveform capture of any length can be triggered once per time slice. AE- and TR frontend filters can be used to store only time slice data of interest, e.g. of a minimum energy or peak amplitude. Recording can be temporarily disabled manually or by an external disable input.
More information can be found in the online help.

IMPROVED: data analysis software supports Windows Vista

Vallen AE-Suite Software for data analysis is approved for use under Windows Vista. Data acquisition software supports only Windows XP.

Miscellaneous

Of course a lot of maintenance and optimization was done making the new software version more user friendly and faster.

R2007.0904

NEW: ASIP-2 Dual Channel Support

Support for the new ASIP-2 dual channel boards providing faster signal processing, larger temporary buffers, 2 channels at the same volume and weight than the previous channel (ASIPP), and much more flexibility on frequency filtering.

NEW: up to SIX AMSY-5 can be run at one ASyC

From R2007.0904 we support to run up to six AMSY-5 units at a single ASyC. This requires 0.7m cables CBL1-0.7 between the AMSY-5 units and a 1.5m CBL-1.5 between PC and first AMSY-5 unit.

IMPROVED: Dual Core Notebook Support

For the control of an AMSY-5 the new Dual Core CPUs for notebooks are supported now.

IMPROVED: Analysis Performance

A considerable increase in analysis speed (up to 25%, depending on the VisualAE setup) was realized.

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R2006.1124

NEW! PRI-file up to 4GB, TRA-file up to 16GB

Now data acquisition with the AMSY-5 supports PRI-files up to 4GB and TRA-files up to 16GB (only on NTFS formatted drives). With older file formats (e.g. FAT, FAT32) the file size is generally limited to 2GB by the file system.

NEW! PRI-Glue

PRI-Glue is a tool to concatenate different PRI-files to form one large PRI-file (e.g. in case test data is spread over several PRI-files) with user definable time offsets. PRI-Glue can create PRI-files with up to 64GB and it also combines TRA-files. VAE- and VAC-files are properly handled as well.
PRI-Glue is part of the basic software package and is available for all clients having a valid update contract.

IMPROVED!

With earlier releases it could happen that a PC (especially laptops) dipped into suspend mode, e.g. due to power management settings. As a consequence the acquisition software (Acq32) returned an error message. From R2006.1124 there is an improved handling of the Power Management System Suspend. New behavior during data acquisition with the AMSY-5:
- Pressing explicit suspend button: System suspend denied.
- Suspend from power management: System suspend denied.
- In case the system enforces a suspend, Acq32 is paused and other Vallen applications are stopped.

R2006.0830

That's NEW!

NEW! Embedded Code Processor (ECP)

A new processor has been implemented which allows to execute user written code within VisualAE online as well as offline! Within the ECP you can process existing results (from external parameters, hits, events, locations, clusters, features extracted from TR-data, ...) to new results according to your needs. Then you can filter and display these new results with the well-known, powerful VisualAE processors and diagrams like any standard result.
This offers unique flexibility: you can program your own, specific analysis algorithms and use the display and further processing capabilities of VisualAE online as well as offline. ECP is a great tool to implement specific analysis algorithms e.g. for large numbers of similar test objects to ease (and speed up) industrial testing, or for scientific research.
To use ECP the corresponding software key is required: An ECP-User key allows for execution of existing code, the ECP-Programmer key enables one to develop code, and the ECP-Validator is needed to sublicense ECP-code.
A time limited evaluation KeyFile with ECP-User and ECP-Programmer-keys enabled is available on request.

NEW! Triggered Autocalibration

A new function allows to schedule the autocalibration to be done at user-defined times and/or intervals. This is great for
a) longtime testing (e.g. to have an autocalibration every day) to proof that sensor coupling didn't change.
b) Acousto-ultrasonic applications where you want to monitor changes in attenuation and/or speed of sound.

NEW! Listing context menu: copy line

This menu item copies the current listing line as text to clipboard, tab separated. This is convenient for pasting in Excel or any text editor.

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NEW! Customized Labels

When doing routine testing of identical (or similar) structures you may want to always use the same labels to structure your test (for easier analysis). Customized Labels allow the user to pre-define labels (in a txt-file) and select from them during the test from a Combo-Box (drop down list). Additionally you can still write any label text you like.

NEW! Show Labels as Time Markers for 2D diagrams.

If enabled in project settings, labels are shown as vertical lines in all 2D diagrams where dataset number or time (relative time of any kind, seconds, hours...) is on the horizontal (X) axis.

NEW! Macros: "FileNameSetup", "FileNameSetup /P"

VisualAE allows to analyse your data with arbitrary vae-files (with different name than the pri-file). These new macros allow to show the filename of the used vae-file in legends, captions, and so on.
A second new feature on this is that a printed VisualAE page shows the VAE file name and path together with pri-file name and path, if the vae differs from the pri.

That's Improved!

Single Step Size:

Now offers additional step sizes of 10.000, 100.000, and 1 million data sets. Step size can now be changed without resetting analysis. This allows to use different step sizes for different parts of your analysis.

Improved! PCTD and PCTA/PCTE continued after stop/resume

Now the parametric counters (e.g. for cyclic testing) continue with the last value after resuming data acquisition.

As Microsoft stopped any support for Win95, Win98, and WinME this is the last release supporting these operating systems. Future releases will support Win 2000, WinXP and their successors. Since AMS3 and AMSY4 hardware can't be used under Win2000 or XP, future software releases will support AMSY-5 only.

R2005.1125

The most important improvements are:

Internet Activation

Having a valid Keyfile, software version R2005.1125 or later, and an internet connection with the PC on which you want to install the Vallen software, then you can immediately receive your KeyCode by 'Internet Activation'.

ICSE Processor Modification

The ICSE processor, required to test underground LPG vessels according to the Italian regulation, has been changed upon request of ISPESL. Those specific results depending NOT on the pressure interval are now shown right from the beginning of the test (previously they were shown only after 2 times the pressure interval).

This is mainly a service release, to make the latest changes and software maintenance achievements available to our clients.

R2005.0504

The most important improvements are:

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Alarm Manager

The Alarm Manager has been greatly enhanced: the software is now able to monitor (online!) whether data transfer is working as expected, whether the operating system is still alive and collecting data, whether there is a time offset between recorded and analysed data,... and some more. As soon as user defined criteria are exceeded, a Warning and/or Alarm can be fired. Also when user defined criteria for the AE data (e.g. 5 hits with more than 80dB amplitude) are met, a Warning and/or Alarm can be fired. This is a unparalleled support for safety critical tests!

SysVeri

This software for semi-automatic system verification is now available. With this software (and the required tools like function generator) one can easily perform a detailed and very exact verification of the AMSY4/AMSY-5 accuracy. This tool exceeds the requirements of EN13477-2 by far and at the same time allows the system verification to be done by a trained operator in much less than half a day (depending on the number of channels of course). Ideally suited for verification at regular intervals (e.g. once per year) as required by most quality management systems. It automatically creates a detailed verification report.

Rate functions

have been implemented: one can now easily calculate the ratio of AE results for subsequent intervals: e.g. 'hits per time interval' or 'AE energy released per user defined pressure interval' and use the Alarm Manager to automatically indicate when the increase between subsequent intervals exceeds a certain ratio. Requires software option VAEUPE.

ICSE-Processor

implemented which supports the approved testing procedure for small underground LPG vessels developed by the Italian ISPESL, which was published in the Gazzetta Ufficiale. This is important if you are planning to offer AE testing services for small underground LPG vessels in Italy.

During the course of ongoing software maintenance some software internals have been redesigned for better performance and/or reduced memory/CPU requirements.

R2004.1028

The most important improvements are:

in VisualAE

The function 'Duplicate Page' was added on user request.

Diagrams can now be exported also as png-files (well compressed, non-lossy format)

In VisualTR

The 'New Feature Extractor' was added, offering spectral ratios calculated from waveforms (tra-data). This tool can be used to e.g. compare the energy content of different time/frequency ranges of a waveform with each other.
These spectral ratios are stored in the feature file, and can then be used for statistical analysis and correlation with AE parameters like Amplitude, Energy,… by VisualAE. Powerful possibility to identify/separate separate signal types from each other.

VisualClass/VisualTR

Results from Feature Extraction (e.g. FMXA, FCOG, or spectral ratios) can now be used simultaneously with results from a Classifier developed by VisualAE due to progress with the trf-format.

Additionally of course the ongoing maintenance of the software like optimizing routines has been continued.

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R2004.0625

The most important improvements are:

in VisualAE

MultiLanguage Interface

All VisualAE menus are now also available in Chinese, French, German, Italian, Russian (and of course also in English).
The function 'Print all pages' was added, either the pages are sent to a printer or saved as image files (named image_001, image_002,….)
Label lines can now be activated/deactivated in listings (useful to e.g. create a printout with labels only)

Additionally of course the ongoing maintenance of the software like optimizing routines has been continued.

R2003.1125

The most important improvements are:

1) in VisualAE

Alarm Processor
: allows to define a warning and alarm condition (e.g. the number of hits above a certain amplitude) where a warning/alarm action is triggered as soon as this condition is fulfilled. Alarm action can be a sound, to send an email, or to trigger a certain element in an ActiveX component that can be evaluated by user programmed software.

Zip-Interface
: VisualAE includes now a convenient zip-interface to easily create compressed zip-files comprising a complete project (all name.* files).

Additional 3D Location Algorithm
: has been implemented. The new algorithm is based on a gradient approach whereas the existing algorithm used an iterative approach. This algorithm has been developed in close cooperation with Dr Eisenblaetter, a well known German AE pioneer in many applications.

Attenuation Profiler
: VisualAE includes now the Attenuation Profiler, a tool to easily determine the attenuation in materials (e.g. in dB/m). This is required by some European standards, e.g. prEN14584.

Image Processor
: allows one to display instead of an AE diagram e.g. a digital picture of the sample for better description/understanding.

Filename Macro
: =[Filename] Gives the current filename without path
=[Filename /P] Gives the current filename including path
=[FileName /e] Gives the current filename without extension

Picture Overlay on log-Diagrams
: The picture overlay is now also activated for diagrams with log-scaling (the picture remains linear scaled).

Filter Processor Disable
: A filter processor can now be disabled/enabled by a mouseclick in order to easily evaluate it's influence on the results.

2) in VisualClass

Normalization Factor
: Now different normalization factors can used by VisualClass: in addition to the Energy now also RMS and Average can be used for the normalization.

80 Feature Limit Dropped
: The limit of 80 features for a classifier (required by the early Microsoft Windows operating systems) has been dropped: now classifiers with more than 80 features are possible.

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3) in AGU-Vallen Wavelet

Auto Convert Function
The AGU-Vallen Wavelet software is now capable of automatically transforming all waveforms within a tra-file and saves the result as jpg-files. You can look at these easily e.g. with the Vallen Jpegger (www.vallen.de/freeware).

All major changes have been triggered by your valuable feedback - thank you very much for this! And we would be happy to continuously receive your feedback and ideas.

R2003.0306

The most important improvements are:
In all 2D diagrams you can now zoom-in with the mouse. Just define a rectangle drawing with the mouse (left button pressed) and the selected region will be set as new diagram area. The right mouse button provides a multi-level undo function.
The display of correlations with large numbers of data points has been considerably accelerated.
All current Vallen analysis software and the acquisition software for the AMSY-5 is now approved for use under Windows XP.
The Acquisition software has been changed: the maximum Parametric Interval (for time driven parametric data) is now 600s (used to be 3s). This is of special interest for long time monitoring with slowly varying external parametrics, to reduce the amount of parametric data. Additionally the Parametric Interval is now specified in seconds [s] instead of milliseconds [ms]. This is valid for AMSY-5 and AMSY4 systems.
The AGU-Vallen Wavelet software includes now a great 3D diagram to better visualize the result of the wavelet transform.
The AGU-Vallen Wavelet software can export wavelet data to ASCII.

R2002.0828

Service Release. Documentation improved and extended. Improvements and minor bug fixes according to latest customer feedback.

R2002.0719

The most important improvements are:
Data Processing Structure: The processor- and diagram properties can be now accessed by a simple double click.
Printing all pages of a VisualAE-File can now easily be done by clicking "Print all pages..." at the "File" pull-down-menu.
Different parametric inputs can now be displayed simultaneously in ONE diagram. Just select "PAx: parametric data" as diagram property (vertical axis)and add/define the required number of planes on the tab 'Distribution' under the vertical axis used for PAx. Then modify the filter of each plane (e.g. PaX = PA3 to show the data of the fourth parametric input) according to your needs.
Changing filter criteria globally for an analysis project is now possible using the implemented Variable Editor! Sometimes one would like to change a filter criterion for a complete analysis project: e.g. after investigating channels 1 to 8 one would like to work on channels 9-16, or to do it channel by channel. This can quickly and easily be done when using Variables. For a detailed description please select "Edit" - "Variables" in the menu bar and click the help button.
The minimum of the parametric clock is now reduced from 0,3 ms to 0,2 ms, increasing the maximum sample rate for the parametrics to 5kHz. See the service manual how to modify the bandwidth of the parametric input, if such high sample rate is required.
The installation procedure has been completely re-designed: a full installation does now take only a few minutes and requires much less user interaction than before.

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R2002.0516

Service Release. Documentation improved and extended. Improvements and minor bug fixes according to latest customer feedback.

This release now includes the software for controlling the AMSY-5, the new AE-System introduced in December 2002.

R2001.1204

Service Release. Documentation improved and extended. Improvements and minor bug fixes according to latest customer feedback.

R2001.0808

Service Release. Documentation improved and extended. Improvements and minor bug fixes according to latest customer feedback. AGU-Vallen Wavelet and Vallen Dispersion software included.

R2001.0326

Service Release. Documentation improved and extended. Improvements and minor bug fixes according to latest customer feedback.

R2000.1002

Service Release. Only minor improvements and bug fixes according to latest customer feedback.

R2000.0831

This release offers only a few new features. It is more a service release to give latest improvements and bug fixes to our customers. Below is a list of features added which are documented in detail in the online help.

Acquisition: A new Time-Processing-Mode has been implemented: now you can select between Recording Time and Absolute Date/Time of recording.
Absolute date/time of acquisition: this is the standard mode. The current real time of the acquisition is stored on file.
Recording Time: the acquisition starts with time zero. If the acquisition is interrupted and resumed later, the time on the file continues with the last time on file plus an offset of about 10 seconds.
The Recording Time is useful if you have long breaks (compared to the length of the sections themselves) between the acquisition of two sections. It helps to display both sections without a long dead time between.

VisualTR™: Two new utilities added :
1) TR-Filter: allows one to apply a user-definable, digital filter to already acquired TR-data
2) TR-Unifier: for unifying the format of two different TRA-files (sample rate and page length), very useful for applying a classifier to such files or if you want to build a classifier from such files.

Acquisition: For our customers using UPS (uninterruptible power supplies) we have implemented a new property of the Acquisition32: In case of an external power outage the UPS sends a number of “shut-down” messages to the operating system notifying all running applications to safely shutdown. If Acquisition32 receives such a message it closes now properly, saving the correct file size information.

New Visuals/Processors after Insert or Duplicate are now inserted behind the existing Visuals/Processors of the same analysis branch.

Some new page layouts for combinations of 4,5, and 6 visuals added.

A bug in the acquisition of TR-files (under special circumstances, only if pool trigger was selected) has been removed 1 day after reporting.

Documentation for VisualAE™ and VisualTR™ improved and extended. Many new illustrations added.

About 30 minor bug fixes and improvements.

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R2000.0804

The Polygon Processor is now implemented (new option VAEPP)!
It is a graphic filter allowing you to define graphically an area of interest of arbitrary shape. Data inside that area can easily be filtered to be analyzed separately (or to be excluded from analysis).
The Polygon Processor is the successor of the Graphic Filter (SWF2) in MultiPlot.
The processors which influence a Visual can now be accessed by the context menu of that Visual.
It is now easily possible to duplicate Visuals and Processors from the Data Structure Tree by the context menu.
The CopyToBitmap menu has been considerably improved (for details see new online-help) to allow for easier export of high-quality diagrams.

R2000.0531

The cluster functionality has been largely extended. Now every cluster has a Cluster-ID by which the cluster content can be easily addressed for more detailed analysis.
Cluster results are calculated for each cluster: mean(Amplitude), sum(Energy), sum(Counts)
Additional, user defined statistical cluster results can be set up by some mouse clicks for analyzing special properties of the clusters' data.
Double clicking on clusters shows the number of elements inside and the Cluster-ID.
Wheel Mouse Support (MS-IntelliMouse) is now implemented in listings and TR-diagrams. Wheeling up/down is like key up/down, <Ctrl> + wheeling like Key + <Ctrl>, and <Shift> + wheeling like Key + <Page-Up / Down>
Channel Groups within a location processor can now easily be duplicated: the context menu (right mouse click) now shows an item "duplicate".
A new user attribute is implemented (VAEUPE required): A * lg(x) on basis B
Improved and extended online-help is available. Please copy "roboex32.dll" from either CD-ROM or our web-site into c:\vallen\hlpe\
All analysis programs have been tested and improved to work on Windows 2000.

R2000.0126

A new function has been implemented: Export to PRI File. Allows one to create a new pri-file from an existing one (e.g. after filtering). Export to PRI belongs to VAE1.
Online Interface for Classifier and Feature Extractor is ready: online-extraction of waveform features and online-classification are now possible.
Filter Processor: status data sets will now always pass a filter
2D, 3D diagram properties, tab distribution: the name "Accu Type" has been changed to "Bin Type"
2D/3D diagrams: "copy text to file" now has the default extension ".txt"
The macro-strings are no longer case-sensitive
Location Analyzer modified: dT can now be changed for each channel (instead of the velocity as before), the second velocity has been removed.
Location Analyzer: up / down buttons for velocity added
New Result "LEv": Located Events, can be used to only address events for which a location result could be calculated, might be changed later (beta-feature)
Filter Report implemented (filter settings now included in analysis report)
Reports now include the comments (also from the Acquisition (general) and the comment from the Acquisition Sections)
PRI and VAE files can now be started from the Windows Explorer, even if VisualAE™ is already running.
TRA and VTR files can now be started from the Windows Explorer, even if VisualTR™ is already running.
New SpeedButton (in icon bar below the menu): Save Setup
Insert TR-Diagram: dialog asking for data server and page implemented.
Listing: horizontal position remains although the focus is on other Visuals
Listing: the line of the cursor is always highlighted yellow, on a doubleclick the line is selected and marked blue.
Listing Navigation is now possible by keyboard (see help for details)
3D-location algorithm considerably improved.

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R991213

A “Fill with defaults” button has been implemented for automatic legend generation for 2D + 3D diagrams and planes. Pressing inserts some of the available macros.

The Online-Interface with the Feature Extractor has been established. Now you can run the Feature Extractor in simultaneously with Acquisition32 and VisualAE and get the extracted results displayed in VisualAE (you have to enable the feature file).

In Edit\Project Settings\Tab Other: Feature File Enabled checkbox

Project Settings Menu modified

Single Step Mode implemented: allows for analyzing data step by step , step size can be selected under Edit\Project Settings

Hit Track Time now adjustable (Project Settings\Tab Other), has not been accessible before

In the listing now a context menu is available allowing to jump to a desired data set number or label.

The data of every section are from now on analyzed with the settings (e.g. gain) of that section (up to now the settings of the first section have been used to analyze all sections).

3D Diagrams: Axis Text menu has been removed. All legend/axis settings are now specified on the legend tab.

Location Analyzer: 2 adjustable velocities have been implemented as a tool to investigate the influence of different velocities (e.g. due to different wave mode velocities)

Menu Item "Setup Report" has been moved from menu "Analysis" to "Edit"

Acquisition Report (Analysis\Section Settings\Report): when selecting one section a acquisition parameter report of the selected section only is possible.

Export to PRI-File (Analysis\Export to PRI-File): You can save the data from a branch of the analysis tree in a new PRI-File, thereby eliminating undesired data and reducing the size of the file to be analyzed.

Improvements with regard to online computation speed have been made

R991130

After a location processor only the first-hit of an event was available. Now the subsequent hits after Location/Event Builder can be selected to be displayed in 2D/3D diagrams and the grading processor (Tab Source).

AND/OR-Filter in processor and diagrams is now implemented.

A Grading Processor is (partly) implemented, based on Historic Index and Severity Index as proposed by T. Fowler et al.. This processor is intended for integrity tests.

2D-Diagrams: Command „Evaluate Macros“ for the evaluation and display of macros used at planes (filter conditions) is now implemented. (-> right mouse to plane)

2D-Diagrams: left and right planes are now displayed in a common list.

2D-Distributions: number of bins and bin-width is now automatically the same for left and right vertical axis.

2D-Diagrams, plane list: drag&drop has been implemented.

2D-Diagrams, right mouse to left or right plane header (when multiple planes defined) -> Quick Setup -> Equal Filter / In-Range-Filter / Legends.. allow for quick setup of multiple planes. (e.g. plane 1 for channel 1, plane 2 for channel 2,... or plane 1 for Amplitude range 30-40dB, plane 2 for amplitude range ,.. etc.) is new.

Now a context menu for page tabs exist (right mouse button).

New Macro: “=[Data]” (only for planes), shows the number of processed data sets, is updated online.

AVI-Interface for creating videos of 3D diagrams (e.g. while rotating) implemented.

3D-Clusters are now updated online.

Location Analyzer for evaluating location results implemented. Very useful to improve location accuracy (available for planar, cylindrical, multi triplet). Shows the hyperbola for each delta-t channel pair.

2D, 3D Diagrams: accumulation type “rate” removed. Reason: With 3D-plots, it became very complicated to generate a meaningful legend that lets one correctly interpret the vertical value of the plot. Now we recommend to add the =[BinWidth] macro to the horizontal axis of each rate plot (each non-cumulative plot) to ensure the correct interpretation. Means the software does not longer show rate plots with a 1/s scaling as before, it shows the sum that falls in one bin and if one wants to know the result per second, he must divide the vertical value by the seconds of bin-width. Sorry for this inconvenience, but we encountered cases were we had to discover that people did not understand the more comfortable rate scaling, especially when the start bin width was not 1.

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New macro: “=[BinWidth]” for 2D diagrams, displays the currently used Bin Width. Please add this to the horizontal axis legend for each non-cumulative distribution to allow a clear interpretation.
Calibration Table now shows only the values of the First-Received hits per channel per pulse.
Library Import: Double-click on a item in the library imports that item in the currently active VisualAE project.
Library Import: Context Menu has been implemented (right mouse button).
Library Export: Double-click on a item in the library now overwrites the selected item.
Visuals now show their ID's in the title-bar of the properties menu.

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