

ArtemiS SUITE
Project

Code 50220

APR 220 Standardized Test Project

The Standardized Test Project of ArtemiS SUITE enables the definition of operating states, allowing test objects to be measured automatically under varying operating conditions, processed individually, and the results to be presented in a Report.

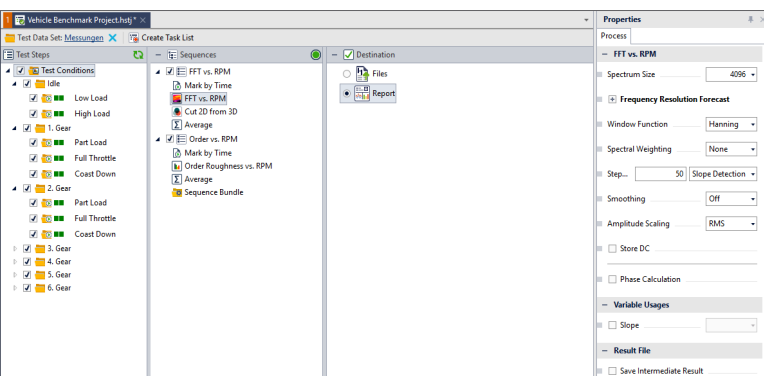
OVERVIEW

APR 220 Standardized Test Project

Code 50220

Use the Standardized Test Project to define operating states for a test object and then perform the required measurements using the Recorder (APR 040 is required). Subsequently, the measurements can be processed, and the results presented in a Report (APR 020 is required) or in a Comparison Report Project (APR 021 is required).

The Standardized Test Project automatically converts the specified test conditions into a Recorder Task List for the Recorder.



KEY FEATURES

Definition of operating states to perform standardized tests

- › of different test objects
- › of test objects in different construction states

Definition of the operating states to be measured on the basis of variations (e.g., 1st gear, 2nd gear, etc.)

Automatic creation of a structured task list for data acquisition using the Recorder

- › Automatic processing of all measurements
- › Comparative representation of multiple test data sets
- › Structured visual control of measurements in the Recorder based on the task list

Configuration of sequences and specific post-processing of the measurements

- › Cutting of marks, filters, analyses, single values, statistics, ..., post-processing operations (tolerance check, smoothing, etc.), export
- › Sequence bundles for parallel calculation of paths or sequences
- › Automatic compatibility check

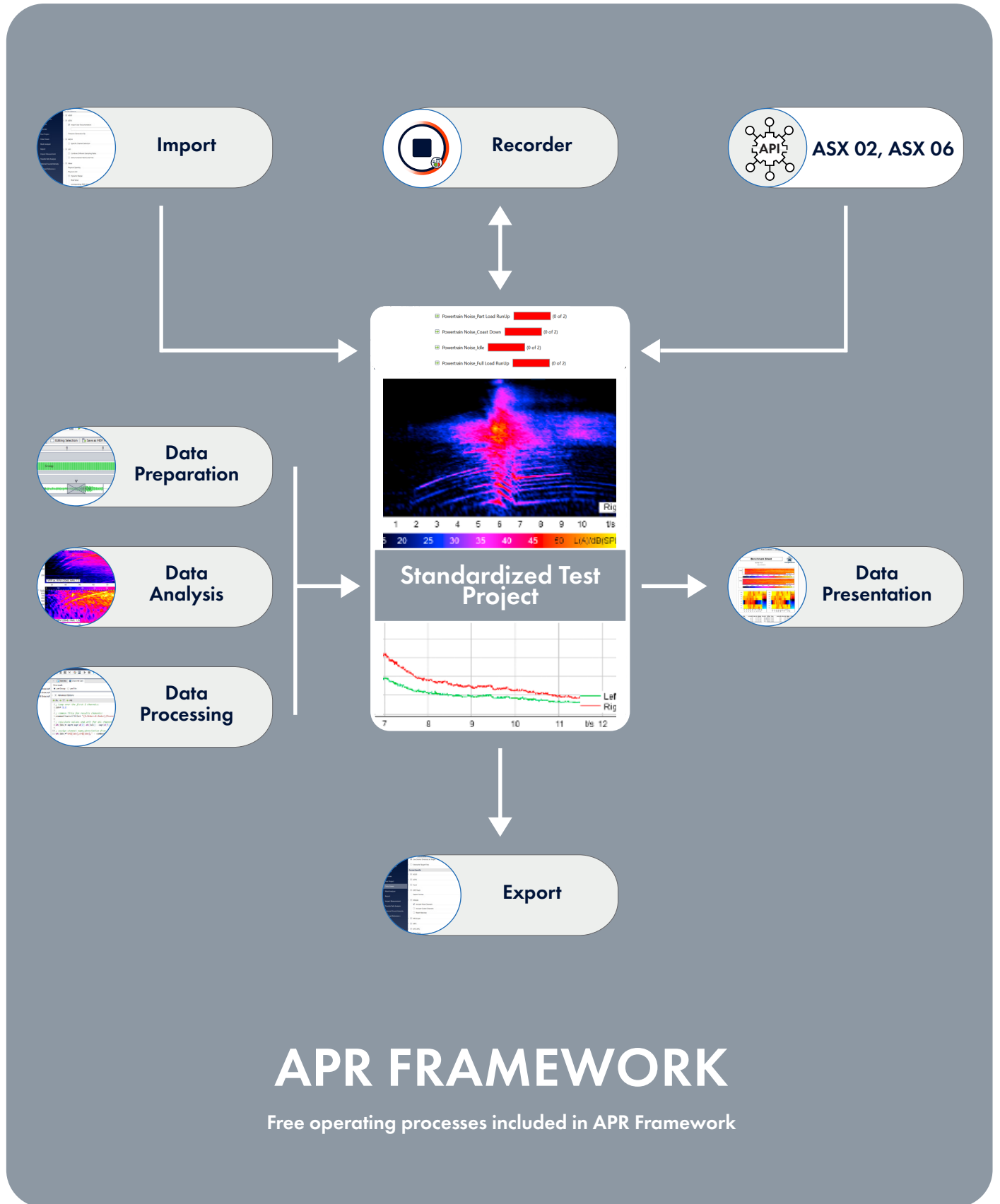
Creation of Reports using a standardized, comparable Report template for all tests of a test series

- › Export to PowerPoint or PDF format

APPLICATIONS

- › Convenient and time-saving measurement and analysis of standardized test series based on defined test procedures

OPTIONAL FEATURES – OVERVIEW



APR FRAMEWORK

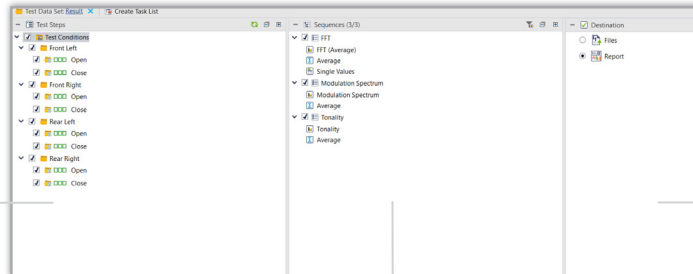
Free operating processes included in APR Framework

OPTIONAL FEATURES – DETAILS

ANY OPTIONAL FEATURES NOT INCLUDED IN APR 220 OR APR 000 MUST BE LICENSED SEPARATELY

SOURCES

- › Time data for subsequent processing
 - › HDF
 - › ATFX
- Suitable ATFX data sets are created automatically



DESTINATION

- › Report (APR 020)
 - › Files (APR 000)
- Storing the results in the file format generated after the final processing step

SEQUENCES

FREE TOOLS

- APR Framework (APR 000)
- › Refer to page 8 for processes included in APR Framework

ANALYSES

- Basic Analysis (ASP 001)
- › Spectral analyses, level analyses, and additional analyses
- Basic Analysis vs. Control Ch. (ASP 002)
- › Analyses from ASP 001 vs. Control Channel
- Advanced Analysis (ASP 003)
- › Spectral analyses with high or variable frequency resolution and additional analyses
- Advanced Analysis vs. Control Ch. (ASP 004)
- › Analyses from ASP 003 vs. Control Channel
- Modulation Analysis (ASP 005)
- › Modulation analyses for examining modulated signals, such as frequency, strength, and time curve
- Order Analysis (ASP 006)
- › Order analyses with variable DFT length, rpm-synchronous resampling or time-domain averaging
- Octave Analysis (ASP 007)
- › 1/n Octave analyses based on recursive filters with high time resolution
- Psychoacoustics – Basic Analysis (ASP 101)
- › Psychoacoustic analyses
- Psychoacoustics – Basic Analysis vs. Control Ch. (ASP 102)
- › Analyses from ASP 101 vs. Control Channel
- Psychoacoustics – Adv. Analysis (ASP 103)
- › Sophisticated psychoacoustic analyses (Sottek Hearing Model)

- Psychoacoustics – Adv. Analysis vs. Control Ch. (ASP 104)
- › Analyses from ASP 103 vs. Control Channel
- Speech Intelligibility Analysis (ASP 106)
- › Examination of speech intelligibility
- Spectral Audio Feature Analysis (ASP 107)
- › Spectral feature analyses
- Spectral Audio Feature Analysis vs. Control Ch. (ASP 108)
- › Analyses from ASP 107 vs. Control Channel
- LEAP Analysis (ASP 109)
- › Prediction of the listening effort based on acoustic parameters
- System Analysis (ASP 201)
- › Transfer function, impulse response, coherence, correlation, etc.
- System Analysis vs. Control Ch. (ASP 202)
- › Analyses from ASP 201 vs. Control Channel
- Sound Power Analysis (ASP 203)
- › Standard-compliant determination of sound power in accordance with ISO series 3740

DATA PREPARATION

- Offline Filters (ASP 301)
- › Filter, processing, and pre-processing tools for input signals
- Data Preparation (ASP 302)
- › Measurement data preparation of single values, channels, marks, files, or folders
- Batch RPM Generator (ASP 304)
- › Creation of reference quantities using templates
- Basic Decoder (ASP 801)
- › Extraction of CAN FD, OBD-2, FlexRay, Ethernet, pulse, trigger, GPS, resolver, etc.

DATA PROCESSING

- Statistics (ASP 303)
- › Statistical functions
- Channel Calculation (ASP 305)
- › Post-processing of individual or multiple channels using scripts

EXTENDED IMPORT/EXPORT

- MDF4 Import (ASP 707)
- MDF4 Export (ASP 703)
- › Import and export: MDF4
- MTS-RPC Conversion (ASP 704)
- › Import and export: MTS-RPC
- UFF Conversion (ASP 705)
- › Import and export: UFF

PROGRAMMING INTERFACES

- Data Processing and Representation API (ASX 02)
- › Control of Standardized Test Projects, Pool Projects, and Automation Projects, as well as execution of Reports, exports, etc. using customized software
- Data Processing Add-In API (ASX 06)
- › Implementation of customized filters and analyses in ArtemiS SUITE projects

DETAILS

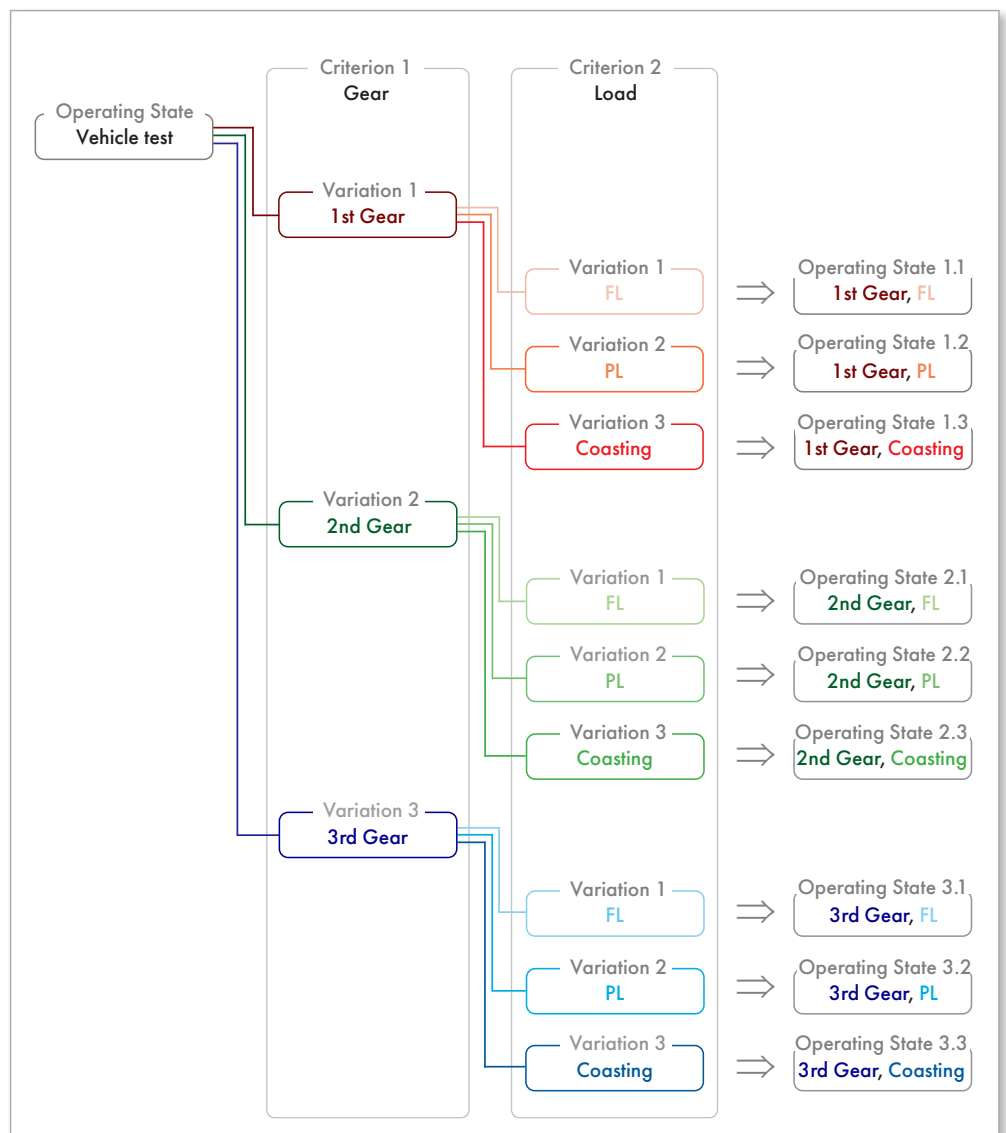
The Standardized Test Project allows frequently repeated test procedures to be mapped across multiple Standardized Test Projects.

Definition of the Operating States

To capture the acoustic properties of a product, multiple operating states of the test object must typically be measured and evaluated using different analysis methods. In this process, different operating states may be taken into account and analyzed individually. An operating state is defined by variations in one or more criteria.

Example: When developing a vehicle (see figure on the right), for example, the criterion "gear" is to be measured in three variations (1st, 2nd, and 3rd gear). The "load" criterion must be measured in three variations for each gear: full load (FL), partial load (PL), and coasting.

The representation of individual operating states in a tree structure facilitates maintaining an overview, even in complex projects. Variations can be duplicated and restructured as required using copy-and-paste or mouse operations.



Example of a tree structure for a Standardized Test Project. A total of nine different operating states are measured.

Definition of the Sequences for Post-Processing Operations

The sequences you define may include any number of post-processing operations, such as cutting marks, analyses, filters, and similar functions. Sequences defined for individual variations are inherited by all subordinate operating states. For example, analyses that are to be carried out for several measurements only need to be defined once for a superordinate variation. Manual attachment of sequences to each test condition is no longer necessary. Irrespective of this, further individual sequences may be assigned to the subordinate variations which will then be applied in addition to the inherited ones. A compatibility check is performed for each element of a sequence, ensuring that any incompatibilities are immediately indicated via the status indicators.

Sequence bundles can be used to calculate several paths or sequences in parallel. This enables, for example an analysis to be computed only once, while still allowing various statistical functions to be applied to it subsequently.

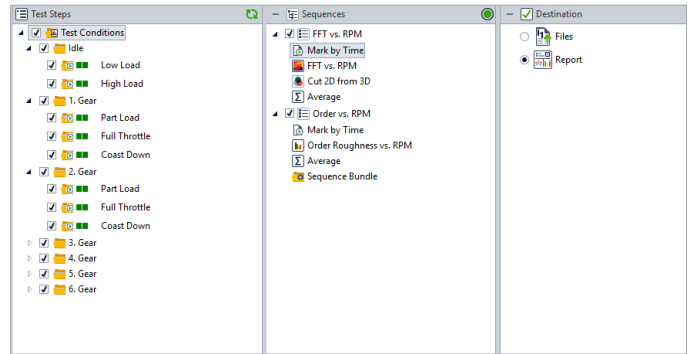
Configuration of the Task List

Once the test procedure has been defined, the Standardized Test Project extracts all operating states to be measured and creates a Task List for the Recorder.

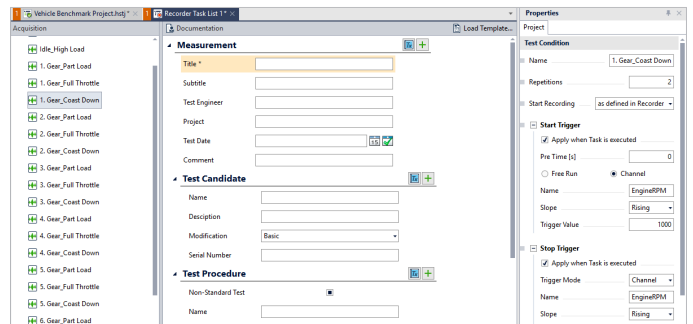
This Task List contains the conditions for the measurements to be performed by the Recorder. All list entries can be individually configured and supplemented with triggers and repeat measurements. This provides the Recorder with the information it needs to perform the required measurements.

Execution of the Task List

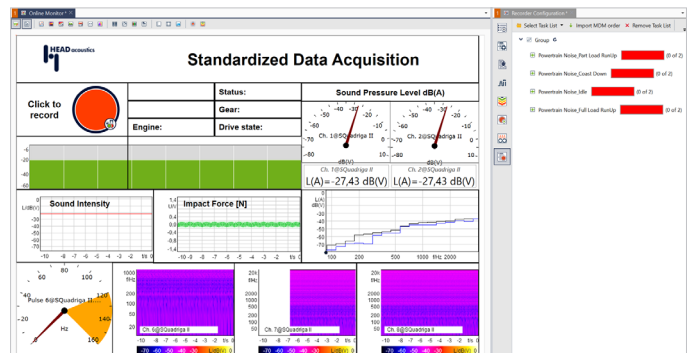
The clearly structured Recorder window enables intuitive navigation through the Task List. It also provides visual feedback on measurements still to be performed and those already completed. In addition, a Documentation Template can be created to document each measurement individually.



Sequences



User Documentation for the Recorder Task List



Task List of the Recorder

Presentation of Results in a Report

The measurements recorded by the Recorder, together with the results calculated from analyses and other processing steps defined in the sequences, can be incorporated into an individual Report template.

This Report template can be used as a basis for all subsequent tests in the test series. This ensures that, after replacing the test data set, consistent and comparable Reports can be generated at the push of a button.

Completed reports can be exported to PowerPoint or PDF format.

Comparison Report Project

Use the Comparison Report Project to analyze and compare the results of a Standardized Test Project by means of batch processing in a clear and dynamic Report, allowing differences between variants or improvements to be readily identified.

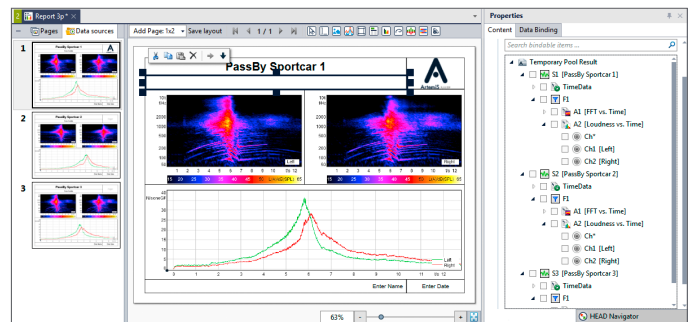
The use of variables in the Comparison Report Project enables direct parameterization of calculations. The variables can be configured differently for each job, depending on the variation. The primary advantage is that the processing elements of the Standardized Test Projects do not need to be modified; instead, individual adjustments can be made directly. This enables variation-dependent adjustments to be implemented quickly and reliably, significantly simplifying project maintenance.

ASX Programming Interfaces

The programming interfaces allow ArtemiS SUITE to be integrated with your software, enabling solutions tailored to your specific requirements.

Configuring a Standardized Test Project in ArtemiS SUITE for operation without user interaction enables you, for example, to load, perform, and stop standardized tests or sequences using ASX 02. When using ASX 02, ArtemiS SUITE and all processes used in the Standardized Test Project must be licensed.

Using ASX 06 enables you to intervene in the signal flow and to incorporate custom analyses, filters, and data exports into the Standardized Test Project.



Report

The Standardized Test Project is suitable

- › when standardized test procedures that have already been created and verified are to be performed,
- › when a test procedure is to be repeated frequently (i.e., multiple tests using the same procedure),
- › when a test includes multiple measurements (e.g., for different operating states),
- › when the measurements of a test are to be evaluated using different analysis methods,
- › when the final Report is highly comprehensive,
- › when no manual effort is to be invested in creating a Report.

The Standardized Test Project provides

- › support for the specification of complex test procedures,
- › a reliable and structured approach to data acquisition,
- › maximum transparency in tests involving a large number of measurements,
- › individually configurable sequences for different operating states (automatic data routing),
- › automated processing of measurement data,
- › simplified Report generation for result presentation,
- › export functionality for PPTX and PDF.

PROCESSES INCLUDED IN APR FRAMEWORK

- › Apply ATFX Documentation Template
- › Delete Documentation
- › Calculate Documentation Field
- › Set Documentation Field
- › Apply Documentation Template
- › Export 16 Bit HDF
- › Import/Export ASCII Text (ASC)
- › Import/Export ASAM Transport Format (ATFX)
- › Export Excel Workbook (XLSX)
- › Import/Export MPEG Layer3 (MP3)
- › Import/Export Wave (WAV)
- › Single Values (Metrics, Vibration Dose)
- › Single Values 3D
- › Single Value Tolerance Check
- › Mark by Time / Mark by RPM
- › Mark by Single Trigger
- › Mark by Start/Stop Trigger
- › Adjust Mark Limits
- › Fragment Mark
- › Select Channels
- › Remove Channels
- › Find Files in Directory
- › Select Subset
- › Find Data Sets in ATFX
- › Select by Documentation
- › Select by Name
- › Apply HDF Template
- › Representation Settings 2D/3D
- › Representation Settings Sampled
- › Linear Smoothing (Abs./Rel, 2D/3D)
- › Spectral Smoothing (2D/3D)
- › Tolerance Check
- › Cut 2D from 3D
- › DOF Normalization
- › Reset Abscissa

LICENSES AND OPTIONAL FEATURES

Requirements

Code	Product Name	Description
50000	APR 000 APR Framework	Basis of ArtemiS SUITE
50220	APR 220 Standardized Test Project	Central project of ArtemiS SUITE: measurement of multiple operating conditions of objects using the Recorder, and analysis of the data using different analysis methods
50040	APR 040 Recorder	Universal Recorder of ArtemiS SUITE for all types of measurements
All processes of ArtemiS SUITE used in the sequences, such as analyses, filters, functions (see page 4), must be licensed.		

Optional Features

Code	Product Name	Description
50020	ASP 020 Report	Central element of ArtemiS SUITE: display of filtered, analyzed, and statistically processed input signals in an individual Report
50021	APR 021 Comparison Report Project	Project of ArtemiS SUITE: analysis and comparison of data using batch processing in a clearly arranged Report
5092	ASX 02 Data Processing and Representation API	ASX programming interface: automated or interactive control of Standardized Test Projects; ArtemiS SUITE must be installed
5096	ASX 06 Data Processing Add-In API	ASX programming interface: integration of custom-programmed filters, analyses, and data exports into the Standardized Test Project

Additional modules of ArtemiS SUITE (see the ArtemiS SUITE Overview data sheet)



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