

ArtemiS SUITE
Project

Code 50050

APR 050 Automation Project

Automation Projects of ArtemiS SUITE enable the interactive creation of so-called Sequences, enabling input data to be further processed automatically.

OVERVIEW

APR 050 Automation Project

Code 50050

Automation Projects are ideally suited for measurement and analysis tasks that have to be executed repeatedly without user interaction.

Automation Projects can either be created and executed manually, generated from an existing Pool Project (APR 010 is required) in ArtemiS SUITE, or executed via the Navigator.

Automation Projects consist of three pools. The first pool is used to select the data to be processed. In the second pool, sequences can be individually assembled from configurable elements. For this purpose, functions such as selecting, cutting, filtering, analyzing, calculating a single value, importing/exporting, and related operations are available. The third pool is used to configure the output of the results—either as a new file, in a Data Viewer, or in a Report (APR 020 is required).

KEY FEATURES

Automation Projects can be used to prepare and process measurement data automatically

- › Filters, analyses, statistical calculations, cutting of marks, decoders, among others
- › Channel-specific analyses (for example, separated by airborne and structure-borne sound)
- › Sequence Bundles for parallel calculation of all Sequences contained in the bundles

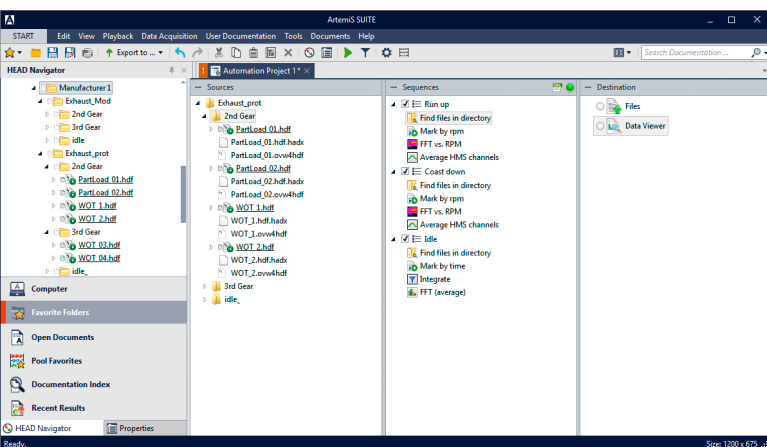
All processing elements used, such as analyses, filters, and statistics, require the appropriate ASP licenses

Automation Projects are divided into three pools:

- › Sources: Files or entire folders are inserted as sources
- › Sequences:
 - › The processing of input data is defined, and input signals are processed within all existing and activated Sequences
 - › The information flows from top to bottom, i.e., the results of a processing step become the input data of the next processing step
- › Destination: Automated output of results, for example, in a Report (APR 020 is required)

APPLICATIONS

- › Creation and automated execution of recurring workflows without user interaction
- › Ideally suitable for smaller and larger pre- and post-processing processes
- › Automated data preparation including decoding, alignment with HDF templates, and related functions
- › Preparation of tests in the context of End-of-Line tests (EoL)

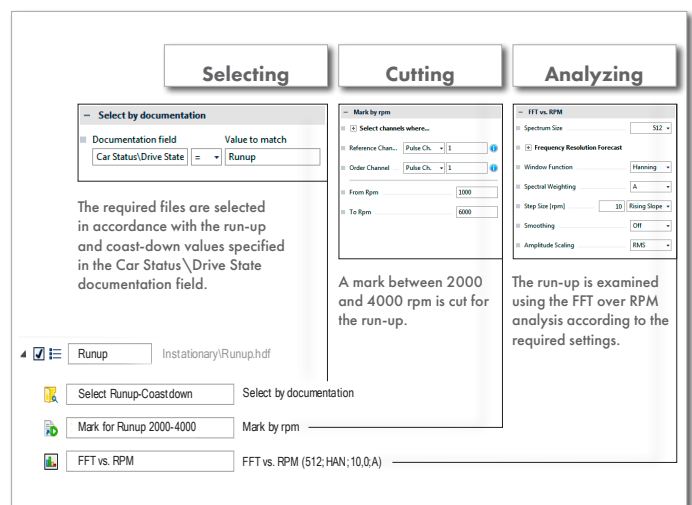


DETAILS

FUNCTIONAL PRINCIPLE

Automation Projects enable the creation of so-called Sequences, allowing input data to be further processed automatically. A major advantage of this approach is that the processing steps need to be defined only once, are executed automatically, and can be reused for all subsequent processing operations or Reports. Automation Projects thus represent an alternative to Pool Projects. The key difference is that the input data is not processed through the complete cross product of all filters and analyses (Pool Project); instead, it passes through the activated Sequences only once (Automation Project). Furthermore, it is possible to narrow down particularly relevant signals—for example, on the basis of their documentation—thereby eliminating the otherwise required adjustment of activation checkboxes when processing mixed input data.

In addition, an Automation Project element can be inserted into the Destination Pool of a Pool Project, thereby generating all Sequences resulting from the cross product of all activated filters and analyses. Subsequently, the Sequences can, for instance, be limited to the relevant combinations or expanded to include additional instructions.

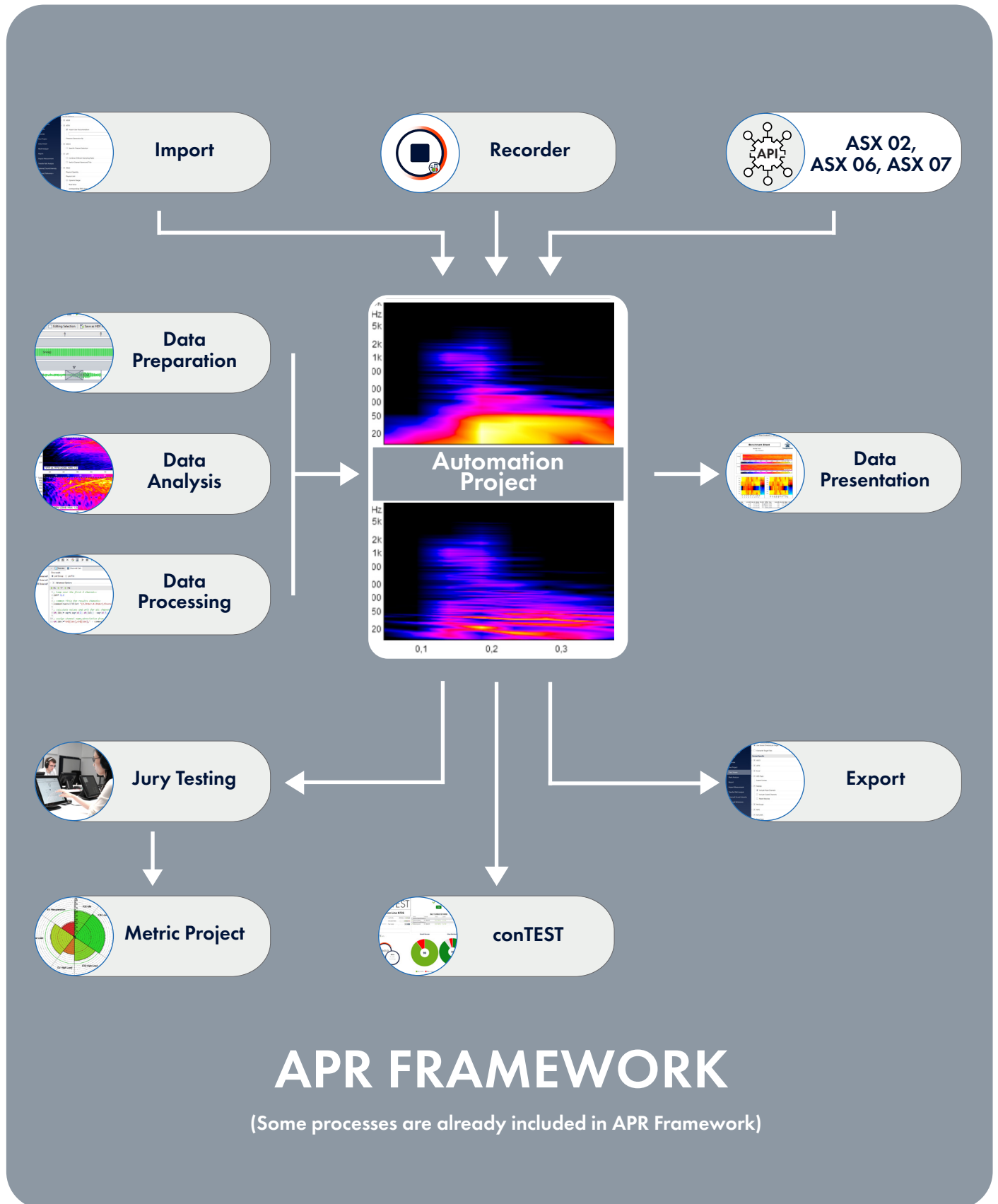


Example of a Sequence consisting of three elements: the required files are selected, then cut according to the specifications, and the resulting marks are finally evaluated using the third element.

PROCESSES INCLUDED IN APR FRAMEWORK

- › Apply ATEX 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 (ATEX)
- › 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 ATEX
- › 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

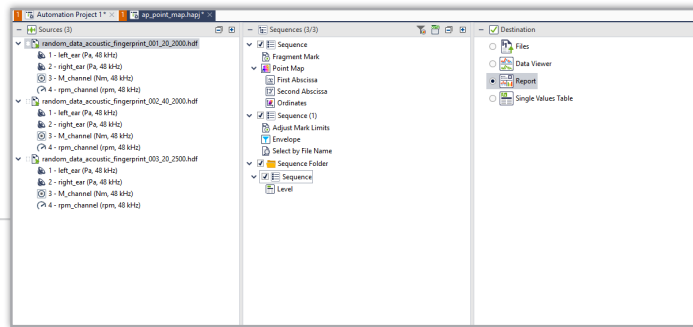
OPTIONAL FEATURES – OVERVIEW



OPTIONAL FEATURES – DETAILS

SOURCES

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



DESTINATION

- › Report (APR 020)
- › Files (APR 000)
- › Data Viewer (APR 000)
- › Single Values Table (APR 000)

SEQUENCES

(ANY OPTIONAL FEATURES NOT INCLUDED IN APR 050 OR APR 000 MUST BE LICENSED SEPARATELY)

FREE TOOLS

- APR Framework (APR 000)
- › Refer to page 3 for processes included in APR Framework

ANALYSES

- Basic Analysis (ASP 001)
- › Spectral, level, and other 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 other 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 change over time
- 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)

- › Analyses of speech intelligibility

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 Pool Projects and Automation Projects, as well as execution of Reports, exports, and related functions using customer-specific software

Data Processing Add-In API (ASX 06)

- › Implementation of customer-specific filters and analyses in ArtemiS SUITE projects

Local Processing Service (ASX 07)

- › Execution of Automation Projects without the need for ArtemiS SUITE to be installed

TEST BENCH SOFTWARE

Post Processing (CTM 010)

- › Import of automation specifications (HPSX files)

EXTENSIONS

Comparison Report Project

The Comparison Report Project enables the analysis and comparison of input data from an Automation Project by means of batch processing in a clear and dynamic Report. This functionality enables benchmarking at the push of a button, the comparison of product development statuses, and additional tasks.

Batch processing extends the functionality of the Automation Project by enabling large volumes of data to be processed in a single operation. As a result, recurring, computationally intensive and labor-intensive tasks can be executed efficiently, reducing the likelihood of errors and increasing productivity in data evaluation.

ASX Programming Interfaces

The programming interfaces enable ArtemiS SUITE to be connected to other software applications, facilitating the creation of solutions for your specific requirements.

ASX 07 enables the execution of Automation Projects that have been stored as automation specifications. The complex processing workflows of an Automation Project can be utilized, and the results are obtained without requiring ArtemiS SUITE to be installed.

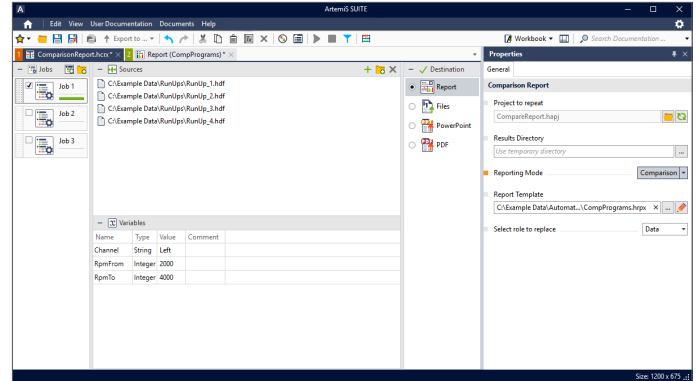
ASX 06 enables intervention in the signal flow and supports the use of custom analyses, filters, and data export within the Automation Project.

ASX 02 provides an interface to the remote control library. Automation Projects, including the processes they contain, can be controlled and integrated into existing workflows. In contrast to ASX 07, ASX 02 requires ArtemiS SUITE to be installed.

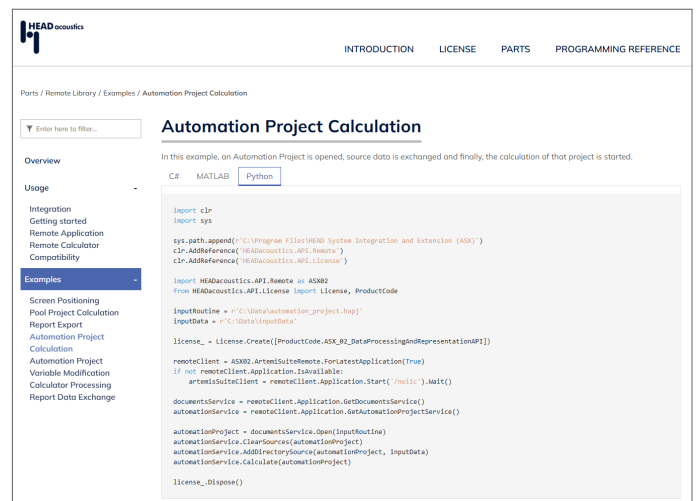
conTEST

conTEST enables the import of Automation Projects that have been stored as automation specifications.

Using standardized interfaces, conTEST can be quickly and seamlessly integrated into your test benches or production lines. Not only do you receive real-time data processing for 24/7 continuous operation, but also a comprehensive range of analyses and tools for your EoL quality testing.



Example of a Comparison Report Project for the processing of input data from an Automation Project, followed by the presentation of the results in a Report



ASX code example in Python: opening an Automation Project, exchanging input data, and subsequent processing



User interface of conTEST

LICENSES AND OPTIONAL FEATURES

Requirements

Code	Product Name	Description
50000	APR 000 APR Framework	Basis of ArtemiS SUITE
50050	APR 050 Automation Project	Core project of ArtemiS SUITE: one-time definition of the processing steps, followed by automated and repeated execution for all subsequent data

Optional Features

Code	Product Name	Description
50020	ASP 020 Report	Core 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 and interactive control of Automation Projects; ArtemiS SUITE must be installed
5096	ASX 06 Data Processing Add-In API	ASX Programming Interface: Use of custom-defined filters, analyses, and data exports in the Automation Project
5097	ASX 07 Local Processing Service	ASX Programming Interface: Execution of Automation Projects, for example, in End-of-Line processes, based on automation specifications (calculation jobs) without the need for ArtemiS SUITE to be installed
42000	CTM 000 Framework	Modular, AI-capable software for End-of-Line testing (EoL) and condition monitoring
42010	CTM 010 Post-Processing	Application of tools for OK/NOK classification.

All ArtemiS SUITE processes used—analyses, filters, functions—must be licensed

Further modules of ArtemiS SUITE (see *ArtemiS SUITE Overview data sheet*)



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