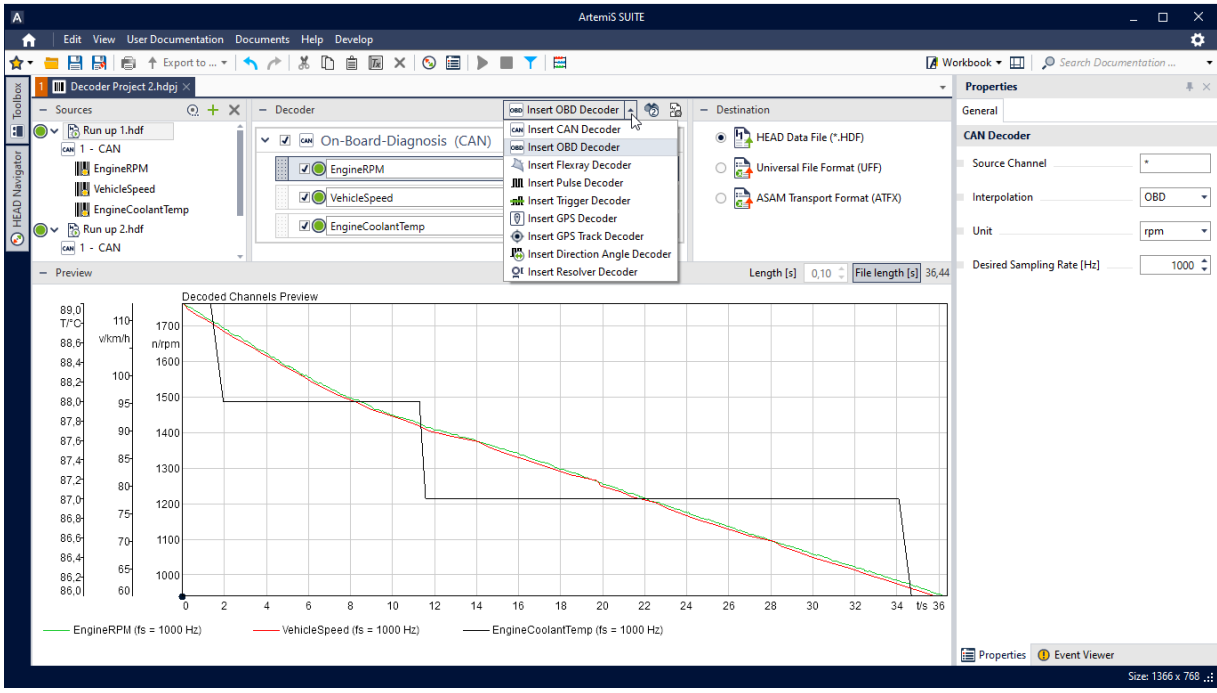
HEAD acoustics

DATA SHEET



ArtemiS SUITE
Signal Processing

Code 51801

ASP 801
Basic Decoder

Basic Decoder of ArtemiS SUITE enables to extract signals, such as CAN FD, CAN, OBD-2, FlexRay, navigation satellite system, pulse, and resolver, to store them as additional dedicated channels.

OVERVIEW

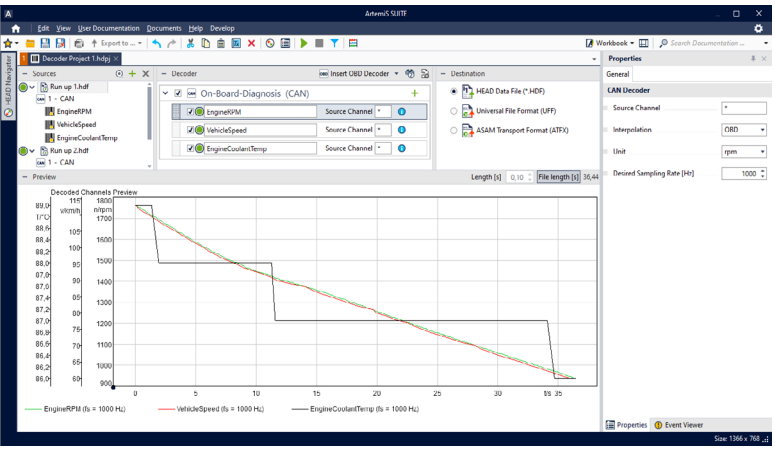
ASP 801
Basic Decoder

Code 51801

Basic Decoder enables users to extract CAN FD, CAN, OBD-2, FlexRay, navigation satellite system, RPM, and resolver signals from the existing data, for instance, for a visualization or for an analysis. The extracted data can be stored as dedicated channels in addition to the original data.

The structure of Basic Decoder with three pools arranged side by side is similar to that of a Pool Project. The left pool is used to collect the source files from which the desired signals shall be decoded. The configuration of the corresponding decoding instructions is performed in the middle pool via suitable decoder elements. In the right pool, users can then specify where and in which format the extended results shall be stored.

Additionally, a graphical preview is available below these three areas that enables for a fast visual checking of the decoding.



KEY FEATURES

Basic Decoder can be used to extract signals, e.g., recorded with the Recorder (APR 040 is required):

- CAN FD, CAN
- OBD-2, WWH-OBD incl.
- FlexRay
- GPS (navigation satellite system)
- Pulse
- Trigger
- Resolver
- Direction Angle
- GPS Track

Simultaneous use of multiple decoders

Easy usage of manufacturer-specific databases

Various configuration options for the extraction (sampling rate, measurement unit, etc.)

Visual control of the decoded signals

Status indicators for the expected results

Storing the decoders with custom settings

Graphical representation of a track history for use in Google Earth, for example

Basic Decoder can be embedded in Automation Projects (require APR 050) and Standardized Test Projects (require APR 220) to extract signals automatically in a processing chain

APPLICATIONS

- Easy and quick extraction of specific signals

DETAILS

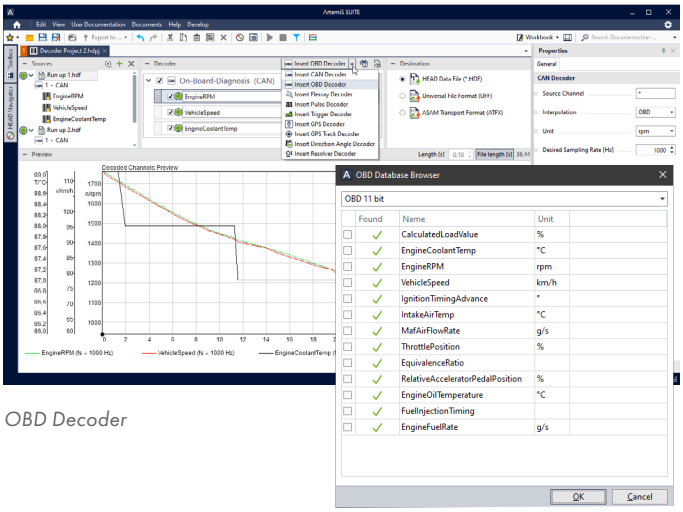
CAN FD, CAN, OBD-2, and FlexRay Decoders

To use a CAN FD, CAN, or FlexRay Decoder, it is sufficient to drag-and-drop the manufacturer-specific DBC, ARXML, or XML database (Fibex 3.0 or 3.1) into the Decoder Pool of a Decoder Project. A list of decodable signals is displayed, from which the ones to be decoded can be easily activated. The list can be filtered for a better overview.

A built-in database is available with Basic Decoder for all signals defined in the OBD-2 and the WWH-OBD standards.

For an interpolation and a smoothing of signals, a special smoothing algorithm for OBD-2 signals is available.

It is possible to add more decoding instructions to the selected ones or to duplicate existing instructions, e.g., in order to decode the same signal with different settings.



OBD Decoder

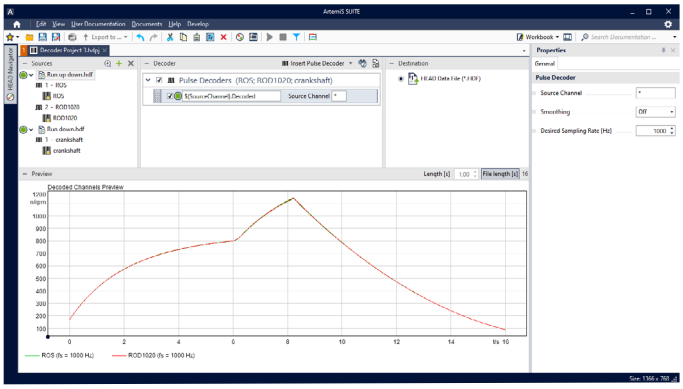
Pulse and Trigger Decoders

Preprocessed (decoded) revolution speed channels can be calculated from digital pulse channels (Pulse Decoder) or separate analog channels (Trigger Decoder). Different pulse patterns, such as equidistant pulses (with or without gaps), zebra tapes, and non-equidistant tooth arrangements are supported. Missing pulses are corrected automatically.

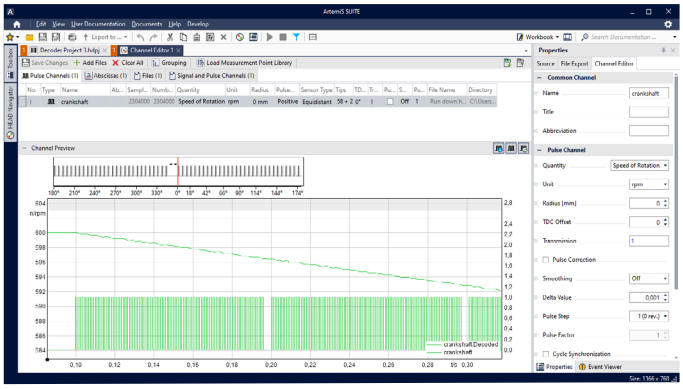
These channels can be used as simple control channels for analyses, as well as for torsional vibration analyses, provided that the source files contain a sufficiently high number of pulses per revolution with an accordingly high sampling rate.

By choosing a high target sampling rate, the signal can be optimally preprocessed for a subsequent torsional vibration analysis.

Furthermore, users can open the Channel Editor (included in APR 000) directly from within a Decoder Project in order to create a new pulse channel, for example.



Pulse Decoder



By means of the Channel Editor, the pulse sensor geometry specified for the particular channel can be edited and missing pulses can be added.

GPS and GPS Track Decoder

The GPS Decoder decodes the navigation satellite system information contained in a recording: speed, altitude, latitude, longitude, and time (via time stamp).

The GPS Track Decoder generates GPX or KML track files from the navigation satellite system information, which enables, for example, test drives to be displayed graphically in Google Earth.

Direction Angle Decoder

The Direction Angle Decoder enables users to create an analog channel with signed direction angle information from two or three digital pulse or trigger signals that are contained in the input data of a Decoder Project.

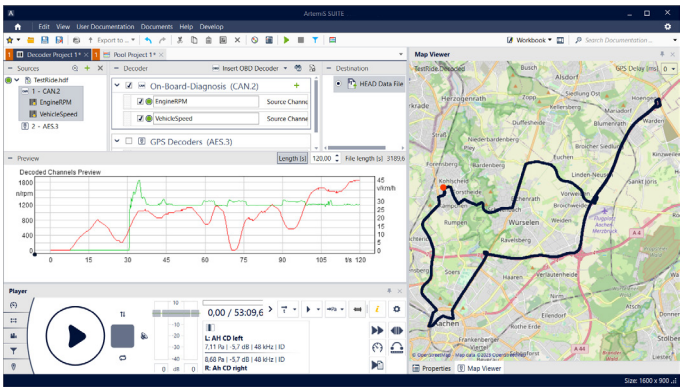
Digital pulses of sensors with an equidistant pulse sensor geometry have to be stored in the selected channels (A/B). The forward or backward information is encoded as time shift between both channels (quadrature encoding). The pulse sensor geometry of both sensors has to be identical. An optional third channel (Z) can be used to provide the pulse information for the determination of the actual start of each revolution (real 0° position).

Resolver Decoder

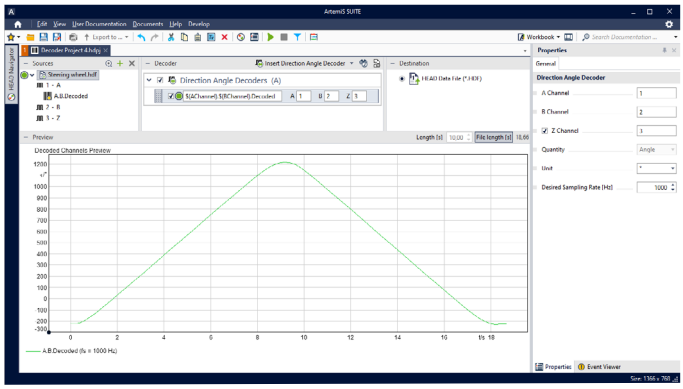
The Resolver Decoder can be used to generate an analog channel with speed of rotation, angle, or frequency information from two or three analog resolver encoder voltage signals (sin, cos, carrier). The decoded channel can be used, for example, as control channel.

Storing and export

A Decoder Project can be saved with all custom settings, so it can be re-used later with suitable input data. The decoded channels can be saved as HDF or ATFX files or exported to UFF (ASP 705 is required) and used for analyses, for example.



Example of a graphical representation of extracted navigation satellite system information in Google Earth.



Direction Angle Decoder

Required:

- **APR Framework (Code 50000) and/or: HEAD System Integration and Extension (ASX) programming interfaces**
- **Manufacturer-specific databases: DBC and ARXML for CAN FD and CAN – XML for FlexRay (Fibex 3.0 and 3.1)**

HEAD acoustics

Contact Information

Ebertstrasse 30a
52134 Herzogenrath, Germany
Phone: +49 (0) 2407 577-0
E-Mail: sales@head-acoustics.com
Website: www.head-acoustics.com