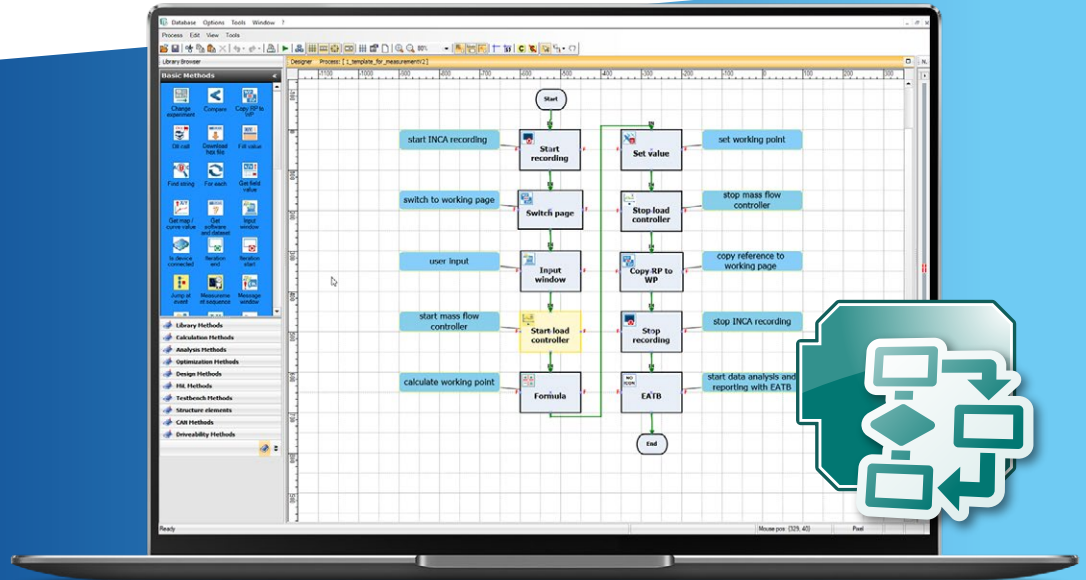


# Guided Calibration and Test Automation for ECUs

## INCA-FLOW

Optimization of complex calibration tasks without coding knowledge



### Areas of application

- For use in vehicle, on test bench, and in XiL (HiL, MiL, SiL) environments
- Automation of ETAS INCA
- Automated and guided calibration of ECU functions
- Validation and documentation of calibration workflows
- Standardization of calibration tasks
- On-line and off-line evaluation and analysis of measurement data

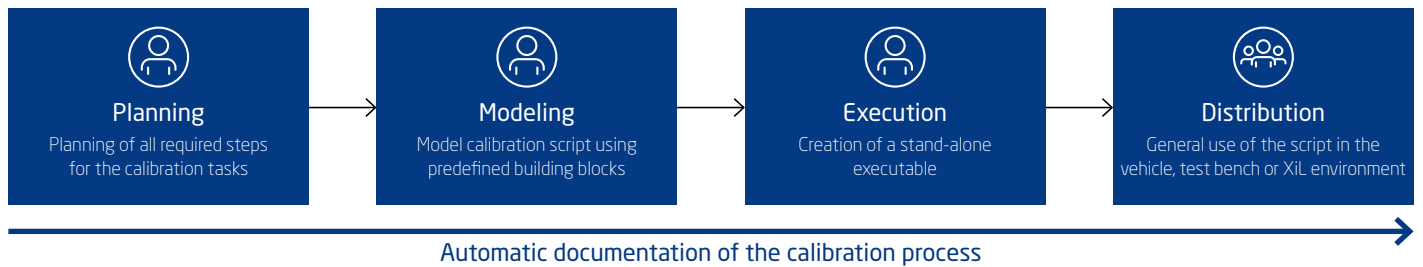
### Functions

- Graphical editor for intuitive modeling of calibration tasks
- Built-in libraries for common and customer-specific model building blocks
- More than 200 ready-to-use calibration methods
- Automated documentation of calibration routines
- Creation of stand-alone executables
- Interfaces to the ETAS toolchain and third-party tools

### Benefits

- No coding knowledge required
- Excellent reproducibility of calibration results
- Increased calibration efficiency and quality
- Reduced user errors
- Reduced calibration workload
- Faster onboarding of new calibration engineers into existing workflows
- Comparability of goals and timelines across projects

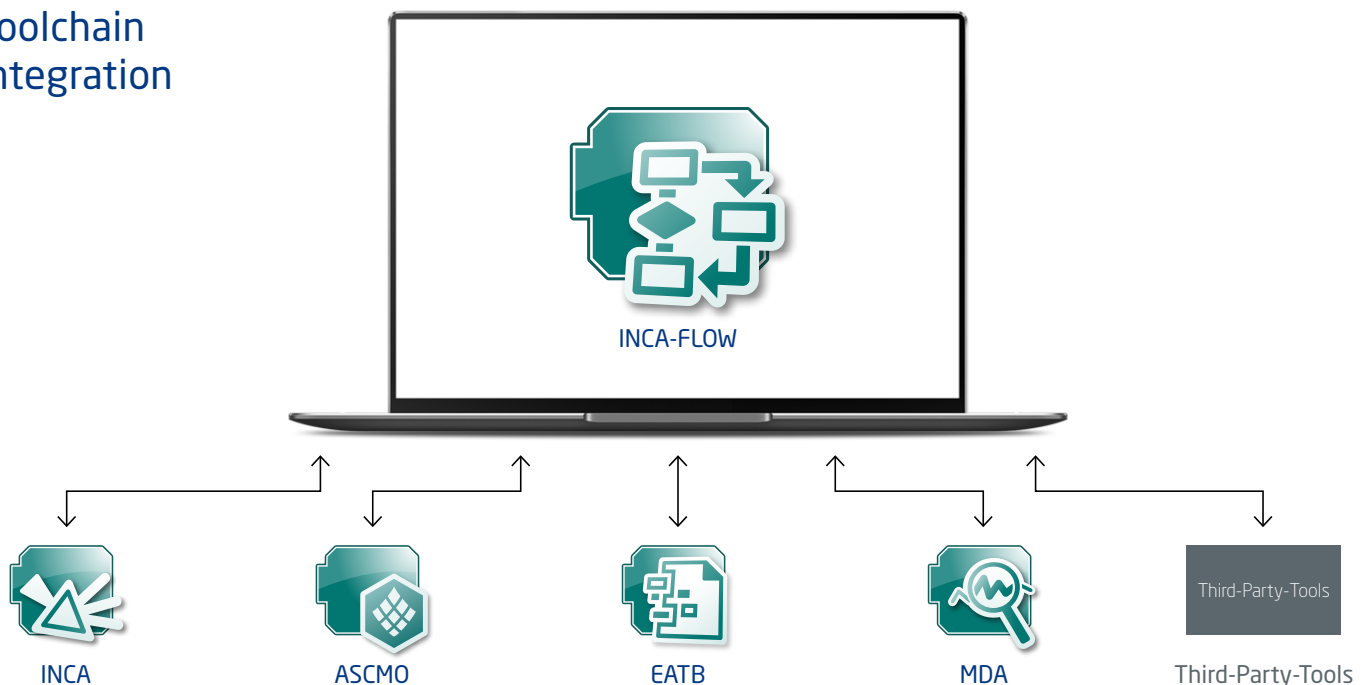
## Workflow



INCA-FLOW helps to automate repetitive and manual steps in the calibration process. The calibration tasks can be prepared at the desk with a graphical editor and no in-depth coding knowledge is required. During the execution, INCA is controlled by INCA-FLOW and it guides the engineer or operator through

the calibration process. The created INCA-FLOW executable also serves as documentation to others. This approach leads to an increased efficiency, reduced time in the vehicle and on the test bench, and reproducible, high quality results.

## Toolchain Integration



**INCA-FLOW and INCA:** Enables the automation of ETAS INCA for ECU access, signal measurement and calibration of ECU parameters.

**INCA-FLOW and ASCMO:** Enables the automation of ASCMO applications for data-driven modeling, model-based calibration and (online) DoE.

**INCA-FLOW and EATB:** Connect to Enterprise Analytics Tool-box (EATB) for automated analysis of measurement data and report generation.

**INCA-FLOW and MDA:** Enables the automatic creation of MDA configurations (.xda) for traditional measurement data analysis.

**INCA-FLOW and Third-Party-Tools:** Connect to third party tools like ATI-Vision, MS-Excel, MATLAB® or CMS.