

iARGUS-CMD

Traffic Scenario Planning, Verification, Execution & Visualization Software
for operating automated Vehicles on the Proving Ground
within the iSWACO-ARGUS Proving Ground Instrumentation & Automation

iARGUS-CMD gives the operator the unmatched flexibility to generate and execute repeatable as well as individual tests within real emulated traffic scenarios for vehicle homologation as well as for validation of sensors like radar, lidar, cameras etc.

The **iARGUS-CMD** software, installed on the iARGUS-CC Control Center of the **iSWACO-ARGUS** system, is used to plan, to verify and to monitor the trajectories of all participating moveable objects (vehicles, soft crash targets) on the proving ground.

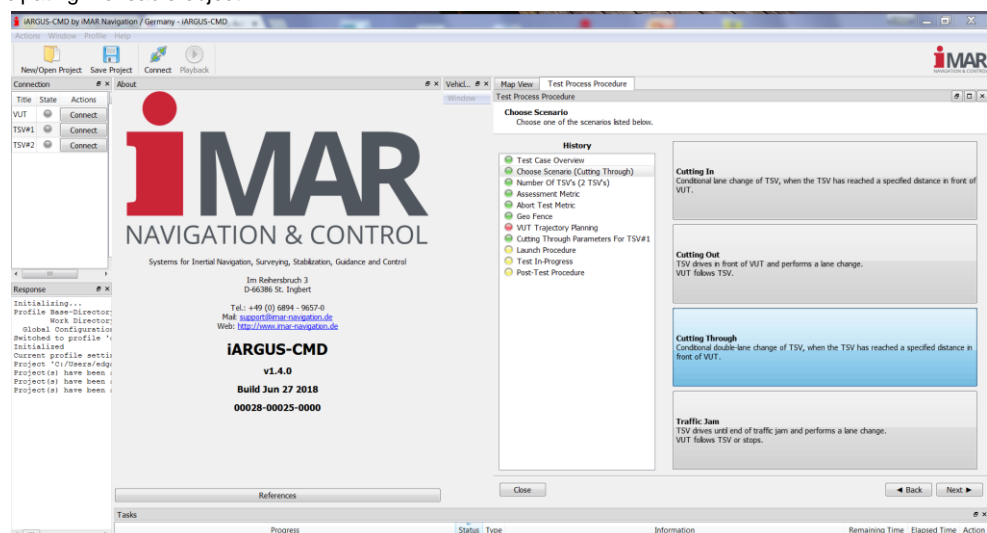
- Traffic scenario definition and trajectory planning and generation for each participating moveable object.
- Execution and supervision of the traffic scenario
- Simultaneous support of several Traffic Simulation Vehicles (TSV) and Soft Crash Targets (SCT) together with Vehicle under Test (VUT) within the same traffic scenario.
- Availability of definable launch procedure and post-test procedure to guide all vehicles into the test and to guide them automatically back to a defined position after the test has finished.
- Definable Assessment Metric and Abort Test Metric to qualify the test result and to abort the test in case of unwanted situations
- Geo Fence definable to suppress driving of the driverless vehicles outside the allowed area
- Test visualization in real-time
- Optional data import from simulation environment (Open-Scenario or any other, tbd [under development]) and data export of vehicle coordinates over time as CSV or binary file.
- Communication protocol fully compatible with the future ISO 22133-1 standard
- iSWACO-ARGUS is also aligned to the latest results of the German **PEGASUS** project.
- iARGUS-CMD is integral component of iMAR's **iSWACO-ARGUS** system for enhanced Proving Ground Automation

iARGUS-CMD furthermore performs the download of the planned scenarios to the vehicles and to the ISEs

(Infrastructure Elements), like **TSV-KIA-NIRO** as TSV, any arbitrary Vehicle under Test and traffic lights, wind generators, rain machines etc. as ISE, and controls the execution of the entire test scenario in real-time.

The iARGUS-CMD provides standard maneuvers as default beside of definable customized scenarios:

- Cutting In: Conditional lane change of TSV, when the TSV has reached a specific distance in front of the VUT
- Cutting Out: TSV drives in front of VUT and performs a lane change. VUT follows TSV



- Cutting Through: Conditional change over two lanes of TSV, when the TSV has reached a specific distance in front of the VUT
- Traffic Jam: TSV drives until end of traffic jam and performs a lane change VUT to follow the TSV or to stop (whatever the VUT is intended to do in its automated mode)
- Nearly any arbitrary scenario like crossing with SCT etc.

iSWACO-ARGUS is the solution for the verification of the safety relevant features of highly automated and fully automated driving vehicles. It covers all SAE levels, i.e. from level 0 "hands on" up to level 5 "optional wheel", with a single test infrastructure, operable on the proving ground as well as on public roads.

