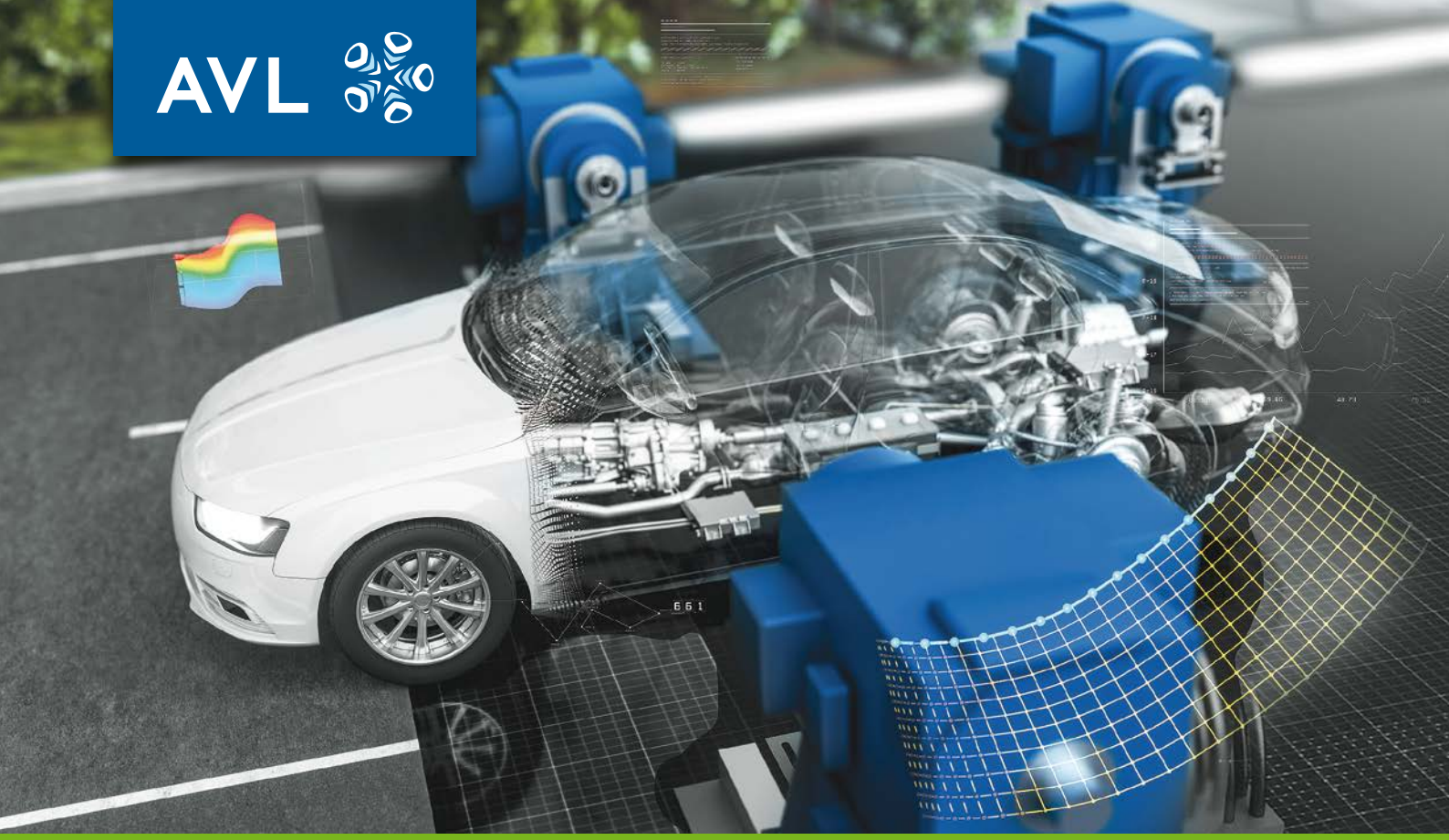


ADVANCED CALIBRATION FOR DRIVEABILITY

Be earlier, faster, cheaper and better in your process

THE CHALLENGE

Today, calibration engineers face a steeply rising complexity and interdependencies of functions (number of calibration parameters, drive modes, components in the powertrain), as well as increasing pressure on quality and efficiency.

Multi-dimensional optimization of calibration parameters (including finding the best compromise for competing targets) as well as the documentation and validation of calibration results in the whole operation range have become more and more important and costly.

THE AVL SOLUTION

"Advanced Calibration for Driveability" (ACD) is an integrated solution which includes following characteristics:

- Flexible usage of different test environments
- Integrated tool chain and methodology
- Full traceability of calibration procedure and results
- Easy, flexible and universal utilization for various tasks
- Maximum degree of test automation (minimize testbed a prototype utilization)

Benefit from decades of experience – use AVL's engineering services in-house or on AVL facilities or implement the tool chain directly in your development landscape.

THE ADDED VALUE

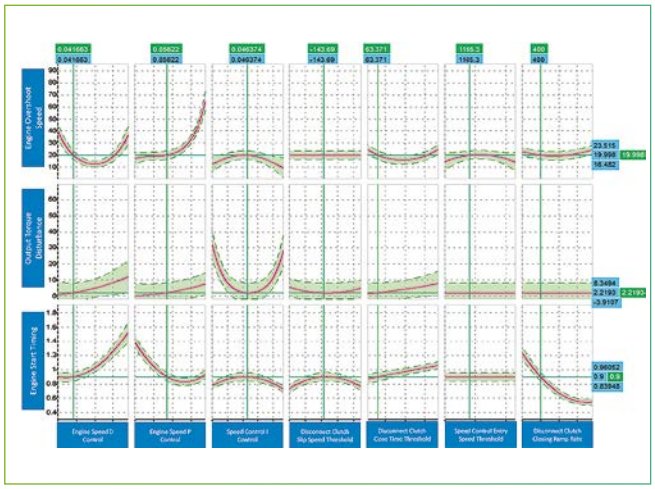
- 3 times faster maneuver execution (customer feedback)
- Minimized testing duration & prototype utilization via 24/7 testing capabilities with intelligent test planning and focus on test-relevant events
- 3 times reduced number of measurement points by use special DoE adapted to dynamic optimization
- Highest reproducibility & repeatability by usage of seamless execution of maneuvers in different working environments
- Increase security – shift of safety critical maneuvers from test track to test facilities
- Integration into customer process and evaluation of customer benefits (time-costs-quality) considering the specific boundary conditions of every customer

SOLUTION OVERVIEW

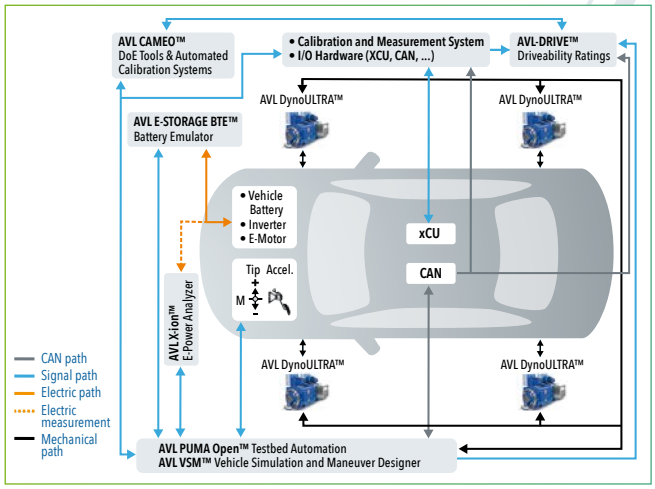
HOW DOES IT WORK?

AVL's CONNECTED Toolchain "Advanced Calibration for Driveability" (ACD) enables to calibrate driveability tasks in earlier process stages due to a powerful methodology and tool chain, combined with flexibility in choosing working environments and application know-how, drawn from years of experience.

EXAMPLE: Hybrid calibration

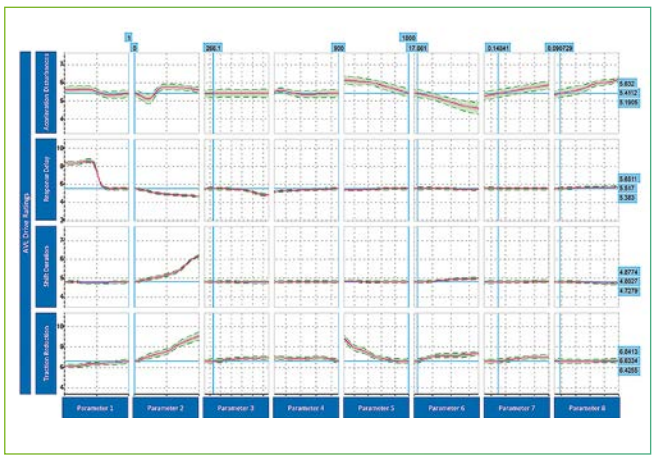


Intersection plot and modelling graphics for target engine speed calibration using 7 calibrations parameters

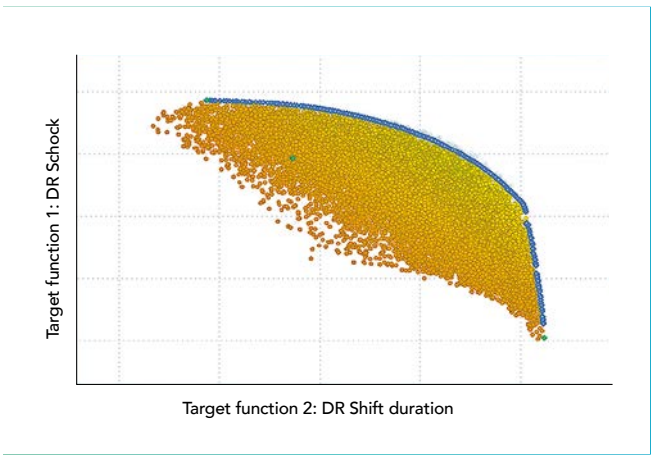


ACD Toolchain on Powertrain Testbed (toolchain also available for different testbed types e.g. chassis dyno testbed)

EXAMPLE: Transmission calibration



Intersection plot for optimization of Tip-in down shifts using 8 calibrations parameters



Pareto front plot for finding compromises between competing targets (e.g.: shock & shift duration) – traceable & efficient drive mode calibration

FIND OUT MORE:

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