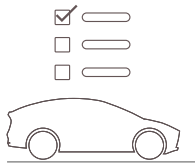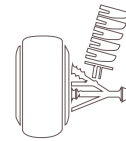# TCT | TARGET CASCADING TOOL

The TCT tool is an independent software tool that has been designed to simplify the vehicle dynamics development work by overcoming CAE process limitations, even for engineers with no CAE experience.

## PERFORMANCE TARGETS

TCT | VD TOOLS

CHASSIS SPECIFICATION

Vehicle dynamics simulation is paramount to cut development times. However, most simulation processes have the following limitations:

⊗ Complexity: they require a high level of simulation background

⊗ Lack of specific chassis development knowledge: they have no pre-defined scenarios, metrics and process

⊗ Lack of integrated optimisation algorithms: they can't be used to automatically generate chassis specs

✓ On the contrary, the TCT is designed following a well-thought engineering workflow and including a simple and clear user interface that allows the user to create the link between performance targets and component specifications.

KEY FEATURES

✓ Optimised UX based on engineering workflow

✓ Ride and handling targets definition

✓ Complete vehicle and chassis components modelling

✓ Simultaneous optimisation of ride and handling performance

✓ Suitable for target cascading and chassis tuning support
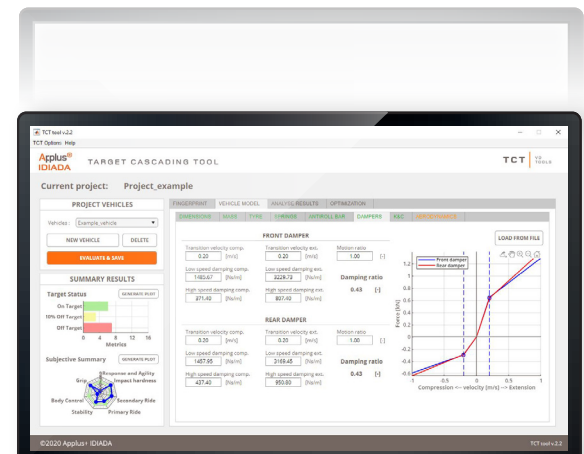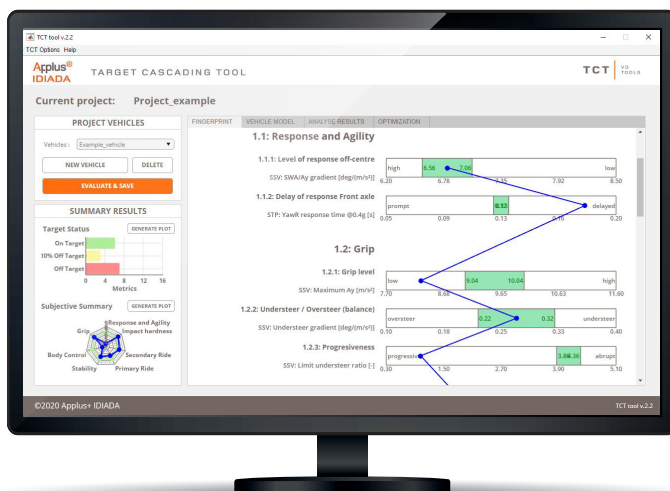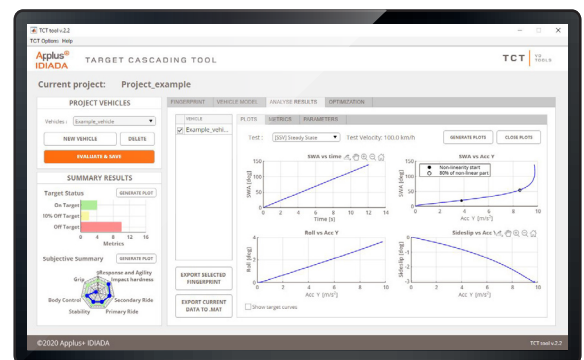
SCENARIOS

Essential yet complete set of driving scenarios to evaluate the vehicle dynamics behaviour in a very effective way.

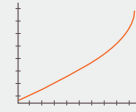All scenarios are natively implemented and can be run with just one click.

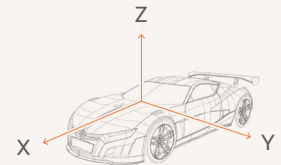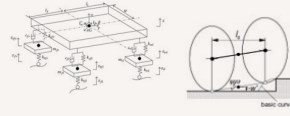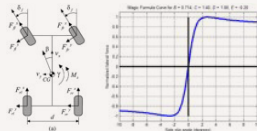| Long Bump	Impact	Rough road	Steady state	Step steer
Primary ride Body control	Impact comfort	Secondary ride Road holding	Steady state lateral dynamics	Transient lateral dynamics
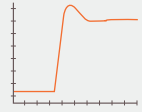
VEHICLE MODEL

Matlab-based, 10 DOF model, validated against complex MBS models and test data.

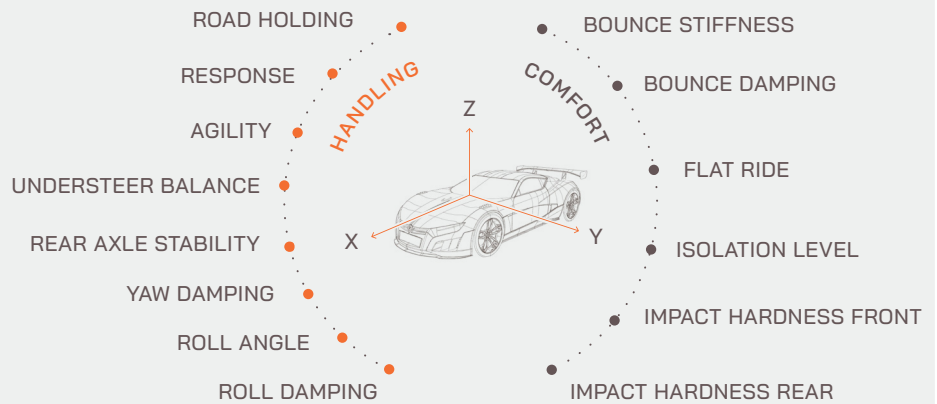Z
X   Y

LATERAL DYNAMICS

3 DOF vehicle model
MF tyre model

VERTICAL DYNAMICS

7 DOF vehicle model
Enveloping tyre model

COUPLED MODEL
10 DOF

METRICS

The data related to each scenario are automatically post-processed in order to generate a total of 14 metrics, each related with one specific subjective item.

ROAD HOLDING
RESPONSE
AGILITY
UNDERSTEER BALANCE
REAR AXLE STABILITY
YAW DAMPING
ROLL ANGLE
ROLL DAMPING

HANDLING

Z
X   Y

COMFORT

BOUNCE STIFFNESS
BOUNCE DAMPING
FLAT RIDE
ISOLATION LEVEL
IMPACT HARDNESS FRONT
IMPACT HARDNESS REAR

OPTIMISATION

Select any of the available model parameters and run a complete optimisation to get a set of vehicle chassis configurations that fulfill your targets.
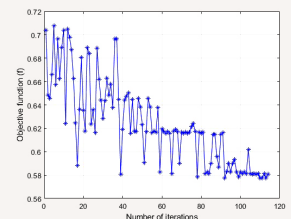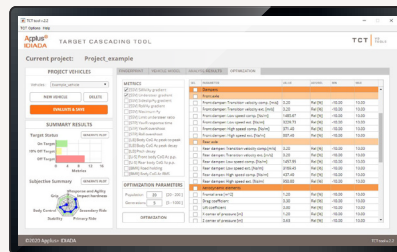
CONTACT INFORMATION

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