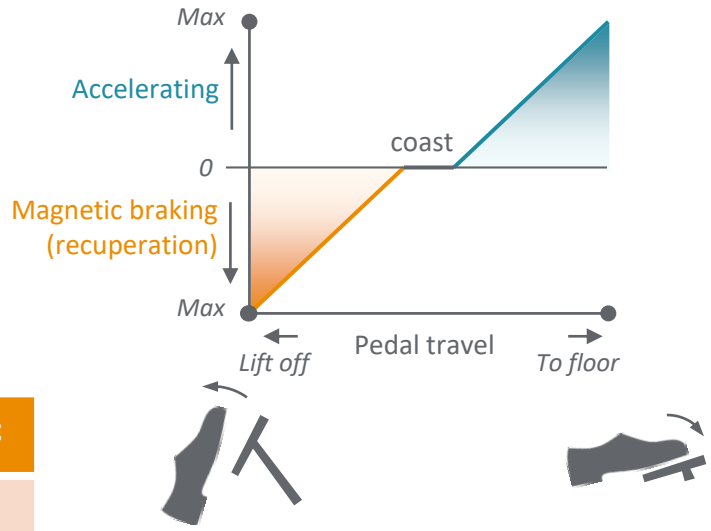
tracetronic
GUIDING YOUR VISION

Test case development with ECU-TEST

Training example: Electrified vehicle

This electrified vehicle has an automatic transmission with two different driving modes:

1. “D” – feels like the normal drive mode in a conventional car
2. “E” – “One pedal driving”: the driver can control the vehicle with only the accelerator pedal; recuperation is at maximum



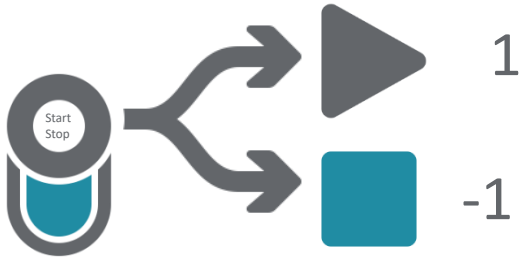
Parking	Reverse	Neutral	„D“rive	„E“lectric
0	1	2	3	4

Training example: Electrified vehicle

The Starter Button of the vehicle has a special logic and distinguishes between starting and stopping the vehicle depending on the current state.

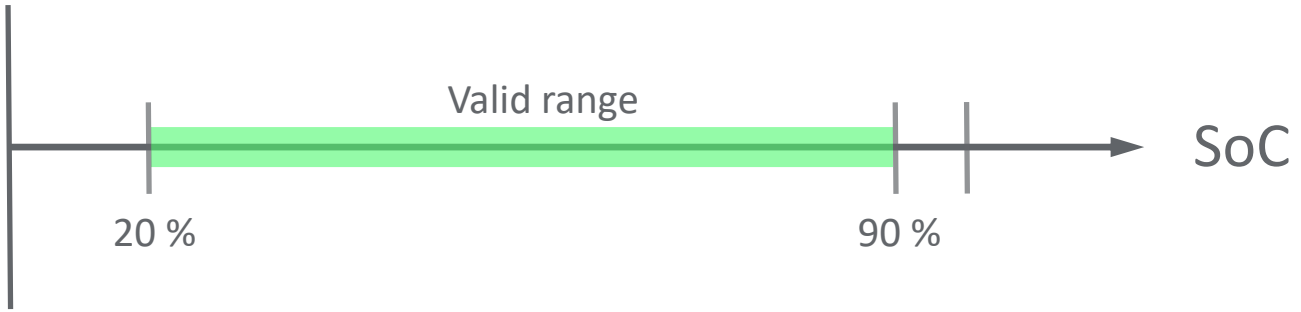
Start: Writing a 1 to the Starter Button signal

Stop: Writing a -1 to the Starter Button signal



Training example: Electrified vehicle

- The (physical) state of charge (SoC) of the battery must be between 20 % and 90 % in all test cases.
- Outside this range normal operation is not guaranteed.



Test case development with ECU-TEST

Hey Mr. Tester!
The new electrified car has been developed further. As your first test case was very helpful, we would like you to help us with more tests.
Here is a spec for “BasicDrive” for you!

YOU

- Specification_TestCaseDevelopment.xlsx
  - BasicDrive Spec

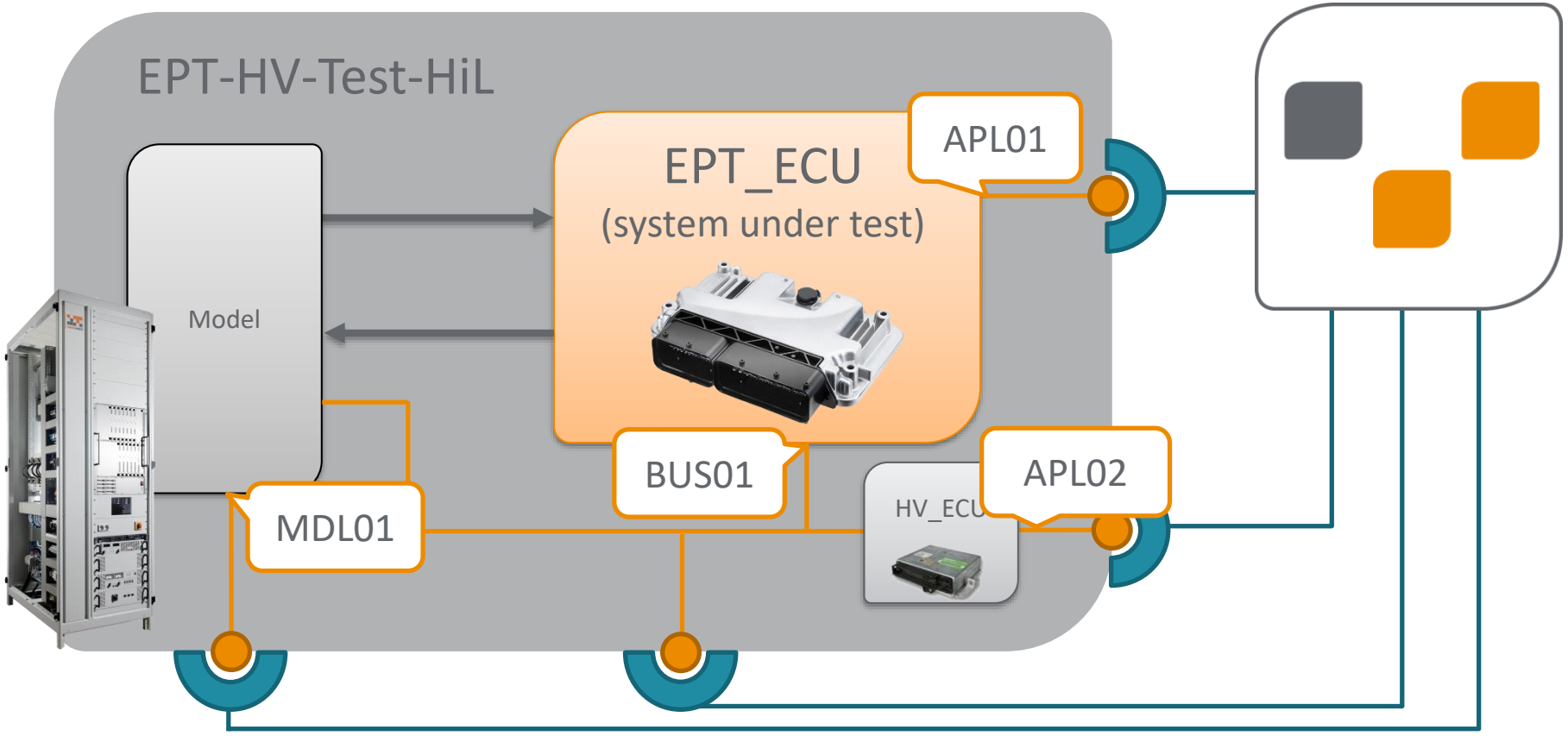
Exercise – On your own!

Test case development – given test spec

- Analyze the given test specification and answer the following questions:
  - Do you need to adapt your configurations?
  - If yes, how and why?
  - What is a main difference between your own test spec and the given one?

Example system under test and test bench

HiL for electrified vehicle



Exercise – On your own!

Test case development – adapt configurations

- Open the given test bench configuration, select it and check the differences to the prior one.
- Open the previously created test configuration.
- Change the used MODEL.
- Add the required BUS access.
- Add the missing ECU access.
- Save your new test configuration as “SW_Ver_1.tcf”, select it and start your configurations.

Files to use

Testlab_HiL.tbc
(EV_HiL_start.tbc)
SimpleModel.tcf
EV_HV_HiL.sdf
Electric_V1.DBC
Battery-Control.a2l

Exercise – On your own!

Test case development – advanced test case

- Create a new “precondition-action-postcondition”-package.
- Implement the test case described in the given test spec.
  - Use the given access points for reading and writing values.
  - In order to check the velocity from three different sources, you can use the test step “Multi-Check”.
- Identify possible repeating sequences in your test case.