

The HEADSTART procedure for testing and validating

Procedure pipeline definition

Introduction

- This work is part of the HEADSTART (Harmonised European Solutions for Testing Automated Road Transport) project, which is funded under the Horizon 2020 Framework Programme
- The focus of this task was to create a procedure for validating driving functions regarding their safety performance

Approach

- The HEADSTART methodology was transformed into a process, divided into different phases and then formulated as a procedure
- The three HEADSTART Key Enabling Technologies (KETs) were included in the process (V2X communication, Positioning, Cyber Security)

Process

- Scenario Selection:** select, extract and rank scenarios from a scenario database
- Scenario Allocation:** assign the scenarios to the testing methods comparing the requirements of the scenarios and the capabilities of the testing
- Testing:** execute tests (proving ground tests, virtual tests, XiL tests, field tests)
- Evaluation:** analyse and combine the test results and compare them with the defined Key Performance Indicators (KPIs).

High-level process

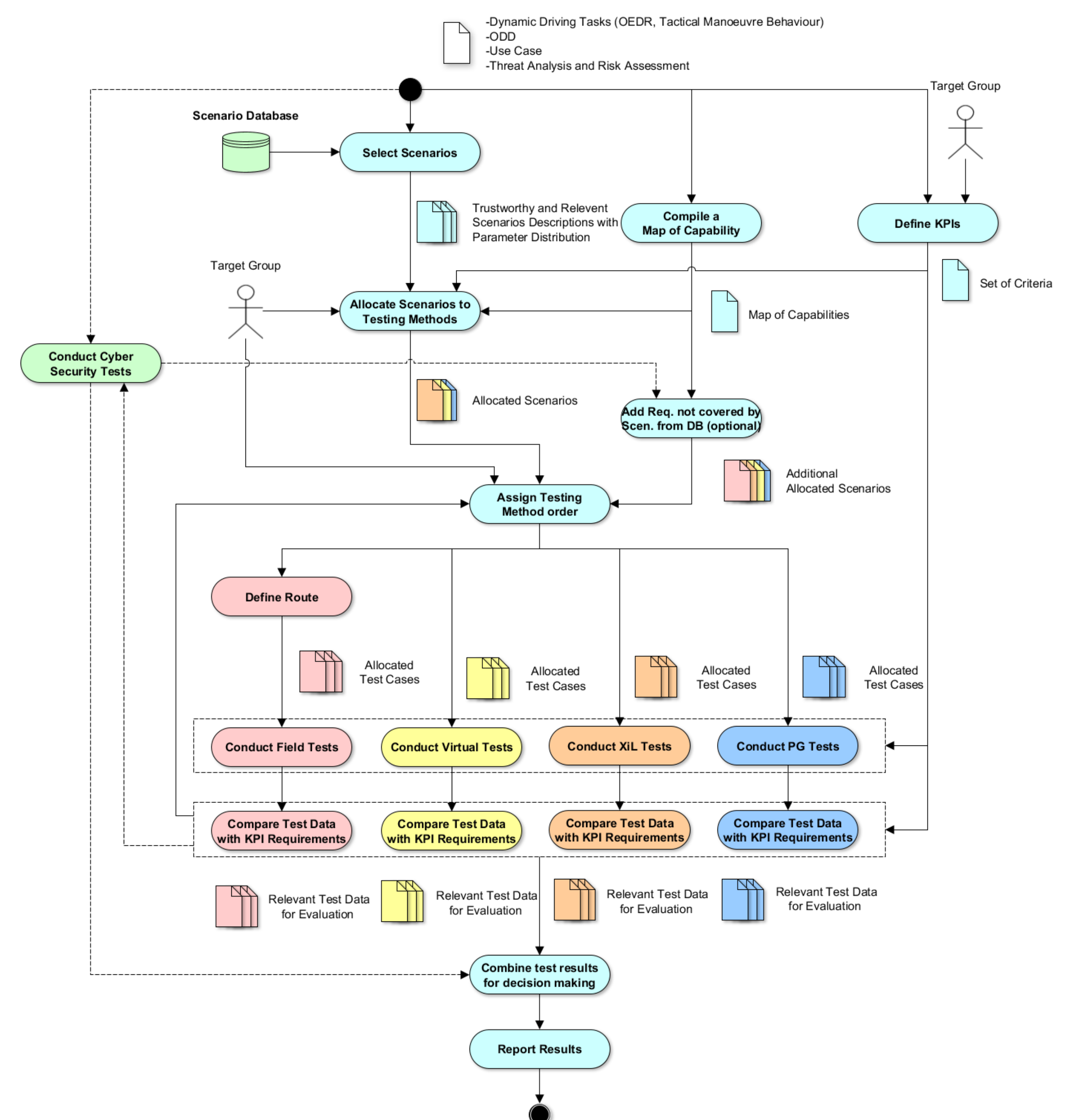


FIGURE 1: HIGH-LEVEL REPRESENTATION OF THE PROCESS

Conclusion

- Transformation of the HEADSTART methodology into a procedure for testing, validation and certification of CAD functionalities
- Integration of KETs into the process steps: Communication and Positioning were mostly integrated into the main process; Cyber Security had to be dealt with in a separate branch

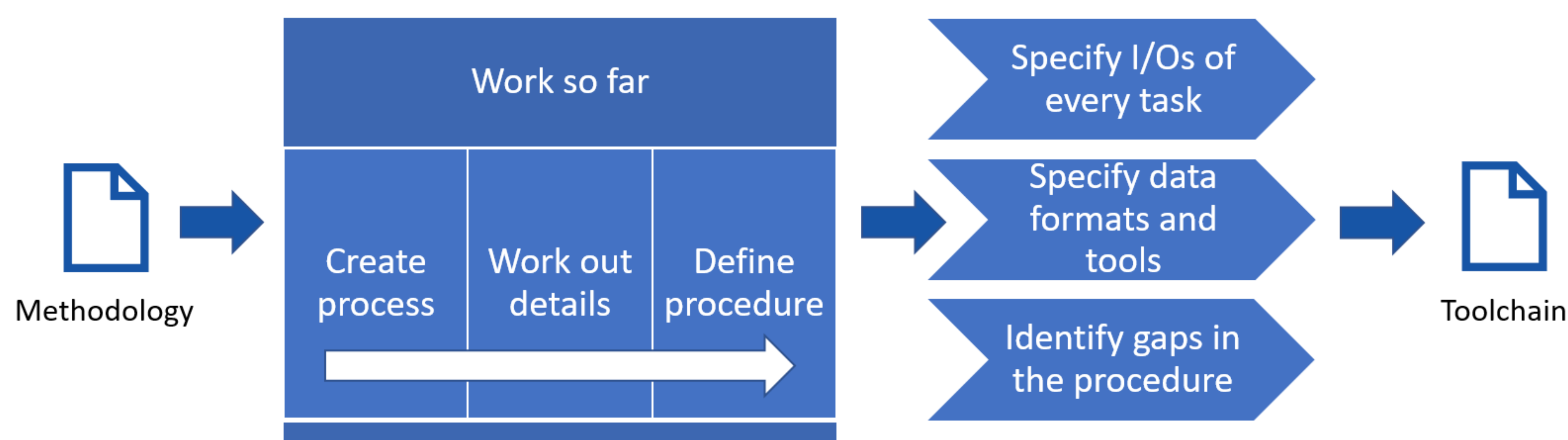


FIGURE 2: WORKFLOW FROM METHODOLOGY TO TOOLCHAIN