

VERIFICATION
VALIDATION
METHODS

Final Event 21 / 22 November 2023

Test Orchestration – The way to Seamless Testing

Martin Dörr, ZF

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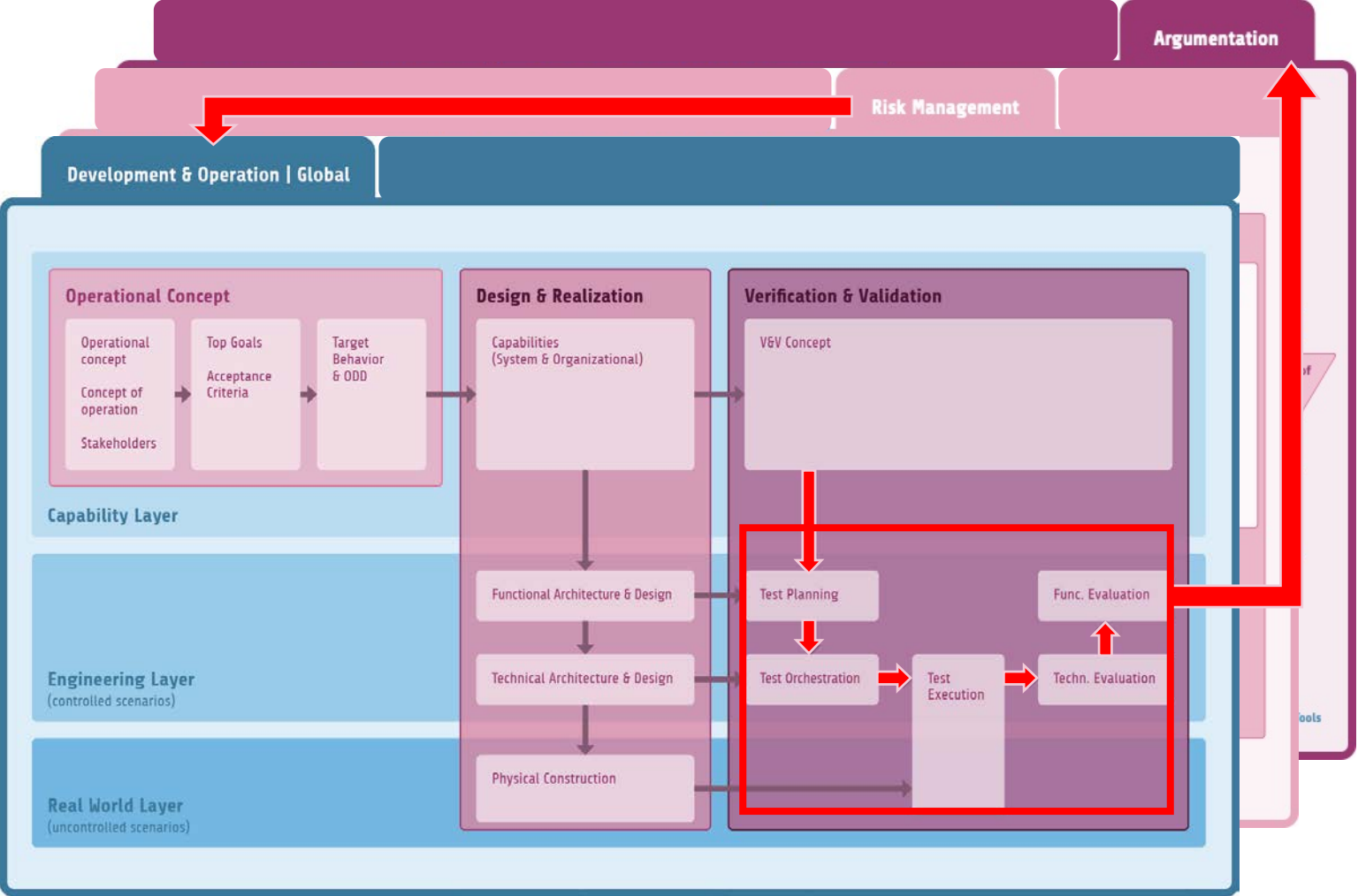
on the basis of a decision
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Agenda

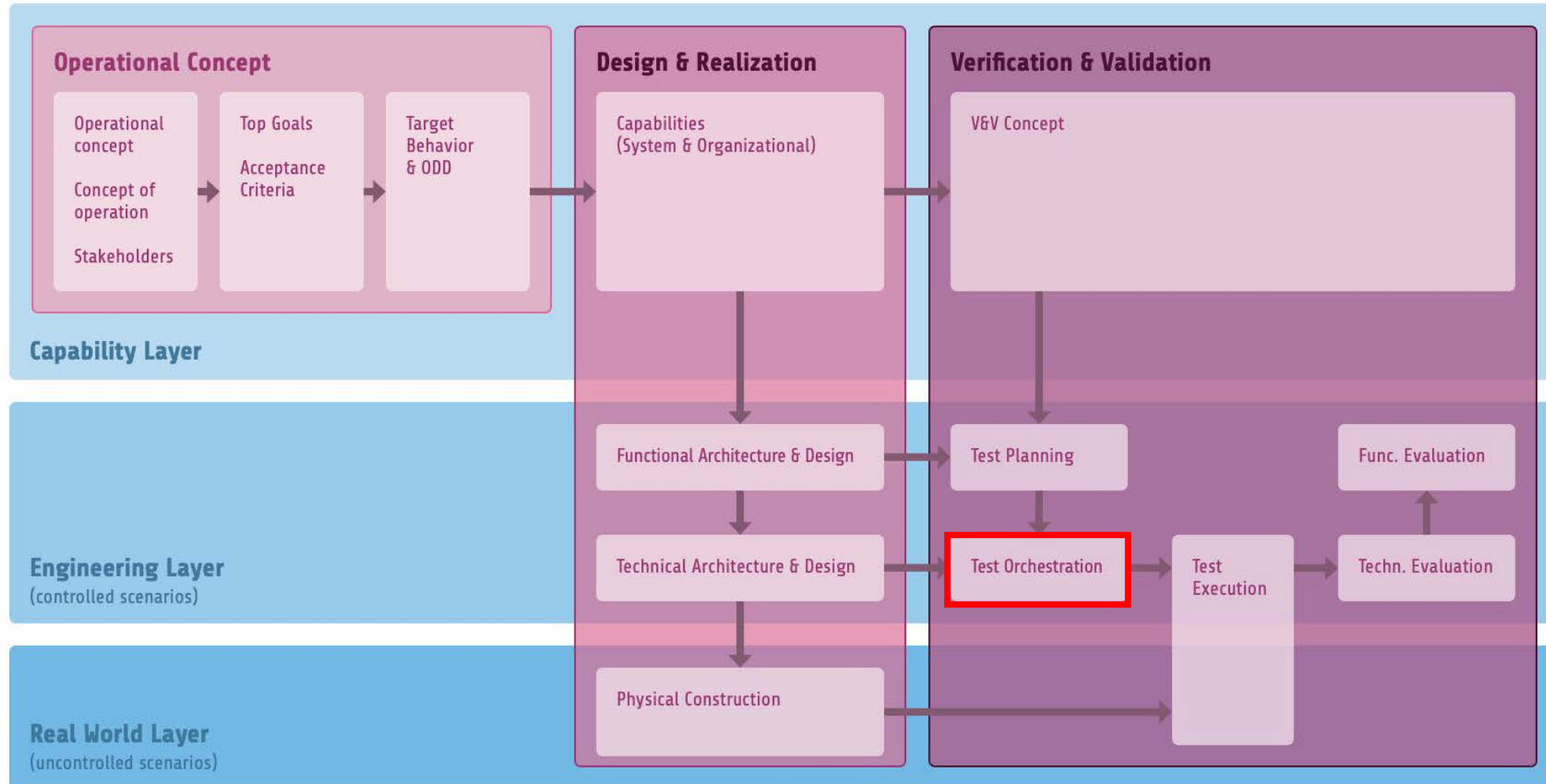
- ▶ Test Orchestration within the Assurance Framework
- ▶ Test Orchestration – Process & Methods
- ▶ Test Execution
- ▶ Test Evaluation
- ▶ Summary

Test Orchestration within the Assurance Framework

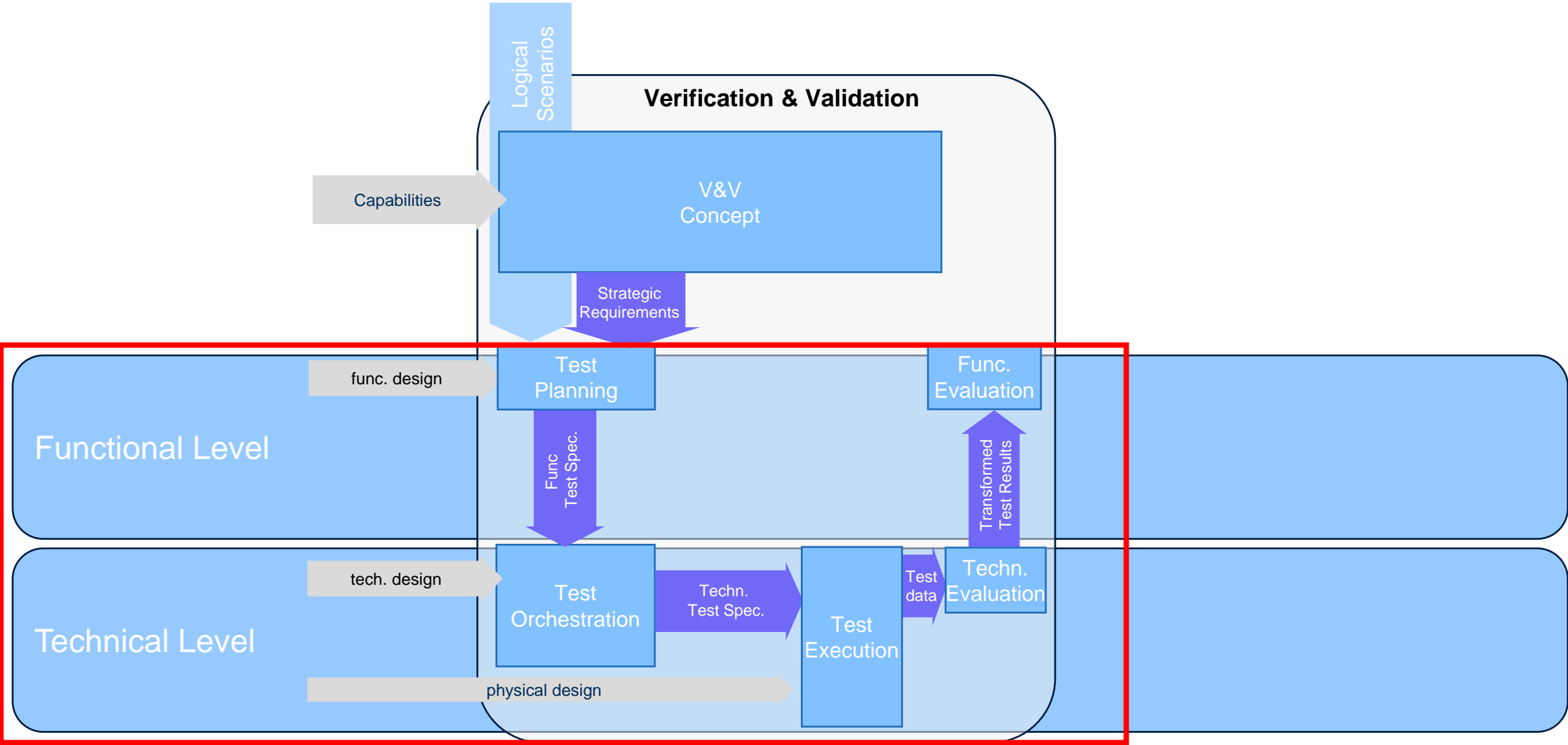
Test Orchestration within the Assurance Framework

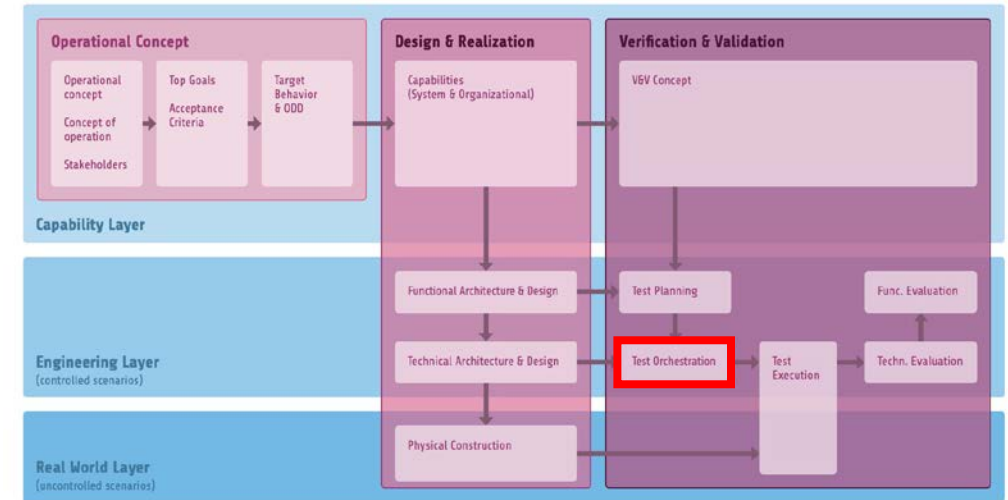


Test Orchestration within the Assurance Framework



Test Orchestration follows Test Planning





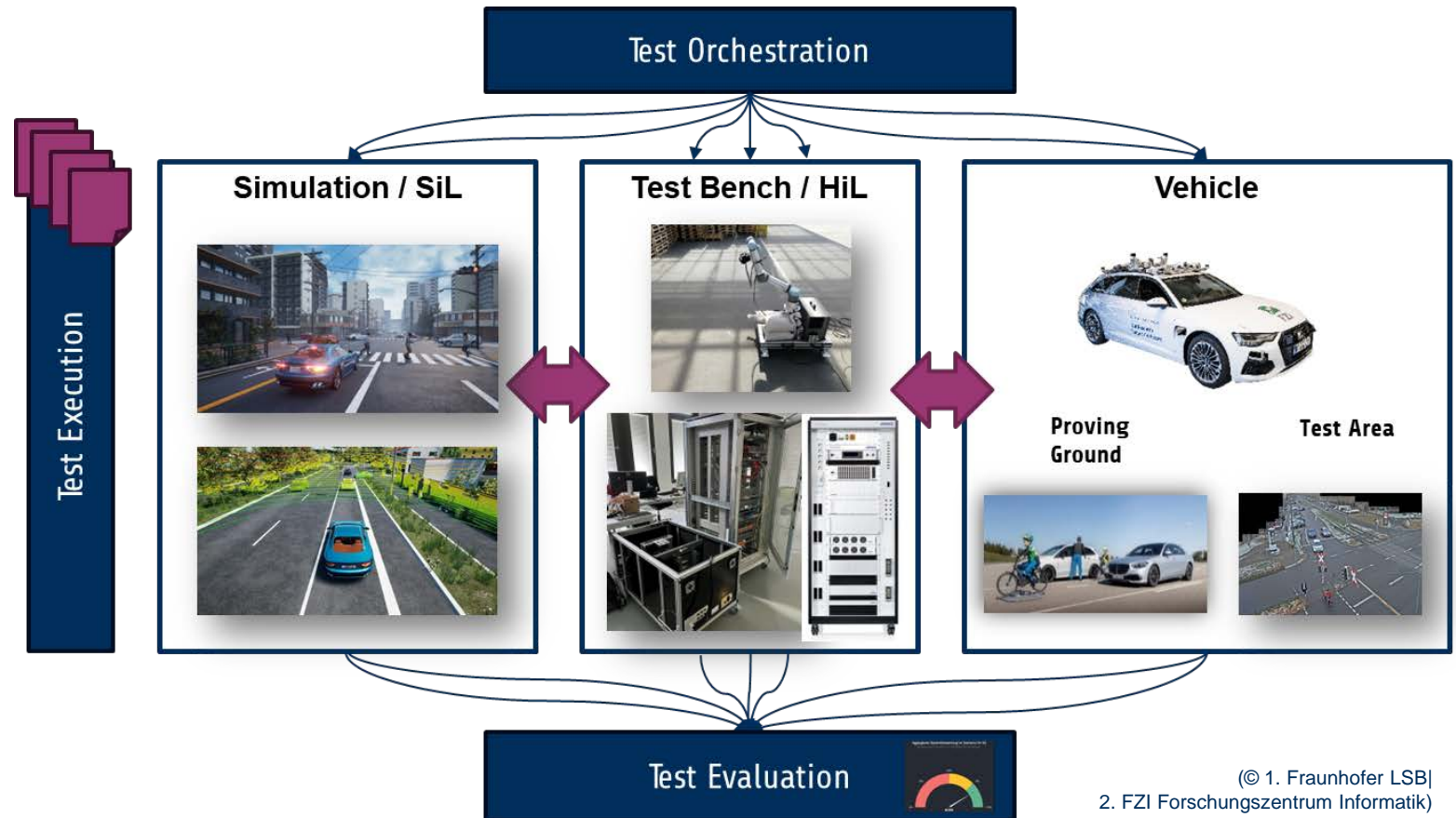
Test Orchestration – Process & Methods

Goal of the Test Orchestration

The goal is to generate technical test specifications that distribute test cases to test instances on the different available test platforms.

Seamless Testing must be realized:

- Complementarity
- Efficiency
- Reuseability
- Consistency
- Flexibility

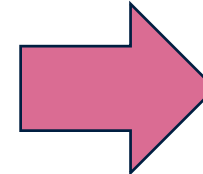
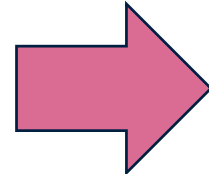


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Input from Test Planning

Functional Test Specification

Functional test object
Functional measured variables
Environment (Scenarios)

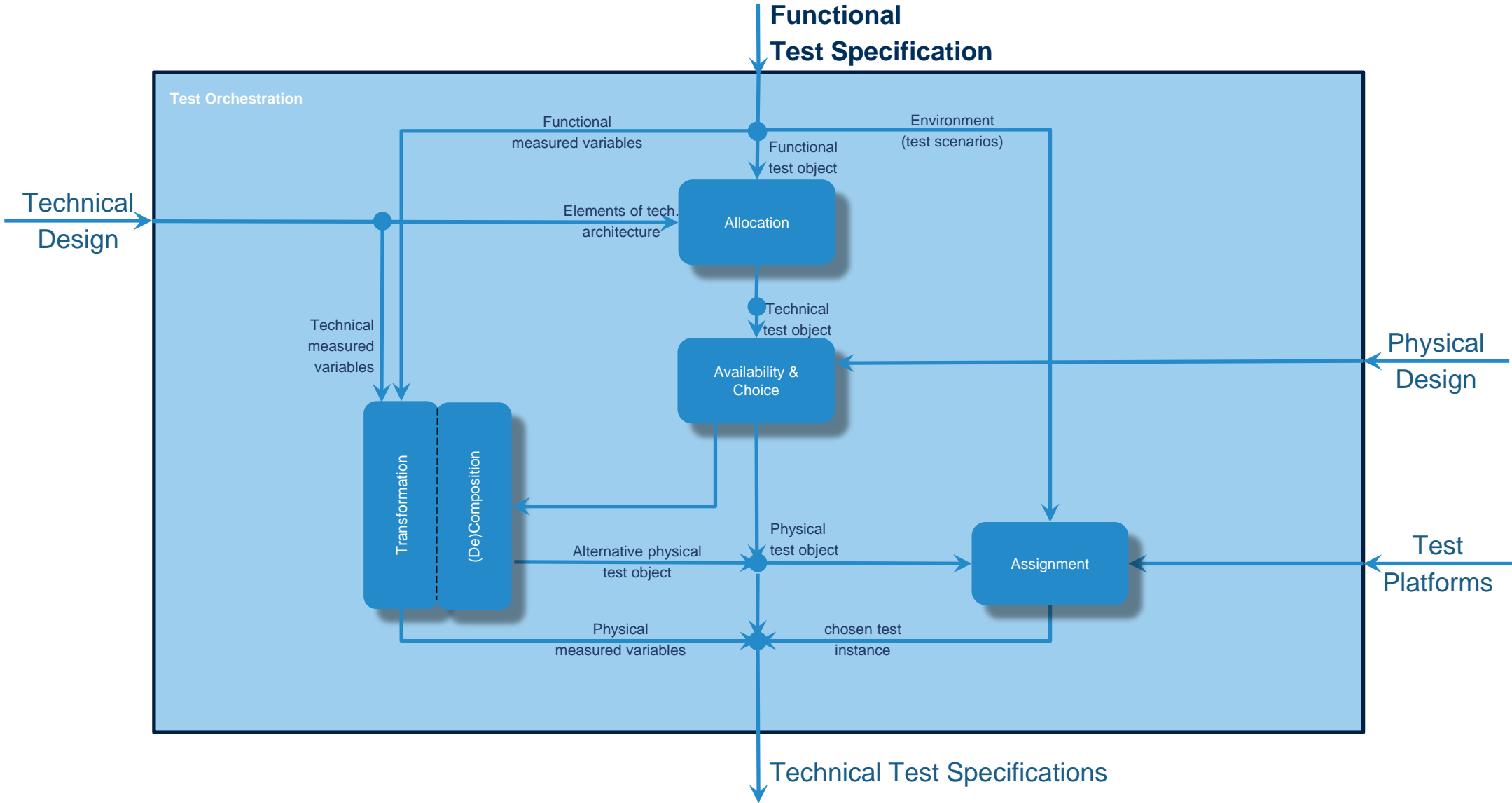


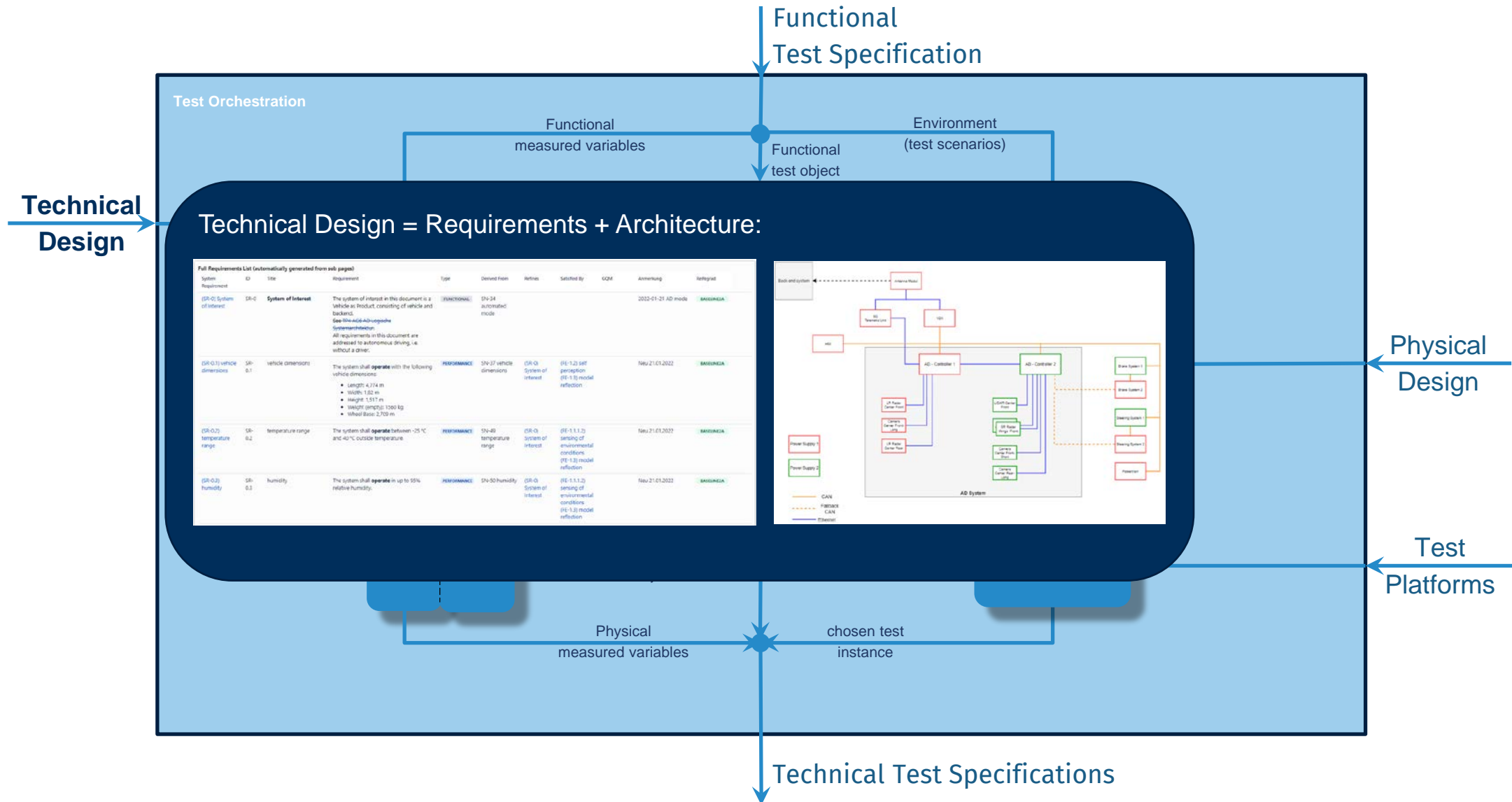
Output to Test Execution

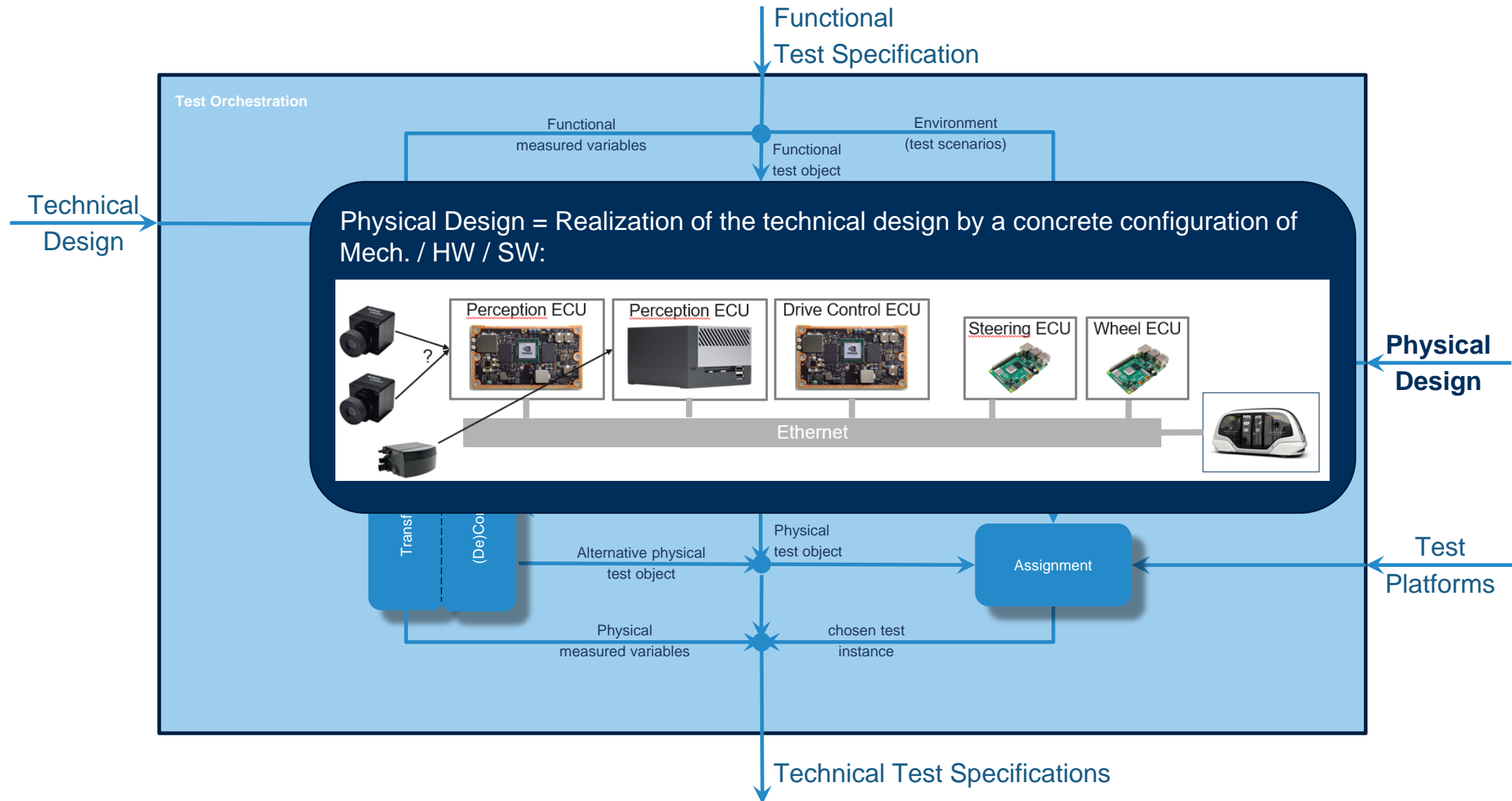
Technical Test Specifications

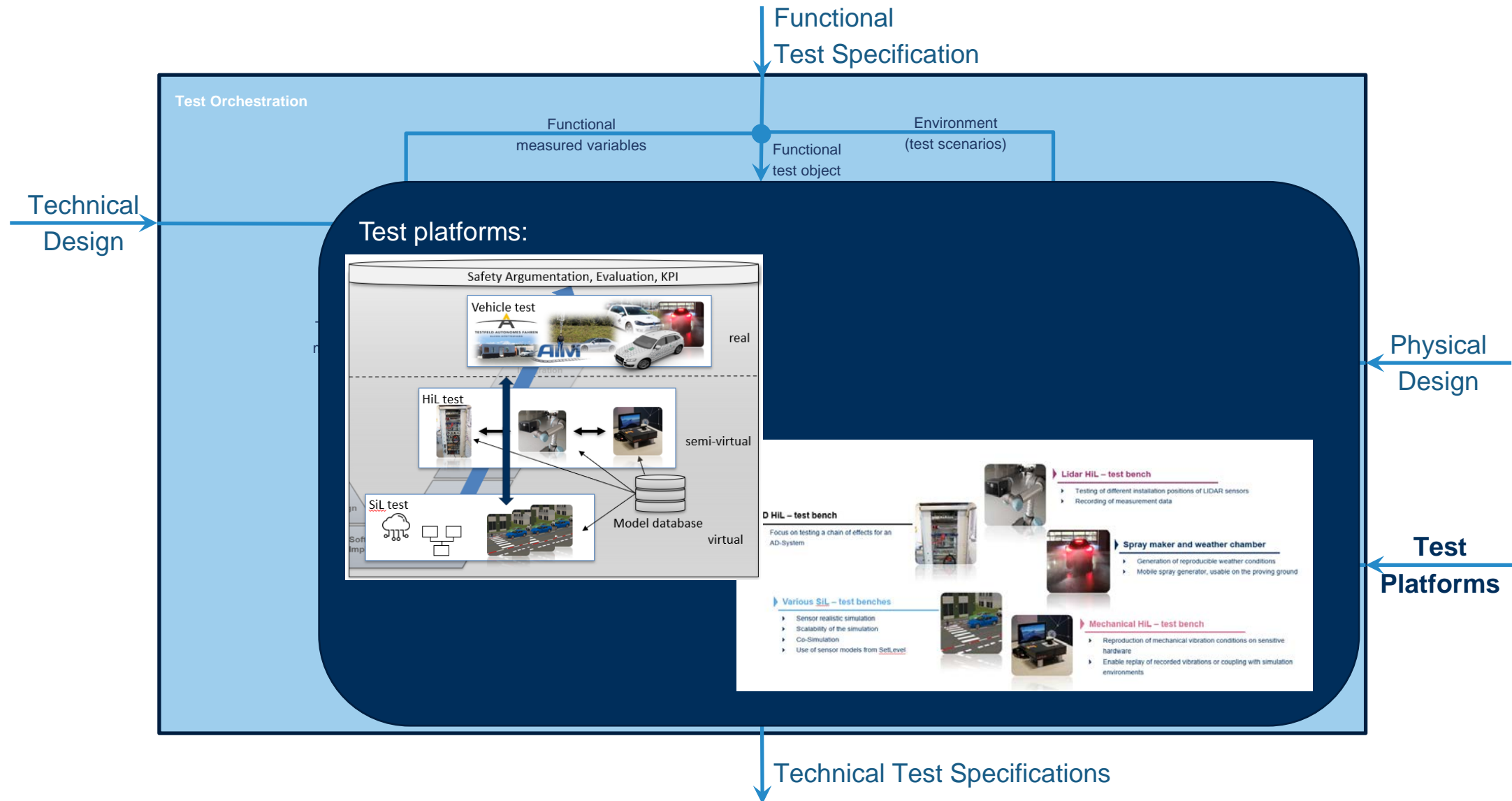
Physical test object
Physical measured variables
Test instance

Inputs – Process – Output

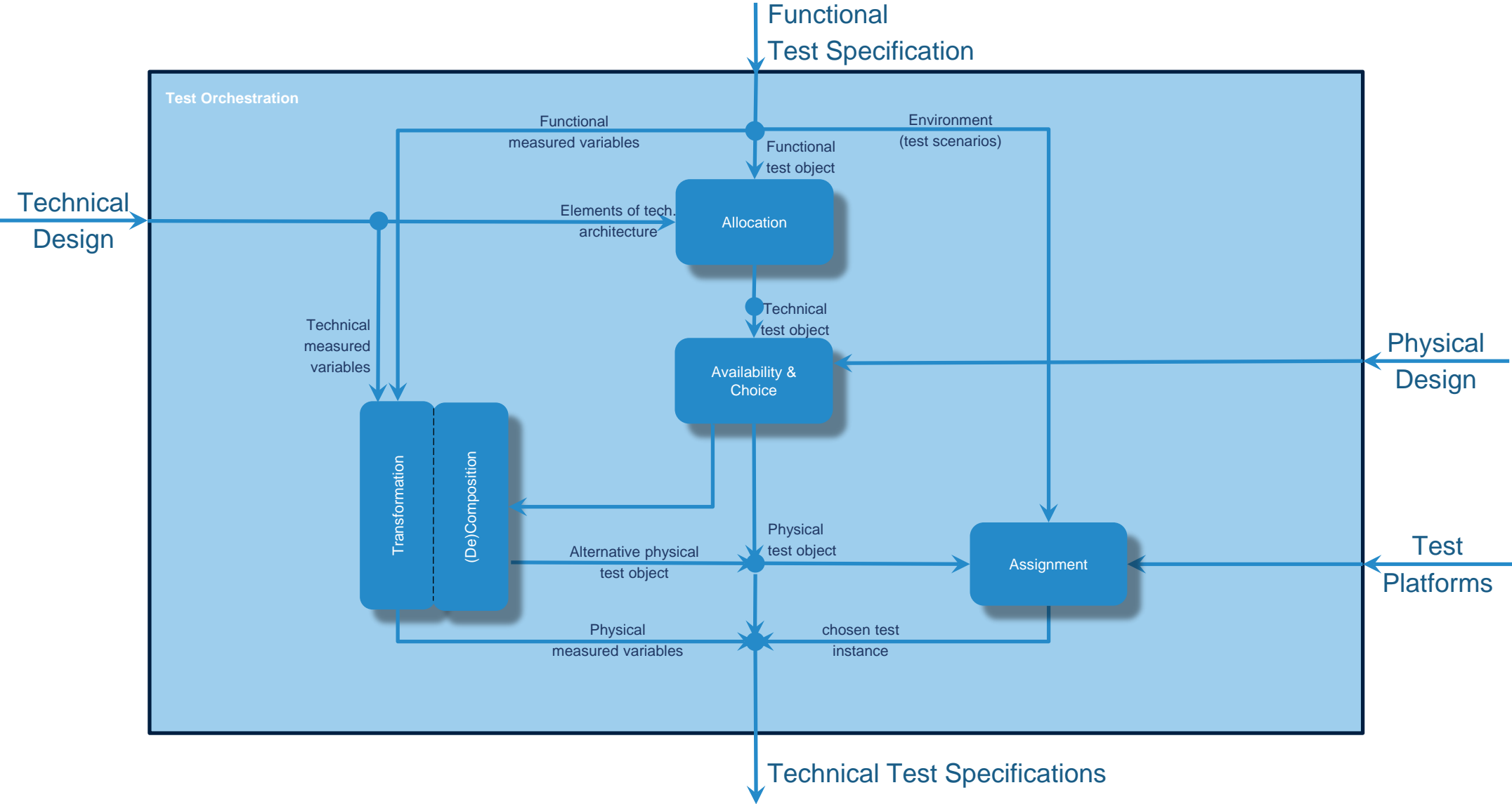


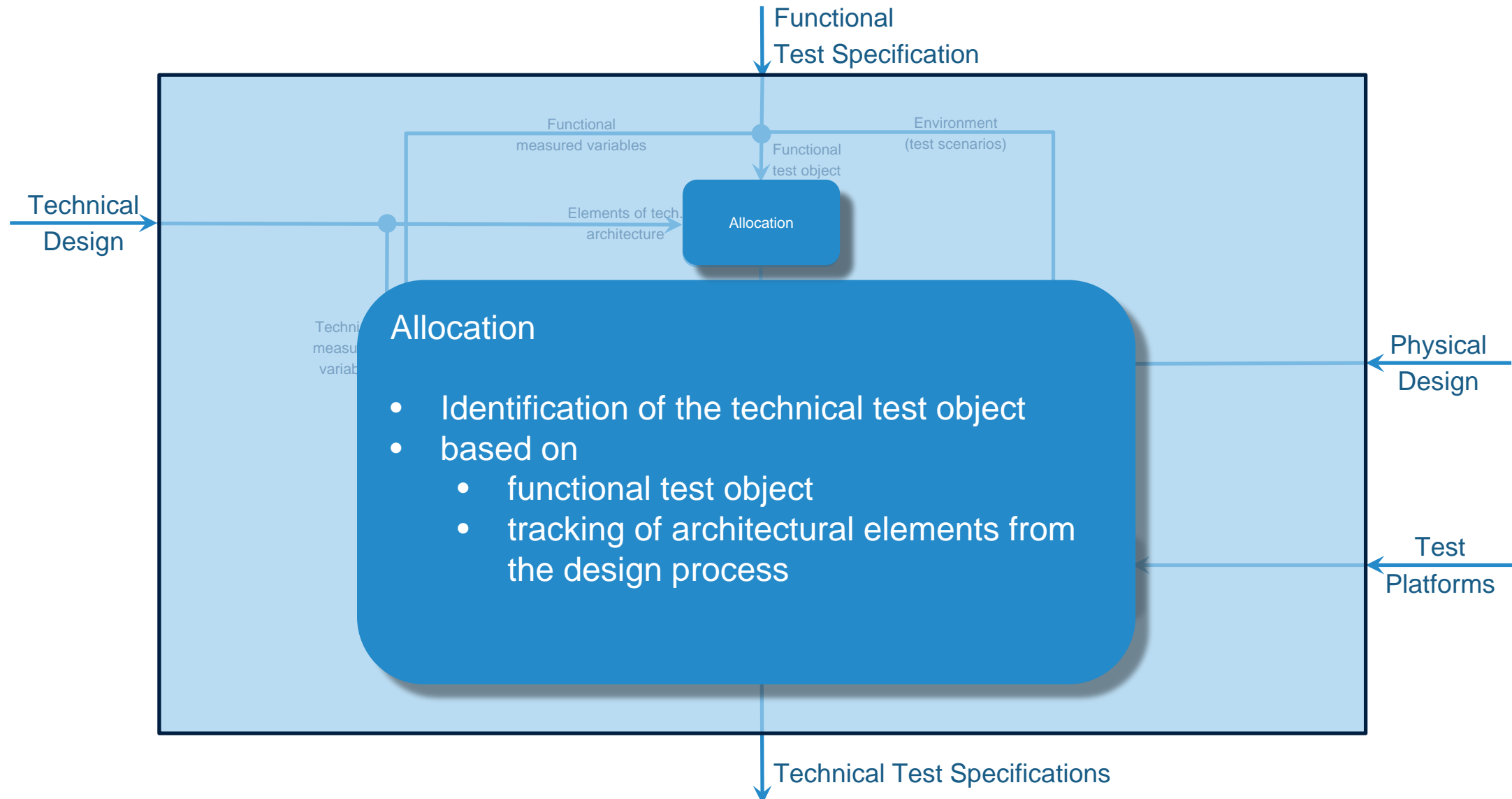


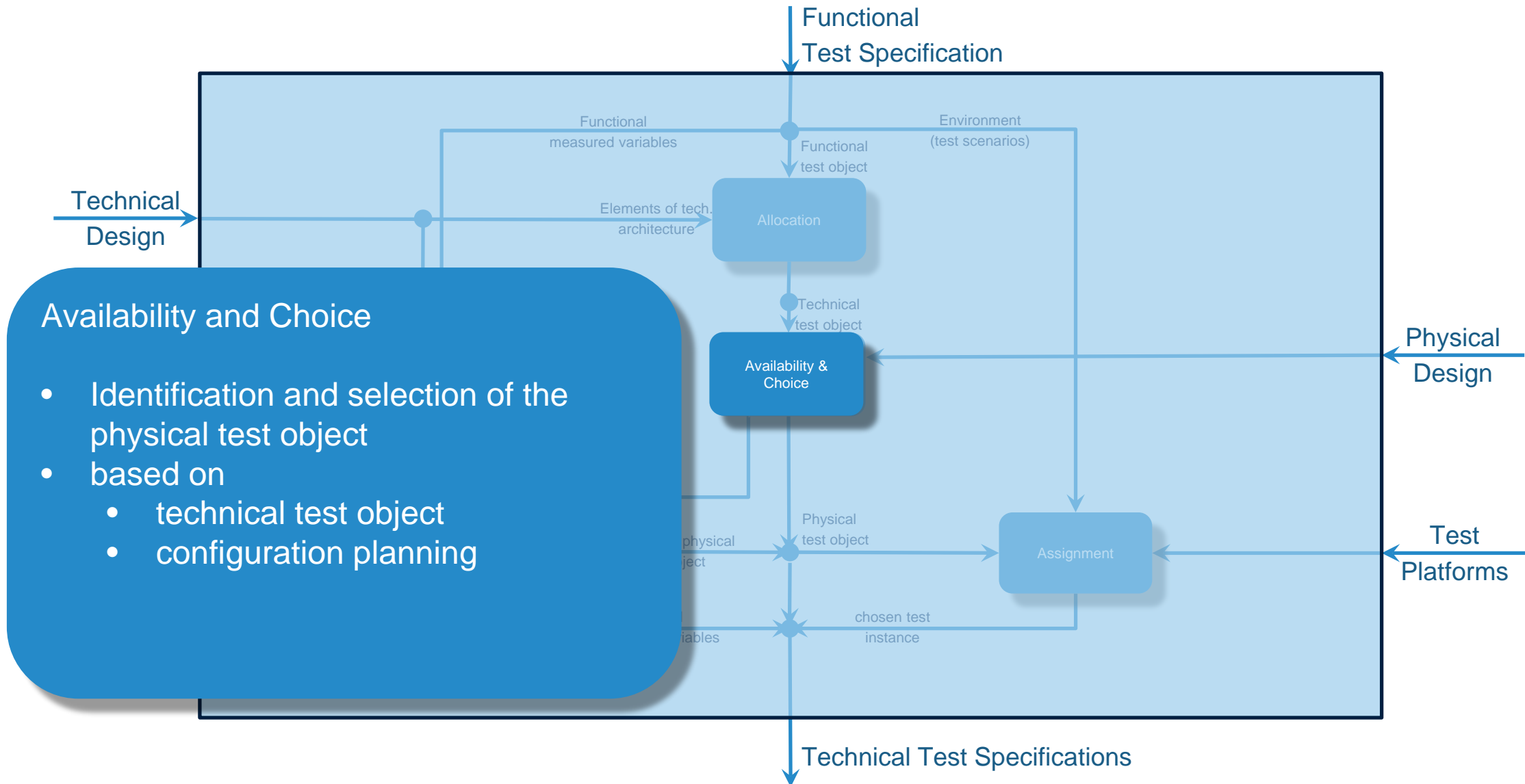




Inputs – Process – Output

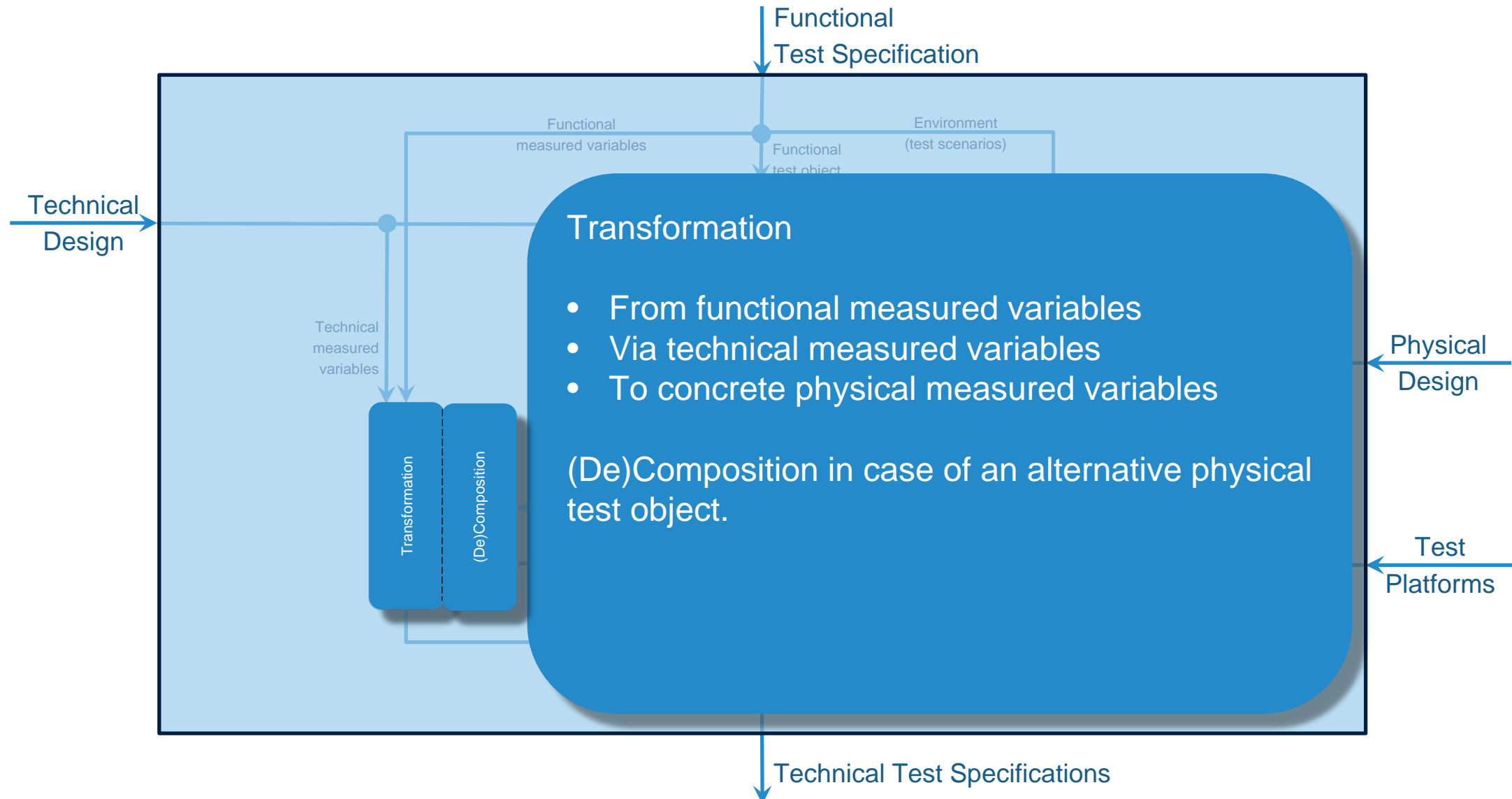


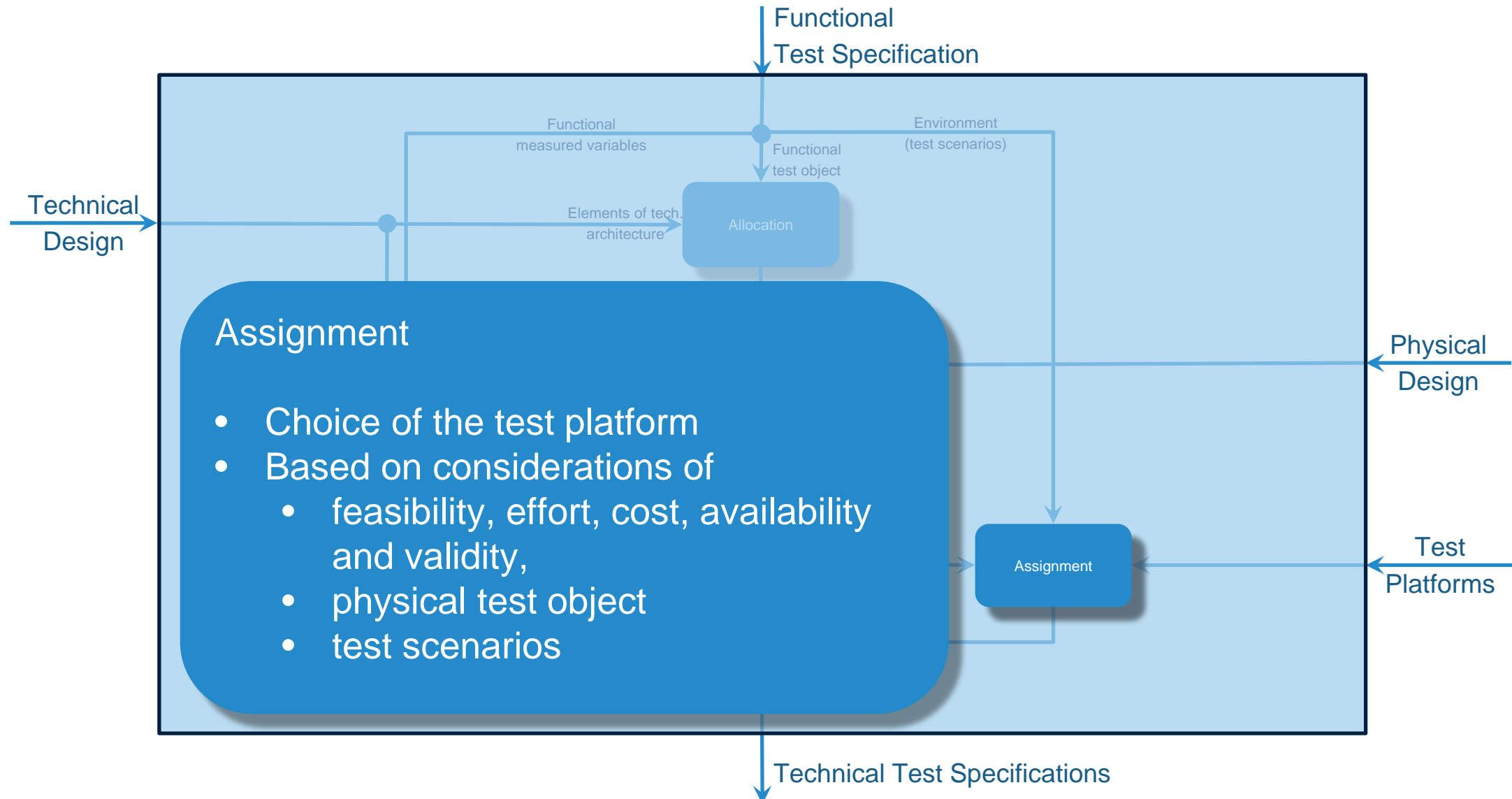


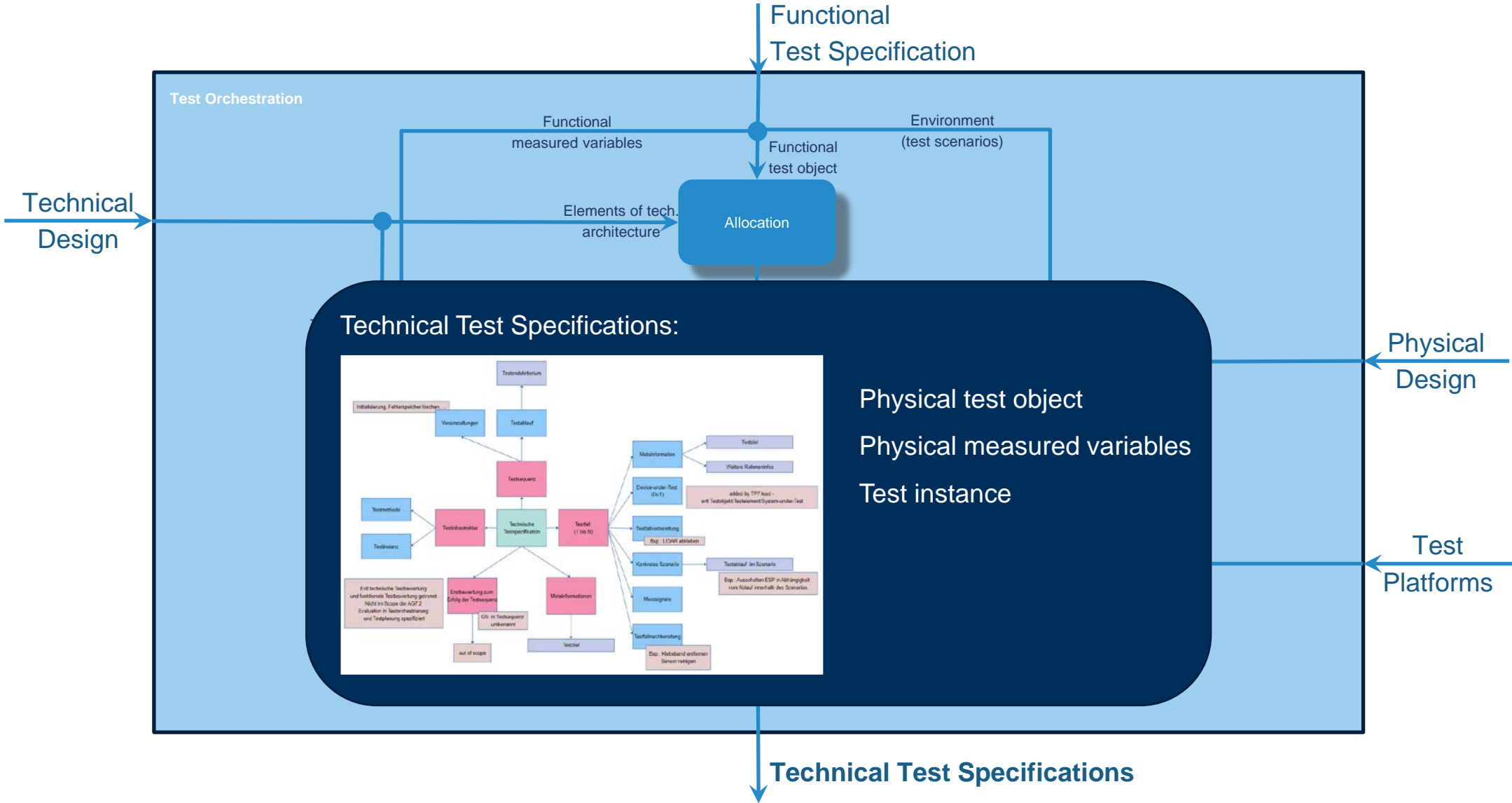


Availability and Choice

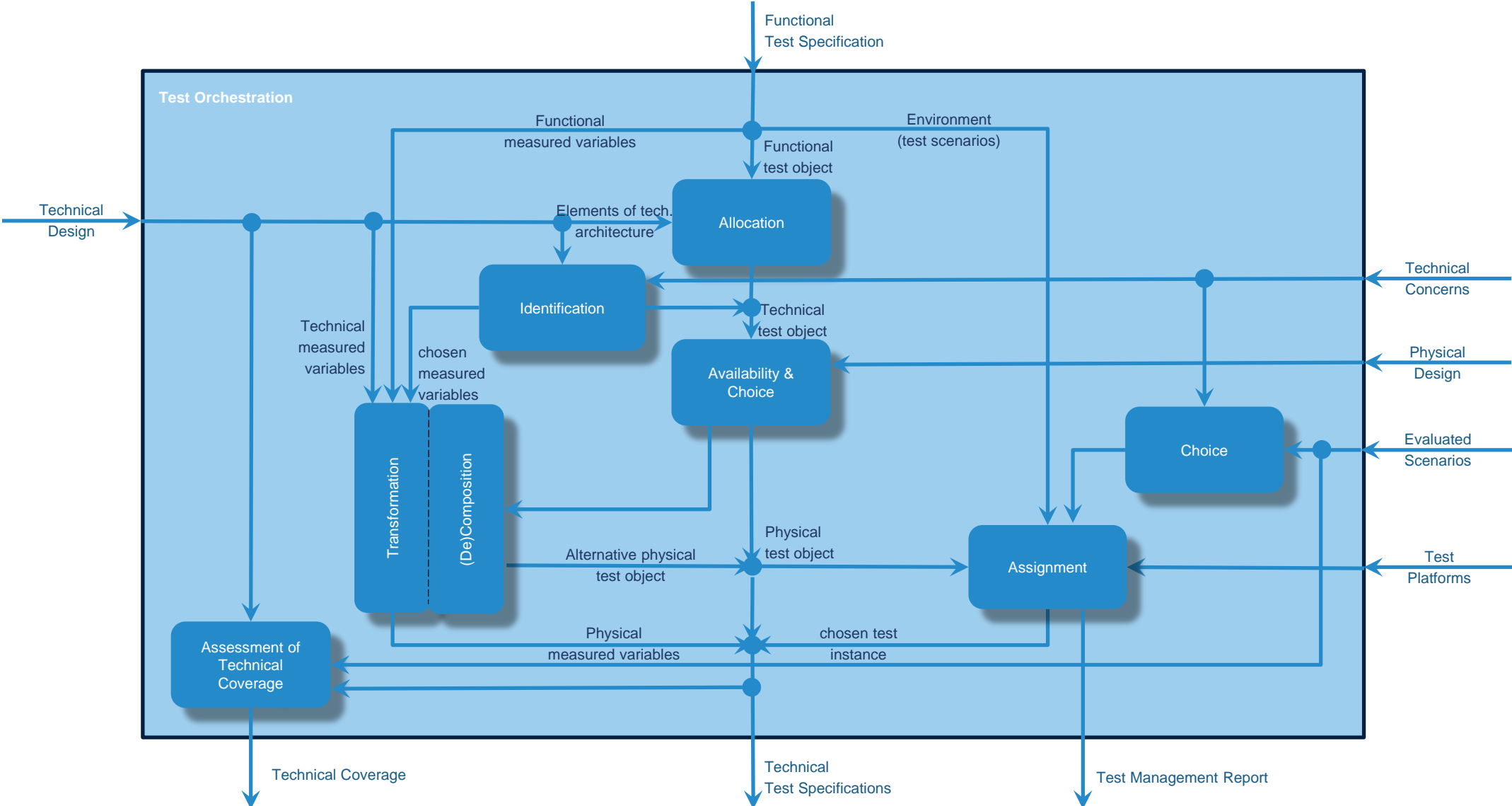
- Identification and selection of the physical test object
- based on
 - technical test object
 - configuration planning

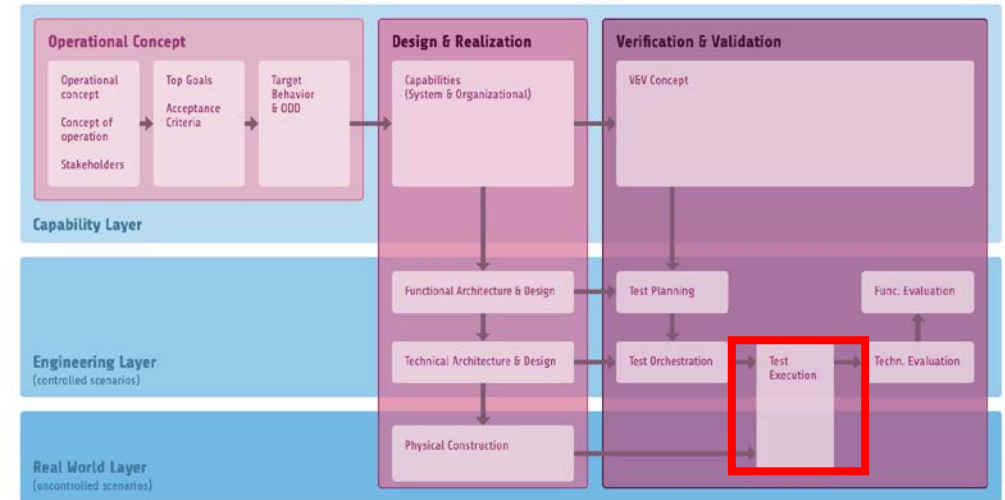






Test Orchestration – complete process





Test Execution



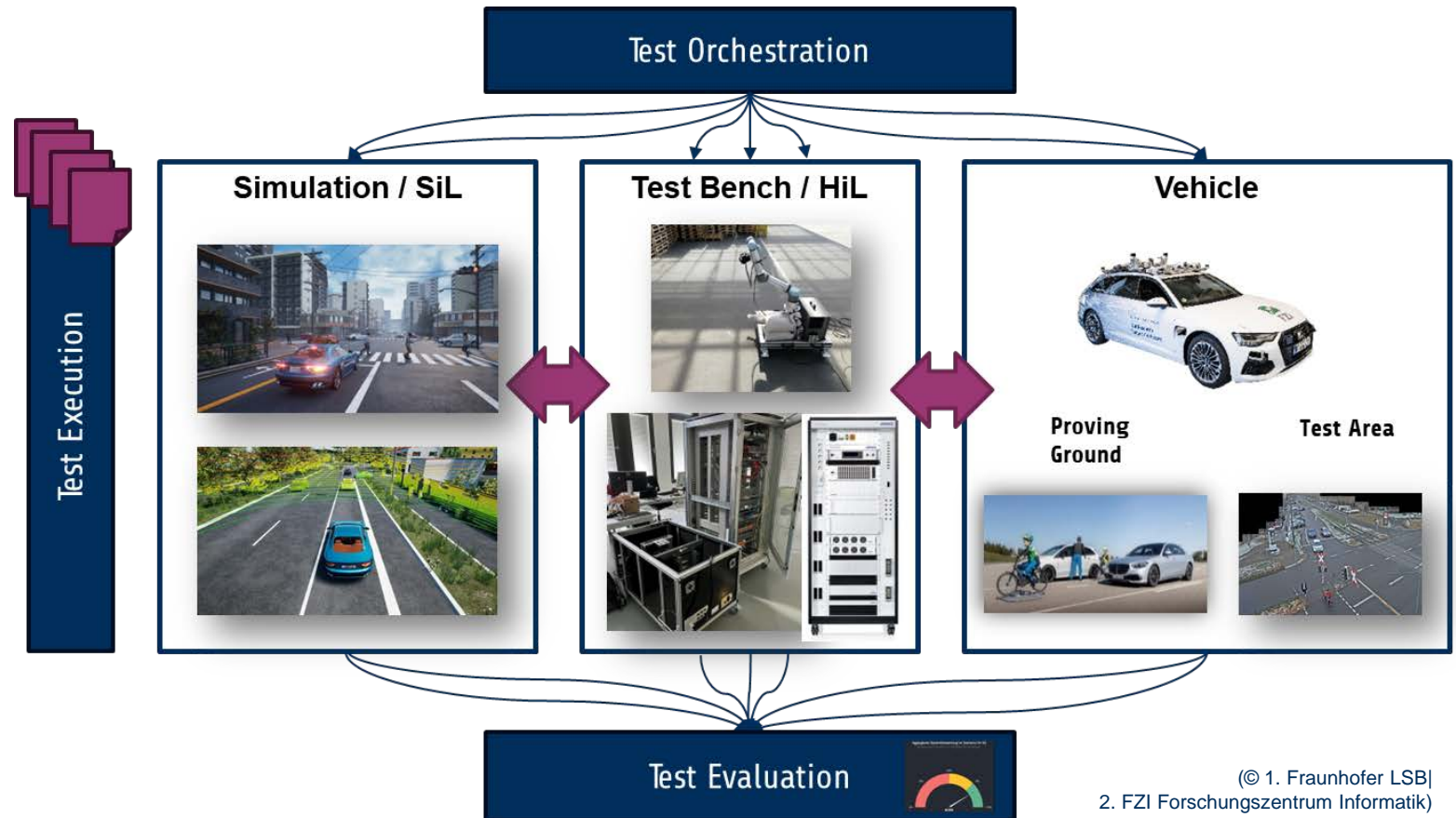
Test Execution - Realizing Seamless Testing

Seamless Testing means:

- ▶ Complementarity
- ▶ Efficiency
- ▶ Reuseability
- ▶ Consistency
- ▶ Flexibility

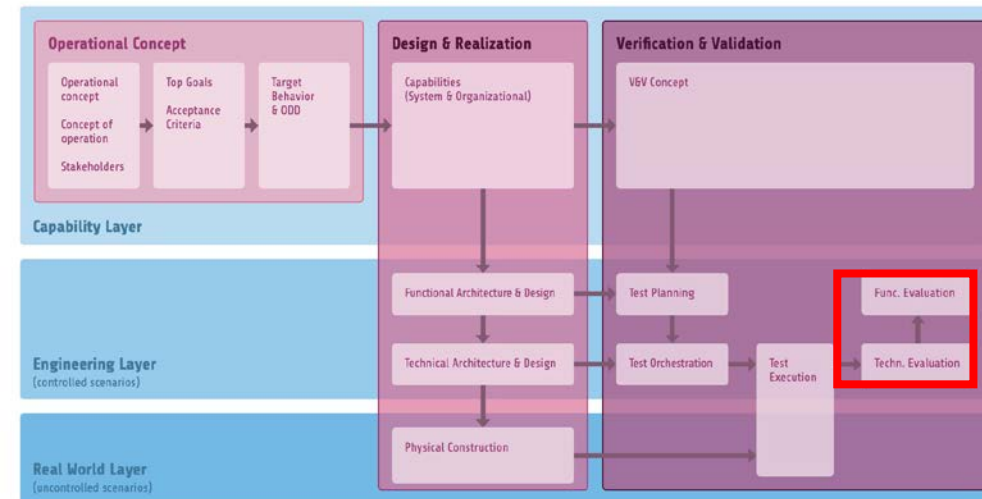
Output :

- ▶ technical test data



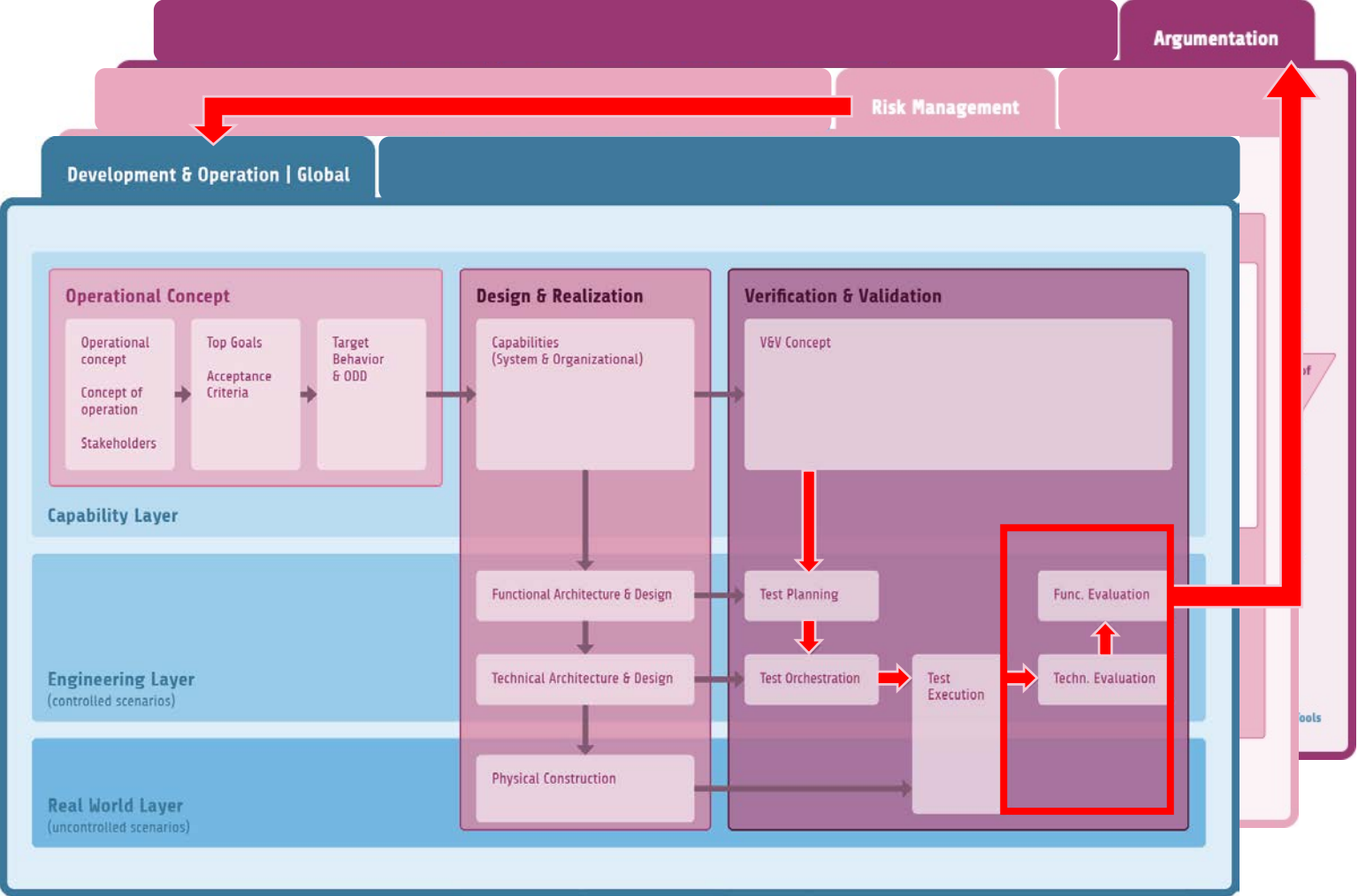
Please visit us at booths 13 and 14.

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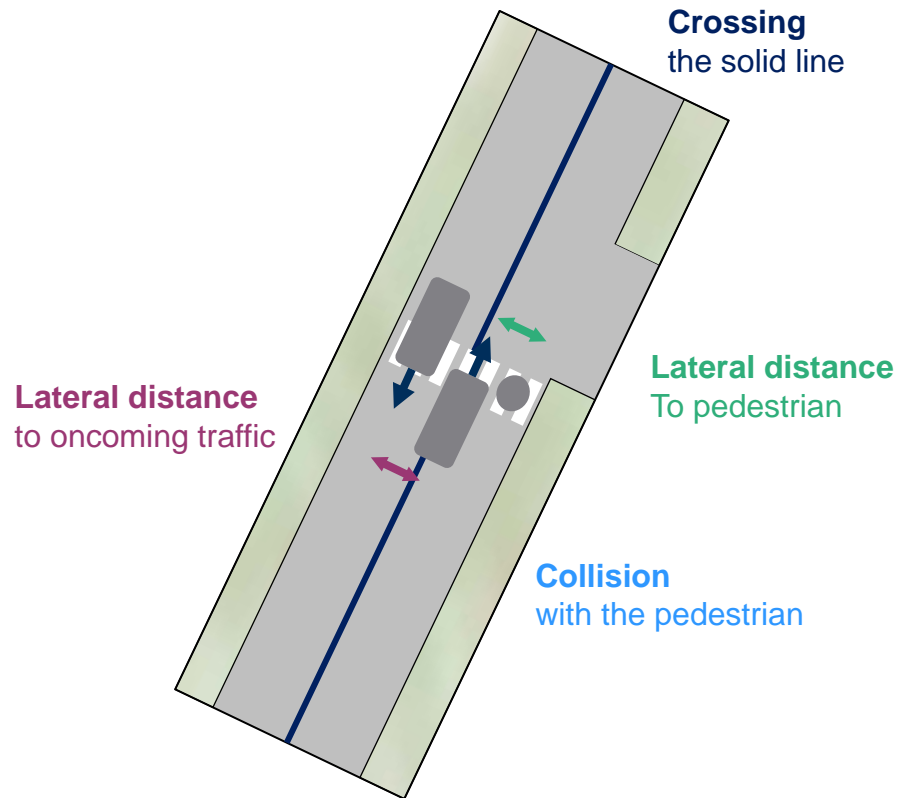
Test Evaluation

Technical Evaluation – Functional Evaluation – Aggregation



Functional Evaluation – Metrics – Challenges

Relevant metrics:



Functional Evaluation:



Challenge: How to aggregate multiple results?

Vision: Aggregation based on Risk Model.

Summary

- ▶ Test Orchestration
 - ▶ follows the concept of division into functional and technical level
 - ▶ distributes concrete test cases to test instances
- ▶ Test Execution
 - ▶ realizes seamless testing
 - ▶ Please attend the next presentation for further information and examples.
- ▶ Test Evaluation
 - ▶ Challenge: Aggregation of multiple results on functional level
 - ▶ Vision: Aggregation based on a parameterized risk model

Please visit us at booths 13 and 14.

Thank you!

Martin Dörr, ZF

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autonomous and connected driving

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