PROJECT of the PEGASUS FAMILY

VERIFICATION VALIDATION METHODS

Final Event 21 / 22 November 2023

This is the VVM ODD coverage and modeling approach

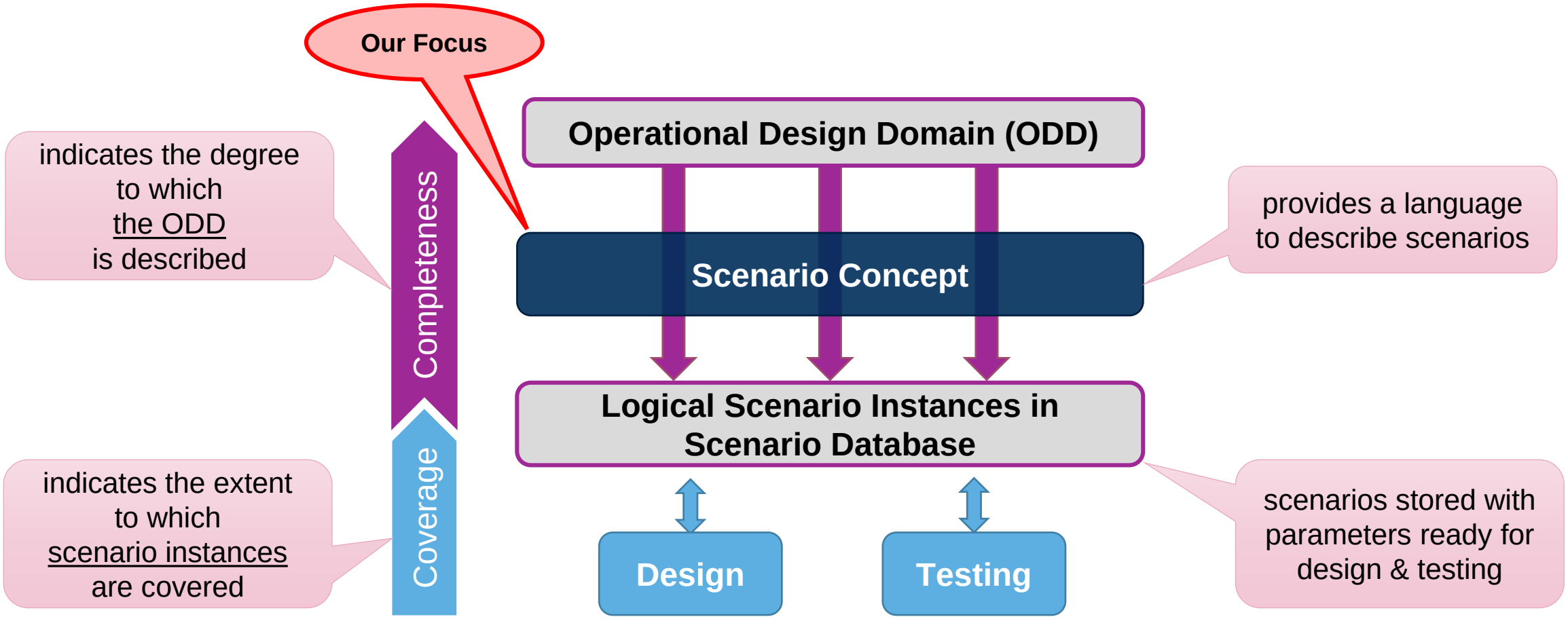
Tino Brade, Robert Bosch GmbH

Supported by:

Federal Ministry for Economic Affairs and Climate Action

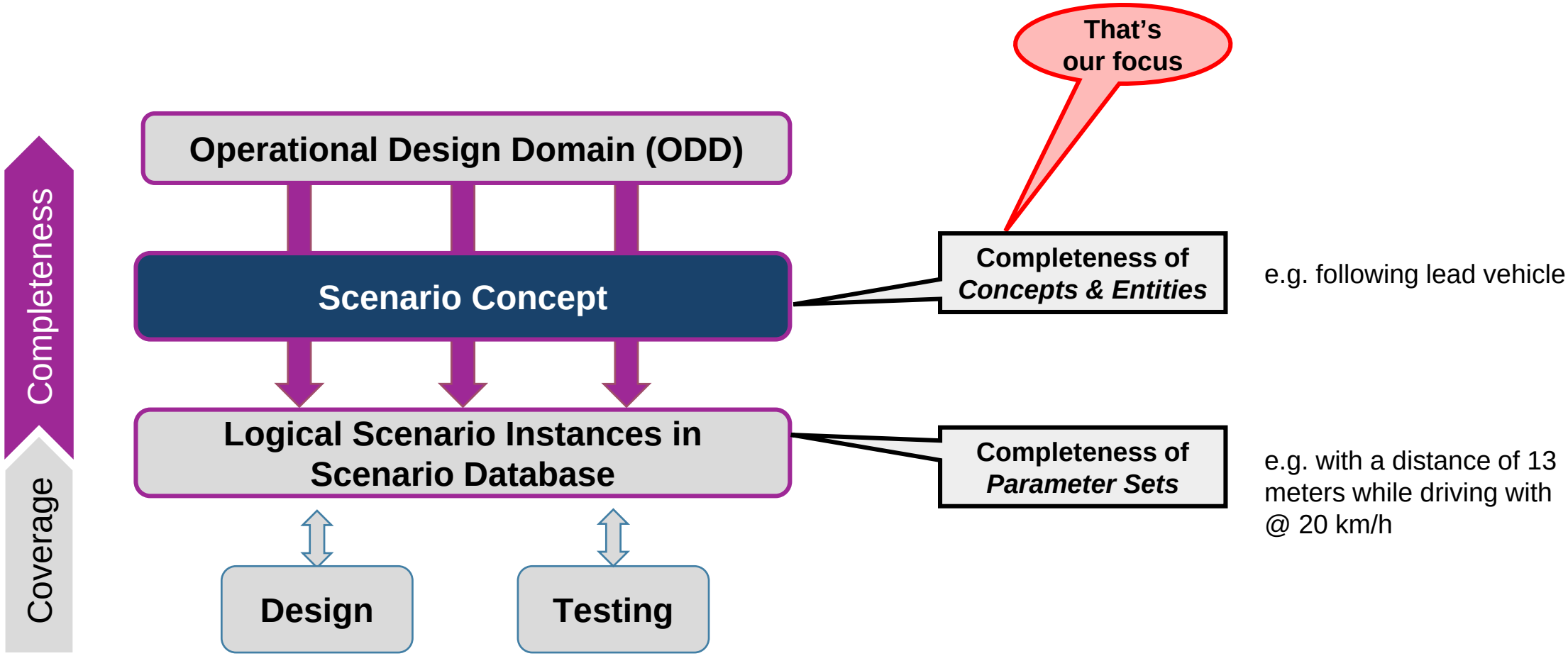
on the basis of a decision by the German Bundestag

Overview



Note that any incompleteness of the *scenario concept* leads to incomplete *scenarios*.

Our Focus

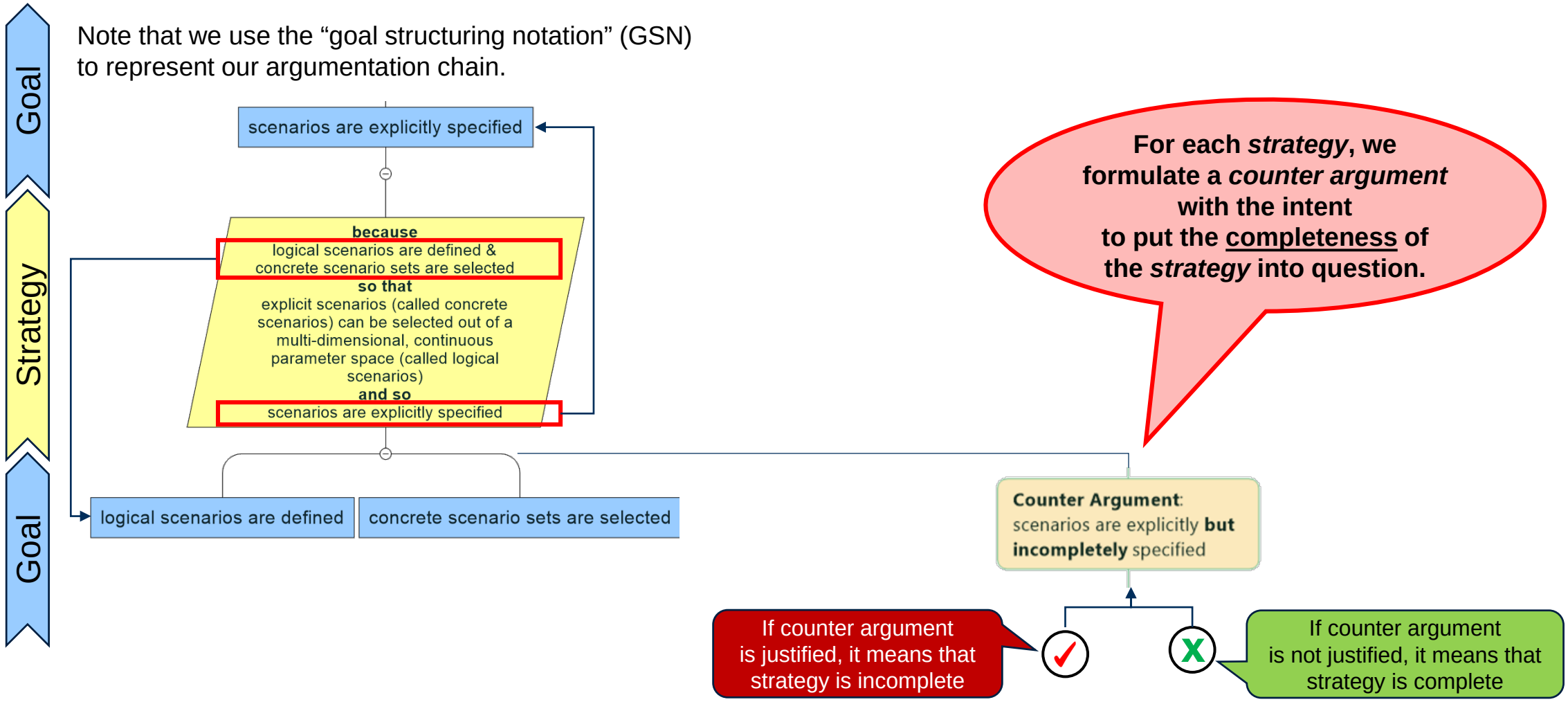


e.g. following lead vehicle

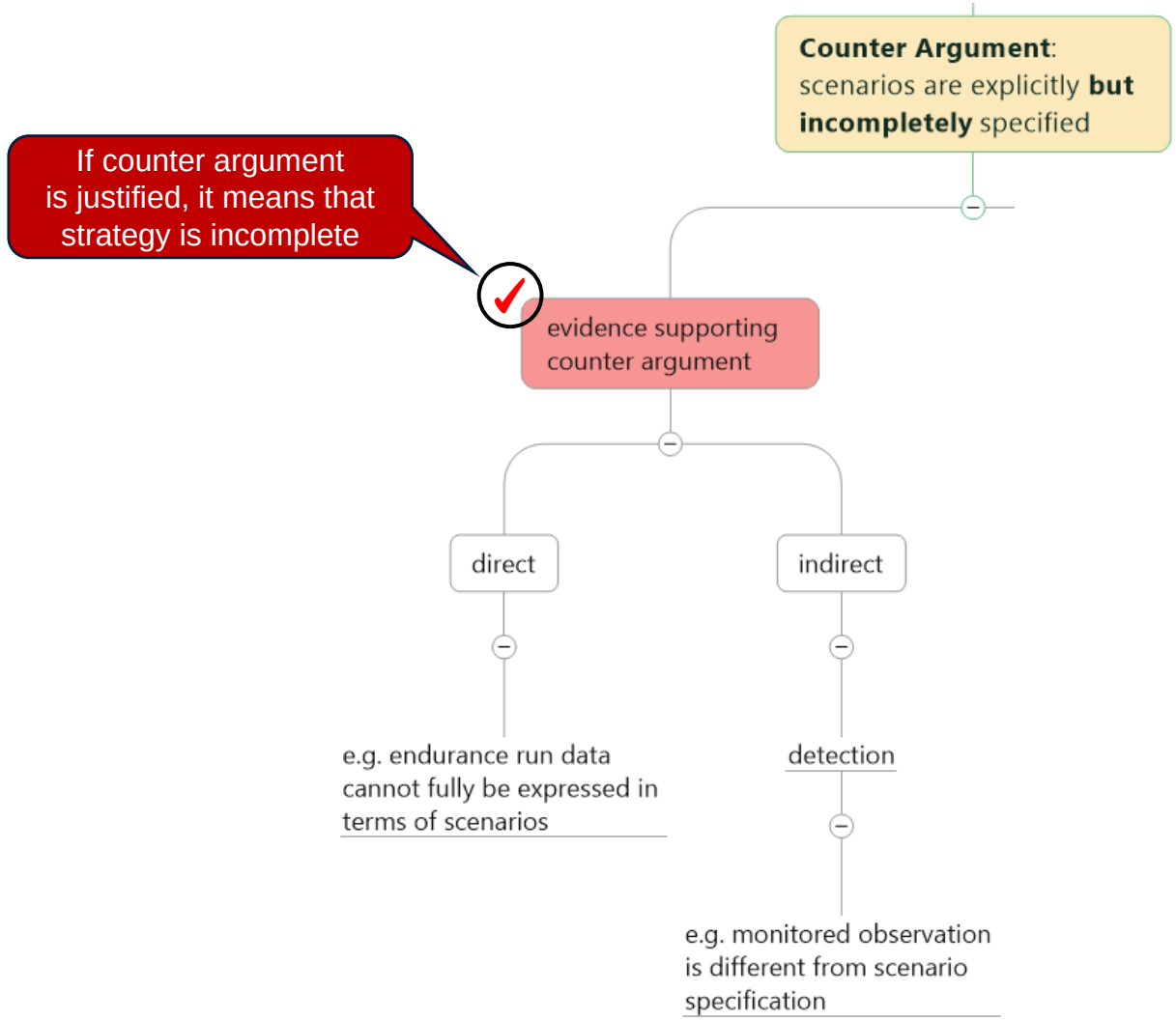
e.g. with a distance of 13 meters while driving with @ 20 km/h

Scrutinizing the Completeness of a Strategy

Note that we use the “goal structuring notation” (GSN) to represent our argumentation chain.

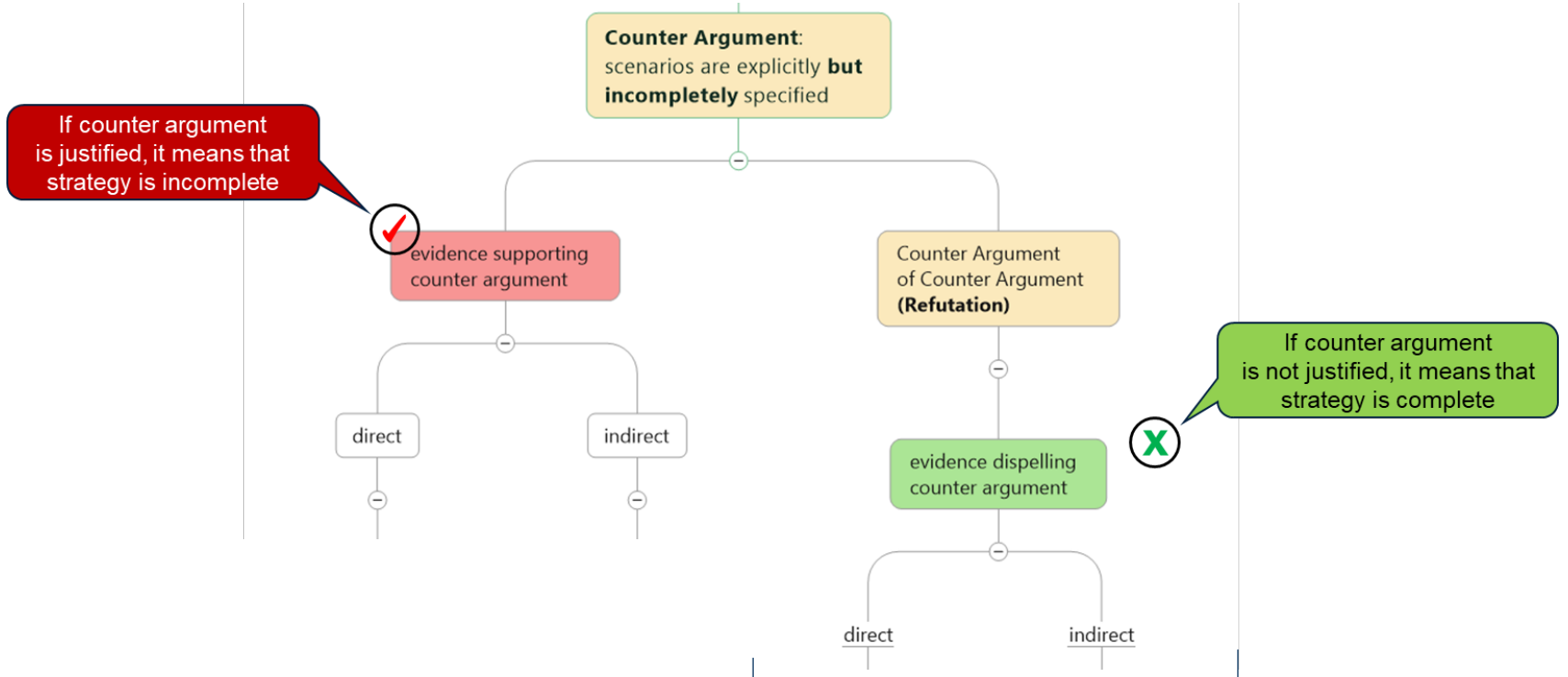


The Pattern for Structuring “Counter Arguments”



If counter argument
s not justified, it means that
strategy is complete

The Pattern for Structuring “Counter Arguments”



known unknowns	known knowns	Observed
unknown unknowns	unknown knowns	Not observed
Not specified	Specified	

Conclusion

VERIFICATION
VALIDATION
METHODS

Why do we deal with the completeness of the scenario concept?

- It is a normative requirement according to SOTIF & AFGBV, just to mention a few.
- Safety is a guarantee for the provision of a specific system property within a specific context.
  - In case the described context is deficient, the safety claim will be inconclusive.
- Any incompleteness of the scenario concept leads to incomplete scenarios.

How did we deal with the completeness of the scenario concept?

- We elaborated a GSN argumentation that explains the soundness of the scenario concept.
- Next, we scrutinized the completeness of our argumentation by counter arguments.
- Finally, we have been seeking for evidence that support or refute the counter arguments.

Further information #3.10 Poster

VERIFICATION
VALIDATION
METHODS

Thank you!

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VDA LEITINITIATIVE

A project developed by the VDA Leitinitiative
autonomous and connected driving

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and Climate Action

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