

SAFETY ARGUMENT



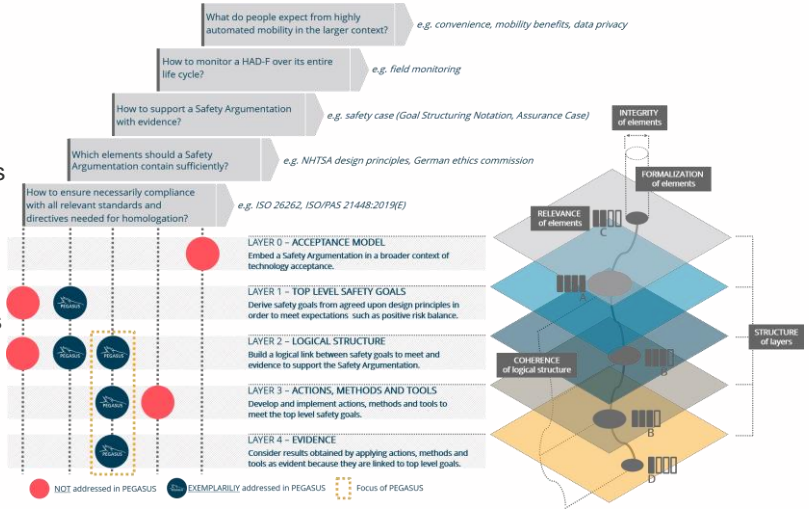
PEGASUS Safety Argumentation is to be understood as a conceptual framework to support securing and approval of HAD-F.

PEGASUS Safety Argumentation follows **five paradigms**: structure, formalization, coherence, integrity and relevance.

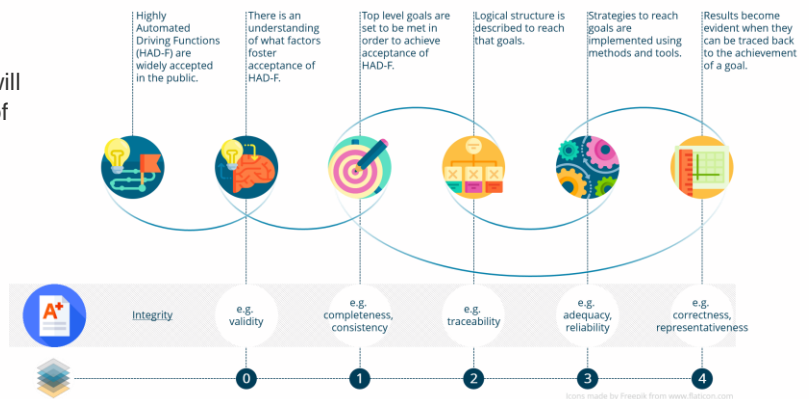
It is structured by introducing **five layers**. Established formalizations are used wherever possible in order to describe each layers **elements**.

Those elements are linked across the layers in order to form a **coherent argumentation**.

Dimensions of integrity and relevance are proposed as **quality criteria** for the five layers with respect to their elements.



The central assumption is: if a chain of arguments, which was created taking into account the proposed framework, stands up to a **critical examination**, this will support securing and approval of HAD-F.



Supported by:



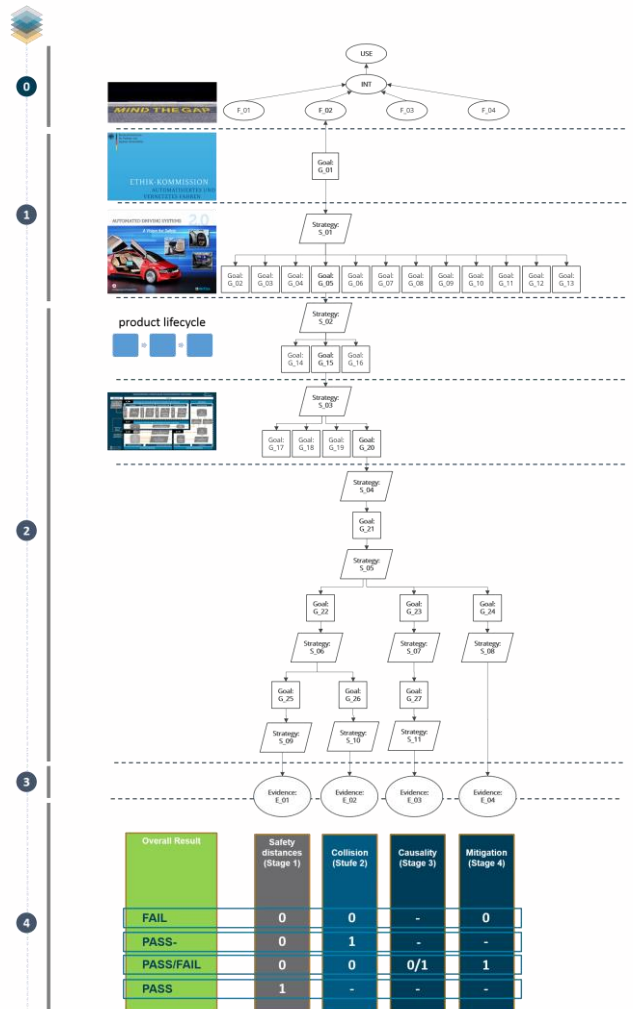
on the basis of a decision by the German Bundestag

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Results become evident when there is a coherent link with top level safety goals to meet.

- ➔ The exemplary Safety Argumentation is linked to one factor of a abbreviated **multifactorial** model on technology acceptance.
- ➔ The overall safety goal [G_01] is derived here from German Ethics Commission on Automated and Connected Driving: **positive balance of risk** (sufficient condition).
- ➔ It is **decomposed** [S_01] and addressed by 12 priority design principles proposed by NHTSA [G_02] – [G_13], exemplarily. Following suitable standards for system safety (necessary condition) [G_02] for example is addressed here.
- ➔ It is assumed here, that there is a certain need to monitor the performance of HAD-F over the entire **life cycle** [S_02].
- ➔ PEGASUS offers **methods and tools for safeguarding** [S_03].
- ➔ One of them is exemplarily linked [S_04] with one of the priority design principles by applying a **formalized logical structure** (cf. Goal Structuring Notation).



Exemplary Safety Argumentation (depicted without ratings for relevance and integrity)

