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Provisional agenda item 3

Transmitted by
the expert from FIA

GRVA

Artificial Intelligence

A WORLD IN MOTION

FEDERATION
INTERNATIONALE
DE L'AUTOMOBILE

FIA.COM





Artificial Intelligence Categories

FIA Preference

Artificial Intelligence can be subdivided into three categories:

- Artificial Super Intelligence, which is exhibiting human intelligence
- Artificial General Intelligence, where the system is able to act like a human in all fields
- Artificial Narrow Intelligence, which focuses on a specific task

Machine learning systems are mainly trained using three methods:

- **Supervised learning**, aims to develop predictive model based both input and output data
- **Unsupervised learning**, aims to discover an internal representation from input data only
- **Reinforced learning** is concerned with how a so-called agent should take actions in an environment to maximize some notion of long-term reward

Transparency builds trust for consumers in Artificial Intelligence (AI)

vs

The Black Box effect describes that AI systems, depending on the model and its complexity, are not transparent and their decisions are not explainable (OICA)

FIA: Real World Testing shall be a fix pillar in type approval and production compliance regimes, to build trust in AI

FIA: Regulatory Requirements including mitigations on risks

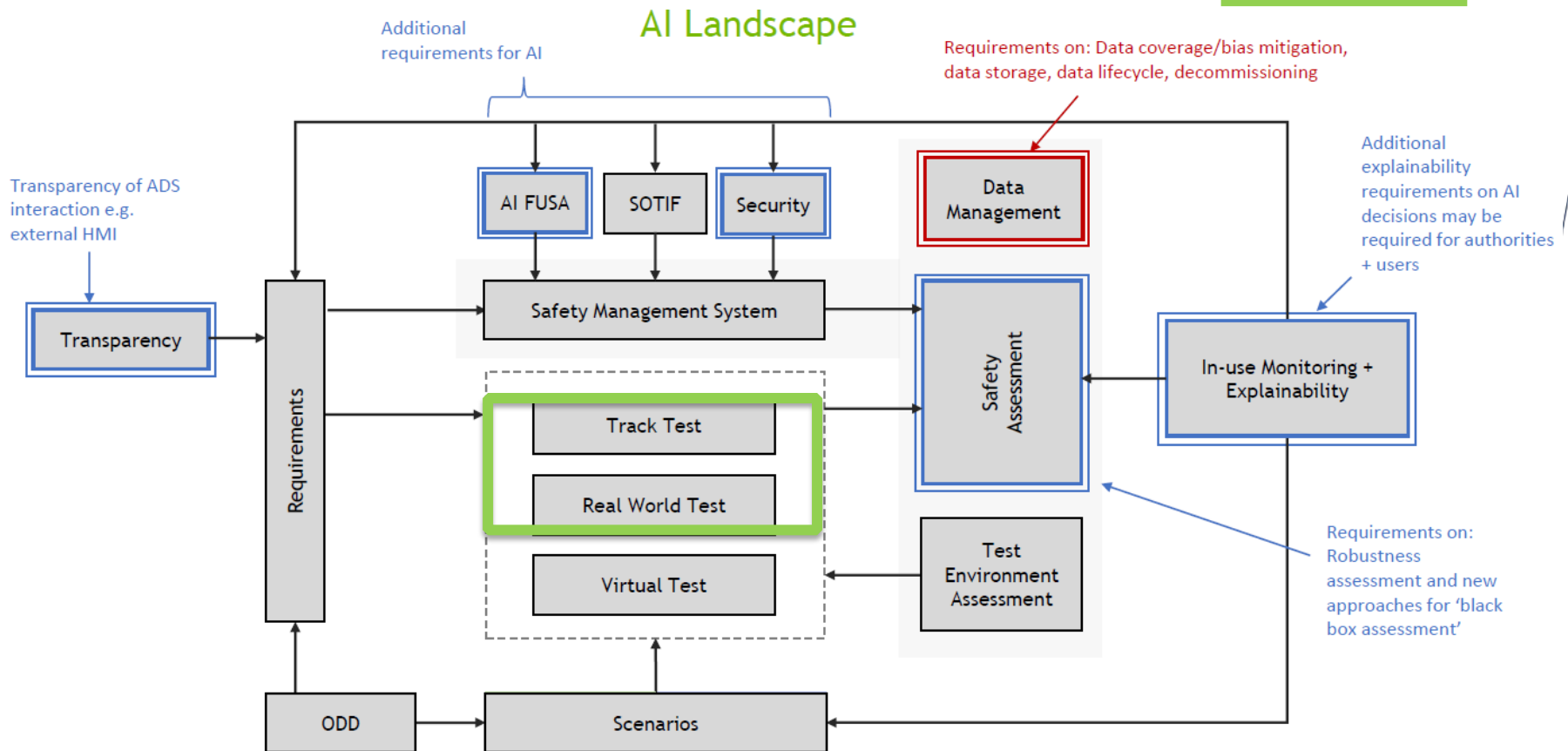
FIA: Certification by Type Approval Authority ; then upload as „frozen software“ to the vehicle

ANALYSIS

Classification of AI algorithms with regard to risk potential and attack possibilities

FIA Supports the type approval approach with scenarios for real world tests and track tests

FIA Request





- AI shall support improvement of safety, security, environmental performance. This should apply to all systems in the vehicle that influence safety, security and environmental performance.
- AI supports defensive driving only. The behaviour of AI must always tend to safe, secure and environmentally friendly driving.
- AI shall support the driver in the driving task. If the system adapts to the individual driving behaviour this should occur in accordance with point 1.
- AI shall include a system and component redundancy contributing to critical AI learning. E.g. for safety critical control functionality there are always 2 or 3 additional monitoring systems with separate hardware components included to make sure that if the main system fails, there is an immediate fallback activation / default operation possible.

FIA Minimum Requirements on AI in Technology Neutral Mode 1/2

- AI learning that derives from the driver must be resettable/changeable
- AI related software updates must be transparent to the driver. Changes must be explained in a user-friendly way. The driver must be able to agree to updates which are not related to safety, security and environmental performance.
- It should be possible to test during the whole lifetime of the vehicle, if valid AI software is installed. Detection of illegal cycle beating by AI software shall be possible.
- AI development should take into account ethical aspects. The AI software shall treat all persons in the same ethical correct way.
- Any AI should not harm people and should always act in such a way as to avoid and if not possible to avoid, then minimise damage.



Thank you for your attention