Safety as a Data-Centric Design for Autonomous Vehicles

Data is at the core of the design of modern Safety-Critical Systems. Data is no longer only sensed and processed in the context of the control loops of such systems. It is also secured, stored, and transmitted for the sake of the decision-making processes required for higher levels of autonomy. Decomposing the problem domain into a Data-Centric point of view considers the modeling of constructs that will abstract the selected entities and their relationships according to the data they produce and consume, considering timing, safety, security, and persistency. The diagram below presents a top-view of components in Autonomous vehicles.

In this sense, many questions come to the mind when we consider safety in Autonomous vehicles. Some of them are listed below to instigate the discussion in this topic during the panel:

1. Data-Centric design:
   1. How to decompose the Autonomous Vehicles into a Data-Centric Design?
2. Data Trustfulness
   1. How assess trustfulness in ITS?
3. Safety Models
   1. How to ensure safety?
4. Critical components Isolation and Security
1. Which aspects of isolation should be considered for safety and security?

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