

Automotive Ontologies

7th 2021 WG meeting

May 11, 2021

Welcome

- A (possible) introduction of new participants
 - Quick recall of the scope of the previous efforts
1. Our Bag-of-Concepts
 2. Info about communication with SAE about J3016
 3. FIBO methodology as applied to draft of Autonomous Vehicle Ontology (AVO)
(including a brief about the process of github controlled modifications)
 4. Going through the AVO as it exists today.
 5. Possible extensions (Traffic Crashes Ontology)
 6. Discussion – what's next?

The Bag-of-Concepts

The Bag-of-Concepts

The working model:

<https://docs.google.com/spreadsheets/d/17DU8B0fWMnT0fllsaZvOYkggw9QF97DyNiKgHA-HsGk/edit?usp=sharing>

More than 70 candidates (includes some concepts from Traffic Incident Ontology (TIO))

Autonomous Vehicles Bag-of-Concepts for auto.schema.org extension

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	A	B	C	D	E	F	G
52	TRIP		The traversal of an entire travel pathway by a vehicle from the point of origin to a destination			--"	
53	USAGE SPECIFICATION		A particular level of driving automation within a particular ODD.				
54							
55							
56	PK:						
57	Traffic incident		All road accidents and collisions irrespective whether there people are injured or serious material damage is caused.			Traffic Incident Ontology (TIO)	
58	Destruction of property		Damage of any goods			Traffic Incident Ontology (TIO)	sort of schema.org Action
59	Injury		Injury of a person			Traffic Incident Ontology (TIO)	actually the class is not yet in the ontology - but should be
60	Traffic violation		Violation of any traffic regulation by a car.			Traffic Incident Ontology (TIO)	
61	Obstacle on the roadway		Any object on a trajectory (actual or alternative) of a moving car.	Role		Traffic Incident Ontology (TIO)	Actually the class is not yet in the ontology - but should be.
62							
63	MS:						
64							
65	[HUMAN] USER		A general term referencing the human role in driving automation			Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles (SAE)	four terms (1 – driver, 2 – passenger, 3 – DDT fallback-ready user, and 4 – driverless operation dispatcher) describe categories of (human) users

Communication with SAE

Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles

https://www.sae.org/standards/content/j3016_201806/

- Mirek Sopek contacted Rhonda Buzard (SAE Customer Service Manager)
- Then contacted Jennifer Collins from the team working on J3016
- She engaged Jack Pokrzywa (Director, SAE Global Ground Vehicle Standards)
- I explained the case to Jennifer and Jack and we are waiting for their response

Autonomous Vehicles Ontology

AVO – Autonomous Vehicles Ontology – the process

- Build using FIBO proces
 - Repository: <https://github.com/edmcouncil/auto>
- First draft of the ontology:
 - <https://github.com/edmcouncil/auto/blob/master/DE/AutonomousVehicles.rdf>
- ACO in the EDMC Ontology viewer
 - <https://spec.edmcouncil.org/auto/ontology/DE/AutonomousVehicles/>

▼ ● [Driving events ontologies](#)

● [Autonomous Vehicles Ontology](#)

(AV)

● [Car Control Ontology \(CCO\)](#)

● [Car Ontology \(CAR\)](#)

● [Map Ontology \(MAP\)](#)

● [Traffic Crashes Ontology \(TC\)](#)

● [Traffic Incident Ontology \(TIO\)](#)

> ● [E-Commerce vehicle information](#)

> ● [EDMC-AUTO middle ontology](#)

> ● [EDMC-FIBO selected ontologies](#)

> ● [Vehicle Signals Ontologies](#)

This resource has maturity level **provisional**. Read more about [provisional](#).

AUTONOMOUS VEHICLES ONTOLOGY (AV)

<https://spec.edmouncil.org/auto/ontology/DE/AutonomousVehicles/> [Copy](#)

QName: auto-de-av: [Copy](#)

Glossary

label

Autonomous Vehicles Ontology (AV)

has maturity level

[provisional](#)

abstract

An initial ontology for Autonomous Cars. Based on the Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles by SAE International. SAE document ID: J3016. [en]

Possible extensions of AVO

- **Source:**
AMERICAN NATIONAL STANDARD - ANSI D.16-2017 Manual on Classification of Motor Vehicle Traffic Crashes
- **Content:**
 - typology of crashes/accidents
 - list of elements of the road system
 - scale of injuries
 - typology of vehicles (also present elsewhere, e.g. in schema.org) + other physical object that may take part in crashes
-

Next steps



Thank you

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