

Transmitted by the IWG on VMAD

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Agenda item 4(c)

# Status Report from the Fifth Session of the Informal Working Group (IWG) on Validation Methods for Automated Driving (VMAD)

**United Nations Economic Commission for Europe (UNECE)**  
**Working Party on Automated/Autonomous and Connected Vehicles (GRVA)**  
February 10-14, 2020  
Geneva, Switzerland

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# VMAD Deliverables to the World Forum for Harmonization of Vehicle Regulations (WP.29)

Based on the Framework document, VMAD has the following deliverables to WP.29:

<b>Deliverables</b>	<b>Deadline</b>
1. The test and assessment (including CEL) for Automated Lane Keeping Systems (ALKS) of SAE levels 3/4 compatible as a new UN Regulation for contracting parties to the 1958 agreement*	March 2020
2. Review of the existing and upcoming methods and a proposed way forward for the assessment of automated driving (AD)	March 2020
3. New assessment/test method (NATM) of AD	March 2021

\*Further clarification regarding this deliverable can be found in VMAD's Terms of Reference and within previous GRVA reports

# Highlights from the Fifth VMAD Session

- **Collaboration between the VMAD IWG and the Functional Requirements for Automated and Autonomous Vehicles (FRAV) IWG**
  - First joint meeting took place between VMAD and FRAV
  - More than 90% of the participants attended both FRAV & VMAD
  - Discussions and deliverables from FRAV informed VMAD's work
- **Increasing Participation at VMAD**
  - The number of participants is still increasing
  - Approximately 80 individuals from contracting parties (CPs) and industry attended the fifth VMAD session
- **Presentations from CPs and Industry, such as**
  - Real-world Testing and Assessment Methods – *China*
  - Metric Driven Approach for Safety Assessments of AVs – *SAFE*
  - Key Concepts and Issues Associated with Developing Scenarios – *Canada*
  - ALKS Test Matrix – *France & Germany*

# Deliverables

The following work has been completed by VMAD:

1. Drafted annex to address new test and assessment methods when applied to the new regulation on ALKS (including CEL) for contracting parties to the 1958 agreement 
2. VMAD reviewed existing and upcoming assessment/test methods of autonomous driving 
  - Sub-working groups presented to VMAD high-level overviews of existing and upcoming assessment/test methods (i.e., scenarios, audit, virtual testing, test tracks, and real-world testing) for validating the safety of AVs
3. VMAD and its sub-working groups will continue to work together with FRAV to establish a NATM

# Topics that Require Further Clarification

Going forward, VMAD will work with its sub-groups and FRAV to clarify topics, such as:

- Foreseeable and non-preventable scenarios
- Reasonably foreseeable vs. rationally foreseeable

# Next Steps

- **VMAD and its sub-working groups will continue to work together to:**
  - Integrate the work done by each sub-working group, including the comments from industry and CPs, to develop overarching documents regarding the NATM
  - Update and implement work plan for establishing the NATM
- **Collaboration between VMAD & FRAV**
  - A FRAV and VMAD Leadership/Co-chair meeting to align each IWG's long-term strategies is being planned
  - Upcoming VMAD meetings will directly follow FRAV meetings to ensure FRAV's work continues to inform VMAD

# Upcoming VMAD Sessions

- **Sixth VMAD IWG Session - April 16 & 17, 2020**
  - Hosted by CCFA in Paris, France
- **Seventh VMAD IWG Session - September 10 & 11, 2020**
  - Hosted by NVIDIA in Santa Clara, United States
- **Eighth VMAD IWG Session - November 5 & 6, 2020**
  - Hosted by the European Commission in Brussels, Belgium
- **Ninth VMAD IWG Session – Tentatively scheduled for January 2021**
  - Location within Asia to be determined

**Special thanks to the Japan Automobile Standards Internationalization Center (JASIC) for hosting VMAD's fifth session!**

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