

# VMAD SG2. Simulation/Virtual Testing

*8° meeting*

*23 December 2020*

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# NATM Master Document Simulation Chapter

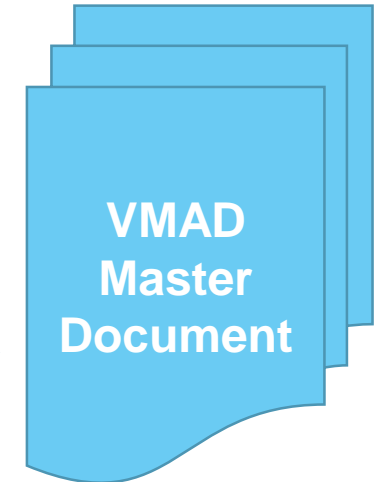
- New structure of Chapter 6 (v. 1.5)
  1. Common definitions
  2. Introduction
  3. ***Virtual testing and simulation including general methods, strengths and weaknesses, maturity (i.e. the agreed version of the chapter)***
  4. General simulation validation processes
  5. Virtual testing to support effective ADS validation
  6. How simulation can be used to support other test methods
  7. ADS virtual tool chain validation
  8. Future of simulation in certification and type-approval
  9. Annex. Documentation requirements for vehicle manufacturers



# NATM Master Document Simulation Chapter

- Target for VMAD submission (8<sup>o</sup> January) – v.1.10

1. **Common definitions**
2. **Introduction**
3. ***Virtual testing and simulation including general methods, strengths and weaknesses, maturity (i.e. the agreed version of the chapter)***
4. **General simulation validation processes**
5. **Virtual testing to support effective ADS validation**
6. **How simulation can be used to support other test methods**
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8. **Future of simulation in certification and type-approval**
9. **Annex. Documentation requirements for vehicle manufacturers**



# Remaining outstanding issues

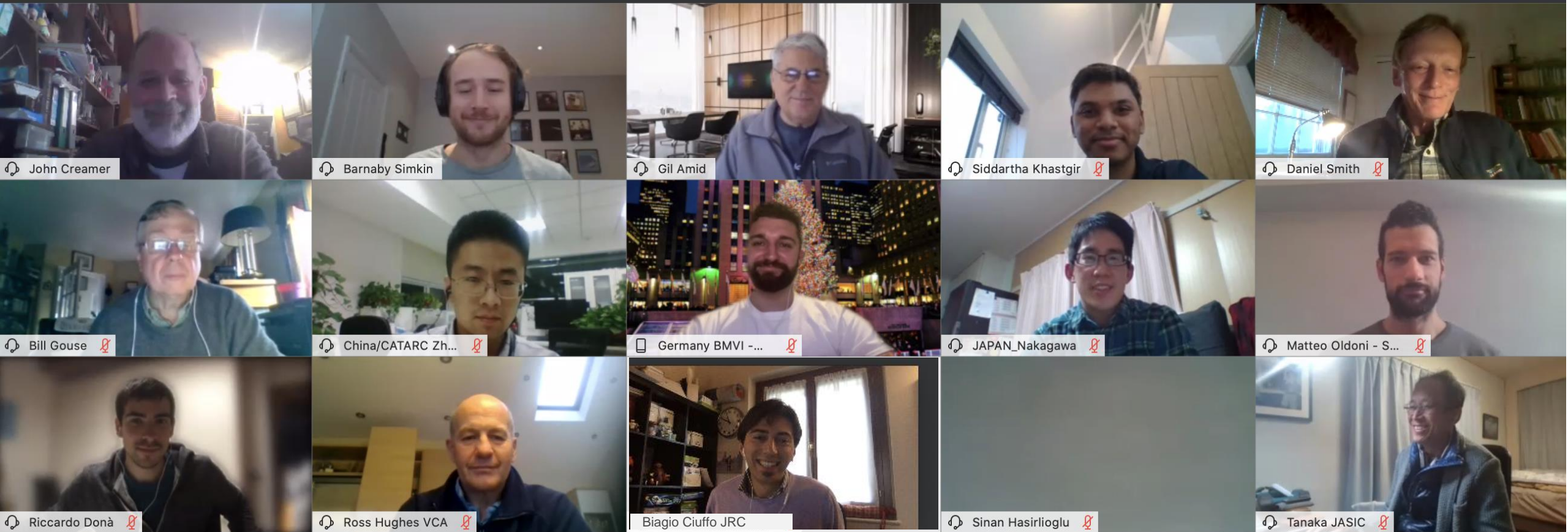
1. Virtual testing to support effective ADS validation
  1. provide an example of a toolchain (January 2021)
2. ADS virtual tool chain validation (April 2021)
  1. Define the different approaches for ADAS and ADS
  2. Add figure to toolchain validation process
  3. Explain why the same scenarios may not be used in toolchain calibration and ADS validation
3. Documentation requirements for vehicle manufacturers (June 2021)
  1. Explain 3rd party involvement in toolchain validation.
  2. Detail the relationship with the audit pillar (SMS or ADS Safety assessment)
4. Future of virtual testing in certification (December 2021)
  1. standardization requirements to allow authorities performing in-house virtual testing (link to the ASAM work)

# Next steps

- In case of agreement today next SG2 meeting on **13 January** (the series of weekly meetings restart).
  - Example of simulation toolchain for virtual testing. Inputs by...
    - AVL?
    - OICA/CLEPA?
    - ...
  - Restart the discussion on simulation toolchain validation. Inputs by...
    - RDW?
    - ...



# SG2 Christmas picture





*Season's Greetings*  
**2020 JRC**

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# Thank you



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