



Session 6

Status Review and Session Orientation

Web Conference

29 October 2020

Today's Agenda



1. Adoption of the Agenda
2. Adoption of the report of the last session
3. FRAV status and session orientation
4. Document 5 update (Request for comments)
5. Elaboration of ADS safety requirements (Discussion)
6. Approaches to setting performance limits (Discussion)
7. Next steps and deliverables

Adoption of the Agenda

Agenda item	Documentation
1. Adoption of the agenda 13:00-13:10	FRAV-06-01
2. Adoption of the report of the previous session 13:10-13:20	FRAV-05-02
3. Status overview and session orientation 13:20-13:35	FRAV-06-03 (Co-chairs)
4. Presentation of draft Document 5 update 13:35-13:50	FRAV-06-05 (Secretary) FRAV-06-09-Rev.1 (Japan)
5. Elaboration of ADS safety requirements 13:50-14:50	FRAV-06-04 (Secretary) FRAV-06-06 (Japan) FRAV-06-07 (Japan) FRAV-06-10 (NL) FRAV-06-11 (Germany) FRAV-06-13 (EC)
6. Approaches to setting performance thresholds 14:50-15:50	FRAV-06-08 (Japan) FRAV-06-12 (EC)
7. Next Steps and Deliverables 15:50-16:00	

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Given the short period between 5th and 6th sessions, we will re-confirm approval of the report at the next session.

Review of FRAV Points of Consensus (cont.)



1. “*Automated Driving System*” (ADS) means the hardware and software that are collectively capable of operating a vehicle on a sustained basis.
2. FRAV requirements specifically regard the ADS and its performance in the operation of a vehicle.
3. Operational Design Domain (ODD) refers to the operating conditions under which an ADS is designed to function.
4. ADS may be designed to function under more than one discrete set of operating conditions (i.e., more than one ODD).
5. “*(ADS) feature*” means an application of ADS hardware and software designed specifically for use within an ODD.
6. An ADS may have one or more features as defined by their unique ODD.
7. “*Operational Design Domain*” means the operating conditions under which an ADS feature is specifically designed to function.
8. In operation, the ADS continuously controls the vehicle motion, monitors the vehicle environment, interacts with other road users, and determines responses to road and traffic conditions (collectively known as the Dynamic Driving Task (DDT)).
9. The ADS has functions that collectively perform the entire DDT while the ADS is in use.
10. The ADS monitors the functions and safely manages failure modes when detected.
11. The ADS functions enable the features to operate the vehicle within the ODD of the feature.
12. An ADS feature may use all or some of the functions of the ADS.
13. ADS features may share ADS functions.
14. An ADS should be assessed based on its intended use(s) and limitations on the use of its features.
15. ADS requirements should be technology-neutral and performance-based.

16. ADS requirements should be applicable across the anticipated diversity of configurations (i.e., features and functions).
17. ADS assessments require information specific to the configuration of the ADS (i.e., features, functions, ODD, other usage specifications).
18. Manufacturers provide the information specific to the ADS design and intended uses.
19. FRAV will define mandatory requirements for ADS descriptions (i.e., ODD elements, other usage specifications).
20. The manufacturer description of the ADS provides a means to determine the application of the ADS performance requirements.
21. The NATM process should begin with a review of the ADS description to verify fulfillment of the mandatory description requirements and to determine the application of the performance requirements.
22. The ADS requirements should be derived from the following safety perspectives:
 - The ADS should drive safely.
 - The ADS should interact safely with the user.
 - The ADS should manage safety-critical situations.
 - The ADS should safely manage failure modes.
 - The ADS should maintain a safe operational state.

No comments received since the last session.

If there are reservations, concerns, or questions regarding these points, please convey them to the FRAV secretary. FRAV will address the issues at a future session.

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- Please review document FRAV-06-05 before the next session.
 - Preferable to have comments in advance (i.e., by Thursday, 12 November)
- Principal changes
 - Updated background to summarize discussions to date
 - Proposes revised “Purpose of the document” (Clarify understanding of purpose)
 - Proposes “Dynamic Driving Task” and “ADS function” (working) definitions
 - Proposes update to “ADS” definition accordingly
 - Proposes “ADS Safety Requirements” introductory chapter
 - Description of “system safety”, FRAV strategy, etc.
 - Proposes “ADS Performance Requirements” chapter
 - D5 structure: “ADS Safety Requirements”, “ODD”, “ADS Performance Requirements”
 - Group ADS performance requirements in subsections

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5. Elaboration of ADS safety requirements
 - Circulated FRAV-06-04 as basis for development
 - Input from Japan (FRAV-06-06/07), Netherlands (FRAV-06-10), Germany (FRAV-06-11), EC/JRC (FRAV-06-13)
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Performance Requirement Starting Points



1. **ADS should drive safely.** (Ensure safe behavior of the ADS as “the driver”)
2. **ADS should interact safely with the user.** (Ensure safe use of ADS and safe interactions with the user such as transfers of control, user override, etc.)
3. **ADS should manage safety-critical situations.** (Differentiate between normal driving and emergency situations to ensure safe responses to the latter)
4. **ADS should safely manage failure modes.** (Ensure safe responses to system malfunction, physical damage, etc.)
5. **ADS should maintain a safe operational state.** (Ensure safety throughout the useful life of the ADS, such as safety critical updates, response to obsolescence)

Item 2: Driver/User/Operator Question

Which term does FRAV prefer to refer the human interacting with the ADS?

- Driver
 - Under some interpretations, ADS can be the driver
 - This interpretation means an ADS vehicle has two possible drivers: the ADS or the human with access to vehicle motion control.
 - Vehicle with driver controls → occupant of the driver's seat
 - Vehicle operated remotely → human operator in control center
 - Hybrid system? → human in vehicle and/or remote operator if needed
- User
 - Term does not necessarily imply control over ADS beyond activate/deactivate
- Operator
 - Term implies human responsibility at some level for correct use
 - Some driver's licenses use the term "operator"

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- Next session 17 November
 - Initial performance goal list
 - How to proceed to reach agreement on the initial list during Session 7?
 - Primary goal: Common understanding of each starting point and the items to be covered
 - Clear understanding of safety aspect provides basis for discussion on work plan
 - Provide input by 12 November to facilitate 7th session preparations
- Request further views on methods for establishing performance criteria/limits
 - Last session in 2020 on 8 December
 - Aim to understand options to support work on defining limits for performance goals in 2021