Informal document **GRVA-11-25**
11th GRVA, 27 Sept.-1 Oct. 2021
Provisional agenda item 4(a)

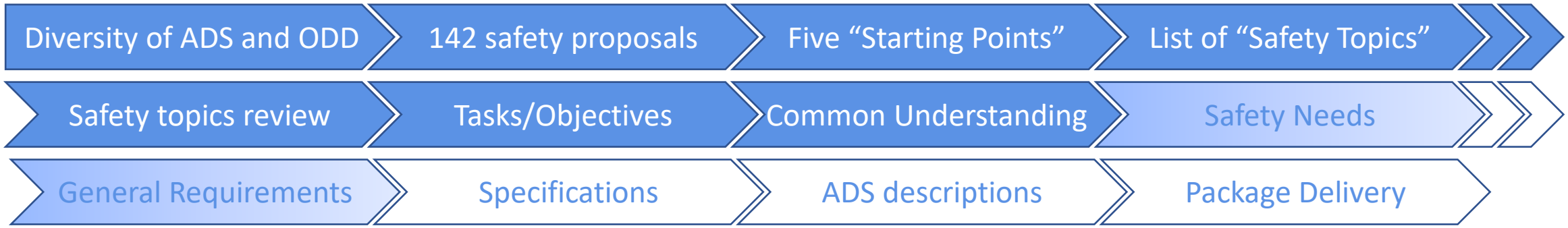
FRAV Status Report to the 11th GRVA Session

Web Conference

27September-1 October 2021

FRAV

FRAV status



- FRAV translating safety needs into safety requirements.
  - Based on “starting points” and “safety topics”
  - Step 1: Determine requirements that address safety needs
  - Step 2: Set verifiable criteria for assessment against requirements
- Three workstreams developing cross-cutting requirements.
  - ADS performance of the DDT
  - ADS interactions with users
  - ADS interactions with other road users and objects (ORU)

Structure and principles

- Terms and definitions
- Guidelines for ADS descriptions
  - ADS configuration and uses
  - ADS feature ODD conditions and boundaries
  - User information
- ADS safety requirements
  - ADS performance of the DDT
  - ADS interactions with ADS users
  - ADS management of safety-critical situations
  - ADS management of system failures
  - ADS operational safety over time

- HMI based on user roles
  - Driver, fallback user, passenger, etc. applicable based on ADS configuration/uses
  - Recognizes roles may shift during trip (e.g., fallback user to driver during a transfer of control)
- OEDR based on detectable properties that enable recognition and classification
  - Detection of signals and markings enables recognition and classification as “emergency vehicle”

GRVA informal document

- Presented to FRAV as FRAV-19-05
  - Consolidation of FRAV working papers transposed into structured format and “WP.29 style”
- **Document currently under FRAV internal review**
  - Issues with transposition of FRAV-14-07/Rev.1 into DDT-related text
  - Ongoing discussions regarding user interactions and human factors
  - Signaling of maneuver intentions
  - External signaling of ADS operational status
  - User information provisions

The informal document covers work as presented to the 19th FRAV session. The document is undergoing revisions per expert comments to be considered during FRAV-20 and will be revised as FRAV prepares its informal submission for GRVA-12.

Data collection workstream

- EDR/DSSAD request for FRAV input regarding ADS
  - Account for diversity of ADS
    - ADS with or without fallback user (in-vehicle but possibly remote…)
    - ADS with or without occupants (driverless shuttles, goods transports)
  - Account for uses of data and their legal frameworks
    - Safety authority crash analysis/reconstruction
    - Manufacturer in-service monitoring and reporting (VMAD activity)
- Provided initial recommendations to EDR/DSSAD and shared with VMAD SG3
  - Anticipate further collaboration on indicative data elements
  - Distinction between crash-specific data and “dual use” data (i.e., consider legal framework for crash investigations and general performance monitoring)

Expectations

- FRAV expects to build out its list of general requirements
  - Collaborating with VMAD SG1 to align requirements and scenarios
  - Combination of requirements and scenarios facilitates application under assessment methods
    - Nominal scenarios for assessment of DDT and HMI performance
    - Critical scenarios for assessment of crash avoidance/failure management performance
- Alignment of scenarios and requirements facilitates work on performance specifications and logical layer scenarios
  - Specifications to ensure safe and smooth navigation of normal traffic
  - Specifications for responses to safety-critical situations (“preventable crashes”)
- Scenarios and requirements support ADS description guidelines
  - Safety-relevant ODD elements to support work on defining verifiable criteria

Schedule

FRAV

- Monthly meetings through to GRVA-12 (tentative schedule)
  - October 14
  - November 17-18
  - December 15-16
  - January 13-14
  - February 1
- Workstreams to develop input to further FRAV discussions
  - Workstreams may change as work progresses
- Anticipate increasing collaboration with VMAD and its subgroups
  - Collaborate as functional scenarios move to logical abstraction layer
  - Collaborate as VMAD subgroups apply scenarios to assessment methods

Thank you for your attention.
FRAV welcomes questions, comments, or suggestions.