

Functional Performance Requirements for Automated Driving Systems and ADS-Equipped Vehicles

FRAV Status Report

1. Purpose

This document has been prepared by the Informal Working Group on Functional Requirements for Automated Vehicles (FRAV) to report to the Working Party on Automated/Autonomous and Connected Vehicles (GRVA) on its efforts to gather and consider proposals for functional performance requirements for Automated Driving Systems and vehicles equipped with such systems. FRAV emphasizes that its first three sessions have focused primarily on gathering, organizing, and consolidating input from across a wide range of stakeholders. This document highlights concepts but will undergo substantial change as the FRAV work progresses. This document does not constitute a proposal, formal or otherwise, for automated vehicle legal requirements but may serve to support discussions across WP.29 and its subsidiary bodies.

2. Background

According to its Terms of Reference (WP.29/1147/Annex V), FRAV was established by WP.29 under GRVA to develop functional (performance) requirements for automated/autonomous vehicles, in particular, the combination of the different functions for driving:

- longitudinal control (acceleration, braking and road speed)
- lateral control (lane discipline)
- environment monitoring (headway, side, rear)
- minimum risk maneuver
- transition demand
- HMI (internal and external)
- driver monitoring.

According to the mandate, this work should also cover the requirements for Functional Safety.¹ FRAV has been further mandated to pursue this work in line with the following principles/elements described in

¹ ISO 26262 defines functional safety as the absence of unreasonable risk due to any potential source of harm caused by malfunctioning behavior of electrical and or electronic systems. A malfunctioning behavior is not limited to failures but also includes unintended behavior (with respect to design intent).

the WP.29 Framework Document on Automated/Autonomous Vehicles (WP.29/2019/34/Rev.2, hereafter, the Framework Document):

- System safety
- Failsafe Response
- HMI/Operator information
- OEDR (Functional Requirements).

The Framework Document established one deliverable specific to functional performance requirements for automated vehicles. GRVA was requested to submit a document on “common functional requirements [based] on existing national/regional guidelines and other relevant reference documents (1958 and 1998 Agreements)” for consideration during the 180th (March 2020) session of WP.29.

Although not specified in the FRAV Terms of Reference, the Framework Document implies and GRVA requested that FRAV provide the basis for this submission to WP.29. Therefore, FRAV considered a “Comparison table of ADS Guidelines in USA, Canada, Japan, EU, Australia and China” (VMAD-01-04) prepared by OICA. At its first session (FRAV-01, 9-10 October 2019, Berlin), FRAV further considered a table of “common AV safety elements” (FRAV-01-13) whereby OICA distilled the comparison table into a single set of common elements. Pursuant to an FRAV request, OICA aligned the table with the Framework Document in a revised document (FRAV-01-13/Rev.1).

In preparation for its second session (FRAV-02, 14-15 January 2020, Tokyo), the FRAV co-chairs (China, Germany, and the United States) directed the FRAV secretary to prepare a document transposing FRAV-01-13/Rev.1 into a format suitable for long-term development. The purpose of this new document (FRAV-02-05) was to facilitate the systematic discussion of each of the safety elements with the aim to gather additional input from all the FRAV stakeholders.

During FRAV-02, document FRAV-02-05 was expanded to include input from the stakeholders, including documents:

- Comments on FRAV-01-13/Rev.1
 - FRAV-02-06 (EC)
 - FRAV-02-08 (Canada)
 - FRAV-02-11 (Switzerland)
- Comments on FRAV-02-05
 - FRAV-02-07 (Netherlands)
 - FRAV-02-10 (OICA/CLEPA)
 - FRAV-02-12 (Canada)
- Proposal for high-level functional requirements

- FRAV-02-13 (OICA/CLEPA)
- Proposal to define “Operational Design Conditions (ODC)”, including driver status requirements
- FRAV-02-09 (China/CATARC)

The discussions and input resulted in document FRAV-02-05/Rev.1 which was considered during the second day of the session. FRAV-02 approved the document as the basis for further developing proposals for functional performance requirements.

Given the intention to continue using the document as a tool for capturing and considering all stakeholder input, FRAV decided to reserve the document number “05” for all future iterations. Hence, FRAV refers to this documentation tool as “Document 5”.

At the conclusion of the FRAV-02 session, the FRAV co-chairs directed the FRAV secretary to prepare a consolidated and updated revision of Document 5 (FRAV-02-05/Rev.2) as a means to gather further input in preparation for the third FRAV session (FRAV-03, 14-15 April 2020, Paris).

In order to fulfill its commitment to support GRVA, FRAV submits the present report for consideration in preparing its submission to the 180th WP.29 session in March 2020.

3. Principles for Functional Performance Requirements

3.1 Introductory comments

3.1.1 Vehicle definitions and classifications

Following discussions on the scope of work during its first session, FRAV tasked the experts from the United Kingdom to conduct a review of Special Resolution No. 1 (SR1) with regard to automated vehicle configurations. As a result, FRAV has identified possible issues with current definitions of vehicle classifications:

- SR1 definitions refer to drivers and driver seating positions. As a result, automated vehicles without driver controls would appear to fall outside the current classifications.
- Definitions limited to the number of seating positions would appear to leave unclassified a vehicle designed to carry small numbers of standing passengers.

3.1.2 High-level approach

In order to cope with the complexity of traffic conditions, FRAV has agreed to proceed from high-level requirements towards more detailed requirements as may be warranted to address particular safety needs. As a result, FRAV has frequently referred to the Framework Document's "Safety Vision" statement, in particular paragraph 7: "The level of safety to be ensured by automated/autonomous vehicles implies that 'an automated/autonomous vehicle shall not cause any non-tolerable risk', meaning that automated/autonomous vehicle systems, under their automated mode ([ODD/OD]), shall not cause any traffic accidents resulting in injury or death that are reasonably foreseeable and preventable".

Given the importance of this statement in establishing high-level performance requirements, GRVA and WP.29 may wish to consider improvements to the text in response to the following issues raised in FRAV. In particular, terms should be accurate and aligned with established practices and standards. Use of multiple terms for identical objects tends to create uncertainty regarding whether the competing terms have been retained to convey differences in meaning.

3.1.3 Operational Domain

FRAV has noted the use of "OD" and "ODD", often interchangeably, in the Framework Document and other WP.29 documents. After extensive consideration, FRAV has determined that use of the term "operational domain" or OD is unnecessary and counterproductive. The term ODD has been defined by SAEJ3016:2018 and is widely accepted across all stakeholders. The term OD was proposed to differentiate between the ODD defined by the manufacturer and minimum operational conditions that might be established by the safety authority. FRAV has determined that the term ODD is sufficient to enable the development of functional performance requirements and does not prejudice the ability of safety authorities to establish minimum requirements related to ODD definitions. Use of OD introduces unnecessary ambiguity and has given rise to confusing use of OD and ODD in WP.29 documents. WP.29 may wish to consider removing the references to "OD" from the Framework Document.

3.1.4 Autonomy

FRAV also considered the use of the term "autonomous" by the Framework Document in particular and WP.29 in general. SAE J3016:2018 includes "autonomous" in its list of deprecated terms and cautions against its usage.² The term is functionally imprecise and has given rise to widespread improper use as synonymous with "automated". In legal terms, "autonomous" refers to the capacity for self-governance, including responsibility for one's own actions. The J3016 Recommended Practice notes that even the

² SAE J3016:2018, Section 7. Deprecated Terms. This section lists terms that are functionally imprecise (and therefore misleading) and/or that are frequently misused by application to lower levels of driving automation (i.e., levels 1 and 2) in which the driving automation system does not perform the entire DDT.

most advanced ADS do not meet this level of independent control or behavior. SAE J3016 states, “This usage obscures the question of whether a so-called “autonomous vehicle” depends on communication and/or cooperation with outside entities for important functionality”. Although such autonomy may be theoretically possible given future advances in robotics and artificial intelligence, FRAV sees nothing in the foreseeable future to suggest the development of ADS along these lines. ADS remain dependent upon external inputs and/or cooperation (e.g., system design, software algorithms and updates, system maintenance, user commands and interactions). Therefore, FRAV submits that vehicles equipped with ADS are “automated” but not “autonomous”. WP.29 may wish to consider removing references to “autonomous” from the Framework Document and discouraging its use in other instances.

3.1.5 Accidents

The use of “accidents” has raised some comments within FRAV. This term does not have a clear legal definition and implies an absence of responsibility. Given that FRAV has been mandated to develop requirements that recognize safety authority and manufacturer responsibilities towards ensuring safety, the term “accidents” should be replaced by a more neutral term such as “events” or a more specific term such as “collisions”. WP.29 may wish to consider alternative language in the Framework Document.

3.1.6 Free of unreasonable safety risks

FRAV discussions have repeatedly included the phrase “free of unreasonable safety risks” (as used under the “System Safety” and “Validation of System Safety” elements of the Framework Document) as a high-level performance standard.³ This phrase appears to more clearly capture the intent of the reference to “non-tolerable risks”. Moreover, ISO 26262 ‘Road Vehicles—Functional Safety’ refers to functional safety as the “absence of unreasonable risk”. WP.29 may wish to consider revising the “Safety Vision” accordingly.

3.1.7 Disruption of the flow of normal traffic

FRAV discussions have repeatedly noted that vehicles operating in automated mode should not unnecessarily disrupt the normal flow of traffic, relating to the notion that vehicles in automated mode should behave in ways that other road users can anticipate. The Framework Document refers to this aspect in paragraph 6 of the Safety Vision: “If automated/autonomous vehicles confuse users, disrupt road traffic, or otherwise perform poorly then they will fail”. However, this cautionary statement is not reflected elsewhere in guiding the work on performance requirements.

³ ISO 26262 "Road vehicles – Functional safety" defines functional safety as “Absence of unreasonable risk due to hazards caused by malfunctioning behavior of Electrical/Electronic systems”, supporting use of “unreasonable risk” as the preferred terminology.

Driving entails the prioritization of competing demands (e.g., compliance with traffic laws versus risk to human life). While safeguarding human life sits at the apex of priorities, ensuring the smooth flow of traffic plays an important role given its relationship to crash causation and to the negative health, safety, and economic impacts of traffic congestion. In this regard, prioritizing functional performance requirements conducive to the assurance of safe traffic flows seems consistent with the intent of the Framework Document. WP.29 may wish to consider this aspect of automated vehicle interaction with surrounding traffic in its high-level guidance.

3.1.8 Destruction of property

Canada has proposed that the performance criteria should also aim to avoid the destruction of property in addition to outcomes resulting in injury or death given the economic consequences of vehicle crashes. Although “destruction of property” would likely require definition (e.g., prioritizing avoidance of injury or death over property damage), this addition appears consistent with the intent to avoid collisions where preventable.

3.1.9 Rational versus reasonable

FRAV has noted the use of “rationally” in place of “reasonably” in WP.29 documents. FRAV supports the Framework Document’s use of “reasonably”. As noted above, the ISO definition of functional safety refers to “unreasonable risk”. Logically, the inverse of this concept would refer to “reasonable risk”, not “irrational risk”. Moreover, a “reasonableness” standard is well-established under English-language regulatory and administrative law. This standard is used both in connection with the “foreseeability” principle and in the exercise of due care in product design.

3.2 Operational Design Domain

The Operational Design Domain (ODD) describes the operating conditions under which an ADS or feature thereof is specifically designed to function.⁴

Under the Framework Document, the definition of the ODD is a manufacturer responsibility: “Vehicle manufacturers should document the ODD available on their vehicles and the functionality of the vehicle within the prescribed ODD”.⁵ Safety authorities will require clear ODD definitions to establish the basis for the assessment of the ADS. For example, an ODD limiting the intended use of the ADS to speeds below 60 kph would determine the applicable functional performance requirements. The assessment would verify that the ADS recognizes and responds correctly (e.g., executes a fallback response) to this boundary condition while evaluating vehicle performance with the ADS in operation at speeds below the

⁴ SAE J3016:2018, section 3.22.

⁵ WP.29/2019/34/Rev.2, paragraph 9, subparagraph (e).

60 kph boundary condition. If the ODD boundary were set at 120 kph, the test and assessment methods would be different.

Given the importance of ODD definition to the assessment of automated vehicles, systems, and features, manufacturers and safety authorities may need a shared methodology to describe a minimum array of ODD elements and its documentation by the manufacturer. Therefore, FRAV anticipates the development of such a methodology consistent with the need to assess compliance with the functional performance requirements. In line with its terms of reference, FRAV notes work on an industry standard (ISO/WD 34503: “Road vehicles — Taxonomy for operational design domain for automated driving systems”) under ISO Technical Committee 22/Subcommittee 33.⁶

FRAV notes that the ODD is not necessarily defined at the vehicle level. As noted by NHTSA in its research report “A Framework for Automated Driving System Testable Cases and Scenarios”, ODD will likely vary for each ADS feature.⁷ Some features may be limited by ODD conditions that are not applicable or relevant to other features.

ODD has generally been described in terms of ambient variables such as road type, weather conditions, lighting conditions, geographical restriction, and the presence or absence of certain road features (e.g., lane markings). However, FRAV is considering stakeholder comments regarding other system dependencies such as the availability of external sources of information or the state of the driver to determine their relationship(s) with ODD definition.

While FRAV accepts the Framework Document’s premise of certain minimum ODD elements, the group cautions that the methodology for documenting the ODD could be more complex. FRAV will need to discuss the stakeholders perspectives to ensure that its work is structured to capture and develop a wide range of safety-critical aspects of automated driving.

3.3 System Safety

Under the Framework Document, the demonstration of system safety is a manufacturer responsibility. Manufacturers are obliged to generate evidence demonstrating “a robust design and validation process based on a systems-engineering approach with the goal of designing ADS free of unreasonable safety risks”.⁸ The role of safety authorities and/or their authorized agents is to verify that manufacturers have

⁶ The Working Draft (WD) of the proposed standard has been approved for registration as a Committee Draft (CD).

⁷ See, for example, FRAV-01-14: “A Framework for Automated Driving System Testable Cases and Scenarios”, Chapter 3.

⁸ WP.29/2019/34/Rev.2, paragraph 9, subparagraph (f).

complied with minimum requirements and have furnished the requisite documentation regarding the development and validation of the ADS.

Functional performance requirements for system safety, therefore, will have to describe capabilities that should be integrated into the ADS design and the performance levels that should be demonstrated by a vehicle manufacturer through its validation processes.

The following capabilities and performance levels are intended to be consistent with FRAV's interpretation of the Framework Document's "System Safety" topic: When in automated driving mode, a vehicle should be free of unreasonable safety risks to the vehicle user(s) and to other road users and ensure compliance with road-traffic regulations consistent with the assurance of road safety.

FRAV highlights that its interpretation differs from the current Framework Document text pursuant to its discussions. GRVA and WP.29 may wish to consider the FRAV interpretation towards improving the Framework Document text.

3.3.1 System Capabilities

An ADS should be capable of object and event detection and response (OEDR).⁹

The OEDR function should monitor the driving environment as needed to operate the vehicle.¹⁰

The OEDR monitoring function should be capable of detecting, recognizing, classifying, and preparing a response to objects and events in the driving environment.¹¹

The OEDR function should be capable of controlling the longitudinal and/or lateral motion of the vehicle in response to conditions in the driving environment.¹²

The ADS should be capable of detecting when the conditions of its operational design domain (ODD) are not present.

⁹ WP.29/2019/34/Rev.2, paragraph 9, subparagraph (d).

¹⁰ SAE J3016:2018, section 3.19.2.

¹¹ SAE J3016:2018, section 3.20.

¹² SAE J3016:2018, section 3.20 and section 3.13, Note 1 regarding the DDT defines OEDR as "monitoring the driving environment" and "object and event response execution" where both elements include operational and tactical effort. In terms of automated driving, tactical effort involves maneuvering the vehicle in traffic. Operational effort involves split-second reactions, such as making micro-corrections to steering, braking and accelerating to maintain lane position in traffic or to avoid a sudden obstacle or hazardous event in the vehicle's pathway (Section 8.11). Section 3.13 defines the DDT as including longitudinal and lateral motion control and OEDR functions of monitoring and response execution. Therefore, it seems useful to distinguish between the data collection and analysis (monitoring) and vehicle motion control (response execution) functions of the OEDR.

The ADS should be capable of monitoring and detecting safety-critical deficiencies in its functional status, including system failures and performance errors.¹³

In cases where the ADS is dependent upon a human operator to fulfill all or part of a functional performance requirement, the system should be capable of monitoring the human operator's readiness to fulfill such requirements as needed to ensure safe use.

3.3.2 Performance Levels

Activation of the ADS or a feature thereof should only be possible when the conditions of the system's or feature's ODD are present.

During ADS operation, the system should execute a safe fallback response when the conditions of its ODD are no longer present or safety-critical conditions outside the ODD are detected. If the ODD conditions pertain only to a feature of the ADS, the feature may be temporarily disabled if doing so does not create an unreasonable safety risk.

Activation of the ADS should only be possible when the system is in a functional state that is free of unreasonable safety risks. In the event of a safety-critical deficiency detected during ADS operation, the system should execute a safe fallback response.

The ADS in operation should detect, recognize, classify, and respond to traffic signals, including prioritization in the event of multiple signals (e.g., traffic lights, road signs, temporary signals, signals from authorized personnel).

The ADS in operation should detect the approach of a priority vehicle (e.g., detect its special luminous and audible warnings) and respond by adapting the automated vehicle's motion to ensure room for the priority vehicle to pass or, if necessary, by stopping the automated vehicle. Similarly, the ADS in operation should detect, recognize, classify, and respond to signals and/or gestures of authorized personnel in the roadway.

If safe use of the ADS is dependent upon human support and the ADS detects a safety-critical deficiency in the human operator's status, the system should prompt a return of the human operator to the required state of readiness and/or to execute a safe fallback response.

¹³ Under SAE J3016:2018, OEDR also includes driving events associated with system actions or outcomes, such as undiagnosed driving automation system errors or state changes. The latter responds to FRAV stakeholder input regarding system "risk mitigation" and "reaction to unforeseen situations".

Under reasonably foreseeable conditions and where preventable, the vehicle in automated driving mode should not disrupt the normal flow of traffic unless necessary to mitigate risks of collision, injury, or death.

Under reasonably foreseeable conditions and where preventable, the vehicle in automated driving mode should not cause collisions or other events resulting in destruction of property, injury, or death.

The vehicle in automated driving mode should comply with traffic laws and regulations except in cases where such compliance would unnecessarily disrupt the flow of traffic and/or introduce unreasonable risks to the safety of its occupants and/or other road users. In such cases, the ADS should execute a response consistent with the flow of traffic and risk mitigation.

3.4 Object and Event Response Execution

The Framework Document identifies OEDR as a distinct topic, stating “The automated/autonomous vehicles shall be able to detect and respond to object/events that may be reasonably expected in the [ODD/OD]”.

As noted above, FRAV (pursuant to its consideration of Contracting Party guidelines and stakeholder comments) considers OEDR to be essentially an element of System Safety. However, FRAV has also noted the work to date of VMAD and anticipates that the assessment of automated vehicles will include third-party physical performance testing (e.g., track tests, real-world test drive).

Moreover, SAE J3016:2018 distinguishes between the OEDR monitoring function and its response execution function. Response execution relates to the control of longitudinal and lateral motion control, among other elements, of the DDT. FRAV also notes its mandate to address motion control and DDT fallback responses in its Terms of Reference.

Therefore, in order to ensure attention to functional performance requirements that could provide criteria for use under third-party physical vehicle testing, FRAV has agreed to consider functional performance requirements for object and event response execution as a distinct subject.

FRAV has gathered an extensive list of proposals for performance thresholds; however, the proposals require further consideration. Categorically, FRAV is considering performance requirements related to normal driving and response(s) to other driving objects and events (i.e., critical situations).

FRAV suggests that GRVA and WP.29 may wish to consider clarifications to subparagraph 9(d) of the Framework Document.

3.5 Human Machine Interface and Operator Information

The Framework Document states, “Automated/autonomous vehicle should include driver engagement monitoring in cases where drivers could be involved (e.g. take over requests) in the driving task to assess

driver awareness and readiness to perform the full driving task. The vehicle should request the driver to hand over the driving tasks in case that the driver needs to regain a proper control of the vehicle. In addition, automated vehicle [*sic*] should allow interaction with other road users (e.g. by means of external HMI on operational status of the vehicle, etc.)”.

The Framework Document text presents significant problems, including its emphasis on “driver” involvement given the development of automated vehicles without driver controls. FRAV has noted possible differences in requirements between vehicles with and without controls, including vehicles designed for remote operation. The objective(s) of the sentence “The vehicle should request the driver to hand over the driving tasks in case that the driver needs to regain a proper control of the vehicle” is not clear and appears inherently contradictory.

FRAV has discussed the complexity of driver monitoring both conceptually and in terms of functional performance requirements. SAE J3016:2018 offers distinctions among “monitoring”, “awareness”, and “receptivity”, noting as an example that a person may become aware of a fire alarm without “monitoring” the fire alarm. Monitoring can also to be a two-way street: the system may monitor the user, but the user may also need to monitor the system. As noted above, concerns have been raised over interdependency between the system and user; the driver state could relate to the “intended use of the ADS” (e.g., its ODD). A system that requires a driver’s hands on the wheel or a requisite level of driver alertness should not be used if those conditions are not fulfilled.

FRAV has gathered extensive stakeholder input requiring further consideration. Nonetheless, the proposals suggest generic categories for functional performance requirements:

- Internal HMI
 - In-vehicle user information (including prioritization)
 - ADS activation/deactivation
 - User override of the ADS
 - ADS misuse, abuse, disuse prevention
 - ADS dependency on user support or intervention
- External HMI
 - Signaling of vehicle intentions (e.g., direction indicators)
 - Signaling of a minimal risk maneuver

3.6 Safe Fallback Response

The Framework Document describes a “Failsafe response” as “The automated/autonomous vehicles should be able to detect its [*sic*] failures or when the conditions for the [ODD/OD] are not met anymore. In

such a case the vehicle should be able to transition automatically (minimum risk manoeuvre) to a minimal risk condition”.

The Framework Document associates the “failsafe response” with system failures, exits from the ODD, and minimal risk maneuvers (MRM). FRAV notes that responses to conditions outside the ODD can fall within the normal and expected behavior of an ADS. Failsafe is generally understood to refer to a mechanism or system that returns the vehicle to a safe state specifically in the event of a failure or malfunction. Therefore, FRAV believes that “failsafe response” does not correspond to the intent of the Framework Document. FRAV agreed that a more accurate term would be “safe fallback response” which captures not only responses to failure modes but also nominal performance, including normal responses to planned and unplanned ODD exits.

In addition, the fallback response to a system failure or an ODD exit would not necessarily be limited to an MRM. For example, in vehicles equipped with driver controls, the fallback could be a safe transition of control to the driver.

Categorically, a safe fallback is a response either by the user or by the system to a system failure or an ODD exit. A fallback strategy can be a transition demand or an MRM and can involve a sequence of fallback responses.

FRAV notes the frequent use of “minimum” and “minimal” interchangeably (as is the case in the above paragraph from the Framework Document). FRAV has agreed that the accurate term is “minimal”. This term is consistent with SAE J3016:2018 and recognizes that the ADS has no control over the vehicle environment. The “minimal risk maneuver” places the vehicle in a “minimal risk condition” within the limits of the options available (e.g., availability or absence of an unobstructed hard shoulder by the roadside).

FRAV suggests that GRVA and WP.29 may wish to reconsider subparagraph 9(b) for improvement based upon the above perspectives.

3.7 Other functionalities

FRAV discussions have raised items outside the scope of the topics specified under its Terms of Reference. These items include “in-use performance” and “post-crash safety”.

FRAV suggests that GRVA and WP.29 may wish to consider the unallocated topics of the Framework Document (“vehicle maintenance and inspection”, “consumer education and training”, “crashworthiness and compatibility”, and “post-crash AV behavior”) for improvement and/or attribution.

FRAV has discussed possible needs related to the “in-use performance” of ADS. The Framework Document refers to “vehicle maintenance and inspection”; however, manufacturers have limited capacities to address what are essentially vehicle owner responsibilities. FRAV anticipates consideration

of requirements to ensure that an ADS cannot be used while in an unsafe state and notes the work of the EDR/DSSAD informal working group.

FRAV has agreed that, in the event of a collision, an automated vehicle should be placed in a state that minimizes safety risks to vehicle occupants, bystanders, and first-responders as well as to ensure that safety-critical damage to the ADS would preclude use of the automated driving mode(s) post-crash pending repair of the damage.

“Consumer education and training” has not produced a consensus opinion; however, FRAV has discussed the risks of ADS misuse as pertinent to functional performance requirements. In general, “consumer education and training” would seem to extend well beyond the scope of motor-vehicle safety regulation, including areas addressed by road traffic rules and WP.1.

“Crashworthiness and compatibility” falls under the scope of the Working Party on Passive Safety (GRSP). Nonetheless, FRAV would like guidance regarding whether its work should include provisions that might support GRSP considerations.