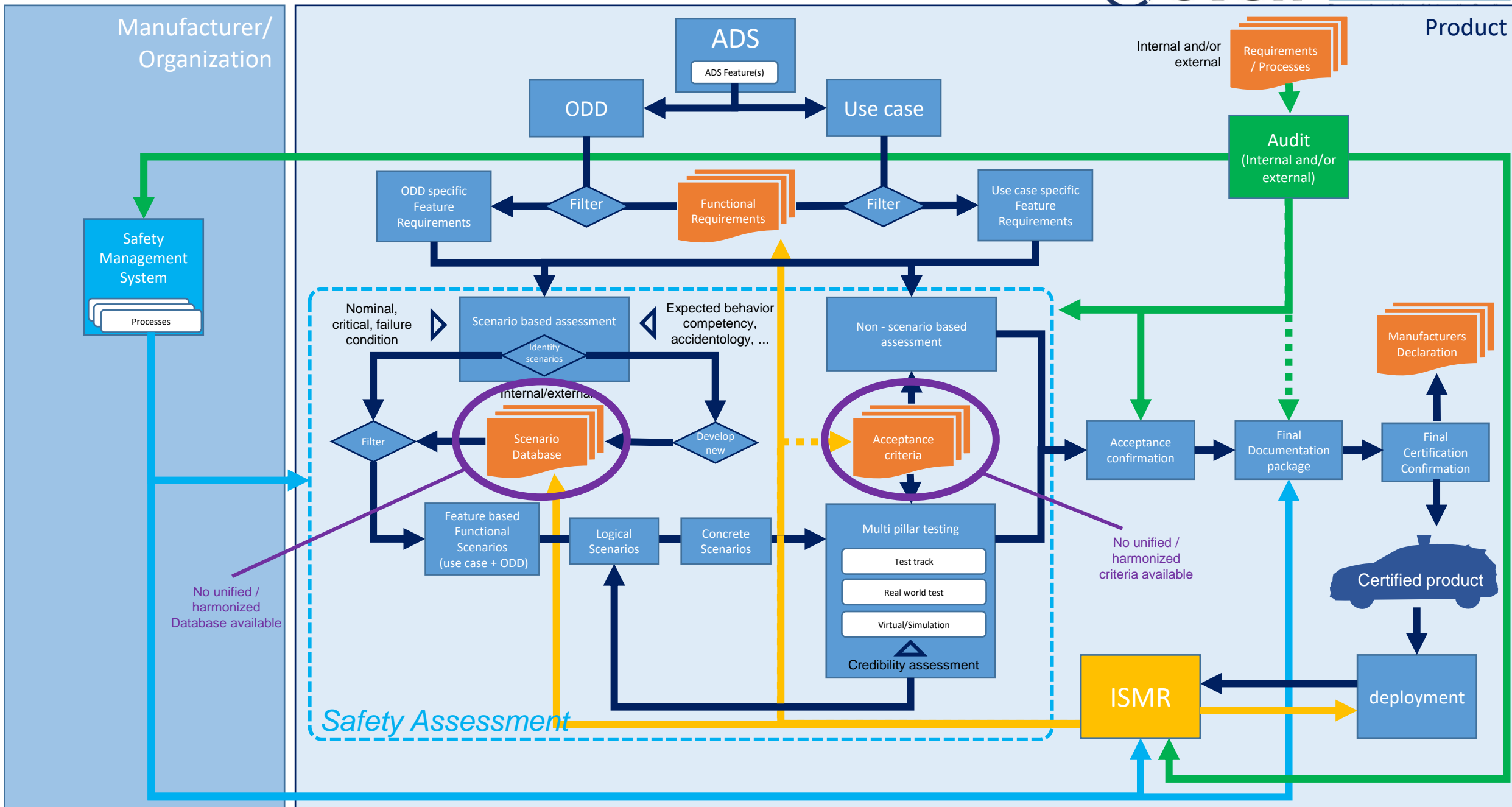# View on the Certification of AV's

- Current achievements and future tasks -

Assessment of the expected deliveries

- OICA/CLEPA has developed an overview on how Automated Vehicles could be certified (=> agreement neutral approach)

- The aim was to identify missing elements required for certification of Automated Vehicles, requiring further consideration under GRVA

- During this exercise the content of the former informal document GRVA-09-10 (presentation on the Certification of Automated Vehicles) was confirmed, taking also into account the latest developments in FRAV, VMAD and the Integration Group
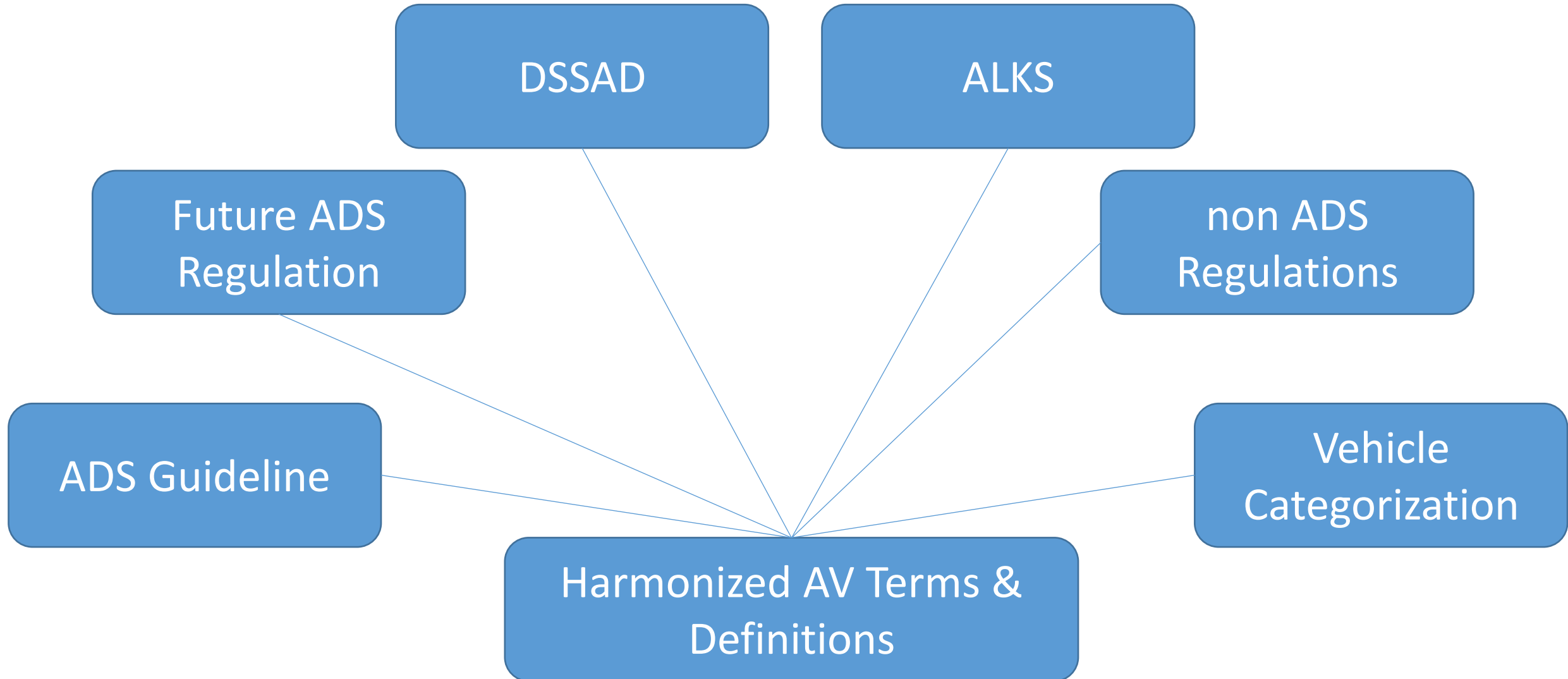
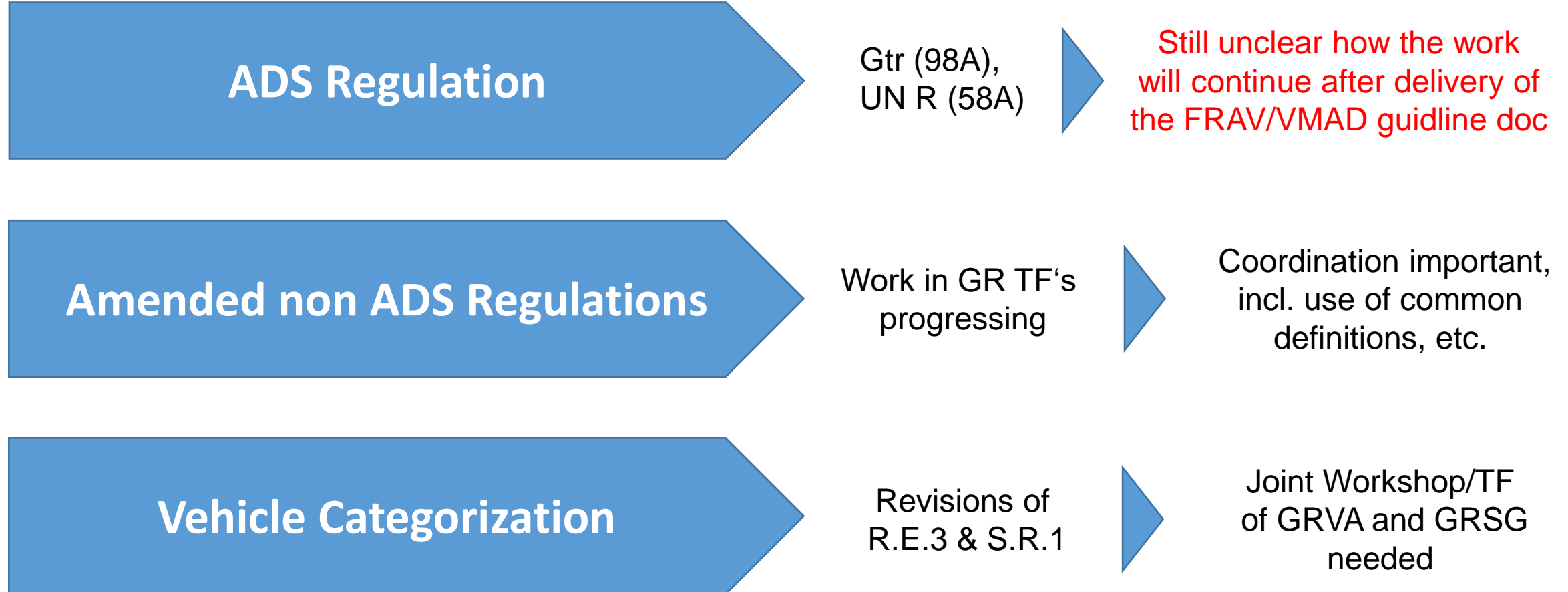# ADS certification overview: „Big picture" on how it works

OICA   CLEPA

Manufacturer/Organization

Product

Internal and/or external — Requirements / Processes

ADS — ADS Feature(s)

ODD ←→ **Use case**

Audit (Internal and/or external)

Safety Management System — Processes

ODD specific Feature Requirements ← **Filter** ← Functional Requirements → **Filter** → Use case specific Feature Requirements

Safety Assessment

Nominal, critical, failure condition

Scenario based assessment — Identify scenarios

Expected behavior competency, accidentology, …

Non - scenario based assessment

Internal/external

Filter ← Scenario Database ← Develop new

Acceptance criteria

Feature based Functional Scenarios (use case + ODD) → Logical Scenarios → Concrete Scenarios →

Multi pillar testing
- Test track
- Real world test
- Virtual/Simulation

Credibility assessment

Acceptance confirmation → Final Documentation package → Final Certification Confirmation

Manufacturers Declaration

No unified / harmonized Database available

No unified / harmonized criteria available

Certified product

ISMR ← deployment

No unified / harmonized criteria available

- In principle all topics needed for an ADS Regulation (GTR or UN R) seem to be addressed by the outcome of FRAV and VMAD

- Potential for improvement/harmonization for future activity on the topics of

  1. Scenario Database/catalog

  2. Acceptance criteria

  => Even though these topics are not addressed in a harmonized way yet, it would be possible to use the concept for certification making use existing solutions (e.g. scenario database from research projects, manufacturer justified acceptance criteria, etc.)

Need for harmonized AV definitions

DSSAD

ALKS

Future ADS Regulation

non ADS Regulations

ADS Guideline

Vehicle Categorization

Harmonized AV Terms & Definitions

Needs for certifications of AV's

ADS Regulation → Gtr (98A), UN R (58A) → *Still unclear how the work will continue after delivery of the FRAV/VMAD guidline doc*

Amended non ADS Regulations → Work in GR TF's progressing → Coordination important, incl. use of common definitions, etc.

Vehicle Categorization → Revisions of R.E.3 & S.R.1 → Joint Workshop/TF of GRVA and GRSG needed