

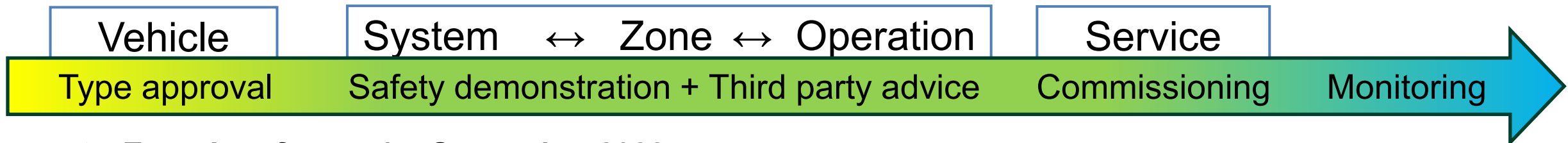
Automated and connected road transport

Regulatory framework in France

Latest developments

National regulatory framework for deployment

- 2019 Mobility Law + 2021 Ordinance and Decree + 3 orders (intervention operator and approved qualified bodies)
 - Definitions
 - automation = delegation to a driving system (partial if handover requests anytime)
 - automated road transport **system (ARTS)** = automated vehicles + remote capabilities
 - remote intervention = capabilities to order and acquit automated manoeuvres
 - Liability : automated system responsible if active (unless driver fails to takeover)
 - Authorisation process for ARTS (highly or totally automated vehicles integrated in a technical system, deployed on predefined route or zone)

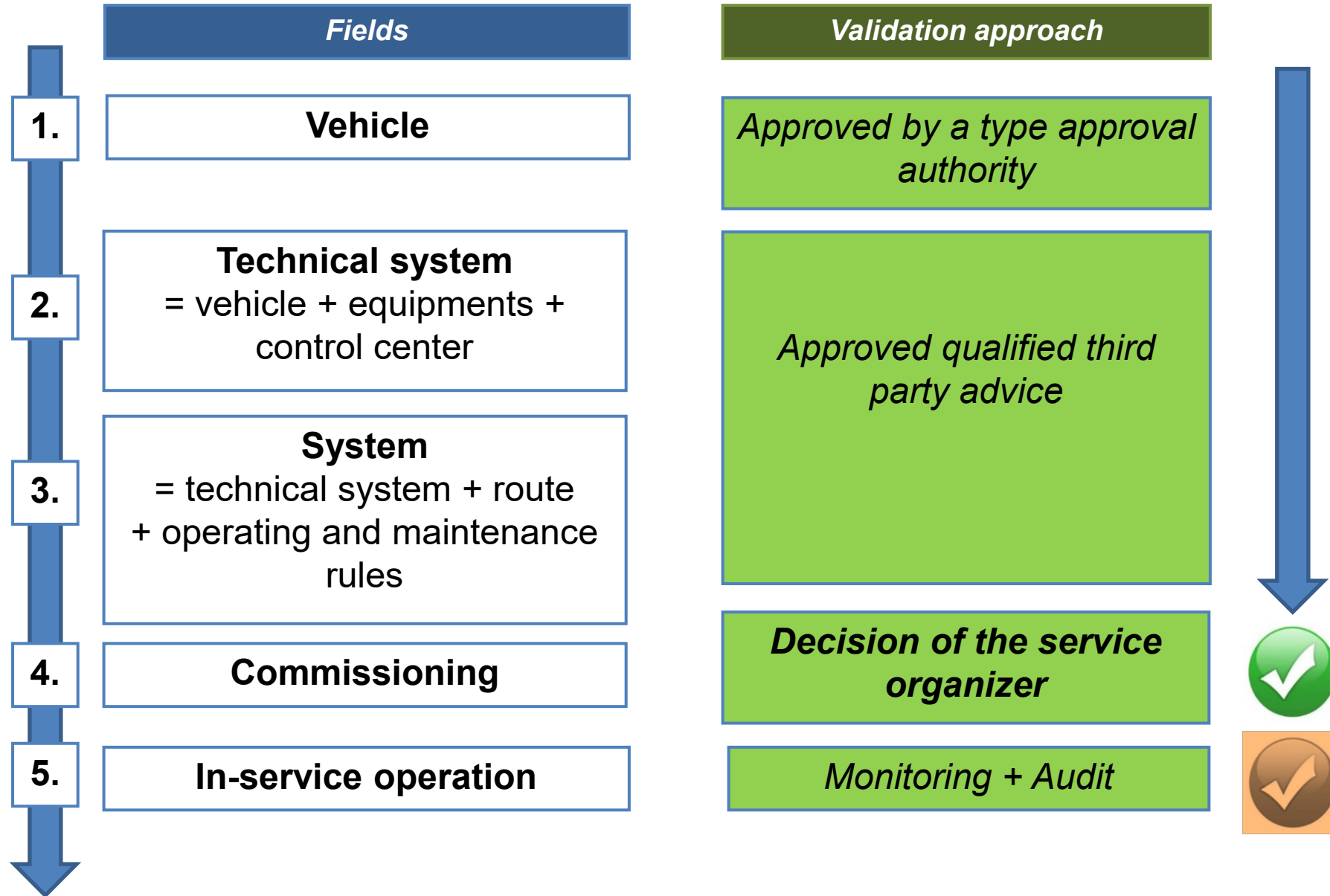


➤ Entry into force : 1st September 2022

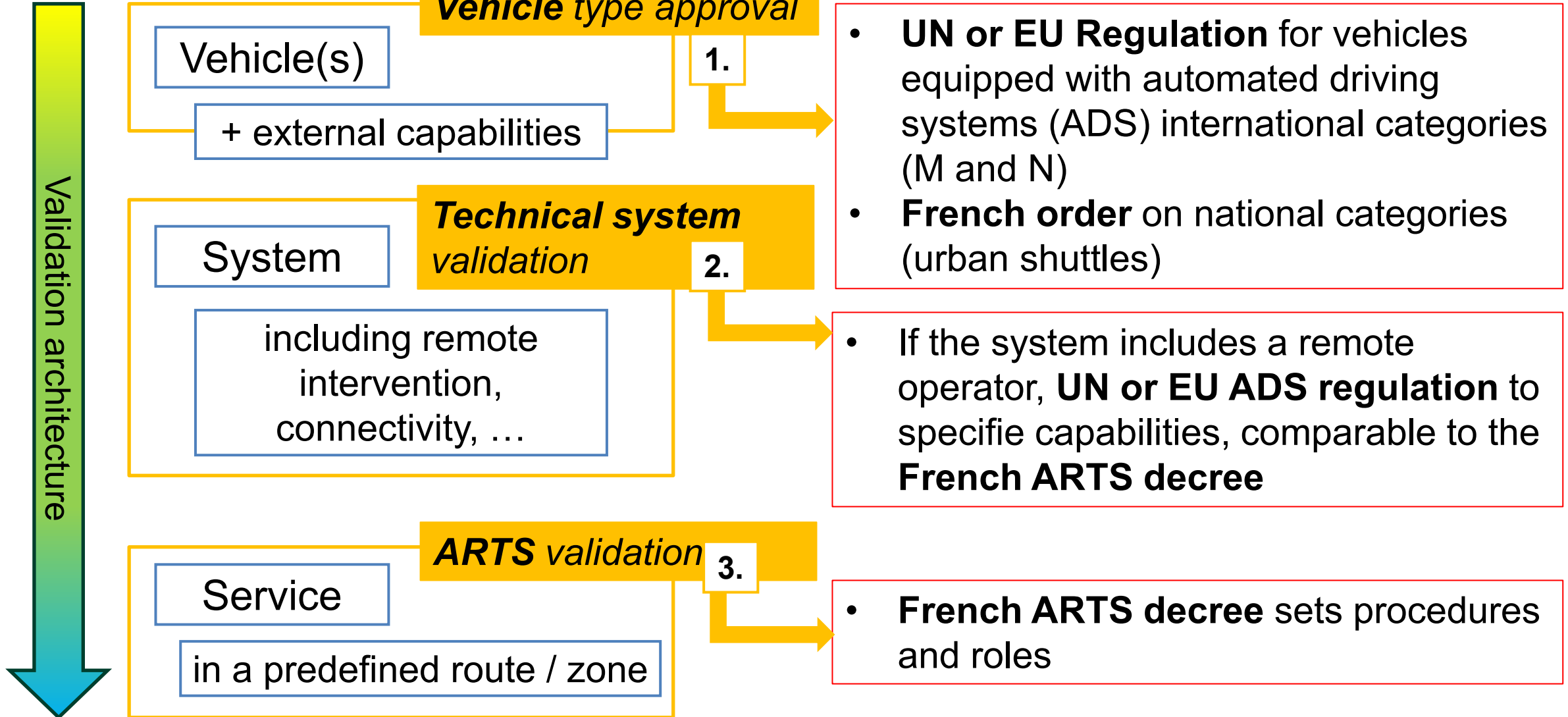
National policy for deployment

- *Order of 2 August 2022 implementing Article R. 3152-3 of the Transport Code on the authorisation of remote participants in road transport systems*
<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000046151685>
- *Order of 2 August 2022 in application of article R. 3152-30 of the transport code, relating to the approval procedure for qualified organisations*
<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000046216833>
- *Order of 5 August 2022 taken in application of article R. 3152-24 of the transport code relating to the content of the opinions of approved qualified organisations*
<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000046174400>
- *Decree No. 2022-1034 of July 21, 2022 publishing the amendment to the Vienna International Convention on Road Traffic of 8 November 1968, adopted in Geneva on 14 January 2022*
<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000046081252>

French safety demonstration architecture



FR and UN/EU regulations



FR – UN/EU : use cases covered by regulation

French decree (system+service-oriented)	UN or EU ADS Regulation (vehicle-oriented) WP29/GRVA FRAV work
<p>Automated road transport system (ARTS)</p> <ul style="list-style-type: none">• Highly or fully automated vehicles and their technical installations (technical system)• Deployed in a predefined route or zone for a transport service, both public and private• For the carriage of passengers<ul style="list-style-type: none">• <i>NB : freight and logistics = forthcoming</i>	<p>Vehicles type approval</p> <ul style="list-style-type: none">• Highly or fully automated vehicles, including dual modes vehicles• Fully automated vehicles designed and constructed for use on a predined area or on a predefined route with fixed start and end points of a journey/trip• For the carriage of passengers or goods

FR – UN/EU : safety requirements and demonstration

UN VMAD or EU ADS regulation sets requirements on safety, demonstration methods (tests) and documentation for automated vehicles

FR regulation sets

- drivers / remote operator roles and responsibilities
- general safety requirements on automated systems
- requirements on safety demonstration procedures



Safety demonstration guidance will need to be developed accordingly, e.g :

- Scenario-based approach for validation
- Reference safety target
- Remote intervention functions characterisation
- Route or zone characterisation
-

Safety standards for automated transport systems

1/3: published documents

Theme / title	Document	State	Remarks (EN versions for recent methodological documents)
Horizontal regulation - use case approach	Methodological document DGITM	Published 2017	https://www.ecologie.gouv.fr/sites/default/files/DGITM_Automated-vehicle-horizontal-regulation-2017-EN.pdf
New safety validation methods	Methodological document DGITM-PFA	Published 2020	https://www.ecologie.gouv.fr/sites/default/files/DGITM_Nouvelle-approche-validation-systemes-avril-2019-EN.pdf
Human/system articulation: manoeuvre approach	Methodological document DGITM	Published 2020	https://www.ecologie.gouv.fr/sites/default/files/DGITM_AD-articulation-roles-systemes-octobre-2020-EN.pdf
Characterisation of the routes: division into sections	Research report UGE-STRMTG	Published 2021	https://www.ecologie.gouv.fr/sites/default/files/DGITM_STPA-analyse-securite-parcours-mars-2021-EN.pdf
Application of the GAME approach	Implementation Guide STRMTG	Published 2021	https://www.ecologie.gouv.fr/sites/default/files/DGITM_Guide-application-STR-principe-GAME-EN.pdf
Scenario-based validation approach	Methodological document DGITM	Published 2022	https://www.ecologie.gouv.fr/sites/default/files/DGITM_Approche-par-scenarios-fevrier-2022-EN.pdf

Safety standards for automated transport

2/3: methodological documents to come

Theme / title	Document	Deadline	Remarks
Scenario validation: interactions with law enforcement and priority vehicles	Methodological framework document DGITM	Published 2022	https://www.ecologie.gouv.fr/sites/default/files/DGITM_Approche-par-scenarios-fevrier-2022-EN.pdf
Accidentology references for safety objectives	Research report DGITM	Published 2022	https://www.ecologie.gouv.fr/sites/default/files/DGITM-Rapport_accidentalite-juillet_2022-EN.pdf
ODD definition	Methodological framework document DGITM	Published 2022	https://www.ecologie.gouv.fr/sites/default/files/DGITM-ODD_dezscriptors-juin_2022-EN.pdf
Route characterisation	Methodological framework document DGITM	Q3 2022	Will incorporate elements from the ODD document and the "route cutting" study report. To be integrated into the STRMTG GAME safety demonstration guide (see below)
Characterisation of remote intervention functions	Methodological framework document DGITM	Q3 2022	To be integrated into the STRMTG GAME safety demonstration guide (see below)
Scenario generation	Methodological framework document DGITM-SystemX	Published 2022	https://www.ecologie.gouv.fr/sites/default/files/DGITM-L1-septembre_2022-EN.pdf
Scenario rating		Q3 2022	To be included in the STRMTG GAME safety demonstration guide (see below)
Use of scenarios in the safety		Q4 2022	

Safety standards for automated transport systems

3/3: forthcoming guidance

Theme / title	Document	Deadline	Remarks
GAME safety demonstration <ul style="list-style-type: none"> Definitions from the glossary Safety demonstration method, including: <ul style="list-style-type: none"> Pathway decomposition Functional decomposition Hazards and high level requirements 	Implementation Guide STRMTG	Published	https://www.ecologie.gouv.fr/sites/default/files/DGITM-GuideD%C3%A9monstration_GAME_STRA_v1_31aout2022-EN.pdf
Additions to be considered in the short term: <ul style="list-style-type: none"> Use of scenarios and safety analysis of routes 	STRMTG	2023	
RETEX - Handling of events	Implementation Guide STRMTG	2023	
Cyber requirements	Implementation Guide STRMTG	Q4 2022	<i>NB: The STRMTG is aiming for a 'martyr' version of this guide by Q3 2022</i>
Missions of the accredited qualified bodies	Implementation Guide STRMTG	Q3 2022	