Automated and connected road transport

Regulatory framework in France

Latest developments

Website: https://www.ecologie.gouv.fr/en/automated-vehicles
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)
  - Autorisation process for ARTS (highly or totally automated vehicles integrated in a technical system, deployed on predefined route or zone)

Vehicle ↔ System ↔ Zone ↔ Operation ↔ Service

Type approval | Safety demonstration + Third party advice | Commissioning | Monitoring

- 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

**Fields**

1. **Vehicle**

2. **Technical system**
   = vehicle + equipments + control center

3. **System**
   = technical system + route + operating and maintenance rules

4. **Commissioning**

5. **In-service operation**

**Validation approach**

- Approved by a type approval authority
- Approved qualified third party advice
- Decision of the service organizer
- Monitoring + Audit
FR and UN/EU regulations

Vehicle type approval

Vehicle(s)

+ external capabilities

Technical system validation

System

including remote intervention, connectivity, …

ARTS validation

Service

in a predefined route / zone

1. UN or EU Regulation for vehicles equipped with automated driving systems (ADS) international categories (M and N)

2. French order on national categories (urban shuttles)

3. If the system includes a remote operator, UN or EU ADS regulation to specific capabilities, comparable to the French ARTS decree

4. French ARTS decree sets procedures and roles
### French decree (system+service-oriented)

Automated road transport system (ARTS)
- 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
  - *NB : freight and logistics = forthcoming*

### UN or EU ADS Regulation (vehicle-oriented) WP29/GRVA FRAV work

Vehicles type approval
- Highly or fully automated vehicles, including dual modes vehicles
- Fully automated vehicles designed and constructed for use on a predefined area or on a predefined route with fixed start and end points of a journey/trip
- For the carriage of passengers or goods
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

<table>
<thead>
<tr>
<th>Theme / title</th>
<th>Document</th>
<th>State</th>
<th>Remarks (EN versions for recent methodological documents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme / title</td>
<td>Document</td>
<td>Deadline</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Route characterisation</td>
<td>Methodological framework document DGITM</td>
<td>Q3 2022</td>
<td>Will incorporate elements from the ODD document and the &quot;route cutting&quot; study report. To be integrated into the STRMTG GAME safety demonstration guide (see below)</td>
</tr>
<tr>
<td>Characterisation of remote intervention functions</td>
<td>Methodological framework document DGITM</td>
<td>Q3 2022</td>
<td>To be integrated into the STRMTG GAME safety demonstration guide (see below)</td>
</tr>
<tr>
<td>Scenario rating</td>
<td>Methodological framework document DGITM-SystemX</td>
<td>Q3 2022</td>
<td>To be included in the STRMTG GAME safety demonstration guide (see below)</td>
</tr>
<tr>
<td>Use of scenarios in the safety demonstration</td>
<td>Methodological framework document DGITM</td>
<td>Q4 2022</td>
<td>To be included in the STRMTG GAME safety demonstration guide (see below)</td>
</tr>
</tbody>
</table>
## Safety standards for automated transport systems
### 3/3: forthcoming guidance

<table>
<thead>
<tr>
<th>Theme / title</th>
<th>Document</th>
<th>Deadline</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| GAME safety demonstration  
  • Definitions from the glossary  
  • Safety demonstration method, including:  
    • Pathway decomposition  
    • Functional decomposition  
    • Hazards and high level requirements | Implementation Guide STRMTG | Published | [Download](https://www.ecologie.gouv.fr/sites/default/files/DGITM-GuideDemonstration_GAME_STA_v1_31aout2022-EN.pdf) |
| Additions to be considered in the short term:  
  • 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 | NB: The STRMTG is aiming for a ‘martyr’ version of this guide by Q3 2022 |
| Missions of the accredited qualified bodies | Implementation Guide STRMTG | Q3 2022 | |