Automated Driving System (ADS) Assurance

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1. Can the segment plan be produced that is feasible and meets the strategic trip goals?

2. Has the user (e.g., passenger, safety driver) responded to request to take over the dynamic driving task (DDT)?

3. Does the segment plan/path conform to all ODD constraints?

4. Is the status of the vehicle (e.g., fault status) and of the environment (e.g., visibility) suitable for the segment plan and ODD?

5. Are all detected objects and events reliably identified and categorized?

6. Is the maneuvering process approaching successful completion of the segment plan?
Automated Driving System (ADS) Enabled Dynamic Driving Task (DDT) Execution

- **Operational Design Domain (OES)**
  - **Monitor**
    - Feedback, fault detection, learning, ODD exit (Level 4)
  - **Fail op/safe**
    - Fail operational, fail safe, fallback, Minimum Risk Condition (MRC)
  - **OEDR/C**
    - Object/event detect/recognize/categorize
  - **Response**
    - Path/maneuver plan & execute via timed torque requests

- **Physics/Eng**
  - Physics & Systems Eng.
  - **Time Locn**
    - Geolocation & timing sources/specs

- **Data**
  - Path Plan
    - Maps, RNDF, drive cycle
  - Path Manager
    - Initial cond., object/event inj.

- **Vehicle/Environment Functions**
  - Sensors
    - External (camera, etc.), Internal (wheel speed, etc.)
  - Communc-ications
    - V2V, V2I, CAN, etc.

- **Segment/Path Planning/Management**
  - Path Plan
  - Path Mgr

- **Operational Design Domain (OES)**
  - **Nominal**
  - **Actual**

- **Fed Mgr**
  - Analytics, Visual.