Vehicle Testing
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Overview Diagram

Complete Vehicle: Assessment Testing

- Quality assurance
- Prototype testing
- Customer
- Specialist

Test Vehicle: Testing Development

- Engine
- Transmission
- Systems
- Operating agents
- Durability testing
- Application, driveability, emissions, functional analysis, fuel-/ oil consumption etc.
Operational Sequence (e.g. Two-Shift Operation)

1. **Picking up of vehicle from customer location**
2. **Assessment drive** before start of the test, preparation of the vehicle, shift allocation, preparation of vehicle-specific documents
3. **Regular operating activities**, loading of vehicle, test drive, inspections, observations, reports, measurements
4. **Inspection**, shift handover, documentation
5. **Regular operating activities**, loading of vehicle, test drive, inspections, observations, reports, measurements
6. **Regular weekly inspection drives:**
   - Checking of the drivers’ data entries
   - Specification of defects (long term assessment)
   - Compilation of a weekly status report for the customer
7. **Assessment drive at the end of the test**
8. **Vehicle return to customer location**
9. **Detailed final test report**

**Roles:**
- **Engineer/ Technician**
- **Shift personnel**
Quality

- Choice of the drivers according to the KST selection procedure
- A permanent staff for many years now (not less than 25 years of age)
- Continuous supervision of the drivers by the vehicle test management
- Route selection depending on the season
- Additional driver instructions; if necessary a KST-vehicle driving ahead in winter
- Advantage of the location: normally winters with little snow
- Generally no convoy driving
- Regular training of the drivers (ADAC safety training at least once a year as well as customer specific driver training)
Quality

- Vehicle inspection at least once per shift:
  - Visual inspection of the engine compartment – leakage check of operating agents
  - Oil level measurement
  - Idle noise / burst of acceleration – leakage check of exhaust gas
  - Damages (e.g. tyres, stone impacts)

- Regular driver briefings at shift changes for the identification of systematic defects/failures observed

- All vehicles are equipped with mobile phones, permanent availability of the vehicle test management

- Cyclic exchange of drivers (daily/weekly) to avoid habituation effects

- Weekly vehicle care and maintenance – e.g. listing of wear marks

- Measurement of the tyre tread depth and description of the wear pattern
Range of Services

- Vehicle durability test with driving intensity: 5 – 6 days/week, 2 – 3 shifts/day for the reproduction of customer-specific load profiles
- A variety of defined and often used test routes in the wider area around the company location
- Route profile and driving style according to customer requirements or depending on the test objective according to a suggestion by KST
- Modification of vehicles to test vehicles, documentation and logistics of test parts
- Maintenance and repairs by qualified personnel in our prototype-dedicated workshop
- Logistics of spare parts, tyres and operating agents
- Prototype-dedicated parking area
Range of Services

- Refuelling with special fuels possible / Special fuels available
- Oil and fuel analyses
- Application of measurement points, mounting and configuration of measurement systems according to customer specifications
- Measurement and data recording of temperatures, pressures, forces, acceleration, speed, emissions etc.
- Measurement of exhaust gas emissions in real driving conditions (RDE) by means of a portable emission measurement system (PEMS)
- Vehicle loading according to individual customer requirements with ballast dummies and sandbags
- Transport trailer (prototype-dedicated)
- Vehicle durability test and special tests on test areas
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