

Requirements Specification: Automotive Assistant Tool (PoC)

Project ID: AAT-2026-POC **Version:** 1.0 **Scope:** AI-driven Traceability & Gap Analysis

1. General System Requirements

- **SYS-REQ-001:** The system shall provide a web-based dashboard to visualize a requirements "spider" (graph) showing relationships between different engineering levels.
- **SYS-REQ-002:** The system shall support multi-platform baselines (e.g., Platform R1, R2) and specific customer projects.
- **SYS-REQ-003:** The system shall store all data locally in a database (SQL) to ensure data privacy and security.
- **SYS-REQ-004:** Each requirement shall contain a unique ID, Title, Description, Status (New/Original/Modified), and an External Link (URL).

2. AI & Analysis Requirements (The "Agent" Layer)

- **SYS-REQ-005 (The Extractor):** The system shall be able to process uploaded PDF documents and extract individual customer requirements using an LLM.
- **SYS-REQ-006 (The Matcher):** The system shall perform semantic comparison between imported customer requirements and the internal platform baseline.
- **SYS-REQ-007 (Qualitative Audit):** The system shall calculate a "Confidence Score" (0-100%) for each traceability link based on the semantic consistency between source and target.
- **SYS-REQ-008 (Code Review):** The system shall analyze C source code against linked SW Requirements and identify missing implementation logic.

3. Traceability & Visualization Requirements

- **SYS-REQ-009:** The system shall support bidirectional traceability: Top-Down (Customer -> Code) and Bottom-Up (Code -> Customer).
- **SYS-REQ-010:** The system shall visualize the "Spider" graph with color-coding based on analysis results:
 - **Green:** Full Match / Consistent
 - **Orange/Yellow:** Partial Match / Parameter Delta
 - **Red:** Conflict / Inconsistency
- **SYS-REQ-011:** The system shall provide hyperlinks to external viewers (Mock-DNG for text, Mock-Rhapsody for diagrams).

4. Integration & Infrastructure Requirements

- **SYS-REQ-012:** The system shall run the LLM (Ollama) locally on a dedicated Linux VM.
- **SYS-REQ-013:** The system shall provide a "Review Mode" to compare two different Git tags and identify the impact of changes on requirements.
- **SYS-REQ-014:** The system shall be able to generate a "Compliance Matrix" report in PDF format.