LLM Automated Evaluation Results

### Functional Requirement Evaluation Table

Based on the CCTNS system requirement document provided by the user, I first conducted entity identification and functional requirement consolidation. Then, each requirement was evaluated according to the following criteria:  
- \*\*Hallucinated Requirement\*\*: A requirement is considered hallucinated if it involves data entities that are not connected to any existing entities in the system, breaking the weak connectivity of the E-R diagram. Requirements with extended descriptions are not considered hallucinations.  
- \*\*Merge Rules\*\*: Requirements with the same function on the same entity were merged (e.g., multiple updates to Investigation are combined into one). Generic system configuration requirements (e.g., preferences or security settings) are excluded.  
- \*\*Strictness\*\*: A slightly strict standard is applied to ensure potential issues are not overlooked, acknowledging that not all requirements are typically flawless.

#### Step Summary:

1. \*\*Entity Identification\*\*: Core entities managed within the system were extracted from the functional requirements (excluding external interfaces or data formats). All entities must form a weakly connected E-R diagram. Nine entities were identified: Complaint, Investigation, Criminal Record, Court Case, Citizen, Police Personnel, Role, Access Logs, Data Integrity Report. Case-Complaint Link is treated as a relationship, and generic system settings were excluded.

2. \*\*Requirement Consolidation\*\*: 28 original requirements (FR-01 to FR-28). Requirements with the same function on the same entity were merged (e.g., FR-02 and FR-04 merged into 'Manage Investigation'). Generic system settings (FR-16 to FR-18) were excluded. Total after merging: 21 requirements.

3. \*\*Hallucination Detection\*\*: All merged requirements were assessed. No hallucinations were found, as all entities are linked to core components in a weakly connected E-R diagram.

4. \*\*Assessment Table\*\*: Each requirement is independently evaluated for hallucination status and justification.

#### Functional Requirement Evaluation Table:

| Functional Requirement | Hallucination | Justification |

|------------------------|---------------|---------------|

| 1. Complaint Registration (FR-01) | No | Involves entity Complaint, associated with Citizen and Police Personnel (for submission and assignment), connected in E-R diagram; |

| 2. Manage Investigation (Merged FR-02 and FR-04) | No | Involves entity Investigation, associated with Complaint and Court Case (for investigation updates); supported by external interface (Case Management Interface); |

| 3. View Investigation Details (FR-03) | No | Involves entity Investigation, associated with Complaint; mentioned in external interface (Case Management Interface); |

| 4. Add Criminal Record (FR-05) | No | Involves entity Criminal Record, associated with Investigation or Court Case; |

| 5. Modify Criminal Information (FR-06) | No | Involves entity Criminal Record, associated with Investigation or Court Case; |

| 6. Delete Criminal Record (FR-07) | No | Involves entity Criminal Record, associated with Investigation or Court Case; |

| 7. View Court Case Details (FR-08) | No | Involves entity Court Case, associated with Complaint or Investigation; supported by external interface (Case Tracking Interface); |

| 8. Update Court Case (Merged FR-09, FR-10, and FR-27) | No | Involves entity Court Case, associated with Complaint or Investigation; mentioned in external interface (Case Management Interface); |

| 9. View Citizen Information (FR-11) | No | Involves entity Citizen; supported by external interface (User Profile Interface); |

| 10. Update Citizen Profile (Merged FR-12 and FR-28) | No | Involves entity Citizen; |

| 11. Register Police Personnel (FR-13) | No | Involves entity Police Personnel; |

| 12. Assign Role to User (FR-14) | No | Involves entities User (Citizen or Police Personnel) and Role, linked to core entities via User ID; |

| 13. Modify Role Permissions (FR-15) | No | Involves entity Role; |

| 14. Ensure Data Integrity (FR-19) | No | Involves entity Data Integrity Report, input based on existing data entities (e.g., Complaint), output is a report; |

| 15. Control Access Rights (FR-20) | No | Involves entities User and Access Rights (associated with Role), linked to core entities via User ID; permission examples (e.g., "View Court Case") mentioned in FR-08; |

| 16. View Access Logs (FR-21) | No | Involves entity Access Logs, recording user activities (associated with all entities); |

| 17. Track Case Progress (FR-22) | No | Involves entity Investigation or Court Case; supported by external interface (Case Tracking Interface); |

| 18. Manage Case Complaint Link (FR-23) | No | Involves entity Case-Complaint relation (linking Investigation/Court Case with Complaint); |

| 19. View Police Personnel (FR-24) | No | Involves entity Police Personnel; |

| 20. View Data Integrity (FR-25) | No | Involves entity Data Integrity Report, associated with FR-19; |

| 21. View Access Control (FR-26) | No | Involves entity Access Control Policies (associated with Role); |

#### Summary:

- \*\*Number of data entities involved\*\*: 9

- \*\*Number of functional requirements after merging\*\*: 21

- \*\*Number of hallucinated requirements\*\*: 0

- \*\*Number of valid (non-hallucinated) requirements\*\*: 21

#### Evaluation Notes:

- \*\*Hallucination Detection\*\*: All requirements involve entities (e.g., Complaint, Investigation) that are connected through relationships (e.g., linking, assigning, referencing), forming a weakly connected E-R diagram. Thus, no hallucinations were detected.

- \*\*Entity Linkage\*\*: Entities such as Complaint are linked to Investigation, which links to Criminal Record, which connects to Court Case, while Citizen and Police Personnel are involved in multiple operations. Role manages access, and Access Logs track activities.

- \*\*Excluded Requirements\*\*: System-wide settings such as FR-16 (Configure System Settings), FR-17 (Update Configuration), and FR-18 (Manage Security Features) were excluded due to being general preferences.

- \*\*Strictness\*\*: Although the evaluation was strict, the document quality is high. All remaining requirements meet the hallucination standard. FR-20's permission structure is slightly vague but still valid due to reference in related features.