

Responsibility-Bound Exit Control System

This document presents a high-security vehicle exit control concept designed for airports and government-secured organizations. The system shifts from traditional vehicle authorization to human responsibility enforcement.

Problem with Traditional Parking Systems

Traditional parking systems rely on vehicle identifiers such as license plates, tickets, or RFID. These systems fail when sensors malfunction, plates are spoofed, or manual overrides occur, resulting in weak accountability and poor incident investigation.

Proposed System Concept

The proposed system enforces custodial responsibility for every vehicle within a secure zone. A vehicle cannot exit unless its custodial responsibility is explicitly resolved. This responsibility persists across sensor failures and manual interventions.

Core Principle

At any moment, exactly one entity is responsible for a vehicle, and that responsibility cannot disappear.

Aspect	Traditional Approach	Responsibility-Bound System
Primary Control	Vehicle authorization	Human responsibility enforcement
Failure Handling	Manual override bypass	Risk mode with custody escalation
Accountability	Weak or unclear	Explicit and auditable
Sensor Dependency	High	Reduced through custody persistence
Use Case	Commercial parking	Airports & secure facilities

Operational Flow Summary

1. Vehicle entry is detected and a custody session is created.
2. Custodial responsibility is claimed by an authorized entity.
3. The vehicle remains bound to that responsibility during its stay.
4. At exit, responsibility must be verified or formally transferred.
5. Exit is denied if responsibility cannot be resolved.

Why This Matters

This approach improves security, auditability, and legal defensibility. It ensures that failures do not erase accountability and that every vehicle movement is traceable to a responsible party.