Risk Documentation

Smart House

Revision History

Date	Version	Description	Author
08/02/26	1.0	Initial Risk Assessment	Katerina Arvay, Dario Ostojic, Andre Sandblom

Risk List

Risk Description	Priority
R1. Server downtime leading to loss of smart house functionality	High
R2. Data inconsistency or loss in the database	High
R3. Security vulnerabilities in server communication	High
R4. Unclear or changing interfaces with other subsystems	Medium

Risk Handling Plans

R1 – Server Downtime

Description: The Smart House system relies on the server as a central coordination point. If the server becomes unavailable due to crashes, misconfiguration, or hardware failure, core functionality such as device control and monitoring may be disrupted.

Probability: Medium

Impact: High

Mitigation Plan:
- Design the server to handle errors gracefully and avoid single points of failure where possible
- Persist critical system state in the database to allow recovery after restarts
- Use logging and monitoring to detect failures early

R2 - Data Inconsistency or Loss

Description: Incorrect handling of database operations or unexpected failures may lead to inconsistent or lost device states, resulting in unreliable system behavior.

Probability: Medium

Impact: High

Mitigation Plan:
- Use transactional database operations where applicable
- Validate data before storage and retrieval
- Implement backup or recovery mechanisms for critical data

R3 - Security Vulnerabilities
A further description of risk 2, its probability, its impact, plus a plan to handle the risk.

Description: Unauthorized access to the server or database could compromise user data or allow malicious control of smart house devices.

Probability: Low to Medium

Impact: High

Mitigation Plan:
- Enforce authentication and authorization for all server interactions
- Secure communication channels between server, clients, and devices
- Limit database access to the server subsystem only

R4 - Interface Mismatch with Other Subsystems

Description: Changes or ambiguities in interfaces between the server and other subsystems may cause integration issues.

Probability: Medium

Impact: Medium

Mitigation Plan:
- Define and document clear API contracts early
- Maintain regular communication with other subgroups

- Version interfaces to reduce breaking changes