Sprint 1 Artifacts

Team #10
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Sprint 1 Goal

The goal of Sprint 1 was to reduce technical risk by researching, validating, and selecting an optimal architecture for developing a Meta Quest Pro HUD system. The sprint focused on tooling decisions, data flow design, and security constraints before any application-level implementation.

Sprint 1 Requirements

- **R1: Platform & Architecture Research**

- **R2: SDK & Toolchain Validation**

- **R3: Data Flow Design**

- **R4: Security & Privacy Baseline**

Sprint 1 Delivered Artifacts

Artifact R1: Platform & Architecture Decision Record

A documented evaluation comparing development approaches for Meta Quest Pro integration, including native Android, Unity XR, and hybrid models. The team selected **Android Studio for application logic** with **Unity acting as a rendering and SDK bridge** based on SDK support, long-term extensibility, and tooling maturity.

Evidence:

- Written architecture decision summary

- Pros/cons comparison of candidate approaches

- Final architecture selection rationale

Artifact R2: SDK & Toolchain Feasibility Report

A feasibility assessment of the Meta Quest Pro SDK, Unity XR pipeline, Android build targets, and deployment constraints. This artifact confirmed compatibility between Android Studio projects and Unity-based Quest applications, along with known limitations and version dependencies.

Evidence:

- SDK compatibility notes

- Unity XR pipeline validation findings

- Identified build and deployment constraints

Artifact R3: System Data Flow Diagram

A high-level system data flow design showing how health and sensor data originates on the phone, passes through the Android application layer, is serialized for transport, and is consumed by Unity on the Quest Pro. No UI rendering was included at this stage.

Evidence:

- End-to-end data flow diagram

- Defined system boundaries and responsibilities

- Identified data handoff points

Artifact R4: Security & Privacy Baseline Analysis

A security-focused research artifact outlining Android health data permissions, consent requirements, encryption options for data transport, and privacy-first handling assumptions. The analysis established a **local-only-by-default** data policy and informed later consent flows.

Evidence:

- Summary of Android permission requirements

- Local data storage policy definition

- Identified security risks and mitigations

Sprint 1 Risks Identified & Mitigations

- **Risk:** SDK incompatibility between Android and Unity

    - **Mitigation:** Early toolchain validation before coding

- **Risk:** Health data permission complexity

    - **Mitigation:** Privacy-first baseline and delayed feature integration

- **Risk:** Premature HUD development

    - **Mitigation:** UI deferred to later sprints

Sprint 1 Outcome Summary

Sprint 1 successfully established a validated technical foundation for the project. By prioritizing architecture, tooling, and security research, the team minimized early implementation risk and enabled Sprint 2 to focus exclusively on Android application development with confidence in the chosen approach.