

Integrated Group Project Report #1

Software Engineering Project

Prepared by: Lance Page

Date: 09/22/2025

Section 1: Customer Statement of Requirements

The customer requires a secure, competitive, and realistic first-person shooter (FPS) game.

The primary goals are:

- Provide a tactical and immersive multiplayer experience.
- Ensure smooth performance and responsive controls.
- Include ranked and unranked modes with a transparent progression system.
- Support profile customization, accessibility options, and cloud-based saving.
- Create intuitive tutorials to help new players onboard effectively.

Section 2: System Requirements

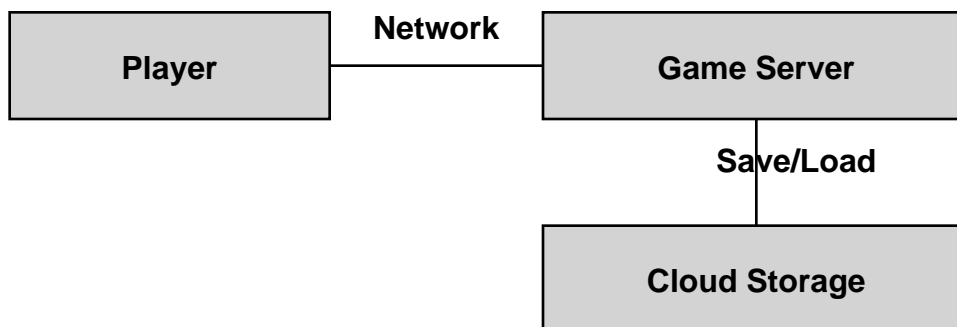
Functional Requirements:

1. Player authentication and secure login system.
2. Profile creation, saving, and cloud synchronization.
3. Ranked matchmaking with visible ranks and leaderboards.
4. Operator and gadget customization with unlocks.
5. Tutorial system guiding players through mechanics.

Non-Functional Requirements:

- Performance: Stable 60+ FPS, low latency networking.
- Reliability: 99% server uptime with fault tolerance.
- Security: Anti-cheat system and protected player data.
- Scalability: Support for growth in player base.

System Context Diagram:



Section 3: Functional Requirement Specification

Core Functions:

1. User Profiles:

- Create, edit, and delete profiles.
- Save profiles locally and to cloud.

2. Gameplay Mechanics:

- Tactical operators with unique gadgets and weapons.
- Bomb and Secure Area objective game modes.
- Realistic recoil and weapon attachments.

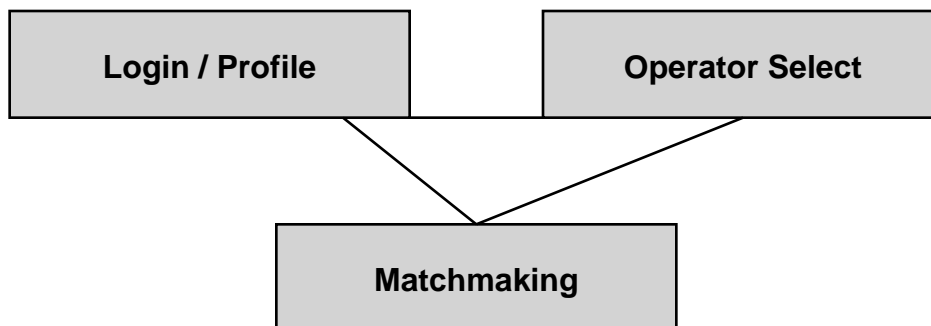
3. Progression:

- Ranked and unranked play with visible rank icons.
- Clan system with divisions and seasonal competition.

4. Accessibility & Settings:

- Customizable controls, FOV, sensitivity, and audio.
- Options for deaf players with HUD indicators.

Functional Flow Diagram:



Section 4: User Interface Specification

User Interface Design:

- Main Menu: Play, Operators, Ranked, Clans, Settings.
- In-Game HUD: Compass (instead of minimap), health, ammo, killfeed, and ping indicators.
- Overlay: Profile and operator selection, unlocks, clan tags.
- Accessibility: Subtitles, visual indicators, customizable HUD size.
- Tutorial Menus: Walkthrough of controls, operators, and game objectives.

UI Layout Sketch:

Main Menu
Play Operators Ranked Clans Settings
Footer / Status

Project Management

Team Role: Single Author (Project completed individually).

Process:

- Requirements Gathering → Functional Design → UI Specification → Implementation Planning.

Methodology:

- Agile-inspired approach with iterative improvements.
- Source control through Git.
- Development in Unreal Engine 5 with pure C++.

Risks:

- Time management as a solo contributor.
- Technical challenges in engine integration.
- Scope management to ensure core gameplay is delivered first.

Summary of Modifications & Improvements

This integrated version improves upon Part One and Part Two by:

- Refining the separation between customer requirements and system requirements.
- Expanding functional requirements to detail progression, operator systems, and accessibility.
- Clarifying UI specifications with focus on realism and usability.
- Providing a cohesive project management framework, adapted for a solo developer.

Contribution Statement

All sections of this Integrated Group Project Report were completed by a single contributor.

Prepared by: Lance Page