

## Game Documentation – Set 4: Turn-Based Strategy Systems

### 1. Game Overview

Working Title: Starship 2020

Genre: Turn-Based Strategy (Simultaneous Turns)

Platform: PC (Unity prototype)

Core Concept:

Two opponents command small squads of units on a grid-based battlefield. Each turn, both players secretly plan their unit actions (move, attack, use abilities). When both confirm, all actions are executed simultaneously, leading to clashes, prediction mind games, and unexpected outcomes.

The focus of this prototype is on four core systems:

1. Grid-Based Movement System
2. Simultaneous Turn Manager
3. Combat & Ability System
4. AI Opponent System

### 2. Core Design Pillar

“Plan under uncertainty.”

Players never see the opponent’s final decisions until resolution. Good play comes from reading patterns, predicting moves, and using clever positioning.

### 3. Core Gameplay Loop

Planning Phase → Lock-In → Resolution Phase → Cleanup → Next Turn

### 4. Systems Design

#### 4.1 Grid-Based Movement System

- Hex or square grid
- A\* pathfinding
- MoveRange per unit
- Obstacles and elevation rules
- Valid tiles highlighted
- Smooth movement animations

#### 4.2 Simultaneous Turn Manager

- Turn phases: Planning, Resolving, Waiting
- Action Queue stored each turn
- Conflict resolution:
  - Both move to same tile
  - Two units attack each other
  - Units dying mid-resolution
- Action Queue UI visualization

#### 4.3 Combat & Ability System

- Stats: HP, Attack, Defense, Range, Speed
- Damage formula using distance and stats
- 3+ abilities per unit type:
  - AOE
  - Single-target
  - Buff/Debuff
- Status effects: Burn, Stun, Buffs

- Damage numbers and hit indicators

#### 4.4 AI Opponent System

- AI evaluates best moves using scoring
- Difficulty levels:
  - Easy: random
  - Normal: scoring
  - Hard: predictive behavior
- Target priority:
  - Weak units
  - Dangerous units
  - Protect key allies

### 5. Data Structures & Classes

- GridManager, Tile, Unit, Ability, StatusEffect, TurnManager, Action, AIController

### 6. Turn Example

Planning → Resolution → Cleanup

### 7. Edge Cases

- Tile becomes occupied mid-turn
- Target dies before ability resolves
- Move cancellation

### 8. Future Extensions

- Fog of war

- Terrain bonuses
- Additional status effects
- Online multiplayer