

# GAME SPECIFIC SUBSYSTEMS

**Ornithopter Controls**

- Game Camera (Shake, velocity-based, distance...)
- Movement (Highly Physics Based or not)

**General Mechanics**

- Score System
- Obstacles & Pickups

**Tension Generation**

- GPU-based Hierarchy Cycles Algorithm

AI?   
 (Highly Not)

## GAME ENGINE

**Front End**

- HUD
- IGUI
- Game Camera

**Gameplay Foundations**

- Dynamic Game Object Model (w/ ECS)
- Event System

~~AI 2~~   
 (Highly Not)

Particle System, Sprite Rendering, Text Rendering

**Low Level Render**

- Materials & Shaders
- Static & Dynamic Lighting
- Text
- Textures & Surface Management
- Graphics Interface

**Collision & Physics**

- Rigid Bodies
- Forces & Constraints
- Shapes & Collisions
- Ragdolling

**Audio**

- 3D Audio
- DSP/effects (3d panning)

**HID**

- Physical Input (Keyboard)

## Resource Manager

**Core**

- Compute API
- Unit Testing (see 3rd party)
- Module Start up and Shutdown
- Serialization
- Unique IDs
- Parsers (JSON, yaml) (see 3rd party)
- Engine Config
- Random Number Generation
- Math Library
- String Functions Hashed String IDs (CRC32)

## Platform Abstraction Layer

**Utils**

- Data Structures, Iterators, Combinatorial, monads
- GPU API frontend
- Physics/Collision Wrappers
- File System
- Logging
- Memory Allocation
- Platform Detection
- ~~Platform Abstraction~~
- SIMD Library
- Sub System / Thread-Fiber library
- Hi-Res Timer

## 3rd Party SDKs

- OpenGL
- ODE
- assimp
- glfw
- dear imgui
- E2ch2
- SUCE
- BLIS
- yaml-cpp
- TTF

OS  
Drivers  
Hardware