Assignment 2: Concrete Architecture

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YouTube Link: https://youtu.be/zWT2fxIyj6o

Group 5

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Overview

1. Revised Conceptual Architecture

2. Concrete Architecture and Derivation Process
   - Sequence Diagrams

3. Subsystem Analysis
   - Air-Traffic Control (ATC)

4. Reflexion Analysis
   - Convergences, Divergences, Absences

5. Effects of Concurrency

6. Lessons Learned and Difficulties

Updates to Conceptual Architecture

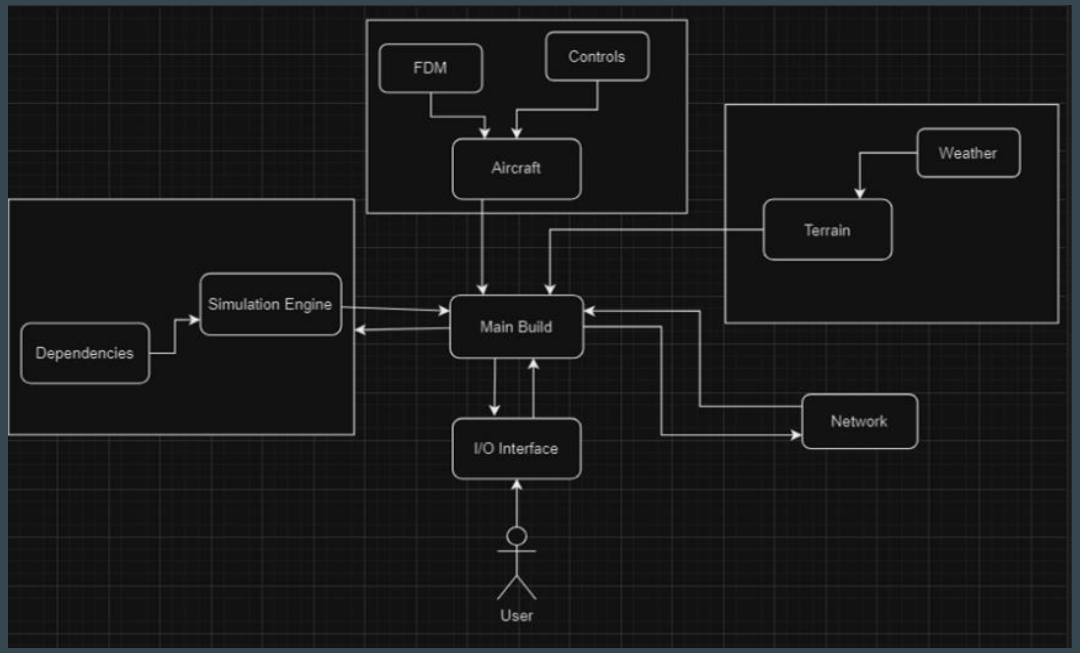

Figure 1: Conceptual Architecture of Group 3

Derivation Process

- Dependency graph using SciTool's Understand program
- Sorting based on conceptual architecture
- Final sort based on source code and interactions

Concrete Architecture

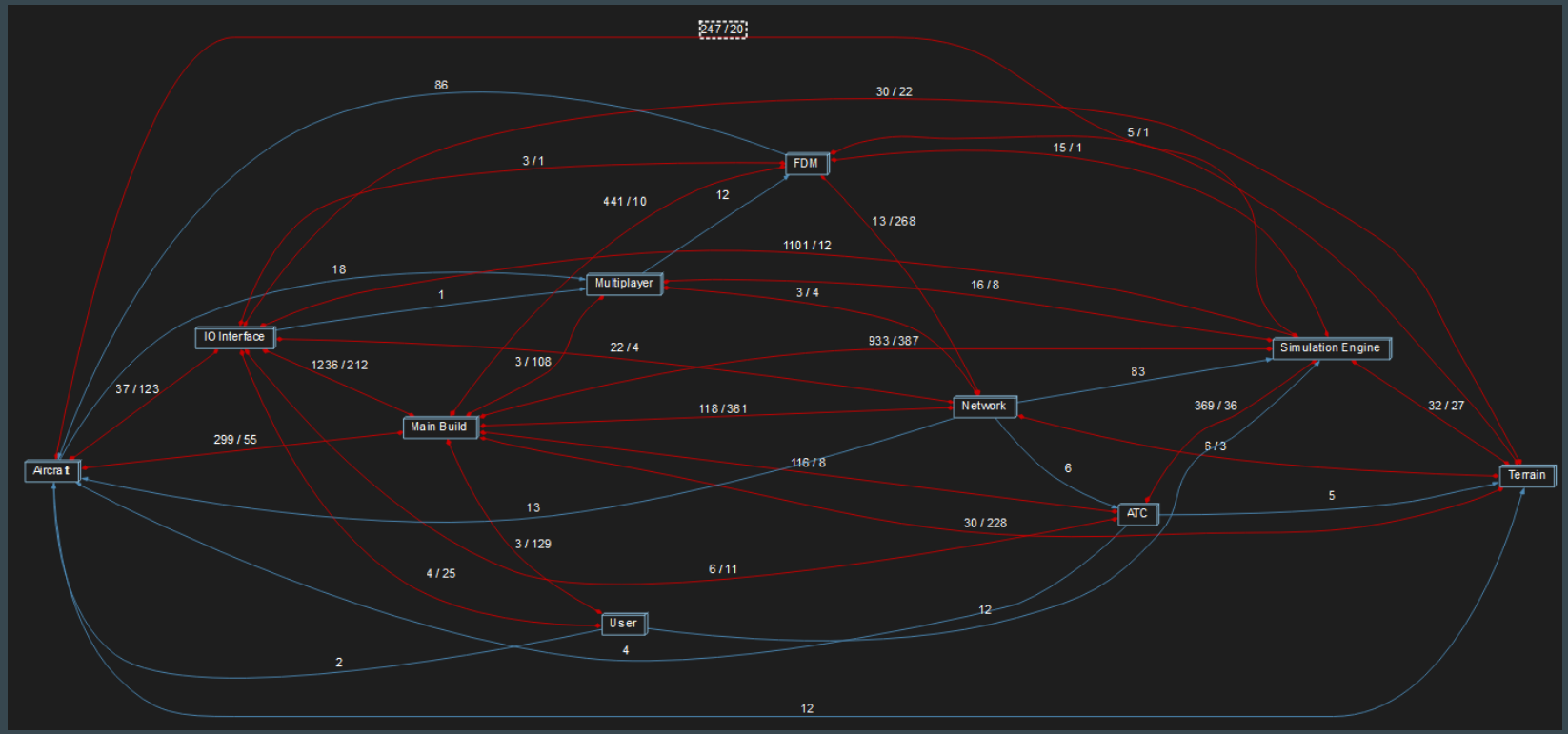

Figure 2: Dependency Graph generated by Understand

Non-Trivial Use Case Sequence Diagram

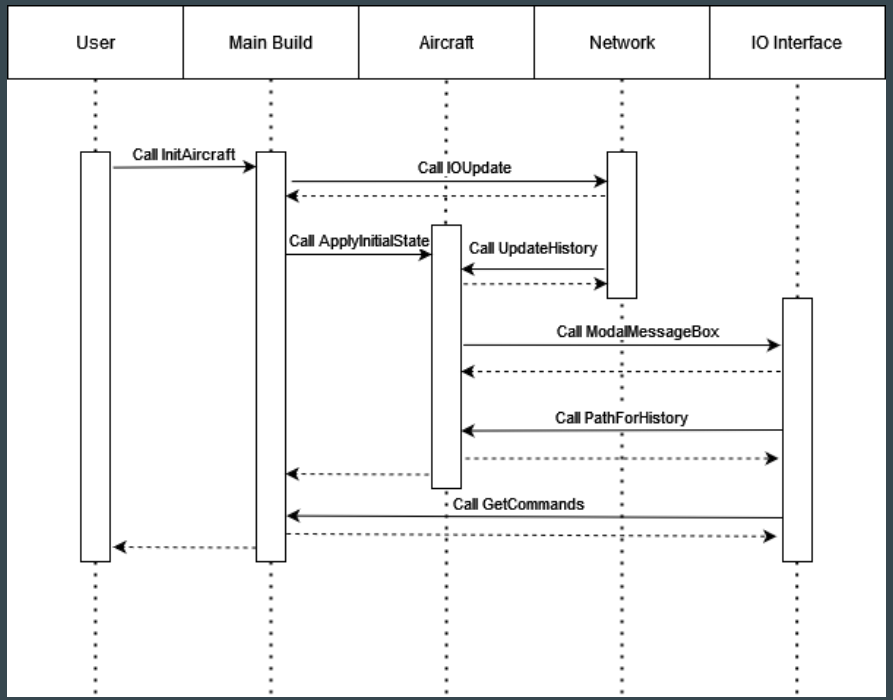

Figure 3: Aircraft Selection Use Case Sequence Diagram

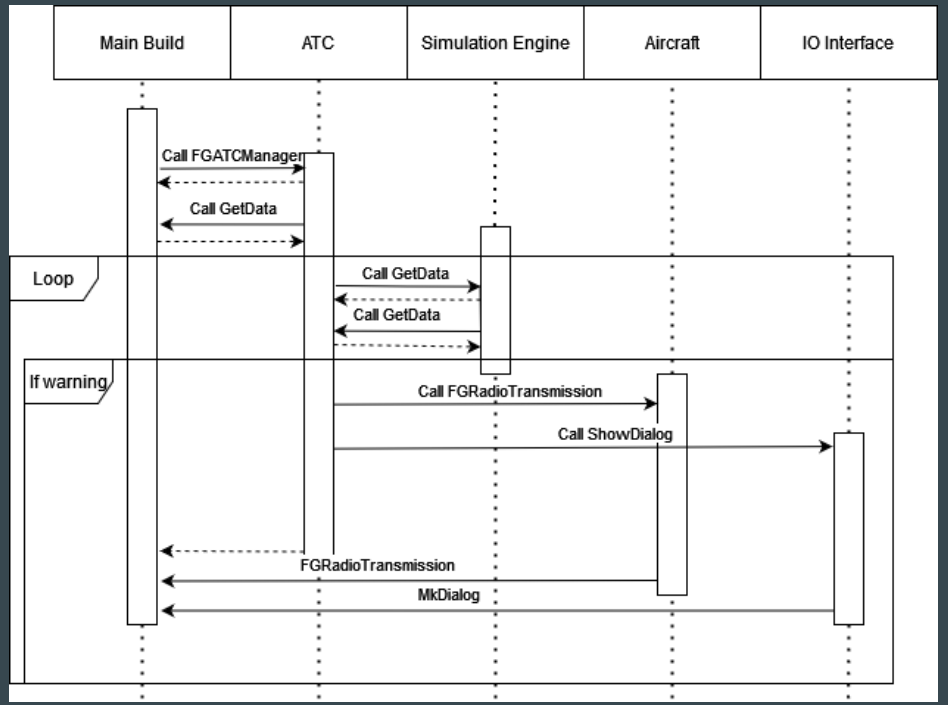

Figure 4: Simulation-User Communication Sequence Diagram

Subsystem Analysis – Air-Traffic Controller (ATC)

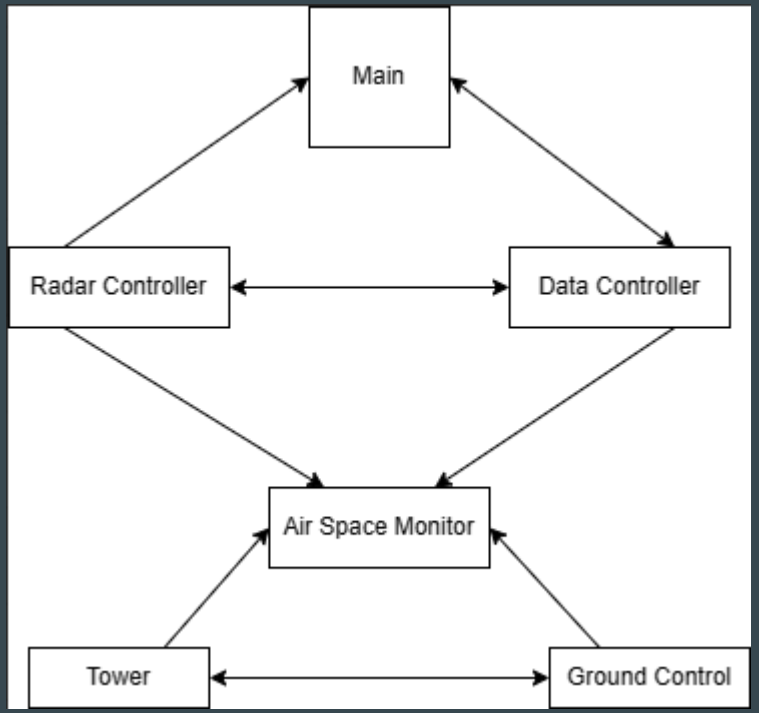

Figure 5: Conceptual Architecture of the ATC

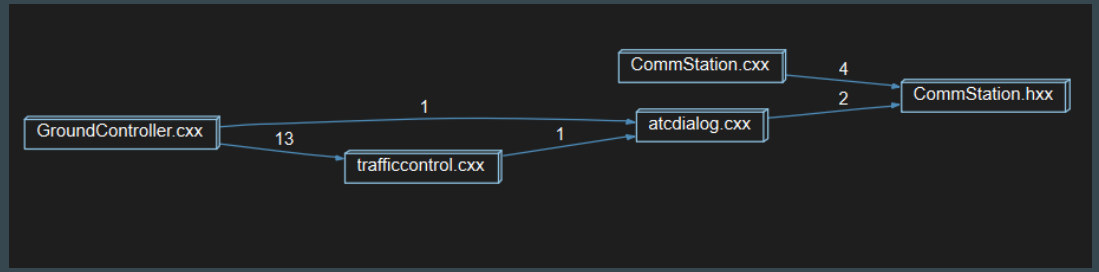

Figure 6: Concrete Architecture of the ATC

Reflexion Analysis - ATC

Divergences

- Radar Controller, Data Controller, Tower components
- Other unexpected divergences

Potential Reasons

- Streamlined Communication Processes
- Data accesses or method-calls
- Memory Management

Effects of Concurrency

- Concurrency: Execute processes simultaneously

- Very important for FlightGear

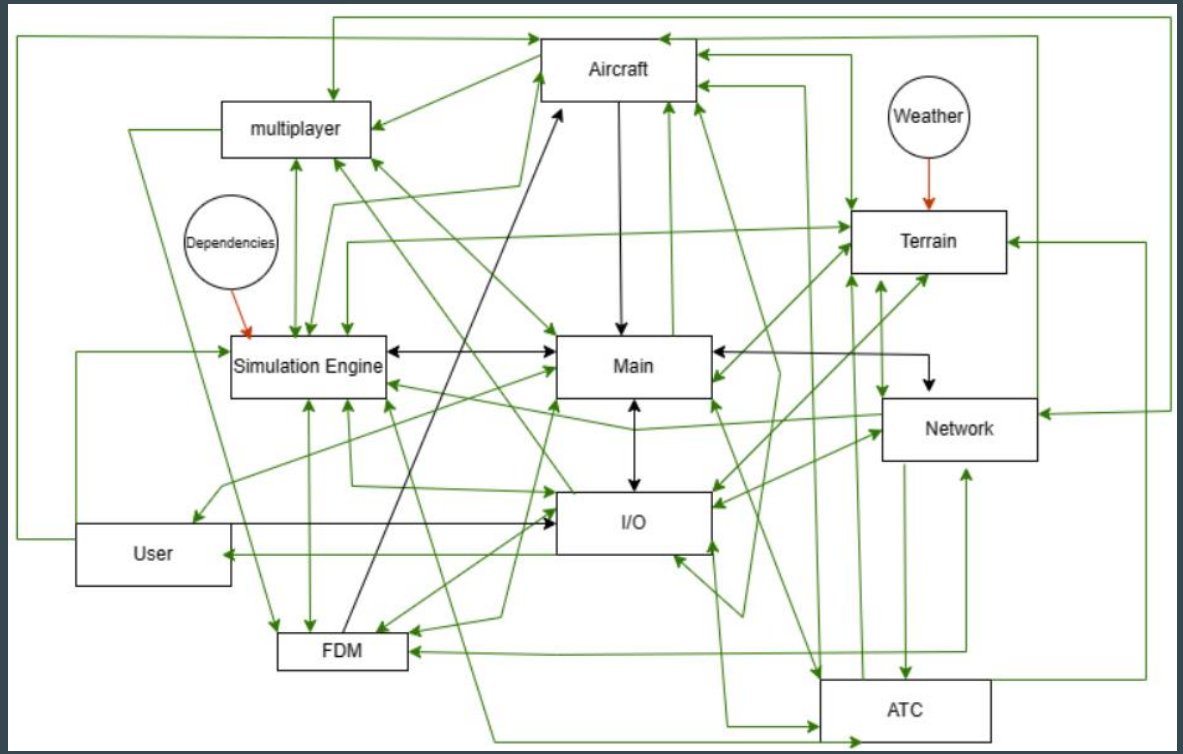

Figure 7: Convergences, Divergences, and Absences

Lessons Learned, Difficulties, and Limitations

- Important to start project earlier

- Distribution of workload

- Missing one team member

End