Apollo Concrete Architecture

Video URL: https://youtu.be/iLsm4Psjkpg

Presenters: All group members

Apollogizers

Group 25

Lavi Ionas - Group Leader, Sequence Diagrams, Abstract, Lessons Learned

Xinyu Chen - Part of Intro and Overview, Box and Arrow Diagram, Part of Top Level Modules Research, Part of Understand Project File

John Scott - Part of Intro and Overview, Top Level Modules Write-Up, Part of Understand Project File

Baorong Wei - Part of Discrepancies with Conceptual Architecture, Reflection Analysis, Conclusion, Reference work

Zhihan Hu - Part of Discrepancies with Conceptual Architecture, Presentation Editing

Anthony Galassi - Detailed Analysis of Single Subsystem, Box Diagram for Subsystem
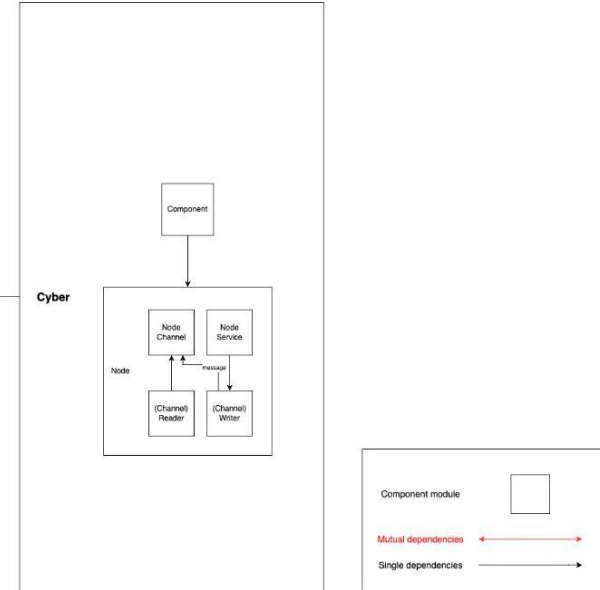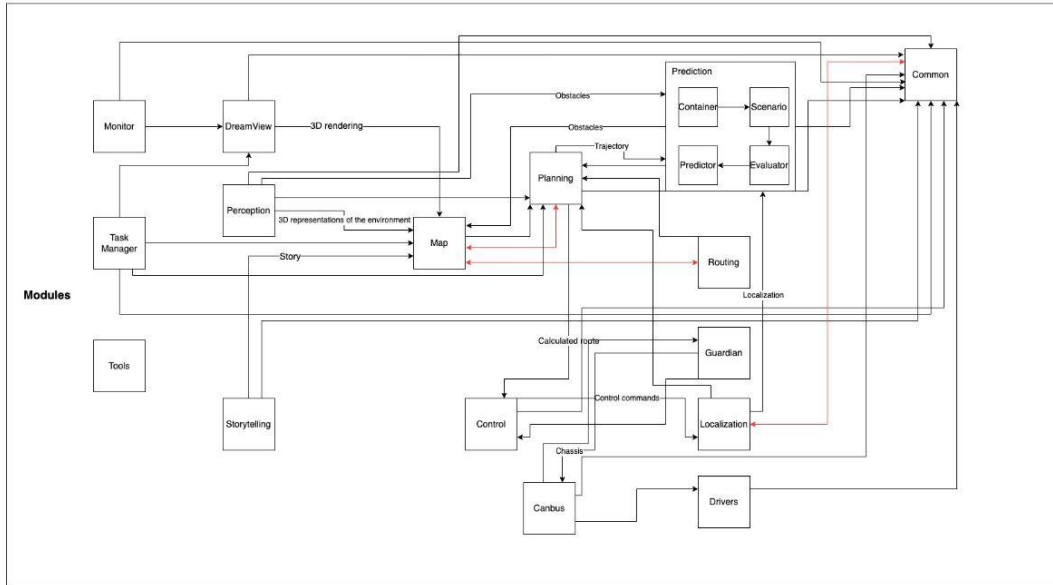
Introduction & Overview

Top Level Modules

- Modules
  - DreamView, Planning, Perception, Monitor, Storytelling, Map, Task Manager, Tools, Canbus, Control, Prediction, Routing, Drivers, Common, Guardian, and Localization
- Cyber
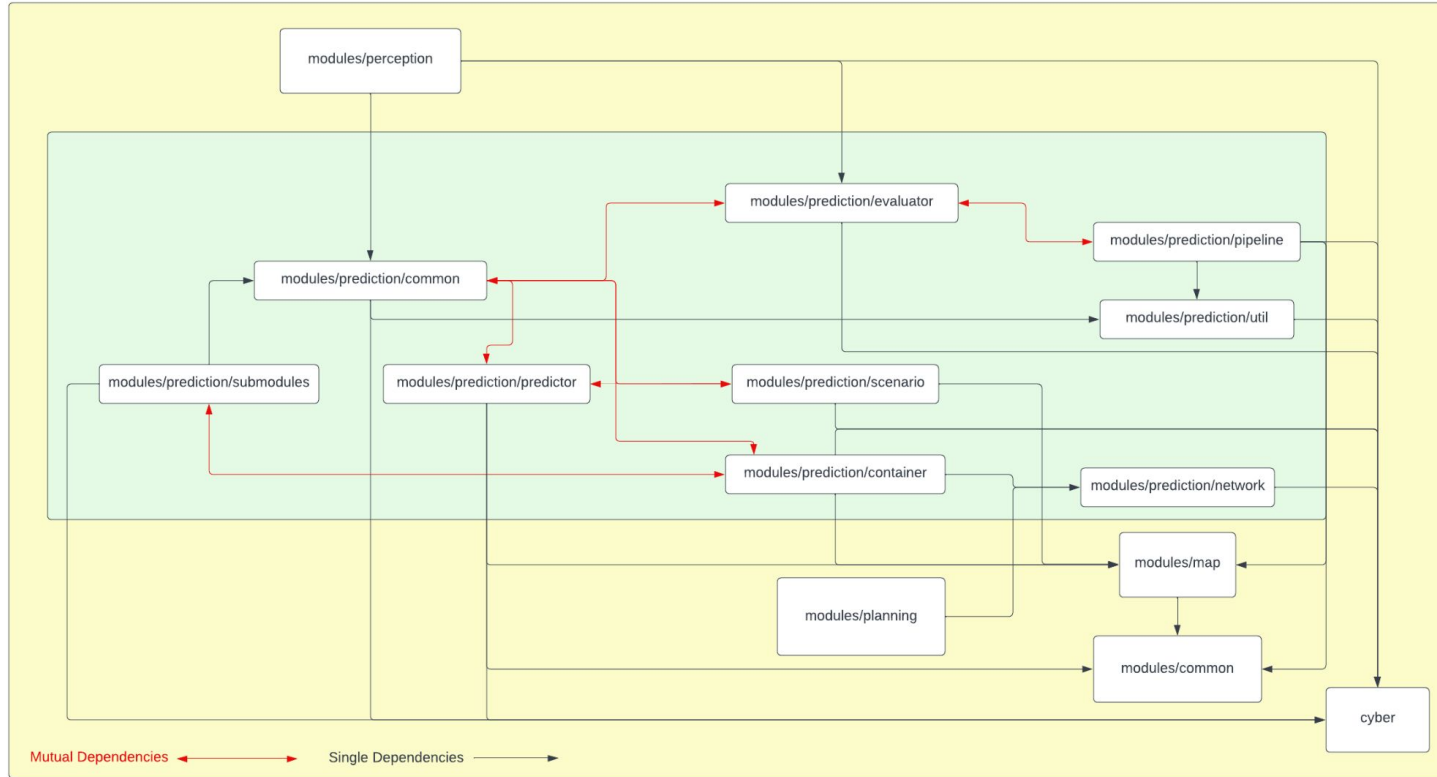 - Component and Node

Box and Arrow Diagram

Reflection Analysis

- A common module is a module that is responsible for topics that are communicated through different modules.
- CANbus → Guardian
- Task_manager → Map
- Task_manager → DreamView

Subsystem Analysis

Discrepancies with Conceptual Architecture

- Choose publish-subscribe style as architecture style
- Add Storytelling Module
  - Manage complex scenarios through predefined rules to trigger different actions
- Create a new box and arrow diagram
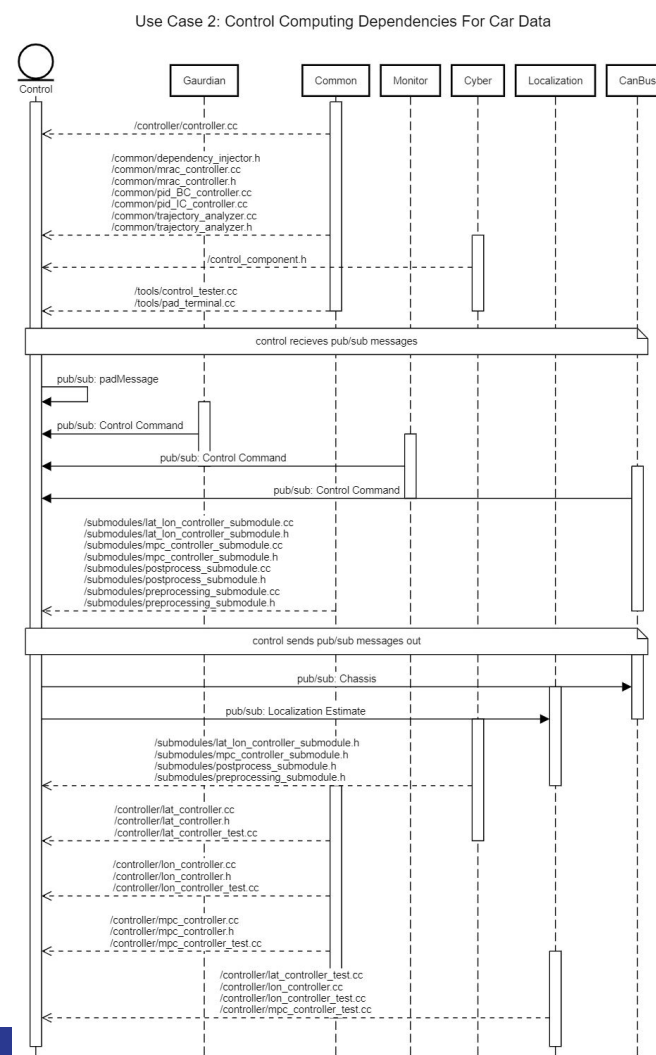- Add a detailed Lessons Learned section

Sequence Diagram: Use case I: Dreamview Dependencies for Web Application

Use Case 1: Dreamview Web Interface Module Dependency
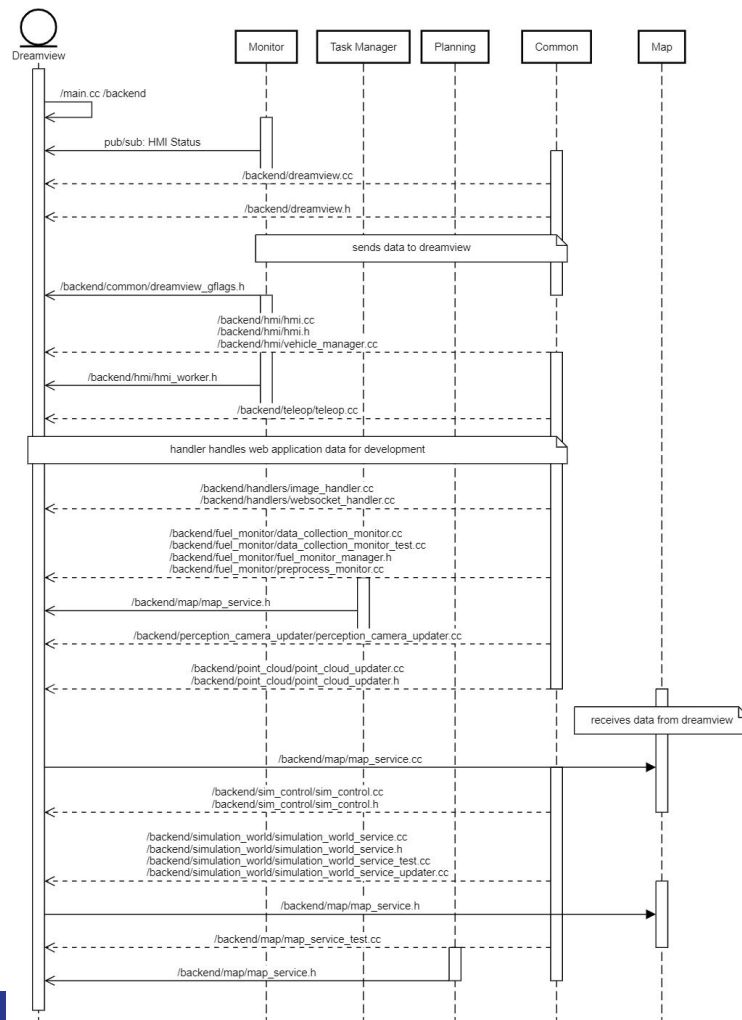
Sequence Diagram: Use case II: Control Computing Dependencies for Car Data

Use Case 2: Control Computing Dependencies For Car Data

Lessons Learned

Conclusion

In conclusion, Apollo's concrete architecture fits into the definition of pub/sub architectural style. As we dive deeper into the source code and the diagrams, we gained a more comprehensive understanding of the publisher and subscriber system used in Apollo. Detailed description of top-level subsystems for the entire Concrete architecture as well as their interactions were made. Later, We focused on subsystems and their interactions. We also update our conceptual architecture based on discrepancies between the conceptual and concrete architecture. Additionally, two sequence diagrams using concrete architecture were depicted, focusing on interactions within two subsystems.