Meeting Materials for QDrone Project Regular Internal Meeting

Regular Internal Meeting for QDrone Project

Jan 7 2019

4PM at PSE 312

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Gunho Sohn

Prerequisites for Pursuing Project

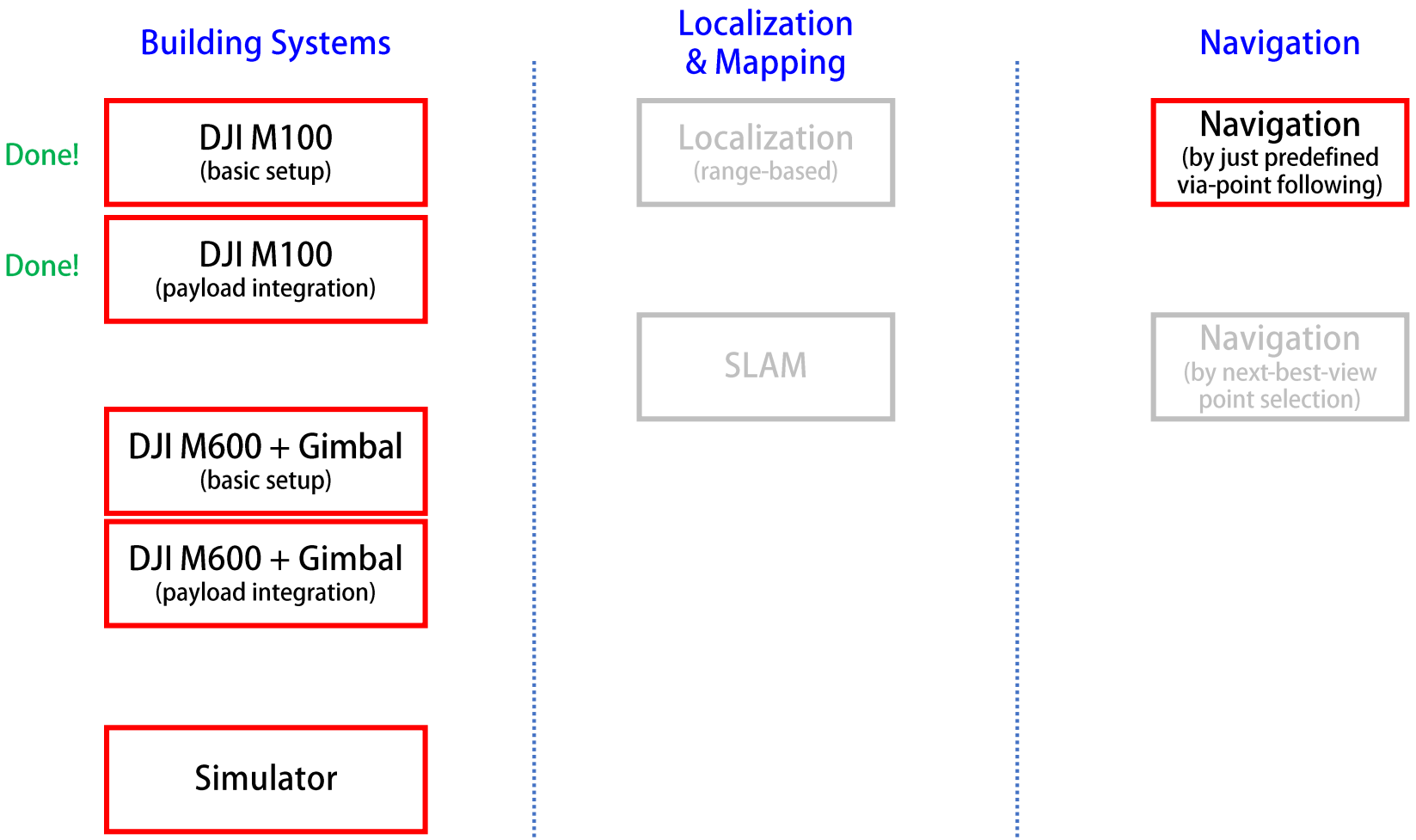
- Software
  - Matlab
  - C++
  - Ubuntu
  - ROS
- Theory (for backend: state estimation from sensor measurement)
  - EKF
  - MSCKF
  - Smoothing
- Sensor
  - GPS
  - IMU
  - Camera
  - LiDAR

Tasks

- Task 0: Building Systems
- Task 1: Localization
- Task 2: SLAM
- Task 3: Navigation

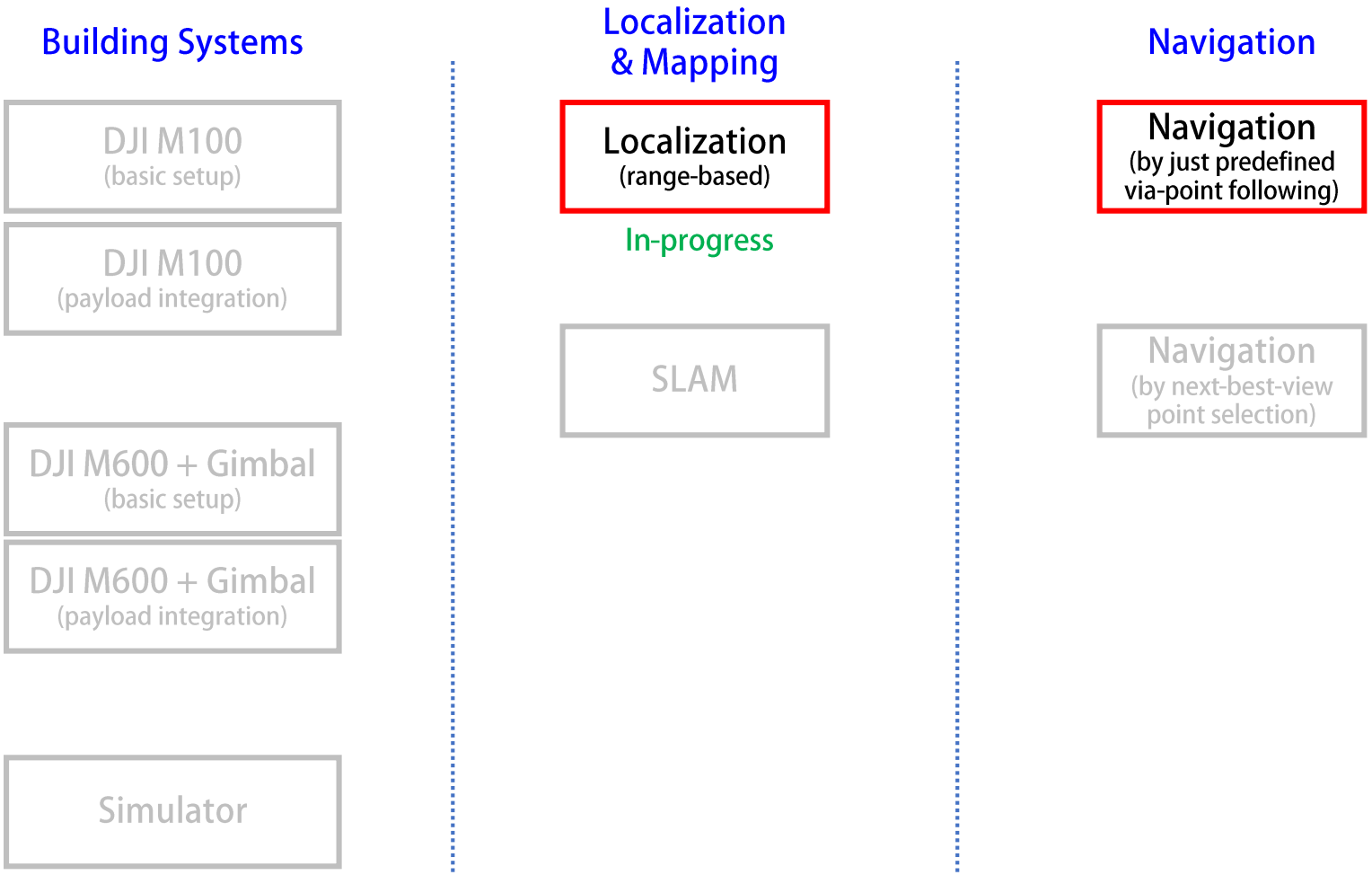
Task 0: Building Systems

❑ Building Complete Systems



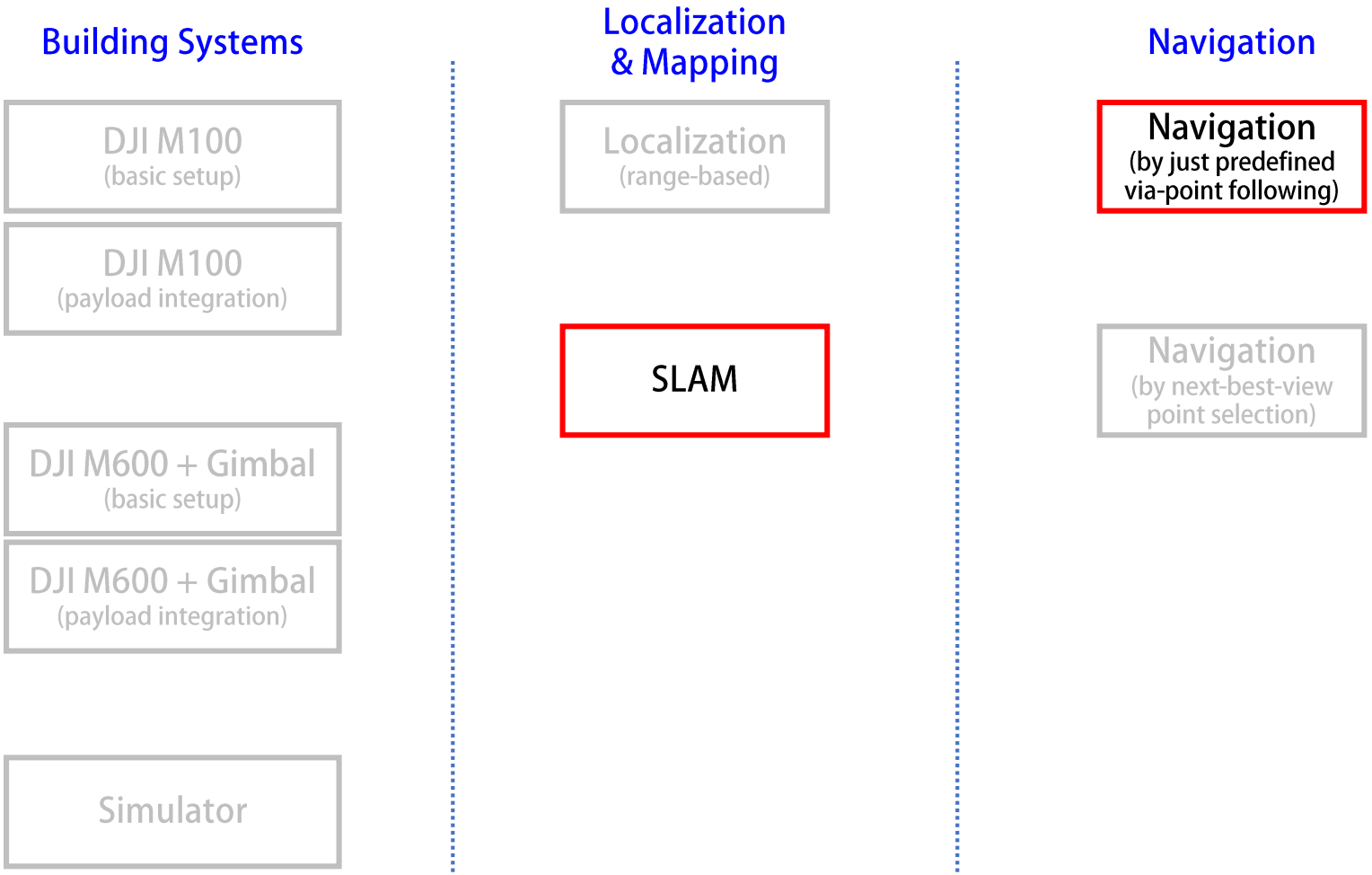
Task 1: Localization

❑ Following Predefined Via-Points



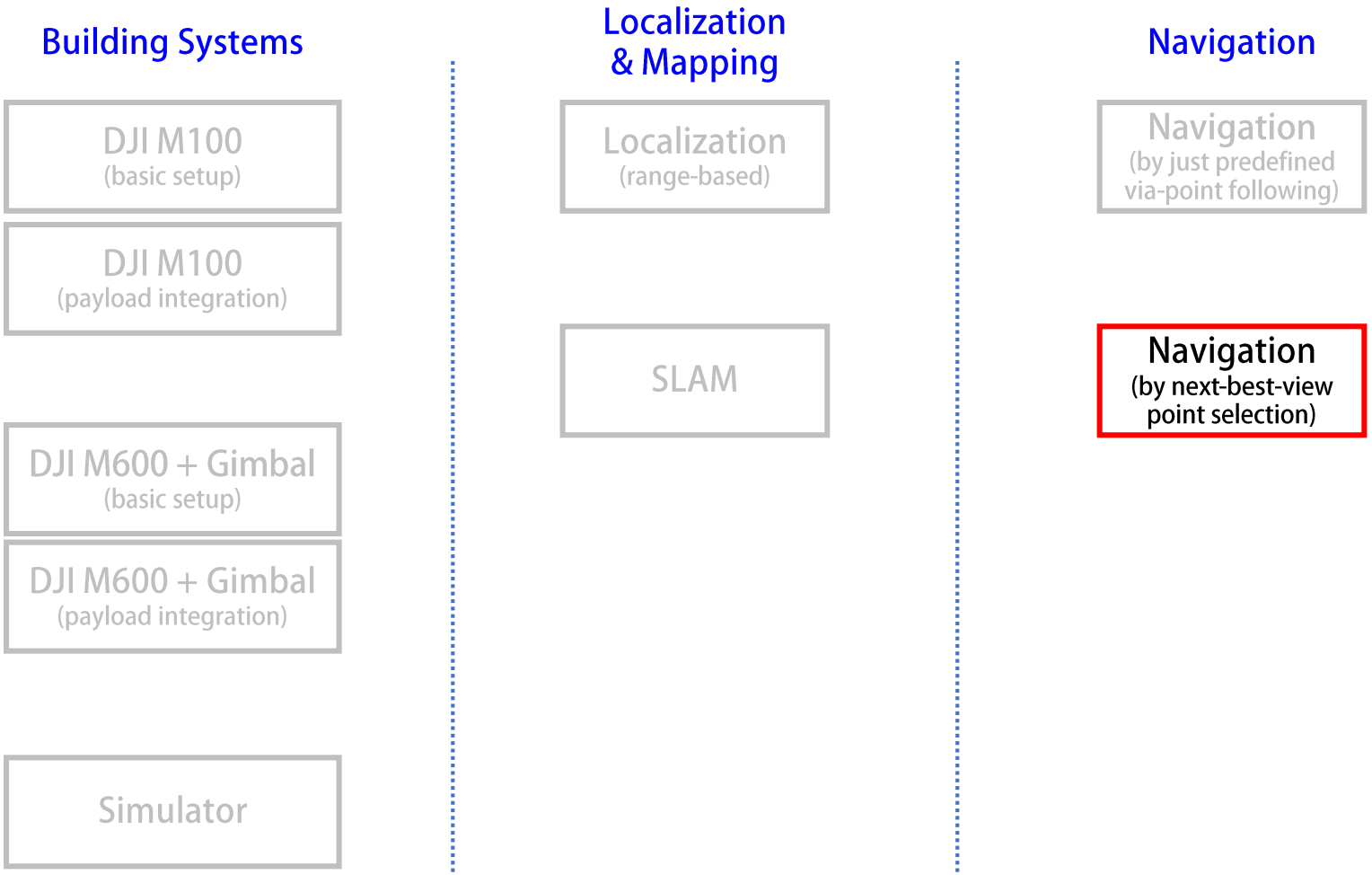
Task 2: SLAM

❑ Building a Map



Task 3: Navigation

❑ Building a Map by Next-Best-View Point Selection



Meeting Results: What to do

- Common
  - Basic setup for 'DJI M600 + Gimbal' (primarily by Zahra & Kunwoo)
  - Booking a PSE 4th floor room equipped with motion capture systems

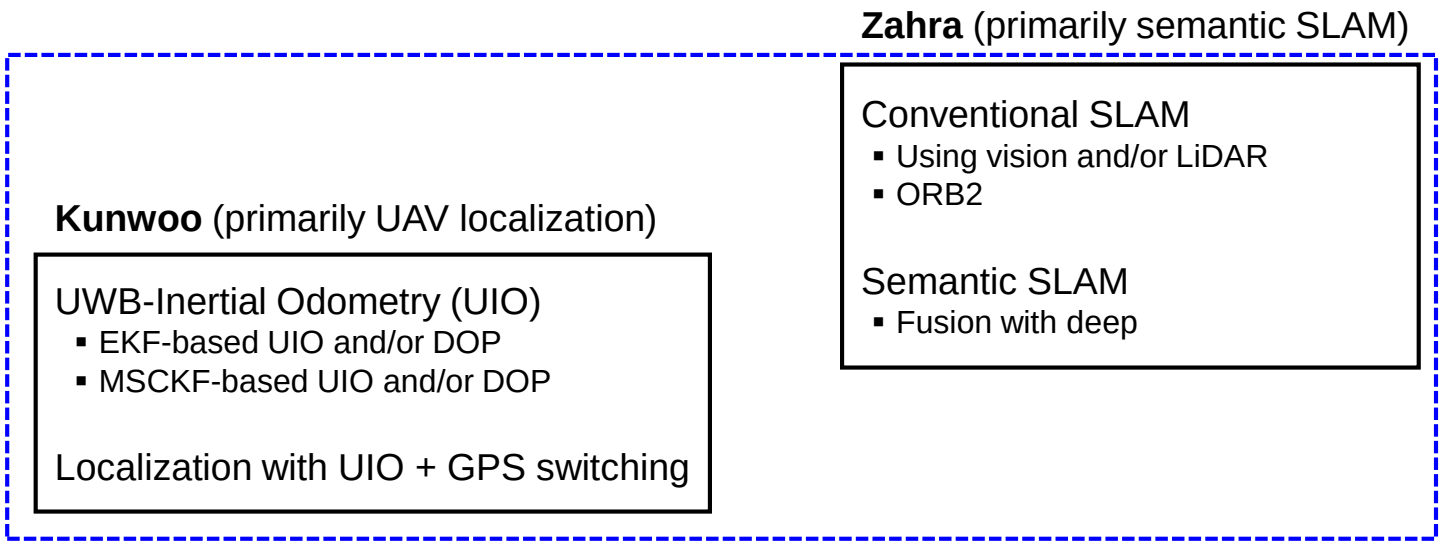
- Zahra
  - Understanding Kunwoo's EKF-based UWB localization code (including EKF)

- Kunwoo
  - Sending thesis and experiment plan to prof. Sohn
  - Writing a paper for ISPRS Geospatial Week 2019

- Jungwon
  - Writing a paper for IROS 2019

Future Plan

❑ Jungwon's Rough Suggestion for Future Plan



Jungwon: supports Kunwoo & Zahra mainly in technical issues.