# Meeting 1 – 5/10/18

Members in Attendance:  
Fraser  
Yana  
Dennis  
Steven  
  
On the agenda:  
Ass3 briefing from Karan  
Distributing out roles  
Determining the priorities for next week Firday (12/10/18)

Agenda item 1 - Ass3 Briefing:  
  
Description  
Karan went through the whole spec and tips on how to do it

### Notes

#### GUI

* Advised to have a system in place to manually label blocks
* Lists for reachable and non-reachable blocks
* Grid based selection system for BPs
* Conveyer changes: Insert vs Reload box options (opposed to prev ass)
* Image previews now only need to show snapshots (not live)

#### Occupancy Grid

* + 9x9 area grid to denote playing area: will use a matrix in MATLAB to denote,   
    9 x 9 x 4 where the z dimension will say the following:

|  |  |  |
| --- | --- | --- |
| **Playing Area Occupancy Grid** | | |
| **Name** | **Data** | **Comment** |
| **Status** | Boolean | Denotes occupation  1 = occupied |
| **Type** | Integer | Denotes letter or shape  1 = Letter  2 = Shape |
| **Orientation** | Float | Block orientation only (no letter orient) |
| **Position** | vector | Denotes Block Position |

* + 2 6x1 grid to denote “decks” of players

|  |  |  |
| --- | --- | --- |
| **Decks Occupancy Grid** | | |
| **Name** | **Data** | **Comment** |
| **Status** | Boolean | Denotes occupation  1 = occupied |
| **Type** | Integer | Needed to sort decks |
| **Orientation** | Float | To fix the positions |
| **Position** | vector | Denotes Block Position |

#### Calibration

* + Follow instructions on: Measuring Planar Objects (google and MATLAB instruct)
    - Need world coords of the following

|  |  |  |  |
| --- | --- | --- | --- |
| **Table** | | | |
| **Name** | **Global** | **Local frame** | **Comments** |
| **PtableHome** |  | (0,0) | Home |
| **P2** |  | ( ,0) | Very Left (past decks) |
| **P3** |  |  | Very Right (past decks) |
| **P4** |  |  | Center Top of Board |
| **Conveyer** | | | |
| **Name** | **Global** | **Local frame** | **Comments** |
| **PconHome** |  | (0,0) | Home |
| **P** |  | ( ,0) | Defined by us |
| **P** |  |  | Defined by us |
| **P** |  |  | Defined by us |

#### Path Planning

* + Need a path finding algorithm, Dijkstra’s or A\*
  + Takes in a 9x9 Boolean matrix and returns a 9x9 matrix
  + Will be tested by having the EE 5mm above the board and tracing the good path through

#### Communications

* Changing to hexideimal encoding for Joints
* Introducing delimeters (incorporate on both sides)
* RS: give back a awaiting command status

#### Testing

* RS side: Create a smart object that can be pickeded up (for now)
* Will require MATLAB stuff to test commsnad what not

#### Vision

* Strip the algorithm
  + Only need to identify between letters/blocks
  + Orientations are only block wise
  + Only need to mark centroids
* Strip the conveyer
  + Don’t need box diagnostics, just Centroid of it

#### MOVEMENT

* Fix the movement functions for joints
* RS: get the XYZ EE striaaght from RS

## Agenda item 2 – Distribution of Roles and Goals

Fraser: GUI, movement

* Start Stripping the GUI
* Implement movement via callback

Steven: Comms, Vision

* Start stripping the vision algorithm
* Change communications protocol
* Help write the new movement functions

Yana: Testing

* Get Smart Objects being placed in CAD (no need to get them working yet, just understand them)

Koushik: Calibraion

* Implement the MATLAB page for world coords
* Modularize the movement functions

Dennis: Path Finding

* Find some random ass path planning, and just outfit tit to input 9x9 and output 9x9 matrix

Daniel: Comms