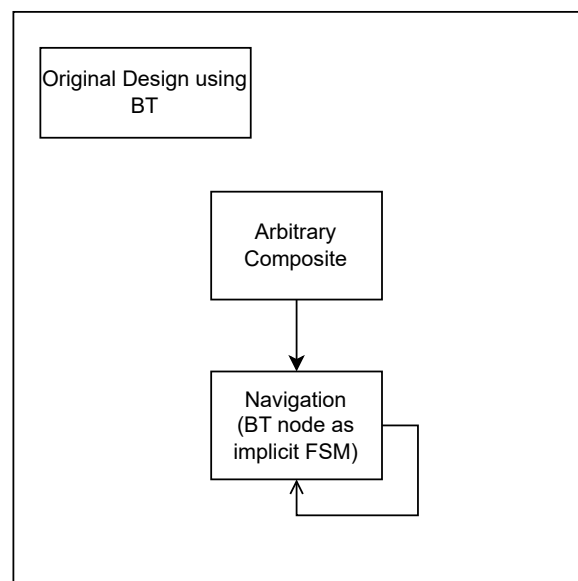


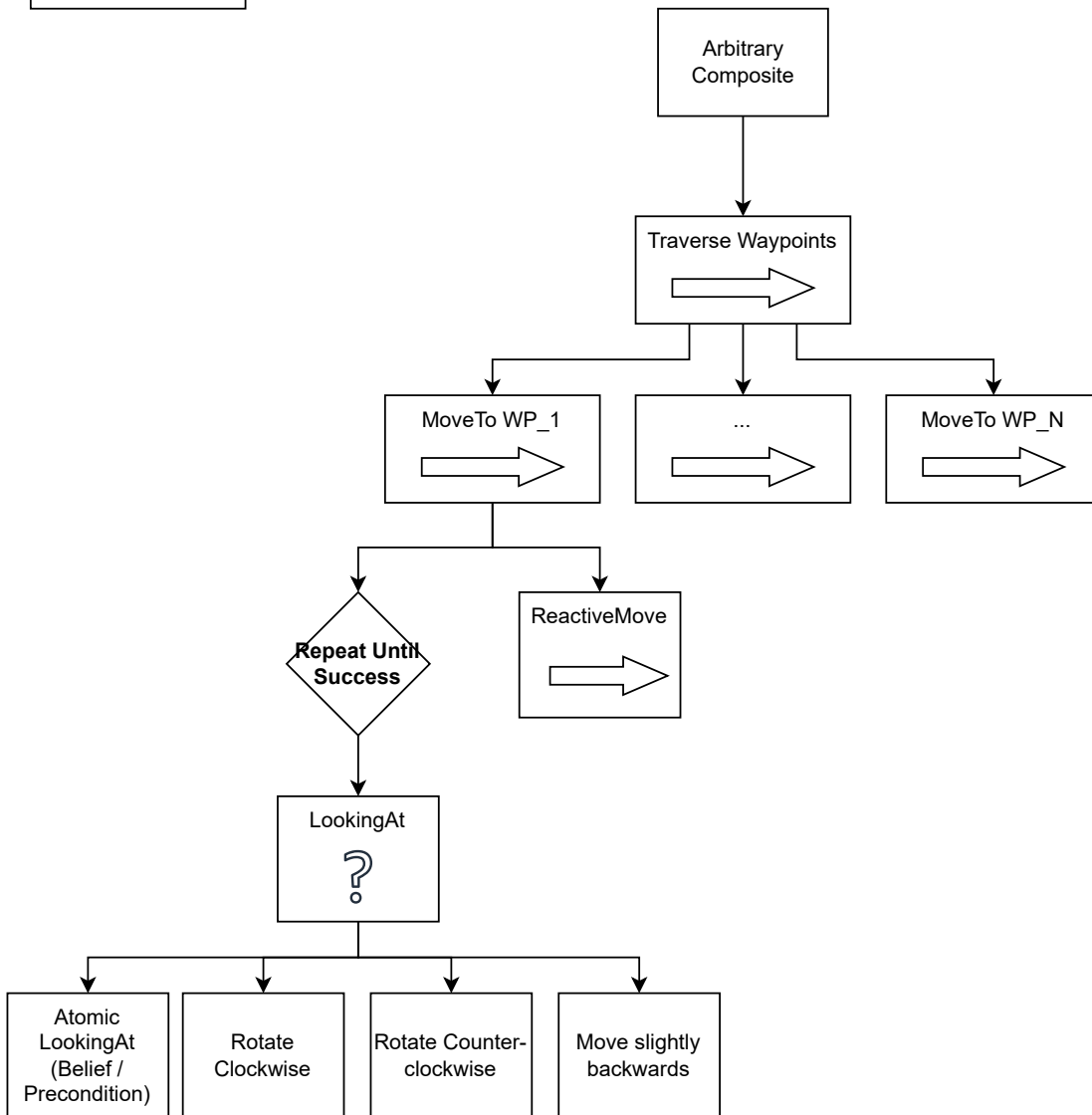
Designing Robust Navigation for Tiago robot with single 6DoF arm (In Progress)

The Issue:

- Heavy arm, and thus not many default configuration without affecting center of gravity.
- No matter the default configuration, the arm is prone to getting stuck in various areas such as walls, tables or between chairs, especially while trying to rotate in order to look towards a certain direction.
- It would be desirable to express waypoint navigation as a sequence of sequences which hold a repeatable fallback behavior for correcting orientation prior to actually navigating to the waypoint.
- This would be difficult to achieve in a traditional BT, because runtime modification of the tree is often unsupported officially. In `py_trees` we can create a subtree by creating a new composite instance and tick it manually within the current action node, which is a fair solution, but not officially supported by design.
- Of course this is for good reasons such as predictability and easier safety verification, but dynamic tree modification can open up new possibilities for complex robotic behavior. The purpose of this design documentation is to draft an experiment that would definitively illustrate the expressivity of TSM.



What we prefer:



Or possibly:

