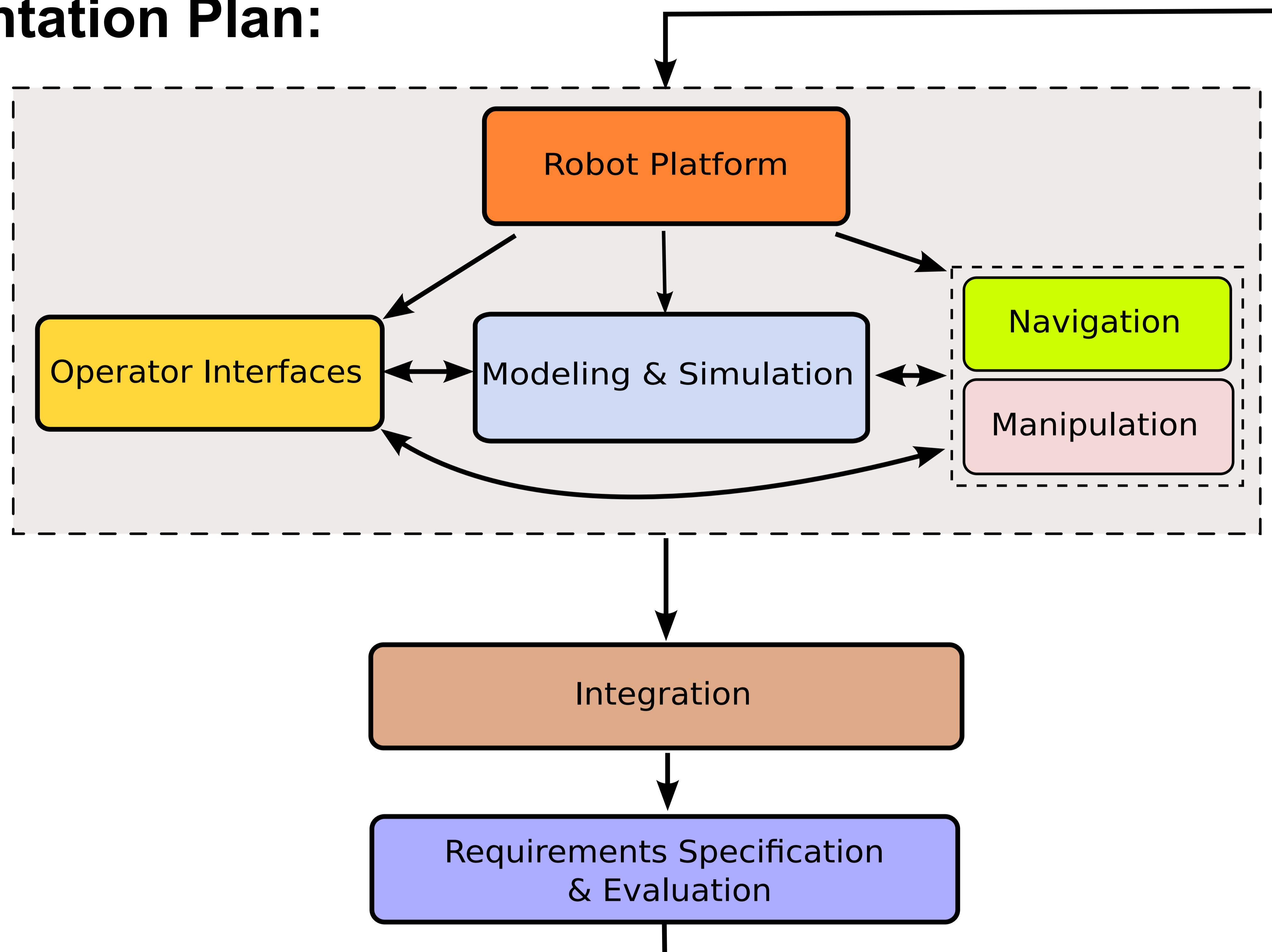


CENTAURO

Implementation Plan:



Robot Platform:

- Design of Centauro Robot
- Construction and assembly of Centauro robot
- Whole-body control with balance
- Wheeled locomotion control
- Legged locomotion control

Operator Interfaces:

- Design of full-body telepresence suit
- Development and test of full-body telepresence suit
- Development and assessment of the operator interface control
- Full-body telepresence in simulated and real robot hardware
- Third-person-view control interfaces

Manipulation:

- Object and workspace perception
- Collision-aware motion generation
- Grasp and motion planning for single-arm object pick and place
- Grasp and motion planning for bimanual object pick and place
- Autonomous execution of manipulation commands

Requirement Specification & Evaluation:

- Definition of requirements, test scenarios, and perf. metrics
- Evaluation of core components
- Evaluation of integrated Centauro disaster-response system

Modeling and Simulation:

- Virtual Testbed and Central World Model
- Centauro robot and environment simulation
- Constructing simulated world from robot percepts
- Predictive robot model

Navigation:

- Rough terrain SLAM
- Terrain classification
- Full-body navigation planning
- Autonomous execution of navigation

Integration:

- Integration infrastructure and system architecture
- Integration of core components
- Integration of Centauro disaster-response system