

Design of a MAS for emergency Response Simulation in Urban Environments: Task 2.

MAS
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Contents

Introduction to the Problem

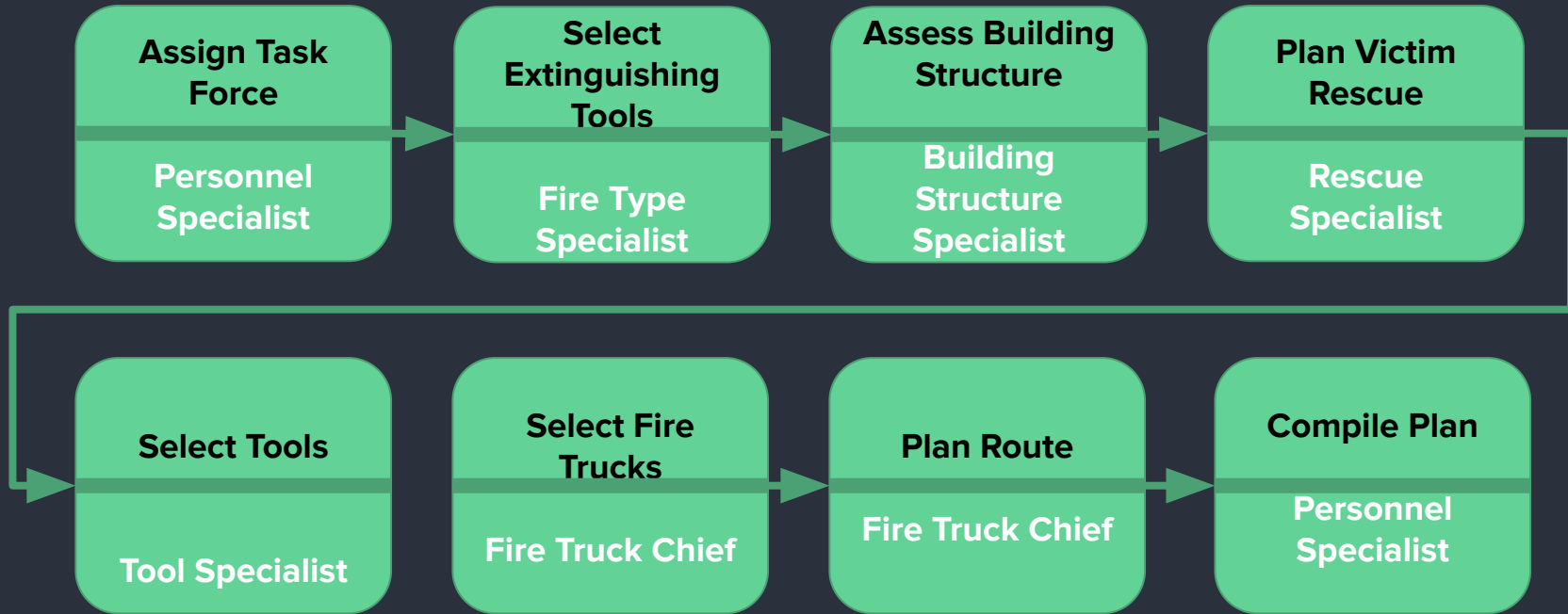
Process Definition

Pydantic Outputs

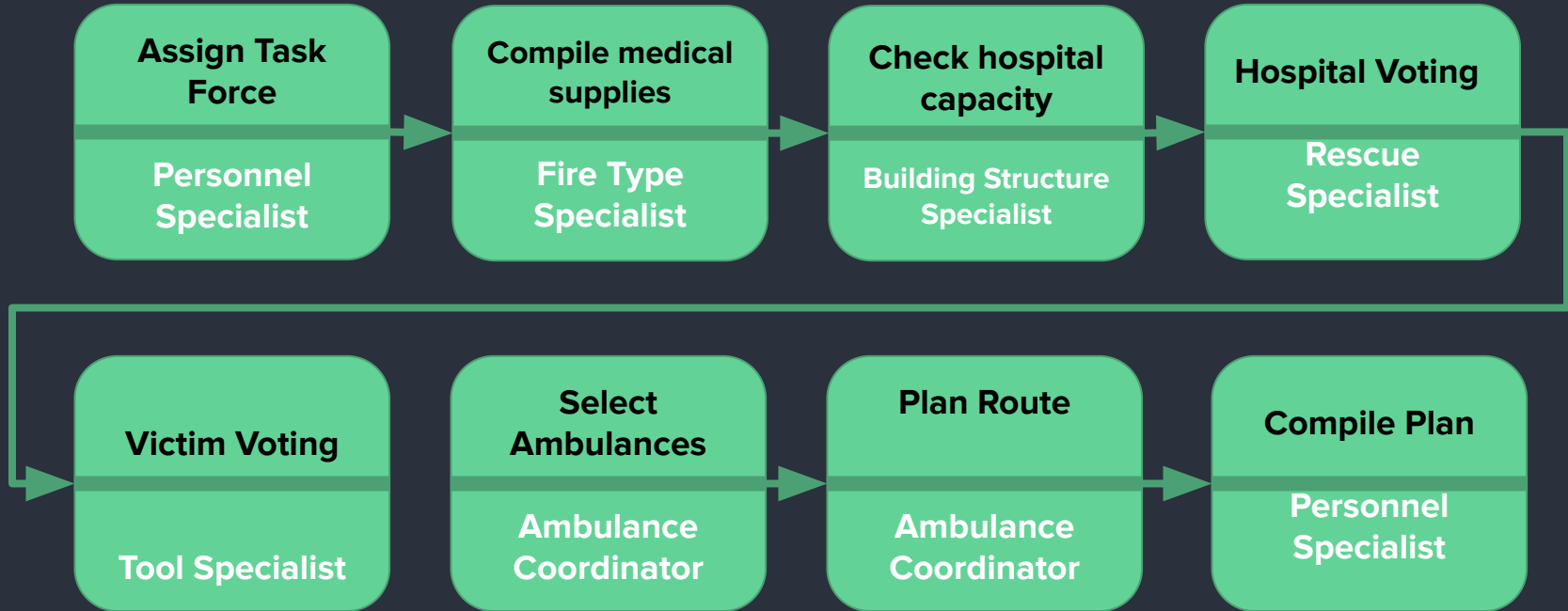
Agent Interaction

Process Definition

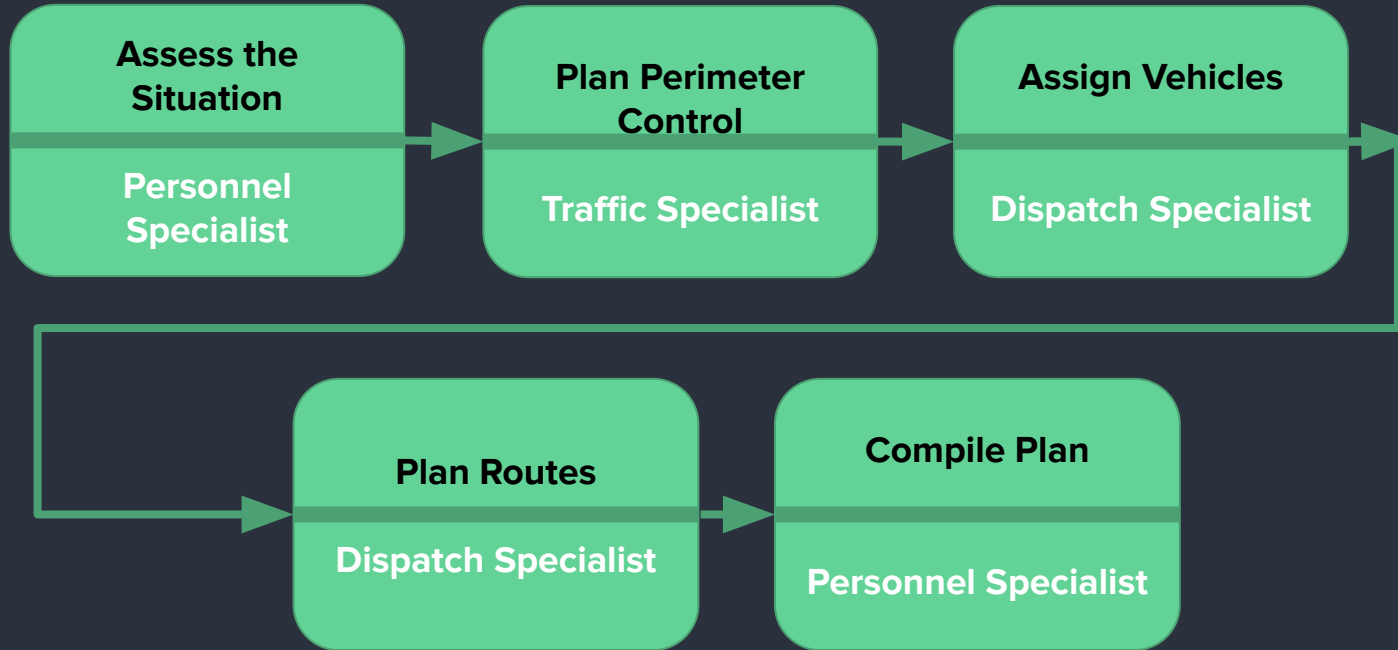
Process definition (I): Firefighting Crew



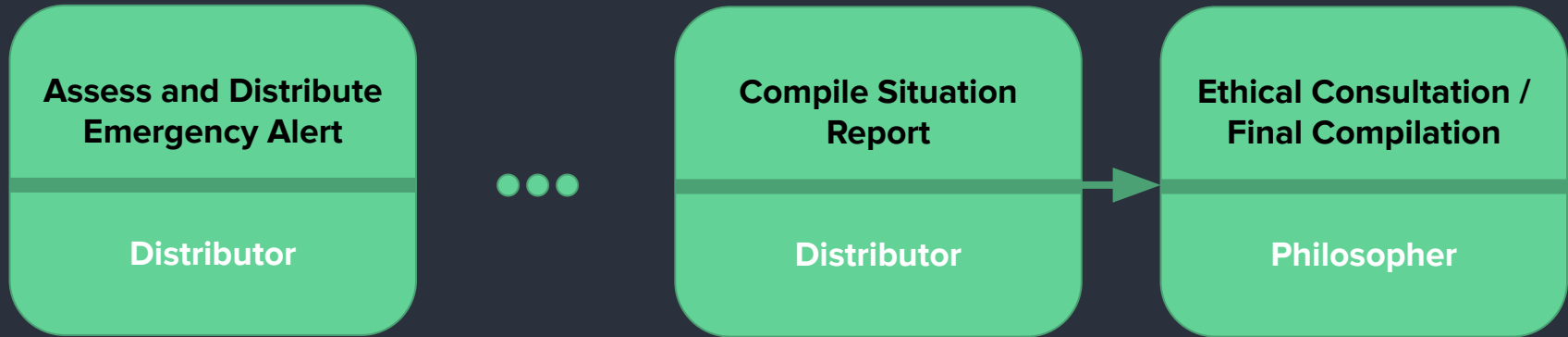
Process definition (II): Medical Crew



Process definition (III): Police Crew



Process definition (IV): Emergency Crew



Pydantic Outputs


```

class TaskforceAssignment(BaseModel):
    """Output for assigning the taskforce."""

    n_firefighters: int = Field(..., description="Number of firefighters assigned.")
    action_details: str = Field(
        ..., description="Additional details of the assignment action."
    )

```

Example for
Assign task
force task

Example for Plan
compilation task

```

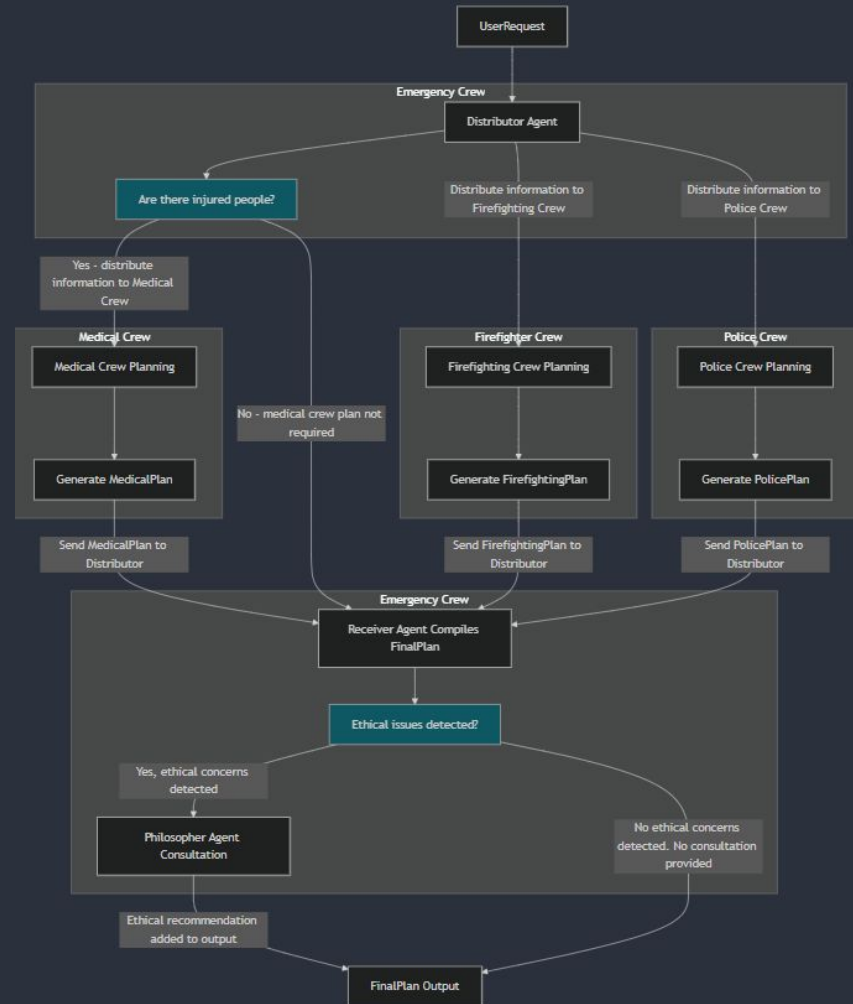
class FirePlanCompilation(BaseModel):
    """Comprehensive output for compiling the final plan."""

    n_firefighters: int = Field(..., description="Number of firefighters assigned.")
    extinguishing_tools: List[str] = Field(
        ..., description="List of selected tools for extinguishing."
    )
    rescue_strategy: str = Field(..., description="Strategy for rescuing victims.")
    stop_fire_strategy: str = Field(..., description="Strategy for stopping the fire.")
    ordered_victim_rescue: List[str] = Field(
        ..., description="List of victims ordered by rescue priority."
    )
    rescue_tools: List[str] = Field(
        ..., description="List of tools used for rescue operations."
    )
    fire_trucks: List[str] = Field(..., description="List of selected fire trucks.")
    routes: List[List[int]] = Field(..., description="List of planned OSMnx routes.")
    ethical_issues: Optional[str] = Field(
        None, description="Ethical issues considered in the plan."
    )
    action_details: str = Field(
        ..., description="Additional details of the overall plan."
    )

```

Agent Interaction

Agent Interaction Diagram



Questions?