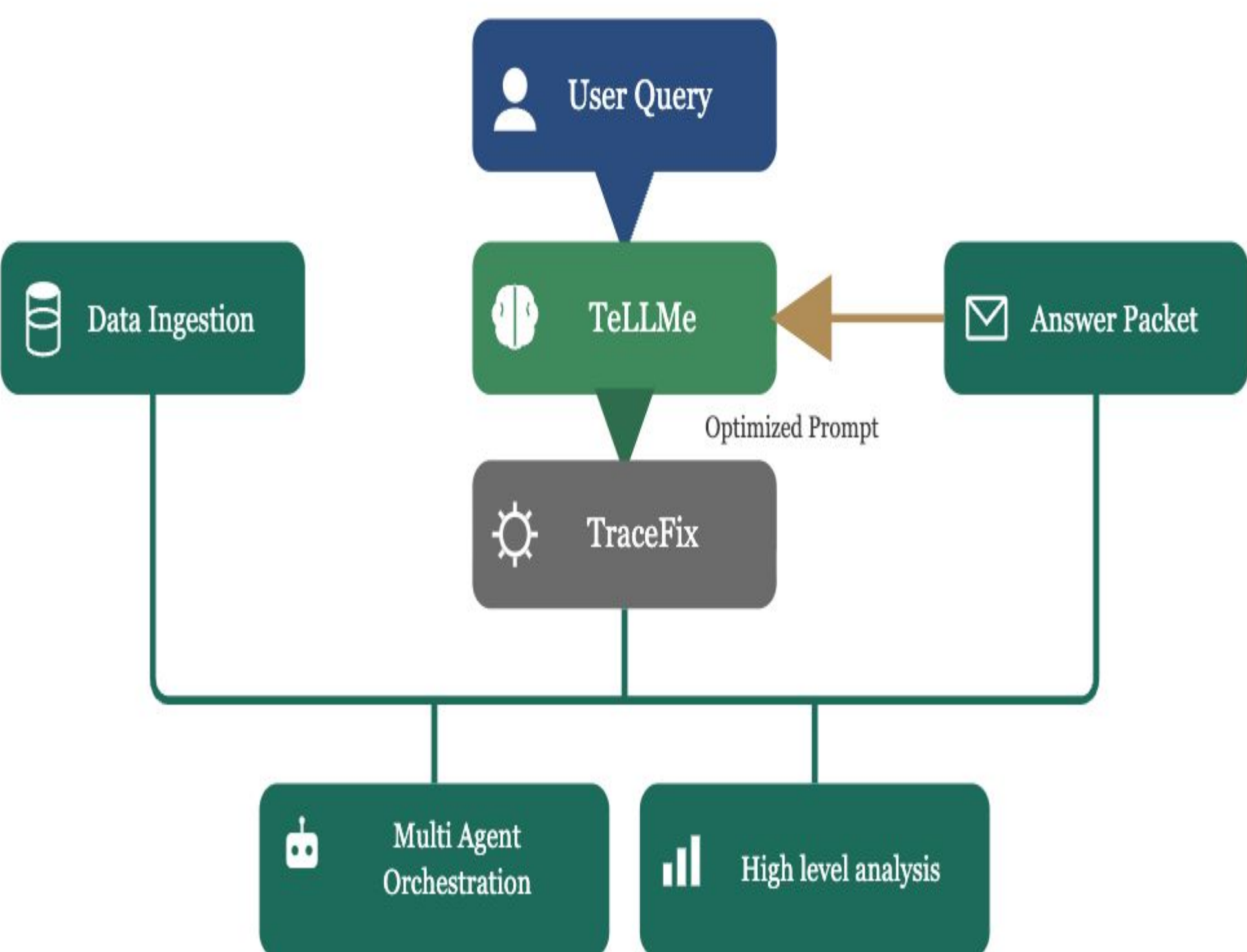


Core Infrastrucutre for Agentic Smart Room Stack

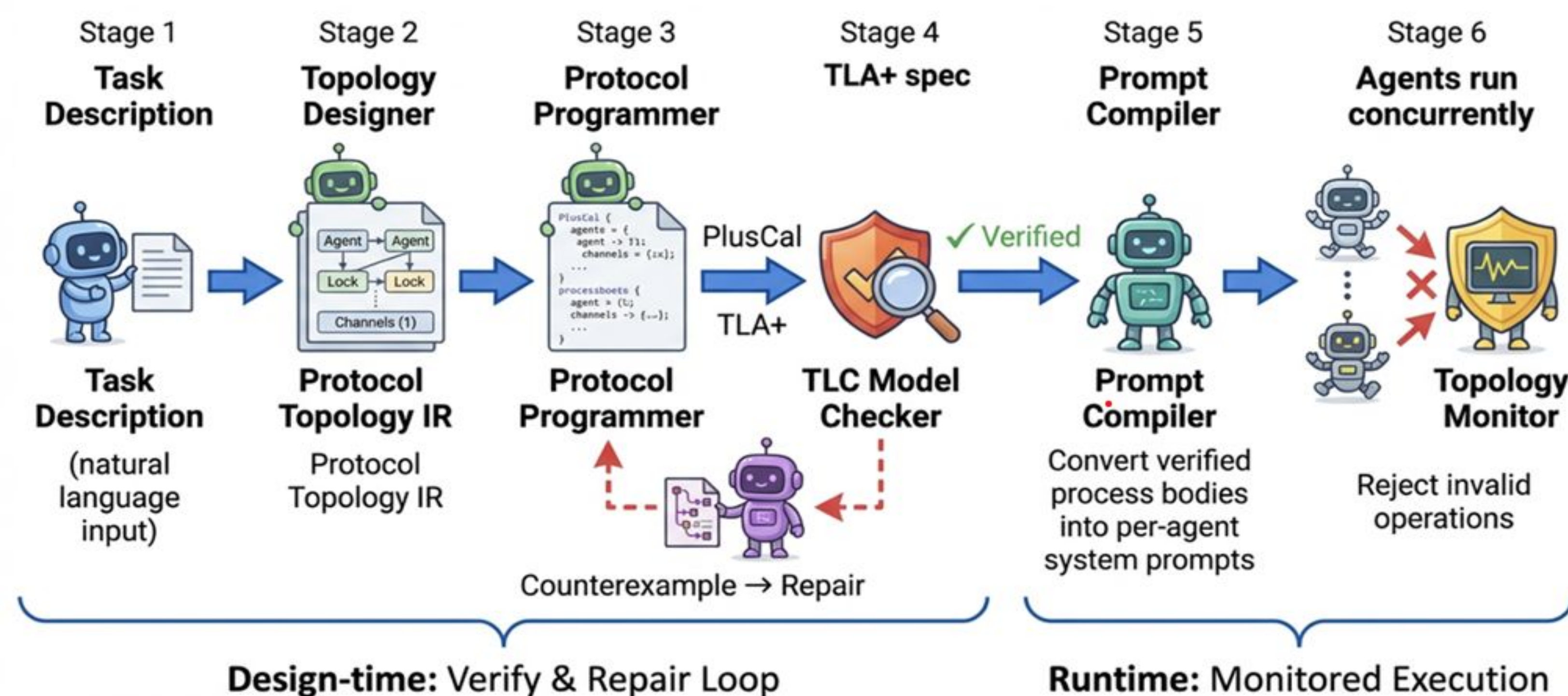
Team Members: Dr. Jorge Ortiz, Shuren Xia(Phd), Oscar Wu(Phd), Taqiya Ehsan(Phd), Jay H Duvvuri (UG) , Shreyaa Sanjay (UG) , Sankeerth Bharadwaj(UG), Vihaan Rajagopal(HS), Alejandro Salto(HS), Rakshan Senthil (HS), Abhishek Shukla (HS), Annika Jeena (HS)

Project Overview

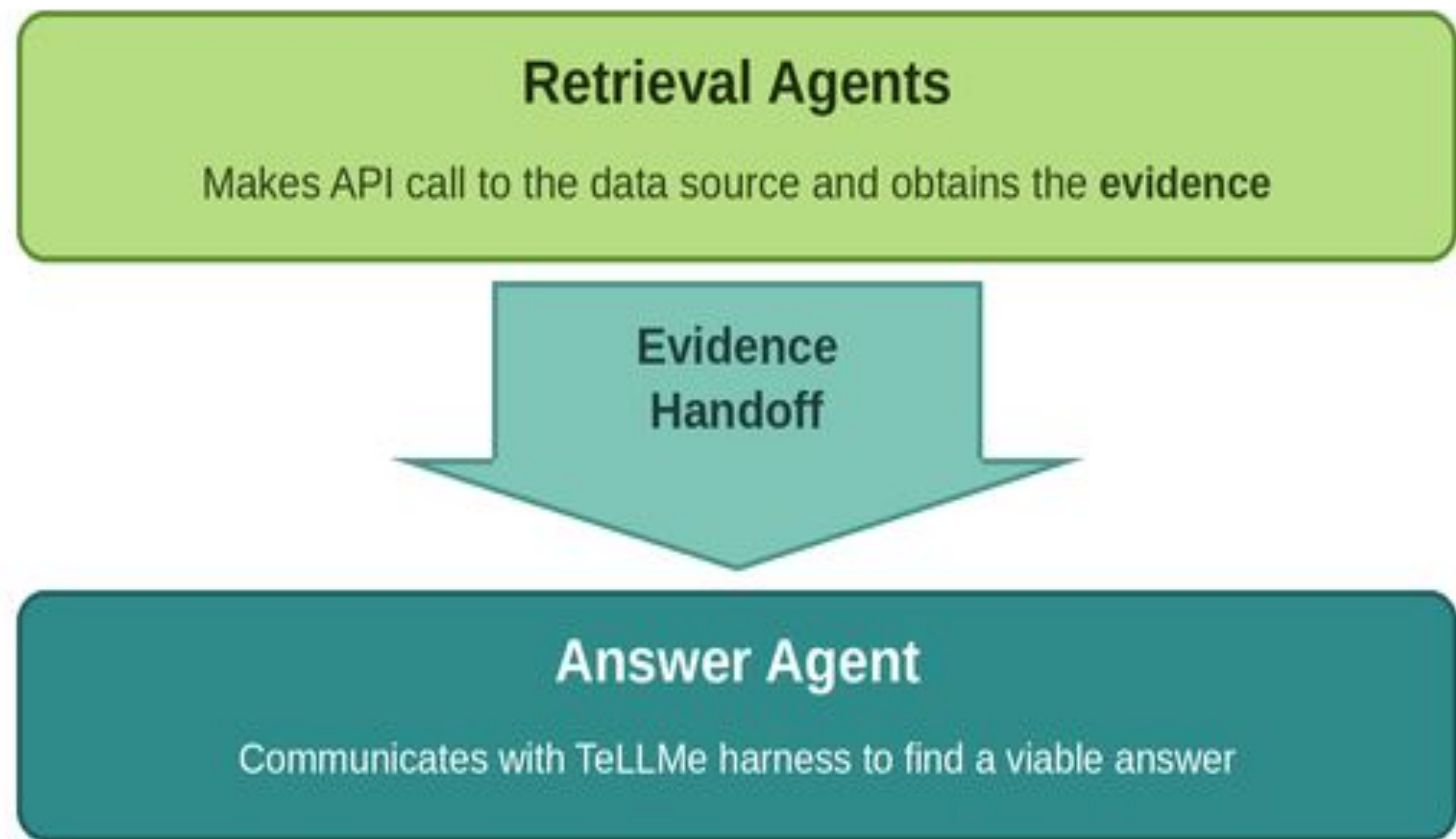


Modern Smart City applications increasingly rely on distributed multi-agent systems to coordinate autonomous services. However, designing these systems requires expertise in distributed protocols and formal verification, making development slow and inaccessible. This project introduces **TeLLMe** and **TraceFix**, an AI-driven workflow that transforms natural language task descriptions into verified distributed system implementations.

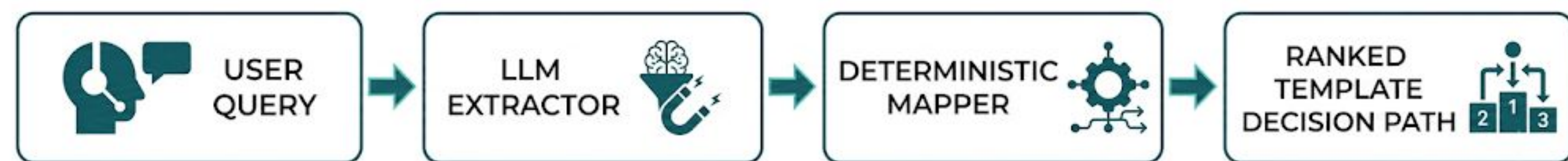
TraceFix Layer



Agent Synthesizer



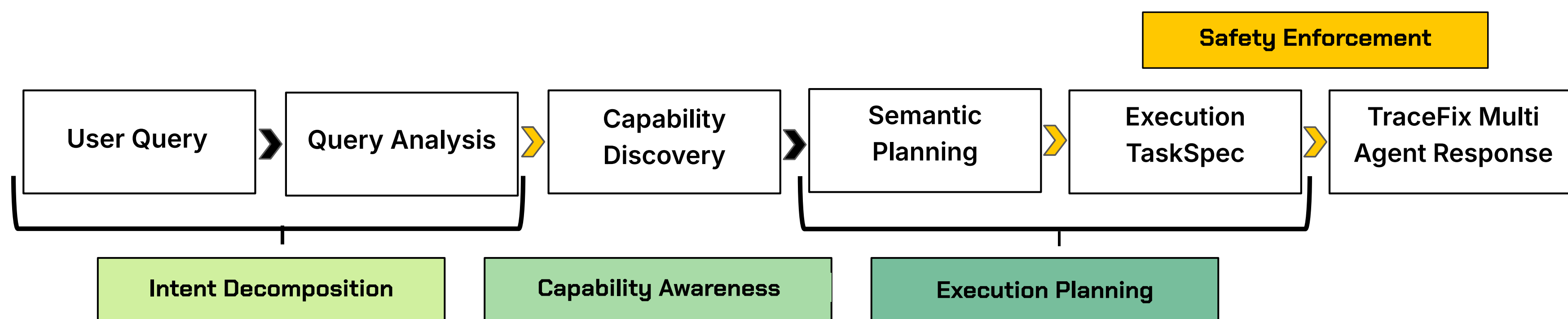
The Agent Synthesizer automatically constructs a lightweight multi-agent workflow tailored to the user's task. At minimum, it generates a **Retrieval Agent** that gathers evidence from external data sources and an **Answer Agent** that aggregates the retrieved information into a structured response. This response is then sent to the TeLLMe Harness. This modular architecture opens up scalable execution while allowing additional specialized agents to be introduced as task complexity increases.



TraceFix Classifier

TeLLMe

TeLLMe acts as a median between the user and the stack by taking questions and formatting them for maximum optimization throughout the rest of the stack.



Next Steps

- Integrate with CityOS Privacy Layer
- Strengthen Core Stack to be mathematically proven and established.
- Test Agent protocols

