Automotive Software with ASOA

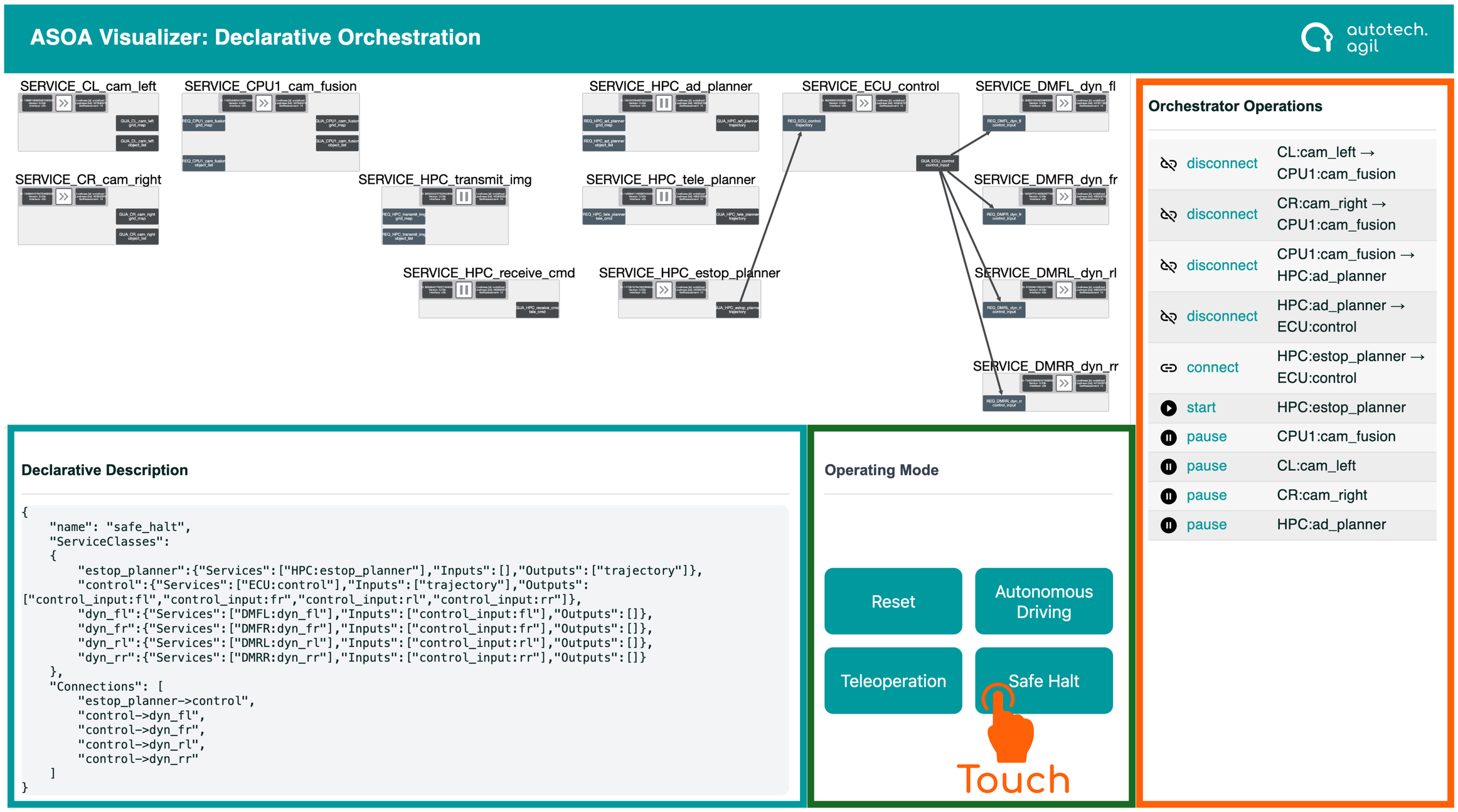
Declarative Orchestration

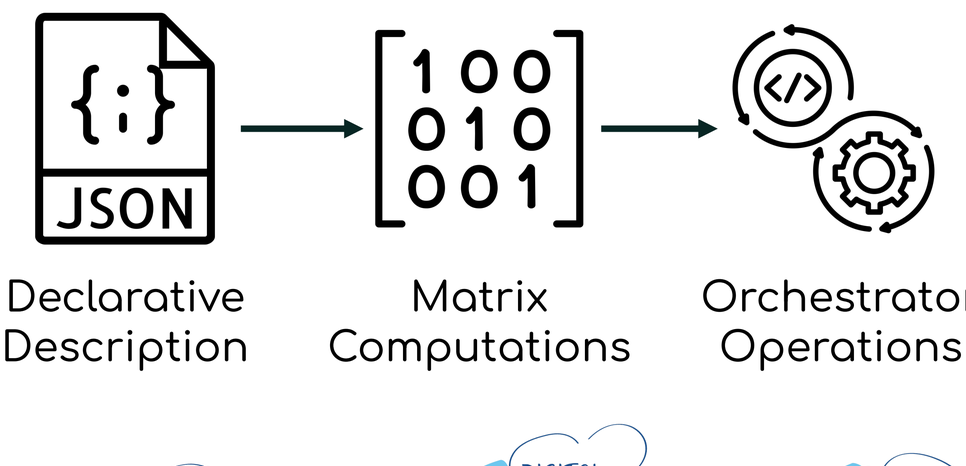
autotech. agil

With funding from the:

Federal Ministry of Research, Technology and Space

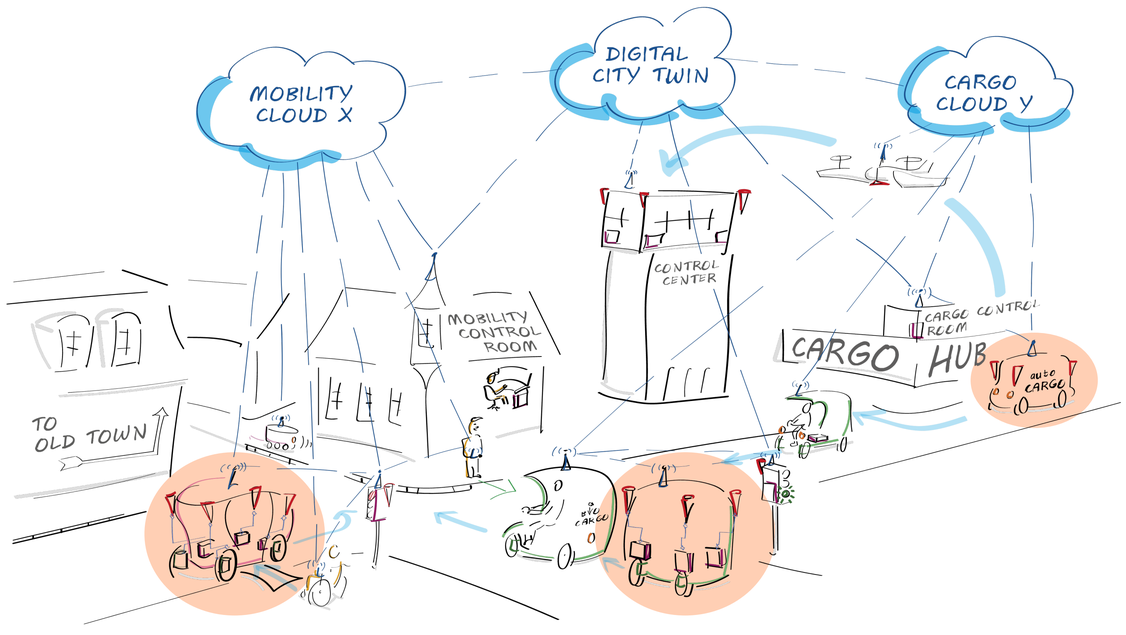
Service-oriented architectures enable highly modular and reusable software architectures offering adaptable systems to changing requirements. Especially safety-critical applications require managing the software system at runtime to guarantee a reliable and deterministic behavior. The **ASOA (Automotive Service-Oriented Software Architecture) Orchestrator** manages the system by deploying chains of software services, effect chains, which provide the requested functionality.





Technological Innovations

When choosing an **Operating Mode**, the **ASOA Orchestrator** parses the **Declarative Description** of an effect chain provided in JSON format. Translating both the current and the desired effect chains into directed graphs in matrix representation enables efficient computations on the effect chains. By subtracting the matrix representing the current effect chain from that of the desired one, the necessary **Orchestrator Operations** to transition to the targeted operating mode can be determined.



Contributing Partners

RWTH AACHEN UNIVERSITY