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Cooperative Aircraft Trajectories Planning

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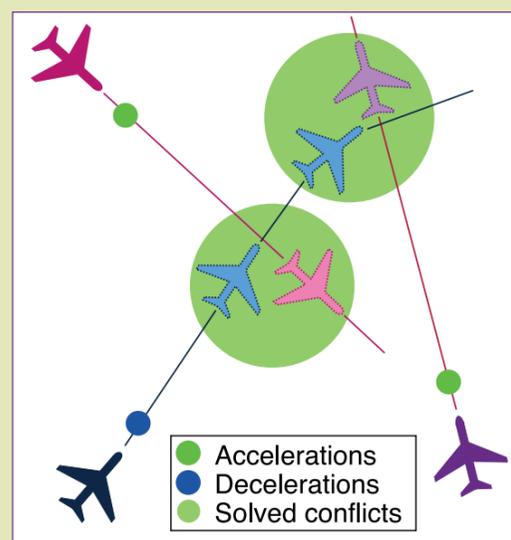
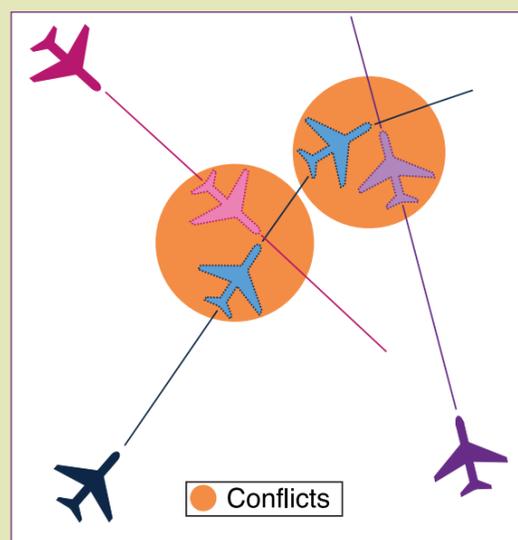
Cooperative Aircraft Trajectory Planning

Multi-agent system

- Resilient, fast and scalable method for problem solving
- Composed of agents (aircraft) cooperating to elaborate their trajectories
- Decisions are taken **by each aircraft**, based on knowledge of its **local environment**

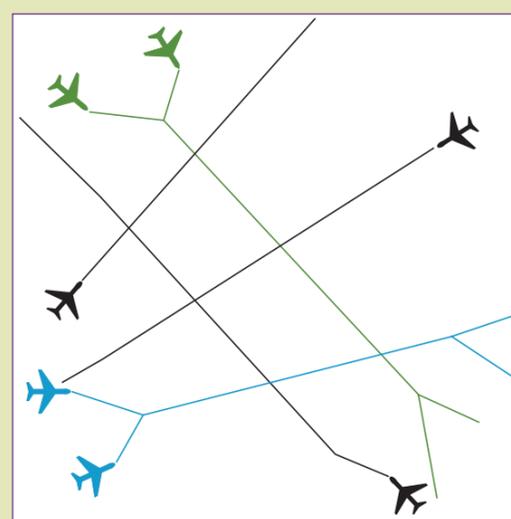
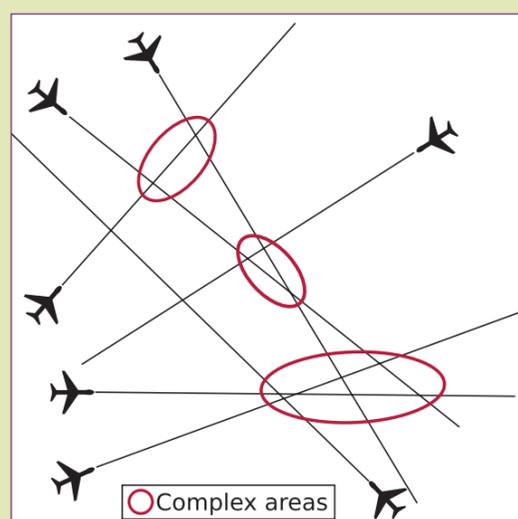
Conflict avoidance by speed regulation

- Aircraft sends messages containing their estimated trajectories
- Each aircraft selects optimal speed changes based on this shared knowledge
- Speeds are selected within $[-6\%, +3\%]$ of its optimal speed



Macro-structuration of air traffic

- The system reduces traffic complexity by structuring trajectories into flows
- A local network of routes is generated **on demand**



Contacts

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