# Cooperative Aircraft Trajectories Planning

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People matter, results count.

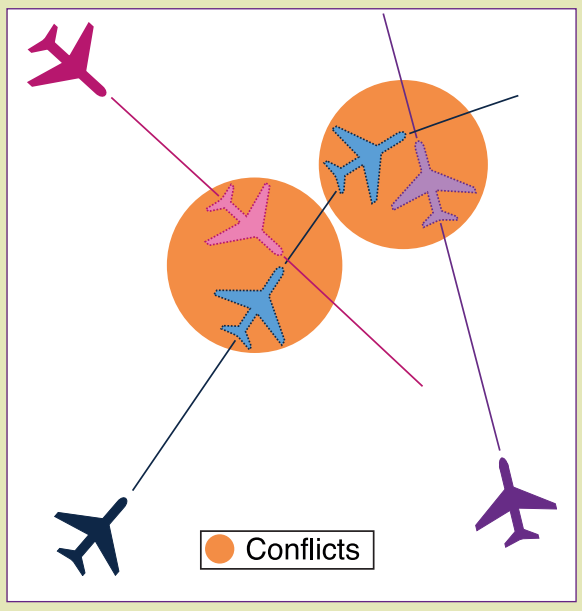
# Cooperative Aircraft Trajectory Planning

## Multi-agent system

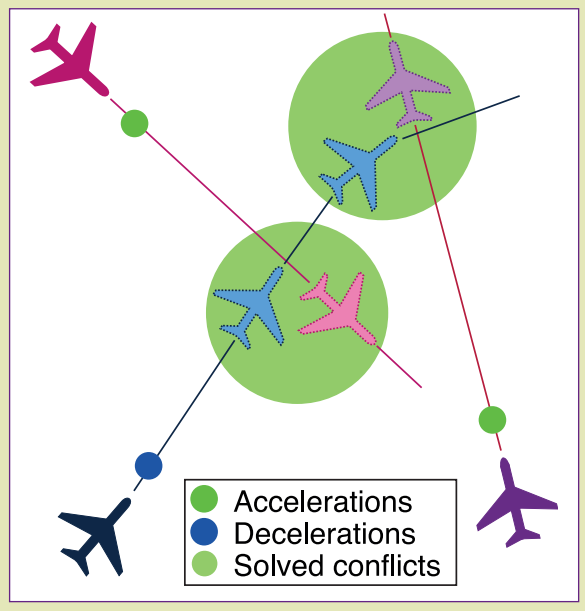
- Resilient, fast and scalable method for problem solving
- Composed of agents (aircraft) cooperating to elaborate their trajectories
- Decisions are taken **by each aircraft**, based on knowledge of its **local environment**

## 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



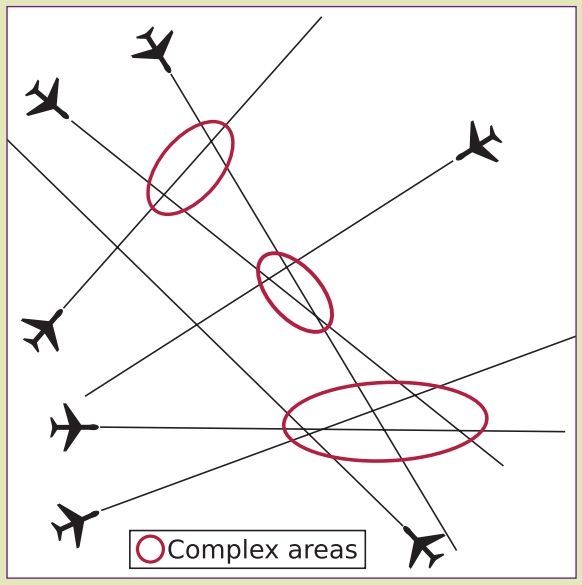

**Without regulation**, conflicts occur



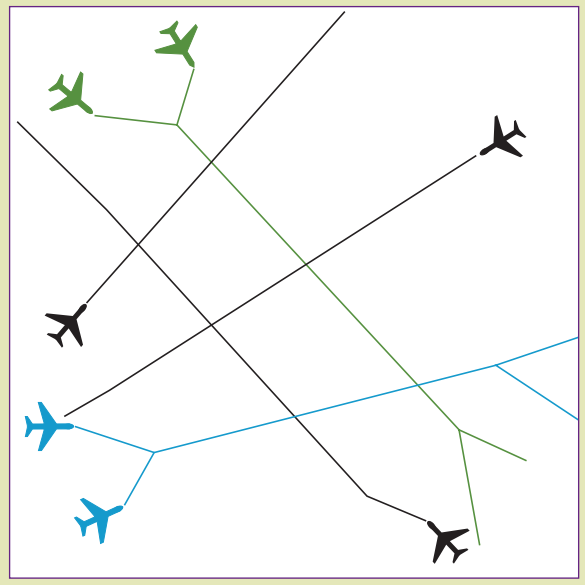

**With speed regulation**, conflicts are solved

## Macro-structuration of air traffic

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




**Unstructured** traffic



**Structured** traffic

## Contacts

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