Cooperative air traffic structuring
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Cooperative Air Traffic Structuring

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

Conflict Avoidance by Speed Regulation
- Aircraft send 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-Structuring of Air Traffic
- The system reduces traffic complexity by structuring trajectories into flows
- The traffic complexity is monitored in real time
- The route network is dynamically adapted to fit the traffic complexity

Without regulation, conflicts occur

With speed regulation, conflicts are solved

Unstructured traffic

Structured traffic