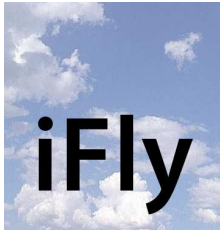




iFly



What are the potential benefits for SESAR and NEXTGEN ?

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Airborne Self Separation Findings



- Pilots like it, if they know that ASAS supporting systems are dependable
- Dependability requirements have been identified using RTCA DO-246 (=EurocaeED78a)
- It can safely accommodate very high en route traffic densities
- It has a very healthy economic perspective
- The proper working of advanced Conflict Detection and Resolution algorithms has been demonstrated
- The potential problems regarding shared SA have been identified, and a start has been made in recovering from these latent conditions





Main Differences and Similarities between A3 ConOps and SESAR2020



- Differences

- Flight crews become responsible for medium and short term conflict detection and resolution
- Handling of mixed aircraft equipage has not been explored
- Interfacing with Terminal Areas has not been explored yet
- Transition paths have not been explored yet

- Similarities

- Reference Business Trajectory based
- ADS-B In & Out
- SWIM
- CDM
- ASAS, though with more advanced functionality





Advanced ATM Design Space perspective



- iFly does not claim that A3 ConOps is THE future solution.
- iFly findings significantly enlarge the feasible advanced ATM design space; A3 ConOps forms an extreme corner of this design space.
- High level assessment of this extreme corner has shown it can safely accommodate very high en-route traffic demand.
- The key challenge is how to manage transitions from conventional ATM to a much better point in the design space; this applies to A3 ConOps as well as to SESAR 2020 and NEXTGEN 2025.
- Then it might be of significant value for SESAR and NEXTGEN to know that under adequate ASAS support, flight crew are also able to safely take over more functionalities from the ground.





Follow-up research



- Identify combinations of A3 ConOps design elements and SESAR 2020 design elements, with focus on:
 - Mixed equipage of aircraft fleet
 - Mixed equipage of ground centres
 - Sharing SA and responsibilities between ATC and Flight crews
- Explore potential transition paths from conventional ATM to these combinations, and compare these against the transition paths identified so far for SESAR 2020
- Evaluate most promising transition paths at the high level key performance indicators, such as capacity, safety and economy,





Questions / Discussion

