

INTENT

Press Release

20 – 22 February 2001, Maastricht

Announcement

The European Commission DG Research has awarded a contract under the thematic programme for Competitive and Sustainable Growth to an international consortium led by NLR for carrying out the INTENT project. The objective of INTENT is to study the fundamental question whether knowledge about aircraft intent information will be beneficial to the air traffic system capacity. Information about 'intention' concerns the flight plan as implemented in the aircraft Flight Management System (FMS).

The objective of INTENT is to answer the following research question:

*"How does the level of **aircraft INTENT** information, shared among ATM users and actors, relate to the **air traffic system capacity**, the **avionics** system design and **ATM system** design?"*

The answer to this question will be translated in a technology roadmap and implementation plan for airborne and ground-based equipment to increase airspace capacity.

Background

In some regions of the world, airspace demand is reaching capacity, resulting in delays and cancellation of flights. Europe, in particular, has shown air traffic growth rates around 5% per year on average over the past years, while projections show this to continue or even increase. At the same time, delays over Europe have increased in 1999 by 58% overall compared with 1998, 25% of which are attributable to en-route inefficiencies. These figures support the assumption that capacity is being reached and consequently new solutions are required urgently.

Various projects and programmes addressing this issue are currently underway in Eurocontrol as well as those sponsored by the European Commission.

Examples are the 3FMS, MA-AFAS and FREER projects which address the air traffic system question from the perspective of increased aircraft autonomy, assuming that delegation of air traffic system responsibility to the flight crew will be a way of increasing system capacity at the prevailing level of safety.

Other projects such as PHARE, AFAS and DADI-2, assume that the responsibility for the air traffic system would remain with a centralised (perhaps distributed) function on the ground, so that any measures to increase capacity would have to be organised between the corresponding ground and air functions.

The NEAN/NUP projects address data link technology, including automatic dependent surveillance broadcasting, assuming that broadcasting of relevant parameters between the various air traffic system participants will be required.

INTENT provides a link between these initiatives by researching both airborne and ground-based solutions to the air traffic separation process. Assuming several common traffic scenarios, the project will produce a complete frame of reference in terms of the ability to improve air traffic system capacity by using aircraft on board INTENT data, by other aircraft and on the ground.



ONERA



DELFT AEROSPACE
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BRITISH AIRWAYS



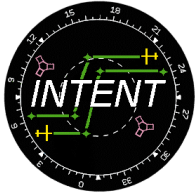
DERA



Rockwell
Collins



KLM Royal Dutch Airlines



Approach

In INTENT, the relationship between the use of aircraft intent information, the responsibility for the traffic separation assurance process (air, ground, air/ground) and airspace capacity has to be found.

INTENT will use compressed-time simulations, containing modelled human characteristics, in order to find this relationship. Limited real-time simulations are used to derive the human characteristics of both pilots and air traffic controllers and to validate the outcome of the compressed-time simulations.

A research flight simulator and research ATC simulator will be used in INTENT to explore the human characteristics and to validate the outcome of the compressed-time simulations.

Consortium

The INTENT consortium consists of the following partners:

Abbreviation	Partner name	Country
NLR (lead)	National Aerospace Laboratory NLR	NL
ONERA	Office National d'Etudes et de Recherches Aeronautiques	F
Eurocontrol	European Organisation for the Safety of Air Navigation	INT
DUT	Delft University of Technology, Faculty of Aerospace Engineering	NL
DERA	Defence Evaluation and Research Agency	UK
RC-F	Rockwell-Collins France	F
SIA	Smiths Industries Aerospace and Defence Systems	UK
EADS AIRBUS	EADS AIRBUS	F
ECA	European Cockpit Association (<i>represented by the Netherlands Air Line Pilot Association</i>)	INT
AEA	Association of European Airlines (<i>represented by KLM Royal Dutch Airlines, British Airways and Scandinavian Airlines System</i>)	INT

Contact

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<http://www.nlr.nl/public/hosted-sites/intent>

