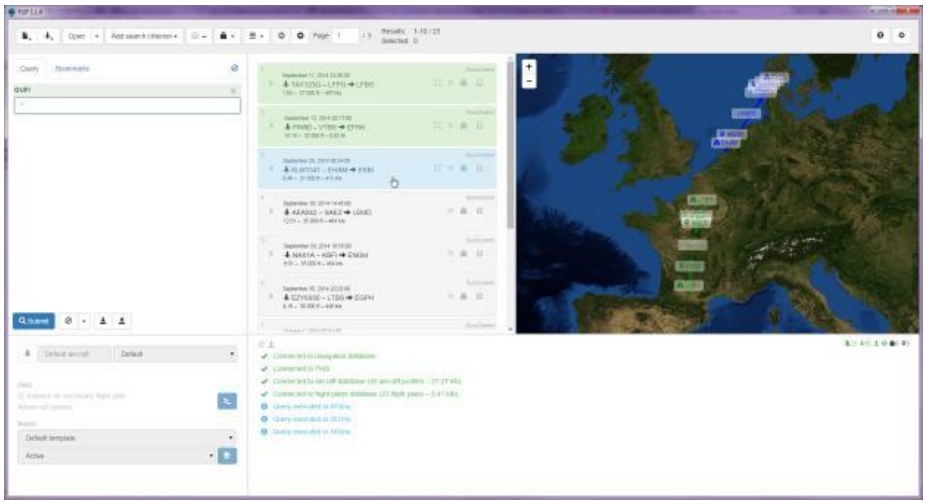
Press Release
Toulouse, 2016, the 7th of April

Clean Sky European programme: FLIP implements a software platform to test the performances of the Thales Avionics future FMS (Flight Management System), thus allowing ORME to finish third in the best European project award.

ORME, the signal and image processing specialist, in partnership with ATMOSPHERE, designed a software application to test under real-world conditions the future FMS developed by Thales Avionics regarding aircraft trajectory optimization. This trajectory revision will reduce CO2 emissions and increase aircraft performance.

A tool to meet major environmental and economic challenges



Europe established 4 targets to be reached by the aviation industry by 2020: reduce CO2 emissions per passenger kilometre by 50%, reduce NOx emissions by 80%, reduce perceived noise by 50% and reduce the environmental impact, whilst increasing the aviation industry's performance. To cope with these targets, a few years ago, Europe built the Clean Sky programme, which brings together key players in this industry.

It is against that background that ORME won the European call for projects named FLIP (integrated element of the Clean Sky programme) related to the future Flight Management System (FMS) developed by Thales Avionics. The Toulouse-based company, in partnership with ATMOSPHERE offered to help optimize this FMS by developing a realistic test platform. The test software designed by ORME and ATMOSPHERE thus provides means to define criteria to select real flight plans from the whole world, to push these flight plans into the FMS, to create new flight plans and to modify them if necessary for testing purposes.

"The FMS is a critical on-board software product embedded in the aircraft, which computes its trajectory based on the flight plan entered by the pilot (departure and arrival locations, waypoints…), take-off and approach constraints, and routes. All data is transmitted to the aircraft's autopilot for flight guidance.

We had to collect more than 300,000 real-world flight plans to create the testing software FLIP; otherwise we would not have reached that level of coverage. Flight plans form the basis for flight operations management; and we needed various scenarios to deliver a reliable tool taking into account real-world conditions.
Thanks to these research works, we took part in the enhancement of the trajectories of the aircrafts to make them more efficient. By contributing to the validation of the aircraft trajectory enhancement functions, we are reducing fuel consumption (fewer flight hours) and we are limiting CO2 emissions. The environmental and economic benefits are significant for the industry." stated the CEO of ORME, Luc Oriat.

For his part, Gilles Poussin, Clean Sky Program Manager at Thales, points out that FLIP enriches the existing suite of test systems that allow the new FMS features to reach the adequate level of maturity. By testing automatically these features against realistic flight plans, FLIP helps to achieve early detection of the defects having to be fixed during the development phase, and to accelerate development.

Third place in the Clean Sky Awards and a second phase for the project

At the Clean Sky Awards, on the 4th of April 2016 in Brussels, FLIP was awarded third best European project of the year, over 500 other projects. This prize is a reward for several months of teamwork between Thales, ORME and ATMOSPHERE.
ORME is still investing in this project and has just submitted a new proposal to the Midi-Pyrénées Regional Council and European Commission for a continuation to the FLIP programme. This second phase will be conducted, like the first one, with ATMOSPHERE, a company specialized in weather data processing and networked aeronautical applications. The new project – FLIP 2 – will enrich the flight plans in the database with real-world weather forecast data.

In this second version, the system will provide the FMS with wind speed levels and weather events that the aircraft shall meet along its course, as well as their dangerousness and the forecasted evolutions. This new element will allow the players in the aviation industry, such as equipment suppliers (FMS developers as Thales) and aircraft manufacturers (Airbus, Dassault Aviation), to promote the reliability of present-day equipment, to reduce even more their environmental impact and to optimize costs.

About ORME:

Founded in 1996, ORME is a company based in Toulouse, specialized in the acquisition and processing of signals and images. ORME is designing a suite of innovative software, TrackImage and TrackReport, offers special designs of systems and software applications, as well as test analysis services.

Their clients include major players in the Aerospace (Airbus, Safran / Snecma, Thales Alenia Space, CNES, Latécoère…), Automotive (Renault, PSA, Autoliv, Faurecia, Valeo…) and Energy (CEA, Schneider Electric…) sectors as well as in Cosmetics (L'Oreal…)

The technical team, based in Toulouse (Labège), now has a staff of fifteen engineers or doctors. Since 2012, for its international commercial development, ORME has signed agreements with distributors in India, China, Japan, the USA and the UK.

Clean Sky Joint Undertaking (CSJU) is a public-private partnership between the European Commission and the European aeronautics industry. It is also part of the Commission's "Horizon 2020" Research and Innovation Programme. Clean Sky is the most ambitious aeronautical research programme ever launched in Europe. Its mission is to develop breakthrough technologies to significantly increase the environmental performances of airplanes and air transport, resulting in less noisy and more fuel efficient aircraft, hence bringing a key contribution in maintaining global leadership in European aeronautics. The new program Clean Sky 2 brings together industrial companies, research centres, SMEs and academia, for an overall budget of €4 billion, over a 7-year time period.

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