

TriaGnoSys SANDRA News Release

NEXT GENERATION INTEGRATED DIGITAL COCKPIT-CABIN COMMUNICATIONS TESTED OVER EUROPE

Munich, Germany – 27 June 2013 - The SANDRA research consortium has today announced the completion of the first flight test programme of its integrated system for next generation cockpit and cabin communications. TriaGnoSys is responsible for the complete system integration and pre-flight lab testing.

The objective of SANDRA (Seamless Aeronautical Networking through integration of Data links, Radios and Antennas) is to design and demonstrate a proof-of-concept testbed of future IPv6-based connectivity, which integrates cockpit communications with both passenger and non-operational airline communications into a common system architecture.

Cabin communication services offered today on many commercial flights around the world allow passengers to access the Internet and use their cellular phones during flights. The satellite and direct air-to-ground connectivity solutions use the IP protocol suite and offer connection speeds ranging from few hundred kilobits per second to around three or four megabits per second per aircraft. In contrast, cockpit communications still rely heavily on analogue voice communication and non-IP low bit-rate data links.

By supporting SESAR's concept of future data-centric cockpit communications, SANDRA is contributing to more efficient and safer flights, which will be particularly important as the volume of air traffic increases.

The flight programme, on [DLR](#)'s Advanced Technology Research Aircraft (ATRA), a modified Airbus A320, ran for three days in June 2013. The SANDRA system was successfully tested on several flights around Oberpfaffenhofen Airport in Bavaria, Germany, where DLR is based. The communication system successfully switched automatically between ground stations with no loss of connectivity throughout the flights.

The SANDRA consortium is made up for Europe's leading aviation technology companies and research organisations. [TriaGnoSys](#), the expert in aeronautical and satellite communications technology, is responsible for integration of the SANDRA communications system and the IPv6 networking software. Importantly, it ensures security of communication, including segregation of cockpit and cabin, efficient resource usage, and seamless handovers between the various radio

links.

Dr Markus Werner, Managing Director of TriaGnoSys, said, “We use digital communications in every facet of our lives. Just look at the number of people who have smartphones and tablets. But often aircraft rely on a combination of decades-old analogue communications and a separate satellite-based system, making cockpit communications both complex to use and inefficient. SANDRA is bringing cockpit communications into the 21st century by simplifying the process for pilots and providing the platform for many more advanced services.”

The SANDRA system brings the most advanced multilink communications, integrating L-band and Ku-band satellite links, as well as AeroMACS ground links, and current VHF data link (VDL2). It uses industry standards such as IP, IEEE 802.16 (WiMAX), DVB-S2 and Inmarsat SwiftBroadband. The system can be set up to choose the best available radio link, or the crew can select the link manually.

Werner continued, “As well as integrating the various radio links, the use of industry standards means we can also integrate cockpit and cabin communications. The cockpit and cabin systems are separate for security purposes, but share the link. This provides airlines with a cost-effective way of providing inflight connectivity to both passengers and pilots.”

The SANDRA consortium is coordinated by Selex ES and its members include aircraft manufacturers, aviation IT providers and consultants, research organisations and universities. SANDRA, which is co-funded by the European Commission, started in 2009 and will run until the end of 2013.