



Networking the sky - Frank Schreckenbach

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This project manager is heading development of the forward-looking 'NEWSKY' aviation communications system

By Roland Detsch and Dorothee Bürkle

Frank Schreckenbach is currently working on a project at the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) to allow air passengers to surf the Internet while the pilot is simultaneously downloading to the onboard computer the latest weather information for his approach – while complying with all the safety regulations applying in the aviation industry. However, anyone who wants to network the sky must not just be a researcher – they must also manage their project internationally. Frank Schreckenbach can do both: he is a scientist and an internationally certified project manager.

The job is rather like an elaborate piece of choreography: each day innumerable machines take off and land – mostly without a problem – in the crowded skies above the major airports of the world. There is, however, a conspicuous contrast between the high-tech world of modern aviation and the tangle of commands in the crackling ether that give this world its necessary order. While the passengers in modern aircraft have long been used to surfing the 'net via WLAN, GSM or UMTS, the pilots above the clouds are still largely dependent, as they were half a century ago, on analogue voice radio.

"Unbelievable at first glance," says Frank Schreckenbach, "but to date it has not been possible to guarantee that vital exchanges of information between the cockpit and the tower are not lost in the confusion of emails and Internet downloads, or are only transmitted after long delays. The necessarily high safety standards in aviation mean that pilots must still rely on voice radio." The days of this antiquated technology are numbered. 'NEWSKY' is the name of the project that aims to significantly modernise communication in modern civil aviation over the next ten years. NEWSKY stands for Networking the Sky for Aeronautical Communications. The objective of the project, funded by the European Commission, is to combine various technical innovations in the field of ground, satellite and aircraft communication. In this way a global aeronautical communications network is to be developed based on Internet technologies.

The lead management in such a 'networking of the sky' lies with Frank Schreckenbach from the DLR Institute of Communication and Navigation in Oberpfaffenhofen. To realise this project, an international consortium was formed in 2007, which includes Thales Alenia Space, QinetiQ, Frequentis, Triagnosys, the German Air Traffic Control service (Deutsche Flugsicherung; DFS) and the University of Salzburg.

Internationally recognised project management certificate

At first glance, the blond, casually dressed 32-year-old does not suggest someone bearing the responsibility of a project manager. "But I'm no exception here. DLR is known for quickly entrusting leading positions to promising new blood," Frank Schreckenbach says. He is supported in his task by an in-house mentoring programme. Furthermore, Frank Schreckenbach is the first member of the DLR staff whose qualification and ability as a manager has been acknowledged by the internationally recognised Project Management Professional (PMP) certificate from the world-leading Project Management Institute.

From mobile phones to aircraft

Before Schreckenbach started working at DLR two-and-a-half years ago, directly after gaining his doctorate, he had already looked around at a variety of industries. He undertook work placements, for example, with the large groups BMW and Infineon, with a small IT start-up, as well as with the Institut des Sciences Nucléaires (ISN) in Grenoble, France. Grenoble is also where Frank Schreckenbach was born in 1976 and spent his childhood before moving to Munich with his parents at the age of 15.

Frank Schreckenbach never found mathematics and physics difficult, but initially he was more interested in sport and music. Two metres tall, his interests include basketball, skiing and mountain biking, hobbies he still pursues today. He also played Bach on the flute until he started to build himself a speaker for his electric guitar. Gradually his technical interests began to predominate, something he no doubt inherited from his physics-teaching father. So, in 1997, Frank Schreckenbach enrolled at Munich Technical University (Technischen Universität München; TUM) to study electrical engineering, with communications technology as his main subject. Here it was the small details in electrical engineering that attracted him in particular. For a long time he had a soft spot for mobile communications, with their promising future, and wrote his diploma and doctoral dissertations at TUM about new mobile phone technologies. Then he swapped mobile phones for aircraft and took on a management position in the field of aircraft communication at the DLR Institute of Communication and Navigation in Oberpfaffenhofen.

Communicative skills

But it does not end with the technical know-how. With his confident attitude and knowledge of foreign languages – Frank Schreckenbach grew up bilingual in German and French, speaks fluent English and has a basic knowledge of Spanish – he was the ideal project manager for NEWSKY. After all, one of the main tasks of the job is to maintain contact with partners, companies and competitors abroad, to take the results of the work to international standardisation bodies, or to present them to an international audience: such as at the Air Traffic Control Exhibition and Conference, an international aviation safety trade fair in Amsterdam. There, Schreckenbach with his team and project partners presented the system in public for the first time. The researchers gave a realistic demonstration of how communication using NEWSKY might look to the pilot in the cockpit and the air traffic controller on the ground during a transatlantic flight and how ground-based and satellite-based data links can be used in a common network. "We had a very positive response", he said happily. "The pilots, as the greatest beneficiaries, see the whole thing positively in any case. But the air traffic controllers and even the airlines, which tend to be the most sceptical because mandatory introduction involves high investment costs for them, were also impressed."

Optimistic future

Asked about his plans for the future, the NEWSKY manager talks in first place about the step-by-step development of the system until it is market ready. He is already raring to go with the successor project. He sees the new technologies conquering the cockpit by way of the cabin, as it were, where they can be tested that one extra time for soundness.

As well as his project management work, Schreckenbach also holds a lectureship at MTU. "Fortunately we don't have standard working days," Frank Schreckenbach says. And since he is married to an industrial designer who is also completely absorbed in her work, there are no work-related stresses to speak of in his private life.

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Frank Schreckenbach



Frank Schreckenbach works at the Institute of Communication and Navigation of the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) on a new aviation communication system.

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Frank Schreckenbach in front of the DLR HALO research aircraft



Frank Schreckenbach standing in front of the DLR HALO (High Altitude and Long Range) research aircraft. As project manager for NEWSKY, a new aviation communication system, he aims to bring together various technical innovations in the field of ground, satellite and aircraft communication. In this way a global aeronautical communication network is to be developed based on Internet technologies.

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NEWSKY: a new communication network for aviation



In the NEWSKY project, a communication network is to be created which meets the requirements of the aviation industry of the future. Here, the data streams must, above all, flow reliably between the aircraft and the ground, and this must happen both in remote regions over the oceans and the poles as well as in crowded conurbations. Supplementary information means that NEWSKY can sustainably improve safety standards in aviation and also reduce environmental impact through optimised flight paths.

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