NATIONAL AIR POLICING CENTRE

A STORY BOOKLET

FREQUENTIS

FOR A SAFER WORLD

THE TRIGGERING MOMENT

Establishment of the National Air Policing Centre in Germany Following the 9/11 Terrorist Attacks

The National Air Policing Centre for Airspace Security was established in July 2003 in Uedem (Germany) in the wake of the events of 11 September 2001 in the United States as well as of the hijacking of a sporting aircraft in January 2003 above the city centre of Frankfurt (Germany). Since its founding, information from all bureaus and agencies on the federal and provincial level that are concerned with safety in the air, as well as from all of their subordinate agencies, is collected and analysed.
Air force service members, civil servants of the federal police and employees of the German Air Navigation Service Provider work hand in hand in this overarching agency with a single goal in mind: guaranteeing safety in the sky!

Within a very short time Frequentis successfully designed a homogeneous system environment providing innovative functionality and a customer-tailored user interface. A common data base or data pool ensures the successful combination of civil and military flight information that enables interagency cooperation between the German Air Force, the German Federal Police and the German Air Navigation Service Provider.

„This is a major step forward in the fusion of (real-time) data from various civil and military sources. This has not been possible in the past, since the relevant systems were mostly proprietary in nature and primarily designed for a particular sector and a particular use. The goal of combining all data and adding value through enhanced networked safety has been achieved in full and is a significant accomplishment."

Colonel (GS) Hornung
Branch Chief at the Centre for Air Operations

NATIONAL AIR POLICING CENTRE

For Safer Airspace

The National Air Policing Centre (NAPC) is the national facility responsible for preventing aircraft hijackings, acts of sabotage and other dangers to air traffic. Located in Uedem it is a joint control centre involving cooperation between three ministries:

- Federal Ministry of Defence (represented by the German Air Force)
- Federal Ministry of the Interior (represented by the German Federal Police)
- Federal Ministry of Transport and Digital Infrastructure (represented by the German Air Navigation Service Provider)

The NAPC, in close cooperation with the NATO-command and control centre CAOC, which is located at the same base, fulfils the function of a multi-department with nationwide responsibility covering any supportive means from processing "exceptional events" in the airspace to consulting decision makers up to political level. Regarding "exceptional events", the "LossComm" case, known as the situation when the communication link to an aircraft is not available, is among the most important. The centre's main focus is on the following tasks:

- Defence against terrorism - triggering of the necessary steps in the case that an aircraft is hijacked by terrorists (renegade case)
- Surveillance of all movements in German airspace, with concentration on critical infrastructure
- Help in civil emergencies (e.g. support in search for missing persons using infrared cameras on military reconnaissance aircraft)
- Supportive measures in the context of major events (e.g. the world football championship, visit of the pope, etc.)
- Monitoring of the enforcement of areas with flight restrictions
- Contact point for reporting and investigation of UFOs in German airspace
- Surveillance of air transport of money (from the printers to the banks)

WORKING WITH THE GERMAN ARMED FORCES

A Trusting FREQUENTIS Customer for Over 25 Years

In 2009 Frequentis won a public tender put out by the German Armed Forces to equip the National Air Policing Centre with an integrated communication and information system. The aim was to design a joint system for interagency cooperation between the German Air Force, the German Federal Police and the German Air Navigation Service Provider, helping to guarantee safety in German skies.

THE PROJECT

A Challenging Business Situation

In October 2011 the journey began and it was clear to all involved that this development project was breaking new ground with major challenges that had not yet overcome in the past.
Eleven months of comprehensive system design were followed by implementation and integration of the hardware and software functionality, with particular emphasis on intuitive usability of the command and control system and the corresponding user interface. Frequentis took an iterative approach and used agile software development methods to ensure the company reached relevant project milestones in time, on budget, and to the complete satisfaction of the customer.

Major project requirements were:

- Automated situational display and awareness across interagency domains
- Homogeneous information processing that allows the use of commercial of-the-shelf (COTS)
- Seamless communication integrated with situational information and operational processes
- Actionable documentation of decisions and related data so that records are admissible in court

On 27 June 2013, the time had come: with the successful completion of the system test for the new, innovative command and control system, the German Armed Forces and Frequentis passed a critical milestone in the development of the National Air Policing Centre. The project included the development and delivery of a system demonstrator that interactively supports operational procedures for air surveillance and air defence in a process-oriented command and control system.

THE SOLUTION

The Chosen Solution is Based on the FREQUENTIS Component Framework

The chosen solution is based on the Frequentis Component Framework - a flexible software framework for emergency and incident management that can easily be adapted to any customer's processes. Core features are:

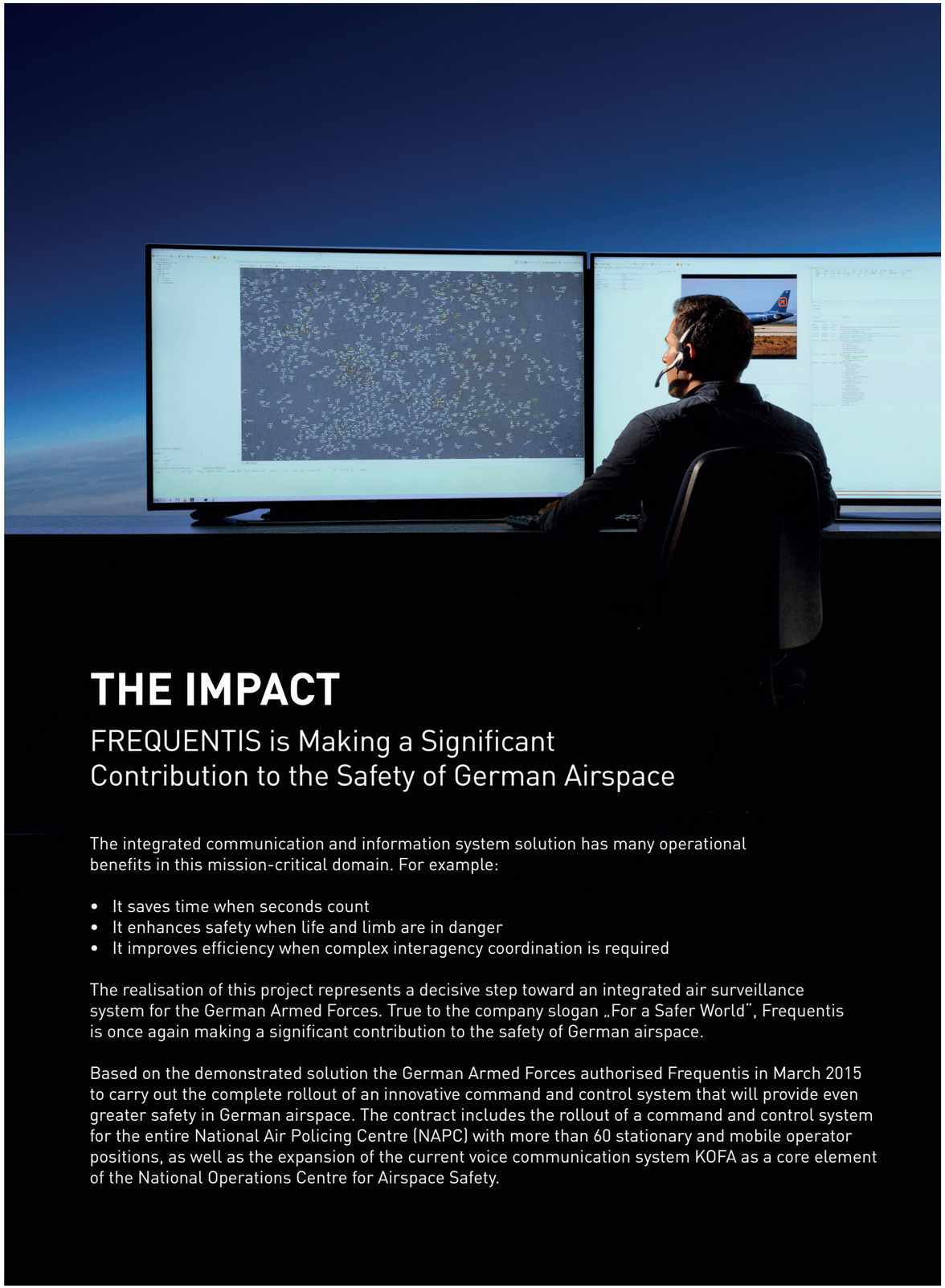
A **common operational picture** based on a geographical information system (GIS) as well as interfaces to central data sources. As a vital part of the system, it combines a correlated recognised air picture based on military and civil radar data sources and the NATO (Link 1) recognised air picture with ground information and relevant aeronautical information from within German territory. It also provides the user with a broad feature set that supports the decision-making process when incidents occur.

A **collaboration and decision-support service** improves operators' actionability by providing appropriate forms and checklists to guide them through entire incidents. All required information is added automatically or, wherever possible, preselected by the system. Operators' decisions are assisted by pre-evaluation and provision of weighted scores calculated using defined rules applied to available information. All incidents and actions taken are completely documented to support subsequent evaluation and provide comprehensive records that satisfy all legal requirements.

The **integrated voice communication service** connects the system with the operational voice communication system in use with the German Air Force (which was also supplied by Frequentis).
A critical operator task is to get in touch quickly with those who fulfil relevant responsibilities.
The system supports this by using different integrated communication services. For example, it takes multiple numbers listed for a single contact and calls each number in turn until a connection is established. It also supports direct calls to contacts associated with objects in the GIS: the operator simply clicks an object on the map (click-to-dial).

Centralised access to the European AIS Database (EAD), a database developed and operated by Frequentis, is of key importance in providing a common operational picture to all participants at the National Air Policing Centre. This solution is a major step towards a „Single European Sky" because it provides one central data base for all aeronautical information. The idea of merging civil and military data from several distributed sources into one system to provide a new kind of situational awareness for the operators and thus the consuming countries can be seen as the foundation for this next-generation collaborative incident tool.

Testing concluded with a live exercise in which members of the air force and federal police, as well as personnel from the German Air Navigation Service Provider, worked together for the first time with the new, innovative command and control system under realistic conditions. The result exceeded all expectations, with the new Frequentis command and control system passing almost 99 % of all technical test cases and impressively demonstrating the operational value added.



THE IMPACT

FREQUENTIS is Making a Significant Contribution to the Safety of German Airspace

The integrated communication and information system solution has many operational benefits in this mission-critical domain. For example:

- It saves time when seconds count
- It enhances safety when life and limb are in danger
- It improves efficiency when complex interagency coordination is required

The realisation of this project represents a decisive step toward an integrated air surveillance system for the German Armed Forces. True to the company slogan „For a Safer World", Frequentis is once again making a significant contribution to the safety of German airspace.

Based on the demonstrated solution the German Armed Forces authorised Frequentis in March 2015 to carry out the complete rollout of an innovative command and control system that will provide even greater safety in German airspace. The contract includes the rollout of a command and control system for the entire National Air Policing Centre (NAPC) with more than 60 stationary and mobile operator positions, as well as the expansion of the current voice communication system KOFA as a core element of the National Operations Centre for Airspace Safety.

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