

PHOENIX Tower Automation Suite

Enhancing safe tower operations



DFS Deutsche Flugsicherung

Integrated solutions

Each airport has its own needs. Each tower requires different operational processes and structures. Thus, tower systems have to offer a high grade of flexibility while maintaining safety standards and efficiency. The modular “PHOENIX Tower Automation Suite” (TAS) by DFS Deutsche Flugsicherung GmbH features a set of integrated ATC automation systems which can be combined and tailored to any specific air traffic control environment – in large and small towers anywhere in the world. The functionalities of PHOENIX TAS are derived from the experience of one of the world’s leading ANSPs.

Surveillance data processing system

PHOENIX with air and ground situation display

The multi-sensor data fusion system PHOENIX not only displays the situation in the air but also on the ground. The controller can easily zoom in on the ground situation; several zoom windows can be displayed simultaneously. Therefore, reliable information ranging from the aircraft approaching the airport down to the runway situation can be supplied at once. The system is able to display a detailed view of the runway and building structure as well as the lighting. This

greatly contributes to the ATCO’s enhanced situational awareness especially in the case of darkness or adverse weather conditions. Thus, PHOENIX contributes to enhanced safety and capacity at the airport. The configuration of PHOENIX is highly flexible – settings can be adjusted to various levels of detail – it is possible to configure the system for each Controller Working Position (CWP) individually, for different roles (as controllers, supervisors, technicians) or specific application contexts. Additionally, PHOENIX offers a variety of intuitively accessible functions, such as zooming, scaling, radar switching or target interaction, that can be individually modified.

Due to its modular structure PHOENIX can easily be adapted to all different kinds of tower environments – regardless of size or airspace structure. The system runs on a single laptop as well as in a network with 120 clients. It is able to process and fuse different sensor and position data. This offers a cost-effective alternative to the classical radar coverage, or even an enhancement.

Safety net function

PHOENIX TAS offers integrated safety net functions as a reliable and convenient

way of supporting the ATCO. The features continuously evaluate the air situation and run oblivious to the controller in the background. Critical situations are identified and immediately reported so that the ATCO has enough time to take countermeasures. The safety net functions can be easily modified and configured to different requirements of individual airspaces. Features include “Short Term Conflict Alert”, “Area Intrusion Alert” and “Minimum Safe Altitude Warning” as well as warnings in the case of runway incursion, taxiway incursion, stop bar violation and protection zone violation.

Tower flight data processing system

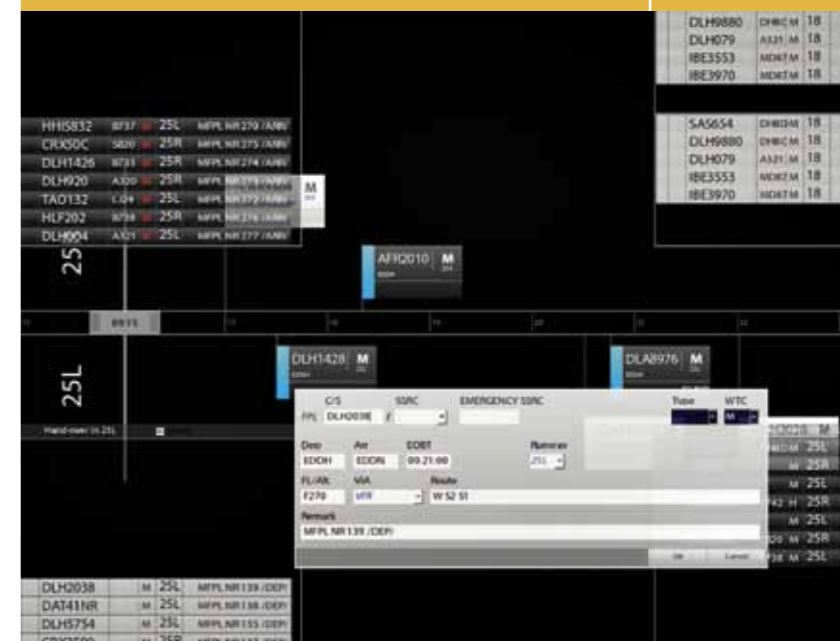
Another harmonised module of the PHOENIX TAS is the DFS flight data processing system. The electronic tool allows the controller to handle more aircraft movements than when using traditional paper flight strips. It is possible to write with a stylus pen on the electronic flight progress strips directly on the screen. Controllers may create, receive, edit and modify flight plan data of arrivals, departures, transit flights, and vehicle movements. Information that is fed into the system is automatically distributed to all working positions and other ATM stakeholders. Optimal availability of information and better coordination is the key to enhanced capacity.

Furthermore, the system displays an integrated solution with PHOENIX, so that both systems can be adapted, configured and monitored at the same time. This simplifies processes and contributes to more efficiency.

Electronic position log

The position logging system (PoLo) is a freely configurable tool to electronically record working times and airspace responsibilities of air traffic controllers. The controllers only need a company ID card to use it. PoLo checks automatically if the user has the

Arriving aircraft allocated on a time-bar in PHOENIX TAS



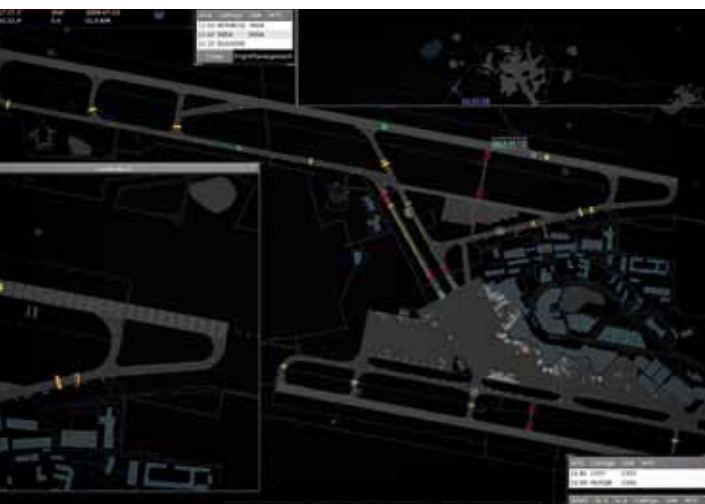
required authorisation. The system also shows the consolidation or division of airspaces. It gives supervisors a complete overview of all activities. Authorisations, ratings and training times can be documented in a user-friendly manner. And the data can be retrieved at any time, for example in the case of an incident investigation.

PHOENIX TAS components

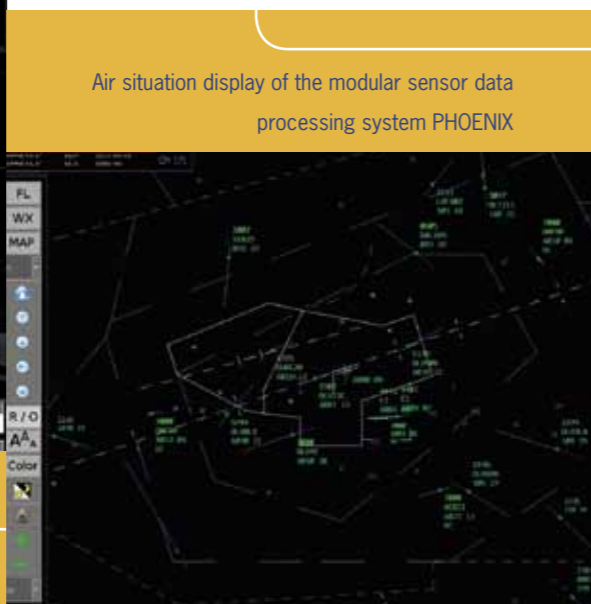
- Multi sensor data fusion (PSR, ADS-B, SMR, MLAT, WAM)
- Air and ground situation display (A-SMGCS)
- Electronic flightplan display
- Safety net function
- Communication flight plans (AFTN, ADEXP)
- System monitoring
- PoLo (as an option)

PHOENIX TAS benefits

- Seamless communication technology between ATC positions
- Optimal information sharing for all stakeholders and thus reduction of workload while enhancing capacity
- Reduced coordination efforts
- Flexibility – adaptable to any operational environment due to modular structure
- Fully redundant



Ground situation display of the modular sensor data processing system PHOENIX



Air situation display of the modular sensor data processing system PHOENIX

Imprint

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