

## Solution Overview

### Situation

After over 35 years of a text based Flight Information Display System (FIDS) that is hard to change, migrate, scale, and display code share flights. Northwest Airlines decided to replace the old FIDS System with a new VIDS system that is being used as a multi-purpose information display system. The system is used by the traveling public and internally by Northwest Airlines. Information displayed includes:

- Flight Information
  - Arrivals
  - Departures
  - Code Shares
- Baggage information
- Visual Paging
- Ramp Information
- Gate information
- In-Flight Services
- Video

The VIDS system is a part of an over all IT strategy integrating ground operational systems together utilizing a common database. The database will integrate new systems as well as legacy systems reducing the need for obsolescence.

### Solution

Northwest's solution includes the VIDS as well as an Airline/Airport Operational Database (AODB).

### Benefits

"This integration will provide Northwest with more accurate real-time information improving efficiencies resulting in happier passengers." Says John Schlitt, VP-Sales & Marketing-debis IT Services.

### Tight Schedule

This system was purchased, designed, installed, and started up in less than 8 weeks. The efforts from both Northwest and debis were focused on meeting the startup date as June 1<sup>st</sup> had been announced as the kickoff of Northwest's largest expansion ever in Memphis, TN. NWA planned the addition of an entire bank of flights and this date could not move.

***A Visual Information Display System (VIDS) based on open architecture, that is scalable, modular and robust has been implemented by debis IT services North America for Northwest Airlines at the Memphis and Minneapolis - St. Paul Hubs.***

In an information Technology Revolution, sharing eye friendly information with the flying public is a necessity. Today's computer technology allows companies like Northwest Airlines to express themselves visually. With the recently installed VIDS system at their Minneapolis – St. Paul and Memphis hubs, Northwest has the capability to display almost anything imaginable. Northwest requirements were for the supplier to deliver a screen layout editor so that the airline had the ability to make custom screens and changes without the services of the software vendor. The system uses different fading effects to change displays or parts of the display. The presentation of different data fields can be changed dynamically depending on contents and status. This includes foreground and background colors and display attributes like flashing, inverted, and underlining. Special display features such as running text lines, alternating texts, etc. are used to display more than one piece of information in a data field. Apart from normal text, logos, pictograms, etc. in a standard graphics format (e.g. GIF-files), can be displayed via the debis VIDS. Multiple logos are shown as animated GIFs. These capabilities allowed the custom designed screens below to be developed in minutes.



The screenshot shows a gate information display for Gate B25. At the top, it says "Gate B25" and "Now Boarding" in green. Below this, there are three columns: "Flight", "Departing to", and "Scheduled". The flight information is "NW 294" with the Northwest logo, "Detroit, MI" and "Baltimore, MD", and "4:50pm". Below the flight information, there is a "Partner" section with two logos: "KLM Royal Dutch Airlines" and "Continental". Next to the KLM logo is "KL 6294" and next to the Continental logo is "CO 5294". At the bottom of the display, it says "Boarding rows 25 through 35" and "NW 882 from Boston, MA will arrive at 8:45pm" in green.

**Gate B25 screen above shows code share information, indicates "Now Boarding" and the boarding rows. The code share logo's make it easy for customers to read and identify from a distance.**

## A Standard Set of Software and Hardware

The solution is based on a set of industry standard software tools, such as Oracle for the database, C++ used as the programming language, and SUN 4000 as the main servers. The SUN servers are running the Solaris operating system, and the Clients are Pentium based running Windows NT.

Northwest's information environment consists of thousands of devices on a fast Ethernet using TCP/IP protocol.

## No Need for New Servers

There will be no need to add more servers when Northwest Airlines adds a new module such as resource planning, gate allocation, etc. The SUN servers have plenty of capacity to expand the system for the foreseeable future.

## The Power of Integration

Integrating the operational software together allows the interdependent information to be shared between multiple programs. For instance, the interface from NWA's central reservation system (WorldFlight) forwards flight status to the VIDS in real time for automatic updates. This eliminates the need for manual intervention of the VIDS for normal operation.

## Simplifying maintenance and modifications

As far as Northwest is concerned, centralized maintenance and administration is the foremost early benefit of the debis solution.

## Northwest Airlines

## Other Gate screen variations include:

**Gate B12**

Flight	Departing to	Scheduled
NW 831	Dallas/Ft. Worth, TX	4:45pm

Snack served in First Class, beverages served in Main Cabin

NW 1166 from San Antonio, TX will arrive at 7:47pm

Gate B12 above shows the flight as well as a scrolling message informing passengers of the In-Flight meal and beverage service.

**Gate B16**

Flight	Departing to	Scheduled
NW 858	Washington (National), DC Amsterdam, Netherlands Dusseldorf, Germany	4:40pm

Partner

KLM Royal Dutch Airlines	KL 6858	Alitalia	AZ 2858
Continental	CO 1858	AIR CHINA	CA 5858

Dinner served on today's flight.

NW 1771 from Indianapolis will arrive at 8:12pm

Gate B16 shows four code share partners, In-Flight service, and all three stops for this flight.

## Cost Effective Information Distribution via Intranet or Internet

WEBIS, the Internet/Intranet module is part of the debis solution. Today, information must be processed quickly and cost-effectively for an ever-growing number of partners and staff operating in the air traffic sector – locally, nationally and internationally. Technologies such as Internet and Intranet open up new perspectives for the distribution and display of information. Consequently, a decisive factor in determining the success of your airport operations is the smooth integration of existing flight information with these new media and technologies.

## Flexible, secure, efficient

In developing the WEB Information System WEBIS, debis has expanded its Flight Information Display System, FIDS, with the inclusion of a decisive new component.

WEBIS facilitates the transfer of FIDS data via the Intranet or Internet in a consistent fashion. The FIDS data can be called up and displayed individually on a PC using a standard browser.

By virtue of its highly flexible configuration, WEBIS presents virtually limitless opportunities for distributing information to participating partners - while ensuring a maximum degree of access control.

In addition, the transfer of data on existing computers within the airport network often represents a cost-effective alternative to the conventional operation of monitors as these are generally controlled by special monitor controllers.


Also in terms of display quality and flexibility, WEBIS is setting new standards: Whereas conventional display technology merely allows the display of predefined page formats, the WEBIS user is able to modify the display to suit his/her individual requirements.

Functions provided include the free choice of fonts, window size and, in particular, the selection of information from the available data. The fading out of unnecessary or unwanted information at each single workplace enables the user to obtain a clear overview of the data he/she requires for his/her work, thus enhancing his/her work efficiency.

## Northwest Airlines

## Arrival / Departure Screens as seen on the Internet / Intranet

ARRIVALS						
Flight	Partner	Arriving from	Scheduled	Actual	Gate	
 NW 5805	CO 7820	Monroe, LA	3:45pm	4:00pm	A19	
 NW 5834	CO 7952	Montgomery, AL	6:55pm	6:42pm	A8	
 NW 5834	CO 7952	Montgomery, AL	6:55pm	6:42pm	A8	
 NW 577	CA 8505	New York (La Guardia), NY	4:03pm	At Gate	B41	
 NW 797	KL 6797	Newark, NJ	4:01pm	At Gate	B26	
 NW 1560	CO 6560	Oklahoma City, OK	4:05pm	Landed	B39	
 NW 5849	CO 7799	Panama City, FL	3:45pm	3:58pm	A12	
 NW 5814	CO 7938	Pensacola, FL	7:05pm	7:04pm	A25	
 NW 1157	CO 6157	Philadelphia, PA	3:35pm	Landed	B21	
 NW 295	AZ 3584	Pittsburgh, PA	4:06pm	At Gate	B32	
 NW 3471	CO 7001	Raleigh/Durham, NC	7:07pm	6:45pm	C7	
 NW 1598	CO 6598	San Diego, CA	7:58pm	7:58pm	A11	
 NW 5801	CO 7819	Shreveport, LA	3:50pm	4:23pm	A12	
 NW 3476	CO 7316	St. Louis, MO	4:00pm	Landed	C3	
 NW 857	KL 6857	Washington (National), DC	4:10pm	At Gate	B9	

DEPARTURES						
Flight	Partner	Departing to	Scheduled	Actual	Gate	Remark
 NW 5811	CO 7936	Alexandria, LA	4:45pm	On Time	A19	
 NW 294	KL 6294	Baltimore, MD 1-Stop	4:50pm	On Time	B25	
 NW 1423	KL 5423	Baton Rouge, LA	4:35pm	On Time	B15	
 NW 3670	KL 5670	Birmingham, AL	4:45pm	On Time	C2	
 NW 831		Dallas/Ft. Worth, TX	4:45pm	On Time	B12	
 NW 799		Denver, CO	4:35pm	On Time	B3	
 NW 294	KL 6294	Detroit, MI	4:50pm	On Time	B25	
 NW 5819	CO 7943	Evansville, IN	4:35pm	On Time	A12	
 NW 3618	CO 7746	Fayetteville, AR	4:45pm	On Time	C7	
 NW 1168	KL 5168	Fort Walton Beach, FL	4:40pm	On Time	B7	
 NW 5931		Greenville/Spartanburg, SC	4:40pm	On Time		
 NW 1157	KL 5157	Gulfport/Biloxi, MS	4:40pm	On Time	B21	
 NW 1093	CO 6093	Houston (Intercontinental), TX	4:35pm	On Time	B22	
 NW 1772	CO 6772	Indianapolis, IN	4:45pm	On Time	B24	
 NW 5816	CO 7940	Jackson, TN	4:45pm	On Time		
 NW 825	KL 6825	Kansas City, MO	4:40pm	On Time	B29	

## Worldwide

The worldwide cost-effective provision of business partners with up-to-date information opens up the opportunity of tapping new customer potential and new business ideas with minimal investment costs.

## Expandable

The application of open standards enables airport operators to exploit the rapid development of new multimedia-orientated standards in information technology without having to launch their own capital-intensive development drive.

## **All the Information at Your Fingertips**

In the future, effective information management will become an ever-more important competitive factor. "Our AODB has set new pioneering standards in current and future developments in airport management systems," says Betros Wakiem, VP Operations – debis IT Services. As the centralized airport information system, AODB performs the following core tasks:

### **Central Database**

As the central database for all operative systems at the airport, AODB provides all flight-related data promptly and efficiently.

In performing its tasks, AODB takes account of the different information requirements of the various users. For example, the System supplies specific information to airport personnel in the various departments, to airlines, passengers, visitors and authorities operating at the airport, such as customs and police.

The required data need only be entered once and at one terminal. This effectively dispenses with the time-consuming multiple manual inputs typical of island solutions and, at the same time, guarantees the consistency of your information and data. Once captured, the information can be processed smoothly and fed to the systems of other functional areas for direct data transfer.

## **Integration and Communications Platform**

Conceived as the core system of our integrated information systems, AODB operates optimally in conjunction with debis' system solutions for display management (FIDS), resource management (GAPS, RAMP, VESS), airspace information monitoring (AIMS), flight-noise monitoring (NOMOS), cargo handling (CIS) and communications in the world-wide SITA network (ASIMS).

### **Debis FRA IT Services**



The joint subsidiary of DaimlerChrysler Services (debis) AG, one of the largest global IT suppliers, and Frankfurt Airport AG, one of the world's busiest airports. The only worldwide supplier of fully integrated Airport Management Systems, offering proven solutions for all landside / airside activities with implementations at major international airports. Strong and reliable partners with more than ten years of experience and a workforce of over 250 software engineers exclusively active in the field of Airport Information Technology.

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