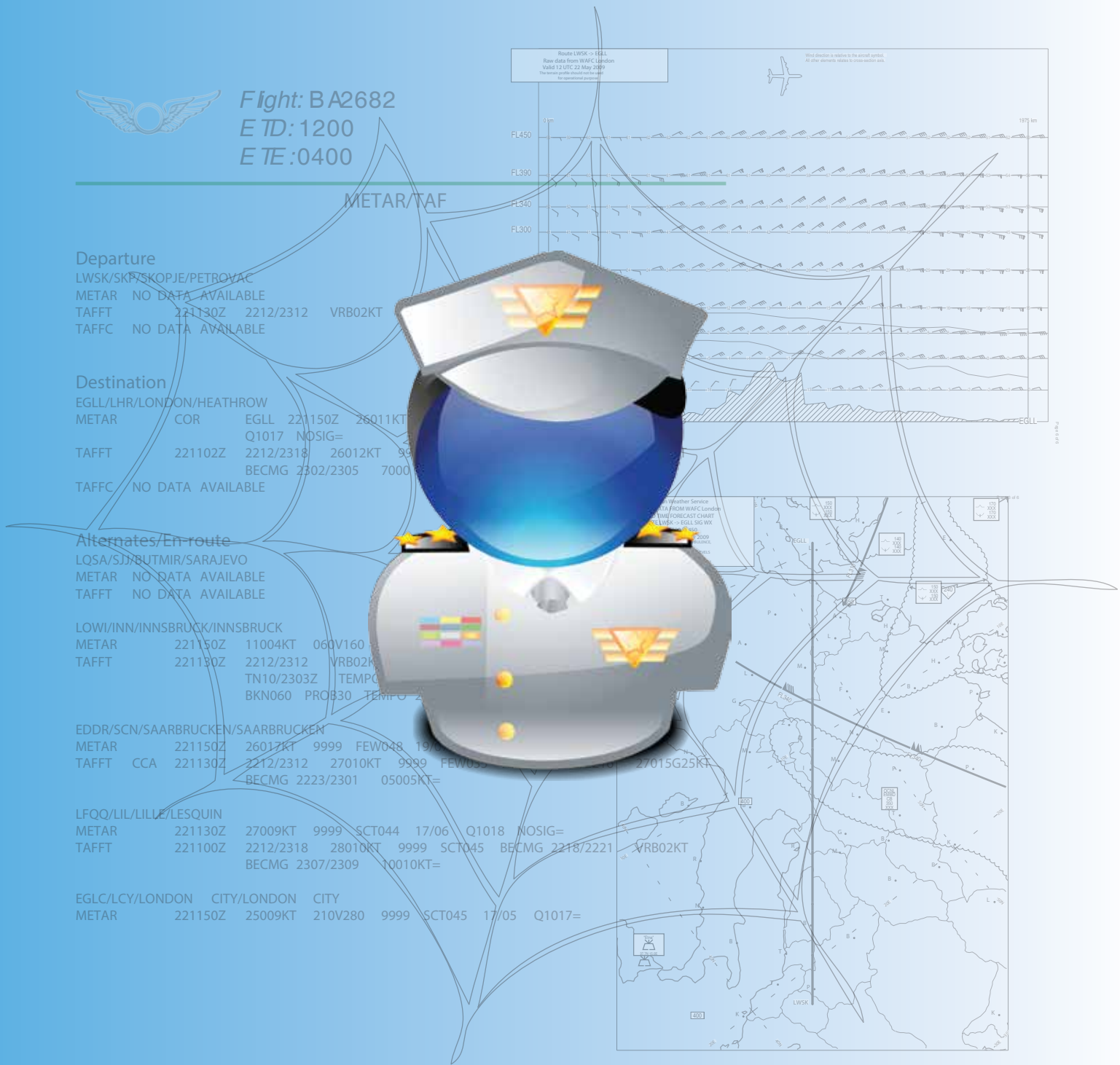
NS WEBPIB

Flight Briefings wherever and whenever you fly

The **NetSys** Internet Pre-Flight Briefing Portal



NetSys

charting the future...

Introduction

nsWEBPIB is the NetSys World Wide Web Pre-Flight Briefing Portal and accompanying Flight Folder Engine. It embraces the modern era of Internet connectivity to provide a scalable web service accessible from any standard web browser. It is targeted at Aviation Authorities and Meteorological Offices, enabling them to bring weather and related data to pilots regardless of where they may be located

Industry Standards

Because our customers require us to remain abreast of important developments within the industry, we ensure that the system is fully compliant to the **WMO** Manuals on the GTS 386 and Codes 306 as well as **ICAO** Annex 3 and remains up to date as Amendments are made (currently supports up to Amendment 74).

Communications Standards

The basic configuration allows for the system to be populated with data through a **GTS FTP** and/or **TCP/IP Socket** connection from a WMO compliant message switch. Numerous other possibilities are feasible by making use of I/O drivers from the NetSys **nsMHS** and **nsWAFS** offerings.

Internet Standards

The server side software runs under the **Apache** Web Server hosted on Linux which evidently is also the platform combination of choice for the majority of web sites in the world.
The client side supports the **Internet Explorer 5** (and higher) and **Firefox** 1.5 (and higher) browsers which account for the majority of desktop systems connected to the Internet today.

HA Cluster

Single server configurations are supported, but for sites requiring mission critical service levels, a **High Availability** (HA) cluster is the preferred choice.
Such a system advertises the servers in the cluster to the outside world by a single IP address and transparently handles assignment of the address to the elected live Ethernet interface by means of a HA heartbeat process. This makes configuration and interaction of any 3rd parties with the cluster much simpler and less error prone. All data delivered to the cluster is received by the live server and immediately replicated to the standby server to ensure both are in step at all times should a live server breakdown warrant a hot-standby swap.
Furthermore, for large deployments serving many concurrent clients, **NetSys** offers a multi-node cluster where any number of servers is fed with the same stream of data from the resident message switching system and load balancing is facilitated by a master node redirecting web site requests to any one of the available servers.

User Interface

Users perform all tasks through a well-designed graphical interface running inside a web browser. The system makes use of industry standard technologies such as HTML, JavaScript , PHP and SQL to create an interactive and easy-to-use interface with all the familiar concepts found in thousands of web pages over the internet.
The interface caters for the novice user and advanced user by varying the required amount of information needed to compile a briefing document. Advanced users have fine grained control as to what exactly should end up in the final document. Once a user is happy, the flight definition can be saved for re-use at a later stage when the user accesses the web page again.
The ability to search for ICAO indicators by airport or city name from a global station database makes it easy to setup flights to even the remotest of destinations.
As it is an internet enabled application, users may access it from anywhere in the world. An enroled airline pilot may create briefings at the initial port of departure but also at the remote port of return.

Route Briefings

Once logged into the system, users need only provide the departure and destination aerodromes plus the departure and flight times. From this, the system can calculate the most appropriate **ICAO** SIGWX and WT charts to include in the briefing as well as any en-route FIR related messages such as SIGMETs, AIRMETs and Volcanic Advisories. Additional charts are automatically included when the flight duration spans chart validity periods. The system will also decide upon the most appropriate METARs and TAFs to include, always striving to prevent information overload. Alternatively, the user can choose to configure all the data to be included in the folder manually and save the setup at the end for future one-click load and execute operations. Available take-off data is included on the cover page. A cross section along the route for all flight levels, depicting wind attack and temperature, the zero and minus ten degrees contours as well as the en-route terrain profile, can also be generated. The resulting Flight Folder is displayed in the web browser, but all these products together with personalized headings, take-off data, SNOWTAMS and ASHTAMS can be compiled into a single flight briefing folder in high quality **Adobe PDF** or other suitable formats, ready for printing.

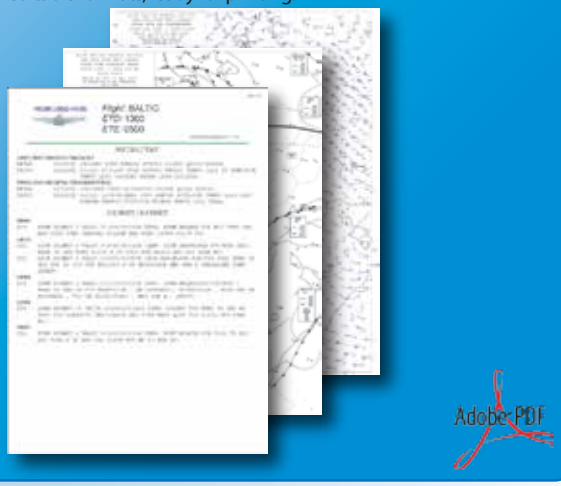
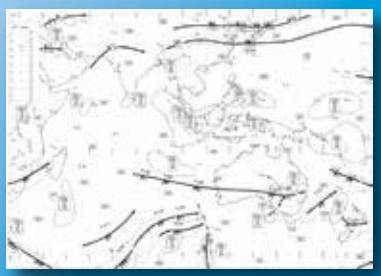
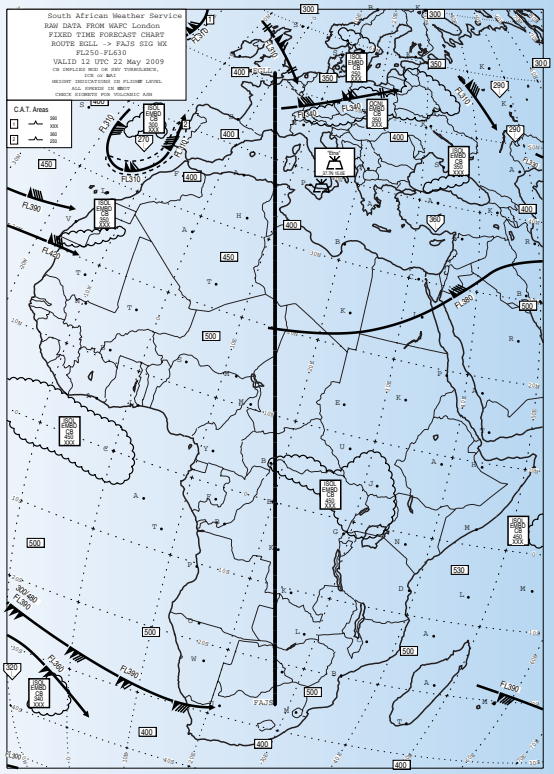


Chart Generation

The system expects ICAO standard region Significant Weather and Wind/Temperature charts to be supplied from an external source. **NetSys** can however provide an implementation whereby charts are generated from WAFC GRIB and BUFR. Under normal circumstances, the Flight Folder engine can automatically decide on the most appropriate ICAO standard chart to be included given the departure and destination aerodromes.



If deployed in an environment where the charts are also produced with **NetSys** software, the system can be enhanced to generate Route Charts on the fly. These are optimally tilted and projected to depict the flight route right across the center of the chart.



Statistics

Detailed or summary statistics can be generated and used as management information. One can typically use it for a system overview or to get the trends in system usage.

The following statistics are available:

- Daily, monthly and yearly summaries of user usage
- Daily, monthly and yearly summaries of system utilization
- Detailed usage per user

Scheduling

nsWEBPIB includes a scheduling subsystem for the automatic generation and delivery of flight documents. After the documents have been generated, it can be:

- Printed[1]
- Faxed[1]
- Sent via FTP or E-mail[1]
- Made available for download

The weekdays and time, at which the flight document will be created, can be set. This feature allows the system to efficiently cater for scheduled as well as unscheduled flights. The system is able to import daily departure lists and automatically set up the flight and scheduling info, typically creating the folder an hour before departure.

[1]The server infrastructure must support these features

Current schedules

Flight name	Time	S	M	T	W	T	F	S	Destination	Delete/Add
BA042	11:00	☑	☑	☑	☑	☑	☑	☑	Email to hans	Remove
CX748	14:00	☑	☑	☑	☑	☑	☑	☑	Email to hans	Remove
EK764	09:15	☑	☑	☑	☑	☑	☑	☑	Download	Remove
IB6050	08:00	☐	☑	☐	☑	☐	☑	☑	Download	Remove
KQ102	10:00	☑	☑	☑	☑	☑	☑	☑	Download	Remove
QR583	20:00	☐	☐	☑	☑	☑	☐	☐	Email to hans	Remove
AF995	00:00	☑	☑	☑	☑	☑	☑	☑	Download	Add

Customization

The web interface can be customized in many ways. It is possible to change the layout, colours, fonts and graphics on the web interface. This is to achieve look-and-feel integration with the customer's existing web pages.

Furthermore, it is possible to customize the flight document. This includes custom graphics, text, layout and other information, for example an explanation of weather abbreviations. One can have different languages on the cover page. Customization be used to produce smaller documents for user sites with slow network connections.


South African Weather Service

FLIGHT FOLDER
OR TAMBO INTL AIRPORT -> HEATHROW

METEOROLOGICAL DATA FOR FLIGHT
BA046

Departure	FAJS (OR TAMBO INTL AIRPORT)
Destination	EGLL (HEATHROW)
Date	Mon May 18 12:23:26 2009
ETD	0555
ETE	1000

Weather Codes

QUALIFIER		WEATHER PHENOMENA		
Intensity of Proximity 1	Descriptor 2	Precipitation 3	Obscuration 4	Other 5
-Light Moderate (no qualifier) + Heavy VC - In the vicinity	MI - Shallow BC - Patches DR - Drifting BL - Blowing SH - Shower(s) TS - Thunderstorm FZ - Supercooled PR - Partial	DZ - Drizzle RA - Rain SN - Snow SG - Snow grains IC - Diamond dust PE - Ice Pellets GR - Hail GS - Small hail and/or snow pellets	BR - Mist FG - Fog FU - Smoke VA - Volcanic ash DU - Widespread dust SA - Sand HZ - Haze	PO - Well - developed dust/sand whirls SQ - Squalls FC - Funnel cloud(s) (tornado or waterspout) SS - Sandstorm DS - Duststorm

Shared Templates

This feature allows users to share saved flights between accounts. The flight is shared with any number of other users. A typical use might be for a "super user" to share scheduled flights with various handlers. These handlers are not able to change or remove the original flight (read-only) but they are able to generate and download the PDF for the flight on demand.

Administrative Interface

The system provides an administrative interface whereby a site administrator can accomplish all administrative maintenance tasks in a user friendly manner. Apart from those already mentioned above, the user can change the main logo of the website, configure locally produced low-level significant weather charts to be included in briefings, edit the on-line help text, and configure standard flight templates visible to all subscribed users.

User Management/Access Control

The web portal is access controlled, thus ensuring that a user must apply for a username and password before accessing the Flight Briefing service. Thousands of users may register and use the system and the upper limit is determined only by the hardware.

The administrator has full control over users. When users register, the administrator can choose whether to allow or deny access to a user. The following lists the registration process and key features:

- An automatic e-mail verification message is sent to new users to ensure the validity of e-mail addresses provided[1]
- Secure passwords are generated automatically.
- The web interface can be used in a secure (SSL) environment, if available.
- Administrators can temporary suspend a user without removing their account or saved flights
- Inline e-mail functionality is provided for sending messages between users. When sending messages, the user will be prompted when he logs in again
- The system keeps track of last user activity

[1] The e-mail server is not part of nsWEBPIB

Billing

The system keeps track of system usage by logging an entry each time a user creates and downloads a flight folder. The logs are summarized to produce information for the generation of customer invoices.

MultiLingual

Any part of the web portal can be translated to the customer's language of choice through a translation dictionary offering the English phrases occurring in the web portal and providing a space to enter the equivalent phrases in a different language.

News

By using the News feature, the administrator is able to provide information to users. With a simple user interface, the administrator can add, remove and change news items. The publishing of news items can be used to inform users of major changes to the system, to advertise downtime, for general news, etc. With User Tracking the administrator can see what users have clicked on the news link.

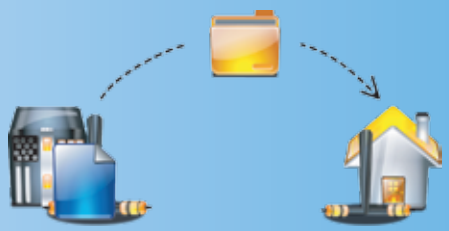
Help

To assist users in using the system, several sources of help are available. These include:

- Inline help on each page
- A help page, customizable by the administrator. This page includes the ability to attach helpful documents to users, for example regional information.
- The administrator can send important information to users with the News functionality
- Users are able to send messages to the administrator requesting information or help, or to provide feedback

FTP Server

Apart from serving only as a web portal, the system comes standard with an FTP server enabling users to download regular bulletins and products dispatched to them by the system administrator through standard FTP client software available with Microsoft Windows and other operating platforms.



COTS Hardware

For the server platforms, **NetSys** elects to use Commercially Off The Shelf (COTS) hardware only, with a preference for Dell and HP equipment providing hot swappable components running the Linux operating system.

Conclusion

The **nsWEBPIB** solution is a complete, powerful and user-friendly product with innovative features made possible by modern technology.
This system is already operational and serves hundreds of users on a daily basis. It is easy and slick to use so as to mitigate the effects of slow Internet access. It eliminates the labour intensive tasks normally associated with flight setup by means of the facility to automatically calculate the relevant information for inclusion in the bulletin and at the same time keeping it to the minimum, thus preventing bloated briefing folders.
It addresses the modern trends towards Internet briefing at operational briefing offices around the world; it deserves consideration in terms of functionality, affordability, performance and flexibility. This flexibility stems from the ability of the team at **NetSys** to customize the product for integration into any environment seamlessly, which in the end is certain to reduce the total cost of ownership through stability and effectiveness.

QUALITY MANAGEMENT Certificate
Voluntary participation in regular monitoring according to ISO 9001:2008
ISO 9001 DEKRA Certified

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