

White Paper

TAV IT FIDS — EXCEPTIONALLY EXCELLENT

Flight Information Display System (FIDS) is the showcase of an airport that is a very critical component for passengers and welcomers. It is vital that the system has to be accurate, fast and up and running on a 7x24 basis. TAV IT FIDS does not only meet and exceed of traditional FIDS requirements but also lifts the bar to a level where satisfaction is guaranteed.

While assessing the importance of the system, TAV IT FIDS is designed to provide airport management with automated control to distribute and display real-time flight information to passengers and airport operational staff.

With its comprehensive and accurate facilities, TAV IT FIDS not only ensures the distribution of flight related information on a variety of public and staff display devices, it also provides to display advertisements, media and real-time weather forecast data on corresponding display devices along with flight related data.

As a key component of an airport's integrated operational systems, TAV IT FIDS can directly be connected to the Airport Operational Database Management System. Thus, the flight information received through integration can be automatically displayed on display devices in a timely manner, with little or no manual intervention. However the comprehensive features of TAV IT-FIDS such as carefully designed Seasonal Flight Management and Active Flight Management components provide it to be operated as a stand-alone application.

Seasonal Flight Management

The Seasonal Flight Management module enables users entering the scheduled flight data easily and conveniently. Once the seasonal flight schedule is entered, the system processes the scheduled data, creates active flight information and delivers the active flight data automatically to Active Flight Schedule according to a pre-defined interval periodically. The preview function is a very handy tool that allows users to see all the active flights that are generated out of a scheduled flight data prior to converting them into active flight information. Time-zone function (UTC – Local time) on the other hand is used to eliminate errors while entering seasonal flight data.

Active Flight Management

The Active Flight Management is a hallmark of TAV IT FIDS. The module is designed by keeping operation staffs' daily requirements in mind: Rich but intuitive filtering options in a sliding panel, multi-column sorting functions, configurable row counts, quick access toolbar, adjustable second panel for work-on-later flights, easily noticeable resource icons, sophisticated resource and remark management and having all these with easily distinguishable row color scheme. The module is used to manage active flight details that also supports for code share and connection flights. The aforementioned resource management helps users to control open and close operations of all resources either automatically according to predefined rules that are administered in a smart rule engine or manually when immediate user interaction is needed.

Content Management

As a leading FIDS product, TAV IT-FIDS has a praiseworthy Content Management module. The module is built on the idea of implementing a flexible graphic container that is capable of

displaying every kind of graphic content. This modern container at the highest level has layouts and portlets that have their own customizable templates. The structure lets users easily implement and convert their conceptual designs into actual ones. The module comes with very rich screen templates library for resource and public monitors. The state of the art content editor is the crucial part of the module allows authorized users to create layouts, portlets and templates as well as custom content. The editor's drag and drop capability, broad image repository, and preview function of the designed content accelerates content generation. Thus the authorized personnel are enabled to perform all desired updates on display devices respectively as a result of letting the users make every possible modification.

Advertising Management

TAV IT FIDS also brings users a revenue generator: The Advertising Management module. It displays all kind of media formats including images, animation and video clips. The Playlist feature provides to play the media files according the play order, play time frame, play count and etc. The module manages assignments of playlists to individual display devices or to a group of display devices. Playing media while displaying flight information or playing full screen media while the display device is not in use are all supported. Besides all these features, the records of playlist and media displays are kept for invoice generation.

One of the strengths of TAV IT FIDS is its integration capabilities. The architecture of the product enables us easily to integrate with external system through configurable data mapping layer. Out-of-the box integrated systems are TAV IT AODB, AFTN, FDP and RMS and other possible external subsystems.

Reference Data Management as one of the components delivered enables the users to store and manage variety of definitions including Airlines, Airports, Cities, Countries, Counter & Chute Classes, Resource Definitions, Remarks and etc. The data can be either imported from various formats such as comma or tab separated files, xml etc. or can be entered manually.

Additional Components

TAV IT FIDS complete solution also provides additional components to meet airport operators' all needs. *Telephone Inquiry System* enables to provide up-to-date flight data to the passengers. The flight information can be listened in multiple languages. TAV IT – FIDS, provides all the necessary information and transmits it to Telephone Inquiry System. TAV IT-FIDS does that, by utilizing pre-defined and structured sentences, receiving the query from IVR and compiling all the necessary information into one complete audio file for IVR to play it. This service can be provided both for a specific flight and the whole list of flights for a selected category and type.

Public Announcement System (PAS) is intended to provide passengers with the voice information on the flights throughout the terminal building. Such information can include automatic announcements of any events as related to departing/arriving flights and periodical

information messages on general usage rules, flight safety requirements, customs procedures, etc. The Public Announcement System is capable to operate multilingual: English, French, Arabic, Georgian and Turkish. The system is programmable to announce specific announces in specific terminal zones by supplying announcement-terminal-zone mapping functionality. The announcement priority level and expiry times aid to airport announcement system's management.

One of the newest components of TAV IT FIDS is *Flight Reporter*. The component enables the airport operators to deliver updated flight information to the passengers and other parties on cell phones in real-time. This service gives users an instant status of any scheduled flight arriving or departing from all TAV airports. Users enter the flight number and airport and they get a text (SMS) alert about the latest status of the flight. Another way that the Flight Reporter delivers the up-to-date data on a subscription based manner. In this model the users once subscribe to the desired flight, they start receive real-time updates until that flight gets departed or landed. This service supports to serve the passengers with multilingual messages.

Features

TAV IT FIDS has a sophisticated *Display Device Management*. This prospers the product to support all type of display devices:

- CRT monitors
- LCD flat panels
- Plasma displays
- LED Boards
- Split-Flap Display

Devices can be defined by device type, resource device group and terminal zones and this let them display different flight information with different pre-defined templates according to the display devices' definitions.

Device Set feature enables to define multiple public monitors as a set that displays flight list that exceeds one-monitor view. Utilizing this facility enables the airport operators to broadcast flights as a set of monitors. In case of facing a technical problem in one of the devices, the device set intelligently re-adjusts the distribution of flights.

Also, displaying multiple pages on a single public monitor by automatic paging, displaying real-time weather forecast information both on resource monitors and public monitors, displaying connection flights on monitors with cross-fade effect rotating and real-time broadcasting of active flights via airport's website are all supported.

Management and Monitoring of the display devices are supported by Java Management Extensions. The system is capable of taking real time screenshot of desired display device's visual content. Also with this mature technology remote reboot, switch on/off operations and physical device usage statistics are obtained immediately. Another useful attribute is reporting and alerting mechanism for the connection status of display devices individually. Utilizing this

module provides real-time tracking of resources and prevents operational errors while resource operations.

TAV IT FIDS presently supports various language options both on user interface and display devices including Cyrillic, Georgian, Turkish, Arabic, French, Japanese, Chinese, and Hindi etc.

Flexible Rule Engine

Pre-defined rules, that can be customized according the airport's operational requirements and needs, are utilized by different layers of the system. Some of the rules are given below.

- Open and close operation times of the resources and the announcement type of this operation can be defined prior or after the flight's scheduled, estimated or actual departure/arrival times. These rules can also be defined in the airline level.
- Defining the time frame to be utilized while displaying flight information on public monitors (This rule can be defined for departure and arrival flights individually.)
- Timeout definitions for departed and landed (concluded) flights, to be utilized while ending up displaying on public monitors.
- Configuring the duration of language rotation for display devices globally.

Solutions beyond the airport

Another feature that comes with TAV IT FIDS is distributing real time information in external areas including hotels and travel agencies outside the airport. Thus the passengers can track their flight before they arrive to the airport. Consequently apart from media capabilities another source of income is established.

Alternative data entry

Although TAV IT FIDS is operated in an integrated manner with AODB, data input is also performed through dedicated client workstations and CUTE workstations. This allows the operators who are at the CUTE workstations to input custom remarks and messages to direct the passengers properly.

Elimination of shadow effect

One of the underestimated issues while operating a Flight Information Display System in an airport after deployment is the shadow effect that occurs on monitors as a consequence of displaying still images in long periods. That problem might force the airport operators to face with early hardware replacements as a financial burden. Utilizing sophisticated display techniques TAV IT FIDS eliminates that risk and prevents unexpected damages.

Visual Paging

For the passengers who have hard of hearing FIDS also provides Visual Paging feature to provide them flight-related announcements in time. Other common purposes to distribute information are given below which are completely met by TAV IT FIDS's functionalities and features.

- Security advices
- Airline announcements
- Travel information, showplaces and weather
- Emergency instructions
- Travel related advertising
- Baggage inspection calls

Technological Infrastructure

TAV IT FIDS is developed as multi-tiered application. The layers of this structure are loosely coupled and communications in between them are accomplished through well-defined messages.

TAV IT FIDS application provides users with rich interactivity and responsiveness similar to desktop programs. By leveraging improvements in data loading, visualization, and execution, it delivers better performance to users and more efficient use of computing resources.

TAV IT FIDS is designed as a Rich Internet Application (RIA) while keeping in mind the limits of existing web applications. As a result it takes advantage of cross browser and platform compatibility besides taking the advantage of the web deployment model's traditional benefits such as single-sign-on and secure data transfer:

- It feels and acts more like desktop applications than traditional HTML-based applications
- Interactions and updates do not cause entire pages to refresh, improving user experience, CPU and network performance
- A wide range of user interface components and expressive features such as transitions and animations help users understand data and application flow
- Support for real-time data streams provides instant updates without manual user intervention or expensive page reloads.
- Support for rich media allows more lively and compelling user experiences.

Interaction between the user interface and service layer that is designed by utilizing Service Oriented Architecture is event-based. Messages are passed around only in existence of events. This minimizes the bandwidth between different layers and maximizes response of requests. With rich monitoring and management tools, TAV IT FIDS is an inevitable component for an airport for maximizing customer-satisfaction.

Platform and Database Agnostic

TAV IT FIDS is a platform agnostic application. Depending users' needs and requirements, it can be deployed on any platform. Thanks to its clusterable and failover features that supports high availability and reliability. With its intelligent object-relational mapping in the data access layer, TAV IT FIDS can work with any database out-of-the-box.

Conclusion

TAV IT FIDS offers extensive and distinctive functionalities that exceeds the conventional flight information system approach and becomes one of the vital components of an airport. In addition to incomparable flight management capabilities, TAV IT FIDS comprises very sophisticated media and advertisement management module with on the edge content management capabilities. As a result, it changes conventional information display approach and becomes a revenue center for airport operators.

Considering the functions and features claimed above, TAV IT FIDS offers the best possible solution for all airports from all sizes. The complete solutions delivered by TAV IT FIDS entitle the product re-define "FIDS concept" and exceeds the standard requirements expected from a common FIDS.