



AirView™

Airport Flight Information System
with advanced 3D graphics
and integrated Public Address and CCTV

Overview

Rev. 10F.12/2012



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1. PROLOGUE

1.1 Purpose

This document aims to provide an overview of the **AirView™** airport information system and associated modules. It is intended to provide sufficient information to enable airport management to evaluate the key features of the system.

1.2 Scope

This publication provides a top-level functional overview. In addition to brief descriptions, this publication provides an overview of current information system technology and anticipated future trends that may impact on technology selection.

1.3 Definitions, Acronyms and Abbreviations

16:9	Wide-screen TV display monitor
AirView	Airport information system
AODB	Airport Operational DataBase
ATM	Asynchronous Transfer Mode - Cell switching network
AVC	Audio-Visual Controller
BIDS	Baggage Information Display System
CASE	Computer-Aided Software Engineering
CRT	Cathode Ray Tube; TV-type monitors
DCM	Display & Control Module
DCS	Display & control Communications Server
EDP	Electronic Data Processing
ePC	Enhanced/embedded PC (Trademark of Sentel)
FDDI	Fibre Distributed Data Interface; 100mbs
FIDS	Flight Information Display System
ICM	Integrated Colour Monitor
IVC	Intelligent Video Controller
LAN	Local Area Network
MBS	Million bits per second (mbs)
MIDAS	Multi-application Information Display Automatic System
OPS	Oracle Parallel Server
PLC	Programmable Logic Controller
VDC	Video Display Controller
WAN	Wide Area Network

1.4 Misc. References

Sentel product brochure; MIDAS overview.

ViewPoint 3D promotional leaflets.

ePC DS Controller brochure.

Databases: MySQL, Oracle & SQL Server product guides.

Intel product guide.

1.5 Information Sources

This document has been produced using publicly available information from Microsoft, MySQL, Oracle, Intel, Sentel Advance and other sources, which are believed to be correct as of the date of publishing.

1.6 Trademarks

Trade marks of Sentel Advance: AirView, MIDAS, Accent, AutoTel, AutoPA, *free-form* Multigraphic, ICM, OptiMon, Sentel, AVC, ePC, AutoGate. ViewPoint 3D, OwnTV.

All other trade marks acknowledged.

1.7 Copyright and Confidentiality

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ViewPoint-3D real-time graphics output

- Powerful, small & economic ◀
- Robust SolidState electronics ◀
- Live-data 3D-graphics ◀
- Up to Quad-HD video ◀
- Designed for 24x7 operation ◀
- Compatible with all content ◀
- Works with 2D and 3D Screens ◀
- Direct Autostereoscopic output ◀
- Supports Chinese, Arabic etc ◀
- Built-in video matrix controller ◀
- Remote status reporting ◀
- Complete solution ◀
- 10-year warranty ◀



ePC[®] SolidState PowerCore 24x7 Computer

1 computer now manages 3 full-HD screens



Protected steel case, solid-state electronics and a small A4 footprint

Powerful real-time graphics with ViewPoint-3D using the latest AMD A10 APU

... economic supercomputing for 24x7

triple monitor output with independent channels

control and monitoring, digital signage, 3D visualization, simulations, or triple monitor gaming

**from just £ 549-
€ 675- or US\$ 889- excl. delivery**

ePC A10 series outperform Intel i7-based systems by up to 300%



For further information contact info@ViewPoint-3D.com or visit www.ViewPoint-3D.com

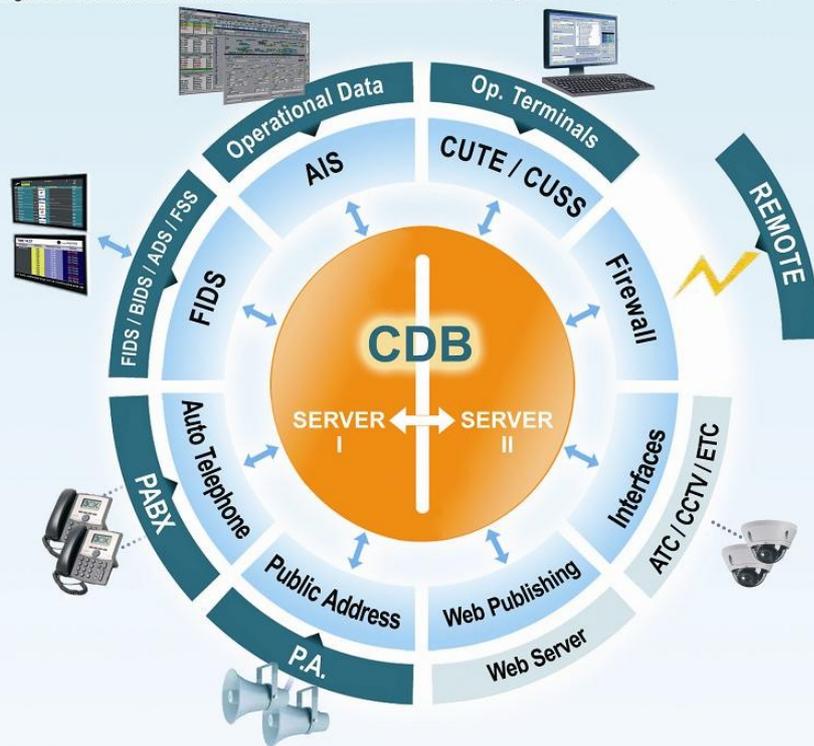




MIDAS AirView Airport Information System

Key features:

- Unix, Linux or Windows-based dual-server operating system with scalable architecture
- Wide range of Databases to suit all airports, with full statistical analysis and reporting
- Connection to wide range of systems, CUTE, CUSS
- Integrated Web publishing of flight schedules
- Multilingual user interfaces and FIDS/BIDS
- ViewPoint Flight Information Display with integrated promotional-info channels
- AutoPA automated digital-audio public address
- AutoTel automated telephone enquiry and reservation system
- Interfaces to CCTV, security and alarm systems with automated emergency information displayed on selected airport displays, etc.



Description

AirView™ Airport Information System (AIS) is a high performance information system designed to offer a scalable and open platform, offering powerful and fully fault-tolerant data management facilities, including integrated email, messaging, Internet data publishing, multimedia flight and advertising screens, automated public address, CCTV, telephone enquiries, all within a truly flexible architecture offering the latest solution for integrated airport information management, from a company with over 20 years experience supplying the largest airport organisations worldwide.

AirView AIS integrates a range of leading-edge technologies, incorporating the very latest computer and display hardware, with fault-tolerant servers, and highly flexible digital information displays suitable for any airport. AirView is an integrated system, connecting to peripheral systems such as CCTV and fire alarm, with preplanned FIDS and Staff messages to provide automatic emergency information. AirView is ready to meet the exact requirements of each airport, with user interfaces and displays designed to approved standards.



The Reliability to Build On™

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info@sentel-advance.com

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2. INTRODUCTION

In today's complex world of rapid travel, airports need information systems that are easy to use, flexible, reliable, and compatible with a wide range of airport applications, delivering outstanding performance every hour of every day.

AirView is a complete airport information system developed by Sentel over the last 25 years, offering all the experience gained working for the largest and best airport organisations, including BAA in the UK, and SAGAT in Italy.



AirView™ is a tightly integrated package, comprising the latest database and display software available, designed to increase airport operational productivity.

The system has been designed to work the way airports need most, with the systems airports are familiar with, using the latest techniques available today, and ready for those in the future. It's faster and more sophisticated services improve the way your organisation works and communicates, improving operational efficiency and the ability to communicate with passengers and staff.

Operational management

Operational management is becoming increasingly complex in today's modern airports, demanding a professional approach to system configuration in order to achieve efficient airport operation. With a wide range of technologies now involved in such systems, Sentel Advance offers an experienced team providing a range of airport IT products and services with a wealth of experience in large-scale IT projects.

Sentel Advance's partnership agreements with Intel, Microsoft, Oracle, and MySQL not only ensure high standards of support, but through close collaboration with our partners, ensures the complete success of your project.

Sentel only employs fully qualified and experienced design, development, installation and training personnel to ensure that the necessary resources are available to meet exacting deadlines and to achieve your project goals.

One world, one objective – better service for our customers

Co-operation and understanding are key to the success of complex IT projects. Our aim is to implement the information system that will best meet your airport's needs. With today's sophisticated and reliable technology we can enhance business operations, efficiency and cost, providing you with the systems that meet your needs today, but that can easily expand to meet your needs tomorrow.

 **One world, one architecture, advanced airport systems - AirView™** 

3 System Overview

The **AirView** information system is able to distribute, in real-time, air traffic information to various categories of users to support operational management and the distribution of information to the public and staff. It provides a scalable open architecture, designed to meet current and future airport needs. Whether you require an information system using a small Server and Staff workstation, or a system based on a cluster of Servers, **AirView** provides the widest range of facilities, including comprehensive airport information management, multimedia displays, automated digital-quality public address, telephone enquiry and booking systems, integrated CCTV viewing and recording, and a comprehensive Internet Web page Server with real-time database access. Your staff and customers will be able to access the information they require from anywhere in the world, and in a secure manner.

AirView systems are designed to meet the demanding needs of the modern international airport.

AirView™ Advanced Information System – features:

- CDB Server foundation: Unix / Windows / Linux
- High-performance Database Management System : SQL Server/Oracle/MySQL
- AirView Flight Information Processing
- Viewpoint 3D™ Multimedia Flight Information Display System – offering full 2D and 3D capability
- AutoPA™ Automated digital-audio PA system
- CUTE/CUSS and related applications
- AutoGate™ Automated Gate Scheduling System
- AutoTel™ Automated telephone enquiry, booking and voice mail system
- Internet Information Server with on-line database access
- Digital CCTV viewing and recording
- Interfaces to remote systems, plus remote diagnostics, etc.

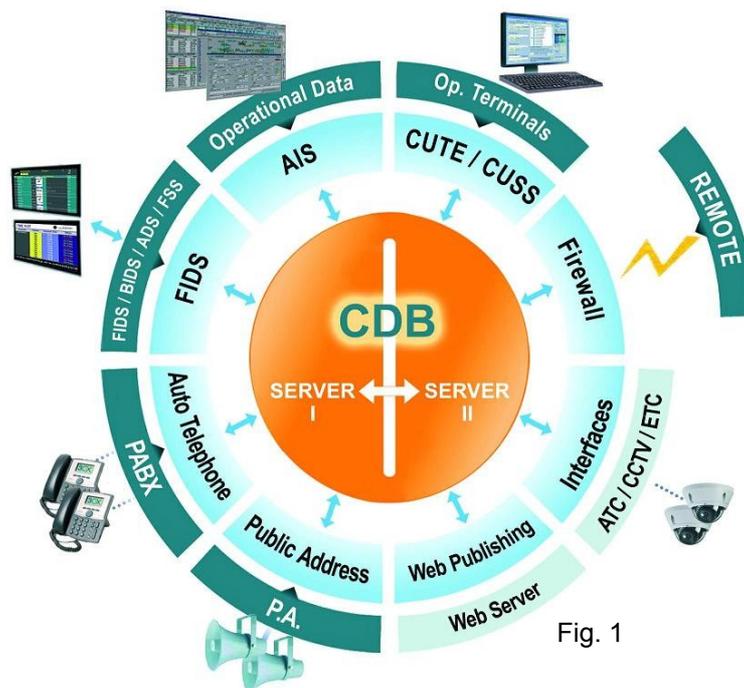


Fig. 1

4 ARCHITECTURE

The **AirView** airport information system uses industry standard hardware and software to support a wide range of networked devices.

These include:

- **Desktop workstations for system management and data entry.**
- **Flat-screen displays for information presentation - FIDS/BIDS, etc.**
- **LED and LCD text displays for large-format information presentation.**
- **Control panels for event signalling - gate switches, turnstile counters.**
- **Public address for manual and automated announcements and music***
- **Security devices, CCTV cameras and alarm systems**

* AutoPA Public address is available integrated within the AirView system.

Announcements are limited at present to 4 user-selected languages.

4.1 Interfaces

AirView can be interfaced to any system with a known communications protocol.

This includes:

- **CUTE/CUSS/SITA networks**
- **AFTN ATC network**
- **PABX telephone systems for telephone enquiry & voice mail services**

4.2 Network

The system utilises highly fault-tolerant switched network components with automated routing to provide the highest performance available today, supporting 100Mbs/Giga Ethernet, ATM, FDDI, Arcnet, Token Ring protocols.

The system is compatible with all current network protocols, including:

TCP/IP, IPX/SPX, NetBeui, AppleTalk, DLC, HTTP, SNA, PPP and PPTP.

DEC Pathworks, Novell NetWare, IBM LAN & SNA, RAS, NFS, ISDN, X.25.

4.3 Clients

The following clients are supported:

Windows Workstation, Linux, UNIX.

5 SOFTWARE OVERVIEW

The **AirView** airport information system is provided with a comprehensive suite of general management, business and airport applications software as listed below.

Detailed technical information can be found in the related publications.

- COS Central Operating System - Windows XP/NT Server
- CDB Central Database System – Oracle/ MySQL / SQL / Access
- DPS Data Processing System – Oracle / MS Access
- ECM External Communication Module
- SER Statistics, Evaluation and Reporting
- MOP Microsoft Office Professional Suite
- FIPS Flight Information Processing System
- FIDS Flight Information Display System (2D & 3D)
- MiniFIDS Flight Information Display System for smaller airports
- AutoPA APA Automatic Public Address System
- AutoGate GSS Gate Scheduling System

5.1 Optional Airport Software

In addition to the standard range of applications provided with the **AirView** system, a wide range of additional software applications are available for the system.

As requirements vary significantly from airport to airport, quotations for the applications shown below are available on provision of detailed requirements.

- AGS Advanced Gate Scheduling System
- OPS Operation Planning System
- OSS Operation Support System
- ASR Advanced Statistics, Evaluation and Reporting
- ABS Accounting and Billing System
- CKS Check-in system
- ATE AutoTel™ Automated Telephone Enquiry System
- AWS Accent™ Web and Advertising Server
- SSP Security Screening System for passport control

5.2 Third-party Products

Sentel Advance has agreements and working partnerships with a variety of specialist firms in order to provide and support the following systems:

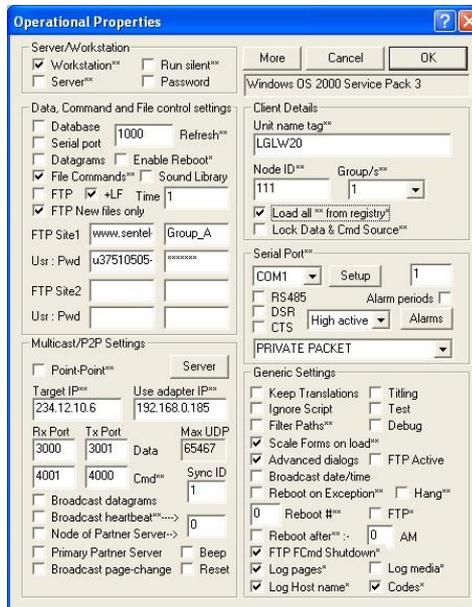
- Advanced Gate Scheduling Systems - knowledge-based systems
- Accounting and business systems
- AFTN mini-switch - ATC network interface
- SITA mini-switch - SITA network interface
- Environmental control and monitoring systems

6 SOFTWARE AND RELIABILITY

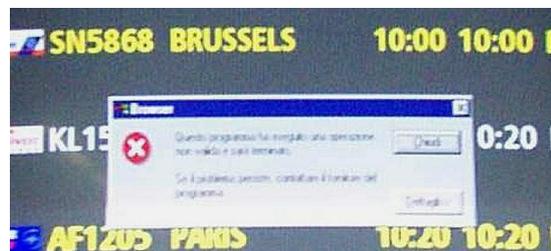
AirView's application software is designed and developed using the latest programming and CASE tools to ensure fast development turnaround, lower cost, and higher reliability. We use the latest Visual C++ development systems, and CASE tools to produce reliable and error free applications for 24x7 operation.

By providing applications that have been developed from the ground up, we can guarantee that your systems will operate 24x7 without hanging-up or displaying annoying warning messages on the FIDS screens.

We also guarantee that failures in the operating system driver software are caught and reported, and that system lock-up, or hangs, are fully controlled and the system rebooted within a few seconds.



AirView FIDS System Dialog



Photographs showing a web-based FID system suffering from uncontrolled events, such as warning boxes

6.1 Why Visual C++?

Visual C++ is the most standards-based, modular and efficient programming language. It provides a solid and expandable foundation that allows the rapid development of advanced applications to ensure that all AirView software runs as expected, 24x7. It gives our applications a guaranteed level of control to ensure that all system conditions are detected and controlled in a timely manner, and for this, AirView and ViewPoint FIDS does not fail, hang or display warning messages generated by third-party code.

Today, the vast majority of airport IT suppliers rely heavily on third-party software not originally intended for automated 24x7 operation, and that lack the low-level of control required to guarantee reliable operation.



FID system suffering from a hung screen controller

Sentel has been developing software and electronics for 24x7 applications for over 25-years, and for a wide-range of high-reliability applications, which is why Sentel FIDS is the most reliable system available today.

The image above shows FIDS screens in a departures hall, where the FIDS software is based on web software. Web-based FIDS is not sufficiently reliable because the core software is developed for browsers, and not for 24x7 real-time automated applications, such as FIDS.

Key differences in design exist, such as with AirView's ViewPoint FIDS, in which the core software is designed to handle the complete range of errors from the operating system up to the application level, reporting errors silently, and automatically rebooting the controlling PC, or reloading the software, within a few seconds. In practice, ViewPoint FIDS has been proven to be completely stable and robust when installed on Sentel's homologated range of ePC controllers, which have proven driver software, and an embedded operating system configuration developed especially for 24x7 applications.

ORACLE®

6.2 CASE Development Systems

Airport's requiring an Oracle-based system, benefit from a highly scalable solution, which includes two database development suites, Oracle Designer and Oracle Developer. Designer supports the modelling of complex systems with business process reengineering (BPR), analysis, and design diagrammers. Developer empowers organisations with the ability to rapidly and productively build sophisticated systems that scale from workgroup to enterprise. With a common repository, flexible modelling and methodology support, a unified client and server development environment, and a portable open architecture, Designer and Developer are the industry's only second-generation client/server design and development tools.

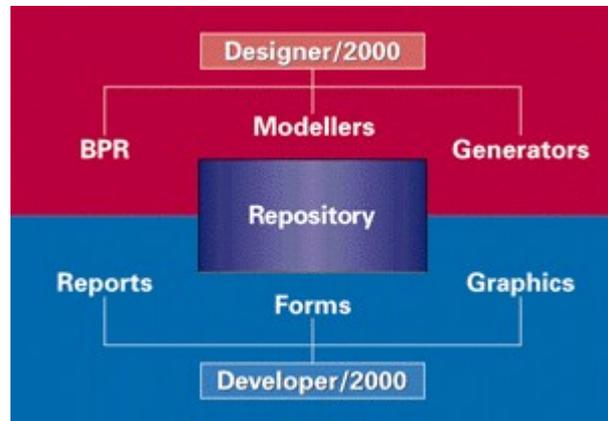


Fig. 2

6.3 Oracle/MySQL benefits

These advanced development tools enable Sentel to continue to offer the most sophisticated and reliable software for any airport at a competitive price. Furthermore, using CASE tools allows applications to be modified and expanded to suit new requirements within short times-scales and with a level of accuracy otherwise impossible to achieve.

6.4 Microsoft Access and Office Suite

For small to medium-sized airports, Microsoft Access actually offers an excellent solution for database application generations, including easy-to-use, and easy-to-update operator interfaces.

In addition, the Office suite provides a range of excellent tools and applications for information management and reporting, including advanced statistical tools and report generating.

7 AIRPORT OPERATIONAL DATABASES

The airport database is the core data warehouse for the airports operational data, and as such, it is a vital component in any successful airport business.

Today, there are many excellent databases available, and many of the less costly are suitable for large airports. However, whatever database is chosen, the most important issue is long-term support, to ensure the regular maintenance and expandability of the database to meet the airports changing needs.

7.1 Database selection

7.11 MS Access – for smaller airports

The Microsoft Access database is now well proven in a number of smaller airports, where the ease-of-use of its forms development tools allows effective, modern and well-connected applications to be delivered in a very short time, and at reasonable-cost.

Since the release of Access 2007, the database supports many of the advanced database features, including structured and unstructured data elements of a wide range of types.

The ease of use of the complete package, with excellent connectivity to the range of Office Suite products, not to mention its excellent application development tools, makes Access a good choice for many small to medium sized airports, in fact Access can be found in use in many airports in Europe.

Although Access is not at the top of the list with database experts, the truth is it is now an excellent product, and fully scaleable at any moment to a full SQL server driven database, suitable for any size of airport.

7.12 SQL, MySQL or Oracle – for medium to larger airports

Oracle/MySQL databases offers advanced features, such as storage of unstructured text, images, audio, and even video. It is currently used to manage everything - from personal information, to corporate data centres, to giant multimedia libraries that serve-up information on demand. It runs on almost every popular computer, from the smallest laptop, to the largest supercomputer, to the Network Computer that will bring interactive news, entertainment, education, and commerce into homes and offices worldwide.

The Oracle & MySQL databases have emerged as leaders around the world, and Oracle/MySQL's software engineers continue to extend its powerful technology. They have created the industry's first second-generation software development tools to help developers build applications to run mission-critical applications. Oracle's ready-to-use application software is designed to help organisations of all kinds access and manipulate their business-critical information.

That said, Oracles annual support costs can be considerable for smaller airports, and many of the advanced features offered are of limited application in airports.

Whatever your database choice, AirView is fully compatible, and will offer the same functionality and reliability customers expect from a leading airport FIDS supplier.

8 System Description

8.1 Overview

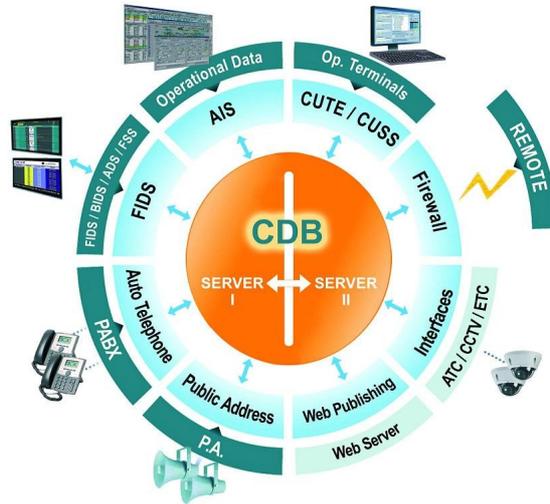


Fig. 3

AirView – an Integrated Airport Information System

The AirView system is a highly configurable airport information display system connected to a network of remote terminals, display screens, CCTV cameras, PA speakers, and other devices. The system uses a local and, optionally, remote database/s, containing airport operational information, flight schedules, planning records, etc. AirView is a mission-critical system, with dual-servers supporting fault-tolerance.

In today's airports, information systems need to be able to cope with long-term needs, and when system updates are needed, allow rapid modifications and additions. One of the primary objectives given to the AirView system engineers was to provide a level of flexibility capable of allowing users to extend and reconfigure the system on demand in minimum time.

Integration: A well planned airport IT system allows airport staff to manage and view all operations within an airport, not just flight schedules, loading, fuelling and billing, but a wide range of operations and services, including automated and manual digital public address, CCTV monitoring and recording, and fire sensor information. And that is the aim of AirView; to provide a complete overview of airport operations via an airport-wide secure information system.

Keeping costs down for the smaller airports, AirView can be run from standard PC servers, able to support all the usual services, including several channels of FIDS/BIDS screens.

For larger systems, additional servers and workstations can be added to support an unlimited number of users, FIDS and other services.

Diagnostics: The system's diagnostic software verifies system status periodically, reporting any failures to the management through status alerts, and also by email, and optionally SMS messages to the mobile phones of key staff. This level of run-time diagnostics enables failures to be detected almost instantly.

AirView also provides real-time event monitoring and control, allowing connection to a wide-range of devices from turnstile counters to Programmable Logic Controllers, CCTV cameras and fire sensors.

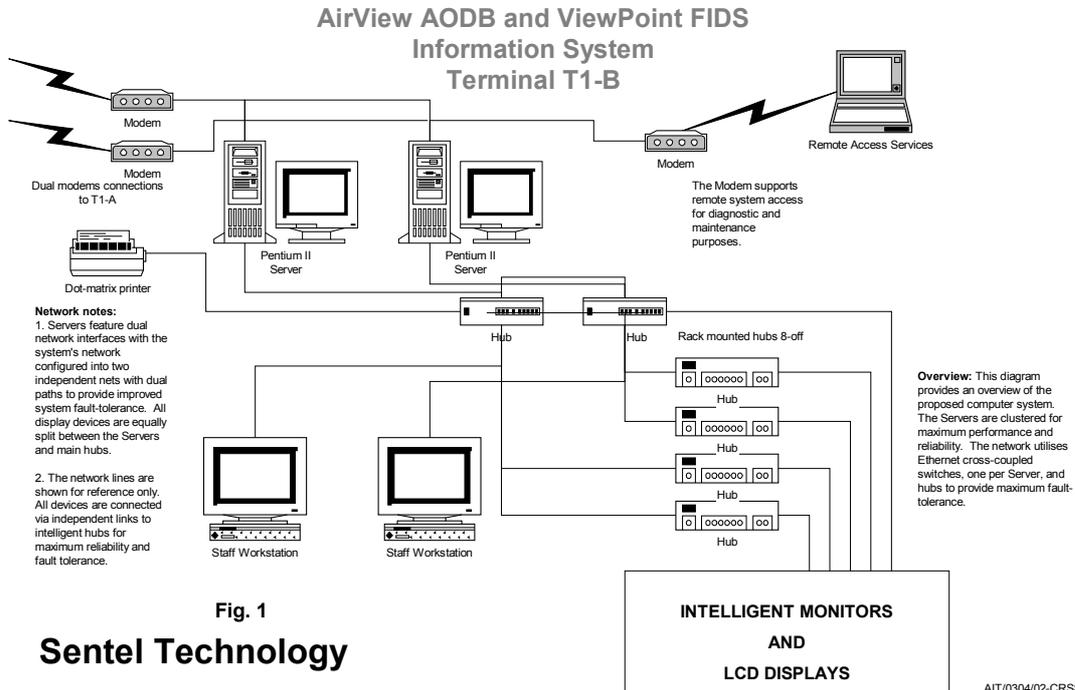


Fig. 1

Sentel Technology

Email: info@sentel.org

8.2 AirView Flight Information Processing System

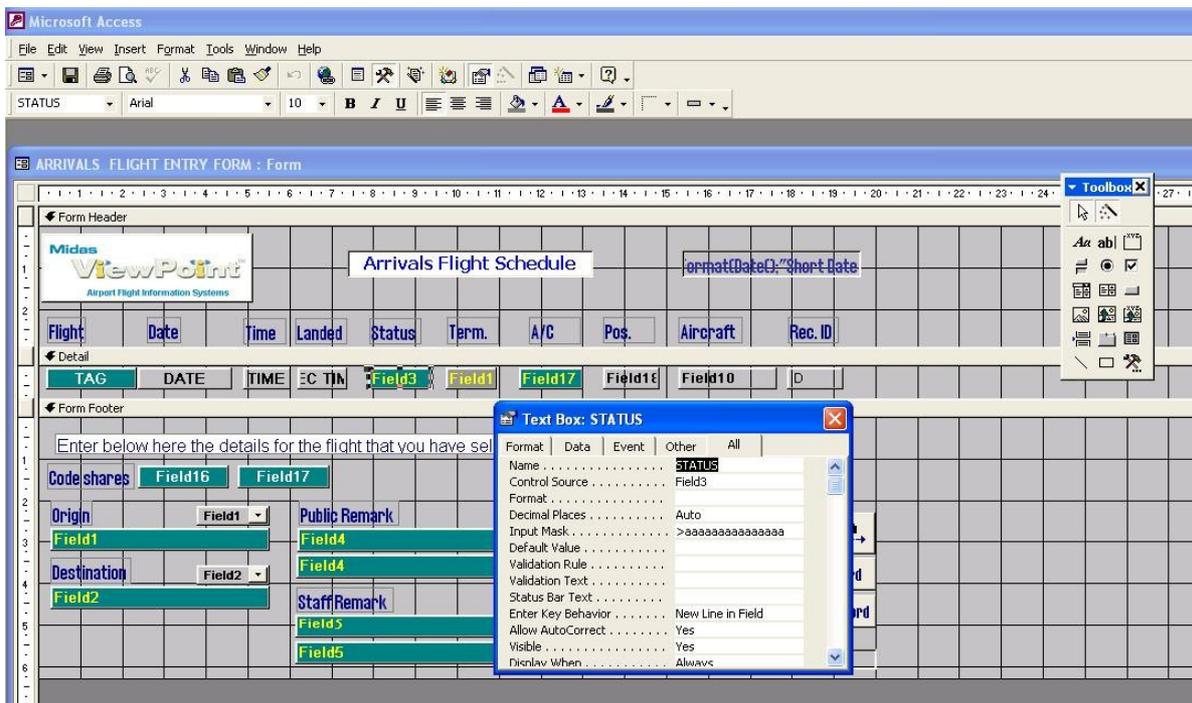
The Flight Information Processing system is used to create and edit the seasonal flight schedule and to edit the daily flight schedule. The daily flight schedule is created automatically from the seasonal schedule using high-level queries, designed to match each airport's precise operational requirements.

Time	Landed time	Status	Term.	A/C	Pos.	Aircraft	Rec. ID
16:95	22:00	DELD					279
16:96	10:00						283
16:96	19:30	LNDD					277
17:96	18:30	ONSD					24
17:96	23:58						282
18:96	14:55	LNDD					278
SV375	26/10/96	17:15	LNDD			747	20
BM871	26/10/96	17:35	LNDD			Flight's current status	11
GF312	30/06/98	12:25	CAND				224
EK003	30/06/98	23:09	LNDD				204
SV304	30/06/98	23:10	DELD				134
LH217	11/07/98	04:32	12:40	DELD		747	13
KL374	11/07/98	09:00	09:05	ONSD			284
BA122	11/07/98	09:30	09:49	LNDD		747	218
GF318	11/07/98	10:30	10:30	DELD			276
SV314	11/07/98	12:10	LNDD				8
LH202	11/07/98	13:00	LNDD				127
BA314	11/07/98	13:34	DELD				15
LH314	11/07/98	16:00	16:40	LNDD			23
GF244	11/07/98	17:20	17:30	LNDD		747-400	3
EK324	11/07/98	18:00	DELD				147

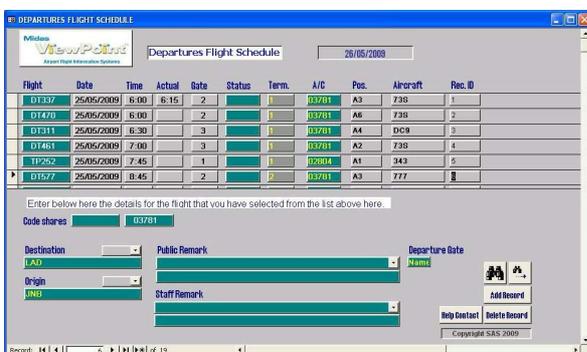
Advanced layouts: Whenever flight information is entered, the system automatically distributes the data to other users' workstations and the public and staff information displays as and when required.

Whether you choose Oracle or Access, or in fact any other ODBC-compliant database provider, AirView can integrate the software components needed to suit your preferences.

AirView FIPS uses Oracle forms generated by Oracle's 4GL tools, Designer and Developer, or Microsoft Access. These advanced tools allow fast and safe development of forms to meet airports precise operational needs. The code generated is both efficient and bug free, supporting easy system maintenance, modification and expansion.



The core concept behind AirView is flexibility. We provide professional training courses to enable airport staff to customise data entry form, queries, and even generate reports from the airport's operational database.



With the modern database management tools now available, AirView provides the means to manage your data processing requirements

8.3 ViewPoint 3D - Flight Information Display System

Public and staff displays are easily managed with ViewPoint 3D, which provides a full WYSIWYG (what you see is what you get) drag and drop interface, allowing unlimited screen layout designs, including full 3D formats. Whatever the information display content, or language, or data processing requirement, ViewPoint allows users to rapidly create and modify their displays.

ViewPoint FIDS runs on dedicated ePC computers, which are soak-tested to ensure reliable operation over many years. The ePC computers are small, powerful, and energy efficient, using the most advanced solid-state electronics.

Today's ePC screen controlling computers are based on the AMD A10 APU, a single-chip computer that outperforms even the flagship technology of leading chip makers.

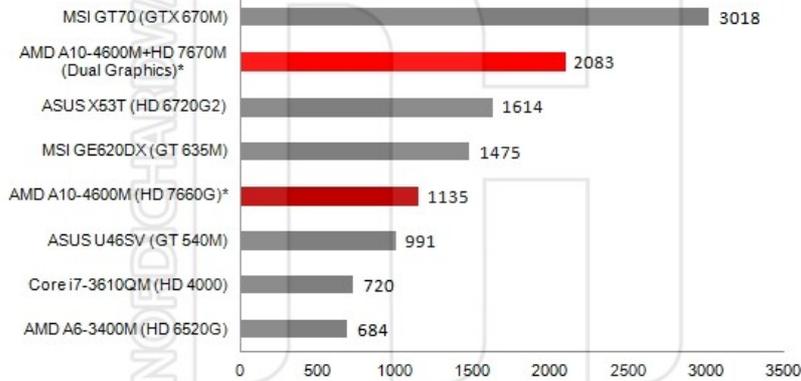
1 computer now manages 3 full-HD screens

Protected steel case, solid-state electronics and a small A4 footprint

Powerful real-time graphics with ViewPoint-3D using the latest AMD A10 APU

3DMark11 - GPU, GPU, Combined and Total score

Test result in points, Performance preset (Higher value is better)



Using ViewPoint FIDS there is no longer any limit to the type of content you can present across your monitor network or online web. From a simple and clear flight information screen, or advanced multimedia corporate TV channel, to a 3D weather flythrough, ViewPoint really allows airports complete control.

ViewPoint uses a drag-and-drop interface to design and edit screen layouts using both 2D and 3D graphics environments. There is full support for interactive touch-screens, with all types of content easily created and incorporated, to display high definition video, live TV, Flash, web pages, PowerPoint and ViewPoint full 3D-graphics presentations.

Not only is ViewPoint capable of displaying messages in any language; it will also translate your messages into your chosen language – from English or Arabic to Chinese, and even handle automated PA announcements!

Fast Content Layout Design Tools

Using ViewPoint's drag-and-drop interface you can position, scale and stretch static and database linked text, images, Flash, video and web content exactly as you need using just the mouse. It offers both traditional 2D and new 3D layout tools, with the latest 3D-graphics content creation environment, using simple drag and drop facilities.

You can add scrolling text with graphics, logos and icons, in any location. 2D and 3D Text and objects can be entered and linked to a database table elements, or RSS feeds.



Animated regions can be created as needed, they can also have 2 and 3D effects, or simply be part of a full-3D scene, as shown above in a weather flythrough that runs in real-time from live Met office data.

When you need sophisticated features, such as tables with automatic line expansion to accommodate 2 lines of data, then ViewPoint has all the facilities you can image; and if you find a missing feature, we'll add it for you free of charge!

You can also add graphical items that change in relation to database changes, for example, a landed status that changes a symbol to show a landed plane.

Data processing is also handled by ViewPoint, at the display, using a logical rule dialog that simply lets you select the data you want processed, and the data you want excluded. This approach is both fast and efficient, and avoids having scores of SQL statements to manage FIDS data.

You can add touch-points and navigation buttons for interactive information kiosks, display web pages, Macromedia Flash animations, and even add PowerPoint presentations.

With ViewPoint FIDS, you will be able to create, manage and monitor your FIDS network in an instant.

Display-object editor dialog

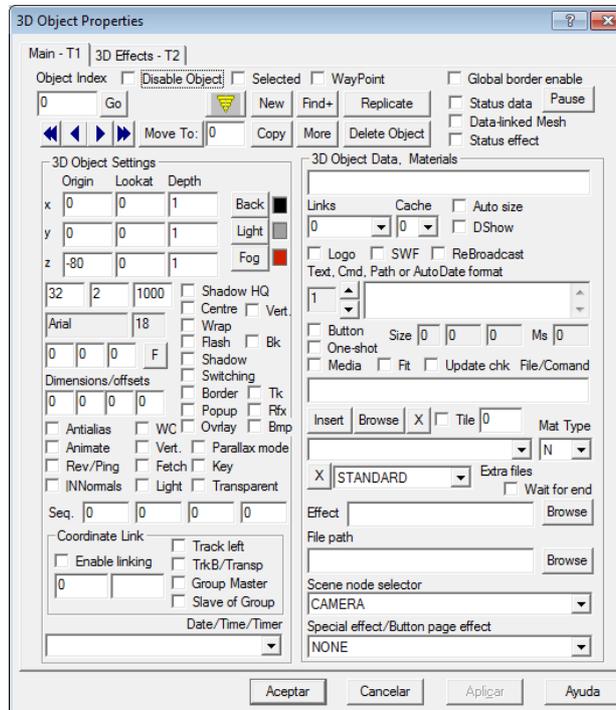


Fig. 5

Using object technology, ViewPoint is able to display messages in any language, it will also translate your messages, or database codes, into the display text and language required – even complex scripts like Arabic, Japanese and Chinese are supported, with right-to-left layout!

Displays can be created that change based on the textual information received, which triggers events to occur, or graphics to be displayed, or video and text to be displayed or hidden. With sophisticated features, creating information displays is easy for any application.

The Play-list Schedule editing dialog

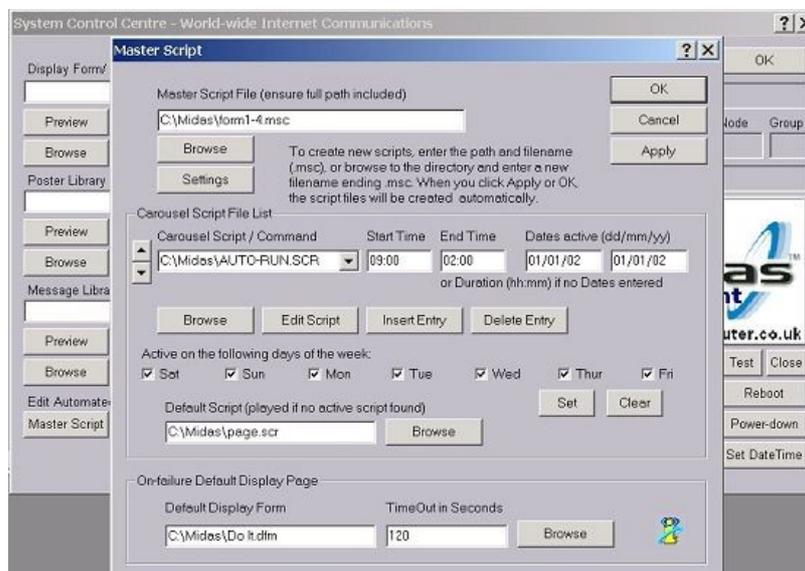


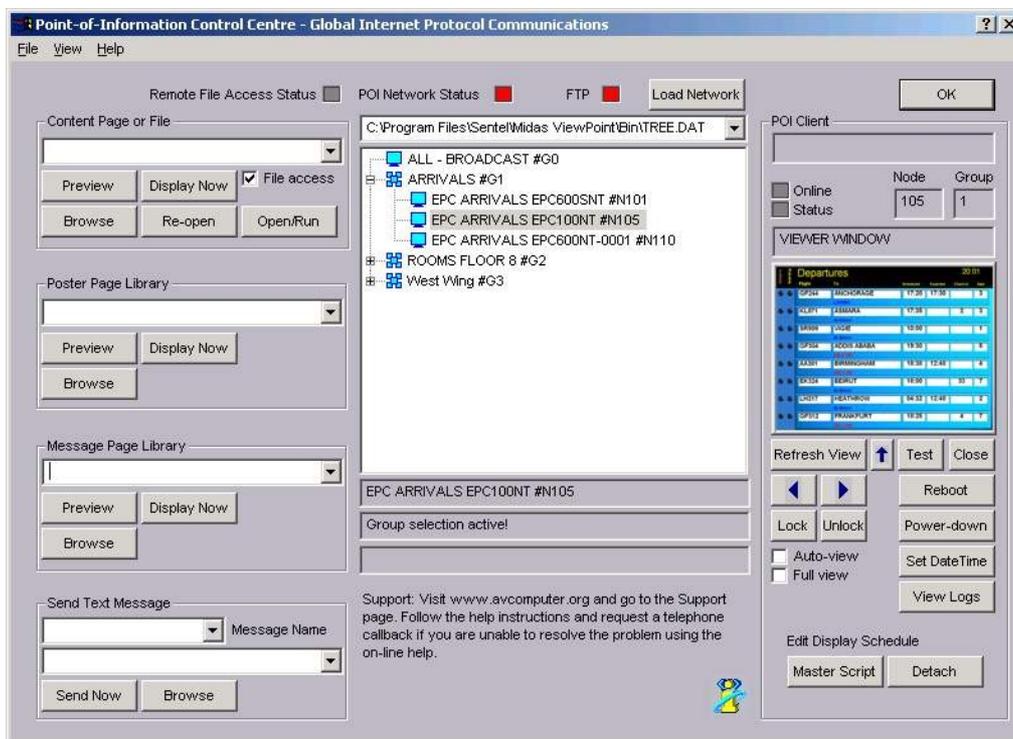
Fig. 6

System Control and Monitoring

When connected over a LAN or WAN, ViewPoint easily allows you to monitor and control all the displays within the system. You can simply define your network, and then click on name screens in a tree view to actually see the current display being shown at any location.

You can change the display by selecting a display form from, and clicking display. You can also shutdown and reboot remote systems.

The Control Centre dialog, shown below, provides a simple way to control displays. For example, it can be customised to allow staff at airport gates to select the airline logo for individual check-in displays.



System Control Panel showing remote real-time screen monitoring

With ViewPoint you can instantly control and monitor all the systems on your network using the above dialog.

Automatic Error Alerts direct to Staff

In addition, with ViewPoint FIDS, you can receive error and status reporting via email or SMS message direct to key staffs' mobile phones and email boxes, alerting them within minutes of any system or display failure.

Detailed logs are also kept allowing tracing of any error condition, and its exact cause.

8.4 ViewPoint 3D Specification

Display format, features and media playback:-

- Unlimited 2/3D screen formats created using drag-n-drop object screen editor and dialogs
- Animations, scrolling and flying objects with up to 32 path points for smooth animations (scrolling and flying text, images).
- Data-driven objects for complex tables, with automated text-image, language and code translations.
- Displays/plays Adobe Flash, Director, PowerPoint, JPEG, BMP, GIF, PNG, MPEG1-4, VOB, AVI, DivX, WMV and WMV-HD, plus all current video streaming formats.
- Reproduces on-line or stored web pages within objects or full-screen .
- View camera inputs or TV feeds through on-screen objects, full-screen, or picture-in-picture
- Perfect Playback quality to Broadcast and DVD standards
- Seamless mixing of High Definition video, web content, images, flash and real-time information
- Seamless back-back video playback of up to 512 videos in a list
- 24 x 7 x 365 operation with automated failure recovery and reporting via detailed logs, and FTP, SMS or email alerts.
- Unrestricted animation content, including smooth scrolling tickers, updated from database or web data in real time, 2 and 3D object animations
- Tickers are fully customisable, allowing mixed images and text to be shown as required
- RSS information services fully supported, with XML data processing
- Programme/campaign priority allows multiple campaigns to be targeted at the same device
- Player stores local media library to reduce network traffic
- Ability to modify programmes/campaigns so that programming can be interrupted and removed within seconds

Programme/campaign scheduling

- Unique programme management including task management, audit trails and security levels
- Rich, intuitive Office-like UI ensuring easy learning curve
- Easy programme schedule editing for quick overview of player activity
- Powerful scheduling options. Create complex schedules in just a few clicks
- Instantly duplicate Programme schedules
- Flexible and modular programme structure, facilitating quick and accurate campaign targeting

Network management

- Remotely view the screen of any client player in real-time across the network
- Issue commands to a remote display device (client) or group
- Retrieve playback logs, error reports, and system information whenever required
- See network status in a single screen with fast on-line status checking
- Email and SMS message alerts from server within 2 minutes of a client error condition

Scalability

- Infinitely scalable architecture allowing an unlimited number of sites to be managed

Security

- Client access protection via username/password
- Encrypted communications protects against snooping and hacking
- Illegal access attempts automatically reported to system administrators

Network management

A key feature of ViewPoint FID systems is the inbuilt Control Centre that enables an advanced information display system to operate efficiently across a large number of networked ePC-controlled screens. In large-scale applications, ePCs can be installed on the back of flat TV or monitor screens, allowing each screen to display varied information, switching between display formats at the click of a button or automated by a predetermined schedule or database connection.

Viewpoint also provides the functionality to automatically retrieve data from specialised data systems, such as airline, hotel and banking information services.

9 Conclusion

AirView and ViewPoint FIDS are open systems that provide a comprehensive range of facilities for airports of all sizes and budgets, and offer a secure and open investment in industry-standard hardware and software, enabling airports to upgrade the system with airport software applications from any number of software suppliers as and when needed.

The key benefits of AirView include the latest advanced services running from fault-tolerant servers, with a full range of airport management applications, including advanced multilingual ViewPoint FIDS, automated digital Public Address in up to 4 languages, and integrated digital CCTV monitoring and recording, plus full compatibility with all the usual airport services and devices, CUTE, CUSS, offering a completely integrated airport-wide management system.

Two decades of airport experience

Many airports have chosen AirView and ViewPoint FIDS since we shipped the first system in 1990 to BAA's prestigious London Airports. Recently, the latest AirView system has enabled airports like Turin International in northern Italy to manage the flood of passengers for the Winter Olympics, with over 220 flights a day, and some 20,000 passengers relying on the information posted on over 230 large-format TFT screens installed around the terminals.

Many experienced airport managers consider AirView to be the most open, cost effective, and flexible system available today, and we continue to add new functionality day by day.

With an experienced team of engineers, Sentel has the resources to support all airport IT and electromechanical engineering needs, including modifications and additions to meet specific requirements.

Thank you for your interest in AirView and ViewPoint FIDS, and we look forward to hearing from you.

For further information contact info@sentel-advance.com or visit www.sentel-advance.com
www.ViewPoint-3D.com

10 FID Screens samples – Created and displayed by ViewPoint-3D

4 / 11 / 2011 Partenze Internazionali 16:12.23

Ore	Linea aerea	Destinazione	Chk-in	Gate	Remarks 2
06:30	BA316	GATWICK	140-142	2	BOARDING
06:50	BE131	MADRID	144-147	2	ON SCHEDULE
07:45	FR375	HEATHROW	124-126	4	ON SCHEDULE
07:50	IB304	ADDIS ABABA	128-131	5	ON SCHEDULE
08:00	AZ256	AMMAN	132-134	5	ON SCHEDULE
08:00	LH314	BAHRAIN	149-151	6	ON SCHEDULE
08:30	BE303	LONDON STANSTED	138	1	
08:30	EZ244	ANCHORAGE	152	3	
08:30	LH247	HEATHROW	137	2	
09:00	LH202	AMSTERDAM	140	3	
09:30	SR999	VIGIE	146	1	
09:45	EZ318	ADDIS ABABA	139	5	
10:00	IB301	BIRMINGHAM	130-140	4	
10:15	LH871	STOCKHOLM	122	3	
10:20	EZ324	BEIRUT	155	7	
10:25	LH312	FRANKFURT	128-130	7	
10:40	FR465	LONDON STANSTED	143-144	4	
11:00	SR203	BOMBAY	141-143	5	
11:15	BA401	HEATHROW	144-148	4	

Please do not leave baggage unattended

FLIGHT ARRIVALS London Gatwick 14:59.20

HORA	PROCEDENCIA	VUELO	FLIGHT	CINTA	BELT	OBSERVACION	REMARKS
12:20	COPENHAGEN	BA201		2		EXPECTED	13:34
12:25	RIGA	BA111		1		LANDED	12:19
12:25	MALAGA	IB201		3		LANDED	12:25
12:30	DUBAI	EK015				LANDED	12:06
12:30	PALMA	BA005		4		EXPECTED	15:03
12:35	VENICE	BA2853					
12:35	FARO	KL303		5		LANDED	12:14
12:40	VIENNA	EZY5358				24/8/2011	International Departures
12:40	ALMERIA	TCX423				12:36	
12:45	MANCHESTER	BA2907				12:27	
12:45	MANCHESTER	MA4907				12:27	
12:55	CORFU	EZY8752				12:40	
13:00	ROME	IB203				14:05	
13:00	MADRID	EZY5476				13:34	
13:00	DOHA	QR073				12:35	
13:00	MALAGA	TOM4407				EXPECTED	
13:05	DUBLIN	FR114				12:49	
13:05	PORTO	TP334				10:50	
13:10	SOFIA	EZY8974				12:20	
13:15	PALMERO	EZY5244				12:25	
13:25	VENICE	EZY5264				13:15	
13:30	NAPLES	EZY5224				13:45	
13:30	MALAGA	EZY8604				ON SCHEDULE	
13:30	MALTA	EZY8824				EXPECTED	
13:30	THESSALONIKI	EZY8992				14:42	
13:30	FARO	TCX407				EXPECTED	
13:30	ALICANTE	TOM4417				EXPECTED	
13:40	BOLOGNA	BA2551				EXPECTED	
13:45	OSLO	DY1304				17:00	
13:50	CORK	FR3852				ON SCHEDULE	
13:55	INVERNESS	BA4736				ON SCHEDULE	
13:55	INVERNESS	BE7324				EXPECTED	
13:55	KRAKOW	EZY5488				13:53	
14:00	DUBLIN	TC1236				EXPECTED	
14:00	ZAKINTHOS	TCX810				EXPECTED	
14:05	VERONA	IB242				ON SCHEDULE	
14:10	NAPLES	BA2607				ON SCHEDULE	
14:10	JERSEY	BA8038				ON SCHEDULE	
14:10	HASSI	MON2109				ON SCHEDULE	
14:15	ABERDEEN	BE7293				ON SCHEDULE	
14:15	MARRAKECH	EZY8894				13:34	
14:15	FARO	EZY8918				EXPECTED	
14:25	KAUNAS	FR2747				14:40	
14:25	ALICANTE	ZB265				ON SCHEDULE	
14:40	GERONA	FR2228				ON SCHEDULE	
14:45	GENOA	IB204				EXPECTED	

Si prega di segnalare i bagagli incustoditi per la sicurezza

12:15.12

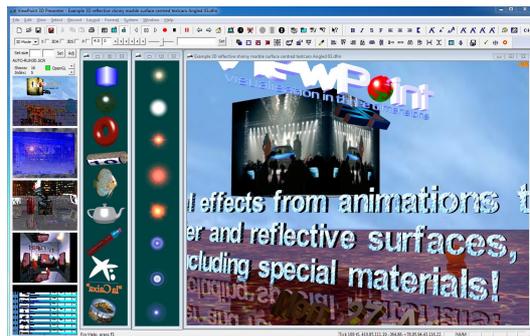
ViewPoint 3D FIDS Graphics

- All items can have unlimited effects
- Rotating remarks and status offer clearer status display.
- Ticker lines replaced with vertical rotation boxes allow faster reading.
- Fully multilingual, supporting all international character sets.
- More modern and attractive layouts with the most advanced presentation methods and truly unlimited facilities.

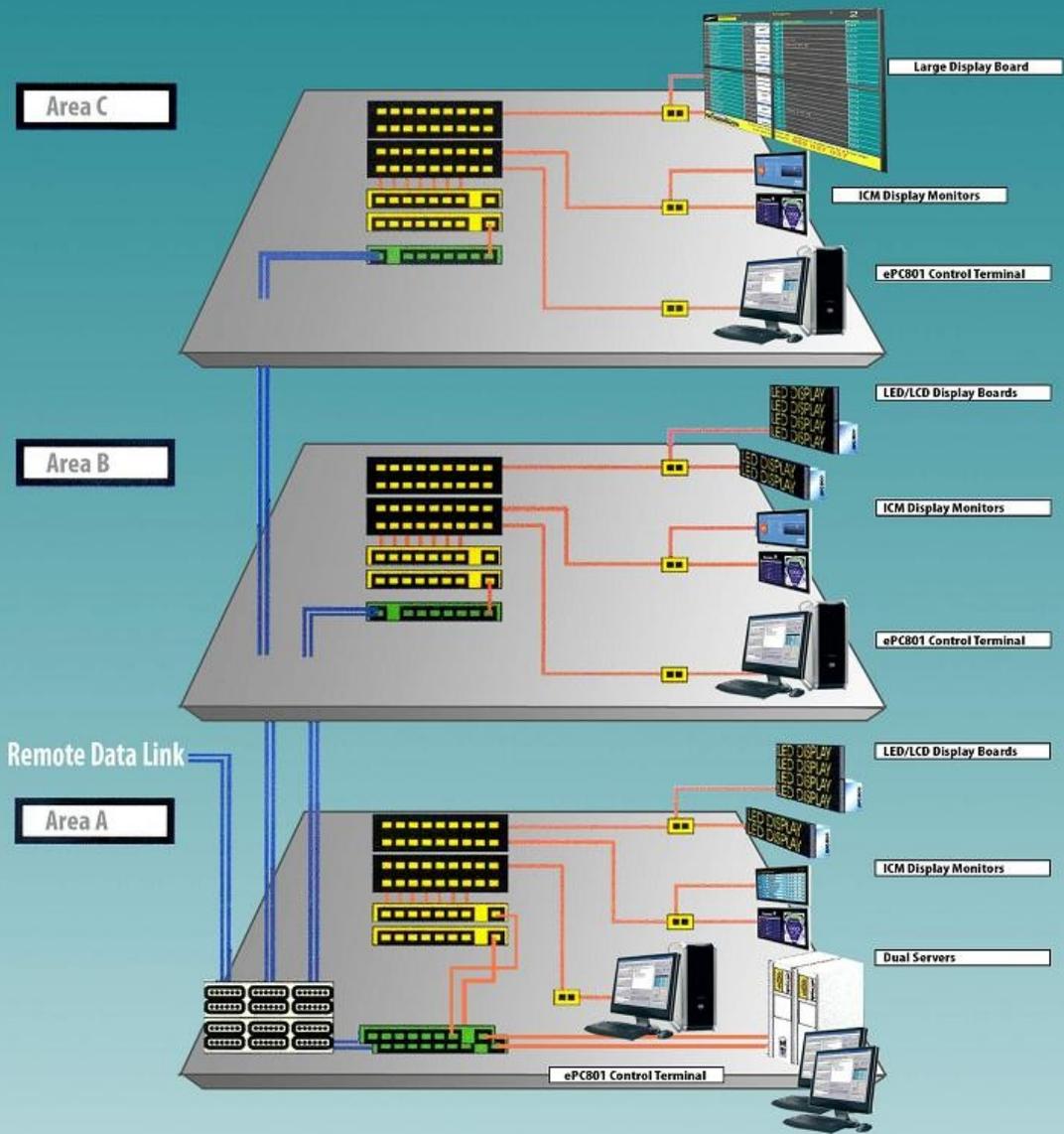
ViewPoint 3D advanced visualization

ViewPoint 3D

Please do not leave baggage unattended



FIDS STRUCTURE FOR EXAMPLE AIRPORT TERMINAL



Key



IT

FIDS - A New Viewpoint



Everyone knows that in order to succeed in business you need to have a flexible approach. With this in mind, Sentel has delivered a new product for the FIDS market – Midas ViewPoint Secure, a flexible and advanced multi-purpose information display system based on an embedded PC (ePC), this being essentially a small computer unit designed for high-reliability graphic-intensive applications that need to function round the clock.

Midas ViewPoint Secure is a software application that airports can use to display general and airport data to passengers and staff on a network of ePCs; this display can also include customised TV distribution, while delivering the highest reliability and quality of information and the best in video presentation.

Turin Upgrade

Sentel was recently awarded the contract for Turin International Airport's new public and staff information display system. Turin will be the first major airport hub to deploy a secure display system with a total of 232 LCD display screens throughout the facility. This is designed to be ready for the Winter Olympics 2006, for which Turin is the host airport, and will replace the original ViewPoint system installed in 1999, which controlled 178 Sentel ePCs and screens, for which there was not one single IT support incident.

ViewPoint is unique as it provides easy-to-use advanced data processing and display facilities that enable information screens to be generated without the need to write scripts, allowing airports to be more self-reliant and thereby save on costs. A comprehensive range of

Turin will be the first major airport hub to deploy a secure display system with a total of 232 LCD display screens throughout the facility.

edit dialogs allows users to precisely specify operational properties, from individual screen objects to data filter and playback schedules. It is a true object-based display application written entirely in the professional C++ language, producing fast and reliable code in contrast to many competing applications developed in Visual Basic. Turin Airport's IT manager Italo Guglielmetti has been able to support all the needs of its users without requesting technical support because the system has been so easy to operate. In addition, the latest version provides automatic warning via email or SMS message direct to mobile phones should there be any system problems, including in the event of any remote displays ceasing to function.

In addition to the public flight displays, Mr Guglielmetti has used ViewPoint to provide information displays for baggage and catering staff, and for airport managers, providing real-time information about airport operations. Although each computer running ViewPoint (the clients) can connect directly to a wide-range of databases, as in Turin, the usual technique is to use Midas Secure Server applications to access the databases and distribute data to the clients via encrypted datagrams (small packets of data). This ensures that only the data required is transmitted, ensuring efficient and fast operation, and that the load on the database and the network is kept to a minimum. The server application can process and filter data before sending it, and clients can provide further processing and filtering as required, creating a flexible, fault-tolerant and efficient solution.

As an example, a typical airport display system – including arrivals, departures and baggage screens for a

Robin Colclough, Information Display Systems Manager for Sentel Advance, describes the company's new Midas ViewPoint system purchased by Turin Airport.

medium-sized airport – can be set up in one afternoon. ViewPoint is installed on one or more workstations and the remote embedded-PCs controlling the display screens, at which point users can begin controlling the displays immediately.

In addition to a free library of sample screen formats, users can design their own screens using the real-time form editor, which allows even the most complex animated screens to be designed and tested without the need for scripts. In addition, content can be mixed on-screen, from textual data to animations, all the latest video formats, web content, and Macromedia and PowerPoint presentations, which are all safely controlled.

In fact, Sentel guarantees that if a client has a requirement that ViewPoint is currently unable to meet, it will add the required feature free of charge. This is the reason that ViewPoint continues to evolve with the features clients need most.

Recent Innovations

Another recent innovation is the addition of professional CCTV or Web cameras to each display point, providing a low-cost surveillance system which operates across the ViewPoint network. System users can select any ePC in the network from their PC and view not only what is displayed on each remote information screen, but are also

able to see and record images from the local cameras in real-time.

ePC – The Embedded-PC

Sentel's range of ePCs now includes two new models for 2006, available for leasing or purchase. The lower-energy model, ColdFusion, smaller than a notebook and just 44mm high, is based on the new VIA Luke chipset. The higher-power model, PowerCore, based on the latest proven Intel 945 chipset, can handle the heaviest workloads, and is 80mm high. Both are available with high-reliability hard drives with 500,000-hour operational life (mtbf) or solid-state drives, and a wide range of options, including control of two monitor displays with independent information from a single ePC.

The Sentel ePC was primarily developed to provide a stable and reliable platform for Midas ViewPoint, which although it can be installed on any modern PC, would not bring the same advantages of reliability and performance which are gained by using the ePC. Sentel works directly with the core component manufacturers to ensure that their software (hardware drivers, etc) are stable for long-term operation. Testing the system as a whole yields controllable consistency and consequently reliable performance, and this substantially reduces costs, both for Sentel and its customers.

Midas ViewPoint Secure is a software application that airports can use to display general and airport data to passengers and staff on a network of ePCs. It includes customised TV distribution while delivering the highest reliability and quality of information along with the best in video presentation. (SENTEL)

ViewPoint data processing & display control
Advanced Information Display Systems

Windows IP Remote Control
Secure network with data encryption

Travellex
1000 BA Miles
mixed content & 3D effects

FLY TO	FLY FROM	CLASS	DEPART	ARRIVE	STATUS
ANCHORA	ANCHORA	12	17:05	17:05	A1
BOSTON	BOSTON	8	16:50	16:50	B3
BOMBAY	BOMBAY	7	17:40	17:40	B3
BIRINGHAMI	BIRINGHAMI	14	12:00	12:00	D4
AMSTERDAM	AMSTERDAM	8	12:00	12:00	D1
ANCHORA	ANCHORA	3	20:00	20:00	C1
TURIN	TURIN	6	21:30	21:30	G8
ZANDBAR	ZANDBAR	13	23:40	23:40	A5

advanced tables

ePC

data-driven graphics

private television

ePC embedded Intel-based PCs for 7x24 applications

Check-ins for people who prefer flying to queuing.

Overhead check-in lcd signs with led message line and remote control keypad, designed and supplied exclusively by Sentel Advance.

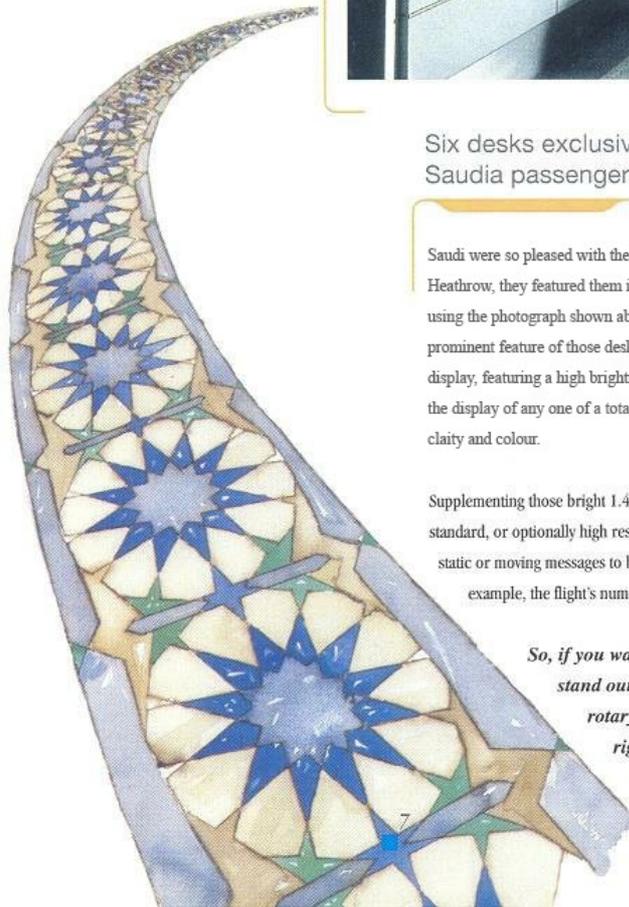


Six desks exclusively for Saudia passengers.

Saudia were so pleased with their check-in desks at Heathrow, they featured them in their own advertisement using the photograph shown above. Perhaps the most prominent feature of those desks were their overhead display, featuring a high brightness led panel sign, allowing the display of any one of a total of 64 airline logos in superb clarity and colour.

Supplementing those bright 1.4 metre wide logos, is a standard, or optionally high resolution led sign, allowing static or moving messages to be displayed, such as, for example, the flight's number, or "Desk Closed".

So, if you want your check-ins to stand out in the crowd, our rotary signs might be just right for the job!





Complete kits

2D/3D Real-time Data Display

Fast 2/3D data-screen layout

Designed for 24x7 operation

Latest Advanced Processors

Works with 2D and 3D Screens

Direct Autostereoscopic output

Supports Chinese, Arabic etc

Back-fit TFT/ Rack-mount

Built-in matrix controller

Drives up to 8 monitors

Remote hardware monitoring

10-year service life

Reduced support costs



Complex data display



For more information: email
info@sentel-advance.com

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LFEP20110928.05

ePC® SolidState Data Display Computer™

Data Display for World-Class airports



Workstation power in your hand...

10-year lifetime guarantee

The fully solid-state ePC data display computers are small and rugged, designed for 24x7 operation and able to drive the latest monitors up to full quad high-definition (F-QHD) resolution. Compatible with ViewPoint-3D data display software, the ePC offers high performance at economic cost.

Failure-proof "no-hang"...

Designed for 24x7 failure-proof operation.

For small or big screens...

The ePC has been designed to be small enough to hide away behind any flat screen, from 12" and up, as can be seen in the image here.



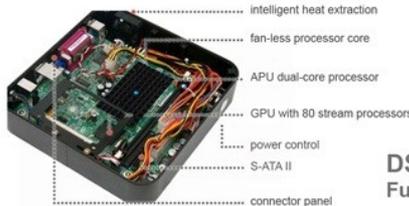
ePC & ePC-Atom, ViewPoint-3D are trademarks of Sentel-Advance, Ltd 2012

Energy Innovation

The ePC runs cool, consuming just 18 watts for most standard applications. Low power means long-life and low electric bills.

Cool Innovation

With solidstate electronics, the ePC runs silently 24x7, with Intelligent forced-air cooling activated only when the ambient temperature rises above 38°C.



Specification - *model specific

- AMD 64-bit quad-core 1.8 - 3.2 GHz
- APU HD6310 80-core GPU / HD7660G
- 2 x DDR3 1066 / 1366 Mhz (Max 8GB)
- 1 x PCI Slot (80mm model only)
- 4 x SATA ports (3 / 6 Gb/s)
- Six-channel high-definition Stereo Audio
- Realtek 10/100/1000Mb/s LAN
- 2 x PS/2 / RS232 Serial / LPT Parallel
- 4-8 x USB high-speed 2.0 ports
- 1 x USB for Solid-state Drive
- 215 x 210 x 45mm (L x W x H)
- 12VDC, 110/220 VAC, 50-60Hz
- 18/48 watts operational, 4 watt standby*

- Intelligent heat extraction
- fan-less processor core
- APU dual-core processor
- GPU with 80 stream processors
- power control
- S-ATA II
- connector panel

SolidState Drive...

Zero mechanical wear and MTBF of over 1 million hours operation.



Wide range of models available up to FQHD



DS mini Full HD from just 18 watts power consumption



- In the box:
- ePC embedded computer unit
 - 110/220 VAC Power adapter & IEC mains cable
 - CDROM with installation and demo software
 - User manual & Read Me card
 - 2-year warranty, and 1-year technical support form
 - Options: Silver finish,VESA bracket, WIFI, POE



Audience Metrics

Add a camera for remote audience monitoring.



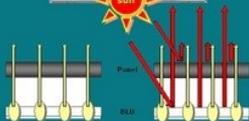
LVD: EN 60950:1992+A1+A2+A3+A4+A11
EMC: EN 55022:1994+A1:1995+A2:1997, Class B
EN 55024:1998, en 61000-3-2:3:1995
R&TTE: TBR21 edition 1 (January 1998)



- Virtually seamless largeboard
- Flexible format : text+logos
- All languages supported
- Designed for 7x24 operation
- Remote control & monitoring
- ViewPoint™ compatible
- Easy network set-up
- Highest-quality components
- Long service life
- Reduced support costs

Sunlight Protection

Normal Screen AED Screen



Sunlight is used to boost the AED screen's brightness using a novel reflective layer built into the LCD. As light enters the screen (image above) a special surface layer reflects the sunlight back through the RGB filters to increase screen brightness considerably.



For more information: email
info@sentel-advance.com

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LED AED 2020™ Public Sign Board

- Specifications:
- 4K Lux
 - 800 CD/m2
 - 10K:1 Contrast
 - 178 degree viewing
 - 2.7K pixels to 27K
 - Low energy
 - 50,000 hours MTBF
 - Indoor & Outdoor



AED 2020 Public Sign Board

Developed for public information display, the 2020 series provides a complete and modular solution for large displays in any application, from video wall to information display. With resolutions starting at 2,732 pixels, image quality is unsurpassed. With brightness of 4K lux, contrast of 10,000:1, the AED 2020 is the perfect solution for public large signs.

AED 2020 Unlimited scale



Standard models:

- 2.1m x 1.2m, 142 Kg (inc. support)
- 2.1m x 1.8m, 214 Kg
- 3.15m x 1.8m, 304 Kg
- 4.2m x 2.4m, 526 Kg



22-line departures hall board - 4 x 47" TF-LED Modules

AED 2020 - The next generation of large public signs

- The AED 2020 sign boards are based on 47" LED retro-illuminated LCD TFT panels offering superior image quality using the latest generation of almost borderless TFT panels.
- The unique 6.9 mm border provides almost seamless image and information display from 2.1m x 1.2m up to any size required.
- Integrated ePC video matrix controllers provide true high definition playback of video and presentations, unlike competing products, which simply zoom images across the screen, causing pixelation of the image and text.
- Automatic ambient light sensors continually adjust display brightness to ensure optimum legibility and reduced power-consumption.
- With LED retro-illumination, the AED 2020 has an MTBF of 50,000 hours.
- Available in indoor and outdoor vandalproof housings to IP65 standard.
- An international warranty of 4 years is provided as standard.

TOTAL INTEGRATION HIGH-PERFORMANCE

Modular and expandable signs

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T. +44 208 144 3150 Crusader House, St. John St, London EC1V 4PY, UK.

Reference kindly provided by Turin International Airport in March 2008:-



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10072 Caselle Tese (TO) - Italia

www.aeroportoditorino.it

Capitale Sociale I.V. € 10.165.200
R.E.A. n° 270127
Registro delle imprese di Torino/
P.IVA / C.F. n. 03505180018

Sentel Advance s.l.
Centre Empresarial Local Cami K 2a
07010 Palma de Mallorca,
Baleares,
España.

REFERENCE: Airport FID System

Installation of the new ViewPoint FID system at Turin International Airport has provided strongly innovative characteristics in respect to past technologies.

SAGAT, the airport society and manager, has in fact wanted to implement a solution that would allow the airport to face the new challenges deriving from the liberalization's of the airport activities, providing a wider flexibility of use well above the traditional functionality in terms of display monitors and other apparatus for display of data.

Exactly for these reasons, the system selection process, rather than being orientated on one of the numerous dedicated products available on the market, has been for data display software developed recently by Sentel: Midas Viewpoint. This product, operating on Windows XP, CE and Linux, features great flexibility and advanced multimedia characteristics; easily integrating the operational database already installed at the airport.

This product today has allowed SAGAT to give the passengers, Airlines Companies and the staff, a service of high quality. Data are updated every 15 seconds through multicast IP transmission (client/server architecture is not required) and are presented in a pleasant environment with graphic personalizing according to the operator's requirements.

The creation of new display forms through the object-oriented integrated editor appears to be very easy and fast; the management of the system (highly distributed) for which there is a control panel for the purpose, is user-friendly and very efficient; the software capacity to "interpret" the data according to tables of integrated translation allows, as well as the management of the multilingual text and of the code-sharing, the use of the multimedia files (audio/visual, flash, etc.)

Midas Viewpoint has also been distributed on the PC used in the back-office (in this case it is utilized as a AODB browser). For this purpose, SAGAT had purchased a 500-client site license.

The implementation of such a system has gained great praise (in particular from the operators who can rely on a communication channel to their customers and operating staff, which is extremely versatile and efficient), but this is only the beginning; shortly, in fact, SAGAT intends to install, using Midas Viewpoint, interactive touch-screen kiosks to put at the disposal of the passengers and the staff (the operators will be allowed to update the data on the database).

In addition we are preparing to explore the potential represented by the availability of the news editor of Palimpsest Weekly (providing sequences of layouts of various kind of data throughout the week) which will allow the monitors throughout the airport to distribute, each week, data concerning flights, other messages and publicity messages in every form (from static images to video MPEG 2).

A further development will then consist of installing a wireless lan connection to allow field services motor vehicles access to database through small touch-screen Windows CE palm-tops running Midas ViewPoint CE.

The choice adopted by SAGAT, Sentel's Midas Viewpoint, has proven itself, not only a winning choice from the beginning, but also as a choice which will, in the future guarantee an adequate answer for every arising necessity in merit to the multimedia and interactive communication, all in a context that meets SAGAT's economical acquisition and maintenance requirements.

Torino, 05/03/2008

Italo Guglielmetti Muglon
I.T. Services Manager
SAGAT S.p.A.