

# SHOW DAILY

FROM THE PUBLISHERS OF

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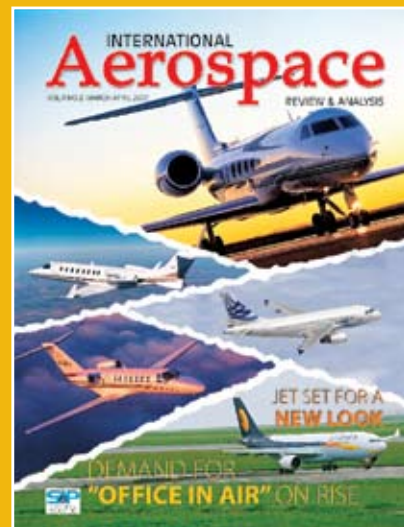
**Airportshow**

BUILD • SUPPLY • OPERATE

2-4 June 2008  
Airport Expo Dubai

**DAY THREE**

Wednesday 4<sup>th</sup> June 2008



INTERNATIONAL AEROSPACE



Striking the right notes at the Dubai Airport Show in the Danish Pavilion

## Royal Jordanian's Majali is new IATA Chairman

The International Air Transport Association (IATA) announced that Royal Jordanian Airlines CEO, Samer Majali, has commenced his one-year term as the Chairman of the IATA Board of Governors. Majali succeeds Fernando Pinto, CEO of TAP Portugal who served as Chairman from June 2007.

Majali, is a 29-year veteran of the air transport industry who has served as CEO of Royal Jordanian since 2001. He ably led the airline through one of its most challenging periods as it prepared for a successful privatization. Majali takes on



**Samer Majali**, Chairman of the IATA

the duties of Chairman at a difficult time as the airline industry falls back into the red with fuel prices skyrocketing to unprec-

*Contd. on page 05*

### Today's Programme

#### Ground Security

**10.00** Chair opening address

Securing airports of the Future

**10.10** Security for NLA (New Large Airports) - determining future enhancements in Aviation Security Dayanthe Athulathmudali, Director, Safety & Security, Dubai World Central (DWC)

**10.35** Securing Future Airports Ahmad Al Haddabi, Head of Safety and Security Abu Dhabi Airports Company

**11.00** Global Harmonization of Avsec Standards

- Why is harmonization necessary
- Difficulties in achieving harmonization
- How to attain harmonization
- Role of International Agencies
- Regional perspective

M S Sharma, IPS, Director Security, Airports Authority of India

**11.25** Implementation of biometric technology & enhancing security at Airports

Dr. Khaled Almazroui, General Manager Fujairah International Airport

**11.50** Q&A Session

**12.05** Technology is the key to improved security and passenger convenience at a low operating cost Michael Cavanaugh, CMO and General Manager, Product Management, GE Security, Homeland Protection

**12.35** Networking lunch

**14.00** Passenger screening – how to meet international best practice Patric Marshall, Director, Europe, Middle East, Africa World-Check

**14.30** Screening and detection systems for Future Airports

- How effective are current screening systems
- Regulatory reforms needed for large airport terminals
- Scanning people on the move
- Next generation surveillance technology
- Explosive detection systems
- Deployment of emerging technology such as millimetre wave, laser, QR, and terahertz technology Thomas J. Lang, Regional Manager Middle East ThruVision, LTD

**15.00** Air cargo screening

- Developing a multi-layered, risk-based approach to maintaining the security of air cargo
- Explosive detection canine program Ashley Reeve, Managing Director, ACR Gulf Ltd Regional Manager Middle East, ICTS Europe Holdings BV

**15.30** Networking break

**16.00** Safeguarding throughput & passenger facilitation at the security

*Contd. on page 05*

## Emirates College Signs MoU With Washington Consulting Group

Emirates Aviation College (Aerospace and Academic Studies) has entered into a Memorandum of Understanding (MoU) with the Washington Consulting Group, to offer courses in Safety Risk Management and related fields, for aviation professionals.

**Mohammed Al Budoor**, the College's vice-chancellor, and **Jeff Griffith**, vice-president, the Washington Group Consultancy, signed the MoU at the Airport Show in Dubai yesterday.

Mr. Al Budoor said: "In tandem with the aviation industry's rapid growth and development, regulatory requirements often change



Emirates Aviation College Vice-Chancellor Mohammed Al Budoor signs the Memorandum of Understanding (MoU) with Jeff Griffith of the Washington Consulting Group

in order to meet operational and commercial pressures."

Recently, both the FAA and ICAO have released new

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# Nagpur Airport: The Future is Here



**R.C. Sinha**, Vice Chairman & MD, MADC

The multi-modal International hub Airport at Nagpur (MIHAN) is an ambitious project which promises to put India firmly on the fast track to economic superiority. The project envisages India's first international airport with passenger and cargo hub with an adjacent Special Economic Zone (SEZ) in the centre of India.

Speaking on Day Two of the Dubai Airports show at the Future airports conference, the vice-chairman and MD of Maharashtra Airport Development Company, Mr. R.C.Sinha, said that Nagpur was on course to becoming the next generation commercial aviation hub in India.

Sinha also announced that as part of the mega airport-Special Economic Zone project, Boeing had taken 7 acres of land for a MRO at Nagpur. Also, Duke Aviation Company (US) was going to develop another MRO on a 40-acre site. Max Aerospace had also moved to develop 15 acres.

"273 aircraft fly over Nagpur everyday and we aim to pull

these flyers in and make Nagpur a place here people want to fly into". He also outlined that as part of the aviation revolution in Maharashtra, airports at Sholapur, Jalgaon, Shirdi and Amravati were being developed. The new mantra, he said, was public-private partnership.

Maharashtra is considered the economic powerhouse of India. It is the top destination for foreign investment and also contributes the highest to the country's taxation and exports.

Nagpur, the second capital of Maharashtra has a strategic geographical location in India as well as on international aviation routes. It has connectivity to all parts of India by National Highways as well as main trunk rail routes. With a population of about 3 million, it is considered the second tier two city in India. Its unique central location makes it ideal for a passenger and cargo hub on the air routes between South East Asia and Middle East/Europe.

Against this backdrop, the MADC chief outlined how Mumbai airport "had reached a saturation point and that as that trend continues, Nagpur would ripen" like the oranges its famous for perhaps. "In fact, airlines are already preferring to go to Nagpur for a night halt", Sinha said. With all the infrastructure now in the pipeline, the new vision was that "supply will chase demand".

The boom in aviation growth has helped as well. There was 122% growth in passenger traffic last year.

With 3000 hectares under its control, the project of developing the existing Nagpur airport into an International Airport meeting global standards is a

unique challenge.

The Multi-modal Airport would be connected to the Rail and Road Terminal for passengers and cargo, hence crating a multi-modal concept. The airport would consist of two parallel runways and a semi-circular terminal building admeasuring 3 million Sq. ft., which would cater to a projected traffic of 14 million passengers and 8,70,000 tons of cargo a year by 2030. The 4000 x 60 meter main runway at Nagpur will be capable of handling all kinds of planes and even those coming in the future. The government has already declared Nagpur as the only cargo hub in India and the Maharashtra government has given a grant to facilitate the project.

The SEZ adjacent to the Nagpur airport will be an added advantage and trigger development of various activities in the region, with ample business incentives, trade concession and above all one window operation creating an efficient environment, committed entirely to do business. This SEZ would consist of:

An Information Technology Park (I. T. Park) – Developing a state-of-the-art Information Technology Park covering an area of about 500 Ha., It would meet all the requirements of setting and operating an IT industry.


**Health City:** This would consist of a number of multi specialty hospitals providing super specialty treatments of international standard levied at Indian cost to meet the needs of not only the surrounding states but also the neighboring and other countries. It

would also consist of a training institute for nurses and medical technicians. With over 2000 beds, an air ambulance service will ferry patients within seven minutes. Although the physical transfer of the airport is awaited, the work is in full progress and 62% of the infrastructure was already in place.

The SEZ will add another 1.5 million to the population. "The airport and SEZ will feed each other, they are complementary," said Sinha.

The work of Internal Roads within the MIHAN Project is in progress. The total length of internal road network is about 51 km, along with storm water drains on both sides. The road network will be of 2, 3, 4 and 6 lane roads. The Main six lane entrance road is concrete road and other roads are bitumen roads. Construction of Flyover Interchange at the Junction of NH-7 and ROB across Central Railway Track which will lead to the MIHAN Project area is in full swing.

MADC is developing a dual water supply in MIHAN area. The raw water will be taken from Wadgaon Reservoir, which is about 34 km away from the MIHAN area. The total water demand is categorized as domestic and non-domestic demand to identify areas of reuse and recirculation of water.

The State-of-the-art Telecommunication Network has been designed for the MIHAN project in coordination with M/s. TATA Teleservices (Maharashtra) Ltd. The construction of telecommunication cable duct and laying of three 96 core Optical Fiber cable covering an area of about 51Kms is being carried out. 

## Emirates College Signs Mou With....

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Management Systems of both Airports and Air Navigation Service Providers.


"The Washington Group Consultancy comprise leading experts in these fields and we are pleased to enter into an MOU with them to offer specialist courses for the region's aviation professionals, with a

strong focus on practical application."

Mr. Griffith said: "Emirates Aviation College is has a strong reputation and track record for quality training. We look forward establishing a long term and co-operative relationship with them to provide high-quality training tailored to

the needs of aviation professionals in the region."

The Emirates Aviation College (Aerospace & Academic Studies) is licensed by the Ministry of Higher Education and the Knowledge and Human Development Authority to offer Academic and professional vocational

programmes in Aeronautical Engineering, Air Transport Management, Aerospace Engineering, Electronics & Computer Engineering, Business Management and Travel & Tourism Management, in addition to short courses in Management and the English language. 



# Air Traffic Control Meet Highlights Importance of Strategic Planning

**C**ongested airspace, restricted flight paths and dated technical systems could undermine the potential of mega airports in the UAE and other parts of the Middle East, industry experts warned at the Air Traffic Control conference in Dubai on Tuesday.

Two senior representatives of one of the world's leading air navigation services providers said precise strategic planning was vital for the new generation of international airports in the region to overcome major threats to their effectiveness.

In his opening day keynote address at the conference, which is being staged as part of the Airport Show at Airport Expo Dubai, **Dieter Kaden, Chairman and CEO of DFS**, the German air navigation services provider Deutsche Flugsicherung GmbH, spoke about the challenges and solutions involved in modernising airspace management.

"Air traffic is growing quickly in the Gulf region and throughout Asia," said Kaden, whose company coordinates 3.1 million aircraft movements in German airspace each year. "This will lead to complex and high-density air traffic areas, which



*Dieter Kaden, Chairman & Chief Executive Officer*

will challenge the existing air traffic control infrastructure and organisations."

The aviation industry has dealt with problems of crowded runways and limited seat capacity. However, as many speakers at the conference pointed out, new challenges such as congested airways and managing the growing number of air movements pose a threat to mega airports such as Dubai World Central's Al Maktoum International Airport, which will have six major runways when it opens.

These concerns were also expressed by Achim Bau-


mann, Gulf Regional Manager for Deutsche Flugsicherung GmbH, who spoke on the first day of the Airport Show, emphasising the crucial importance of involving air traffic control experts in the planning stages of new airport developments.

"Only a common and coordinated approach between all air traffic management stakeholders will lead to sustainable capacity growth," said Bauermann, who outlined solutions for re-working airspace and route structure and said cross border communication was a key to minimising problems.

In a presentation on the 'future of air traffic management', Jeff Griffith, Executive Vice President and Chief Operating Officer of Washington Consulting Group, outlined 23 guidelines to minimise the impact of airspace congestion, allowing mega airports to reach their full potential.

Explaining that UAE airspace is influenced by the aviation regulations of other countries, Griffith said: "Global airspace management initiatives are essential. Greater collaboration between the region's aviation authorities will result in more efficient airspace management by alleviating any competing interests in the region."

Organised by Streamline Marketing Group, this year's Airport Show attracted a record number of pre-registered visitors and delegates, an increase of 53 per cent on last year.

The show features four specialist conferences, including the two-day Future Airports conference. Tomorrow's Ground Handling and Aviation Security conferences will address a range of issues including the need to evolve each sector to meet the needs of future airports. 

# Hosts Systems Forges Partnership with Bayanat Airports Engineering & Supplies

**F**ollowing a recent visit to the UAE by **Michael Brunton, CEO, UK-based Hosts Systems Ltd.**, specializing in the manufacture and integration of mobile air traffic control towers, has announced the signing of a working agreement with Georges Hannouche of Bayanat Airports for representation in the UAE.

"We are delighted to reach an agreement with Bayanat Airports Engineering & Supplies for representation in the UAE," commented Mr.



*Michael Brunton  
CEO, UK-based Hosts Systems Ltd*


Brunton in welcoming the deal. "They have significant expertise in the aviation sector and have first-hand

knowledge of challenges facing the fast growing Middle East Airports," he observed.

Both Bayanat and Host are excited about the many possibilities and applications that Mobile ATC towers have in the UAE. Host Mobile ATC Towers are fully equipped to handle the same operational capability as a conventional tower during refurbishment or expansion of an existing tower. It also possesses an independent back-up system in the case of an emergency. Other applications include deployment at private airfields and rapid

deployment for military applications.

The Host Systems Mobile ATC Tower also provides a cost-effective solution to Air Traffic Control at small or private fields. The towers provide the same high level of equipment as a conventional tower including weather reporting, communications and surveillance, and can be fitted out for up to three operators.

The system can be easily deployed by sea or road and air trials are on. It can be deployed by 3-4 men in an hour. 

# Fujairah Airport Location Gives it the Edge

In his presentation at Airport Build and Supply, **Dr. Khalid Almazroui, General Manager**, outlines the importance of **Fujairah International Airport**.

Fujairah lies in the south-eastern corner of the Arabian Peninsula, on the shores of the Indian ocean, overlooking the gulf of Oman. Hence, the airport is an ideal location for long haul technical stops and serves as an ideal transit point for the Sea-Air cargo trade.

Easily, UAE's most scenically attractive Emirate with its picturesque fortresses, dramatic mountain scenery, unspoilt beaches and a salubrious climate, Fujairah has become the weekend destination for locals and expatriates. Says Almazroui, it is the climate that ensures there are no fogs at Fujairah Airport unlike the other Emirates. There are clear skies all year around, he points out.

With a strong commitment to trade and industry in the region, and an open policy towards the growth of its economy, Fujairah is fast becoming a renowned, commercial and industrial principality in the Emirates. Its cargo operations have won the Airport many awards.

The full-fledged cargo com-



*Dr. Khalid Almazroui, General Manager, Fujairah International Airport*

plex at Fujairah International Airport, with its fully automated cargo handling system, serves as a break bulk center, and takes in the input from the seaport and sees it on board cargo flights. Under the aegis of a single custom authority, clearance and forwarding operations are expected to be smooth, attracting greater volumes and making Fujairah a hub in global movement. Another principal area of promise is the Emirate's Free Trade Zone, which has been established in the port vicinity and offers some of the most attractive schemes and concessionary terms. The FTZ is even generating a broader base of export cargo.

At Fujairah International Airport, passenger service is

priority. The airport has made elaborate arrangements to ensure that passengers find the start and the culmination of their journey utmost convenient and pleasant.

Inside the modern terminal, there are several check-in counters at the departure side, each equipped with modern digital scales and a conveyor belt. Our courteous and experienced staff present a level of efficiency normally associated with long established airports.

Apart from the VIP and First Class lounges, there is a spacious departure hall, a restaurant and a Duty Free Shopping Complex, offering round-the-clock wide mix of merchandise, at prices competitive with other duty-free shops in the UAE.

Tourist attractions abound and the Emirate has variety of hotels, catering to all the tastes of both the business and leisure travelers and offer excellent facilities including diving. More hotels are also being planned. The travel trade operating in the region expects tourism into Fujairah and the East Coast to increase substantially with more holiday charters arriving at the airport. Transit passengers from technical stopovers as well as "shoppers" from the Indian subcontinent and C.I.S. countries are dramatically adding to the tourist traffic of the Emirate.

Fujairah is prominent among the Emirates and a favorite tourist destination. Trade opportunities are also abundant in this part of the world, which is an incentive for investment and attracts businessmen and entrepreneurs alike. The strategic location of the Airport makes the main city perfectly accessible. Fujairah also has a thriving port, with a variety of light-to-large industries and successful agricultural ventures. In addition, the Emirate has seen the influx of some of the leading names in banking and insurance, and its free trade zone reflects Fujairah's progressive policies. 

## Some Rail Projects Face Multibillion-dollar Costs that make Their Future Uncertain

Riding a proposed 13-mile rail line from downtown Sacramento to the city's airport would take a few minutes longer than driving, according to a February report by the Sacramento Regional Transit District. That's because Sacramento International Airport sits next to an interstate highway and congestion "is relatively light," said Mike Wiley, general manager of the transit district.

Environmental benefits also are questionable. When the report compared building the rail line with vastly expanding local bus service, it found rail "would provide a small benefit to the region's air quality" because it would reduce overall driving by just 0.02%.

Wiley says people will take the train, which could be done by 2017, even if it takes longer than a drive because the rail line will have frequent, reliable service and will take passengers directly to the terminal. "People have a very strong willingness to use public transit as long as it doesn't add an undue amount of time," Wiley said.

About 10 rail systems now take passengers from city centers to airport terminals, usually in older cities such as Boston, Chicago and Cleveland. In other cities such as Los Angeles and Baltimore, rail lines stop a few miles from an airport where passengers board a free shuttle bus to terminals.

Many regions now considering rail to airports are newer and seeing massive growth in the suburbs around an airport.


"If it gets too complicated, people won't take advantage of it," said Carrie Bohnsack-Ware, spokeswoman for the Utah Transit Authority, which hopes to break ground this year on a 10-mile rail line from downtown Salt Lake City to the city airport. "It has to go to the terminal or it doesn't justify the cost."

Maureen Riley, executive director of Salt Lake City International Airport, said the rail line will be "a huge asset" by giving passengers an alternative to driving to the airport.

In Phoenix, the region's first rail line will open in December

with a stop near Sky Harbor International Airport. In the short term, the airport will bus airline passengers to the terminal, 10 minutes away.

By 2013, the airport expects to build a small satellite terminal at the rail stop where passengers can print boarding passes, possibly check luggage and board an airport train to terminals. The mini-terminal and train are part of a \$1.5 billion project aimed at easing road congestion that could become intolerable, said airport assistant aviation director Jane Morris.


"If you can't expand the roads," Morris said, "you have to look at high-occupancy ways to get people into the terminal and out." 

## Abu Dhabi Airport Services and Proveo: A Long-Standing Partnership

**A**bu Dhabi Airport Services (ADAS) and Proveo have a long-standing partnership. Actually, the company was Proveo's launch customer for a pilot study in the Middle East. Last year ADAS decided to purchase a number of Trepel CHAMP 70 W high loaders, and combined the move with the set-up of a pilot installation of the Proveo Airport Visualiser. The Airport Visualiser enables users to monitor and control literally all asset-related processes on a single screen benefiting from real-time data and mission-critical reporting. ADAS' high loaders were equipped with Proveo's Infoman hardware device straight at the Trepel factory in Tauberbischofsheim (Germany) reducing the installation efforts on the ground in Abu Dhabi to close to zero. The Airport Visualiser helps ADAS to easily locate their loaders among the other 500+ motorised GSE in use on the apron at Abu Dhabi. Based on the good experience with Proveo, ADAS has recently decided to widen the scope of the pilot project and equip their entire fleet of 43 high loaders as well as three towed GPUs, three ACUs and a Douglas TBL with the Infoman hardware.

The project will start in May and is expected to go live during summer with a trial phase.

"Due to the rapid growth experienced at Abu Dhabi, ADAS needs to invest in systems that support the ground handling business and that provide the management team with accurate operational information. We were pleased to increase the scope of this pilot project over our peak summer period and look forward to benefits we will gain from the output as well as the ability to provide a business case for a full roll out", says Richard Backhouse, Assistant General Manager Strategic Planning, at Abu Dhabi Airport Services.


Abu Dhabi Airport Services was established in 1976 with the aim of improving the standard of aircraft ground handling in the emirate. Today, ADAS provides ground services in Abu Dhabi and Al Ain airports and at Al-Bateen, Delma and Al-Dhafra bases. At Abu Dhabi International Airport, ADAS provides services to over 40 airlines, including passenger, mixed and full freight services. ADAS has over 2,400 employees of various nationalities that are employed to cover the wide aspects of handling services. 

## 3M Showcasing Passport Scanner for CUSS Kiosks

**A**s a leading provider of travel and identity document readers for the CUSS kiosk market, 3M showcases its 3M Kiosk ePassport Reader for integration into the latest generation of Common Use Self-Service (CUSS) kiosks and automated gates. Used to facilitate the check-in process for airlines and automate identity processing for frequent travelers and at automated border control points, the new reader design is compact to comply with the latest designs of counter-top kiosks. The easy-to-use, ergonomic unit helps shorten the queues for travelers around the world.

The 3M Kiosk ePassport Reader provides top-of-the-line technology that supports the

scanning of e-passports regardless of chip location within the document, while also providing barcode reading for ID cards. Its machine-readable zone captures full-page images for rapid display and easy viewing. Check out a demonstration of the reader's use of 3M technology by 3M's technical marketing development manager, Roger Edwards, in the 3M booth.

3M brings more than 30 years of experience, a global presence, technical innovation and a strong customer focus to the secure document marketplace. 3M solutions cover a broad spectrum of enhanced travel and border security, including document issuance and border management. 

### Today's Programme

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- means of explosive threat containment units
- Containment of suspect bags: The missing link in the screening process
- Is airport evacuation / closure a viable option in case of successful detection?
- Analyzing evacuation verses immediate containment
- Case studies from the Middle East, the US and Europe Marc Ottolini, CEO Aigis Blast Protection Ltd

**16.30** Future of air transport security : Convergence of biometric and passenger data Thomas Marten, Vice President, Government and Security Solutions, SITA

**17.00** Bangkok Airport Case Study This presentation will show how to integrate and unify solutions in an aviation environment to best make use of the network, the existing infrastructure, hardware and various software systems so that the safety and operational needs are met and exceeded Phil Tennent, Sales Manager Southern Europe DVTEL

**17.30** How to secure, at lower cost, the flow of passengers in a terminal without rebuilding Jean Marie Borelli, Inventor Ex Technical Director Nice Airport

**17.50** End of conference

### Ground Handling

**10.15** Welcome Address Dr.Ghanem Al Hajri, Director-General, Sharjah International Airport Secretary General, GASA

**10.30** Keynote: Ground service industry future outlook Middle East and Asia  
 • How does the current aviation growth affect the ground handling industry  
 • Current challenges facing ground handling service providers  
 • How is the global change in the ground handling industry affect regional service providers  
 • How does the ground handling industry adapt to the needs of future airports Stewart Angus, Divisional Senior Vice President - Associated Companies, Emirates Group

**11.00** Evolving the ground handling industry for Future Airports  
 • Airline expectation from ground service providers in the Middle East, North Africa and South East Asia  
 • How do ground handling service providers evolve their operational model for ensuring continued profitability  
 • How will the increasing importance of low cost carriers shape the ground handling industry?  
 • What is the optimum operational model for servicing low cost carriers?  
 • Customer expectations, pricing and service delivery for future airports  
 • Developing viable partnerships  
 • Evolving safety management for ground service providers Naji Al Ajmi, CEO, National Aviation Service Alain Chappier, Secretary General, Aviance Captain Mohamed Ahmed, Director of Operations & Maintenance, Air Arabia Craig McBride, Manager Safety Compliance & Training, DNATA Airport Services

**12.20** Q&A Session 12.40 Ground handling for corporate and private jets Captain David Ovey, Director Operation, Palm Aviation

**13.00** Networking break Ground support equipment and fleet management for Future Airports

**14.00** Considerations for operating environmentally efficient ground support equipment Our industry is facing increasing pressures to reduce carbon emissions or face stricter penalties from governments. We can make a contribution and reduce emissions on the ground by using environmentally efficient ground support

### Today's Programme

equipment. To do so we must understand what changes will be required to reduce our carbon footprint without compromising operating efficiency.  
 • What are the cost implications of running hybrid and electric vehicles versus standard equipment?  
 • What additional service requirements are required?  
 • Can airport operators and airlines benefit and the reduced emissions  
 • What can be done to make it easier to use these vehicles?  
 Brian Sneyd, Director, Fleetserve

### Ground Handling

**14.30** Infrastructure investments that give a high return on investment  
 • How we can invest and get a faster and smoother work situation around aircrafts on the ground?  
 • The latest experience with the A 380.  
 • How to be able to guarantee the delivery of cold PCair to the airplane? Michael Widegren, Group Vice President, Cavotec MSL Holdings Ltd.

**15.00** GSE and operational optimisation through real-time ramp data The presentation gives an overview how fleet dedicated software solutions can address the real-time requirements of airports and ground handlers for GSE localisation, tracking, safety/security, asset and maintenance management as well as process optimisation. This presentation will provide an insight into:-  
 • How to reduce GSE operational costs and capital expenditure  
 • Achieving quality improvements and mitigating risks  
 • Giving management utmost visibility and transparency of vital processes on the apron Oliver Schulz, General Manager, proveo Middle East FZC

**15.30** Networking break Passenger handling and service quality for Future Airports

**16.00** Managing and maintaining service quality in ground handling operations Alexander Manakos, Partner, Lufthansa Consulting GmbH

**16.25** The Quality Airport - one measurement is worth more than a thousand opinions...  
 • How to measure quality - identify and pinpoint quality bottlenecks?  
 • How can the service level of airports be measured automatically?  
 • How can the airport identify compliance with service level agreements?  
 The presentation will cover tool for identification of quality issues in the baggage and passenger flow, to pinpoint "quality bottlenecks" - and through this, identify and determine where improvements are either necessary or important. This presentation will help senior airport management identify key performance indicators and service level agreement compliance. Jan Kretzschmer, Director Airport Division, Lyngsoe Systems

**16.45** Role of luggage sealing in Future Airports for increasing efficiency This presentation will discuss why luggage sealing is important for Future Airports, with comparative analysis and how does it result in increasing efficiency and reducing costs. Paul T.M. Rijkhoff, CEO, Seal & Go BV

**17.00** Manpower management, safety and security for Future Airports  
 • What will be the main safety issues for Future Airports?  
 • Training requirements for ground service personnel  
 • Workforce management Alain Chappier, Secretary General, Aviance Lorena de Rodriguez, President, AviaEd / SSI

**18.00** End of conference

# Pakistan's Vision Of The Skies

In the midst of all the activity and announcements, it was a pleasant experience to hear AVM Sajid Habib, Deputy Director-General of the Pakistan Civil Aviation Authority (CAA) outline his country's aviation vision.

Commissioned in the Pakistan Air Force as General Duty Pilot in the year 1978, he has served in various disciplines of aviation with extensive background as a Flying Instructor and Aviation Safety Expert.

In his present assignment, besides overseeing the New Islamabad International Airport project, he is heading the technical upgrade and acquisition projects of the CAA.

Habib said the CAA mission was to "provide safe, secure and efficient best-in-class aviation services to the stakeholders" and the vision was to be a world-class service provider in the aviation industry with a futuristic approach.

To meet the current challenges with a futuristic approach, said Habib, restructuring of the PCAA was also ongoing.

"The new aviation policy has been developed in consultation with all stakeholders. It is expected to bring about



growth in the aviation industry in consonance with ICAO Standards", he said.

The objectives were to serve national and public interests and allow market forces to determine the price, quality, frequency and range of air services options.

Part of the improvement plan was to encourage development of passenger and cargo hubs and regulate standards of services of airports and airlines. Among the commercial development projects envisaged were airport cities initially at Karachi and Lahore

airports and subsequently, at New Islamabad International Airport.

Among things on the agenda were: aviation towers at Islamabad, focus on security and passenger handling facilities, expansion and renovation at different airports to facilitate the passengers and improvement of cargo and storage facilities at all major airports.

Habib said that after the Foundation laying ceremony of New Islamabad International airport in April 2007, design concepts and layouts had been finalized and tenders floated.

The earthwork / leveling was nearly completed the overall expected completion time was 2010.

Habib also spoke of the new Gwadar International Airport (NGIA) for which the CAA has acquired land at a site 26 km east of Gawadar City.

The Conceptual Master Plan of NGIA has already been developed. Work on other mega projects mentioned were up-gradation of Multan and Peshawar airports.

Other development projects include: Upgradation of runway for A-380 category aircraft at Karachi and Lahore airports; Upgradation of Civil Aviation Training Institute at Hyderabad; Extending necessary support and oversight role on the construction of Sialkot International Airport (private sector) and ILS at Quetta and Peshawar airports.

Work was also on for up-gradation of radar network to latest technological standards with a view to fill gaps; Replacement of Air Traffic Management System (ATM) and Voice Communication & Control System (VCCS) of both Area Control Centers at Karachi and Lahore.

## Abu Dhabi, United Arab Emirates

Abu Dhabi Airports Company (ADAC), the owner-operator of Abu Dhabi International Airport (ADIA), today released its April 2008 traffic figures revealing a huge 40.9 percent increase in passenger traffic over the same month last year.

On the back of robust growth in Q1 2008 which saw an equally impressive 34 percent increase, the year-to-date figures (first four months) show a similar 35 percent boost in passenger numbers through the UAE capital's main airport.

Significantly, these figures are in stark contrast to international trends, as suggested by IATA (International Air Transport Association), with global growth rates up to 2011 predicted to grow at a far more modest 5.1 percent.

"There a number of factors responsible for the impressive

increases recorded in passenger traffic," said Rudy Vercelli, CEO – ADAC.

"Firstly, we are feeling the effects of the capacity increases of Abu Dhabi's home airline, Etihad Airways; Secondly, there has been a marked increase in business-related travel as the growing conference and exhibitions sector has boosted business tourism to the UAE capital; And thirdly, from January this year we have seen the arrival of five new airlines operating through our airports," added Vercelli.

The new airlines having just started operations from ADIA in 2008 are Jet Airways (India), Nas Air (KSA), Fly Yeti (Nepal), MIDEX Airlines (Abu Dhabi) and Cargoitalia (Italy).

India – currently Abu Dhabi's largest market – also posted strong passenger increases (+41 percent) again

due to Etihad's capacity growth to destinations in South India and improved load factors on existing routes, as well as and the commencement of services with Jet Airways' services to New Delhi and Mumbai.

In total, Abu Dhabi International Airport handled over 703,000 passengers in April 2008 compared to the 501,000 in the same month the year earlier with total aircraft movements for the month showing a 17 percent upward trend.

ADIA also witnessed steady growth in its cargo operations with an 18 percent increase over the same month last year.

In other news, ADAC also released data detailing the top three destinations served out of Abu Dhabi – or 18 percent of total passenger traffic at the airport. The top destination was Doha, Qatar; closely followed by London, in the UK; with



Bangkok, Thailand, just edging out Cairo, Egypt, for the third most popular destination from the UAE capital.

"The changing demographic and passenger profile demonstrates Abu Dhabi's increasing international reach and its growing connectivity to key destinations world-wide – this is a reflection of the growth of Abu Dhabi's home airline, Etihad Airways, and the ever increasing number of airlines attracted by Abu Dhabi Airports' strategic location and business approach," added Vercelli.

## AAI Freezes Hike in Airport Charges to Help Airlines tide over bad times

**R**eeling under the impact of a relentlessly rising fuel bill, carriers operating in Indian skies will heave a sigh of relief with the country's Airports Authority of India (AAI) announcing its decision to put a freeze on the entire spectrum of fees it charges passengers and airlines, reports Domain-b.com.

In an additional gesture, the AAI also said that the freeze will remain in place till the situation improves, or the price of Aviation Turbine Fuel (ATF) dips.


AAI's announcement will be a matter of great relief for carriers as the services provided by the country's airports manager constitutes the third largest component in their total costs. Services provided by AAI constitute 15% of the total operating costs of airlines, ranking third after the fuel and wage bills. Fuel accounts for 40% of all costs while wages come in second with 30%.

Services provided by AAI to domestic and international airlines includes passenger, terminal and aerodrome facilities that include parking, landing and air navigational ser-

vices. AAI's charges include the Rs 225 passenger service fee on each ticket and parking and landing charges as per the weight of the aircraft.

While senior AAI officials confirmed that they had decided not to increase charges for passengers, airlines and cargo operations in order to cushion airlines from rising input costs, officials of the ministry of civil aviation also confirmed that an in-principle decision had been taken to extend current user charges. Ministry officials said it was their perception that the scope for the aviation industry to absorb additional costs was exhausted.

Airlines are implementing a host of measures to cut costs, with ATF prices almost doubling to Rs 60, 468 per kilolitre from April 2005. These include dropping flights with poor passenger loads, postponing fleet acquisition plans, implementing e-tickets and negotiating commissions with travel agents to cut costs.

The industry is also contemplating measures such as charging for all baggage carried by passengers. 

## Scandinavian Airports Lead the Way

**A** new approach to flying has found a way to make aircraft landings cleaner and quieter. According to reports by Wired and Ice News, airports in Scandinavia are leading the way in the development of this new process.


Most carbon emissions, as well as the most noise, produced by commercial aircraft occurs when the plane is landing. That is, if the aircraft is landing using the traditional stepped approach.

The stepped approach involves reducing thrust as the plane begins its decent, increasing thrust to level off and continuing this process until the plane lands on the ground. The stepped approach is widely practiced at most airports; however the acceleration and deceleration

required to complete the task burns lots of fuel and creates noise.

The continuous descent approach not only cuts noise levels but it conserves fuel and decreases the plane's carbon emissions. It doesn't require equipment or new technology or large expenditures, but it does require air space – something many airports don't have.

Stockholm Airport is one of the many Scandinavian airports which allows airplanes to use continuous descent. The airport has plans to increase the number of continuously descending planes to 30 a day.

Other airports, in Gothenburg, Malmo and Umea, also plan to use continuous descents during off-peak hours during the next three years. 

## No Casual Matter

**Q**ueensland's border security could be compromised by a Customs decision to employ casuals to check airport passengers, say security analysts and unionists.

According to Couriermail, the Australian Customs Service will employ casual workers to conduct passport checks for outgoing passengers, beginning this month. More than 1300 job-seekers – some as young as 18 – have applied for 30 positions at Brisbane Airport and 10 at Coolangatta Airport. Television programmes such as Border Security are being credited with fuelling the eager response.

Opponents fear casual workers might not have the training and experience to make crucial decisions on security and passenger safety.

Queensland University of Technology security expert Sara Davies said casuals working a few hours a week might not be able to spot potentially dangerous passengers. "When we talk about safety on planes, we rely on very close examination of the person and what they have on them," Dr Davies said.

"You want a highly trained,


extremely responsible and loyal person doing that. "You don't want someone who has a little bit of knowledge and is straight out of school, where their last part-time job was at Woolworths." Community and Public Sector Union national organiser Brooke Muscat said Customs bosses were compromising security standards in a bid to cut down on overtime costs.

"The CPSU is not opposed to the use of casuals for casual work. However, this is not casual work," Ms Muscat said.

"It is work which is done on a daily basis and performed by permanent officers.

"We believe Australians deserve a permanent and properly trained and resourced border security and this does not meet those standards."

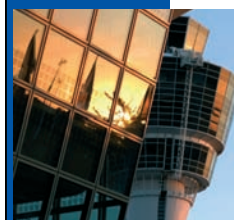
Customs management have shortlisted 84 candidates for the role of "flexible employees", who will work as little as a few hours per week, and will also act as marshals and provide tourist refunds.

Airport sources have raised concerns about casual workers having access to sensitive and classified information. 



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An architectural rendering of a proposed new airport terminal at night. The scene is illuminated by a warm, golden sunset sky with a bright sun low on the horizon. The terminal building features a curved, metallic facade with a grid-like pattern. Numerous aircraft are parked at gates along the terminal. The tarmac is marked with glowing white lines and lights. In the background, a cityscape is visible under the twilight sky. The overall atmosphere is futuristic and modern.

# THE HYPERCONN IS RE



# CONNECTED WORLD READY FOR TAKEOFF.

**"OUR TECHNOLOGY MINDSET IS VERY, VERY ADVANCED. WE WANT AN AIRPORT THAT IS VERY, VERY TECHNOLOGY INTENSIVE."** –SANJAY REDDY, MANAGING DIRECTOR, MUMBAI INTERNATIONAL AIRPORT, LTD. With India's economy booming, Mumbai's Chhatrapati Shivaji International Airport (CSIA) needed to do more than just expand—they needed to modernize their entire infrastructure. So they chose the one technology partner they knew could get them there: Nortel. With Unified Communications, Carrier Ethernet, Global Services and Secure Data solutions, Nortel is delivering not only technology, but a clear roadmap to a truly modern infrastructure. It's a partnership that will unify disparate systems, streamline processes, increase productivity and create a passenger experience like no other. The result? Real business value unparalleled in any airport in the world. It's another example of Nortel turning the challenges of hyperconnectivity into opportunity. See even more at [HYPERCONNECTIVITY.COM](http://HYPERCONNECTIVITY.COM)

BUSINESS MADE SIMPLE

**NORTEL**

# 40G to 100G – What’s All the Fuss About Optical Gigabits?

Preventing a worldwide bandwidth crisis hangs by a thread - a fiber-optic thread thinner than a human hair yet filled with untapped potential.

And, that potential within each tiny fiber-optic thread is powerful enough to keep vast amounts of information like YouTube\* videos flowing at the speed of light, when new network technologies meet the challenge of doing what many said couldn't be done.

Today's 10 gigabit per second (10G) optical networks form the high-speed, backbone core for communications, spanning nations and linking continents into a seamless global village. But these networks - filled with thousands of tiny, fiber-optic threads - are quickly evolving from the 'fiber glut' of unused capacity built out during the late 1990s dot.com boom to possible 'fiber crisis,' as the insatiable global appetite for bandwidth threatens to choke optical networks to a crawl.

It's estimated that YouTube alone consumes as much bandwidth today as the entire Internet used in 2000, even before music downloads, online gaming and business uses like VoIP or videoconferencing are factored in. And, the trend to Hyperconnectivity - where everything that can be connected, will be - is already fueling huge increases in devices and applications accessing networks. Nortel estimates that by 2010 there will be 10 devices connected to the network for every person using them, resulting in five billion connection points.

"Growing traffic patterns with the infusion of video are causing bandwidth constraints in carrier networks worldwide. This trend has the potential to starve new, innovative Internet-based websites, applications, and services of the bandwidth they need, as well as create problems for users accessing real-time content," says Michael Howard, principal analyst at Infonetics Research\*.



**Hassan Hamadani**  
Middle East Marketing Manager,  
Nortel

With this unprecedented demand for bandwidth, it's little wonder carriers and service providers are starting to fuss over how to squeeze more gigabit capacity into their networks' fiber-optic threads. They're looking for affordable new technologies to boost current 10G networks to 40G, and then 100G capabilities that will keep Internet junkies satisfied with the real-time speed of their connections without jacking up subscriber fees to pay for expensive network upgrades.

"We take for granted all the great new things we can do in communications today and we don't want to worry about whether the network is going to let us down when we may need it most. We leave that to the service providers to worry about," says Philippe Morin, president, Nortel's Metro Ethernet Networks business unit. "But we're approaching the point where optical networks could hit a wall of limitations, governed by the basic laws of physics. And, if the quality of real-time communications is affected as a result, it'll get everyone's attention - fast."

All information like videos, VoIP and multimedia services is converted into tiny packets of light to be transmitted across the fiber-optic threads of optical networks. In the same way a highway can only carry so many cars traveling at high speeds before everyone gets backed up in a huge traffic jam, networks also have limits to how much high-bandwidth information can be transmitted. As networks reach these limits

for the gigabit capacity critical to quality, real-time communications, streaming video can freeze or a VoIP conversation gets garbled and starts to break up.

Overcoming those limitations of physics in simple, affordable ways that many thought weren't possible just a few years ago, is where Nortel comes to the rescue. Backed by its 40-year pioneering history of R&D innovation with optical networks, Nortel has developed the industry's first optical technology that can deliver both 40G and 100G network capacity, enabling four times the network throughput immediately, while providing the foundation to simply and affordably increase capacity ten-fold as required. For example, where a current network speed of 10G can support the bandwidth of 1000 HDTV channels simultaneously, that increases to 4,000 channels with 40G and 10,000 for 100G, speeding up downloads from hours to minutes.

Nortel's new 40G to 100G technology achieves these breakthrough milestones through simple 'plug and play' technology components added to existing 10G networks. The components allow carriers to get much more bandwidth from fiber already in use, without the need for new, expensive equipment to keep information powered up over thousands of kilometers. Other approaches require costly gear that can carry the information light signals less than half the distance of the Nortel technology.

"One misconception about the unused capacity within today's networks from the big build out of fiber in the late 1990s is that it could just be lit up to handle the surge in bandwidth demand," says Dino DiPerna, leader of Nortel's Metro Ethernet Networks R&D. "But not all fiber is created equal. While the quality of some fiber is fine at 2.5G or even 10G, it can distort communications signals at 40G and more. If, for example,

it's not perfectly round or the quality of glass isn't consistent, then the effectiveness of transmitting light signals can be reduced."

Also, when the increased amounts of information, or bandwidth, required to reach 40G is packed into the same fiber space as 10G, the different spectrums of light used to transmit it can overlap, mix together or bits lag behind. In the fiber-optic realm, where lasers are pulsing information out at billions of times per second, even one picosecond delay -- one millionth of one millionth of a second - can mess up the signal. The farther the light signal travels without passing through equipment that cleans it up and puts it back together, with a boost of speed for the next leg of its journey, the more distorted it becomes.

Rather than trying to make information go four times faster to reach 40G which makes fiber quality issues even worse, Nortel developed innovative approaches for packing four times the amount of information into the same 10G transmission speeds that already are working well in today's networks. For example, instead of 10 cars speeding together as one unit through one lane of highway, now 40 cars occupy the same space. And, similar juggling within light frequencies will get a 40G network to 100G.

But getting four times the information to its destination also means the equipment that cleans up the signals and keeps it powered over thousands of kilometers has to be super-fast and efficient to handle four times the amount of processing. With patent pending, Nortel invented a chip for electronic dispersion compensation (eDCO) that can figure out the errors in signals that developed over 2,000 kms, fix them and send a clean signal on its way.

"In 2005, when Nortel first announced eDCO - the approach we are taking for 10G, 40G, 100G - and the chip that

we were designing to make it possible, people said it couldn't be done, particularly using electronic techniques within less than perfect fiber," says DiPerna. "Researchers even published critical papers saying why our chip wouldn't work but we have 6,000 of them in use with customers today and they are functioning just as we planned."

Overall, operators are embracing Nortel's new 40G technology, creating momentum in the market with numerous network trials underway globally. Verizon Business recently purchased ultra long haul (ULH) optical equipment, which supports emerging 40G services, to enable

high-bandwidth applications and deliver increased network capacity across Europe. TDC Denmark's leading provider of communications solutions, is deploying a new 40G-ready optical solution initially to carry TDC European network traffic across the United Kingdom, the Netherlands and Germany. Neos, a leading service in the U.K., is deploying a 40G solution to provide bandwidth-on-demand to its customers.

The ground-breaking significance of Nortel's 40G to 100G solution is the result of innovation and perseverance from every one of the 130-person R&D team that has been driving its development for the

past few years.

DiPerna recalls how the path to Nortel's 40G solution actually began in the late 1990s when demand for bandwidth seemed to be almost limitless. "Nortel has a very long history of breaking through high-speed transport barriers," he says. "In fact, at Telecom 99 in Geneva, we demonstrated 80G transmission between Geneva and Paris. Although it proved we could reach those high speeds, we quickly realized that using traditional methods for achieving these higher bit rates was very complex and required significant extra cost and engineering to deploy. As a result, we fundamentally

changed our approach to 40G and higher speed optical transport development."

"The strength of Nortel's optical portfolio has been our ability to innovate and introduce solutions that are truly disruptive in the marketplace," says DiPerna. "Our 40G technology is a great example of our team's ability to think completely out of the box to overcome technical issues our competitors thought were unsolvable with a 'never-take-no-for-an-answer' attitude. Customers are excited by our ability to offer a 40G deployable solution now, and they recognize it gives us a lead in breaking the 100G barrier as well." 

## Airports Rail Projects on Track

**E**ven after Tampa International Airport converted two economy parking lots to six-storey garages, congestion remained a nightmare. But help might be on the way in Tampa — and in many other airports around the nation.

USA Today reports the airport set aside a 3.5-mile corridor on airport property for a light-rail system that it wants built to ease traffic.

"We don't want to continue building more and more and more parking," Tampa Airport executive director Louis Miller said. "We're totally out of room."


Many airports are finding themselves in a similar situation and are looking to new rail systems to ease roadway congestion and also to cut pollution by giving passengers and workers an alternative to driving.

In at least a dozen cities including Dallas, Denver and Seattle, transit agencies are

building or planning rail lines that would connect some of the nation's busiest airports to downtown areas up to 25 miles away. That could more than double the number of airports with rail service and make getting to an airport easier.

In Denver, the Regional Transportation District projects that a proposed 24-mile light-rail line will take travelers from downtown to the city's airport in about 38 minutes — roughly the amount of time it now takes to make the drive. By 2025, the drive to the airport will take 50 minutes.

"What's really driving this is roadway congestion, the inability to add lanes and to add roads," said Dick Marchi, head of policy and regulatory affairs for the Airports Council International.

"High gas prices are a sweetener that makes rail more acceptable to the public." 


## BAA Airports to be Run by 'Tube Man'

**B**AA has turned to the London Underground for a second time in a month to fill a key management position at the airports operator. The Spanish-controlled company said it had appointed Stephen Peat as managing director for a new division running six of the group's seven airports.

He will oversee Gatwick, Stansted, Edinburgh, Glasgow, Aberdeen and Southampton - all of BAA's airports except Heathrow.

According to UK's Tele-

graph daily, Mr. Peat joins on July 1 from Amey, itself part of Ferrovial, BAA's controlling shareholder. He is operations director at Tube Lines, the consortium partly owned by Amey that is responsible for regenerating the Jubilee, Northern and Piccadilly lines for London Underground.

His appointment follows that of Mike Brown, chief operating officer at London Underground, who will be BAA's new head of Heathrow. 


## Russian airlines switch to e-tickets?

**A**ccording to the International Air Transportation Association (IATA), e-tickets are faster and safer than paper ones.

The IATA says they are more difficult to counterfeit, and can't be lost.

The organisation says the

move to e-tickets will save the industry up to \$US 3 billion dollars annually.

But Russia's major airlines say they will have to continue issuing paper tickets alongside electronic ones, as some smaller airports are still not ready for the change. 

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# Ground Realities Of Air Traffic



The majority of the world's airports are non-towered, with no air traffic control presence. However, at particularly busy airports, or airports with other special requirements, there is an air traffic control (ATC) system whereby controllers (usually ground-based) direct aircraft movements via radio or other communications links. This coordinated oversight facilitates safety and speed in complex operations where traffic moves in all three dimensions. Air traffic control responsibilities at airports are usually divided into at least two main areas: ground and tower, though a single controller may work both stations. The busiest airports also have clearance delivery, apron control, and other specialized ATC stations.

## Ground Control

This is responsible for directing all ground traffic in designated «movement areas,» except the traffic on runways. This includes planes, baggage trains, snowplows, grass cutters, fuel trucks, and a wide array of other vehicles. Ground Control will instruct these vehicles on which taxiways to use, which runway they will use (in the case of planes), where they will park, and when it is safe to cross runways. When a plane is ready to take off it will stop short of the runway, at which point it will be turned over to Tower Control. After a plane has landed, it will depart the runway and be returned to Ground Control.

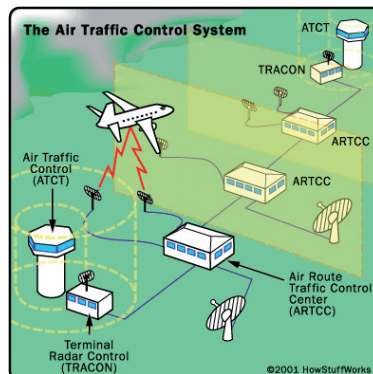
## Tower Control

This controls aircraft on the runway and in the controlled airspace immediately surrounding the airport. Tower controllers may use radar to locate an aircraft's position in three-dimensional space, or they may rely on pilot position reports and visual

observation. They coordinate the sequencing of aircraft in the traffic pattern and direct aircraft on how to safely join and leave the circuit. Aircraft which are only passing through the airspace must also contact Tower Control in order to be sure that they remain clear of other traffic.

## Traffic Pattern

All airports use a traffic



pattern (often called a traffic circuit outside the U.S.) to assure smooth traffic flow between departing and arriving aircraft. Generally, this pattern is a circuit consisting of five "legs" that form a rectangle (two legs and the runway form one side, with the remaining legs forming three more sides). Each leg is named (see diagram), and ATC directs pilots on how to join and leave the circuit. Traffic patterns are flown at one specific altitude, usually 800 or 1,000 ft (244 m or 305 m) above ground level (AGL). Standard traffic patterns are left-handed, meaning all turns are made to the left. Right-handed patterns do exist, usually because of obstacles such as a mountain, or to reduce noise for local residents. The predetermined circuit helps traffic flow smoothly because all pilots know what to expect, and helps reduce the chance of a mid-air collision.

At extremely large airports, a circuit is in place but not usually used. Rather, aircraft (usually only commercial with long routes) request approach clearance while they are still hours away from the airport, often before they even take off from their departure point. Large airports have a frequency called Clearance Delivery which is used by departing aircraft specifically for this purpose. This then

allows airplanes to take the most direct approach path to the runway and land without worrying about interference from other aircraft.

While this system keeps the airspace free and is simpler for pilots, it requires detailed knowledge of how aircraft are planning to use the airport ahead of time and is therefore only possible with large commercial airliners on pre-scheduled flights. The system has recently become so advanced that controllers can predict whether an aircraft will be delayed on landing before it even takes off; that aircraft can then be delayed on the ground, rather than wasting expensive fuel waiting in the air.

## Navigational Aids

Standard Visual Approach Slope Indicator There are a number of aids available to pilots, though not all airports are equipped with them. A Visual Approach Slope Indicator (VASI) helps pilots fly the approach for landing.

Some airports are equipped with a VHF omnidirectional range (VOR) to help pilots find the direction to the airport. VORs are often accompanied by a distance measuring equipment (DME) to determine the distance to the VOR. VORs are also located off airports, where they serve to provide airways for aircraft to navigate upon. In poor weather, pilots will use an instrument landing system (ILS) to find the runway and fly the correct approach, even if they cannot see the ground. The number of instrument approaches based on the use of the Global Positioning System (GPS) is rapidly increasing and may eventually be the primary means for instrument landings.

Larger airports sometimes offer precision approach radar (PAR), but these systems are more common at military air bases than civilian airports. The aircraft's horizontal and vertical movement is tracked via radar, and the controller tells the pilot his position relative to the approach slope. Once the pilots can see the runway lights, they may continue with a visual landing.

## Guidance signs

Airport guidance signs provide direction and information to taxiing aircraft and airport vehicles. Smaller airports may have few or no signs, relying instead on airport diagrams and charts.

## There are two classes of signage at airports, with several types of each:

**Operational guidance signs** Location signs - yellow on black background. Identifies the runway or taxiway currently on or entering.

**Direction/Runway Exit signs** - black on yellow. Identifies the intersecting taxiways the aircraft is approaching, with an arrow indicating the direction to turn.

**Other** - Many airports use conventional traffic signs such as stop and yield signs throughout the airport.

## Mandatory instruction signs


Mandatory instruction signs are white on red. They show entrances to runways or critical areas. Vehicles and aircraft are required to stop at these signs until the control tower gives clearance to proceed.

**Runway signs** - White on a red. These signs simply identify a runway intersection ahead.

## Frequency Change signs

- Usually a stop sign and an instruction to change to another frequency. These signs are used at airports with different areas of ground control.

## Holding Position signs

- A single solid yellow bar across a taxiway indicates a position where ground control may require a stop. If two solid yellow bars and two dashed yellow bars are encountered, this indicates a holding position for a runway intersection ahead; runway holding lines must never be crossed without permission. At some airports, a line of red lights across a taxiway is used during low visibility operations to indicate holding positions. 



# GALLERY OF AIRPORT SHOW 2008



*(L-R) Georges Hannouche & Ragi Bejjani, of Bayanat*



*Khalifa Al Zaffin talking to visitor at DWC Pavilion*



*Visiter's ar Reytheon Stall*



*Marc Michel & James Crisp of BCS Automation Engineering*



*Abdul Razzak Mikati with visitor in serious discussion*



*Visiters at Northrop Grumann*

Name	Country	Stand Nos
3M Rochford Thompson	UK	
ACO (Al Mostaqbal)	Germany	
ACR Gulf Limited	UK	
Acudor Products (Al Mostaqbal)	USA	
ADAC - Abu Dhabi Airports Company	UAE	
ADP Ingenierie (ADPi)	France	
AEROPORT EPINAL MIRECOURT	France	
AFTEC	UK	
Aigis Blast Protection	UK	
Aiport Tech.com	UK	
Air & MAK Industries INC (MakControls)	USA	
Air BP - BP Middle East	UAE	
Air-a-plane	USA	
Aircraft Support Industries	Australia	
Airport & Aviation Services (Sri Lanka) Ltd (AASL)	Sri Lanka	
Airport Equipment srl	Italy	
Airport Tech.com	UK	
Airports Authority of India (AAI)	India	
Airports Council International	Switzerland	
Airpotech (Division of GCSS)	UAE	
Al Amana Air Conditioning Trading Co. Ltd	UAE	
Al Jaber Asphalt & Lubricants LLC	UAE	
Al Mostaqbal Building Materials Trading Est	UAE	
Al Sayegh Brothers	UAE	
Al Shirawi Contracting (CCM)	UAE	
Al-Mulla Group (Opentec)	Kuwait	
Ales FZCO	UAE	
Alifabs (Countach)	UK	
Aljac Fuelling Componets (Meggitt)	UK	
Almex (Opentec)	UK	
ALPHA 55 (Figueras)	UAE	
Alpha Star Sanitaries & Tiles LLC	UAE	
Alphasource Trading (Bahraja Trading)	UAE	
ALTO General Aviation Services GmbH	Germany	
Amana Group	UAE	
American Science and Engineering, Inc.	USA	
Ammeraal Beltech Holding B.V	Germany	
AMT Datasouth Corporation (Opentec)	USA	
Ansir Systems (Asif Lighting)	Australia	
Ansul (Haven)	USA	
APC MGE	UAE	
APS Gulf	UAE	
Arconas (Gulf Business Foundation)	Canada	
Arempa International Limited FZE (Caddie)	UAE	
Argos Vip Private Handling srl	Italy	
ARINC	UK	
Arnold AG	Germany	
Asif Lighting Equipment	UAE	
AssureTec Systems Inc. (Opentec)	USA	
Astac	UK	
Astrophysics Europe	Italy	
ATG Airports	UK	
Atlas Telecommunications	UAE	
AUDAX-Keck GmbH	Germany	
AudioSoft	UK	
Augier SA (OCEM)	France	
Aura Light International AB (Cavotec)	Sweden	
Autronica (Haven)	Norway	
Avalon Academy	India	
Avery Hardoll Division of Meggitt	UK	
Aviation Consultants & Training	UAE	
Aviation Parts & Support Corporation	USA	
Aviation Resource Ltd	UK	
Aviation Zone (MADC)	India	
AviationJobSearch	UK	
AviaVox B.V.	Netherlands	
Avicorp Middle East	UAE	
Avtura	UK	
Axa Power APS	Denmark	
Axima Services	Belgium	
BAAB Doors (ME Insulation)	UAE	
Badi Pintura (Cloisall)	Spain	
Bahraja Trading LLC	UAE	
BarcoView - Traffic Management - ATC (Bayanat)	Belgium	
Bartsch International	Germany	
Bayanat Airports Engineering & Supplies	UAE	
BCS Conveyer Solutions Ltd.	Australia	
BEIJING BOWEI AIRPORT SUPPORT LTD. (Xinfa)	China	
Belgian Trade Centre (Flanders)	UAE	
Betafence	UAE	

Name	Country	Stand Nos
Bin Ghurair Trading (ME Insulation)	UAE	
Blast Deflectors Inc (GCSS)	USA	
Blue Lines	Iran	
Blue Stream Environmental Tech LLC	UAE	
Bond Communications	UAE	
Boryspil International Airport	Ukraine	
Bosch Security Systems	UAE	
BOUYER	France	
Broadway (Transnorm)	UAE	
Butzbach GmbH Hangar Doors	Germany	
C A Danaid A/S	Denmark	
C.C.M. srl	Italy	
CA Danaid	Denmark	
CAA	UK	
Cairo Airport Company	Egypt	
Carmanah Technolgies Corporation (GE Solar)	Canada	
Catcon	Germany	
Cavotec Middle East FZE	UAE	
CEM Systems	UK	
CGT (Cavotec)		
China Public Security Publisher/	Hong Kong	
China Aviation Security Journal		
CIAT AIRPORTS	France	
City Gourmet	UAE	
Civil Aviation Affairs	Bahrain	
Civil Aviation Authority	Sudan	
Civil Aviation Authority	Uganda	
Civil Aviation Authority of Nepal	Nepal	
Civil Aviation Authority Pakistan	Pakistan	
Clipsal Middle East FZC	UAE	
Cloisall Co. LLC	UAE	
CNA Integrated Technologies LLC	Singapore	
CNS Systems AB	Sweden	
Cobham	UK	
Colson Transportwielen B.V.	Netherlands	
Combi (Bahraja)	Japan	
Combi Box System (Avicorp)	Sweden	
COMBITHERM GmbH	Germany	
Conrac MENA FZE	UAE	
Continental Industrie - Marechal Electric (Avicorp)	France	
Conrac GmbH	Germany	
Controlware GmbH	Germany	
Cooper (Haven)	UK	
Cooper Crouse-Hinds LLC	UAE	
Copperchase Limited	UK	
Corgan Dy.	UK	
Cortec (United Corrosion)	USA	
Countach	UAE	
COWI	Denmark	
Crawford Middle East	UAE	
Crowcon (Haven)	UK	
CSE-International (BAG)	UK	
CTI Systems GmbH	Germany	
Custers Hydraulica B.V.	Netherlands	
Cyrus Group (Cavotec)	UAE	
Cytech	UK	
Daimler AG	Germany	
Damarel Systems (Opentec)	UK	
Dan Dryer A/S	Denmark	
Danish Airport Group	Denmark	
Danish Export Association	Denmark	
Dar Al Handasah (Shair and Partners)	UAE	
Data Capture Systems (Intermec)	UAE	
Datastrip	UK	
DCC Doppelmayr Cable Car	Austria	
DEBBAS Electric (Schmidt)	UAE	
DEDIENNE AEROSPACE	France	
Densit Aps	Denmark	
DESCHAMPS	France	
Digital Images Intl. Pty. Ltd. (Opentec)	Australia	
Dilogos (Flanders)	Belgium	
DIRICKX Groupe	France	
DISYC S.A. DE C.V.	Mexico	
Djibouti International Airport	Djibouti	
Dnata (Emirates Group)	UAE	
Douglas Equipment Ltd. (Generex)	UK	
Dreger Consulting (Controlware)	Germany	
DSR Ltd. (Ales)	Hungary	
Dubai Airport Free Zone Authority	UAE	
Dubai Airports	UAE	

Name	Country	Stand Nos
Dubai Aviation City (DWC)	UAE	
Dubai Aviation Club (DCA)	UAE	
Dubai Cargo Village (DCA)	UAE	
Dubai Duty Free (DCA)	UAE	
Dubai International Hotel (DCA)	UAE	
Dubai Logistics City (DWC)	UAE	
Dubai Police/Avsec centre	UAE	
Dubai Technology Partners LLC	UAE	
Dubai World Central	UAE	
DV Tel	UK	
Eastern Trading (Tyco Thermal)	UAE	
ecoGSE GmbH (Proveo)	Germany	
Efaflex GmbH & Co. KG	Germany	
Efla	Finland	
EGIS AVIA	France	
Egsa Alser - Algeria Airports	Algeria	
Electrophysics (Atlas Telecom)	UK	
Elgin Sweepers (Generex)	USA	
Emirates Airline (Emirates Group)	UAE	
Emirates Glass LLC	UAE	
Emirates Group	UAE	
Emirates Neon Group	UAE	
EMPIC GmbH (Munich Airport)	Germany	
Enav	Italy	
Energy International Corp - Aviation Division	UAE	
Ensto Czech (Transcon)	Czech Republic	
ERA Corporation	USA	
ERNI Licht-Technik AG (NIVATEC)	Switzerland	
ESR Technology FZCO	UAE	
Eubiq Middle East FZC	UAE	
Eurofurniture s.r.l.	Italy	
Eurotec Projects Development (AXA Power)	Denmark	
Excel Industrial Co. Ltd.,	UAE	
Exhibitions India	India	
ExtraCo Fibre Glass & Prefab Houses LLC.	UAE	
FAC (Farnborough Aerospace Consortium)	UK	
Fahrion Produktionssteme GmbH & Co. KG	Germany	
Ferfor (DTP)	Spain	
FiberNet (United Corrosion)	Italy	
Figueras International Seating S.A	Spain	
FKI Logistex	Denmark	
Flames (Avicorp ME)	USA	
Flanders Investment & Trade	Belgium	
Flowcon International	Denmark	
Flughafen Munchen GmbH (Munich Airport)	Germany	
Fluid Control Trading	UAE	
Flyport development GmbH	Germany	
FMC Technologies	UAE	
FOD BOSS (Generex)	Australia	
Frequentis AG	Austria	
FS Walker Hughes (Bayanat)	UK	
Fujairah International Airport	UAE	
Fyber Sens (Atlas Telecom)	USA	
GATE - German Airport Technology & Equipment	Germany	
GATE GSE	France	
GBA Products (Meggitt)	UAE	
General Authority of Civil Aviation (GACA)	Saudi Arabia	
General Civil Aviation Authority (GCAA)	UAE	
Generex Avio	Lebanon	
GERFLOR	France	
German Airport Technology and Equipment (GATE)	Germany	
German Federal Ministry of Economics & Technology	Germany	
GeSecurity	UAE	
GESolar FZ LLC	UAE	
Gilardoni SpA	Italy	
Glidepath	New Zealand	
Globe Uniforms llc	UAE	
Goldhofer Aktiengesellschaft	Germany	
Group 4 Securicor	UAE	
Gulf Airports Services Association	UAE	
Gulf Business Foundation	UAE	
Hale Hamilton (Valves) Ltd	UK	
Hamburg Messe & Congress	Germany	
Harlan Global Manufacturing (Avicorp)	USA	
Haven Fire & Safety LLC	UAE	
Helios Technology Ltd. (FAC)	UK	
Herz	Austria	
Hobart Ground Power	USA	
Hoelt & Wessel (Opentec)	Germany	
Honeywell (BAG)	UK	

Name	Country	Stand Nos
Honeywell Airport Systems GmbH	Germany	
Hort & Wessel	Germany	
Host Systems	UK	
HTS Worldwide (FAC)	UK	
Hummel GmbH & Co. KG	Germany	
HYDRO-Geraetebau GmbH & Co. KG	Germany	
Hygood (Haven)	UK	
IAVNA -International Airport Visual & Navigational Aids Ltd (Asif Lighting)	UK	
ICC	UK	
ICM	Germany	
ICM Airport Technics (DTP)	Germany	
IER	France	
Ikan Media Fz LLC/Construction World (ME)	India	
Ikusi - Angel Iglesias, S.A.	Spain	
Industry Networks	UAE	
INECO-TIFSA	Spain	
Infinova (Zio)	USA	
Infologic Nederland B.V (Al Sayegh)	Netherlands	
Inform GmbH	Germany	
Ingersoll Rand Security Technologies	UAE	
Insight Media/Airport World & Asia-Pacific Airports	UK	
Inter-Roller Engineering Limited	Singapore	
Interlabels	UAE	
Intermec Technologies Middle East	UAE	
International Air Transport Association	Canada	
International Security Technology Ltd. (Opentec)	China	
ITP Business Publishing/Aviation Business & CW	UAE	
Jane>s International Airport Review	UAE	
JBK-BICC (Tyco Thermal)	Qatar	
Jeppesen Australia Pty Ltd. (Bayanat)	Australia	
Jewers Doors Limited	UK	
Kabul International Airport	Afghanistan	
Kaphs S.A.	Switzerland	
Kazarooi Trading Company (Wanzl)	UAE	
Keri Systems Incorporated (Zio)	USA	
Key Publishing/Airport International	UK	
Khartoum New International Airport (KNIA)	Sudan	
King Hussein International Airport	Jordan	
KLIA INFORMATIK SDN. BHD	Malaysia	
Koninklijke Boon Edam Group Holding B.V.	Netherlands	
Kusch+Co Sitzmobelwerke GmbH & Co KG	Germany	
L-3 Communications	UK	
Lavi Industries - Beltrac (Generex)	USA	
Lechmotoren GmbH	Germany	
Lenzlinger (Fahrion)	Germany	
Leoni-Studer Cable (Energy Intl.)	Switzerland	
LG Electronics (Al Sayegh)	Korea	
Lindner AG Lindner Airports	Germany	
Logan Teleflex (Axima)	UK	
LORD INGENIERIE	France	
LS Leaderflush Shapland (Al Mostaqbal)	UK	
Luxcom Technologies (Bayanat)	Canada	
Lyngsoe Systems	Denmark	
MACE (Royal Boon Edam)	UAE	
Macron Safety Systems (Haven)	UK	
Magnatech (Portec)		
Maharashtra Airport Development Co. Ltd	India	
Mak Controls & Systems Private Limited	India	
Marantec (ME Insulation)	USA	
Materna	Germany	
Matteograssi	UAE	
MEA Polymer Beton B.V.	Netherlands	
Media One	UAE	
Media One	UAE	
Media One	UAE	
Mediterranean Building Materials (Zoeffig & Co Ltd)	UAE	
Megadoor (Crawford)	USA	
Meggitt Fuelling Products	UK	
Mercator (Emirates IT) {Emirates Group}	UAE	
MEYERINCK (Cavotec)	Germany	
Middle East Insulation LLC	UAE	
Ministry of Transport & Aviation	Afghanistan	
Mototok International GmbH (Alto)	Germany	
MULAG Fahrzeugwerk	Germany	
Multi Electric	USA	
Munich Airport International	Germany	
MUSTHANE	France	
NAFFCO	UAE	
Nagpur Airport (MADC)	India	

Name	Country	Stand Nos
Nagpur Cargo Hub (MADC)	India	
National Paints Factories Co. Ltd.	UAE	
National Tiles & Block Co. Ltd	UAE	
National Trading & Projects Co.LLC (AXA Power)	Oman	
NATS	UK	
NAVCONTROL	France	
Nedap Middle East	UAE	
Nedap N.V.	Netherlands	
Neenah Foundry Co. (Al Mostaqbal)	USA	
Netherlands Airport Technology	Netherlands	
Newronge Enterprises Company	China	
NIVATEC EUROPOLES	Germany	
Nivatec Euro poles	Switzerland	
Nortel	UAE	
Northrop Grumman Mission Systems	UAE	
Novoferm Bgt (ME Insulation)	Netherlands	
OCEM Spa	Italy	
Omega Professional SRL	Italy	
Ooms Airport Technology Services	Netherlands	
Opentec Systems	UAE	
ORTEC B.V.	Netherlands	
Pacific Control Systems LLC	UAE	
Panasonic	UAE	
Panduit	UK	
Park Air Systems (Bayanat)	UK	
Pascall & Watson	UK	
Perma Pipes Middle East	UAE	
Permatex Middle East Trading (Sika)	UAE	
PERT Engineering (Portec)	Hong Kong	
Petroleum Nasional Berhad	Malaysia	
Phoenix Metal Products (Generex)	USA	
PML Plast GmbH	Sweden	
Portec Flomaster	USA	
Proveo GmbH	Germany	
Pyrolave (Countach)	France	
Pyrotenax (Tyco Thermal Controls)	UK	
Qeshm International Airport	Iran	
QinetiQ Airport Technologies	UK	
Queen Noor Civil Aviation	Jordan	
Qurum International LLC (Aigis Blast)	UAE	
R W Armstrong + Associates	UAE	
Rapid Access	UAE	
Ras Al Khaimah International Airport	UAE	
Raytheon	USA	
Real Time	UK	
Red Box (Avicorp ME)	UK	
Regula (Atlas Telecom)	Uzbekistan	
Remote Control	UK	
RESA	France	
Resalco (ME Insulation)	Netherlands	
RGB Consulting (C.C.M.)		
RHS Italia Spa	Italy	
Rice Lake Weighing Systems	USA	
Ricochet AS (Bayanat)	Norway	
Rochford Thompson (Opentec)	UK	
ROTOMOULding (Cloisall)	Austria	
ROYAL TARGET GENERAL TRADING (Gilardoni)	UAE	
S.T.E. Servizi Tecnici per l'Elettronica S.p.a.	Italy	
SABA Dinxperlo B.V.	Netherlands	
Saco Airport Equipment B.V.	Netherlands	
Safegate Group	UAE	
SAMIFI	France	
<b>SAP Media Worldwide Limited</b>	<b>India</b>	
<b>International Aerospace</b>		
SAT Consult (Transcon Ltd.)	Germany	
Satam / Bin Seddiq International	UAE	
SBAC /BAG	UK	
Schmidt Airport Equipment GmbH	Germany	
Schopf Maschinenbau GmbH	Germany	
Seal & Go B.V.	Netherlands	
SeaTrail LLC	UAE	
Segway	UAE	
Selex Sistemi Integrati	Italy	
Sell2Arabia	UAE	
Sensis Corp. (Bayanat)	USA	
Sharp Middle East (DTP)	Japan	
Shenzhen CIMC Tian Da Airport Support Ltd	China	
Sialkot Intl Airport Ltd. (SIAL)	Pakistan	
Sichuan HSQ Cooling Equipment Co. Ltd	China	
Siemens Airports	Germany	
Sika Korrosionsschutz GmbH	Germany	

Name	Country	Stand Nos
Silk Road Gen Trading	UAE	
Skysoft - ATM	Switzerland	
Smart Approach	UK	
SMG	UAE	
Smith Detection	UAE	
Snead and Associates	USA	
Solid Stone (Countach)	India	
Sovereign Publications Ltd.	UK	
Spanish Embassy	UAE	
Strojexport A.S (Transcon)	Czech Republic	
Subway International BV	USA	
Superior pipeline Fittings	UK	
Superior Pipeline Fittings (Al Mostaqbal)	UK	
Syrian Civil Aviation Authority	Syria	
Systems Controls Limited	New Zealand	
Systems Interface	UK	
TAC Europe (FAC)	UK	
Taha Al Fahim Group (Gilardoni)	UAE	
Tailor Made Systems Ltd. (Bayanat)	UK	
TCR Intl. (Flanders)	Belgium	
Techno Sky S.r.l.	Italy	
TechtradeDoors	Lebanon	
Tecnomech s.r.l.	Italy	
Tedopres Asia Pte Ltd	Singapore	
Tensator	UK	
THALES	France	
Thyssen Krupp	UAE	
Thyssen Lifts & Escalators LLC	UAE	
Tiger Profiles & Insulation LLC	UAE	
Timsan	Turkey	
TLD Europe	France	
TMS Photometrics Ltd. (Asif Lighting)	UK	
TOPEX	Romania	
Topsystem Systemhaus GmbH	Germany	
Touch Aviation (BAG)	UK	
TQ Systems (Munich Airport)	Germany	
Tracetek- Raychem (Tyco Thermal Controls)	Belgium	
Transcon Electronic Systems Ltd	Czech Republic	
TRANSNORM SYSTEM GmbH	Germany	
Tranzeo Inc. (Opentec)	Canada	
TREPEL Airport Equipment GmbH	Germany	
Tridum (Pacific Controls)	USA	
Trilectron	USA	
Tunisian Civil Aviation and Airport Authority (OACA)	Tunisia	
Tyco Thermal Controls	UAE	
U.A.E Contractors Association/Contractors News	UAE	
UAE General Civil Aviation Authority	UAE	
UBi France	France	
UFA Inc (Munich Airport)	Germany	
Ufis-AS (DTP)	Austria	
ULMER AERONAUTIQUE	France	
Unimark Inc. (Opentec)	USA	
UnionCamere Lazio	Italy	
United Corrosion Technologies	Jordan	
United Security	UAE	
USIMAT-SERMEEES	France	
Van Der Graaf	Canada	
Vanderlande Industries Nederland b.v.	Netherlands	
Vestergaard Company	Denmark	
Viessman Kaltetechnik	Germany	
Vision pacific Co	Thailand	
Vitrociset Spa	Italy	
Wanzl Metallwarenfabrik GmbH	Germany	
Water Blasting Technologies	USA	
Weber (Asif Lighting)		
Weigel Hochdrucktechnik GmbH & Co. KG	Germany	
Weihai Guangtai Airport Equipment Co. Ltd.	China	
WIBE AB (Cavotec)	Sweden	
Wilson Engineering	New Zealand	
Wings Electro (Avicorp)	USA	
Workbridge A/S	Denmark	
World Check	UK	
Xinfa Airport Equipment Ltd.	China	
Zacher (C&J Engg)	Germany	
Zamil Steel	Saudi Arabia	
Zeiss (Atlas Telecom)	UK	
Zio Technologies LLC	UAE	
Zoefitg & Co Ltd	UK	
Zuhair Fayeze Partnership	Saudi Arabia	