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Integration of Support Facilities in the Master Planning Process

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Master Plan Goals & Objectives

- Provide future Support Facilities based on the aviation forecast projections (20 yrs.).
- Requirements based on peak hour demand for passengers, aircraft operations, cargo tonnage and ultimate airfield geometry.
- Provide a balance in capacity between other airfield functional areas (terminal, airfield, landside, etc.).
- Provide for flexibility and expandability to meet changing demand levels.
- Determine the appropriate facility location on the airport.
- Incorporate future technologies and trends.





Major Airport Support Facilities

- Airport Maintenance
- Administration Offices
- Flight Catering
- Aircraft Maintenance
- Rescue & Fire Fighting
- Fuel Farm / Distribution System
- Air Cargo / Freight Forwarders
- Ground Service Equipment Staging & Storage
- Airport Data Centre
- Waste Consolidation Centre
- Police / Security



Comprehensive On-Airport Land Use Plan

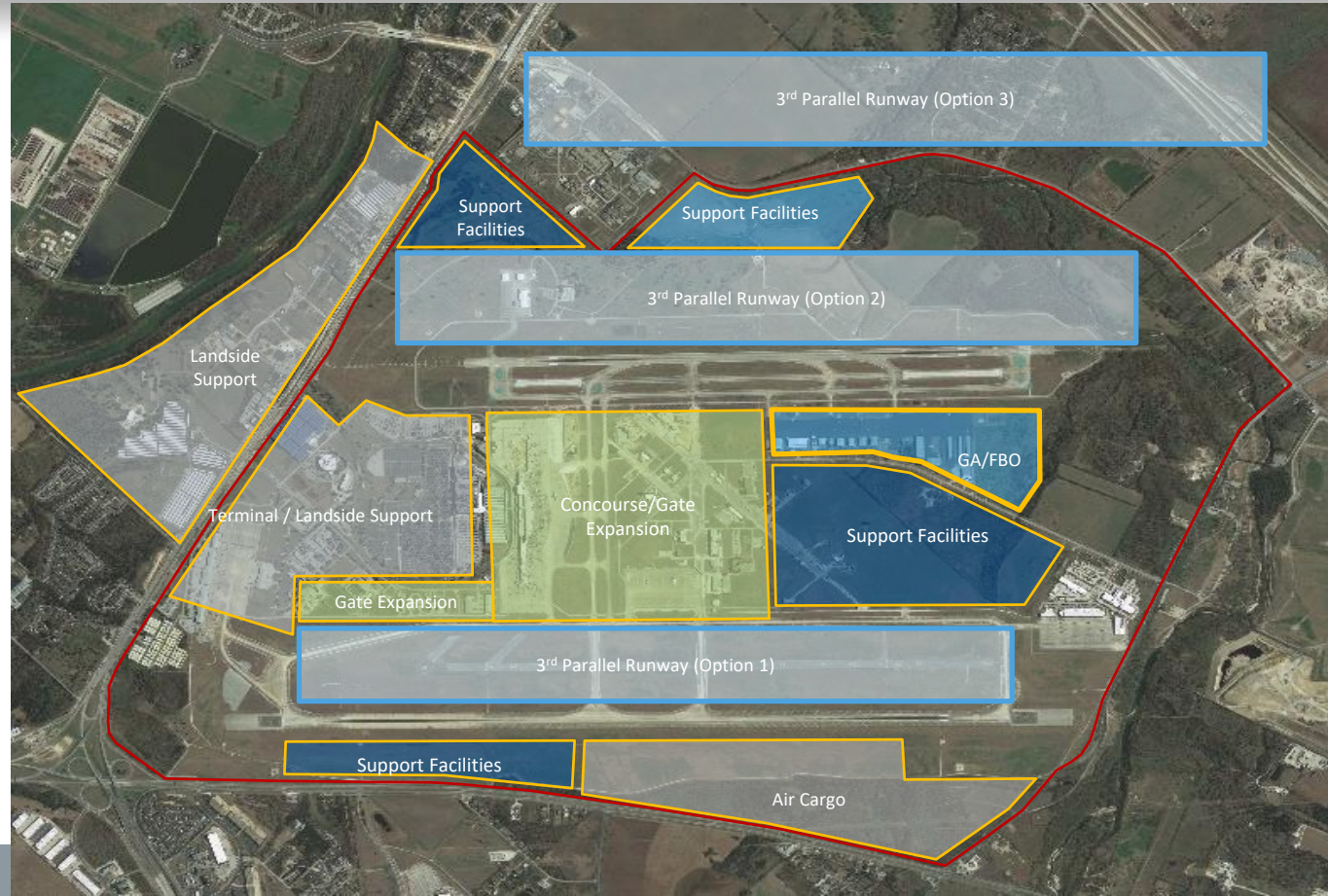
- On-Airport Land Use Plan based on the following key factors:
 - Airfield layout (runways, taxiways, and aprons)
 - Terminal and aircraft gate areas
 - Support facility requirements (5, 10, 15 and 20 years)
 - Proposed facility site locations (based on adjacency matrix)
 - Airport property boundary (consider potential land acquisition)
- Provide for future expansion capability beyond the forecast period.
- Provide for flexibility if the demand levels change.
- Provide for long-term site location if possible (meet life-cycle and cost-benefit).



Land Use Opportunities

Typical Land Use Categories:

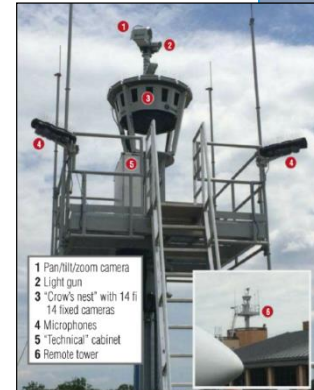
1. Airfield
2. Terminal Area / Support
3. Cargo
4. Airport / Airline Support
5. General Aviation
6. Military Area
7. Ground Access & Parking
8. Commercial Development
9. Environmental





What is the Future of Air Traffic Control?

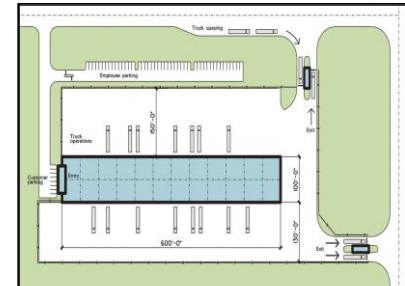
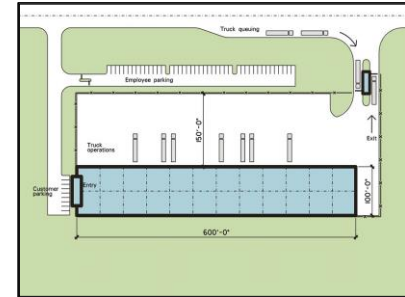
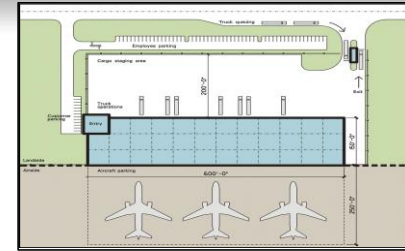
- Will there be the need for a physical Air Traffic Control Tower?
- Will all air and ground traffic be controlled and monitored via a “Virtual Tower” in the future?
- Use of cameras and thermal sensors to see if animals stray onto the runway.
- Infrared cameras can supplement images in rain, fog and snow.
- **Need to provide the flexibility for future new technologies!**





Air Cargo

- Understanding the type of cargo companies operating at the airport and their inter-relationships.
 - **Integrated Carriers** – transport freight from door-to-door using their own fleet of aircraft and trucks.
 - **Freight Forwarders** – act as brokers that link shippers with freight carriers; they coordinate the shipment of freight, but do not transport it.
 - **All Cargo Operators** – sell space to freight forwarders or individual companies and ship the air cargo on their aircraft.
 - **Combined Carriers** – carry both passengers and freight on a single aircraft, typically with a reconfigured cabin.
 - **Belly Freight Carriers** – carry cargo in the baggage compartment or belly of a passenger aircraft.





Aircraft Maintenance

- Provide for maintenance activities, including A, B, C and D Checks
- Each check is performed at specific intervals and requires special equipment and facilities, such as:
 - Maintenance Hangars
 - Wash Bays
 - Paint Hangars
 - Calibration Pad
 - Ground Run-up Enclosure
 - Apron

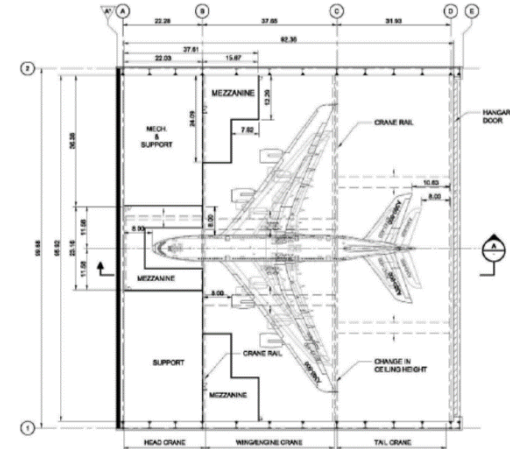


EXHIBIT A - plan
HEAVY MAINTENANCE HANGAR
(A330-300 & A340-600)

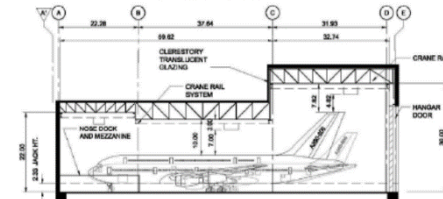
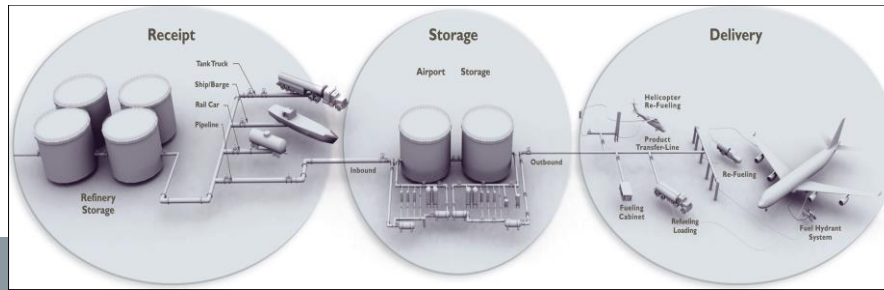


EXHIBIT A - section
HEAVY MAINTENANCE HANGAR
(A330-300 & A340-600)



Aircraft Fueling System

- Fuel Receipt Area – where incoming fuel is metered, filtered, tested and combined into a manifold to feed the fuel farm (usually off-airport).
- Fuel Farm Area – where fuel is stored and the hydrant depot is located (usually on-airport).
- Into-Plane Services Depot – provides staging for hydrant vehicles as well as operational management and welfare facilities.
- Hydrant Fueling System – trend to be at larger airports with fuel pits located under the aircraft wings and fueled via a fuel dispenser vehicle.





Facilities Implementation Plan

- Provides guidance on how to implement the findings and recommendations of the Master Planning effort.
- The facilities Implementation Plan needs to consider all of the airport's planned capital projects (even those not associated with the Master Plan).
 - 5-year Capital Improvement Program
 - Annual Maintenance Programs
 - Safety / Security Programs
 - Environmental / Sustainability Programs
- It must balance:
 - Airport funding constraints
 - Project sequencing limitations
 - Environmental processing / permitting requirements
 - Agency and tenant approvals
 - Tenant leases
 - Airport's financial plan (How much can the airport afford on an annual bases?)



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Southern African
(ESAF) Office
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(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok



THANK YOU

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