

# DEVELOPMENT AND EVOLUTION OF AIR TRAFFIC FLOW MANAGEMENT ATFM IN MÉXICO



Since the end of the 90's and beginning of the 21 century, operations within Mexico's Air space experienced a continuous growth. This situation had a significant impact in our air space, the saturation of 3 of the most important airports in our country was the first yellow flag that alerted us of this.



The authorities confronted the task of solving the congestion problem of the International Airport of Mexico City.

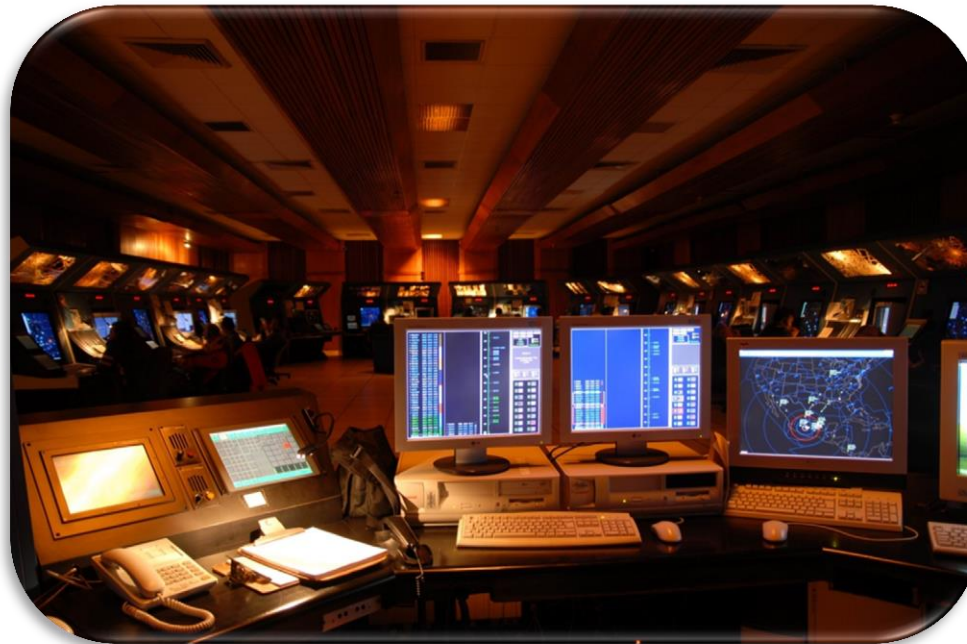
- Relocating general aviation from México City to Toluca airport.
- Restricting the operation of aircraft with speeds below 220KTS.
- Promoting the use of airports at Cuernavaca, Puebla and Queretaro.

These measures helped temporarily, the void left by the general aviation was taken up by commercial aviation.

Results.....

- Delays.
- Holding patterns, more than six hours per day, with an average of 30-40 minutes per aircraft.
- Excessive Fuel Consumption.
- Carbon Emissions
- Operating Costs.

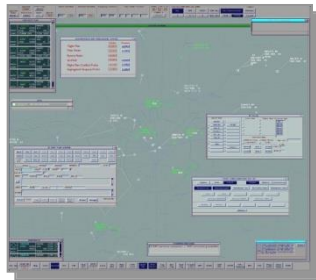
SENEAM took responsibility of this new situation and in February of 2002 established a new service named Flow Control. It began operations inside México's Air Traffic Control Center. It's primary function was to provide flow control services to Mexico's City airport arrivals and to prevent arrivals from exceeding capacity at the nations busiest airport. (AAR Airport Arrival Rate).



In order to accomplish this new task SENEAM created PROSAT, which is a homemade software system that aids the supervisors to make a pre-tactical decisions to sequence aircraft operations in blocks of 15 minutes. This tool in combination with the ETMS and the information provided by EUROCAT X, allows for better organization to the arrival sequence for aircraft bound into Mexico City International Airport.

# Information Flow

**EUROCAT X**



**Automatic  
ETMS**



**Manual / Automatic**

**PROSAT**



**AFTN**

Messages ATS  
 Airlines  
 OSIV's

**Automatic**

**SIAAT**



**Automatic  
SIAAT X**



**Automatic**

Due to the great success at Mexico's city airport, the service was implemented in other airports MMSD in November of 2004 and MMUN in October of 2005.

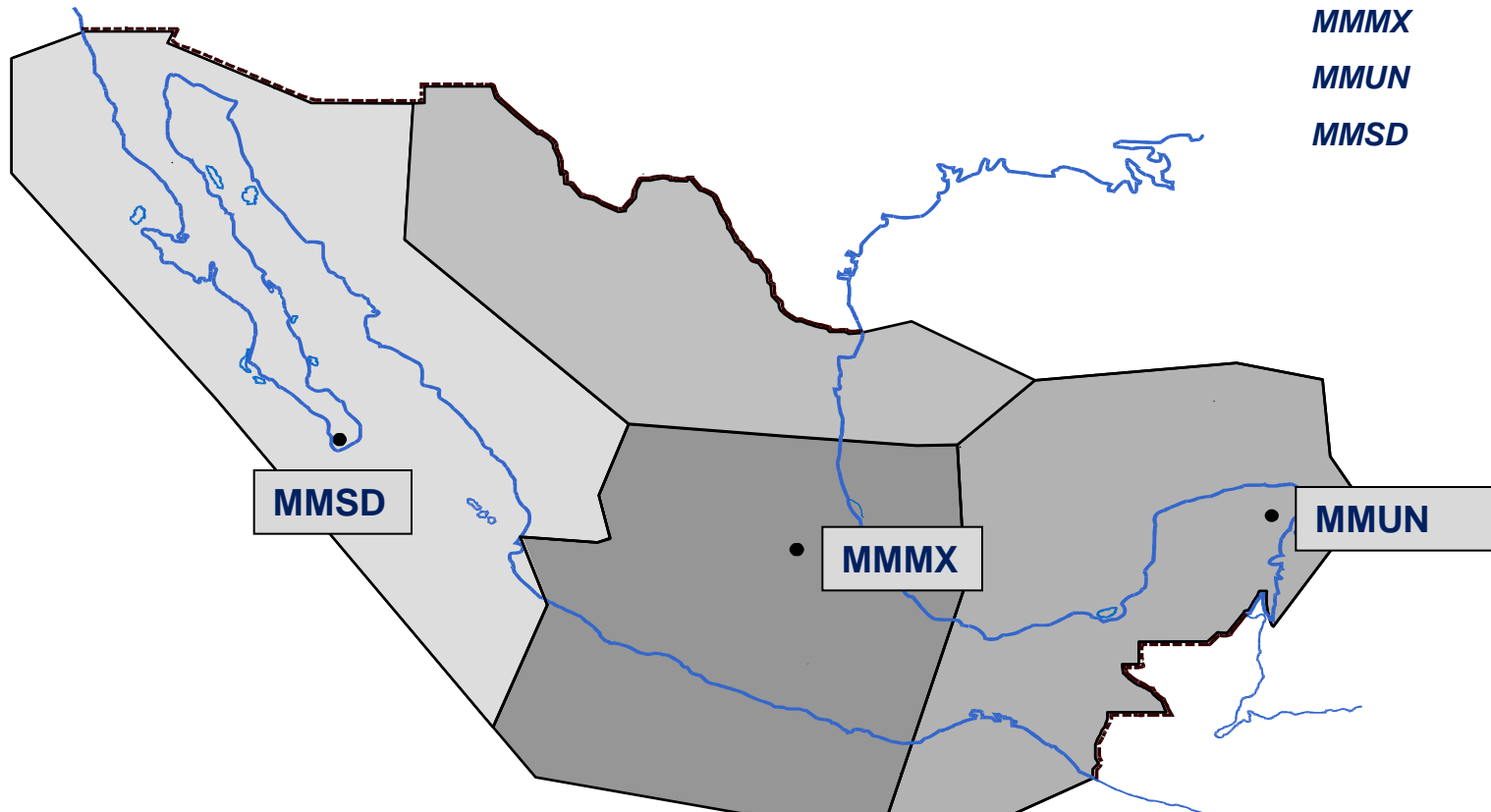
## AAR's

### FIRST PHASE

MMM

MMUN

MMSD



## **ATFM MEX DEVELOPMENT UPDATE**

The continued growth of the flow control system would not have been possible without the ICAO and FAA authorities, since 2005, we have been involved in frequent meetings that make the continued exchange of ideas and experiences possible.

## ATFM MEX DEVELOPMENT UPDATE

|                      |  |
|----------------------|--|
| <b>March 2005</b>    | <ul style="list-style-type: none"> <li>• <i>ICAO 1st ATFM NAM/CAR meeting in México City</i></li> <li>• <i>ATFM to MMSD</i></li> </ul>   |
| <b>March 2006</b>    | <ul style="list-style-type: none"> <li>• <i>ICAO 2nd ATFM NAM/CAR meeting at Tegucigalpa Honduras</i></li> <li>• <i>ATFM to MMUN.</i></li> </ul>   |
| <b>June 2006</b>     | <ul style="list-style-type: none"> <li>• <i>DG &amp; DGATA visited ATCSCC</i></li> </ul>   |
| <b>August 2006</b>   | <ul style="list-style-type: none"> <li>• <i>1st FAA ETMS Supervisors training</i></li> <li>• <i>México ATFM unit officially named CCFMEX</i></li> </ul>  |
| <b>November 2006</b> | <ul style="list-style-type: none"> <li>• <i>CCFMEX starts daily Telcons</i></li> <li>• <i>North American/ European ATFM Task Force, St Louis, Missouri, USA</i></li> <li>• <i>ICAO meeting at Lima Perú</i></li> </ul> |
| <b>December 2006</b> | <ul style="list-style-type: none"> <li>• <i>AAR National analysis</i></li> </ul>   |

## ATFM MEX DEVELOPMENT UPDATE

|                       |   |
|-----------------------|---|
| <b>March 2007</b>     | • <i>LOA between ATCSCC/CCFMEX</i>  |
| <b>July 2007</b>      | • <i>FAA/SENEAM 1st ATFM meeting at Mérida</i>  |
| <b>August 2007</b>    | • <i>CCFMEX officially in AIP</i>   |
| <b>September 2007</b> | • <i>SCV National analysis</i>  |
| <b>October 2007</b>   | • <i>ATFM information to ACC's Supervisors</i>  |
| <b>December 2007</b>  | • <i>WATRS RNAV routes, Miami meeting</i><br>• <i>ATCSCC telcon training at CCFMEX.</i> |

## ATFM MEX DEVELOPMENT UPDATE

|                      |  |
|----------------------|--|
| <b>February 2008</b> | <ul style="list-style-type: none"><li>• <i>Telcons conducted by CCFMEX</i></li><li>• <i>Gulf of México RNAV routes analysis by SENEAM</i></li></ul>  |
| <b>March 2008</b>    | <ul style="list-style-type: none"><li>• <i>FAA/SENEAM meeting at Monterrey, México LOA's of MTY-ZHU, MID-ZHU</i></li><li>• <i>SENEAM Gulf of México RNAV routes data exchange with FAA</i></li></ul> |
| <b>April 2008</b>    | <ul style="list-style-type: none"><li>• <i>GDL &amp; BJX ATFM meeting at GDL</i></li><li>• <i>ETMS training for SENEAM at ATCSCC, POTOMAC TRACON &amp; Dulles TWR</i></li></ul>                      |
| <b>May 2008</b>      | <ul style="list-style-type: none"><li>• <i>ICAO NACC/ WG/ 2 at Ocho Ríos, Jamaica</i></li></ul>  |
| <b>June 2008</b>     | <ul style="list-style-type: none"><li>• <i>2nd ATFM meeting NOC/FAA/SENEAM at Mazatlán</i></li></ul>   |

## ATFM MEX DEVELOPMENT UPDATE

|                      |   |
|----------------------|---|
| <b>July 2008</b>     | <ul style="list-style-type: none"><li>• <i>ICAO ATM/CNS/SG/6 meeting Sto. Domingo, D.R.</i></li><li>• <i>SCV analysis for Colombia, Cuba &amp; CENAMER.</i></li></ul>   |
| <b>August 2008</b>   | <ul style="list-style-type: none"><li>• <b><i>LOA's between MZT-LAX, MZT-ABQ, MTY-ABQ, TIJ-SOCAL</i></b></li><li>• <i>ETMS in MZT, MTY, MID, CUN &amp; SJD</i></li><li>• <b><i>ATFM Concepts Seminar in SENEAM (Colombia, COCESNA, Panamá, Cuba, FAA, IATA, DGAC)</i></b></li></ul> |
| <b>October 2008</b>  | <ul style="list-style-type: none"><li>• <i>GREPECAS 15th at Río de Janeiro, Brasil</i></li><li>• <i>Revision of LOA between ATCSCC &amp; CCFMEX</i></li></ul>   |
| <b>November 2008</b> | <ul style="list-style-type: none"><li>• <i>ATFM meeting at Lima, Perú</i></li><li>• <b><i>LOA's between Habana-MID, CENAMER-MID</i></b></li></ul>   |

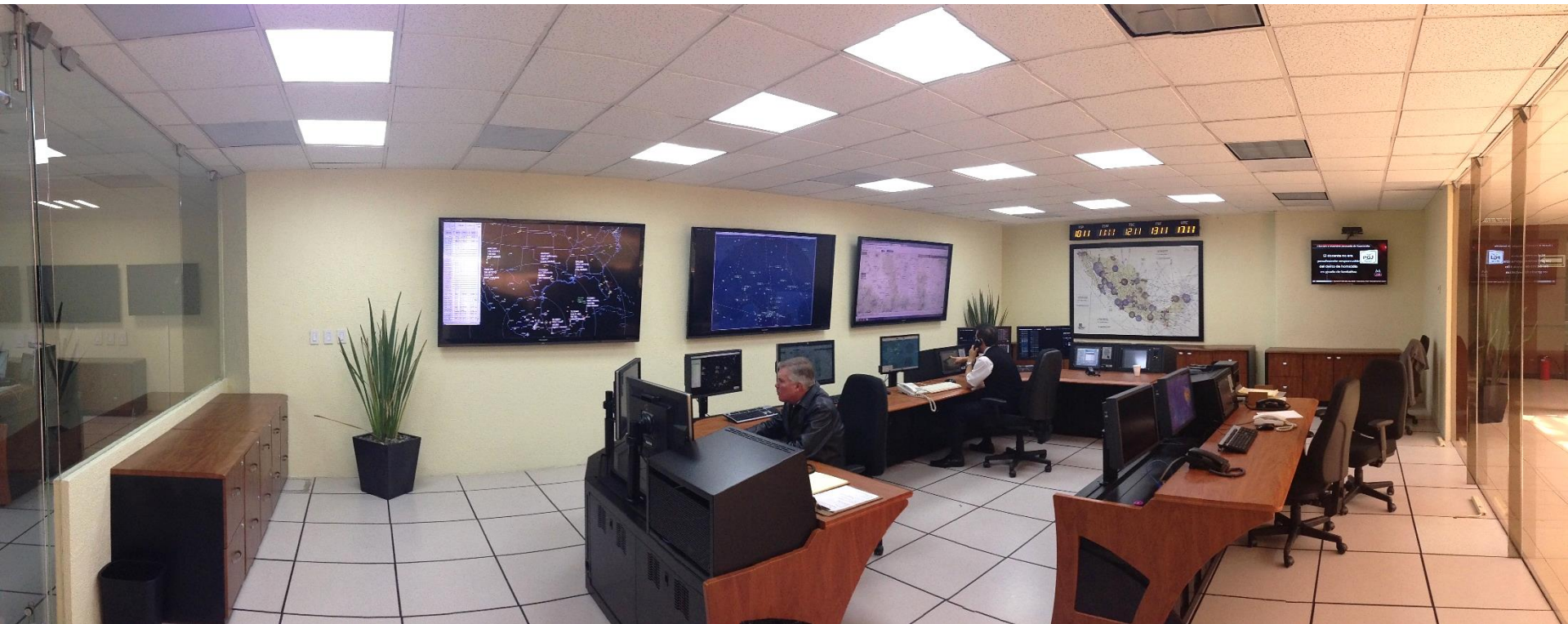
## ATFM MEX DEVELOPMENT UPDATE

|                      |   |
|----------------------|---|
| <b>February 2009</b> | • <i>Stakeholders at CCFMEX</i>   |
| <b>March 2009</b>    | • <i>March 2009 ATFM work-shop at Armenia, Colombia</i>   |
| <b>July 2009</b>     | • <i>3rd ATFM meeting NOC/FAA/SENEAM at GDL</i>   |
| <b>January 2013</b>  | • <i>Transition of the CCF MEX to SMART (Monitoring system, administration and regulation of air traffic)</i> |

# MONITORING, MANAGEMENT AND REGULATION SYSTEM OF AIR TRAFFIC



# SMART



## SMART Transition Plan

The transition plan is to comply with the objectives put forth by the SMART project and it is divided into 3 phases:

- ▶ **Phase I.-** Remove the CCF MEX from ACC MEX control floor, with the functions that have been put into place and a new specific location within the same building, equipped and conditioned with necessary state of the art technology complying with the needs of the following 2 phases.
  
- ▶ **Phase II.-** Implement new tools, operational manuals and necessary procedures to supplement the evolution of SMART to the national level, of which the ATFM, SMOT and the Crisis Center will be based out of the SMART unit.
  
- ▶ **Phase III.-** Develop operational and procedural manuals for the implementation of CDM (Collaborative Decision Making).

## Objective of SMART

- Serve as the Monitoring Control Center to the various units throughout the country that provide air traffic control services; where operational and functional information is concentrated that encompass all of the ATS units involved.
- Regulate air traffic to balance operational demand of arrivals taking into account capacity at the nation's (3) busiest airports which are México (MMMX), Cancún (MMUN) y San José del Cabo (MMSD) and any other airport throughout the country where an increase in demand is foreseen.
- Serve as a Crisis Center to all the services provided in case operations are impacted, concentrating and transmitting information and implementing directives to mitigate impact throughout the air traffic control system.

## Monitoring

### Essential information.-

- Local meteorological conditions and weather conditions for the corresponding terminal area.
- Operational conditions of the airport (impacts affecting movement area such as runways or taxiways that have certain restrictions or are closed).
- Operational conditions of the systems and tools (navaid failures, frequencies, radars, EUROCAT X AND SIAAT systems, etc.) Special Events that impact acceptance capacity (presidential visits, government forums, national security meetings and festivals, etc.)
- Pertinent technical and operational or personnel based information that could impact systemwide continuity of the services being provided.

# Monitoring Applications

Sistema Monitor Nacional de Servicios de Transito Aéreo.

Archivo Edición: Arial 8.0 Actualizar Información Acerca De...

EDITOR DE MENSAJES

BORRAR REGISTRO  BORRAR TODOS LOS REGISTROS 

## SISTEMA DE MONITOREO DE SERVICIOS DE CONTROL DE TRANSITO AEREO.



RELOJ  
UTC: 10/10/2013 18:02:47  
FECHA: 10/10/2013  
TURNO: C HORA: 13:02:47

CONTROLES DE MONITOREO DE AEROPUERTOS.

RECIBIÓ DEPENDENCIA ESTACIÓN  
GC     
REPORTÓ

REPORTE:

SEMÁFORO  PUBLICAR

VISUALIZAR  
 ETIQUETAS TWRS/AFIS  AFIS  
 TWRS  APPS  TMAS  ACCS

MODO MONITOR  
  1 Min. (12s)  10 Min.  
 1 Min. (15s)  1 Hr.  
 5 Mins.

# Monitoring Applications

Sistema Monitor Nacional de Servicios de Tránsito Aéreo.

Archivo Edición: Arial 8.0 Actualizar Información Acerca De...

EDITOR DE MENSAJES

BORRAR REGISTRO  BORRAR TODOS LOS REGISTROS 

## SISTEMA DE MONITOREO DE SERVICIOS DE CONTROL DE TRANSITO AEREO.



**Aeropuerto Internacional Del Bajío  
León, Guanajuato (BJX).**

**TWR:**  
1.- AERODROMO BAJO MINIMOS POR LLUVIA FUERTE EN LA ESTACIÓN.  
VISIBILIDAD 0 SM Y TECHO 100FT.

**TMA:**  
1.- PATRONES DE ESPERA SOBRE VOR BJJ, DISPONIBLE  
ALTITUDES DESDE 16000 FTS A 18000FTS.

**RELOJ**

UTC: **10/10/2013 17:56:38**

FECHA: **10/10/2013**

TURNO: **C** | HORA: **12:56:38**

**CONTROLES DE MONITOREO DE AEROPUERTOS.**

RECIBIÓ:  DEPENDENCIA:  ESTACIÓN:

GC:

REPORTÓ:

REPORTE:

SEMÁFORO:  PUBLICAR

**VISUALIZAR**

ETIQUETAS TWRS/AFIS  AFIS

TWRS  APPS  TMAS  ACCS

**MODO MONITOR**

  1 Min. (12s)  10 Min.

1 Min. (15s)  1 Hr.

5 Mins.

## Management

### Coordination-

- Certification of Safe Flight operations (CVS).
- Priority Aircraft Operations: Presidential aircraft, Heads of State, VIP's, ambulance, Medevac, search and rescue , humanitarian operations etc.
- Special Operations: National Security aircraft, organ transport, etc.
- Crisis Center for air traffic control services



8th  
Global ATFM  
Conference



{ 17 Countries }

# NEXT STEPS SMART

# PLANSA

Pendientes 2

| Dia Hora     | SLOT | Ident  | ETD_SLOT          | DOF    | ETD               | ADES |
|--------------|------|--------|-------------------|--------|-------------------|------|
| 26-Oct 18:48 | S    | SL1252 | 26-Oct-2014 20:38 | 141026 | 26-Oct-2014 20:51 | MMPT |
| 26-Oct 18:48 | N    | SL1924 | 01-Jan-1970 00:00 | 141026 | 26-Oct-2014 21:06 | PPPY |

Ident obs ADES

ETD\_SLOT ETD\_SOL

tipo Ident ETD ADES DOF

ETD\_PL5 ETD\_DLA

Eliminar Aplicar

00:00

Buscar

Manual Del Lst Cluster Marcas Sol / Lleno Cerrar LDCs

- 18:48 PPL SL1269 OK ETD 2029
- 18:48 PPL SL1460 OK ETD 2048
- 18:48 PPL SL1273 OK ETD 2050
- 18:48 PPL SL1313 OK ETD 1938
- 18:48 PPL SL1304 NO PPL SEN SLOT
- 18:48 PPL SL1252 P4 SLOT + 2655 SOL + 2
- 18:48 PPL SL1511 OK ETD 2000
- 18:48 PPL SL12414 OK ETD 2120
- 18:48 PPL SL12672 OK ETD 2125
- 18:51 PPL SL1222 OK ETD 2135
- 18:51 PPL AP9341 R2 DOF NO VALIDO 141031
- 18:52 PPL AD3254C R2 DOF NO VALIDO 141101

Oct 26 / 20:00 - 20:14

| slot  | Id      | ades |
|-------|---------|------|
| 20:00 | ARU4AAA | MMAA |
| 20:00 | TAD336  | MHCV |
| 20:00 | UAL718  | KSFO |
| 20:00 | VOL794  | MMTG |
| 20:05 | AD2765  | MMPR |
| 20:05 | SL1517  | MMBT |
| 20:05 | SL1555  | MMTG |
| 20:05 | SL1634  | KSAT |

Oct 26 / 20:15 - 20:29

| slot  | Id      | ades |
|-------|---------|------|
| 20:15 | AD2701  | MMAA |
| 20:25 | AMX647  | KLAX |
| 20:25 | AMX706  | MMHO |
| 20:25 | VIV3490 | MMPS |

114 PLANSA

| Id      | ades |
|---------|------|
| TAD144  | MMEP |
| AI12216 | MMML |
| AU2062  | KMIA |
| AU2691  | MMTG |
| TDS318  | KSNA |
| VIV2703 | MMML |
| AMX541  | MMTP |
| TAD615  | MMLC |

21:00 - 21:14

| slot  | Id      | ades |
|-------|---------|------|
| 21:15 | AD2803  | MMSD |
| 21:20 | SL12406 | MMVR |
| 21:20 | VOL780  | MMSD |
| 21:25 | SL1130  | MMLO |
| 21:25 | SL12536 | MMSP |

Oct 26 / 21:15 - 21:29

| slot  | Id      | ades |
|-------|---------|------|
| 21:30 | AMX464  | KJFK |
| 21:30 | CM135   | MMTO |
| 21:35 | AD2505  | MMCE |
| 21:35 | AMX188  | MMTJ |
| 21:35 | LPE2620 | SPM  |
| 21:35 | SL1166  | MMCL |
| 21:40 | AD2982  | MUHA |

Oct 26 / 21:30 - 21:44

| slot  | Id      | ades |
|-------|---------|------|
| 21:30 | AD2253  | MMOJ |
| 21:35 | AMX252  | MMGL |
| 21:45 | AMX928  | MMMY |
| 21:50 | AU2410  | MMTJ |
| 21:50 | GHT784  | MMJN |
| 21:50 | SL12442 | MMCP |
| 21:55 | AU2553  | MMVR |

Oct 26 / 21:45 - 21:59

| slot  | Id      | ades |
|-------|---------|------|
| 21:45 | AD2312  | MMJN |
| 21:45 | AMX252  | MMGL |
| 21:45 | AMX928  | MMMY |
| 21:50 | AU2410  | MMTJ |
| 21:50 | GHT784  | MMJN |
| 21:50 | SL12442 | MMCP |
| 21:55 | AU2553  | MMVR |

23:00 - 23:14

| Id      | ades |
|---------|------|
| AU2534  | MMVA |
| SL12690 | MMDO |
| VOL762  | MMHO |
| SL12036 | MMOX |
| SL12474 | MMNL |

Oct 26 / 23:15 - 23:29

| slot  | Id      | ades |
|-------|---------|------|
| 23:15 | AMX227  | MMMD |
| 23:15 | AMX571  | MMJN |
| 23:15 | CLX779  | MMGL |
| 23:15 | SL12524 | MMMT |
| 23:20 | SL12688 | KDHW |
| 23:20 | SL12568 | MMZ0 |
| 23:25 | SL12636 | MMAS |
| 23:25 | AD12957 | KSAT |
| 23:25 | SL1118  | KJAH |

Oct 26 / 23:30 - 23:44

| slot  | Id      | ades |
|-------|---------|------|
| 23:30 | AU2116  | MMNY |
| 23:30 | TAO463  | MMJA |
| 23:35 | AD3783  | MMZ0 |
| 23:35 | AMX018  | SPM  |
| 23:35 | SL1482  | MMPA |
| 23:40 | VIV1705 | MMNY |

Oct 26 / 23:45 - 23:59

| slot  | Id      | ades |
|-------|---------|------|
| 23:45 | AMX126  | MMGL |
| 23:45 | AMX932  | MMNY |
| 23:45 | SL1210  | MMOJ |
| 23:45 | TAO330  | MMCV |
| 23:50 | AU2530  | MMMD |
| 23:50 | TAO7101 | MMCE |
| 23:50 | VOL747  | MMGL |
| 23:50 | VOL774  | MMAA |

Grid of 48 slot status cards for Oct 27 and Oct 26. Each card shows slot number, pins, and lms.

| Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 00:00 - 00:14 | 00:15 - 00:29 | 00:30 - 00:44 | 00:45 - 00:59 | 01:00 - 01:14 | 01:15 - 01:29 | 01:30 - 01:44 | 01:45 - 01:59 | 02:00 - 02:14 | 02:15 - 02:29 | 02:30 - 02:44 | 02:45 - 02:59 |
| slot 3        | slot 9        | slot 6        | slot 9        | slot 5        | slot 11       | slot 4        | slot 5        | slot 4        | slot 4        | slot 0        | slot 10       |
| pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        |
| lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 8/9       | lms 7/8       | lms 5/6       |

| Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        | Oct 27        |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 03:00 - 03:14 | 03:15 - 03:29 | 03:30 - 03:44 | 03:45 - 03:59 | 04:00 - 04:14 | 04:15 - 04:29 | 04:30 - 04:44 | 04:45 - 04:59 | 05:00 - 05:14 | 05:15 - 05:29 | 05:30 - 05:44 | 05:45 - 05:59 |
| slot 9        | slot 6        | slot 9        | slot 6        | slot 5        | slot 3        | slot 6        | slot 3        | slot 0        | slot 0        | slot 0        | slot 13       |
| pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        |
| lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     |

| Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        | Oct 26        |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 21:00 - 21:14 | 21:15 - 21:29 | 21:30 - 21:44 | 21:45 - 21:59 | 22:00 - 22:14 | 22:15 - 22:29 | 22:30 - 22:44 | 22:45 - 22:59 | 23:00 - 23:14 | 23:15 - 23:29 | 23:30 - 23:44 | 23:45 - 23:59 |
| slot 5        | slot 5        | slot 10       | slot 7        | slot 9        | slot 5        | slot 10       | slot 5        | slot 5        | slot 5        | slot 7        | slot 13       |
| pins 0        | pins 2        | pins 1        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        | pins 0        |
| lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     | lms 13/14     |

Control interface for PLANSAT AICM. Includes buttons for 'Cerrar', 'LOCs', 'Breveos', 'Simulador AX', 'Fu0', 'Rech 2', and 'Sun 26-Oct-2014 20:07:49'. A table of flight data is visible at the bottom right.

| ddhhmm | OrEq      | Hsg  |
|--------|-----------|--|
| 311932 | MMWKS LIX | (FPL-SL12098-15-E190/M-SOMG/C-MWXX2020-NB) |
| 311933 | MMWKS LIX | (FPL-SL1405-15-E190/M-SOMG/C-MWXX2040-NB)  |
| 311934 | MMWKS LIX | (FPL-SL1278-15-E100/M-SOMG/C-MWXX2045-NB)  |
| 311935 | MMWKS LIX | (FPL-SL1313-15-E170/M-SOMG/C-MWXX1930-NB)  |
| 311936 | MMWKS LIX | (FPL-SL1924-15-E190/M-SOMG/C-MWXX2100-NB)  |
| 311937 | MMWKS LIX | (FPL-SL12522-15-E190/M-SOMG/C-MWXX2050-NB) |
| 311938 | MMWKS LIX | (FPL-SL1511-15-E100/M-SOMG/C-MWXX2020-NB)  |
| 311939 | MMWKS LIX | (FPL-SL12414-15-E145/M-SOMG/C-MWXX2120-NB) |
| 311940 | MMWKS LIX | (FPL-SL12072-15-E170/M-SOMG/C-MWXX2125-NB) |
| 311941 | MMWKS LIX | (FPL-SL1222-15-E100/M-SOMG/C-MWXX2135-NB)  |
| 311942 | KDENX LDX | (FPL-APX541-15-8757/M-SOE2E9G1RMV/S01-MW)  |
| 311943 | KDENX LDX | (FPL-AIT2546-15-A320/M-SOE1RMV/S-MWXX0025) |

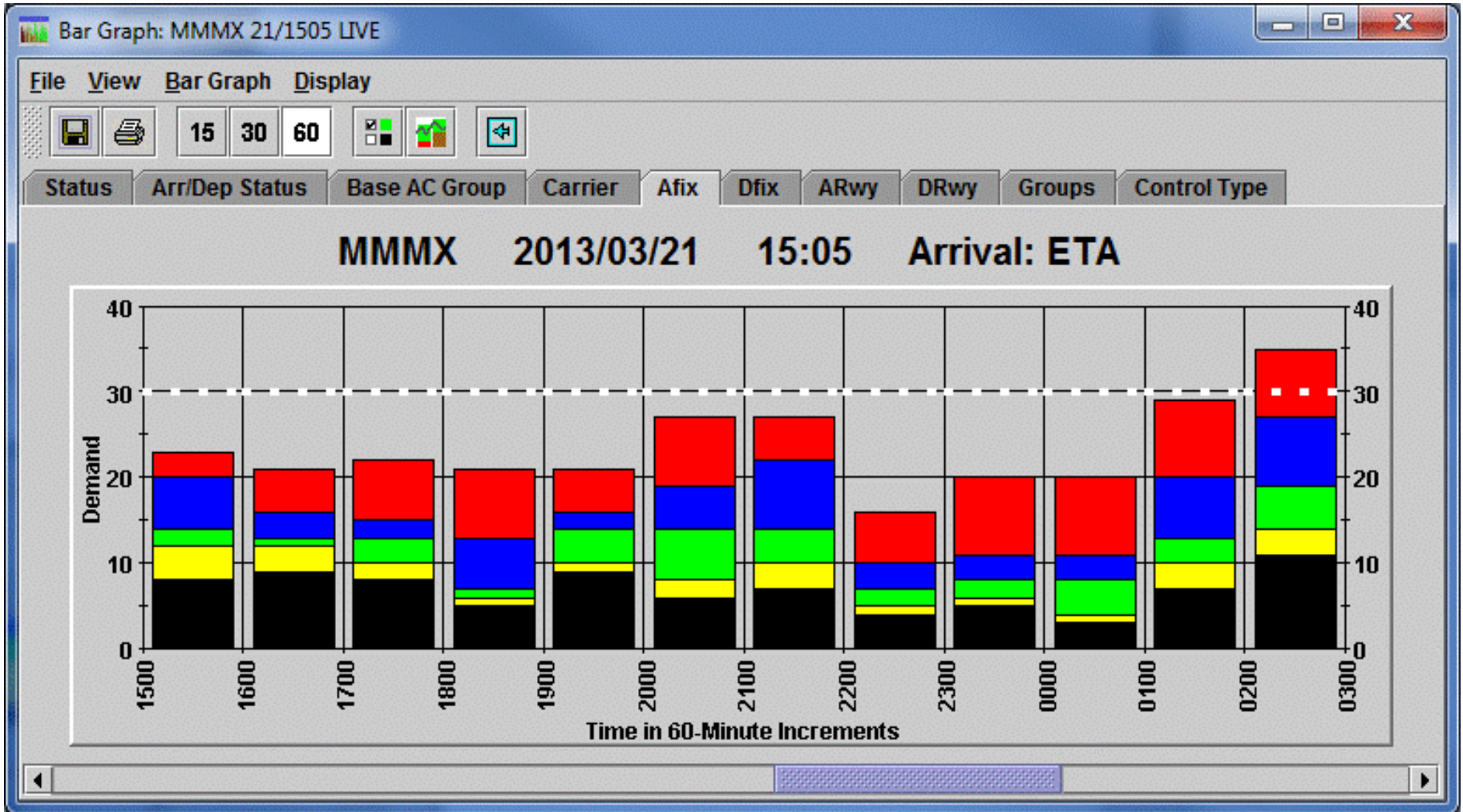
## Road Map Implementation of Departures Regulation of the AICM

|               |            |
|---------------|------------|
| TOTAL TIME    | XX days    |
| BEGINING DATE | 02/10/2014 |
| ENDING DATE   | xx/xx/xxxx |

| PHASE | NAME   | PERIOD IN DAYS | PRECEDENT PHASE | BEGINNING  | ENDING     |
|-------|--|----------------|-----------------|------------|------------|
| 1     | Installation of the software PLANSA in the SMART unit                            | 15             |                 | 02/10/2014 | 17/10/2014 |
| 2     | Training of the working crew of the SMART  | 1              | 1               | 27/10/2014 | 28/10/2014 |
| 3     | Operative review of the PLANSA application                                       | 5              | 2               | 28/10/2014 | 01/11/2014 |
| 4     | Internal simulations first phase   | 9              | 3               | 10/11/2014 | 18/11/2014 |
| 5     | Internal simulation second phase   | 8              | 4               | 19/11/2014 | 26/11/2014 |
| 6     | Working meetings with the AICM   | 30             | 1, 2, 3, 4 y 5  | 26/11/2014 | 29/12/2014 |
| 7     | External simulations   | 13             | 4, 5 y 6        | 27/11/2014 | 09/12/2014 |
| 8     | Simulations evaluation   | 39             | 4,5, 6 y 7      | 10/11/2014 | 20/12/2014 |
| 9     | Development of procedures and modification propositions to the regulations       | 48             | 4, 5, 6, 7 y 8  | 01/11/2014 | 26/12/2014 |
| 10    | Development of the require regulations by the authority                          | XX             | 7 y 8           | 26/12/2014 | Stand by   |
| 11    | Communication to the Airlines and stakeholders of the procedures and regulations | 6              | 9               | Stand by   | Stand by   |
| 12    | Training for the operative crew of the SMART unit                                | 7              | 4, 5, 6 y 7     | 26/12/2014 | 03/01/2014 |
| 13    | Beginning of the operations  |                | 10 y 11         | Stand by   | Stand by   |
| 14    | Supervising and making the necessary changes                                     | 60             | 12              | Stand by   | Stand by   |

## HARMONY

- Airbus ProSky presents a proposed proof of concept for the management of air traffic flow (ATFM).
- Concept test provides appropriate software for ATFM and CDM
- Metron Harmony provides the following principal functions:
  - Predict demand of ANSP-specified resources (e.g., airports)
  - Specify capacity of ANSP-specific resources (e.g., airports)
  - Monitor demand and capacity of ANSP-specified resources (e.g., airports)
  - Evaluate alternative TMIs to address demand-capacity imbalances
  - Perform CDM with stakeholders
  - Initiate, monitor, and modify TMIs for constrained resources
  - Record operational data
  - Report metrics and analyze performance
  - Perform Adaptation Management
  - Perform System Administration



Updated 21/1509 **MMMX Flight List**

Search for Airport:

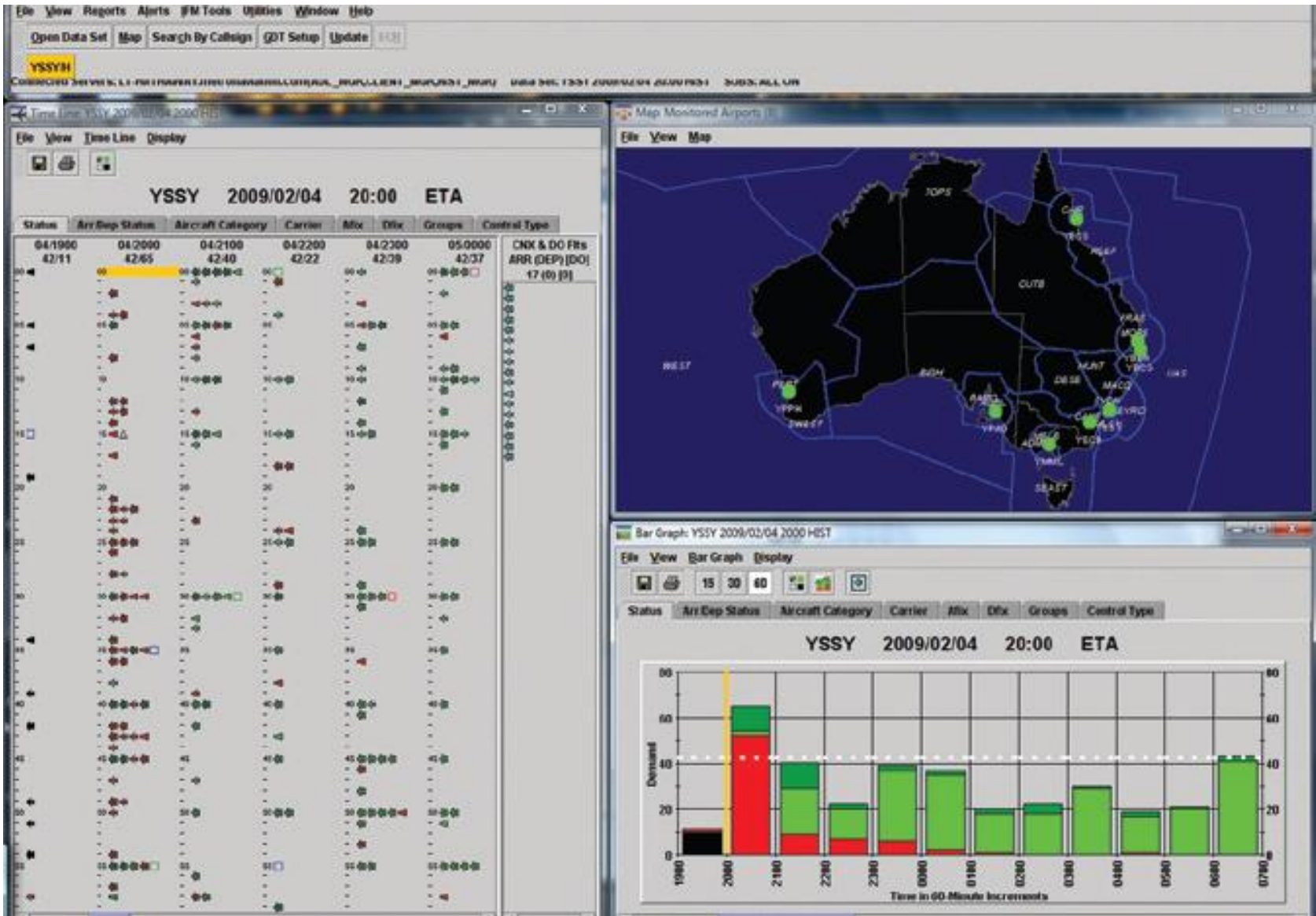
Display: **Arrivals & Departures**  Tower View

|   | ACID                    | Major | AC Reg  | Status  | ADEP | ADES | Elem Slot | Ctl Slot | ETD     | ETA     | EIBT    |
|---|-------------------------|-------|---------|---------|------|------|-----------|----------|---------|---------|---------|
| 1 | <a href="#">AMX540</a>  | AMX   | AMX540  | Arrival | MMUN | MMMX |           |          | 22/0739 | 22/0952 | 22/1000 |
| 2 | <a href="#">AMX401</a>  | AMX   | AMX401  | Arrival | KJFK | MMMX |           |          | 22/0549 | 22/1102 | 22/1110 |
| 3 | <a href="#">AMX683</a>  | AMX   | AMX683  | Arrival | KORD | MMMX |           |          | 22/0709 | 22/1117 | 22/1125 |
| 4 | <a href="#">IBE6401</a> | IBE   | IBE6401 | Arrival | LEMD | MMMX |           |          | 21/2339 | 22/1122 | 22/1130 |
| 5 | <a href="#">AMX191</a>  | AMX   | AMX191  | Arrival | MMML | MMMX |           |          | 22/0844 | 22/1132 | 22/1140 |
| 6 | <a href="#">AMX709</a>  | AMX   | AMX709  | Arrival | SKBO | MMMX |           |          | 22/0608 | 22/1132 | 22/1140 |
| 7 | <a href="#">AMX193</a>  | AMX   | AMX193  | Arrival | MMTJ | MMMX |           |          | 22/0839 | 22/1142 | 22/1150 |
| 8 | <a href="#">AMX491</a>  | AMX   | AMX491  | Arrival | KLAS | MMMX |           |          | 22/0808 | 22/1142 | 22/1150 |

- Active  
  - Pop-Up  
  - Active, Pop-Up

Page 1 of 8  
 Display: Up to 50 Results  
 Displaying 1 - 50 of 365







8th  
Global ATFM  
Conference



**Thank you!**