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# Airport Surface Detection Equipment Model X (ASDE-X)

ASDE-X Outreach Brief  
Aeronautical Charting Forum

April 29, 2004



# Agenda

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- System Equipment And Usage
  - ASDE-X Overview
  - Multilateration Subsystem
  - Display Subsystem
  
- ASDE-X Airport Sites
  
- Impact to Users
  
- Airport Diagram Notation Suggestions
  
- Contact List



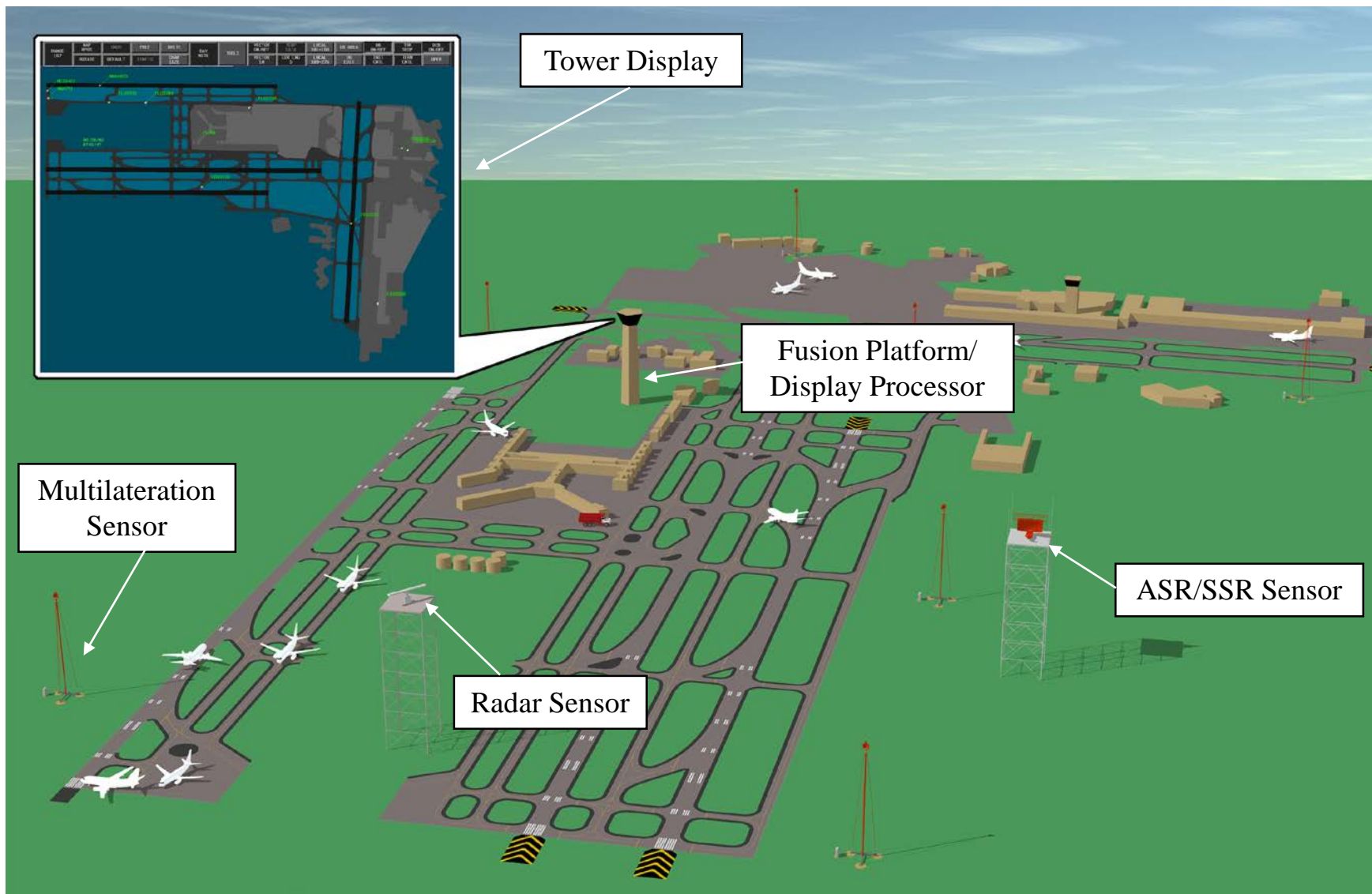
# What is ASDE-X?

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- Surface Movement Radar (SMR) - “Primary Radar”
  - X-Band Frequency Surface Movement Radar
- Multilateration/Automatic Dependent Surveillance-Broadcast (ADS-B) Sensor - “Secondary Radar”
  - Provides Position And Identification Of All Transponder Equipped Targets
- Automation
  - Multisensor Data Processor (MSDP) That Combines All Sensor Reports Into Single Track
- Air Traffic Control (ATC) Tower Display
  - New High Brightness, Flat Screen Tower Displays



# System Overview





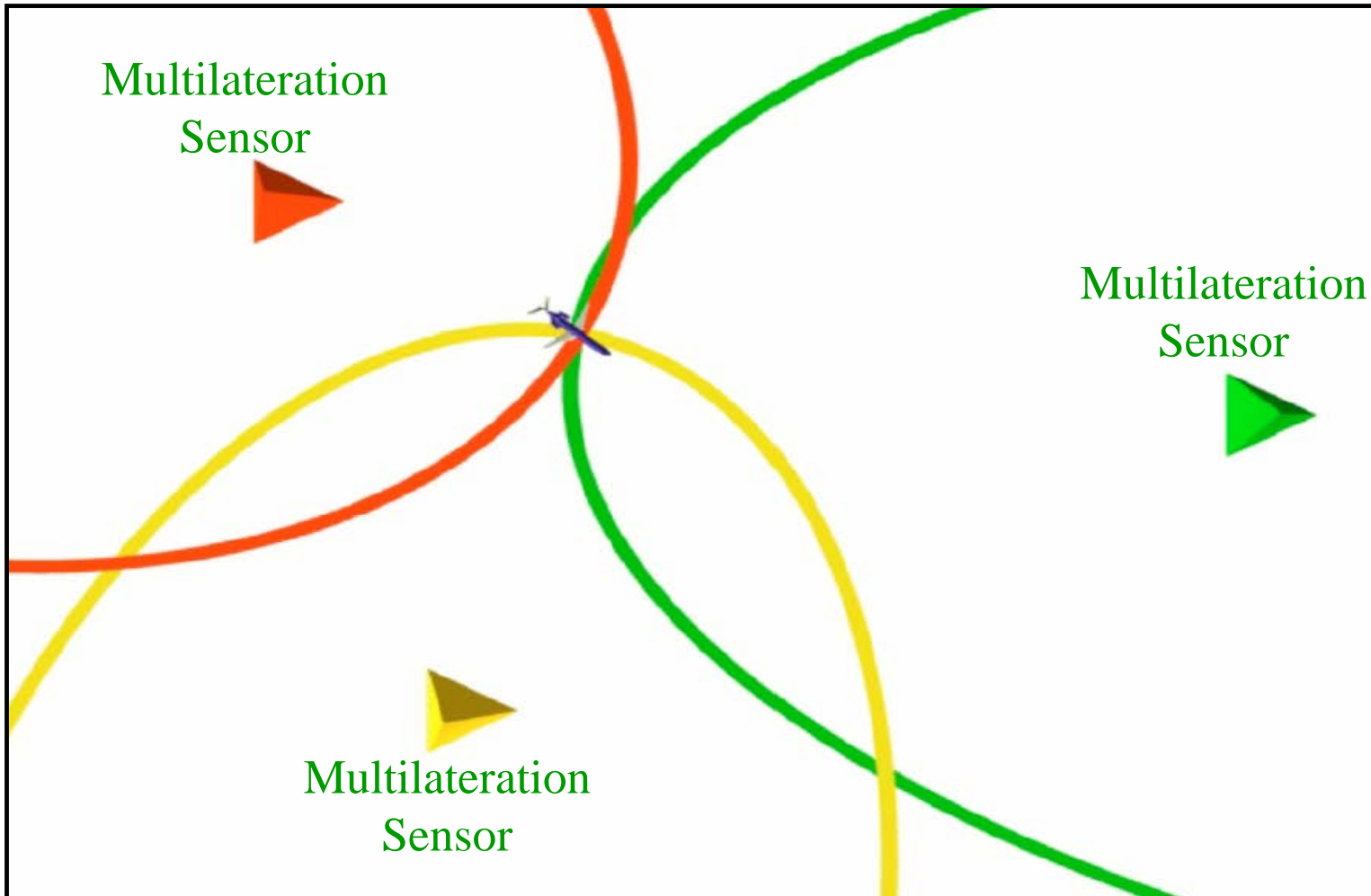
# Multilateration Subsystem Definition

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- Multilateration is the process of determining a transponder's location. By installing a collection of receiver antennas around the airport surface, ASDE-X notes the time each antenna “hears” a transponder squawk, and calculates the difference between these times through the use of triangulation.
- Assets
  - Compatible with Mode A/C, Mode S, and ADS-B Transponders
  - ASDE-X automatically obtains identification and location information from the aircraft’s avionics
  - No weather degradation
- Issues
  - Transponders must be turned on while operating on the runways and taxiways for the multilateration to determine the identification and location of aircraft



# Multilateration Subsystem, Continued

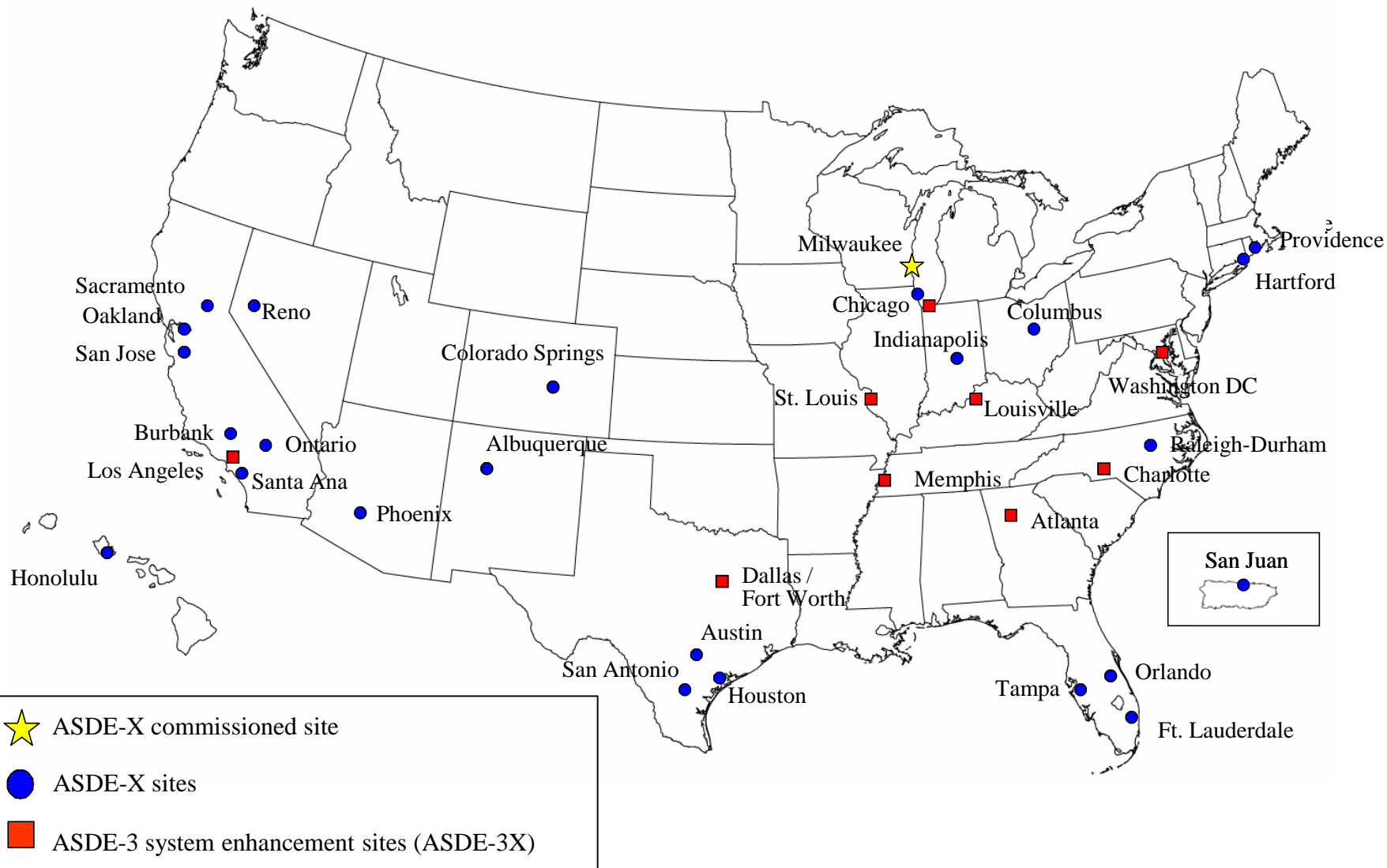






# ASDE-X Airport Sites

- A total of 34 sites will commission by FY 2007





# ASDE-X Priority List

Number	ID	Airport	ORD
1	MKE	General Mitchell International Airport (Milwaukee, WI)	10/30/03
2	PVD	Theodore Francis Green State Airport (Providence, RI)	Jul-04
3	MCO	Orlando International Airport	Sep-04
4	STL*	Lambert-St. Louis International Airport	Sep-04
5	SDF*	Louisville International Airport-Standiford Field	Sep-04
6	CLT*	Charlotte Douglas International Airport	Jan-05
7	DFW*	Dallas/Ft. Worth International Airport	Jun-05
8	HOU	William P. Hobby Airport (Houston, TX)	Sep-05
9	BDL	Bradley International Airport (Hartford, CT)	Oct-05
10	FLL	Ft. Lauderdale/Hollywood Airport	Jan-06
11	SJC	San Jose International Airport	Feb-06
12	SAT	San Antonio International Airport	Apr-06
13	ATL*	Hartsfield-Jackson Atlanta International Airport	May-06
14	HNL	Honolulu International - Hickam AFB Airport	May-06
15	PHX	Phoenix Sky Harbor International Airport	Aug-06
16	LAX*	Los Angeles International Airport	Aug-06
17	RDU	Raleigh-Durham International Airport	Aug-06

Number	ID	Airport	ORD
18	ORD*	Chicago O'Hare International Airport	Sep-06
19	MEM*	Memphis International Airport	Sep-06
20	SMF	Sacramento International Airport	Oct-06
21	IAD*	Washington Dulles International Airport	Nov-06
22	IND	Indianapolis International Airport	Nov-06
23	ONT	Ontario International Airport (Ontario, CA)	Dec-06
24	TPA	Tampa International Airport	Dec-06
25	MDW	Chicago Midway Airport	Jan-07
26	CMH	Port Columbus International Airport (Columbus, OH)	Jan-07
27	COS	Colorado Springs Municipal Airport	Feb-07
28	SNA	John Wayne - Orange County Airport (Santa Ana, CA)	Feb-07
29	AUS	Austin-Bergstrom International Airport	Mar-07
30	ABQ	Albuquerque International Sunport Airport	Mar-07
31	BUR	Burbank-Glendale-Pasadena Airport	Apr-07
32	SJU	San Juan International Airport	Apr-07
33	OAK	Metropolitan Oakland International Airport	May-07
34	RNO	Reno/Tahoe International Airport	Jul-07



# Impact to Users at ASDE-X Airports Upon Commissioning

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- Users will be requested to operate transponders while on ASDE-X airport runways and taxiways
- Current Notification
  - Message on ATIS
  - Instructions in pilot flight plans
  - Information Sharing by the ASDE-X Program Office



# FAA Actions

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## Office of Terminal Procedures (ATP)

- Letters sent to affected ASDE-X regions outlining the importance of notifying users. Notification could consist of one or more of the following:
  - Put message on ATIS
  - Issue a L-NOTAM
  - Issue a local Letter to Airmen
  - Update the Airport Facility Directory
- Generating Document Change Proposals (DCPs)
  - Update the Aeronautical Information Manual (AIM)
  - Update the Aeronautical Information Publication (AIP)
- Working to acquire funding to equip airport vehicles with transponders





# Contact List

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- ASDE-X website: [www.asdex.net](http://www.asdex.net)
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