

SERVICIOS A LA NAVEGACIÓN EN EL ESPACIO AÉREO MEXICANO ADS-B IMPLEMENTATION



SCT

SECRETARÍA DE COMUNICACIONES
Y TRANSPORTES

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1

Previous



Mexico as member of ICAO and in accordance with the 2013 – 2016 Activities. Plan of the Regional Technical Cooperation Project for the Caribbean Region – implementation of the Performance Based Air Navigation Systems for the CAR Region, have designed a implementation plan to install a first set of 10 ADS-B radio stations on strategic sites, to feed with ADS-B data meet DO-260 and DO- 260A and Asterix Cat 21 forward four ATM system in FDRG trough country.

The four ATM systems will be updated for accepting and processing ADS-B data and fusing with ATC radar sensors.

The implementation plan obey the need of increase safety and efficiency of air /ground operations, mainly about surveillance, separation, coverage redundancy and getting surveillance data in non radar areas.



Also, in parallel, SENEAM is working together FAA to develop and deploy of Automatic Dependent Surveillance – Broadcast (ADS-B) as a means of providing satellite based surveillance for air traffic control (ATC) systems that serve the Gulf of Mexico region. New ADS-B services will be beneficial to both parties in areas where radar coverage may be nonexistent or can be enhanced by ADS-B.



The joint use of ADS-B will enhance the development and performance of air traffic control and pilot applications. Safety levels, efficiency, and capacity will also be enhanced by providing new and expanded surveillance coverage for the airspace in the United States and Mexico.

2

SENEAM ADS-B Program

SENEAM is executing a plan to install 10 ADS-B stations at the next sites:

- 6 in Mexico Valley
- 1 in Southeast of Mexico
- 2 in Northeast of Mexico (Monterrey Terminal Airport)
- 1 in Radar station of Puerto Peñasco Sonora, at the Northwest of México

SENEAM is also executing a software updating in all four ATM systems based on each ACC:

Mérida:

The ATM system has been updated since Dec 4 2013, full ADS-B capable. One ADS-B station at Ciudad del Carmen, Campeche is on installation process. FAA ADS-B station on Mérida and Cancún will be installed on 2015, and operative until 2016.

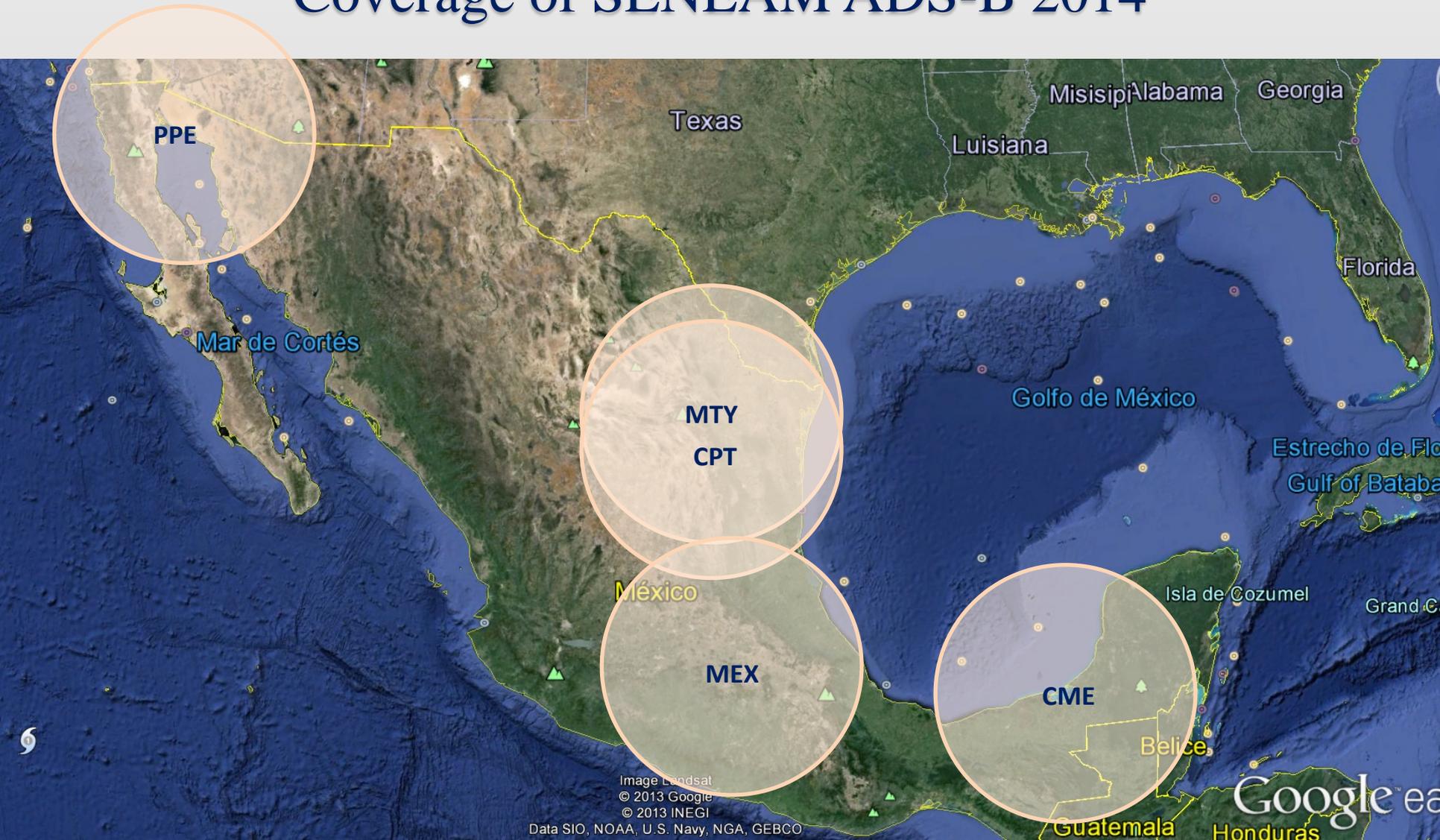
México:

Four ADS-B station are working and on testing process, and two more will be ready by the end of July. Data gathering is taking place to begin the evaluation for data integration on ATM systems (Radars and ADS-B sensors).

Monterrey & Mazatlán:

ADS-B software (MEDISIS) ,is testing on Test & Evaluation platform.

Coverage of SENEAM ADS-B 2014



Needs to be covered

- Surveillance of México Valley
- Air Traffic Control of Mexico City Airport Terminal Area
- Air Traffic Control of Helicopters flying over Mexico Valley
- Air Traffic Control of Monterrey Airport Terminal Area
- Surveillance redundancy on Puerto Peñasco station
- Air Traffic Control Area of Merida
- Surveillance of Helicopters flying from/to Oil Platform on Gulf of México

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SENEAM-FAA ADS-B Program

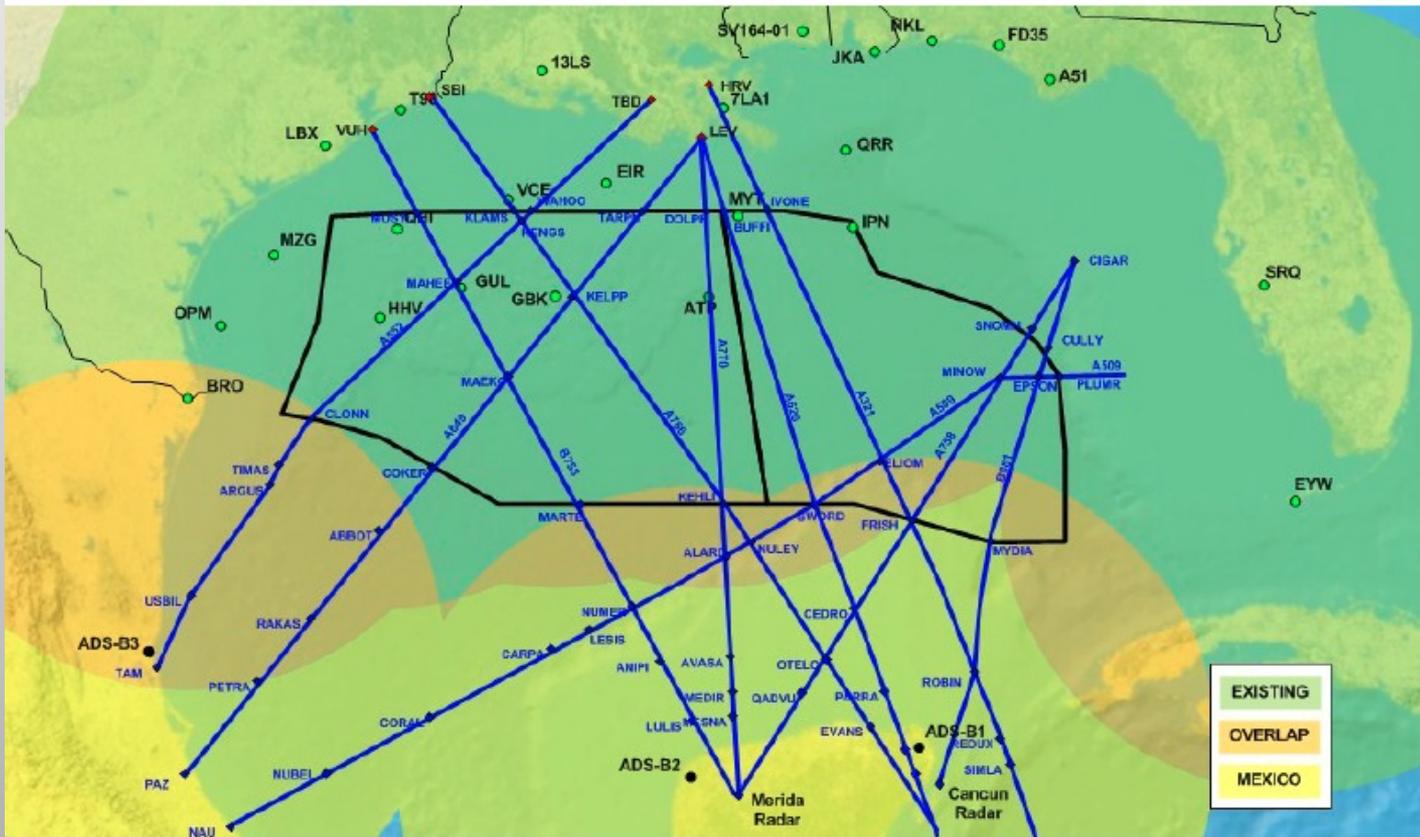
FAA-SENEAM Agreement ADS-B Stations

FAA-SENEAM Agreement consider install ADS-B stations:

- Tampico
- Mérida
- Cancún

FAA-SENEAM ADS-B forecasted coverage

Coverage with Proposed Radio Stations in Mexico at FL280

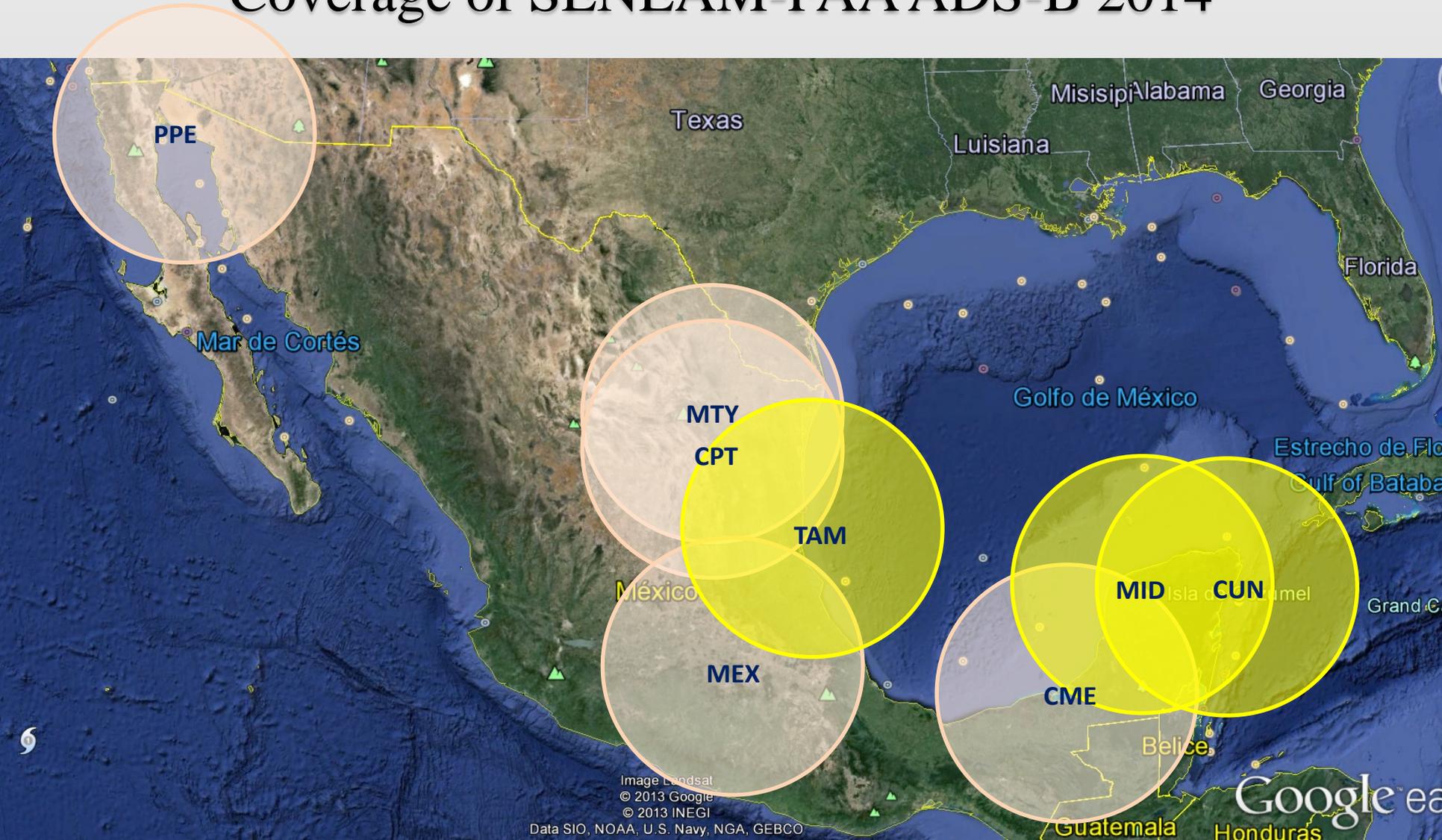


FAA – SENEAM ADS-B Project
Various Coverage Maps



Federal Aviation
Administration

Coverage of SENEAM-FAA ADS-B 2014



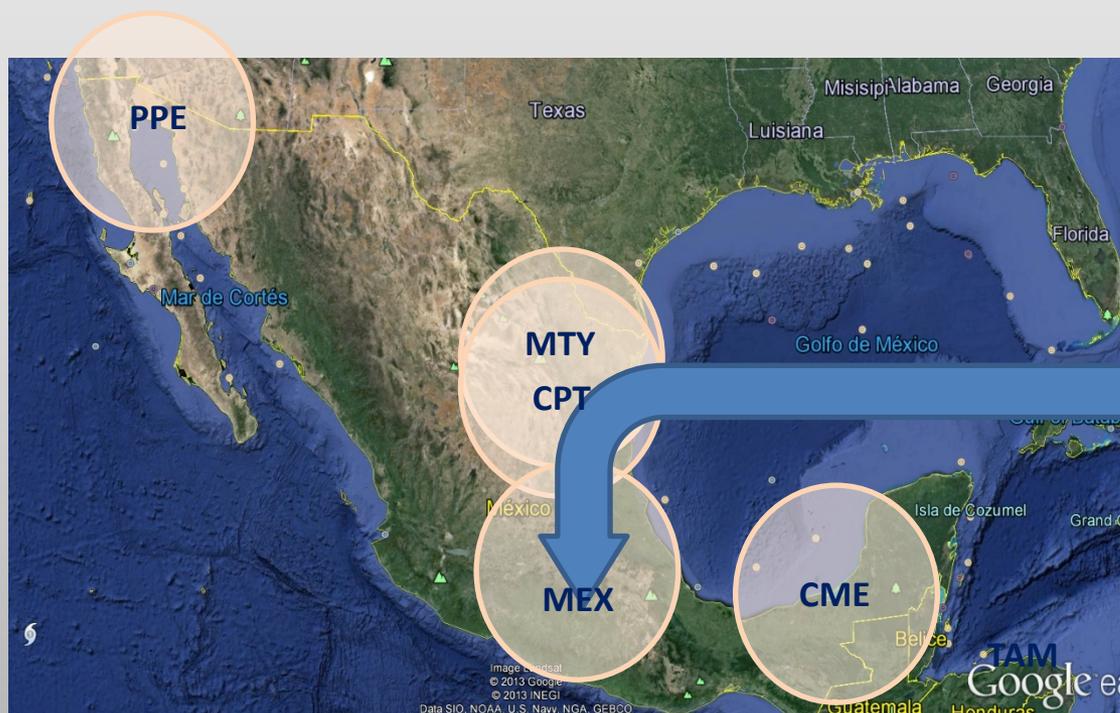
Needs to be covered

- Air Traffic Control Area of Merida, Cancún
- Complete surveillance of Helicopters flying from/to Oil Platform on Gulf of México
- Sharing data with FAA to have complete surveillance of Gulf of Mexico in order to enhance the Air Traffic Management between FDRG of both countries.

4

SENEAM ADS-B Schedule

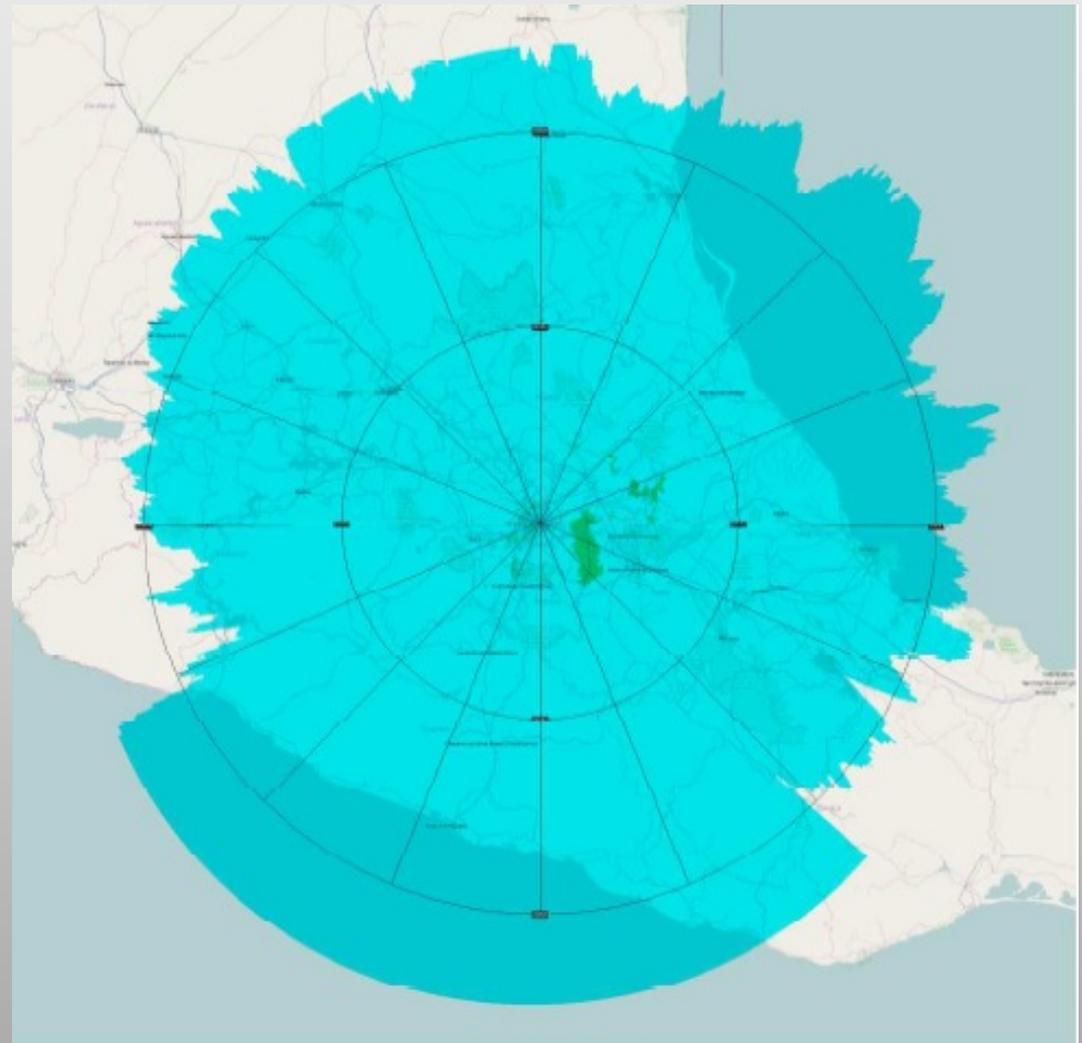
SENEAM ADS-B Schedule



Date	Site	ID
May 2014	Cerro Gordo	CGO
May 2014	Cerro Peñón	PEN
May 2014	AICM	MEX
May 2014	Toluca	TLC
2014	Ajusco	AJO
2014	Cerro Cathedral	CAT

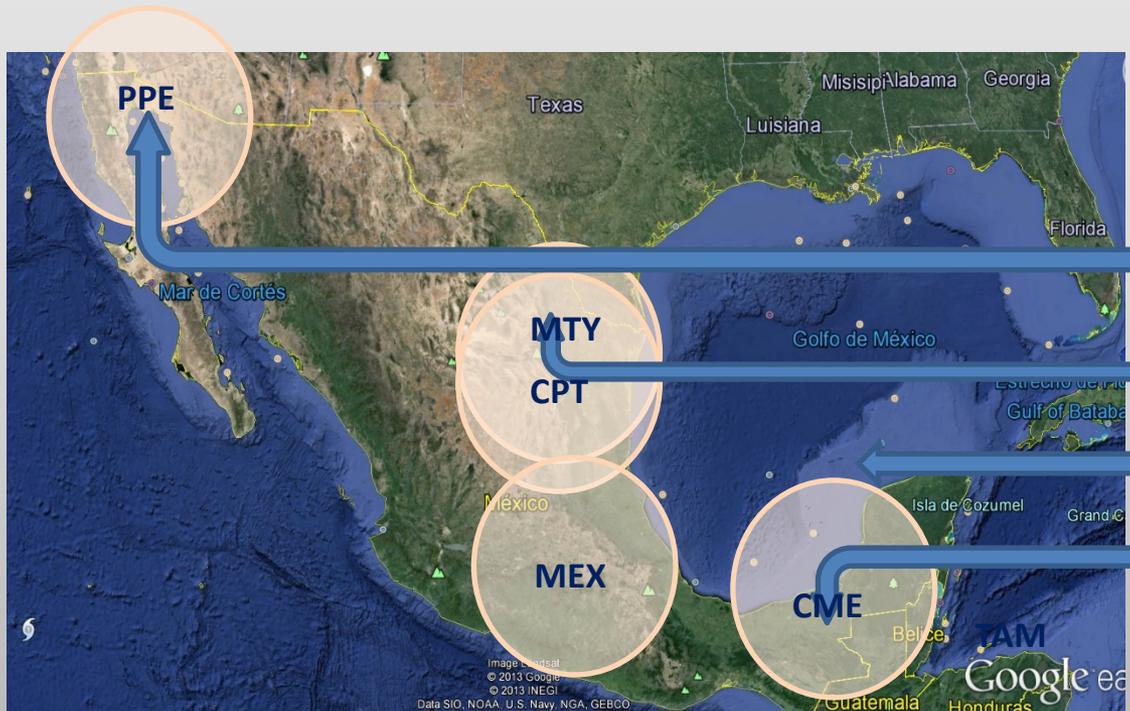
Theoretical coverage on Mexico Valley

ADS-B coverage area of all 6 selected ADS-B ground stations within Mexico Valley and Toluca Valley at 40000 ft AMSL for aircraft ADS-B transponders Tx power of 250 W



SENEAM ADS-B Schedule

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Date	Site	ID
2014	Puerto Peñasco	PPE
2014	Monterrey	MTY
2014	Cerro Potosí	CPT
2014	Cd. Carmen	CME

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SENEAM ADS-B 2014-2018

ADS-B 2014-2018

2014	2015	2016	2017	Total 2018
10 + 3	10	10	5	35+3
CGO, PEN, MEX, TLC, AJO , CAT, PPE, MTY, CPT, CME, TAM , CUN , MID	BJX, CPT, GDL, LGS, SJD, TIJ, HMO, LRS, VER, VSA	TRC, CUU, SEU, ZIH, PVR, TGZ ACA, MZT, CUL, SLP	LAP, CAB, LPD, PTE, CCL	

6

SENEAM ADS-B Sites.

TWR MEX:



CERRO GORDO:



CERRO GORDO:



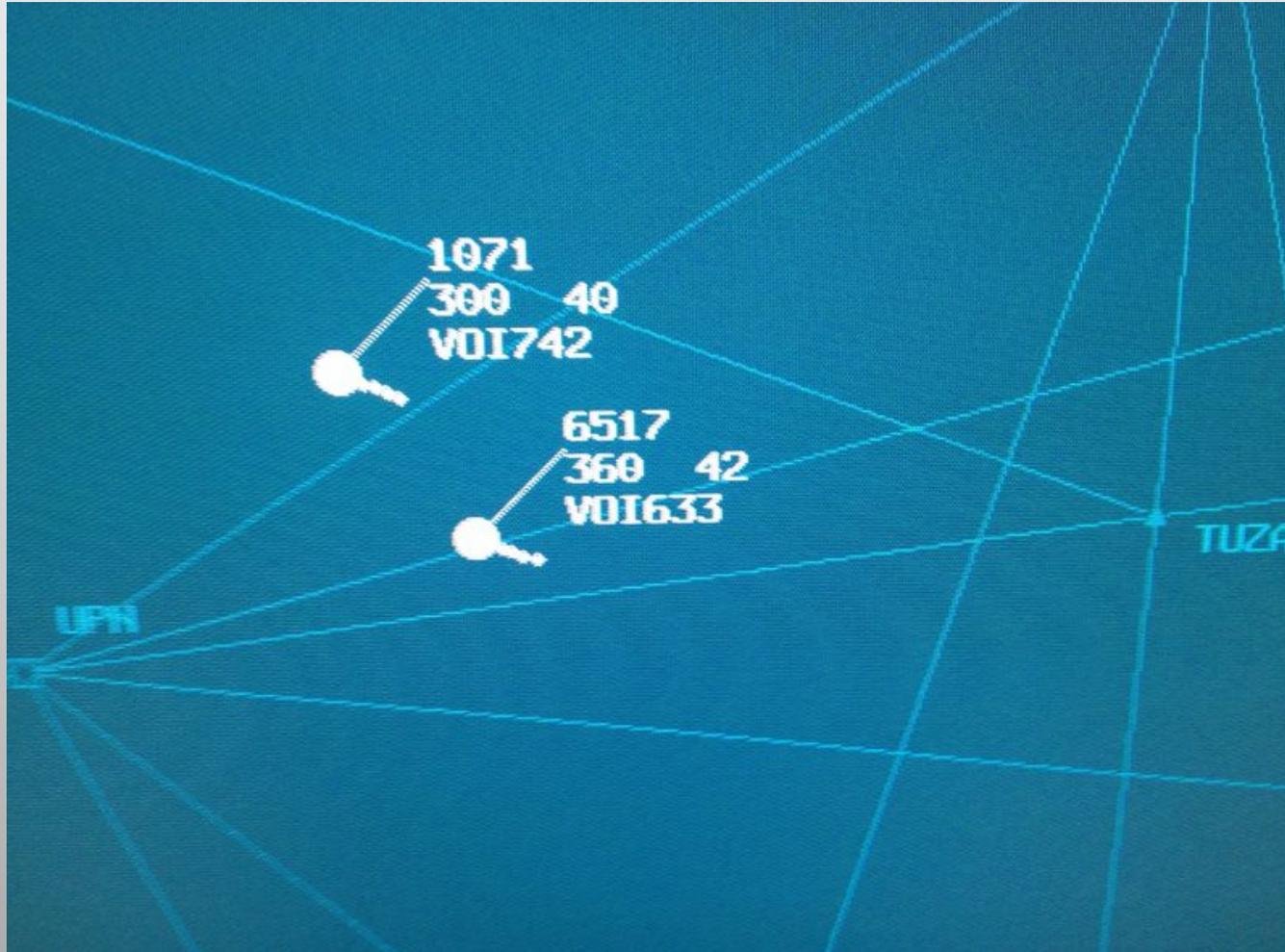
7

ADS-B Track Symbols. Mexico System.



ADS-B + SSR

6



ADS-B + SSR + PSR

6



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Mexico City. May 22, 2014