

SERVICIOS A LA NAVEGACIÓN EN EL ESPACIO AÉREO MEXICANO

MEXICO ADS-B PROJECT PREVIEW



SCT

SECRETARÍA DE COMUNICACIONES
Y TRANSPORTES

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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 an 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 to four ATM systems in FDRG through our country.

The four ATM systems are being updated for accepting and processing ADS-B data and fusing them with ATC radar sensors.

The implementation plan, obeys the need of increasing 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 with 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 sensors.



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.

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SENEAM ADS-B Program

Up to date, SENEAM has installed 10 ADS-B stations at the following sites:

- 5 in Mexico's City Valley (Toluca's Airport, Cerro Peñon, Cerro Cathedral, Cerro Gordo & Mexico's ATC TWR Control)
- 1 in Radar Station of Cerro Los Gallos, Aguascalientes (LGS), at Central of Mexico
- 1 in Southeast of Mexico at Ciudad del Carmen (CME)
- 2 in Northeast of Mexico at Monterrey's Terminal Airport (MTY) & in Radar station of Cerro de Potosi (CPT)
- 1 in Radar station of Puerto Peñasco Sonora (PPE), at the Northwest of México

SENEAM is also executing a software updating all four main 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 has been installed.

México:

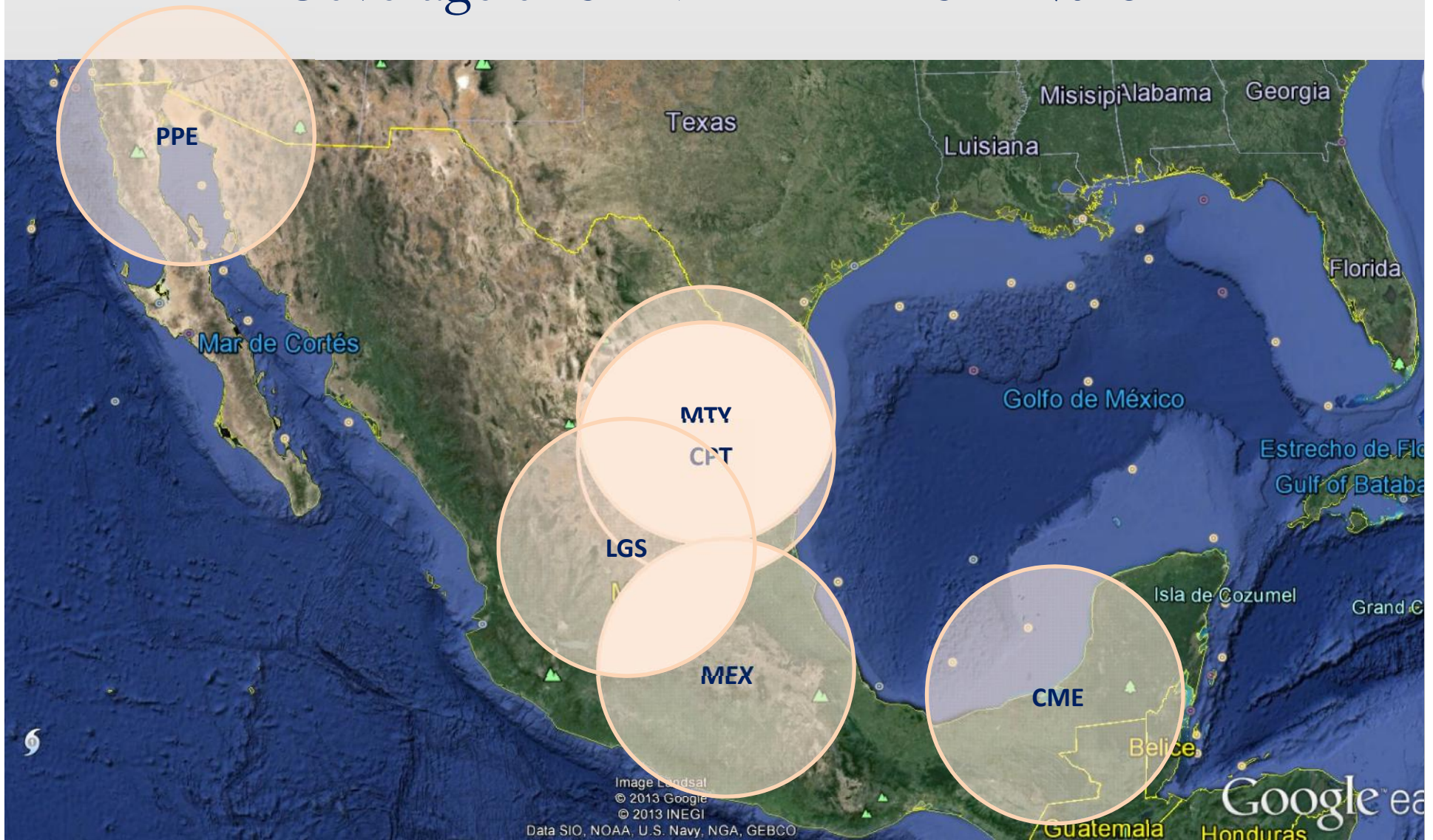
Five ADS-B stations are working and they are integrated to T&E platform Data gathering is taking place to begin the evaluation for data integration on ATM systems (Radars and ADS-B sensors).

Monterrey & Mazatlán:

The ATM system has been updated last year, full ADS-B capable. ADS-B stations at Puerto Peñasco, Sonora, Cerro de los Gallos, Ags., Cerro del Potosí and Monterrey, NL. have been installed.

FAA ADS-B stations on Tampico, Mérida and Cancún will be installed on 2015 and will be operative until 2016.

Coverage of SENEAM ADS-B 2015



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 considers the installation of ADS-B stations at:

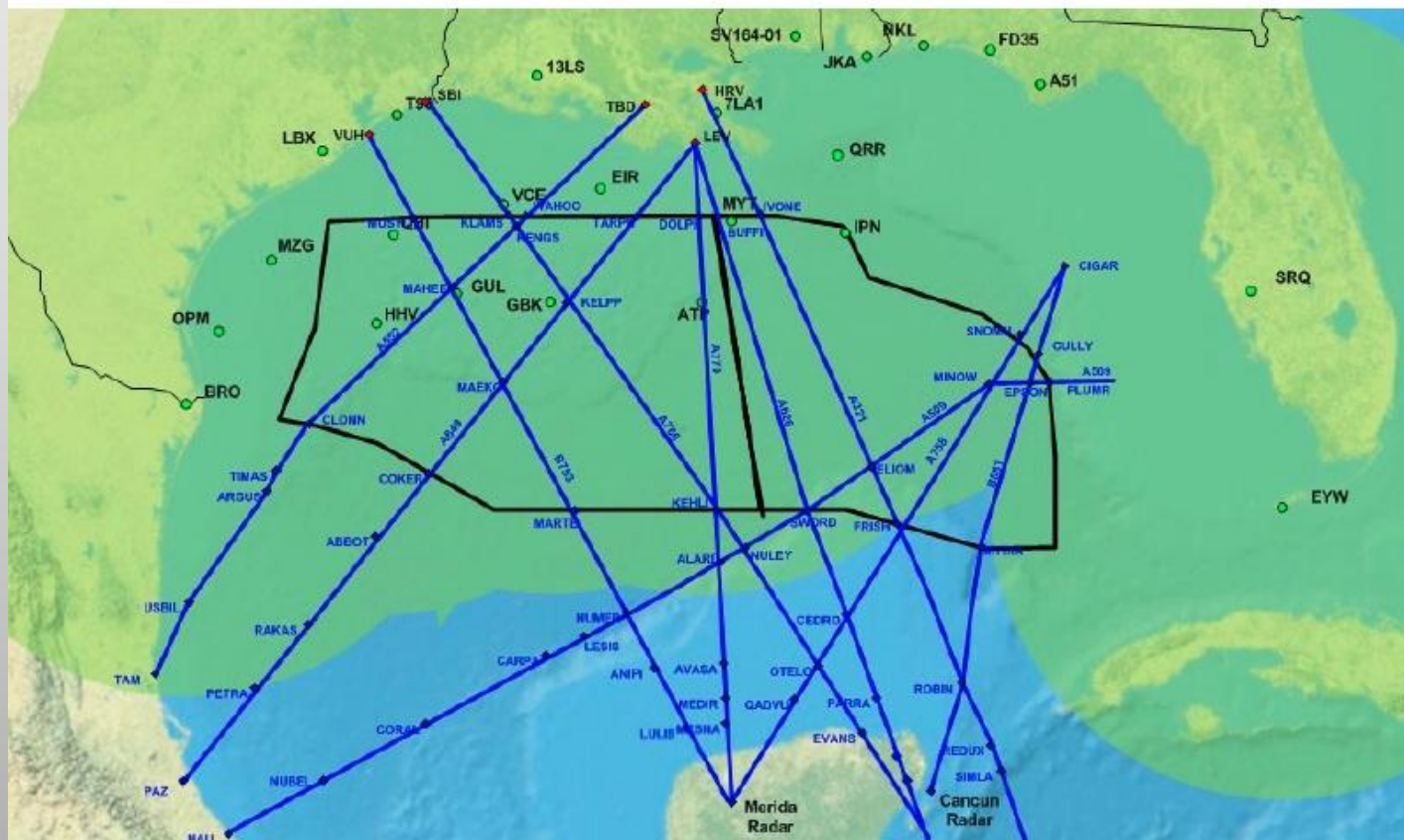
- Tampico
- Mérida
- Cancún

FAA and SENEAM are working together to install the Radio Station and equipment for Service Delivering Point at the station mentioned above and 3 of 4 ACC (MEX, MID and MTY) before end of 2015. The data will be shared to feed ACC in Mexico and USA (Houston)



FAA ADS-B current coverage on GOM

Existing ADS-B Coverage at FL280



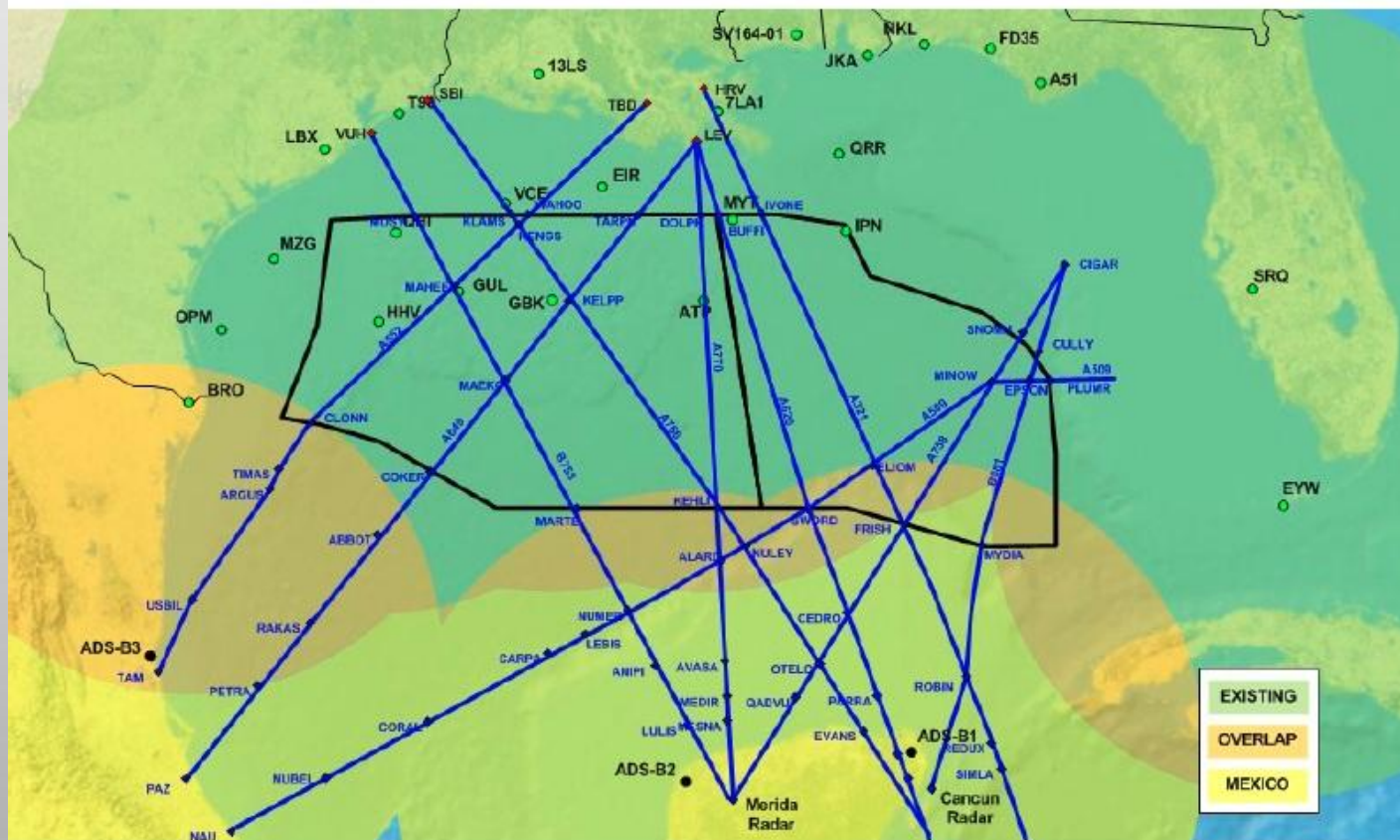
FAA – SENEAM ADS-B Project
Various Coverage Maps



Federal Aviation
Administration

FAA-SENEAM ADS-B forecasted coverage

Coverage with Proposed Radio Stations in Mexico at FL280

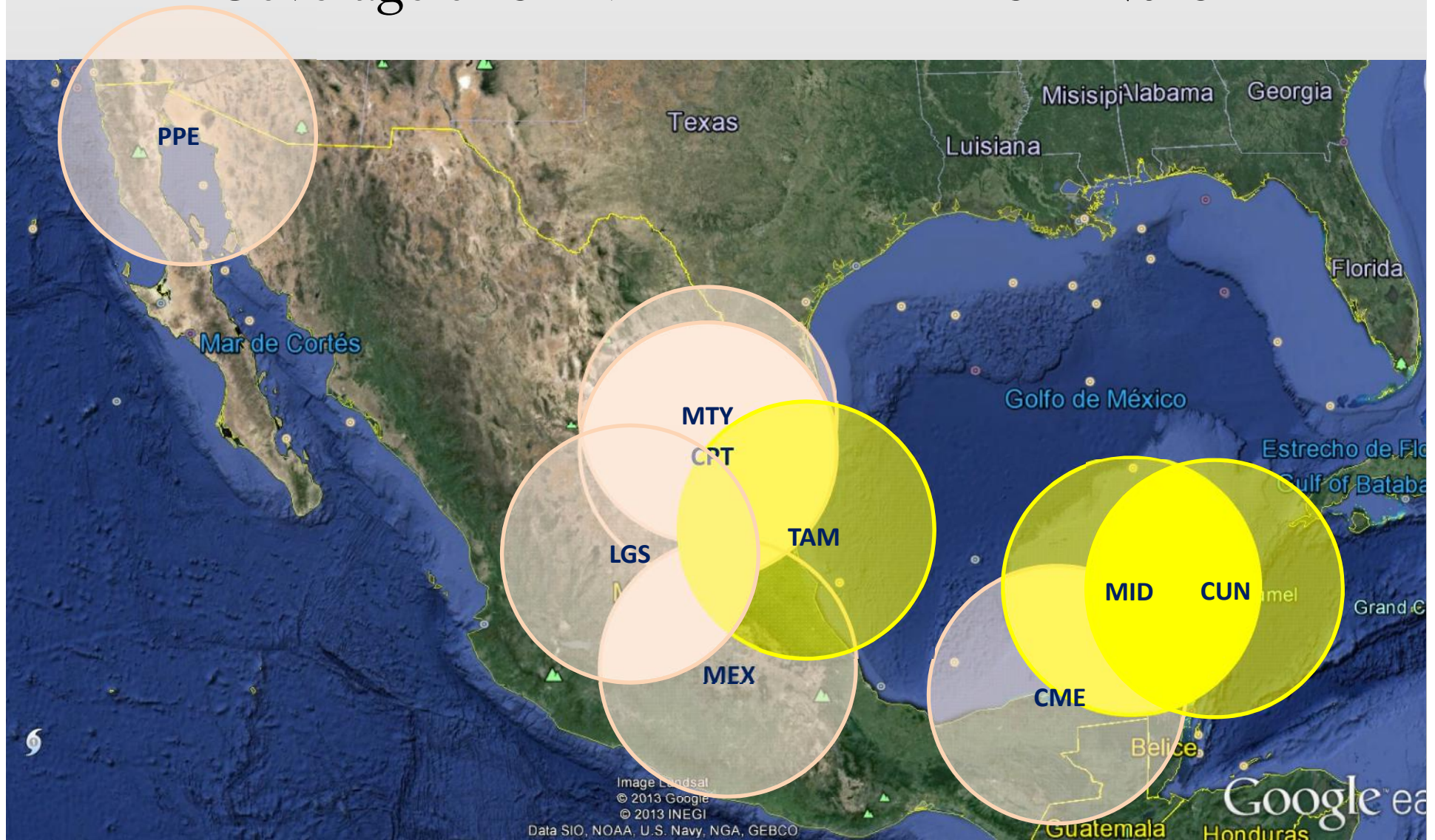


FAA – SENEAM ADS-B Project
Various Coverage Maps



Federal Aviation
Administration

Coverage of SENEAM-FAA ADS-B 2015



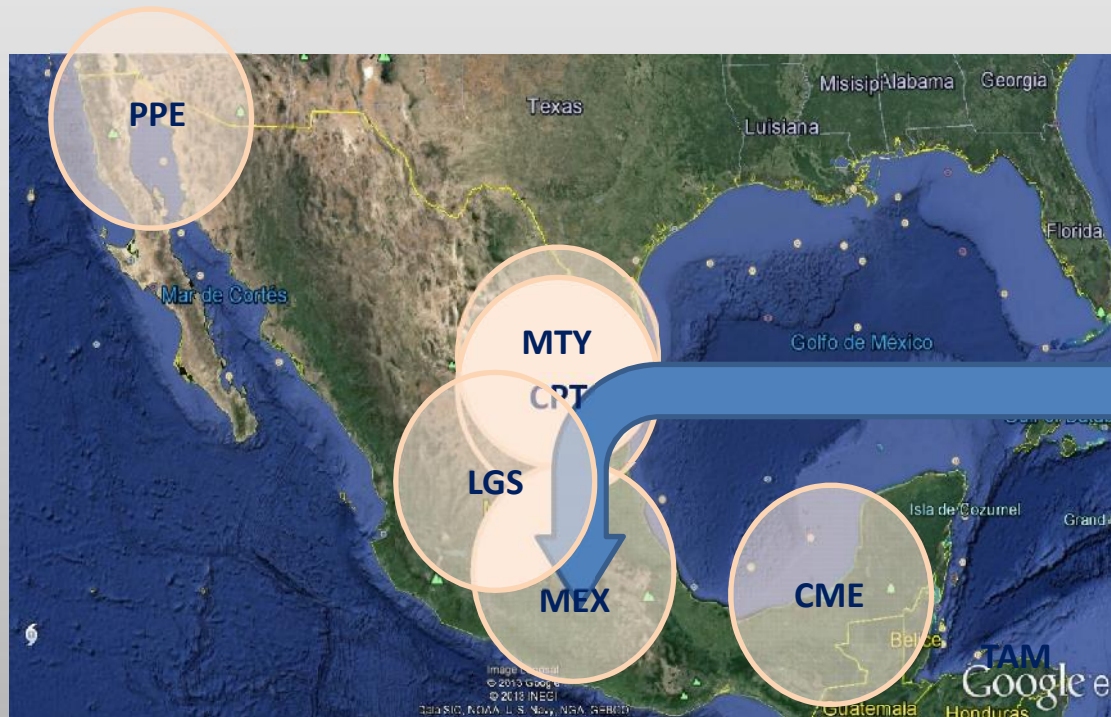
Needs to be covered

- 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.

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SENEAM ADS-B Schedule

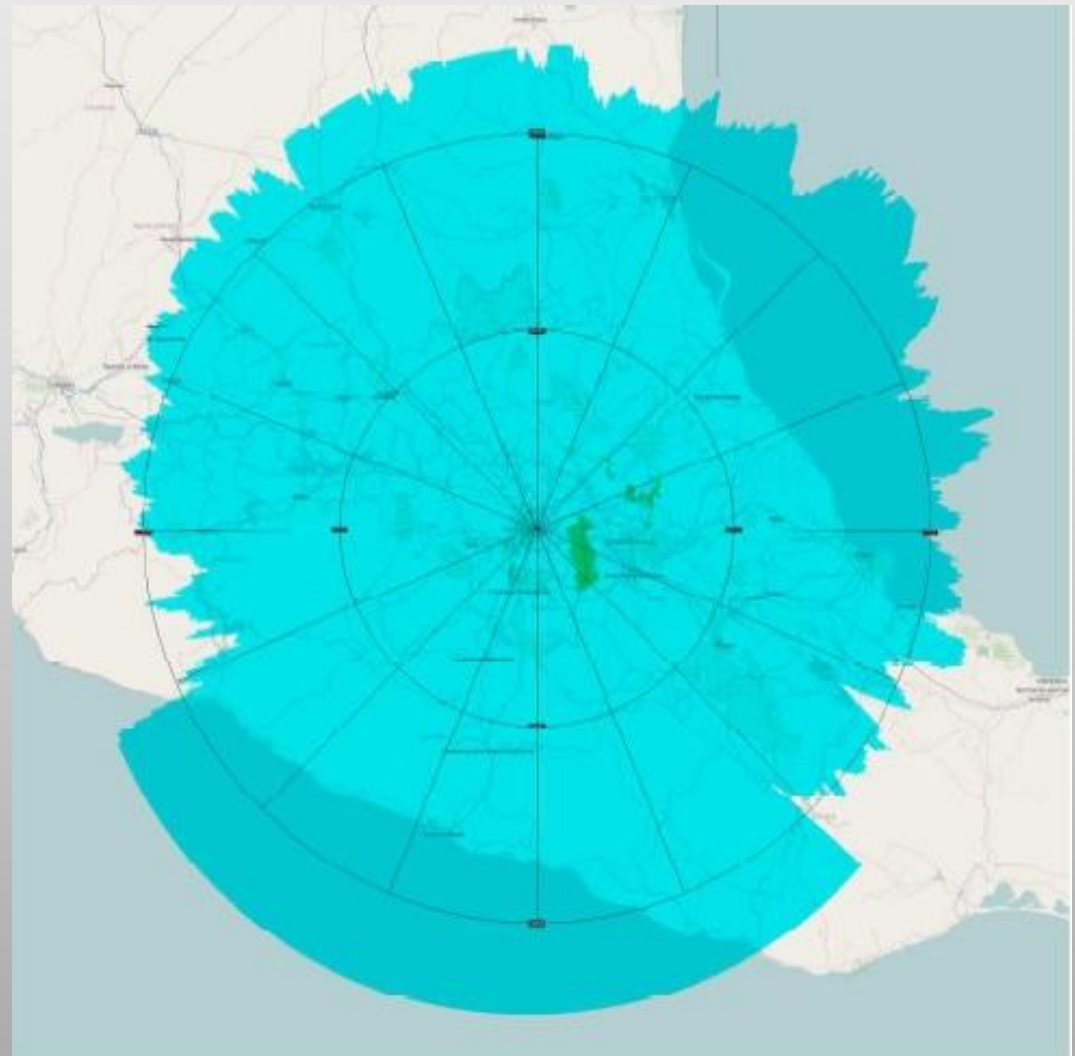
SENEAM ADS-B Schedule



Date	Site	ID
May 2014	Cerro Gordo	CGO
May 2014	Cerro Peñón	PEN
May 2014	AICM	MEX
May 2014	Toluca	TLC
May 2014	Cerro Cathedral	CCD

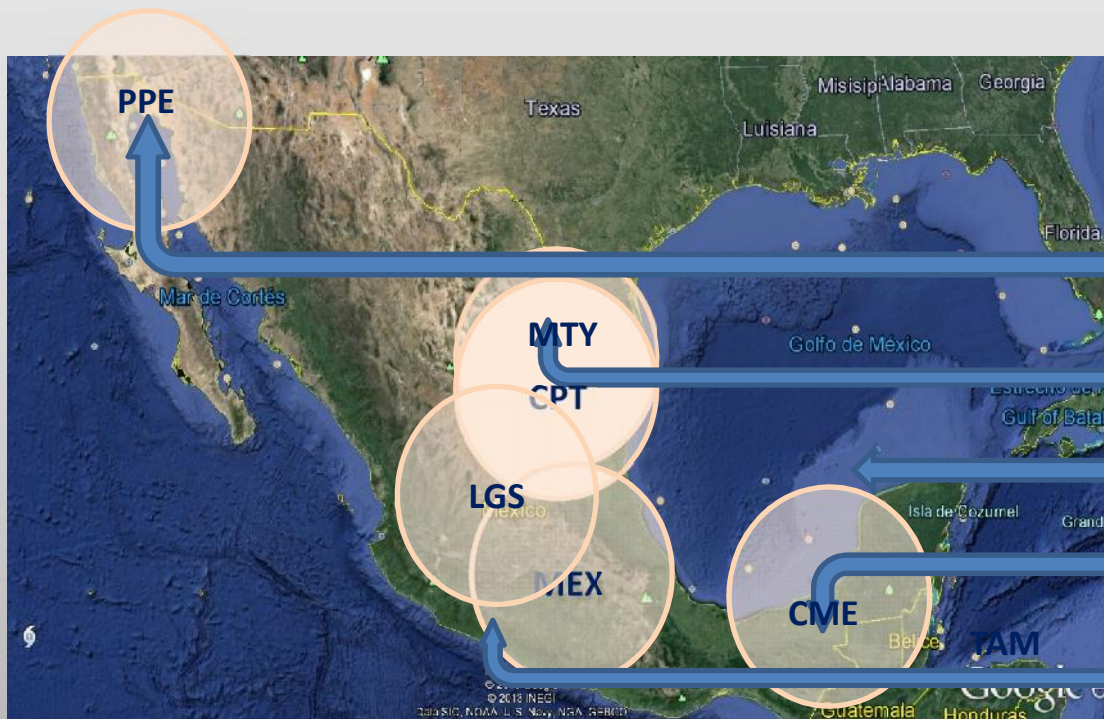
Theoretical coverage on Mexico Valley

ADS-B coverage area of all 5 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
Jan. 2015	Puerto Peñasco	PPE
Jan. 2015	Monterrey	MTY
Jan. 2015	Cerro Potosí	CPT
Jan. 2015	Cd. Carmen	CME
Jan. 2015	Los Gallos	LGS

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SENEAM ADS-B 2014-2018

ADS-B 2014-2018

2014	2015	2016	2017	Total 2018
5	5 + 3	13	12	35+3
CGO, PEN, MEX, TLC, CCD	PPE, MTY, CPT, CME, LGS TAM, CUN, MID	TRC, CUU, SEU, ZIH, PVR, TGZ, ACA, MZT, CUL, SLP, BJX, GDL, SJD	LAP, CAB, LPD, PTE, CCL, LRS, VER, VSA, ZIJ, HUA, TIJ, HMO	

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SENEAM ADS-B Sites.

TWR MEX



CERRO GORDO



CERRO GORDO



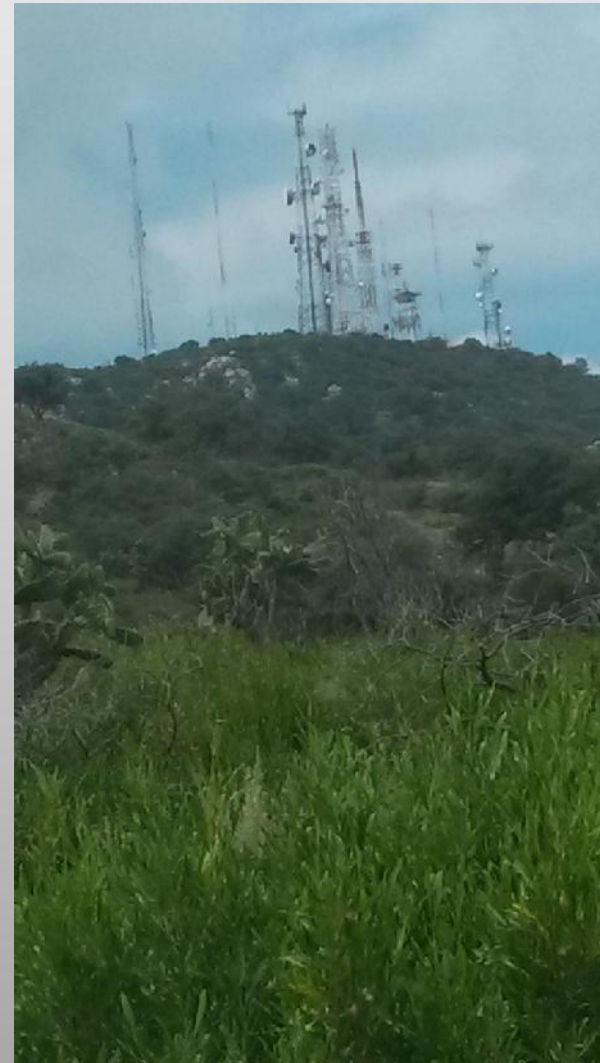
CERRO CATEDRAL, EDO. DE MEXICO



PUERTO PEÑASCO, SONORA



LOS GALLOS, AGUASCALIENTES



MONTERREY, NUEVO LEON



CIUDAD DEL CARMEN, CAMPECHE



7

**ADS-B Track Symbols
on ACC Mexico System
& ADS-B Labels from
other sites.**

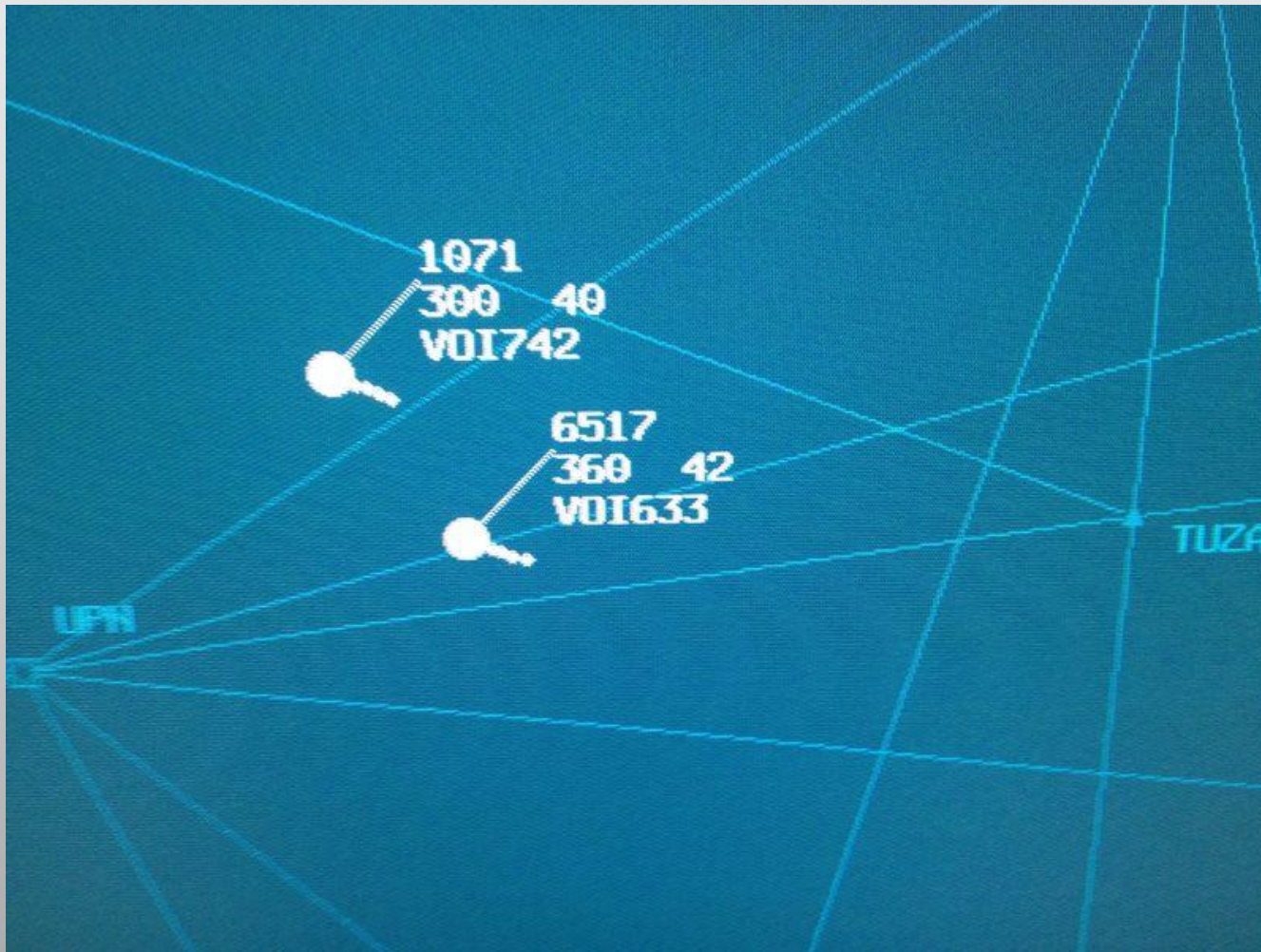
ADS-B Only (MEX)

7



ADS-B + SSR (MEX)

7



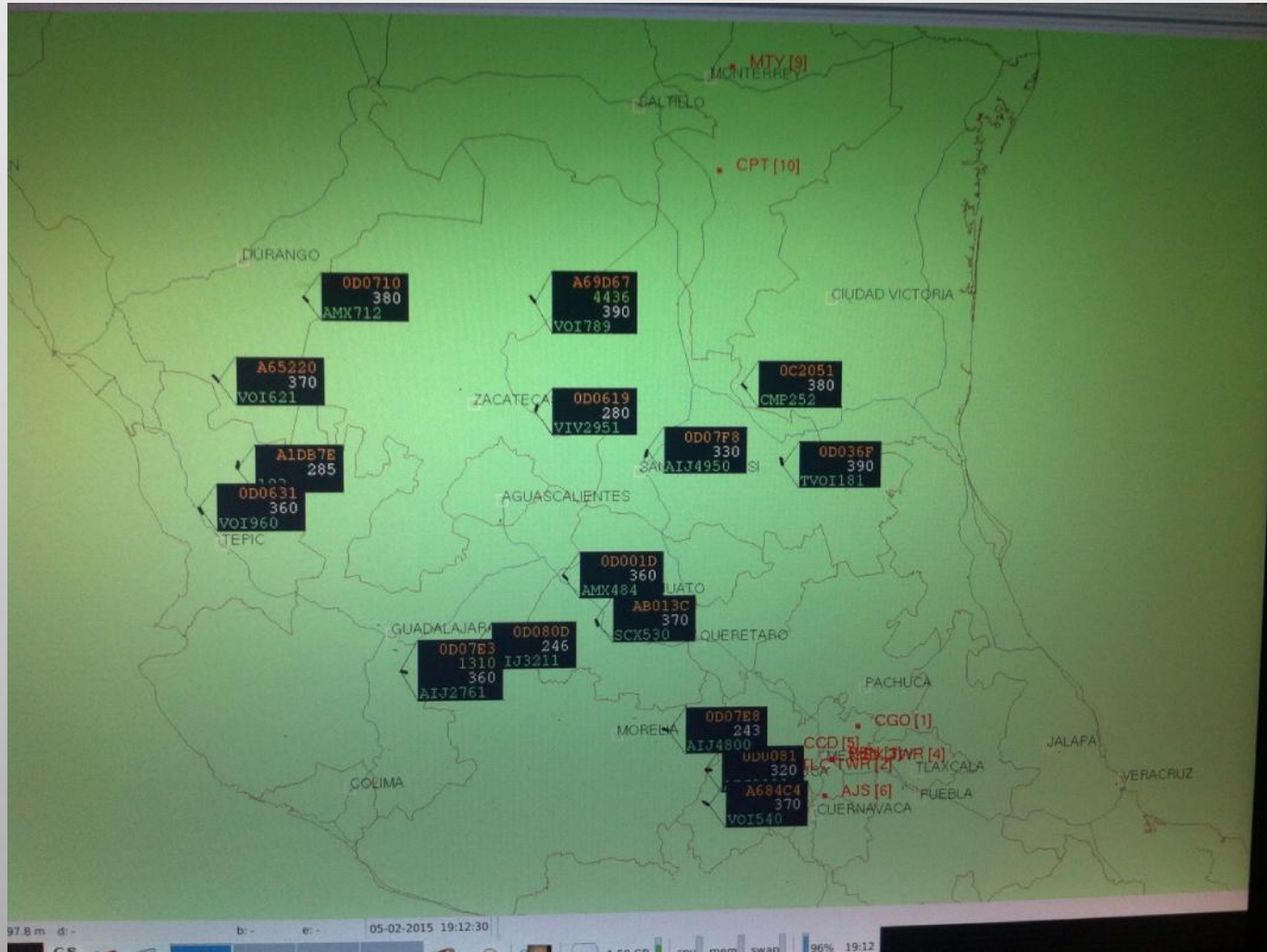
ADS-B + SSR + PSR (MEX)

7



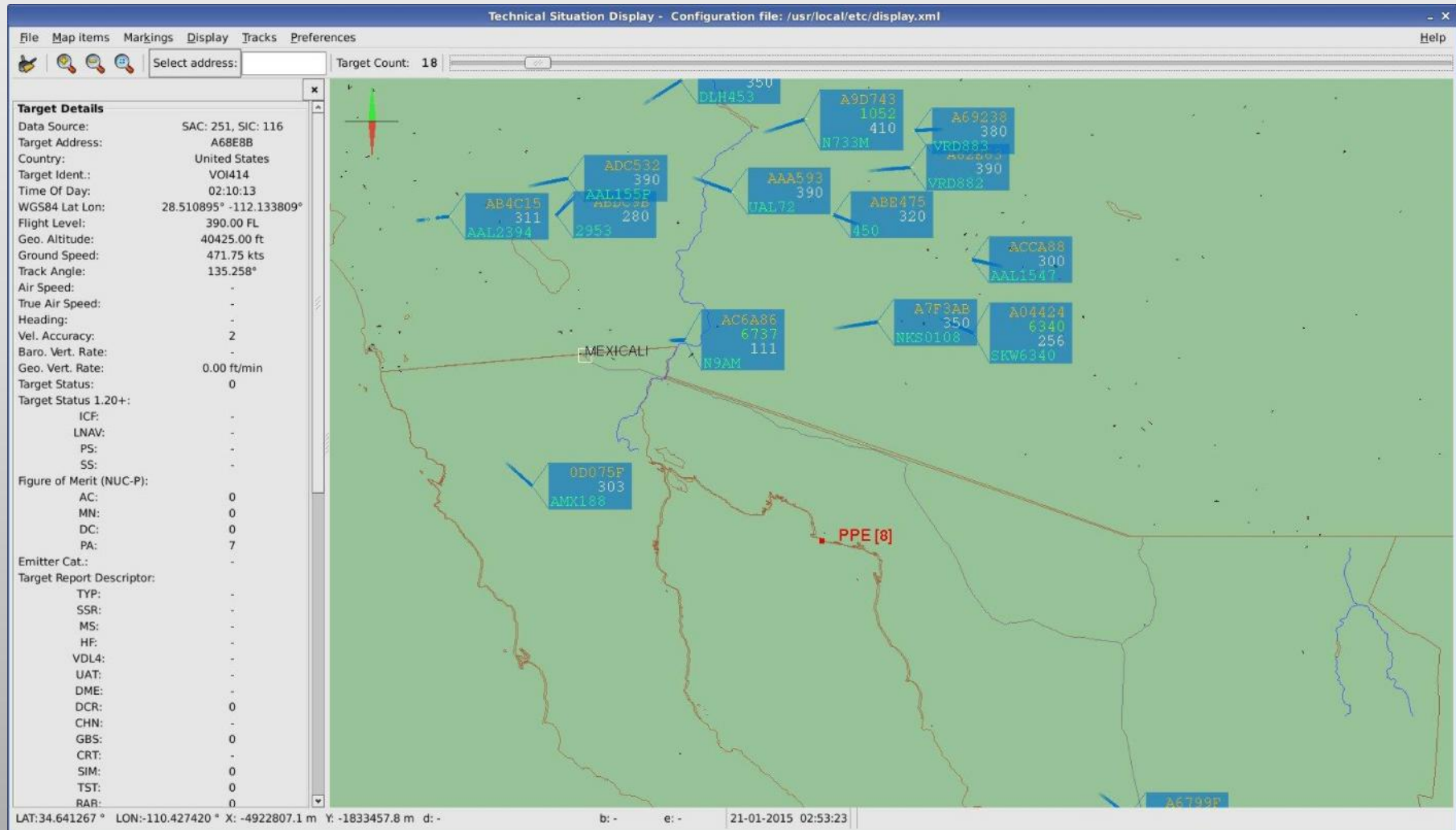
ADS-B LGS

7



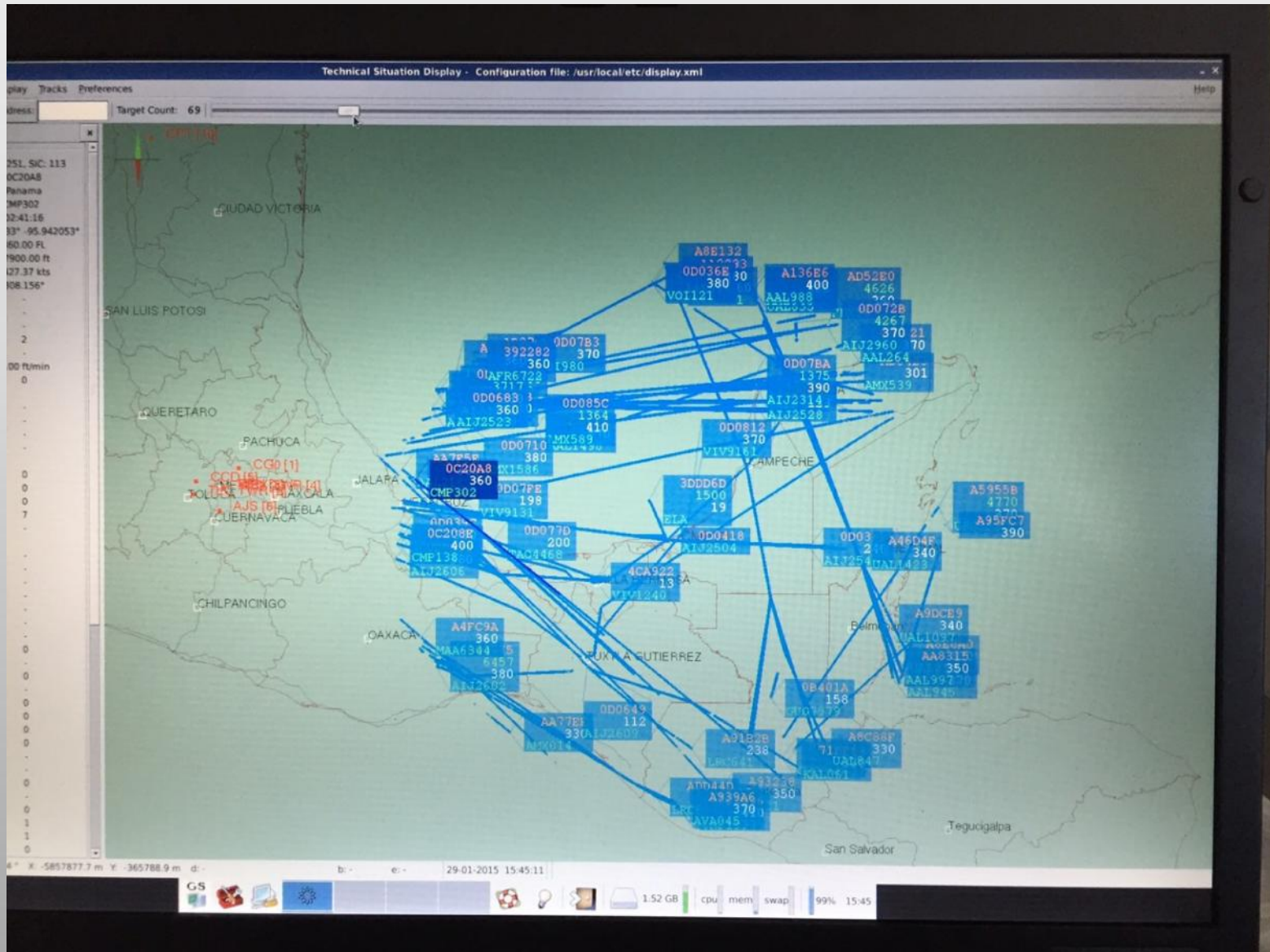
ADS-B PPE

7



ADS-B CME

7



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THANK YOU !

Mexico City. April 27, 2015