



# ASBU ELEMENTS

## CNS Technology and Services

## Others

ICAO Workshop on the new version of the Global Air Navigation Plan (GANP)  
(Mexico City, Mexico, from 17 to 21 February 2020)

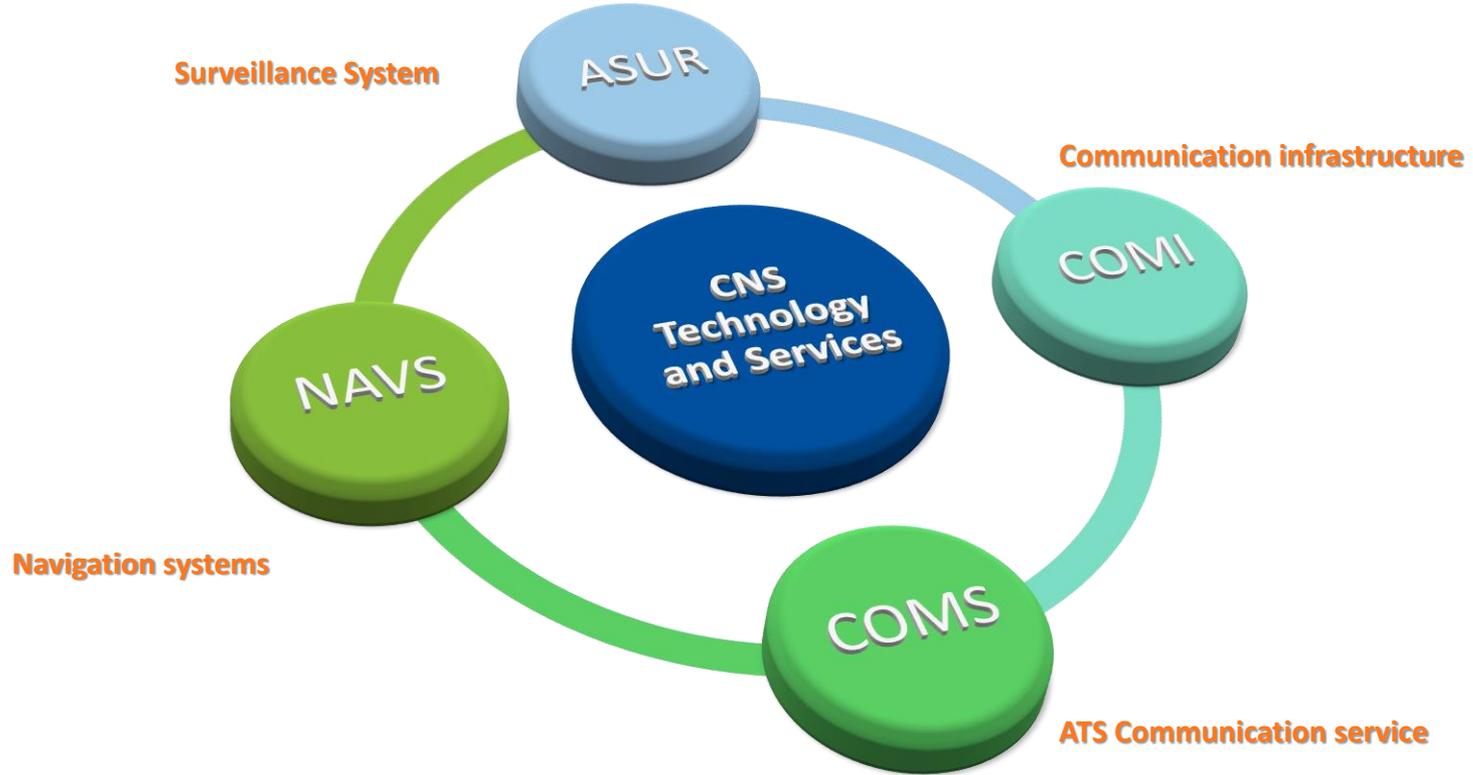


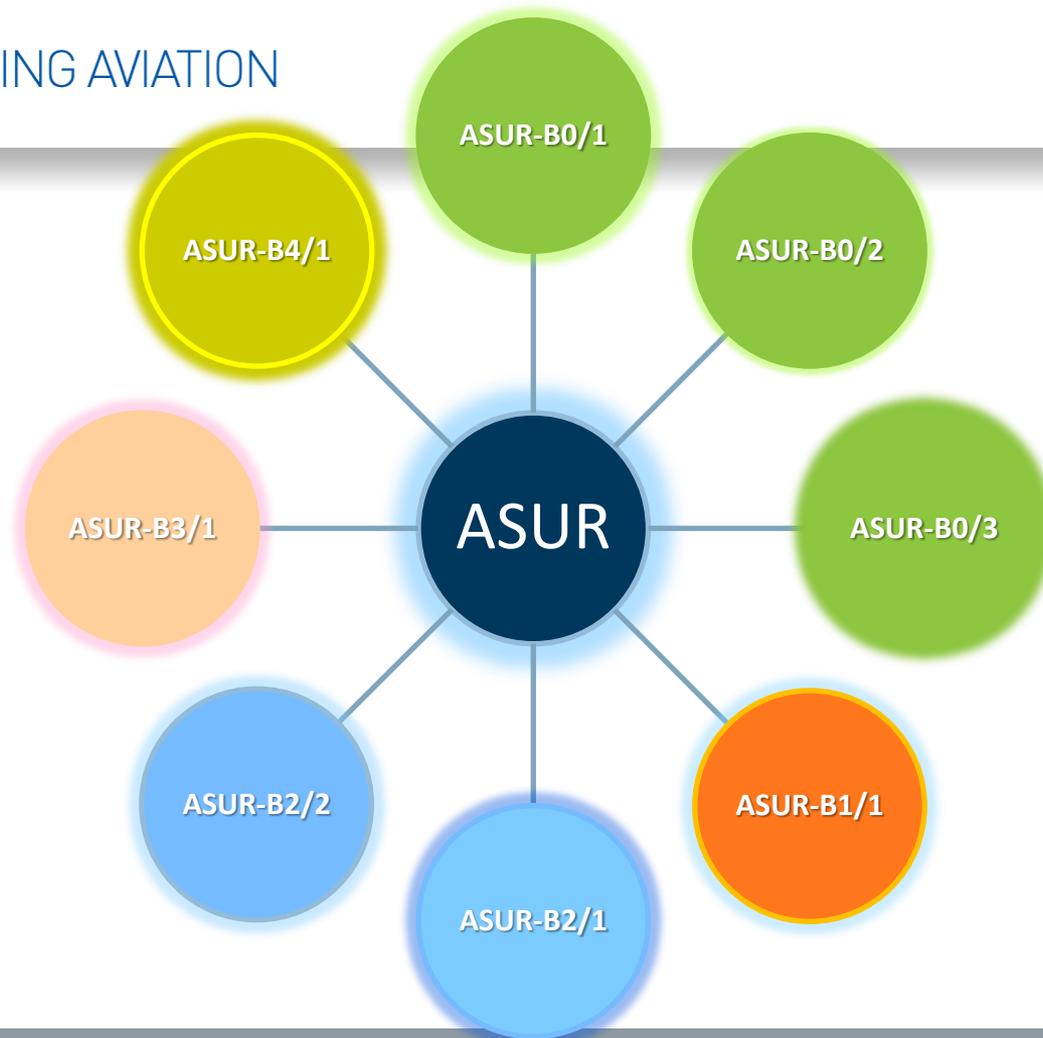
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Regional Officer, Communications, Navigation and Surveillance  
International Civil Aviation Organization North American,  
Central American and Caribbean Regional Office



# ASBU ELEMENTS







# ASUR-B0/1

## Automatic Dependent Surveillance – Broadcast (ADS-B)

## Technology

<b>Main Purpose</b>	To support the provision of Air Traffic Services and operational applications at reduced cost and increased surveillance coverage.		
<b>Ready for implementation</b>			
<b>Support Operation:</b>	Taxi-out Taxi-in	Departure Arrival	En-route
<b>Dependencies and relations:</b>	NAVS-BO3/2	NAVS-B0/3	Operational Threads



# ASUR-B1/1

Reception of aircraft ADS-B signals from space (SB ADS-B)

Technology

<b>Main Purpose</b>	To provide surveillance coverage in locations where ground stations siting is not possible or not currently provided.		
<b>Standardization</b>			
<b>Support Operation:</b>	<b>Arrival</b>	<b>Departure</b>	<b>En-route</b>
<b>Dependencies and relations:</b>	NAVS-BO3/2 NAVS-B0/3	Evolution ASUR-B0/1	Operational Threads



# ASUR-B2/1

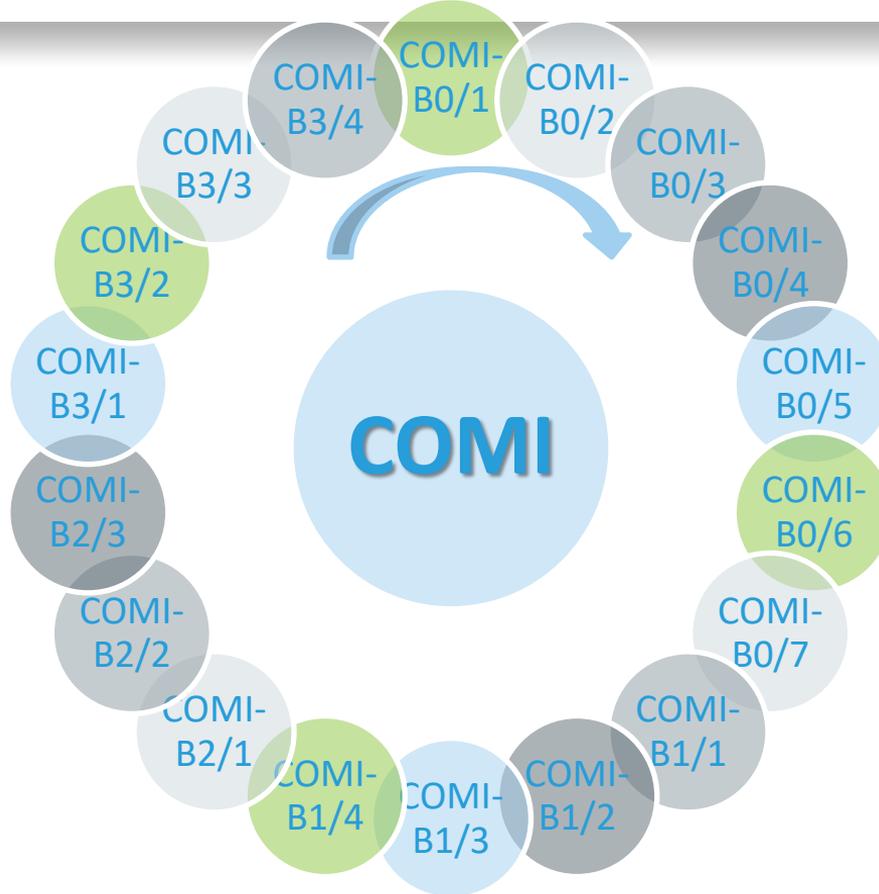
## Evolution of ADS-B and Mode S)

## Technology

<b>Main Purpose</b>	<b>To provide new types of data in support of Air Traffic/MET Services and vehicle-to-vehicle applications</b>		
<b>Validation</b>			
<b>Support Operation:</b>	<b>Taxi-out Taxi-in</b>	<b>Departure Arrival</b>	<b>En-route</b>
<b>Dependencies and relations:</b>	NAVS-BO/2 NAVS-BO/3 <u>NAVS-B2/2</u> <u>NAVS-B2/3</u>	ASUR-BO/1 ASUR-BO/2 ASUR-BO/3 ASUR-B1/1	<b>Operational Threads</b>



# COMI





# COMI-B1/1

## Ground-Ground Aeronautical Telecommunication Network/Internet Protocol Suite (ATN/IPS) Technology

<b>Main Purpose</b>	To provide for a more modern, more efficient, cost-effective, and robust data communications network infrastructure.		
<b>Standardization</b>			
<b>Support Operation:</b>	En -route		
<b>Dependencies and relations:</b>	ASBU-Elements		



# COMI-B2/1

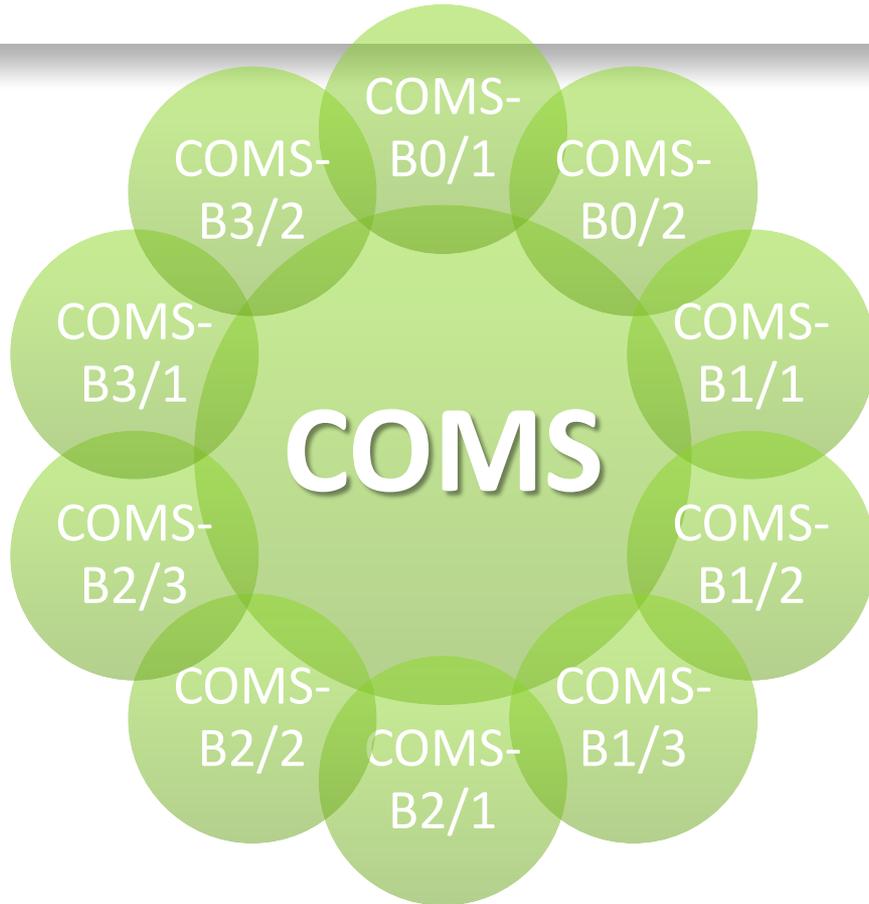
## Air-Ground ATN/IPS

### Technology

<b>Main Purpose</b>	To improve integrity of the information.		
Validation			
<b>Support Operation:</b>	En-route		
<b>Dependencies and relations:</b>	COMI-B1, B2 and B3		Operational Threads



# COMS



**CPDLC Implementation**

**ADS-C Implementation**

**PBCS Approved**

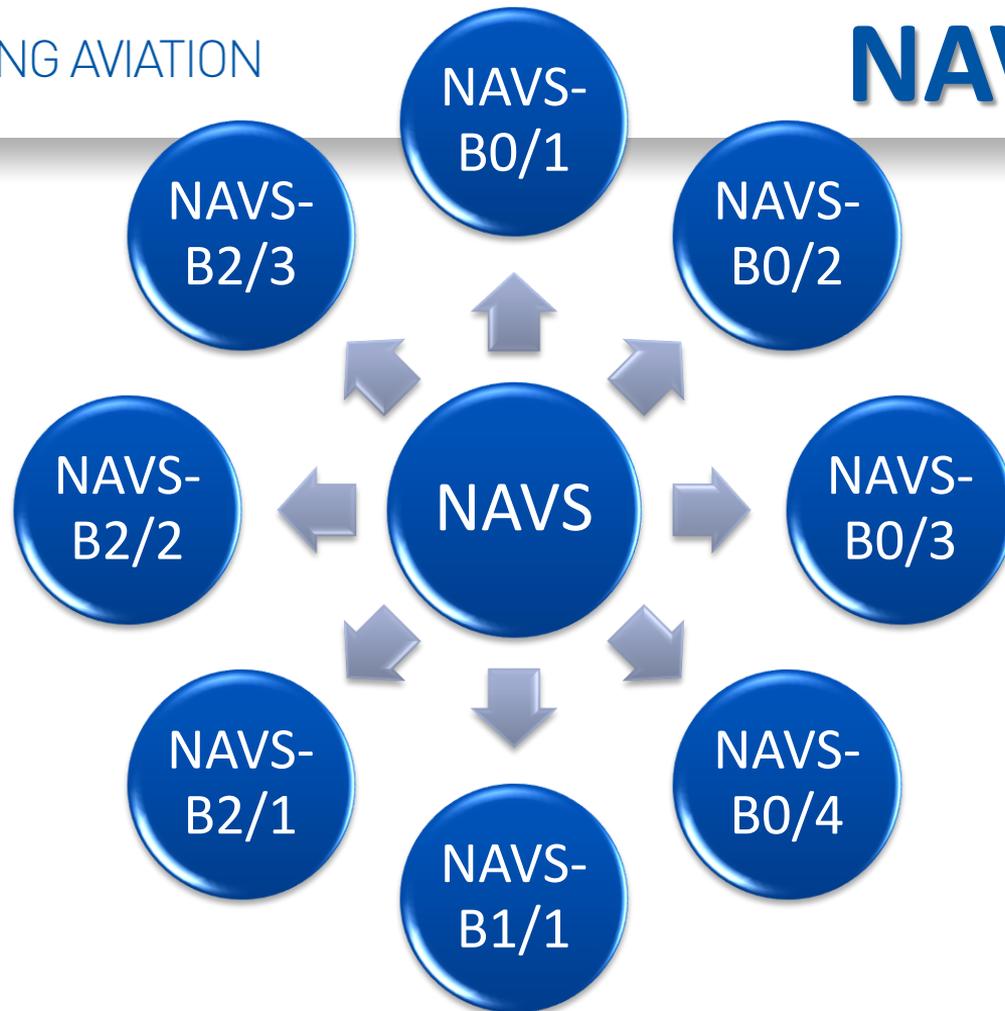
**PBCS Approved and CPDLC  
SATVOICE**

**Extended CPDLC**

**Extended ADS-C**



# NAVS





NAVS-B0/1 Ground Based Augmentation Systems (GBAS)

NAVS-B0/2 Satellite Based Augmentation Systems (SBAS)

NAVS-B0/3 Aircraft Based Augmentation Systems (ABAS)

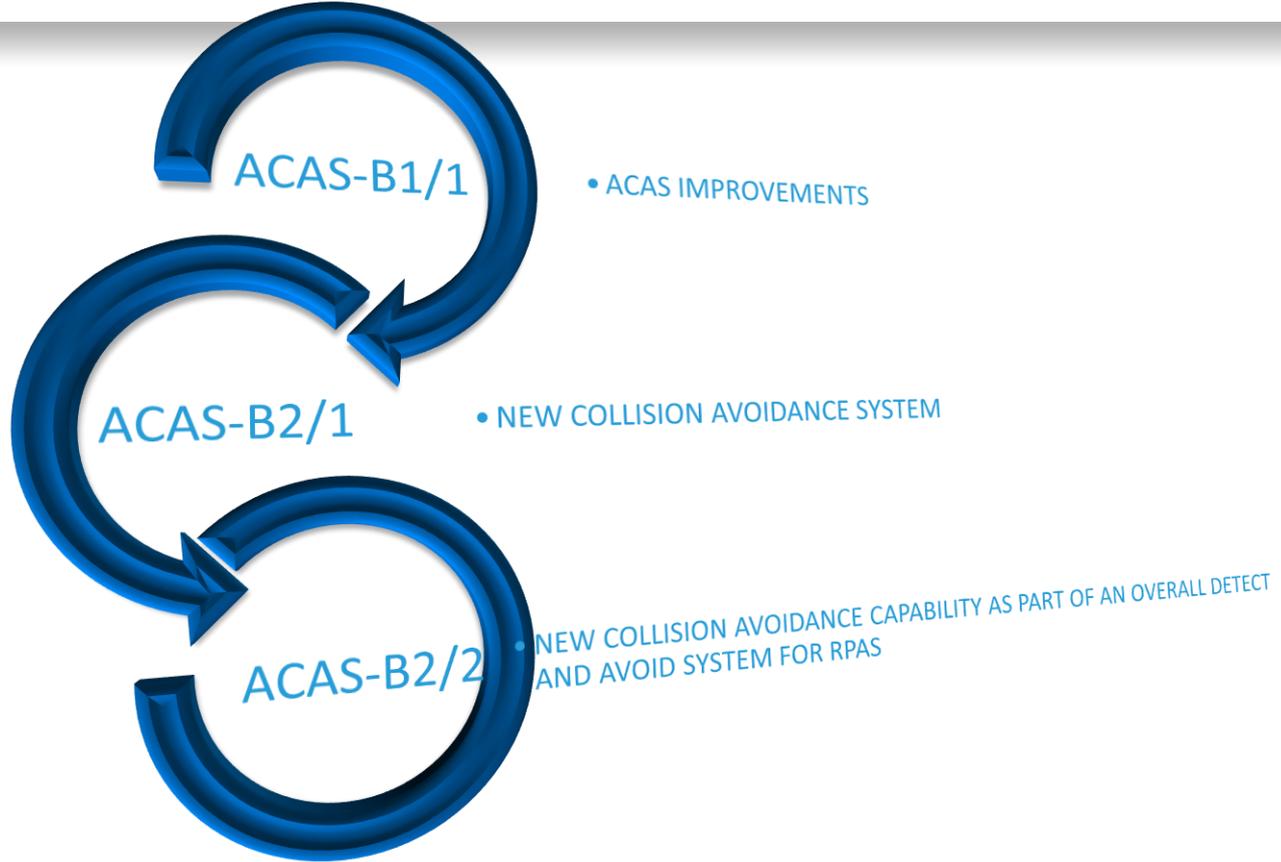
NAVS-B0/4 Navigation Minimal Operating Networks (Nav. MON)

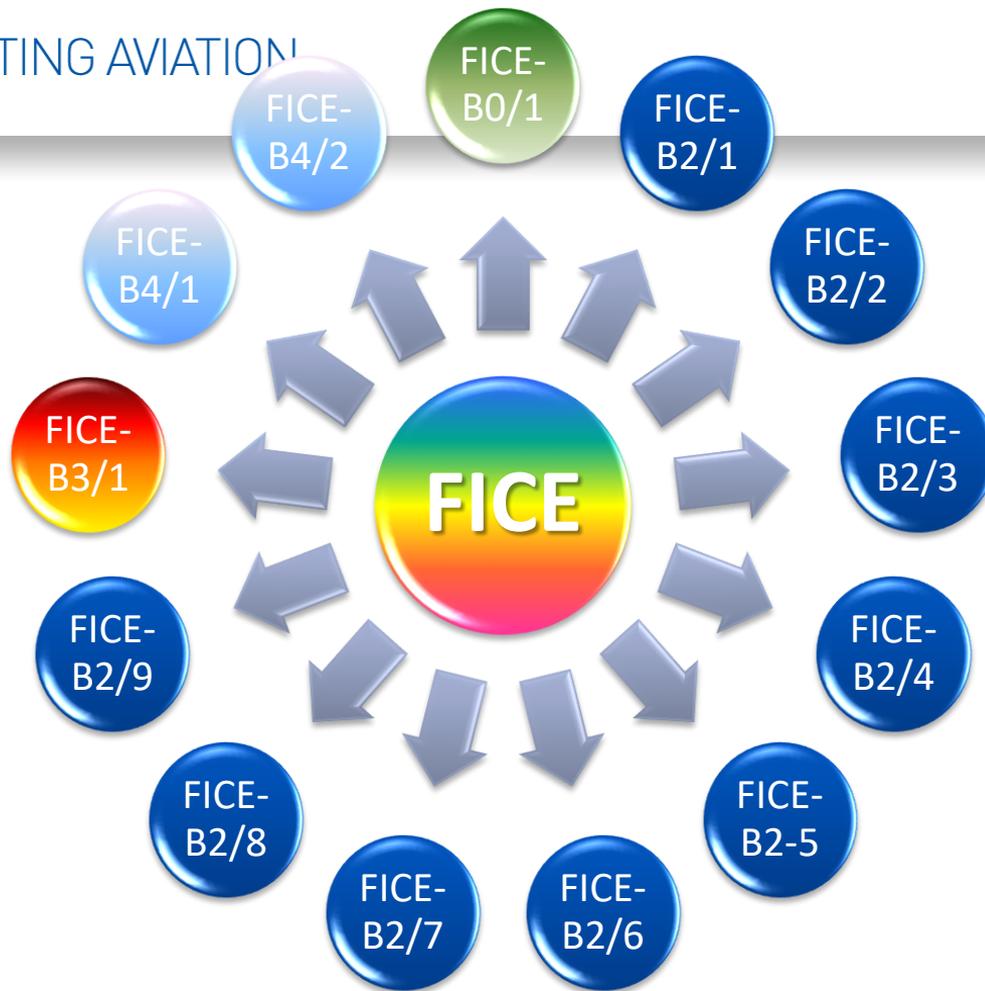
NAVS-B1/1 Extended GBAS

NAVS-B2/1 Dual Frequency Multi Constellation (DF MC) GBAS

NAVS-B2/2 Dual Frequency Multi Constellation (DF MC) SBAS

NAVS-B2/3 Dual Frequency Multi Constellation (DF MC) ABAS







# ACTION PLAN WORK

- **Surveillance Task Force** --- ASUR, ACAS, COMS
- **AIDC Task Force** ----- FICE
- **MEVA/TMG** ----- COMI, COMS (Freq)
- **NAVS** --- Pending



ICAO

UNITING AVIATION



ICAO

North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU