

# AFI Infrastructure GAP Analysis

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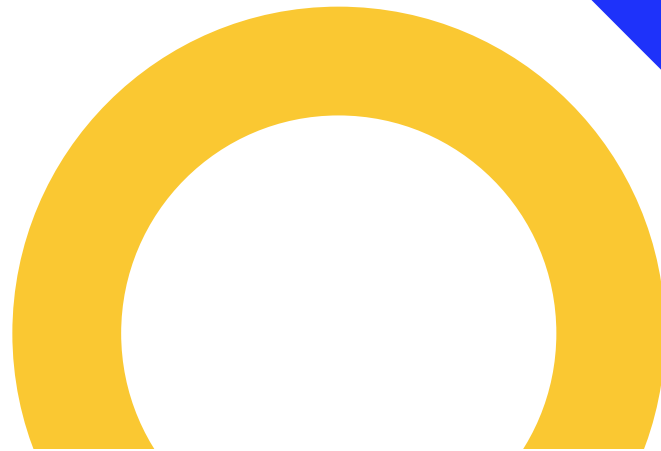
Manager Safety and Operations-ATM

15 March 2019



# Content

- Aeronautical Mobile Communication
- AFI Air Navigation Deficiency Database
- AFI Incident Analysis Group (AIAG)



# Towards Single AFI Sky

Harmonized,  
Interoperable,  
Seamless ATM

Safety & Efficiency

Air Transport



# Aeronautical Mobile Communication

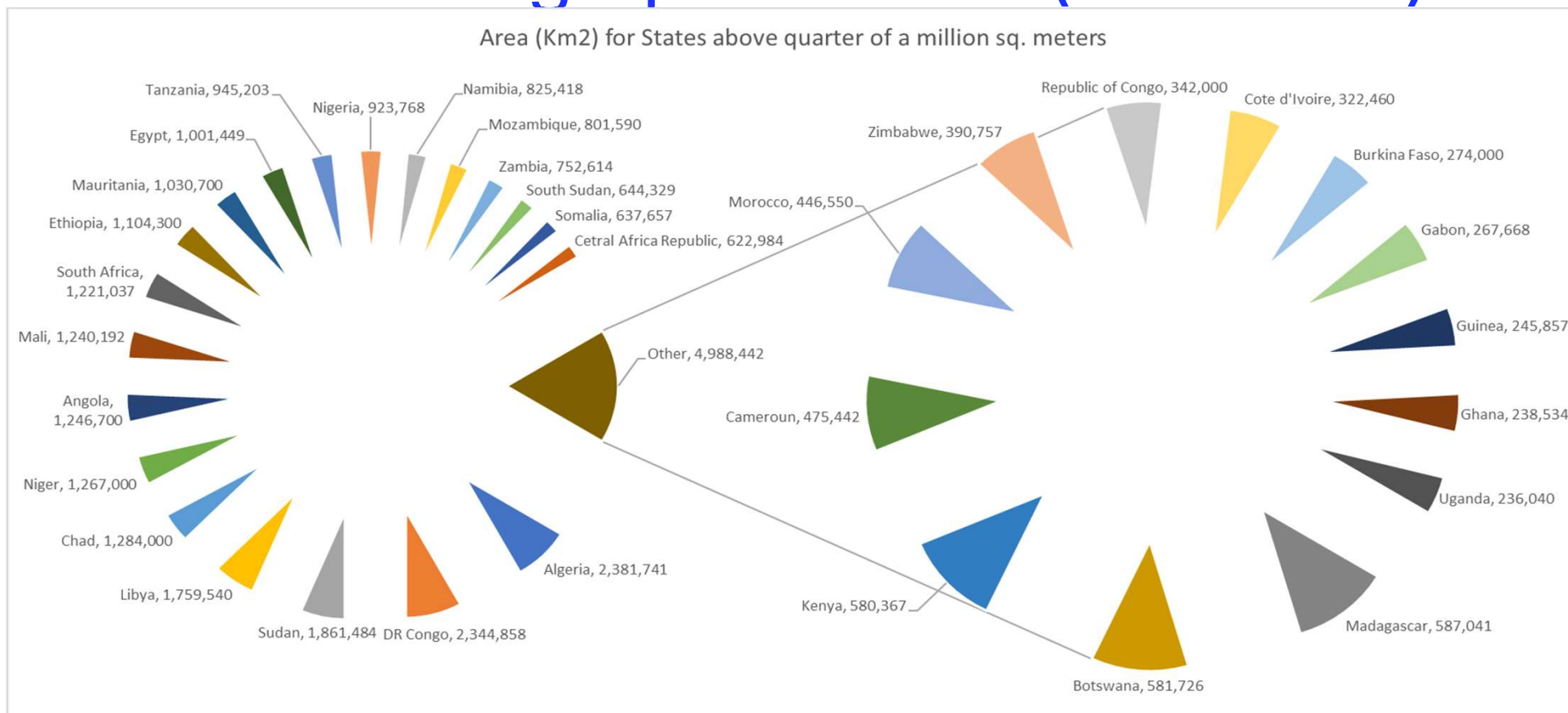
## **APIRG/16: Decision 16/20**

'that the ICAO Regional Offices (Dakar and Nairobi) coordinate the conduct of regional surveys on AMS/VHF coverage by States and Organizations in order to ascertain that VHF frequencies are free of harmful interference and to initiate remedial action with States concerned as necessary'

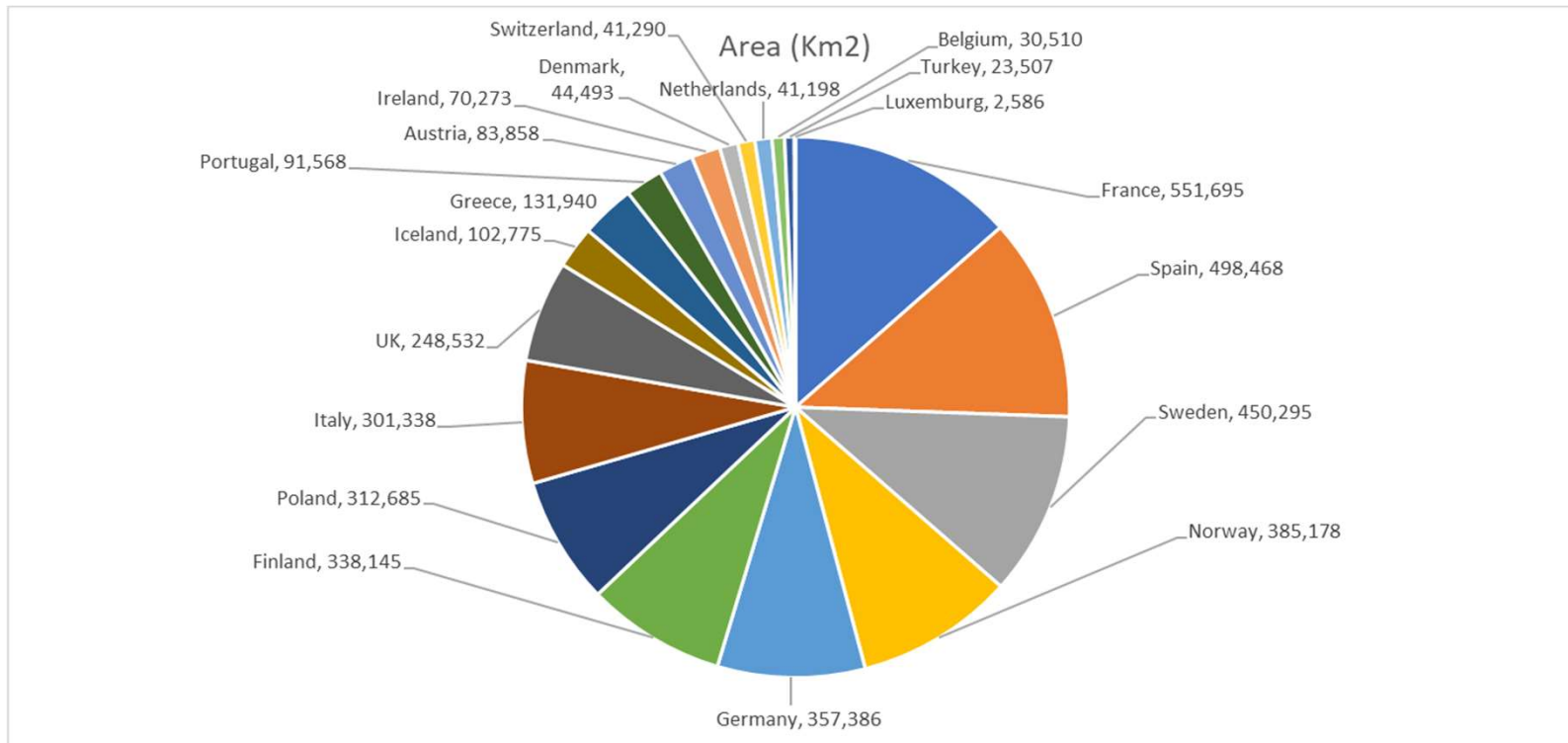
## **APIRG/16: Conclusion 16/21**

'that States cooperate and provide their support to VHF coverage surveys to be carried out by IATA in the AFI Region, initially every 18 months'.

# AFI States Geographical Area (34 States)

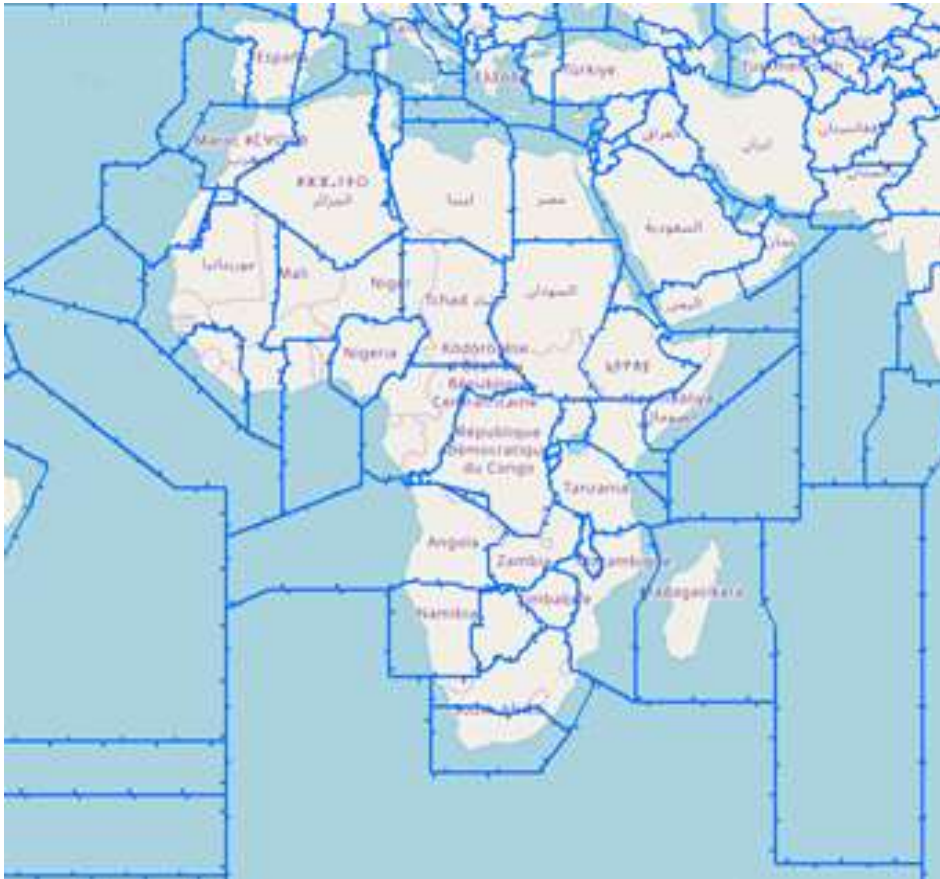


# EU States Geographical Area (20 States)



#	Country	Area (Km2)	Cumulative
1	France	551,695	
2	Spain	498,468	1,050,163
3	Sweden	450,295	1,500,458
4	Norway	385,178	1,885,636
5	Germany	357,386	2,243,022
6	Finland	338,145	2,581,167
7	Poland	312,685	2,893,852
8	Italy	301,338	3,195,190
9	UK	248,532	3,443,722
10	Iceland	102,775	3,546,497
11	Greece	131,940	3,678,437
12	Portugal	91,568	3,770,005
13	Austria	83,858	3,853,863
14	Ireland	70,273	3,924,136
15	Denmark	44,493	3,968,629
16	Switzerland	41,290	4,009,919
17	Netherlands	41,198	4,051,117
18	Belgium	30,510	4,081,627
19	Turkey	23,507	4,105,134
20	Luxemburg	2,586	<b>4,107,720</b>
1	Algeria	2,381,741	
2	DR Congo	2,344,858	<b>4,726,599</b>

# Area and coverage: The State and the FIR

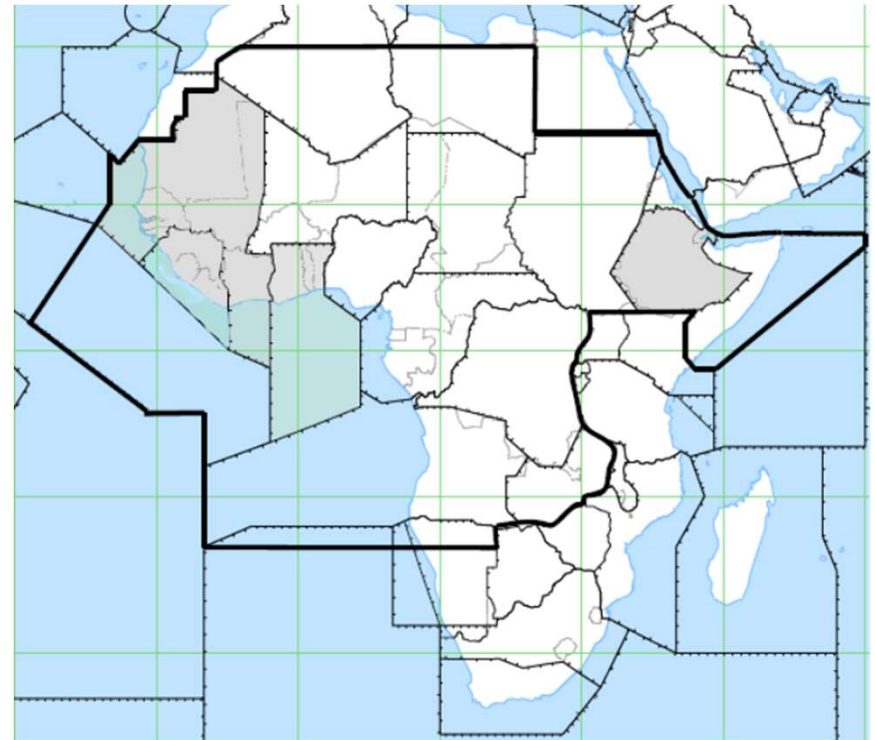
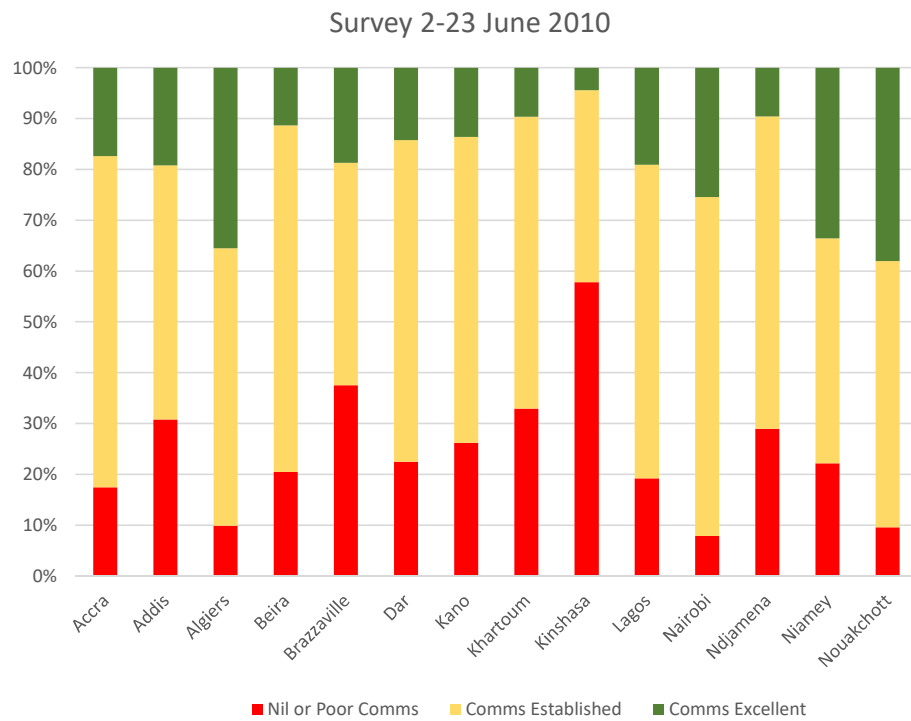


- Largest States not largest FIRs
  - Seychelles
  - Mauritius
  - South Africa
  - Angola
  - Senegal
  - Ghana
- Regional Single Sky Building Blocks
  - ASECNA
  - EAC
  - Roberts FIR
  - SADC
  - COMESA

# AMC Survey Results-2010

## Aeronautical Mobile Survey Report -2010

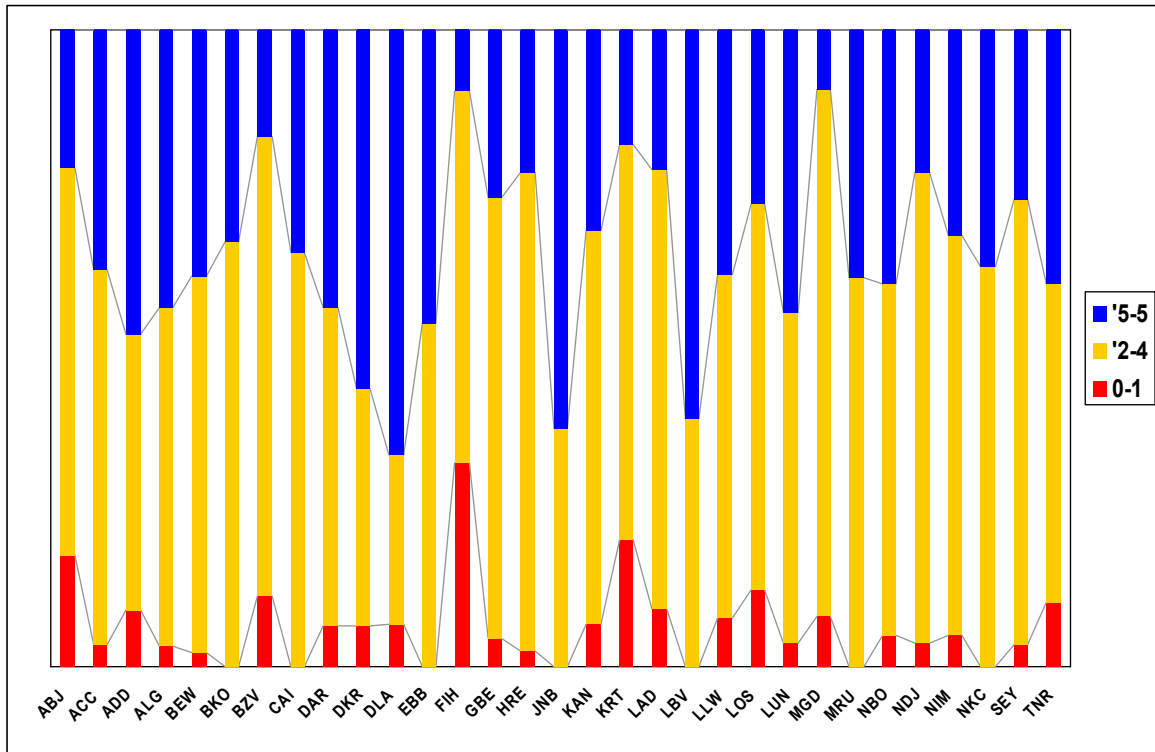
## IFBP 2010



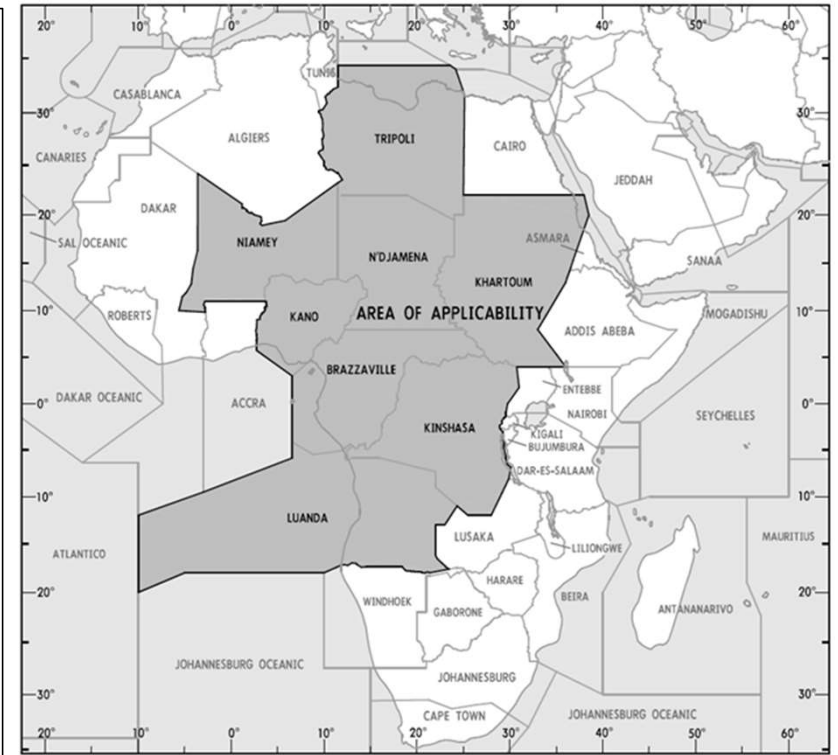


# AMC Survey Results-2012

## Aeronautical Mobile Survey Report -2012

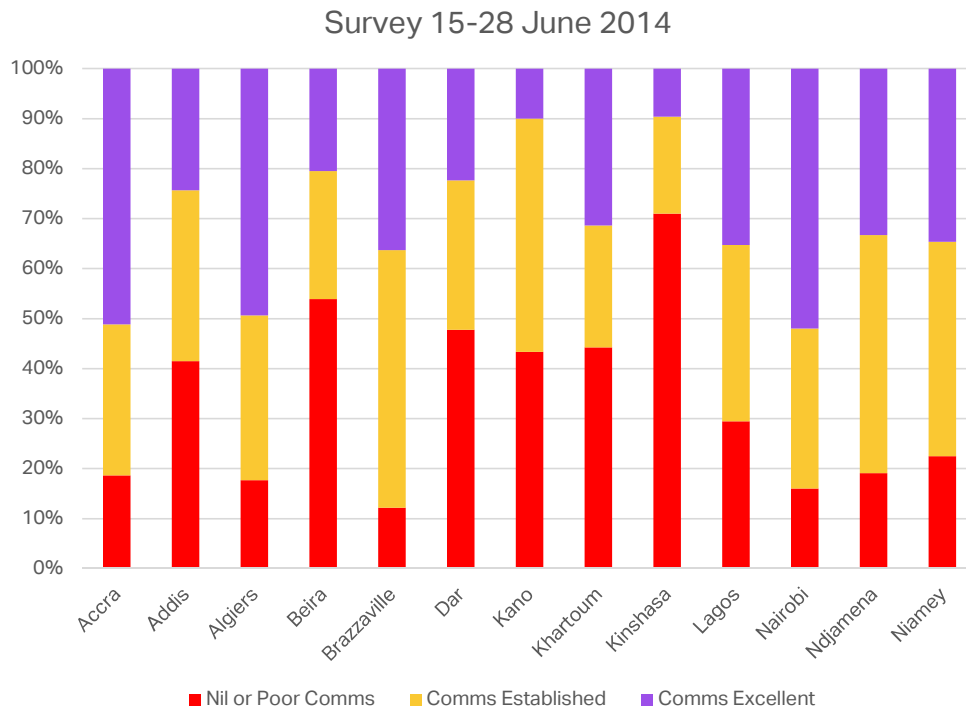


## IFBP 2013

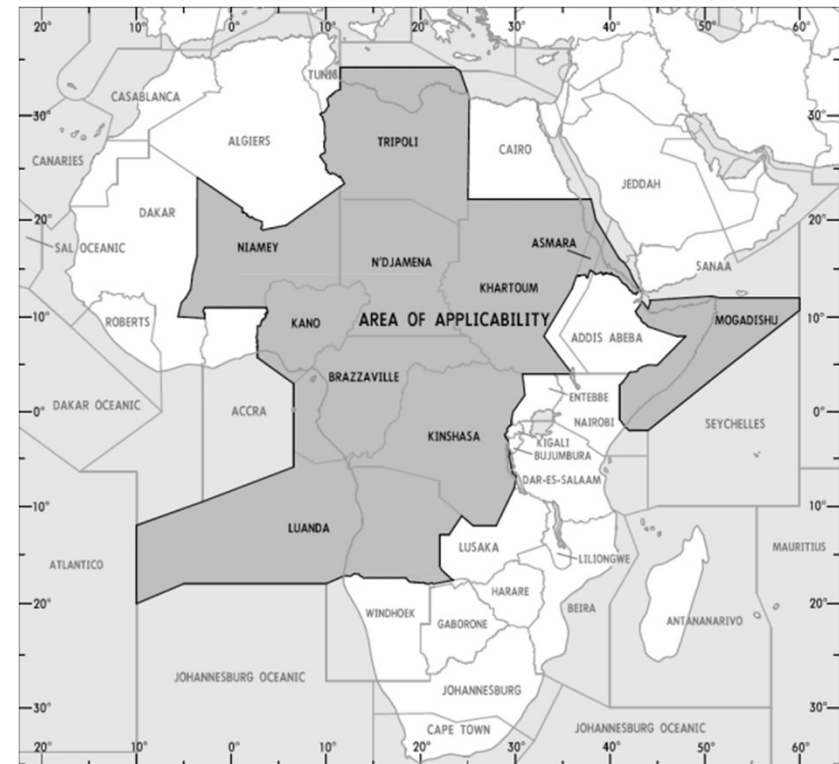


# AMC Survey Results-2014

## Aeronautical Mobile Survey Report -2014

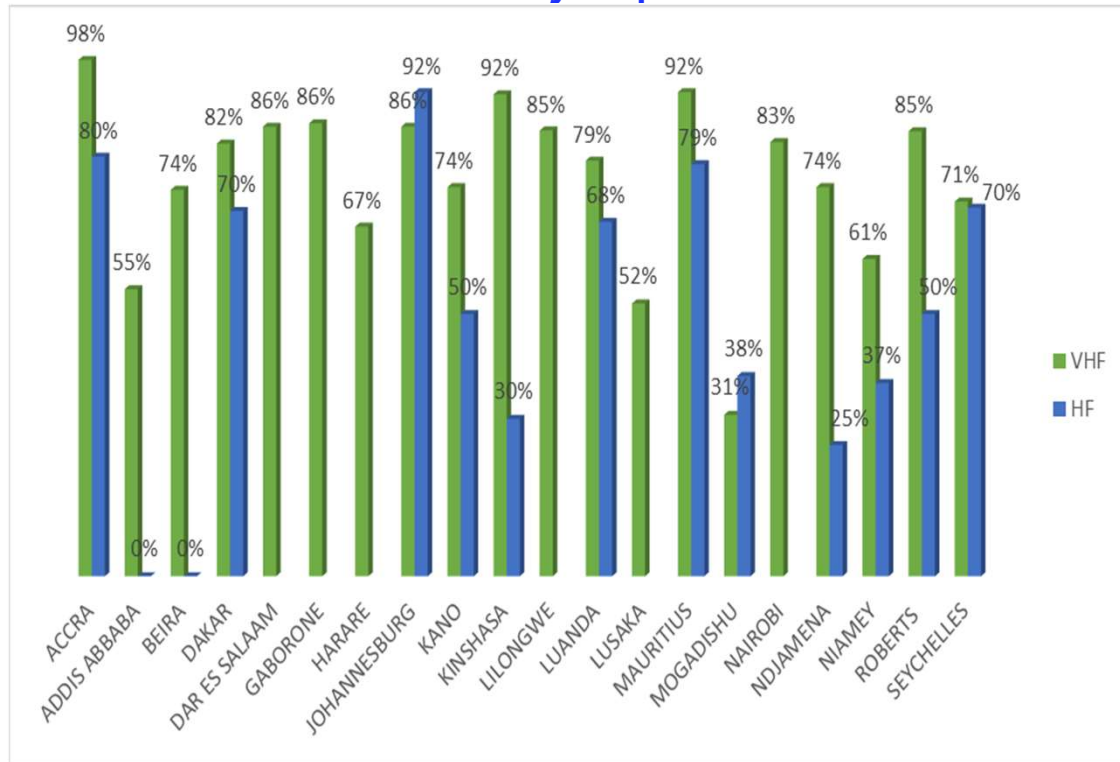


## IFBP 2014



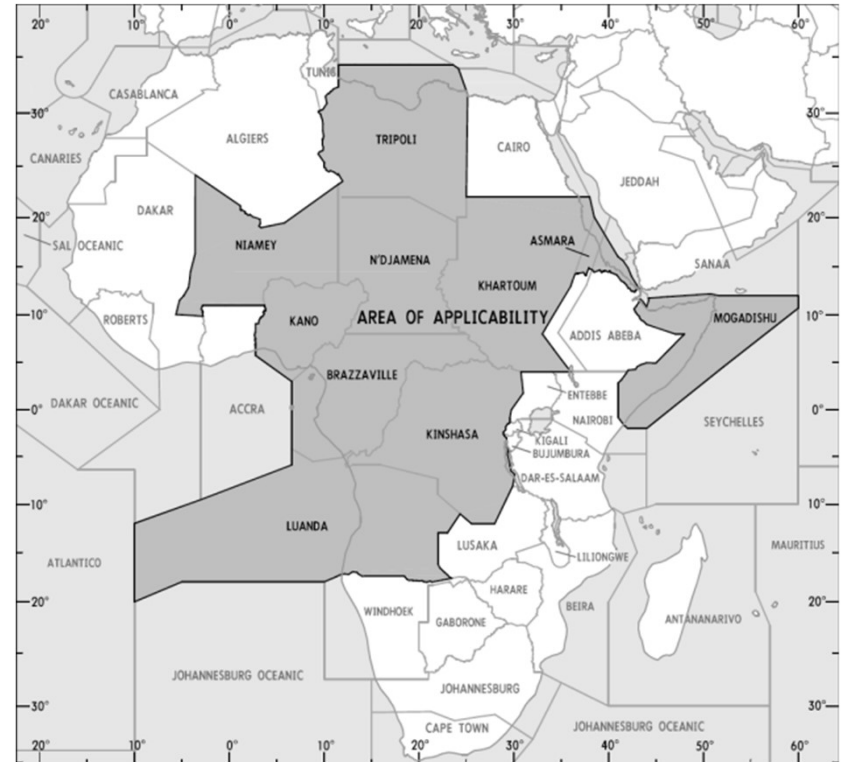
# AMC Survey Results-2016

## Aeronautical Mobile Survey Report -2016



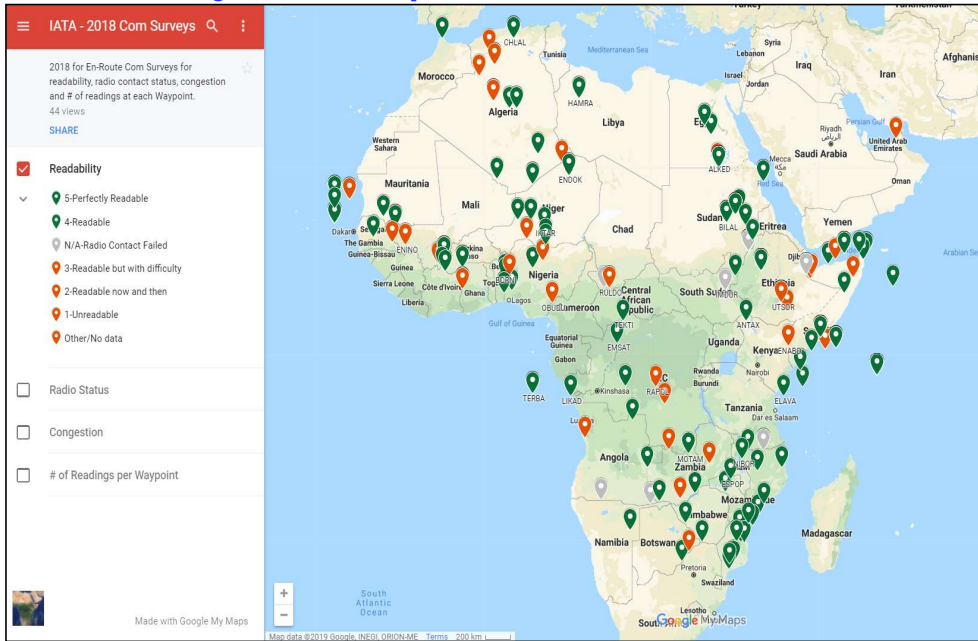
Success rate for VHF and HF as % of the calls

## IFBP 2016

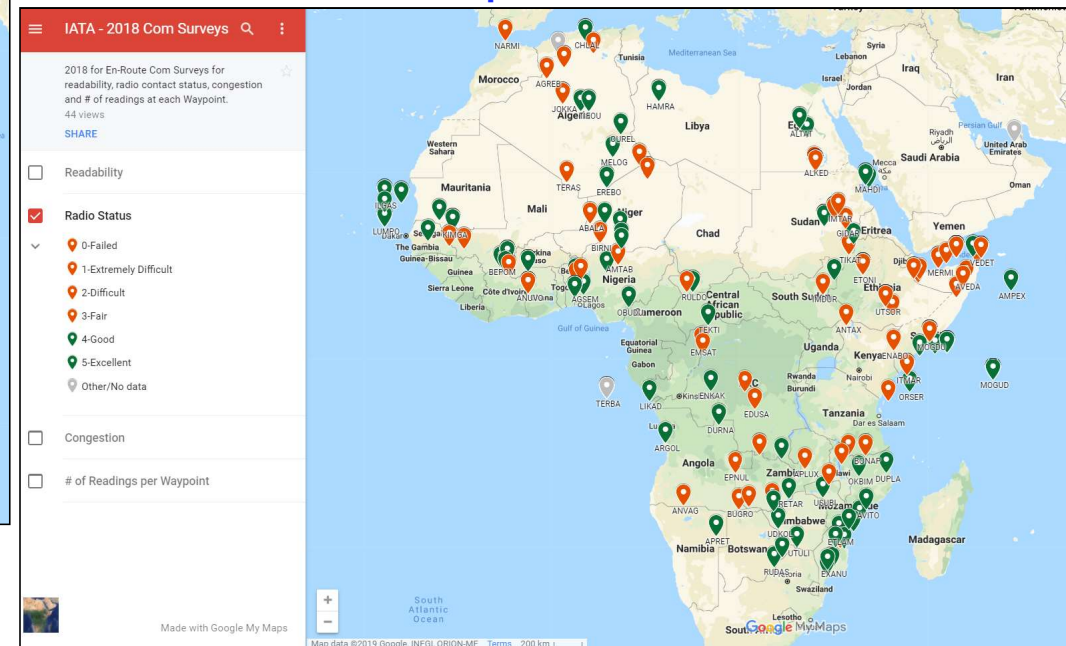


# AMC Survey Results-2018

## Readability heat map



## Radio Contact heat map



# Mind-the-Gap!-Communications

IFBP

VHF Coverage



1870s

HF Coverage  
Is it still relevant?



ADS-C/CPDLC



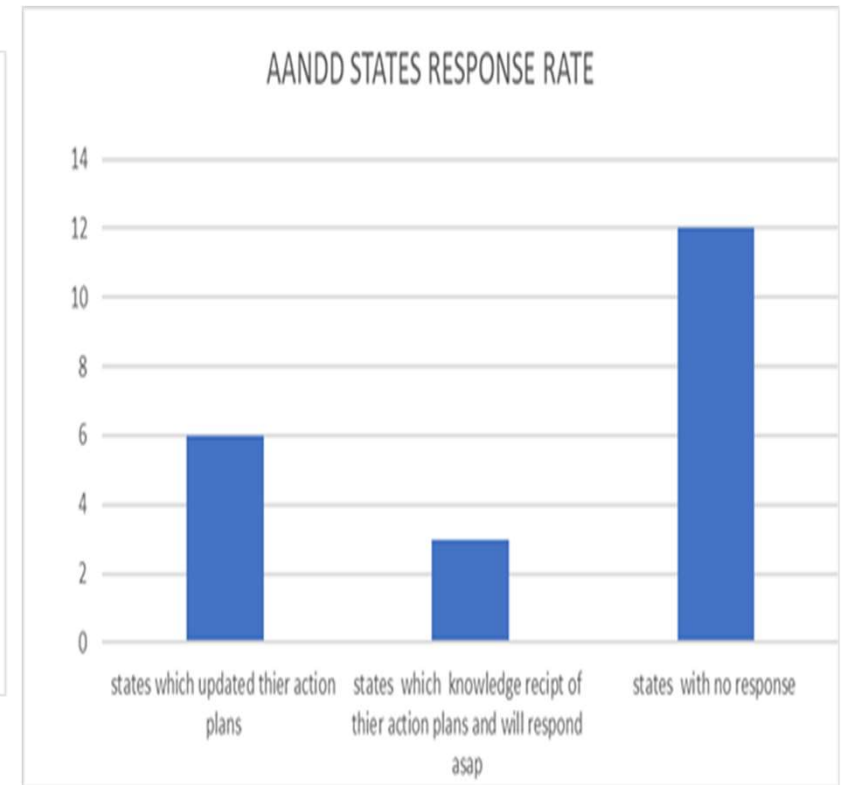
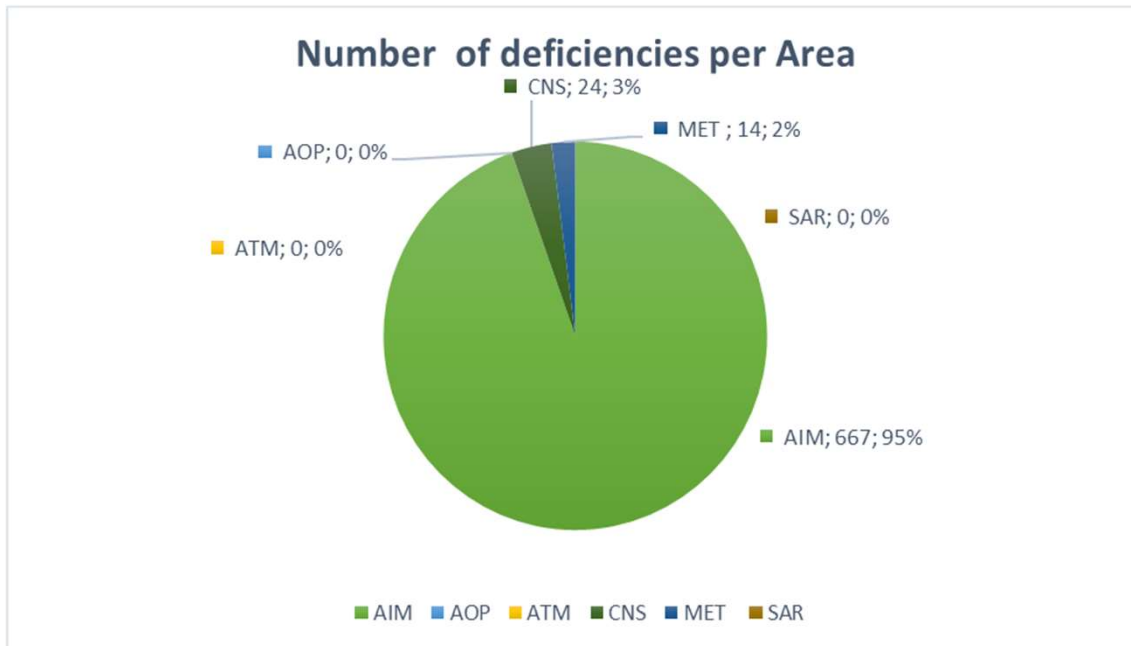
VSAT Networks  
and  
Local Telecoms  
Infrastructure



Future  
Technology:  
ATN  
SWIM



# AFI Air Navigation Deficiency Database



# Mind-the-Gap!-ASBU Implementation

AIM

Transition from  
AIS



PBN

PBN  
Routes  
SIDs/STARs



Approach with  
Vertical Guidance  
LNAV/VNAV



METEOROLOGY

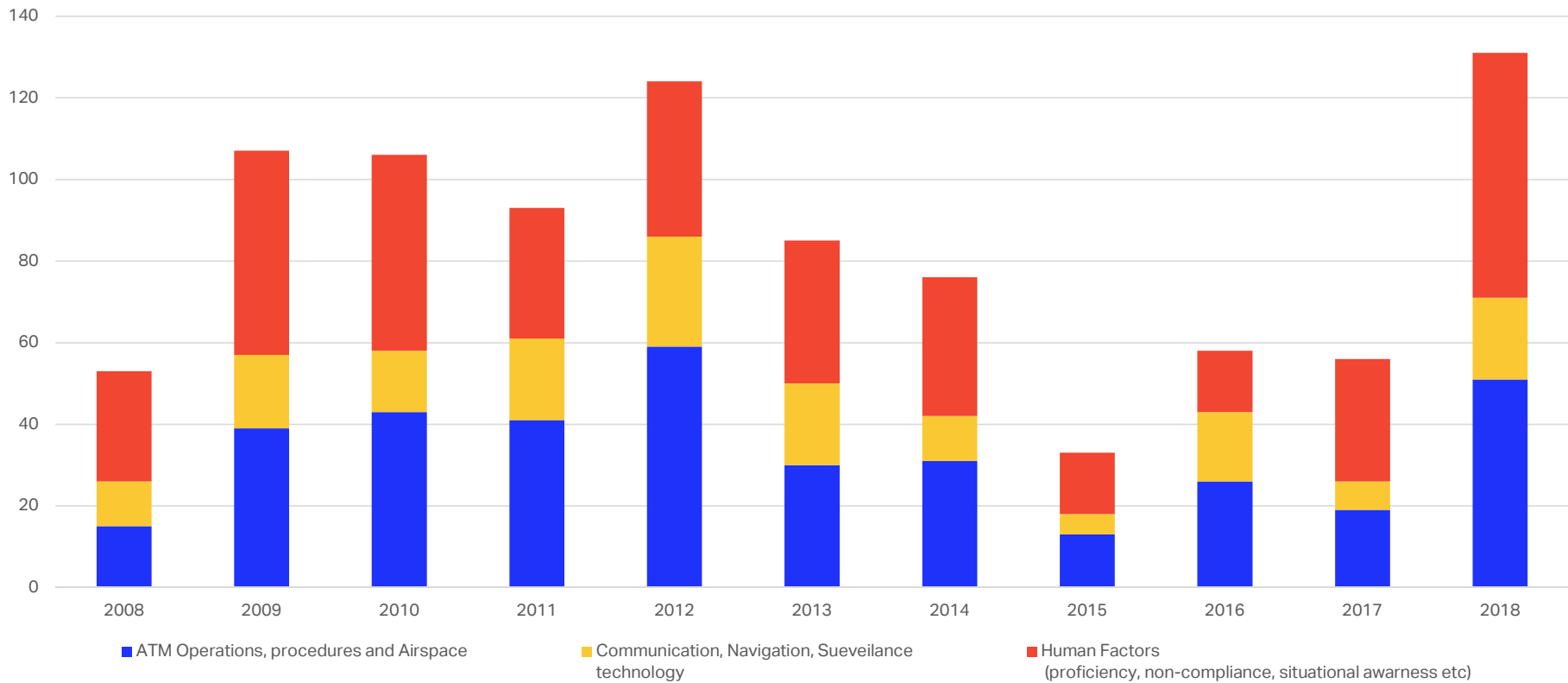


CNS  
ATM  
SAR



# AIAG Report 2008-2018

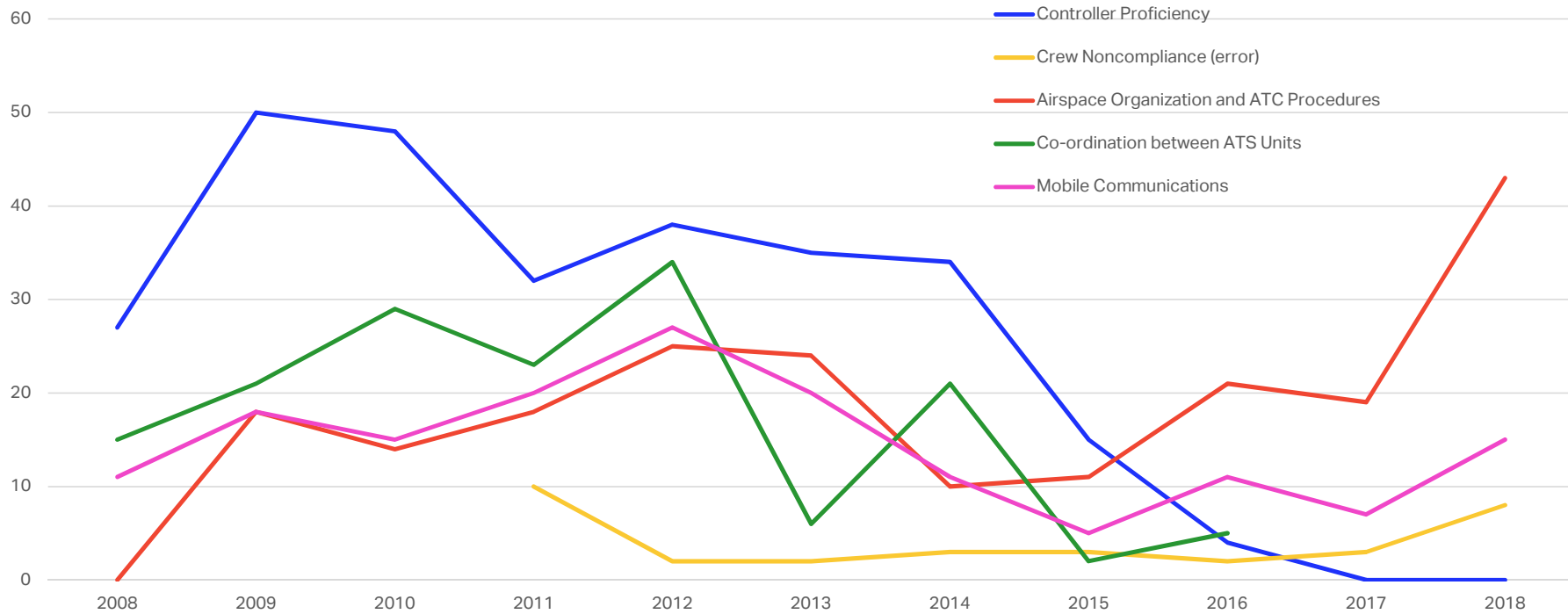
High Level AIAG Causal Factors



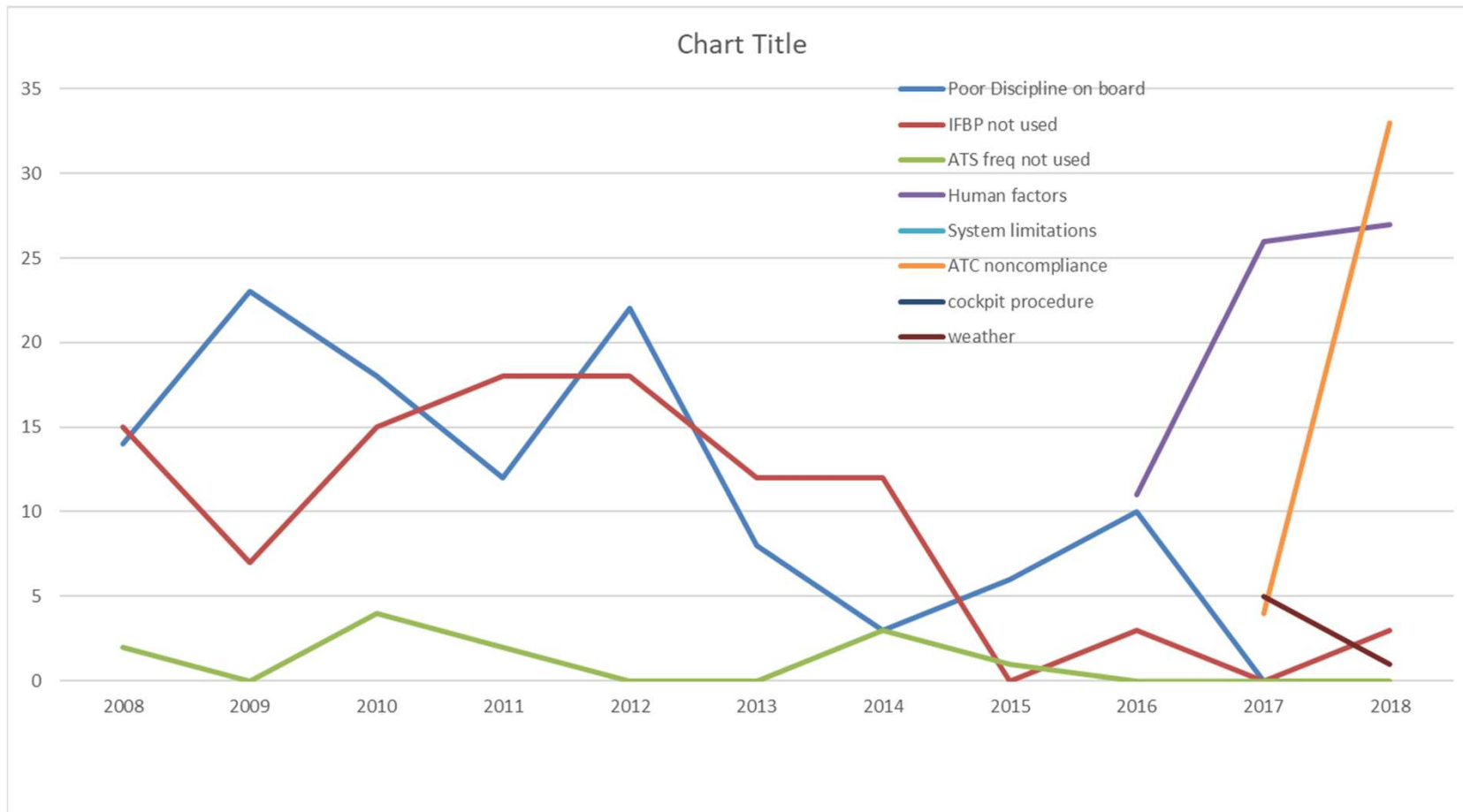


# AIAG Report 2008-2018

Chart Title



# AIAG Report 2008-2018



# Mind-the-Gap!-INCIDENT ANALYSIS Reports

Aeronautical  
Mobile  
Communications



Airspace  
Organization

ATC  
Procedures



Controller  
Proficiency  
ATC  
Non-Compliance  
Flight Crew  
Non-Compliance



**HUMAN FACTORS**



Coordination  
between ATS  
Units



# Thank you

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