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SAFETY IMPROVEMENTS FROM ANS IMPLEMENTATION

AIR TRAFFIC SERVICES (ATS) INTERFACILITY DATA COMMUNICATION (AIDC)

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Overview

- Scrutiny Group (GTE) Considerations
- Air Traffic Services (ATS) Interfacility Data Comunications (AIDC)
- Why AIDC improve safety?
- Conclusions

GTE Considerations

With the implementation of the Reduced Vertical Separation Minimum (RVSM), the CAR/SAM Monitoring Agency (CARSAMMA) together with the Scrutiny Group (GTE) have analysed the occurrences of Large Height Deviations (LHDs) and carried out the Safety Assessment in compliance with the ICAO Doc 9574 - *Manual on a 300 m (1 000 ft) Vertical Separation Minimum Between FL 290 and FL 410 Inclusive*.

During this years the GTE monitored and found that between 2011 and 2014 , there was a gradual increase in LHD events, going from 687 in 2011 to 1451.

The assessment also showed that over 90% of LHD events where coordination errors between adjacent Air Traffic Control (ATC) units.

Something must change!

- With this result, the GTE improved its mechanisms to review the information
- Improve some recommendation about training and mechanisms between the Air Navigation Services Providers (ANSP) with the objective to reduce the LHDs
- Continue monitoring the CAR/SAM regions and analyse the new data
- Share the information with different task forces
- Share the information with the participants of the Fifth North American, Central American and Caribbean Working Group Meeting (NACC/WG/5)
- Share lessons learned across regions

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Reportados por otras FIR's	Reportados 2012	Validados 2012	VR>20	Reportados 2013	Validados 2013	VR>20	Reportados 2014	Validados 2014	VR>20	Reportados 2015	Validados 2015	VR>20	Reportados 2016	Validados 2016	VR>20
Antillas Holandesas	123	113	4	56	53	20	56	39	19	20	18	8	49	43	16
Cocesna	22	20	4	59	42	20	161	117	55	68	60	20	53	48	23
Cuba	25	15	3	12	10	2	21	16	1	12	10	2	4	2	1
Haiti	65	65	20	63	62	26	46	37	22	12	12	8	45	44	14
Jamaica	22	17	15	12	11	11	36	27	16	16	14	6	13	10	9
Panamá	27	26	12	55	54	26	142	132	74	60	58	0	57	51	27
Republica Dominicana	94	75	38	170	146	138	159	123	106	87	78	51	54	48	32
Trinidad e Tobago	26	23	9	25	19	11	9	9	5	7	6	4	12	10	6
Total Region CAR	404	354	105	452	397	254	630	500	298	282	256	99	287	256	128

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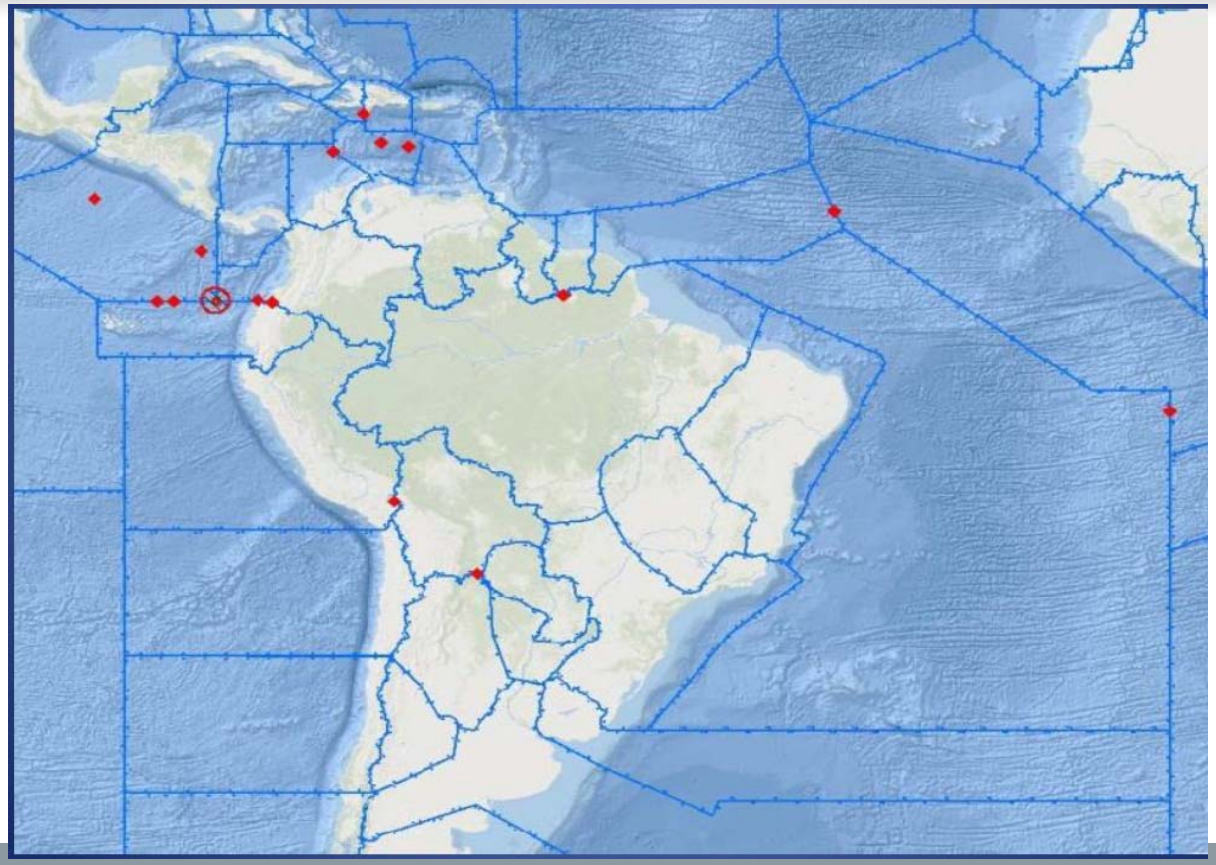
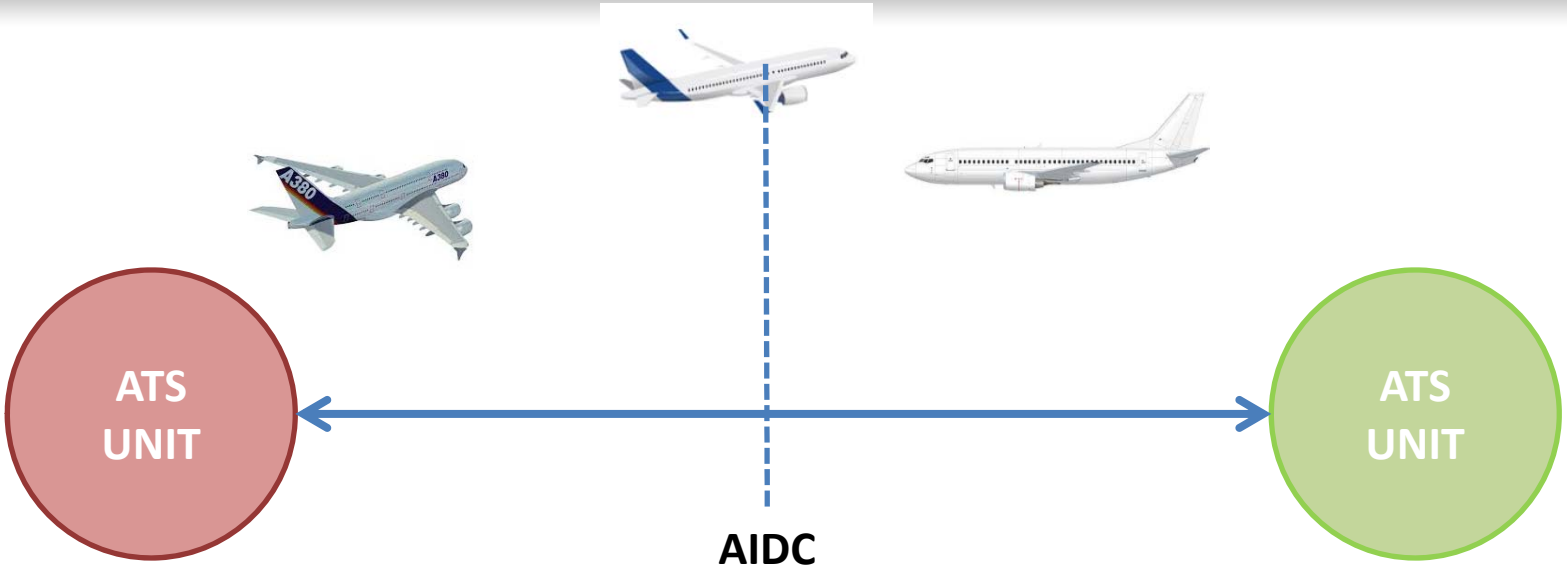
Scrutiny Group (GTE)
Progress Report



ATS Interfacility Data Communication (AIDC)



AIDC; Information exchange between ATS Units in support of ATS functions

AIDC Functions; Notification, Coordination, and Transfer of Control.

AIDC Safety Benefits

- Coordination errors - reduced
  - Coordinated data should be extracted automatically from flight data processing system
  - Coordination should occur automatically
- Controller workload - reduced
  - Less reliance on intercom/phone lines
  - More time available to complete other tasks
- Efficiency - increased
  - Controller can manage increased traffic levels
  - Support ICAO Standards and Recommended Practices (SARPs), etc.

Why AIDC improves  ?

Benefits of Coordination

- Avoid phone communication
- Coordinate with more precise time and levels based on trajectories calculations
- Dynamic Interaction with the Collateral
- Adjust the coordination rules based on Letters of Agreement (LoAs)
- Customize different kind of coordination for the different neighbors

SAFETY

- Coordination makes flying significantly safer for the aviation community by providing to the Control Centers the needed data to manage in advance the flights in order to avoid future conflicts
- Real-time interaction with neighbors
- Executive or Planner controllers don’t have to loose time and attention to the phone calls from/to collaterals
- Strip printing and Flight Plans adjusted based on the coordination data

- For the AIDC implementations the following is needed:
  - ANSPs have to share radar data information
  - ANSPs have to feed their control centers with the same aeronautical information
  - ANSPs must agree on common operational procedures
  - ANSPs have to train their personnel with the new procedures
  - ANSPs must sign LoAs that reflect the new procedures
  - Monitor the coordination and analyse errors

ANSPs need to have the same Aircraft performance

Group Name	Alt. (Hf)	Speed (Knots) Min.	Cruise	Max.	WTC	Alt. (Hf)	Speed (Knots) Climb	Descent	Rate (ft/min) Climb	Descent
A306	410	127	481	619	H	5	157	131	1925	698
						10	158	132	1907	714
						15	159	138	1889	730
						20	166	149	1974	774
						30	167	181	1955	988
						40	190	230	2289	1287
						60	225	233	2695	1306
						80	272	272	2973	1520
						100	280	280	2846	1561
						120	357	334	2879	1984
						140	367	344	2706	2027
						160	378	354	2527	2071
						180	389	365	2344	2075
						200	401	376	2156	2119
						220	413	387	1962	2163
						240	425	399	1765	2206
						260	438	412	1563	2248
						280	452	425	1357	2289
						290	466	438	1147	2330
						310	468	445	1499	2349
						330	464	459	1359	2388
						350	459	459	1111	3297
						370	455	455	842	3198
						390	453	453	511	2882
						410	453	453	229	2873

What does that mean?

- Same information
- Same procedure
- Improve safety

Improvement of Situational Awareness

Conclusion

- The AIDC implementation in the different ANSPs is one of the most effective ways to reduce errors in flight coordination between ANSPs because it improves the situational awareness and reduces errors.

Conclusion

- ANSPs need the information from the industry of the Aircraft Performance to update the data base configuration of the ATS and allow system calculation, estimate with the real aircraft performance information.

Recommendation

- It is necessary that States/Organizations promote the implementation of automation protocols between the Flight Information Regions (FIRs) since it has been proved that the correct implementation reduces the error in air traffic coordination between ANSPs.

Recommendation

- **RASG-PA** to take note on the need of ATS system to configure with the real Aircraft Performance Information and find a way to share the information with the ANSP and recommend a mechanism to update that information when needed.

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THANK YOU