



ICAO

CAPACITY & EFFICIENCY

**NOTAM2021**

# NOTAM2021

**Working together to eliminate old NOTAM**

**28 October 2021**

Agenda	Subject	Presented by	
		Name	Organization
1	Opening and Initial Remarks	Mr. Saulo da Silva	ICAO HQ
2	Global NOTAM Campaign statistics	Mr. Saulo da Silva	ICAO HQ
3	Sharing best practices and lessons learned		
3.1	EUROCONTROL	Ms. Katarina Neuschlova	EUROCONTROL
3.2	Brazil initiatives and practices	Mr. Alessandro de Andrade Santoro	DECEA-Brazil
3.3	Iran initiatives and practices	Mr. Mohammad Sadeghi	AIS-Iran
3.4	OPS GROUP	Ms. Rebecca Lougheed	OPS GROUP
3.5	Qatar Airways	Mr. Stuart Reddy	Qatar Airways
3.6	Jeppesen	Mr. Volker Meyer	Jeppesen
3.7	IATA MENA	Ms. Lindi-Lee Kirkman	IATA
4	Q&A	Mr. Abbas Niknejad (Moderator)	ICAO EUR/NAT
5	Wrap-up - future way forward		
5.1	NOTAM Replacement System	Mr. Brian Murphy	IMP
5.2	Introduction NOTAM iPack	Mr. Aissaoui Radhouan	ICAO MID
5.3	Closing remarks	Mr. Stephen Creamer	ICAO ANB



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**NOTAM2021**

# NOTAM2021

Working together to eliminate old NOTAM

# Q&A



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**NOTAM2021**

# **Verbal introduction of “NOTAM Replacement System”**

**Mr. Brian Murphy**

**ICAO Information Management Panel (IMP)**





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**NOTAM2021**

NOTAM Campaign video

<https://www.icao.tv/videos/notam-words-from-around-the-globe>

Supporting  
European  
Aviation



# ICAO Global Campaign on NOTAM Improvement (NOTAM2021)

## EUROCONTROL EAD Service Experience

Wrap-up Session  
28 October 2021

EUROCONTROL

NMD/INF/IAC/EAIM Service

Katarina Neuschlova



NETWORK  
MANAGER

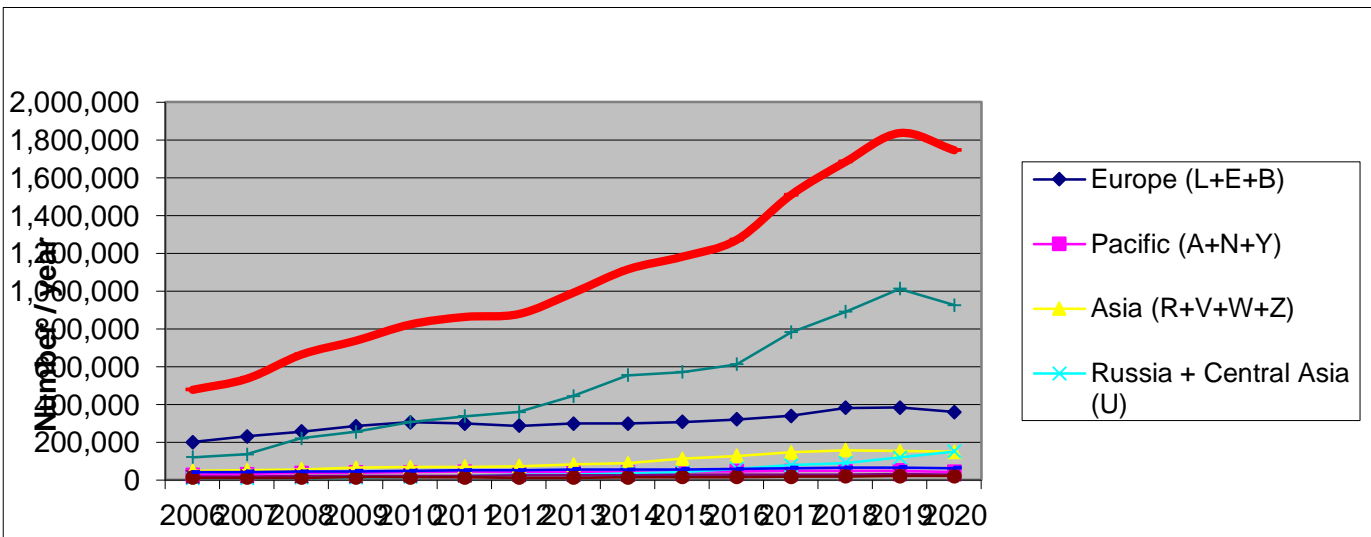


# EUROCONTROL EAD Service

- The European AIS Database (EAD) service:
  - Provided by EUROCONTROL on behalf of its Member States;
- The EAD objective:
  - Common reference of harmonised, quality-assured aeronautical information that enables users' community to retrieve and download aeronautical data (static and dynamic) as well as aeronautical information products;
- EAD Data Providers (DPs) - 55 worldwide, incl. 43 from ECAC, Data Users (DUs) – about 200;
- EUROCONTROL EAD service is certified by EASA (European Aviation Safety Agency):
  - Aeronautical Information Service Provider in the EU regulatory framework (IR (EU) 2017/373 amended by IR 2020/469);
  - Alignment with ICAO Annex 15 (AMDT 40) and PANS-AIM (first edition);
- EAD contributes to enhancing data quality by identifying non-compliant NOTAM ("old"):
  - To share experiences gained through the implemented procedures and working with clients.

# Setting the Scene

## EAD NOTAM Statistics 2006-2020



Region	2019	2020	Trend	Percentage
Europe (L+E+B)	383,099	360,574	- 22 525	- 5.88%
Pacific (A+N+Y)	50,240	42,354	- 7 886	- 15.7%
Asia (R+V+W+Z)	153,298	150,124	- 3 174	- 2.07%
Russia + Central Asia (U)	118,684	152,022	+ 33 338	+ 28.09%
Africa (D+F+G+H)	31,941	29,630	- 2 311	- 7.24%
Mid Asia (O)	20,986	21,202	+ 216	+ 1.03%
North America (C+K+P)	1,012,150	926,050	- 86 100	- 8.51%
South + Central America (M+S+T)	66,427	64,073	- 2 354	- 3.54%
<b>TOTAL</b>	<b>1,836,825</b>	<b>1,746,029</b>	<b>- 90 796</b>	<b>- 4.94%</b>



## NOTAM Quality in EAD

- EAD implemented the Data Consistency Review process to support clients:
  - Harmonised and unique high standard of data quality to all EAD DUs and DPs;
  - Errors in the data contained in the EAD are identified and acted upon by DPs;
- EAD monitors and reports to migrated EAD DPs (INO) on a quarterly basis:
  - All NOTAM reviewed per month;
  - Details about number of errors identified and percentage;
  - Summary per error category [%];
  - List of Known Errors (not solvable due to local legislation, system constraints, etc.) applicable;
  - List of the number of valid **PERM NOTAM** on a monthly basis per year;
  - List of the number of **EST NOTAM** overdue per month;

- 
- PERM NOTAM Development with Status as of 01-Oct-2021**
- | Date      | ECAC | NON ECAC | WW ex U.S. | MIGRATED | NOTAMR |
|-----------|------|----------|------------|----------|--------|
| 01/Jan/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Mar/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/May/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jul/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Sep/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Nov/18 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jan/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Mar/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/May/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jul/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Sep/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Nov/19 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jan/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Mar/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/May/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jul/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Sep/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Nov/20 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jan/21 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Mar/21 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/May/21 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Jul/21 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Sep/21 | 1635 | 5783     | 8676       | 1397     | 972    |
| 01/Oct/21 | 1491 | 3067     | 4567       | 1397     | 972    |

# EAD Actions for Improvements

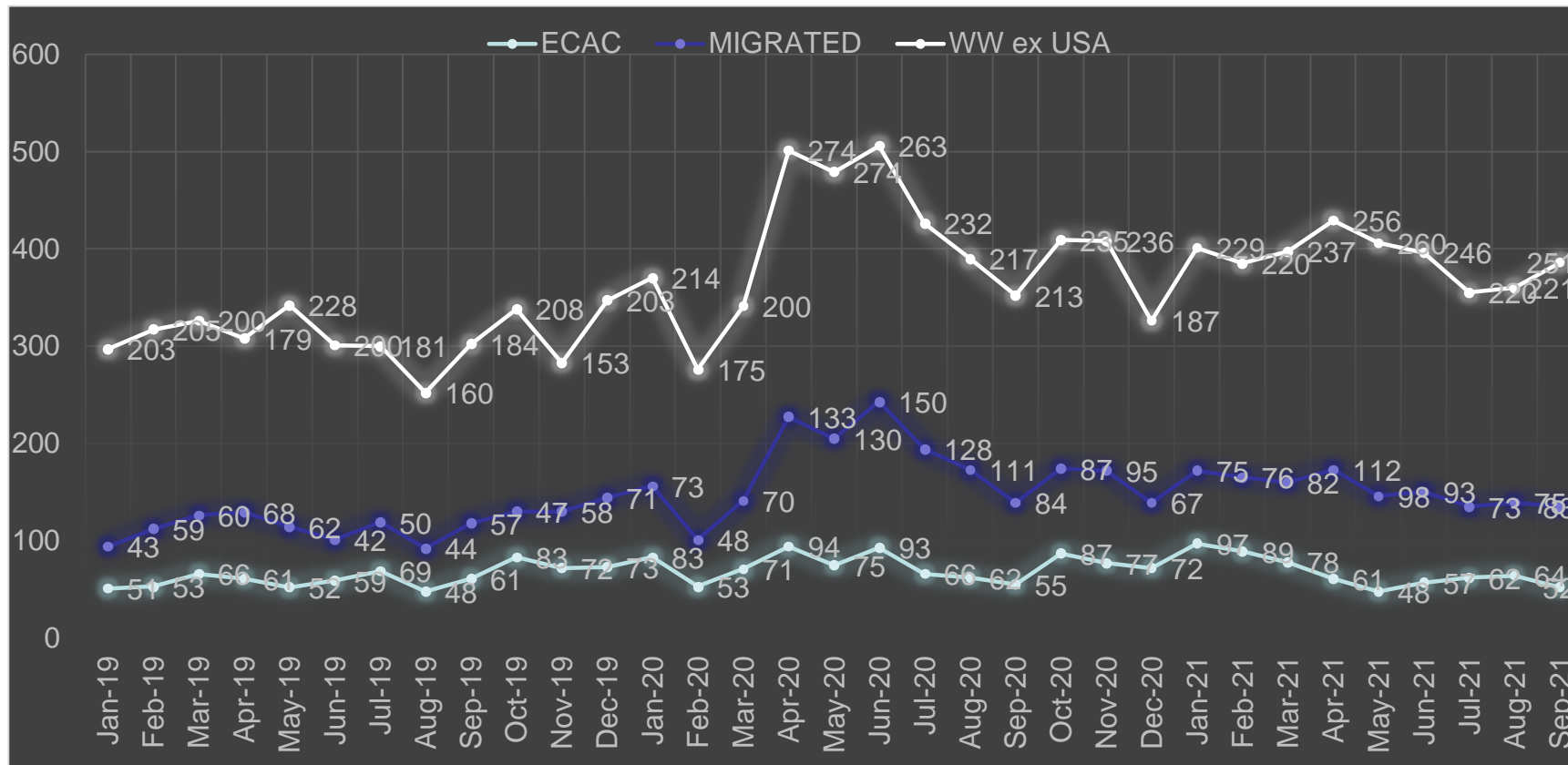
- Towards migrated DPs including Military:
  - DCR quarterly reports provided in a standard manner;
  - EAD requests individual DPs to provide feedback;
  - Defined communication flow is a "must";
  - Process embedded in DPs' QMS in many cases -> corrective actions planned for findings;
  - Escalation procedures applied via EAD Service Desk (incident management);
- Regular reporting to EUROCONTROL Working Arrangements with Stakeholders:
  - To raise awareness on issues identified by EAD;
  - To encourage short-term improvements:
    - Apply ICAO SARPs and EUROCONTROL Guidelines in daily NOTAM operations;
    - Adhere to EAD procedures;
    - Re-enforce importance of their feedback.

# EST NOTAM Review by EAD

- EAD performs review on outdated EST NOTAM:
  - Frequency once a month;
  - Identification of NOF having EST NOTAM published which have exceeded the Item C) time by more than 24H (acc. to EUROCONTROL OPADD);
  - Notification by an AFTN freetext message to address the respective NOF.



# Outdated EST NOTAM Evolution 2019 - 2021



# Evolution Towards Digital NOTAM

- Common Project One (CP1) Regulation (CIR (EU) 2021/116):
  - ATM modernisation in Europe;
  - Applicability date: 31 December 2025;
- CP1 introduces Digital NOTAM as a mandatory service:
  - AISPs that are intended providers of the service;
  - Airports that are originators of the event data;
  - ANSPs that are the intended consumers of the service and information it provides;
- EUROCONTROL initiated consultation at the level of EAD Stakeholders:
  - EAD evolution strategy needs to be discussed further.

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Contents

*II Non-legislative acts*

INTERNATIONAL AGREEMENTS

\* Council Decision (EU) 2021/112 of 25 January 2021 on the conclusion of the Agreement on civil aviation safety between the European Union and Japan 1

\* Council Decision (EU) 2021/113 of 25 January 2021 on the conclusion of the Agreement in the form of an Exchange of Letters between the European Union and the Government of the Cook Islands concerning an extension of the Protocol on the implementation of the Sustainable Fisheries Partnership Agreement between the European Union and the Government of the Cook Islands 3

REGULATIONS

\* Commission Delegated Regulation (EU) 2021/114 of 25 September 2020 amending Annexes II and III to Regulation (EU) No 978/2012 of the European Parliament and of the Council as regards Armenia and Vietnam 5

\* Commission Delegated Regulation (EU) 2021/115 of 27 November 2020 amending Annex I to Regulation (EU) 2019/1021 of the European Parliament and of the Council as regards perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds <sup>(1)</sup> 7

\* [Commission Implementing Regulation \(EU\) 2021/116](#) of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014 <sup>(1)</sup> 10

# EUROCONTROL Digital NOTAM Specification

[https://ext.eurocontrol.int/aixm\\_confluence/display/DNOTAM/Digital+NOTAM+Specification](https://ext.eurocontrol.int/aixm_confluence/display/DNOTAM/Digital+NOTAM+Specification)

## Digital NOTAM concept

The term "Digital NOTAM" means *a small data set which contains digitally coded data about one or more related aeronautical information changes, which are of temporary nature or provided on short notice*. From this point of view, the information scope is similar to that of a traditional NOTAM message, as defined by the ICAO Annex 15 and PANS-AIM. However, there are a number of essential differences between the NOTAM messages and the Digital NOTAM concept:

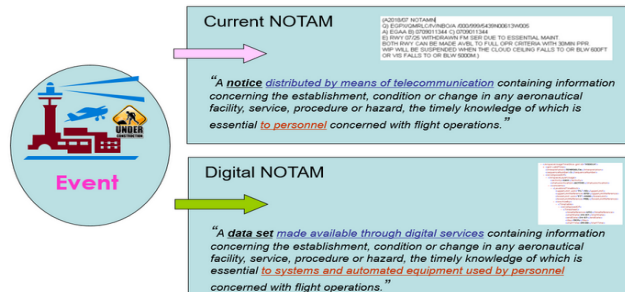
- the current NOTAM is a text note intended to be read by pilots, controllers and other operational personnel involved in flight operations. A Digital NOTAM is intended for **automatic processing and interpretation**. Using dedicated software, it can be **formatted into textual and graphical formats for presentation to human operators**. Digital NOTAM data can be used, for example, in order to present an actual airport map to the pilot or to the air traffic controller, containing graphical depictions of the work in progress areas, closed taxiways or runways, temporary obstacles, etc. A Digital NOTAM might also **trigger automated actions**, such as determine procedures impacted by the unavailability of a navaid;
- verifying the quality of the information contained in the current NOTAM messages requires manual effort, as the NOTAM typically needs to be read by an operator. Digital NOTAM can be **quality checked automatically**, both for adherence to the coding specification and for coherence with the rest of the data;
- the NOTAM messages can refer to information contained in Aeronautical Information Publications and aeronautical charts, requiring just small subsets of data to be digital, such as the list of FIR and the list of airports. Digital NOTAM encoding can be **based only on fully digital static data sets**. It also requires software tools that provide dedicated input forms;
- the NOTAM messages can be distributed by basic teletype networks such as the Aeronautical Fixed Telecommunication Network (AFTN). A Digital NOTAM requires **more advanced communication networks** for distribution, such as IP-based networks, AMHS, TypeX, etc.

In order to enable the provision of Digital NOTAM, the information currently exchanged by NOTAM had to be modelled and specified in a logical data model. This was achieved with the **Aeronautical Information Exchange Model (AIXM) version 5**.

In addition to the AIXM data model, specific rules are necessary in order to harmonise the encoding of the different categories of NOTAM "events". A situation that affects one or more aeronautical features, by altering their properties, either temporarily or permanently and which requires specific encoding, decoding and verification rules in AIXM is described in this document as an **"event scenario"**.

In order to enable a smooth transition and to support the current NOTAM users who will not have the capability to use Digital NOTAM from the first day, Digital NOTAMs will be issued in parallel with the current NOTAM messages. For this reason, the automatic generation of the text NOTAM is also in the scope of this specification. Thus, NOTAM will be generated in the same way that AIP tables and aeronautical charts are generated from a common aeronautical information database. For this purpose, the text NOTAM generation rules are described for each particular scenario. This should avoid the manual creation on a different system and minimise the risk of inconsistencies that could otherwise exist between the NOTAM text and the digital data.

Digital NOTAM will most likely be implemented incrementally; the most common types of NOTAM will be supported first, in order to match the gradual implementation by the end-user of their capabilities for digital NOTAM processing. Therefore, the Digital NOTAM Specification document will continue to be developed incrementally, adding new scenarios as required.



## Related activities:

- EUROCONTROL Digital NOTAM Action Group;
- Contribution to WG-A of the ICAO Information Management Panel (IMP).



EAD – European AIS  
Database

Thank you!



# Acronyms and Abbreviations

<b>DCR</b>	<b>D</b> ata <b>C</b> onsistency <b>R</b> evue
<b>DP</b>	<b>D</b> ata <b>P</b> rovider
<b>DU</b>	<b>D</b> ata <b>U</b> ser
<b>EASA</b>	<b>E</b> uropean <b>A</b> viation <b>S</b> afety <b>A</b> gency
<b>INO</b>	<b>I</b> nternational <b>N</b> OTAM <b>O</b> peration
<b>INO DP</b>	<b>INO</b> <b>D</b> ata <b>P</b> rovider
<b>OPADD</b>	<b>E</b> UROCONTROL Guidelines for <b>O</b> perating <b>P</b> rocedures for <b>A</b> IS <b>D</b> ynamic <b>D</b> ata
<b>QMS</b>	<b>Q</b> uality <b>M</b> anagement <b>S</b> ystem
<b>NOF</b>	<b>N</b> OTAM <b>O</b> ffice
<b>WW</b>	<b>W</b> orld <b>W</b> ide

## Definitions

### **Migrated client**

A Client (Data Provider) that has been declared operational by EUROCONTROL for INO area for which it is responsible.

### **Non-Migrated client**

A Client (Data Provider) that has not declared operational by EUROCONTROL for **INO area** for which it is responsible.

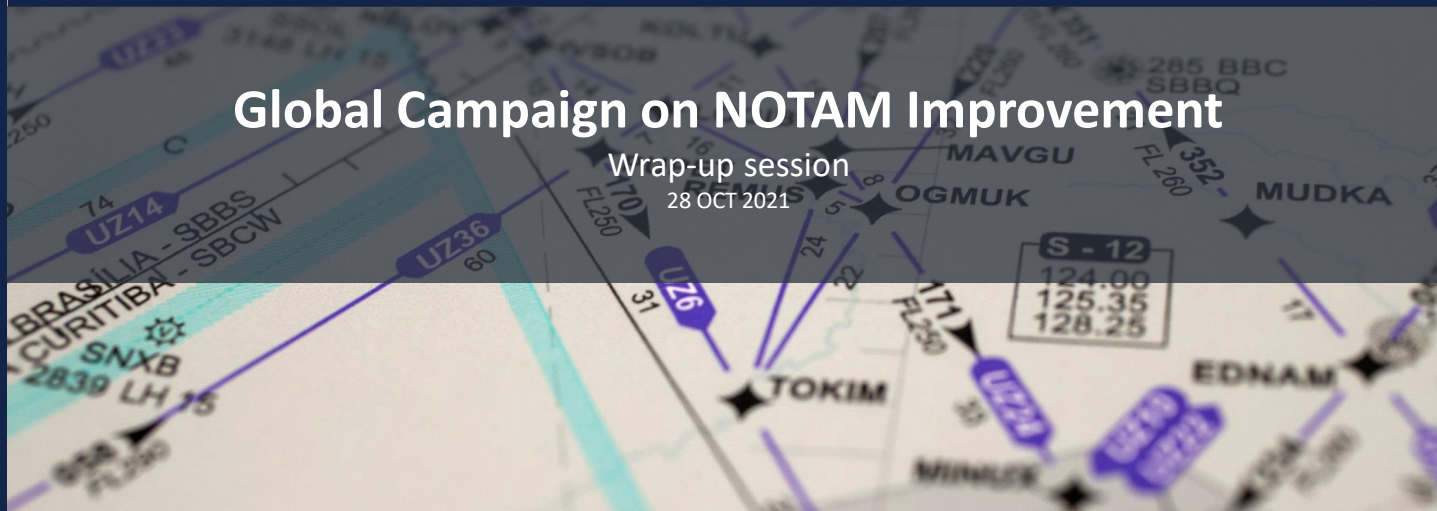


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# Global Campaign on NOTAM Improvement

Wrap-up session  
28 OCT 2021



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Departamento  
de Controle do Espaço Aéreo



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# Objective

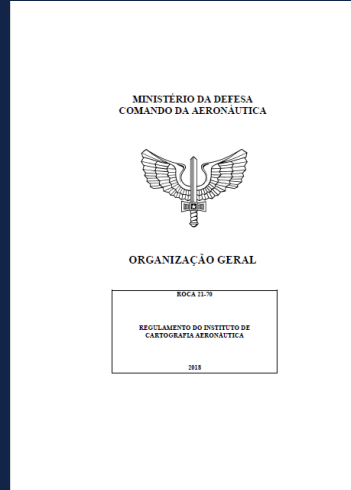


Present current actions in Brazil to  
improve NOTAM quality





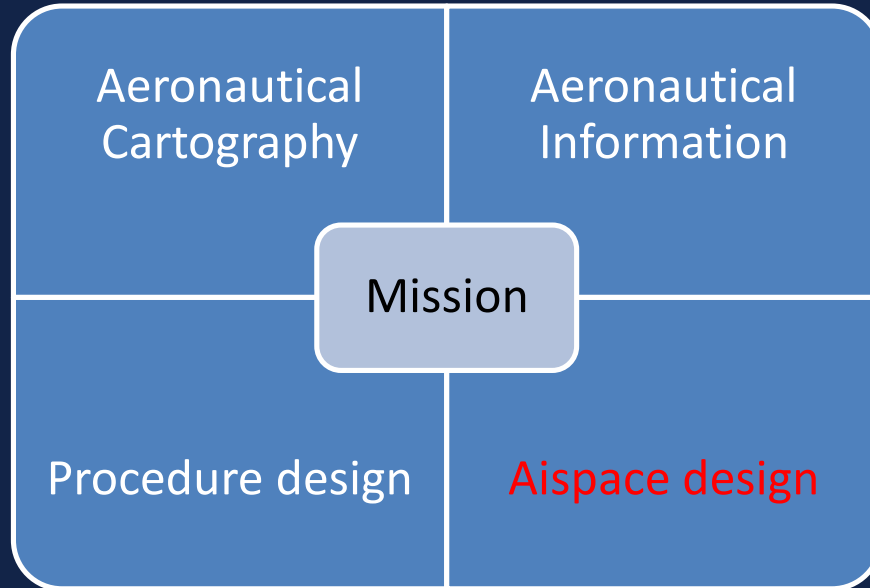
# Institute of Aeronautical Cartography (ICA)



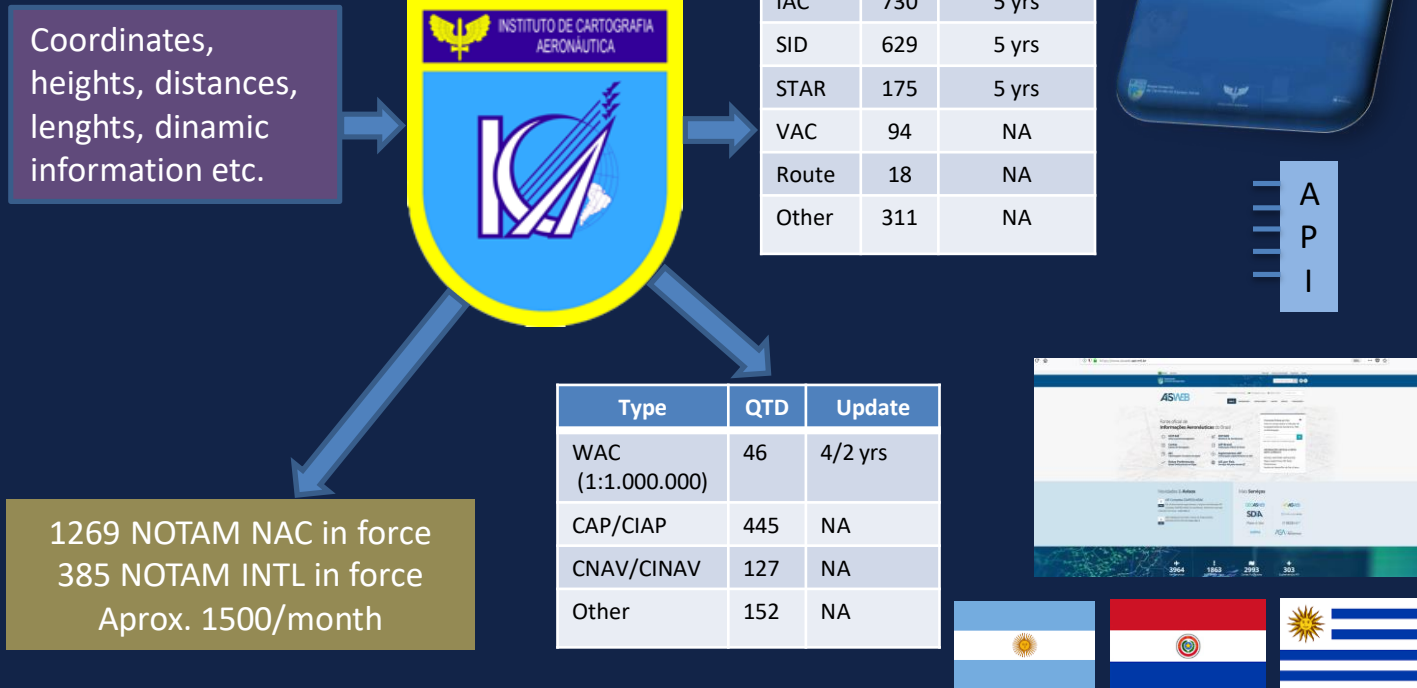
Quality information



Right decision



# Inputs and outputs



# Problem identification



Meeting with general aviation in Dec 17th 2019

- a) ICA (AIM), CGNA (Flow Manag) and CIMAER (Meteorology)
- b) Main users complain – too Much NOTAM in force
  - Difficult to plan the flight
  - Safety risk (signal/noise ratio)

# Identified causes



## Endogenous factors

- a) Internal coordination (ICA)
- b) Charts productivity
- c) Control process for NOTAM
- d) Chart production tools and database integration

## Exogenous factors

- a) Originators delays
- b) Originators adhesion to regulations
- c) "Liability" NOTAM



[AIM](#)[AIRAC](#)[Specimen AIP](#)[WG-A](#)[NOTAM2021](#)[Online Registration](#)[NOTAMeter](#)[Contact Us](#)

## Global campaign on NOTAM improvement (NOTAM2021)

On any given day, there are some 35,000 active NOTAM circulating in the global air transport system. In 2020, the total number of NOTAM issued exceeded 1.7 million.

Yearly totals such as this have increased steadily over the years, on average by more than 100,000 annually. Due to the COVID pandemic, however, the total number of NOTAM decreased by five percent in 2020, the first decrease in over 10 years (*Source: Eurocontrol, International NOTAM statistics 2000-2020*).

It is not uncommon for a pre-flight briefing package supporting a long-haul international flight to contain more than 100 pages of NOTAM information. Findings have shown that twenty percent of these will be old NOTAM, exceeding their three-month applicability period.

On 8 April 2021 at 12:00 UTC, ICAO will launch a new **Global Campaign on NOTAM Improvement (NOTAM2021)** by kicking off Phase 1 on old NOTAM with a webinar in collaboration with its seven regional offices. Its objective will be the significant reduction in the number of old NOTAM still in circulation.

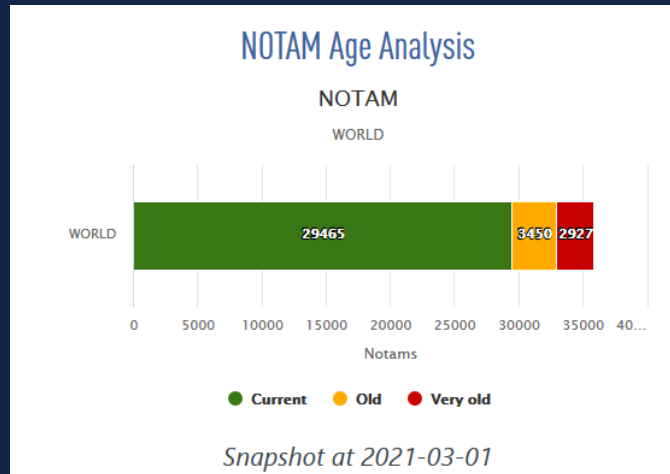
Additional webinars will be conducted on a bi-monthly basis to monitor progress and share experiences and lessons learned. The overall schedule for all of these sessions will be as follows:

Kick-off webinar: 08 April 2021  
Progress webinars: 16 June 2021  
31 Aug 2021  
28 Oct 2021  
15 Dec 2021

All webinars will be conducted at 12:00 UTC to optimize global participation.



The initial objective of the global campaign is to eliminate old NOTAM. On any given day, there are some 35,000 active NOTAM in the global air transport system. In 2020, the total number of NOTAM issued exceeded 1.7 million. Findings have shown that 20 per cent of these will be old NOTAM, exceeding their three-months applicability period as per Annex 15 — *Aeronautical Information Services*.



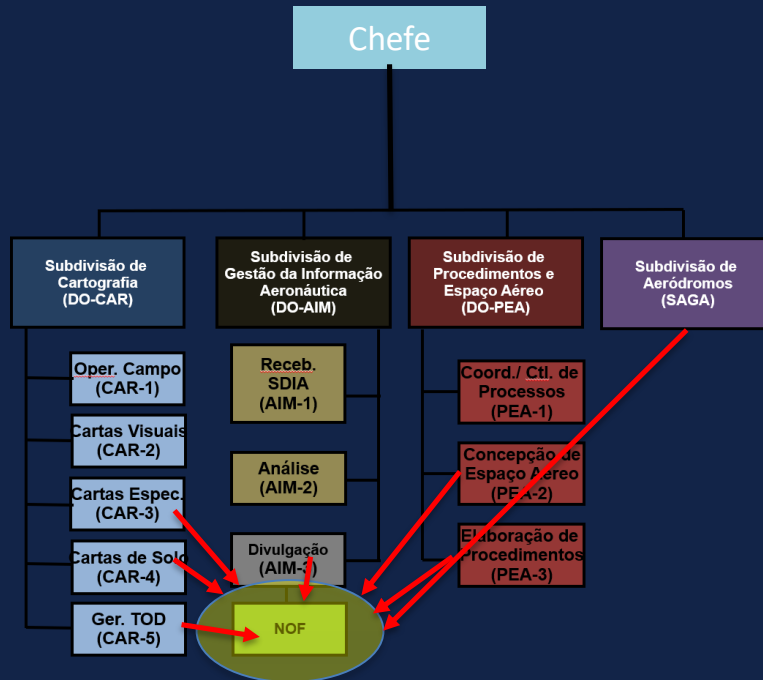
### Brasil

$$480(\text{NOTAM BRASIL})/35000 (\text{WORLD}) = 1,37\%$$

# Iniciatives



## Original Structure of OD



SBRJ Z3022/16 NOTAMR Z1514/14

Q) SBRE/QSTXX/IV/NBO /A /000/999/0808S03455W005

A) SBRF - RECIFE/GUARARAPES - GILBERTO FREYRE, PE

B) 12/08/16 19:47 - C) PERM

E) TWR D-CL (DATA LINK CLRD) AUTH DE TFC VIA DATA LINK ACT H24 REF: AIP-MAP ADC PDC VAC SID (TODAS) STAR (TODAS) IAC (TODAS)

DT EXPED: 12/08/2016 19:42

STATUS: ACTIVE

ORIGEM: Z1798/CGN/120816



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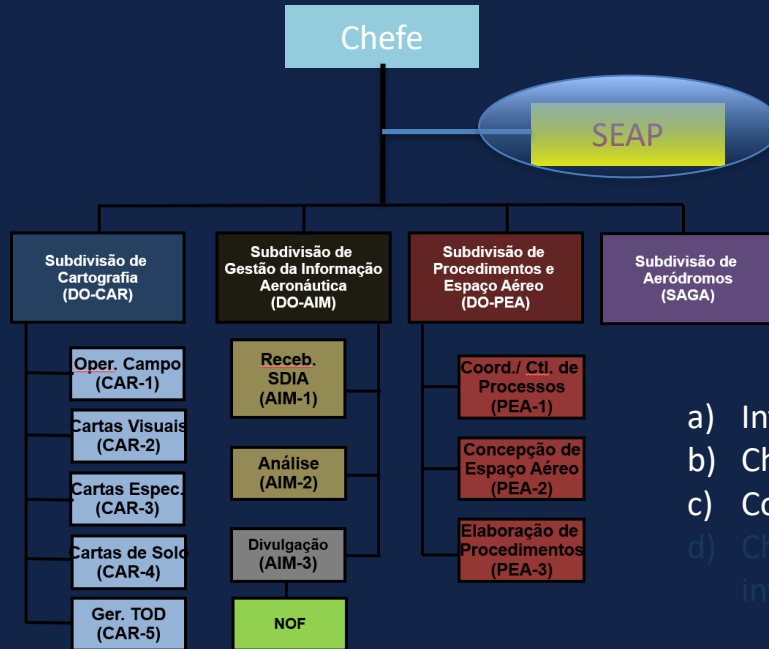


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## Actual OD Structure



## Endogenous factors

- a) Internal coordination (ICA)
- b) Charts productivity
- c) Control process for NOTAM
- d) Chart production tools and database integration

# Iniciativas



DO –PEA  
(Charts Design)

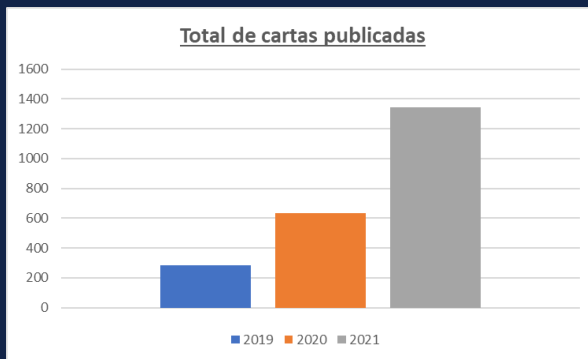


DO -  
AIM



## Training

- Qualification of 4 Procedure Designers (EP)
- Qualification of 7 Procedure Design Auxiliary



## Endogenous factors

- a) Internal coordination (ICA)
- b) Charts productivity
- c) Control process for NOTAM
- d) Chart production tools and database integration



## Quality Management System

- Quality indicators
- Continuous monitoring
- 3 more certified process em 2021 (TOD, OPEA, SAGA) – 8 in total (AIM, Visual Charts, Topography, Training, Special Charts)

## Endogenous factors

- a) Internal coordination (ICA)
- b) Charts productivity
- c) Control process for NOTAM
- d) Chart production tools and database integration



# Iniciatives



## SAC (Customer Support Service)

- Daily monitoring (Director, OD, Chiefs e SGQ)
- Decrease in response time
- Users help increase of internal process quality

SAC	Índice de Atendimento aos Chamados do SAC no Prazo		95%	MENSAL	95 %	88 %	92 %	92 %	91 %	98 %	84 %	96 %	97 %	100 %	100 %	100 %
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## Endogenous factors

- Internal coordination (ICA)
- Charts productivity
- Control process for NOTAM
- Chart production tools and database integration



## Finalization of printing of aeronautical information products

- Modification of ICA 53-4 (SDIA)
  - Reduction from 73 to 42 days the term for effecting aeronautical information for AIRAC



## Exogenous factors

- a) Originators delays
- b) Originators adhesion to regulations



## Improve coordination with originators and suppliers

- Awareness
- Pursuit of compliance with standards
- Avoid “quick fix”
- Improvement in the quality and adherence of NOTAM

## Exogenous factors

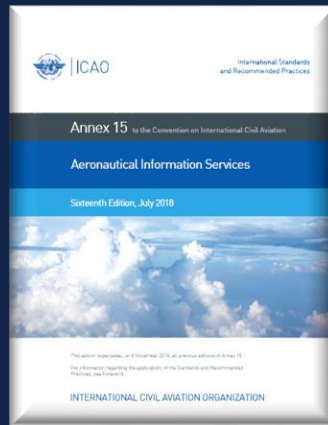
- a) Originators delays
- b) Originators adhesion to regulations
- c) “Liability” NOTAM





## Transition AIS to AIM

- DECEA/ICA participation in ICAO groups in Lima and Montreal
- AIXM 5.1 implementation
- Programm SIRIUS - SWIM





## Database modernization

- ☐ Single database for aeronautical information
- ☐ Data provision for all operational system (SIGMA, SAGITARIO, DACOM etc.)
- ☐ E-AIP generation
- ☐ AIXM 5.1 (SWIM)
- ☐ Increased productivity and data integrity
- ☐ Integration with FPDAM (chart design), ICE (chart route design) and PLX (AIM)
- ☐ Faster NOTAM incorporation



### Endogenous factors

- a) Internal coordination (ICA)
- b) Charts productivity
- c) Control process for NOTAM
- d) Chart production tools and database integration

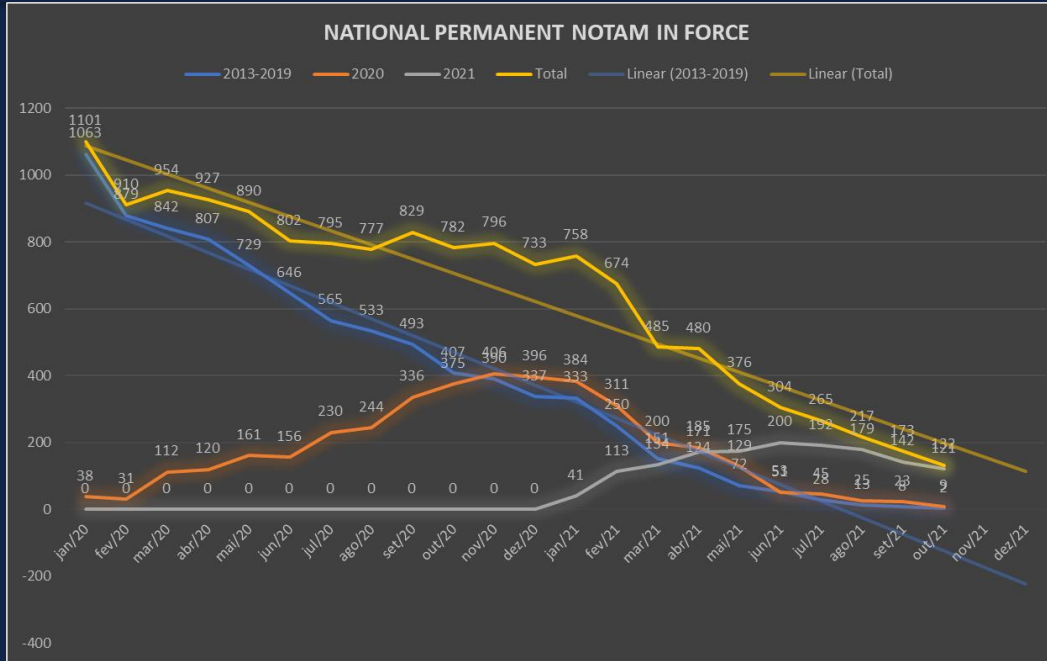
# The future



SWIM consists of standards, infrastructure and governance enabling the management of ATM information and its exchange between qualified parties via interoperable services



# Results

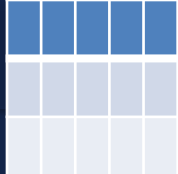


Decrease **88%**  
PERM NOTAM

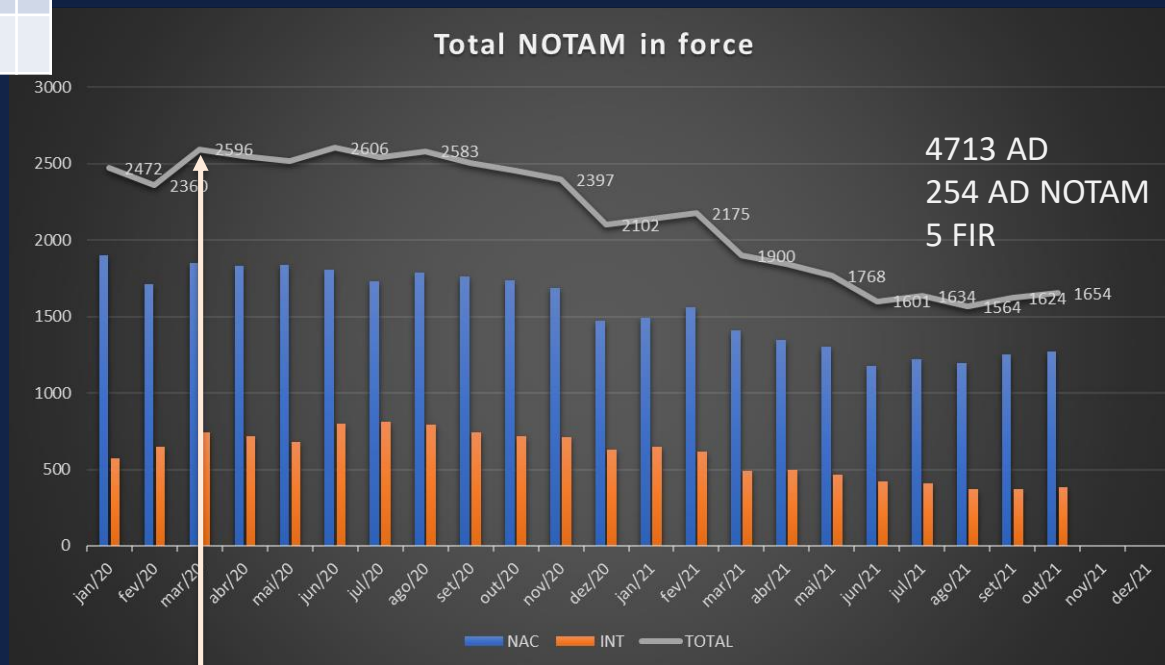
Decrease **99.8%**  
PERM NOTAM  
2013/2019

ONLY PERM  
NOTAM issued in  
2021 by  
DEC/2021





# ults



COVID-19

	> 1 yr	>180d	>90d	<90d
NAC	7	55	125	1137
INTL	1	28	61	323





**Muito obrigado – Muchas gracias – Thank you**

Alessander Santoro – santoroaas@fab.mil.br



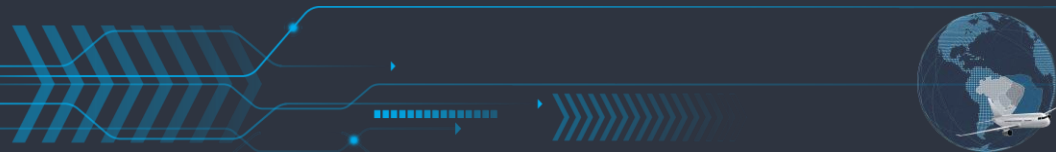
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# NOTAM2021

Working together to eliminate old NOTAM







Q)KENV/QPACH/I/NBO/A/000/999/4038N07347W005  
B)2105290000 C)2211211230  
E)JENNY ARRIVAL...  
UNUSABLE 4000  
Q)KENY/QONT/V/M/000/9/4038N07347W005  
B)2105290000 C)2211211230  
E)JENNY VOR 01 0 UNUSABLE  
Q)KENY/QVORT/V/M/000/9/4055N096025  
B)2107011147 C)2112012111 EST  
E)/HTO/ VORTAC 270-332 UNUSABLE  
  
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B)2107151059 C)210301059 EST  
E)ILS OR LOC RWY 22L, AMDT 26...  
ILS OR LOC RWY 22R, AMDT 4...  
ILS OR LOC RWY 31L, AMDT 11B...  
ILS OR LOC RWY 31R, AMDT 16B...  
ILS OR LOC RWY 4L, AMDT 11D...  
ILS OR LOC RWY 4R, AMDT 30B...  
RNAV (GPS) RWY 22R, AMDT 10...  
RNAV (GPS) X RWY 22L, ORIG-B...  
RNAV (GPS) Y RWY 22L, AMDT 1F...  
RNAV (GPS) Y RWY 31L, AMDT 2B...  
RNAV (GPS) Y RWY 31R, AMDT 2C...  
RNAV (GPS) Y RWY 4L, AMDT 3B...  
RNAV (GPS) Y RWY 4R, AMDT 2B...  
VOR RWY 22L, AMDT 4F...  
VOR RWY 31L, ORIG-B...  
VOR RWY 4L, AMDT 1B...  
VOR RWY 4R, ORIG-B...  
CIRCLING LOW CATS C/D 700/HAA 687. VISIBILITY CAT C 2, CAT D 1 / 4...  
  
Q)KENY/QBCE/IV/M/A/000/999/4038N07347W005  
B)2108261304 C)2112312000  
E)CRANE (ASN 2021-AEA-95A-980A) 40385780734722W (0.7NM NW  
JFK) 115FT (102FT AGL) FLAGGED  
  
Q)KENY/QPCH/I/NBO/A/000/999/4038N07347W005  
B)2109021413 C)2612311413 EST  
E)TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES AMD 9...  
AND TAKEOFF OBSTACLE NOTE: RWY 31R, TEMPORARY ACFT TAILS 1878FT  
FROM DER, 476FT LEFT OF CENTERLINE, 64FT AGL/ 74FT MSL  
(2020-AEA-1302-NOA, LONG TERM CONDITION).  
ALL OTHER DATA REMAINS AS PUBLISHED.  
  
Q)KENY/QPCH/I/NBO/A/000/999/4038N07347W005  
B)2109221454 C)2205041454 EST  
E)KENNEDY FIVE DEPARTMENT...  
NOTE: COATE DEPARTURES NA EXCEPT FOR AIRCRAFT EQUIPPED WITH  
SUITABLE RNAV SYSTEM WITH NAU GPS.  
SAX VOR OUT OF SERVICE.  
  
Q)KENY/QKXK/IV/M/A/000/999/4038N07347W005  
B)2109300852 C)2209302300  
E)TWY A CLR BAR LOT NOT STD  
  
Q)KENY/QFAX/IV/NBO/A/000/999/4038N07347W005  
B)2110011059 C)2112212300  
E)AP BIRD CMT INCREASED HWY MIGRATORY BTN 1000FT-3000FT

A7734/21

Q) KZNY/QMRXX/IV/NBO/A/000/999/4038N07347W005  
B) 2110212303 C) 2112310400  
E) RWY 22L ENGINEERED MATERIALS ARST SYSTEM NOT STD

A8150/21

## Working together to eliminate old NOTAM



**NOTAM2021**  
Working together to eliminate old NOTAM

# Why do we need Notams?

## What is the Big Picture?

Period: 2018-11-06T21:55:00.000Z - 2018-11-08T00:00:00.000Z  
Q-Code (FAXX):  
CYHZ RWY 23 ALS, RCLL, RTHL AND RTZL U/S



## Can a single Notam cause an accident?



# NOTAM2021

Working together to eliminate old NOTAM

“Poorly-presented  
information and **complex and cluttered notams**”

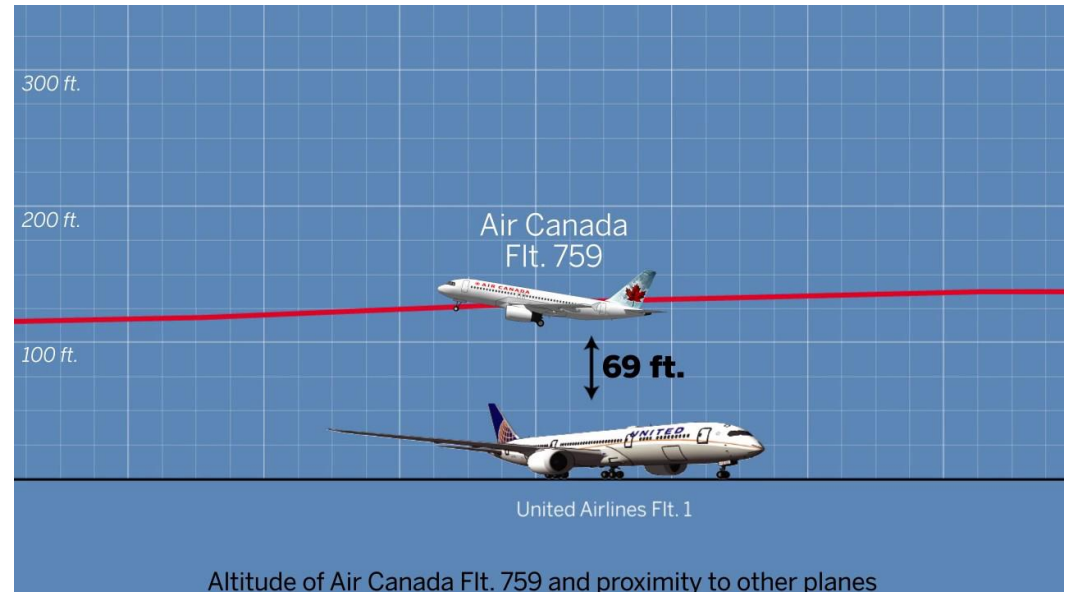
- 98 notams in total
- 37 for Halifax
- 22 about the runway
- 10 required comparison



## The Problem of Old Notams

- “White noise”
- Increased time
- Critical information missed or misunderstood

**Safety is Compromised!**





# Recommendations

- Understand the real impact
- Communicate and work together
- Maintain and build on the progress

**The solution is here today - us working together!**



## OLD NOTAM - User reflection

ICAO Global NOTAM Campaign (NOTAM2021) – 28 October 2021



# Operational Consequences of OLD NOTAMs

## Awareness

Pilots & Dispatcher Unaware NOTAM  
transferred to other publications

## Access to AIS Publication

Lack access to AIP publications

## Planning

NOTAM EST. are not cancelled in timely manner,  
content is not valid but still considered for planning purpose

## Right info, Right Place, Right Time

NOTAM of Permanent NATURE have end time/date  
NOTAMR repeatedly used  
NOTAM with long validity

## Cost

NOTAM not reflecting real time condition

## Resources

Operator create in-house publications for both pilot and dispatcher

# NOTAMR, NOTAM validity, PERM

- **NOTAMR:** Replaced 20 times since DEC 2015 , Incorporated to AIP SUP in mid 2019 , NOTAM cancelled July 2020

B) 2003201230 C) 2006301330EST  
E) NEW STANDARDIZED TURN PAD AT SOUTHERN END RWY14 AVBL FOR ACFT OPS ON TRIAL BASIS. TURN PAD RWY14 USABLE FOR ACFT UP TO TYPE CODE 'E'

- **NOTAM of long duration:**

B) 2103241340 C) 2303241340EST  
E) ILS OR LOC RWY 4L, AMDT 11D...  
AUTOPILOT COUPLED APPROACHES NA BELOW 200FT MSL.

- **PERM NOTAM**

- 6 month after published still in Pilot briefing package

B) 2104281611 C) PERM  
E) IN OPERATION NEWS ACFT STAND COMMERCIAL AVIATION APRON:  
ACFT STAND NR-17 GEOGRAPHIC SITUATION: xx xx xx.xxN xx xx xx.xxW  
ACFT STAND NR-18 GEOGRAPHIC SITUATION: xx xx xx.xxN xx xx xx.xxW  
ACFT STAND NR-19 GEOGRAPHIC SITUATION: xx xx xx.xxN xx xx xx.xxW  
ACFT STAND NR-19A GEOGRAPHIC SITUATION: xx xx xx.xxN xx xx xx.xxW

- Item E) content Temporary or PERM?

B) 2109090000 C) 2112012359  
E) REP XXXXXX COORD xxxxxx.xxS/xxxxxx.xxW INSTL



# Pilot Briefing Package & NOTAM filtering

## Doha (DOH) – New York (JFK)

Pages containing  
NOTAMs  
75

Total NOTAMs  
547

AIP SUP  
44

## Doha (DOH) – Lagos (LOS)

Pages containing  
NOTAMs  
24

Total NOTAMs  
104

AIP SUP  
80

## NOTAM filtering

User can block  
NOTAM/SUP from  
display in Pilot  
Briefing package

Company Policies

NOTAM included in  
Nav. charts, FMS,  
Company document

E) AMEND PUBLICATIONS:  
MOBILE CRANE WITHIN 200FT  
RADIUS CENTRED ON  
510819N 1140155W APRX 2640FT  
BFR THR 17R AND 2440FT WEST  
EXTENSION 360

**NOTAM  
Blocked**

E) RWY 04L/22R SAFETY  
AREA S TWY A3  
IRREGULAR SFC

# Pilot Briefing Package & NOTAM filtering

## DEPARTURE AIRPORT

\*\*\*\*\*

[Airport name] - DETAILED INFO

\*\*\*\*\* RUNWAY \*\*\*\*\*

SX21/21

SX0021/21 AIP SUPPLEMENT

FROM 30JUN21 - UFN

MON-SUN 2000-0400

RWY 05/23 CLSD DUE TO RWY REHABILITATION NIGHT WORKS. REF AIP PAGE XXXX AD.

SX39/18

SX0039/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

WORK IN PROGRESS ON RWY 05/23 SHOULDERS BETWEEN TWY

INTERSECTIONS H TO K. PILOTS TO EXERCISE CAUTION DAY AND NIGHT.

SX30/18

SX0030/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

PORTION OF THE RWY 05/23 BETWEEN TWY H AND J IS 30MM MILLED.

TEMPORARILY RAMPED AND SMOOTHENED.

SX8/18

SX0008/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

RWY05/23 EDGE LIGHTS 120M APART BETWEEN TWY H AND K ON BOTH SIDES OF THE RWY DUE TO SOME OF LIGHTS WHICH ARE U/S

\*\*\*\*\* APPROACH PROCEDURE \*\*\*\*\*

SX24/20

SX0024/20 AIP SUPPLEMENT

VALIDITY: 01DEC20 TILL UFN

VHA DME FREQUENCY 131.1MHZ UNSERVICEABLE. PILOTS TO EXERCISE CAUTION.

\*\*\*\*\* AIRPORT \*\*\*\*\*

SX20/21

SX0020/21 AIP SUPPLEMENT

FROM 30JUN21 - UFN

WORK IN PROGRESS ON THE SHOULDERS OF TWY E.

PILOTS TO EXERCISE CAUTION.

SX19/21

SX0019/21 AIP SUPPLEMENT

FROM 30JUN21 - UFN

TWY M CLSD

SX12/19

SX0012/19 AIP SUPPLEMENT

WORK IN PROGRESS ON THE SHOULDERS AT THE INTERSECTION OF THE

BEGINNING OF RWY 23 AND TWY G. PILOTS TO EXERCISE CAUTION.

SX00/19

SX0000/19 AIP SUPPLEMENT

VALIDITY: 23JUL20-UFN

FUELLING OF EXTERNAL TANKS ARE NOW FROM 0600-2300 HOURS.

HOWEVER, FUELLING EARLIER THAN 0600HOURS WILL ONLY BE UPON REQUEST

AS DEPOT WORKING HOURS ARE FROM 0600 HOURS.

SX12/19

SX0012/19 AIP SUPPLEMENT

VALIDITY: 03JUN2019 - UFN

TWY N IS RESTRICTED TO LIGHT AIRCRAFT (7000KGS AND BELOW) EXCEPT

FOR MEDIUM AND HEAVY AIRCRAFT GOING TO AVIATION GROUND SERVICES

(AGS) APRONS. THIS IS DUE TO MOVEMENT OF CONSTRUCTION VEHICLES

SX11/19

SX0011/19 AIP SUPPLEMENT

VALIDITY: 03JUN2019 - UFN

W.I.P. EXTENSION OF INTERNATIONAL APRON FROM THE SOUTHERN SIDE OF

BAY 6. PILOTS TO EXERCISE CAUTION.

SX10/19

SX0010/19 AIP SUPPLEMENT

VALIDITY: 03JUN2019 - UFN

W.I.P. AT BOTH EDGES OF TWY P. CONSTRUCTION VEHICLES CROSSING,

PILOTS TO EXERCISE CAUTION.

SX9/19

SX0009/19 AIP SUPPLEMENT

VALIDITY: 03JUN2019 - UFN

W.I.P. AT DOMESTIC APRON. DECOMMISSIONING OF BAY 10 CENTRE LINE,

NEW CENTRE LINE INSTALLED.

SX40/18

SX0040/18 AIP SUPPLEMENT

VALIDITY: 19NOV2018 - UFN

CONSTRUCTION VEHICLES CROSSING THE RWY05 50M FROM THRESHOLD.

PILOTS TO EXERCISE CAUTION.

SX37/18

SX0037/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

TWY H CLOSED FOR CODE D, E, F ACFT DUE TO WIP

SX34/18

SX0034/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

AUTOMATIC TERMINAL INFORMATION SERVICE (ATIS) ON FREQUENCY ~~xxxx~~ MHz

UNSERVICEABLE.

SX27/18

SX0027/18 AIP SUPPLEMENT

VALIDITY: 19JUL2018 - UFN

TAXIWAY A, B AND H EDGE LIGHTS U/S. A LEAD VAN WILL BE AVAILABLE FOR ALL NIGHT

FLIGHTS.

17 AIP SUPs & Nil NOTAM published for one aerodrome

All AIP SUP displayed for aerodrome are previous NOTAMs

## NOTAM Transfer to AIP SUP

- Common to see only AIP SUP and NO NOTAM published for an aerodrome.
- Published AIP SUP including words “Incorporating”, “Replaced”, “Replaces” or “Cancels” NOTAM are increasing.

### AIP SUP Increase



#### Example

May & Jun 2021 , A State  
published 41 SUPs  
incorporating total 41  
NOTAM

- AIP SUP is repackaging a NOTAM. Pilot and dispatcher are still reading same content.

# NOTAM Transfer to AIP SUP

## Life Cycle of a NOTAM transferred to AIP SUP



AIP SUP available in Qatar Airways AIP library  
Percentage difference 2021 vs 2020



# Observation and Consideration

## Non-AIRAC publications

There is no mechanism to announce availability

## NOTAMs transferred to AIP SUP

Encourage AIS offices to include graphics (where applicable) and enhance textual content bringing added value

## AIP

Long intervals between AIP amendments result in AIP SUP and NOTAM being used extensively

## Non-AIRAC publications

Containing significant operational information

# THANK YOU

# NOTAM2021

Working together to eliminate old NOTAM



# Have We Succeeded?

## Old NOTAM:

- Jun 2020 – 3842
- Jan 2021 – 3295
- Jun 2021 – 3303
- Oct 2021 – 4086

## Very Old NOTAM

- Jun 2020 – 3445
- Jan 2021 – 3115
- Jun 2021 – 2642
- Oct 2021 – 2312

Total NOTAM

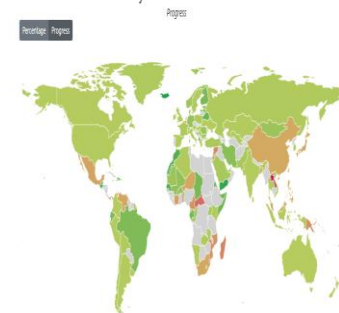
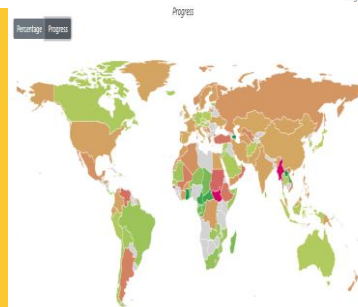
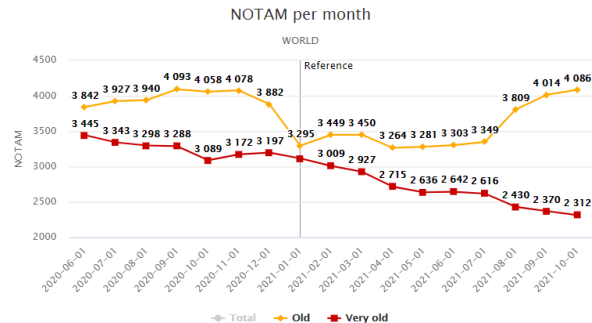
37120

Old NOTAM

4086 (11%)

Very Old NOTAM

2312 (6.2%)



Graphics credit to NOTAMeter ([icao.int](https://icao.int))

# The Double Edge sword

Chased the statistics

- Zero old
- Zero very old

BUT...

No real reduction in the size of the  
PIB



Graphic credit <https://www.Quora.com>

# Addressing The Causes



- Regulation and oversight
- Transition AIS to AIM
- Quality Management
- The human factor

# Lighting The Path Forward

- AIM your light to:
  - Coordinate
  - Collaborate
  - Champion

Effective improvement, AIMing towards an illuminated enabled Air Navigation System





Thank you



## Improving the Quality of NOTAM for safe Flight Operations- NOTAM iPACK

Access to iPack Portal to Streamline  
Deployment



ICAO

iPack



### Improving the Quality of NOTAM for Safe Flight Operations

Implementation Package

[www.icao.int/iPack](http://www.icao.int/iPack)

For more information: [www.icao.int/iPack](http://www.icao.int/iPack) , [iPack@icao.int](mailto:iPack@icao.int)