

IDS AirNav  
an enav group company



**RONOS**



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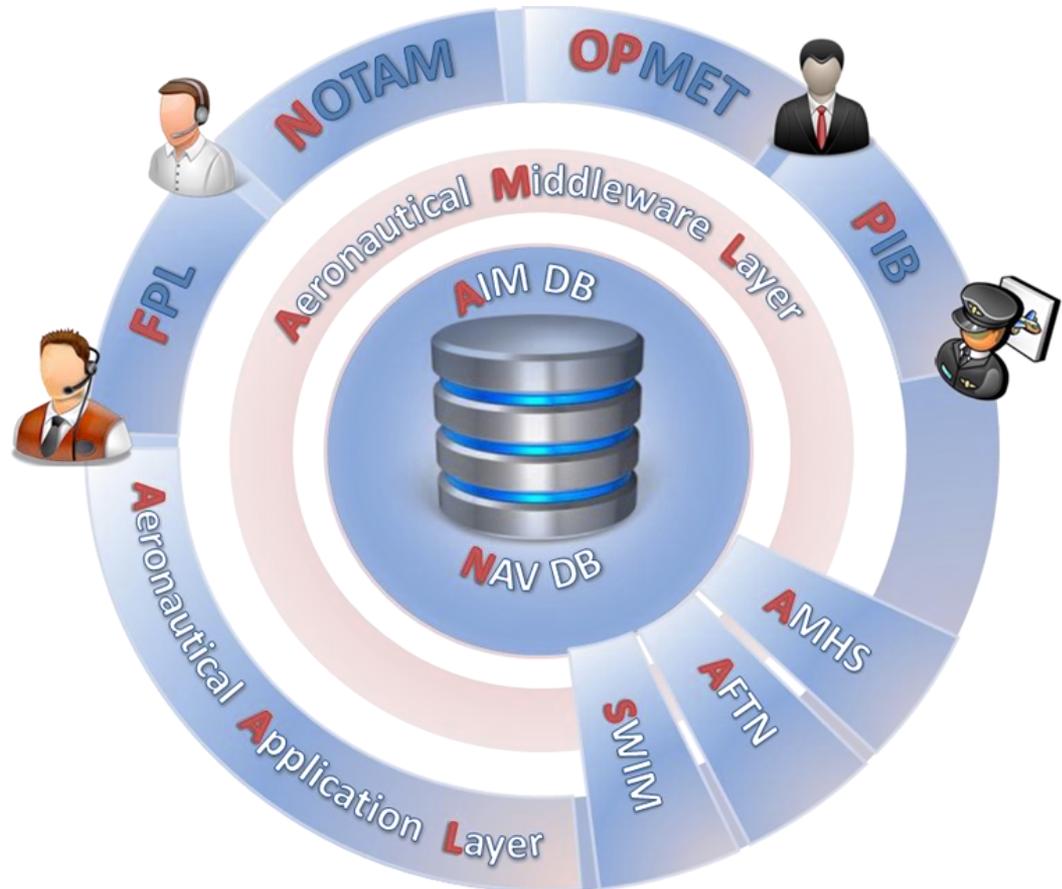
E-mail: [marcellod.mannino@idsairnav.com](mailto:marcellod.mannino@idsairnav.com)

# Agenda

- Overview
- **CRONOS-PORTAL**
  - COM Module
  - TAM Module
  - MET Module
  - ATS Module
  - PIB Module
- **MOBILE APP**
  - Flights management
  - Briefing
- Roadmap



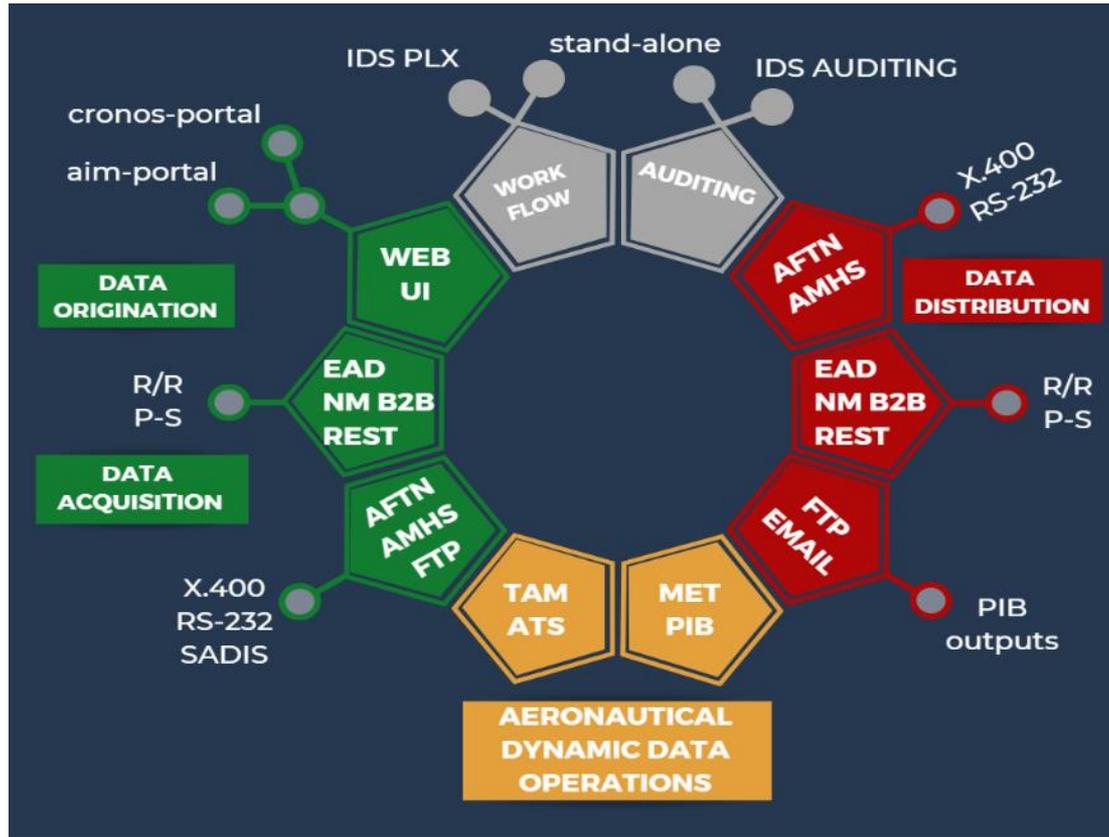
# CRONOS-PORTAL Overview



# CRONOS Overview

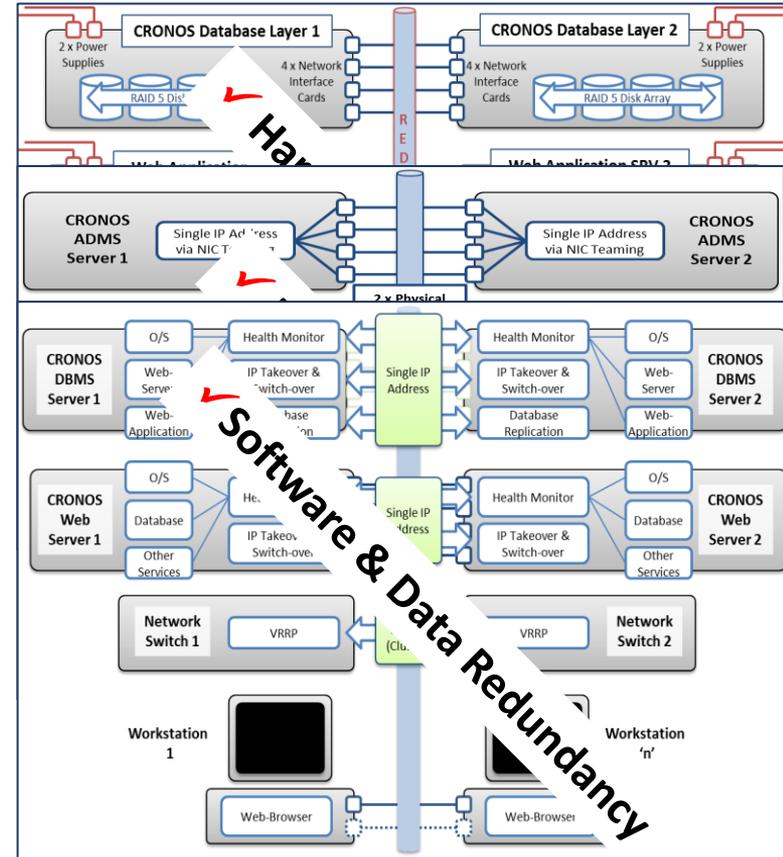
- CRONOS origins from a dual subsystem:
  - Traditional Messages (TAM, ATS, MET-TAC)
  - Digital Packages (D-NOTAM, FIXM, IWXXM)
- CRONOS gathers both of them into a unique environment where Aeronautical Data Quality and SWIM patterns are made available with the current ICAO message exchange system (AFTN / AMHS)
- The “**core**” of the IDS CRONOS Product is its **Datastore Layer**
  - **AIMDB** , aimed to the storage and management of message elements, and
  - **NAVDB**, aimed to the storage of Aeronautical Information (worldwide and / or national) in terms of ATS geography to be used as a “static data set” for georeferencing and validating “dynamic datasets”
- The **Middleware Layer** is then used to interconnect the datastore layer to the **Application Client Layer**.
- Application Client can be used by means of different Web Browsers.
- **CRONOS UI** technology is “responsive” : it can resize on different clients such as desktop or tablets
- **CRONOS ATN and SWIM Gateway**, designed to interconnect the application to different network patterns such as AFTN, AMHS, Pub/Sub, REST, APIs, Mail, FTP, Web, grants information exchange

# CRONOS Overview



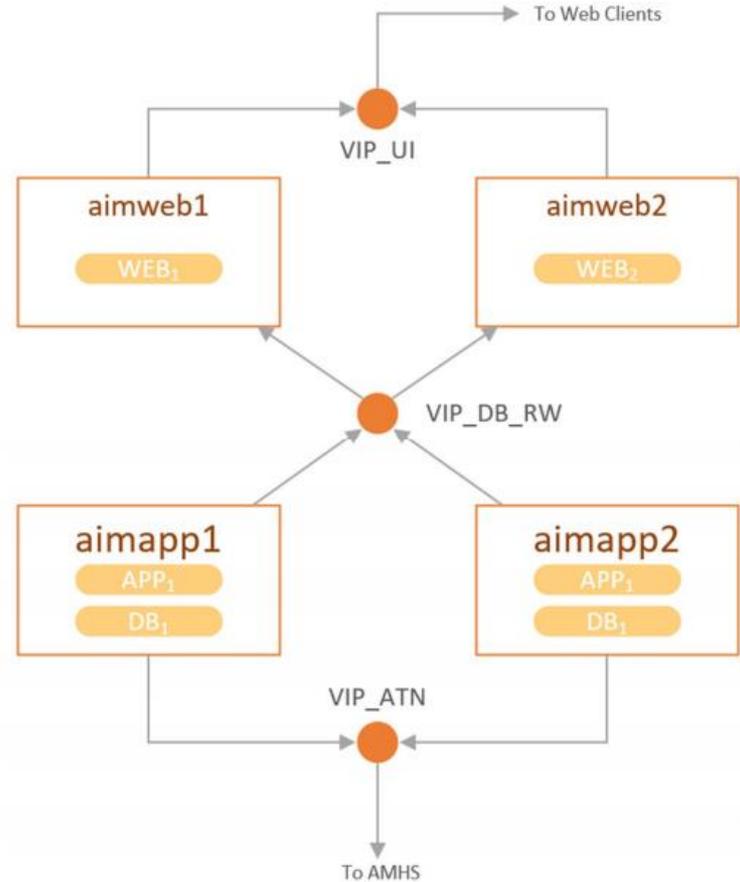
# CRONOS Availability

- CRONOS can be deployed into different platforms: virtual or physical environments
- High Availability is granted by redundancy of any system component
- Archive and Backup
  - Manual / Automatic Backup
  - Hot backups
  - Configurable Retention period per each type of data



# CRONOS Deploy

- At least a couple of APP Servers and a redundant Web Servers
- High Availability is granted by redundancy of any system component



# CRONOS Self-Registration

- New Users can use the Self-Registration process to request access to CRONOS' functionalities
- Each User is requested to select the Group to which belonging, since group membership defines a User's access right within the system
- Not all of the existing Groups are available for Self-Registration process
- After being registered, Administrators might approve/reject self-registered Users to access via the CRONOS' Login page

The screenshot shows a mobile application interface for 'IDS AirNav', an enav group company. The page is titled 'SELF REGISTRATION'. It contains several input fields with asterisks indicating they are required:

- Username \***: Contains the text 'ao\_aviation'.
- Email \***: Contains the text 'ao@aviation.com'.
- Password \***: Contains four dots for masked input.
- Confirm Password \***: Contains two dots for masked input.
- Last Name \***: An empty input field.
- Date of birth \***: A date picker with the text 'Select date'.

A security warning is displayed in a red box: 'This connection is not secure. Logins entered here could be compromised. Learn More'. There is also a back arrow in the top left corner of the form area.

# CRONOS SWIM Gateway

- CRONOS supports ICAO Global Air Navigation Plan (GANP) and ICAO Aviation System Block Upgrade (ASBU) program by having included its own SWIM GATEWAY
- To support common knowledge and situational display, the information has been made
  - Aggregated from different available data packages (**AIXM**, **FIXM**, **IWXXM**)
  - Consumed via **SWIM** patterns (ESI, NM B2B)
  - Accessible via **Open Interfaces**
  - Standardized and
  - Secured
- AFTN / AMHS networks can be configured to act in synch or prioritized as second source of information

Q SWIM Incoming Queue Query

Payload Type:  AIXM  FIXM  IWXXM  NM\_B2B

Protocol:  ESI  NM B2B OVER SOAP  NM B2B OVER AMQP

Received From: Select date and time

Received To: Select date and time

Processed From: Select date and time

Processed To: Select date and time

Q SEARCH x RESET

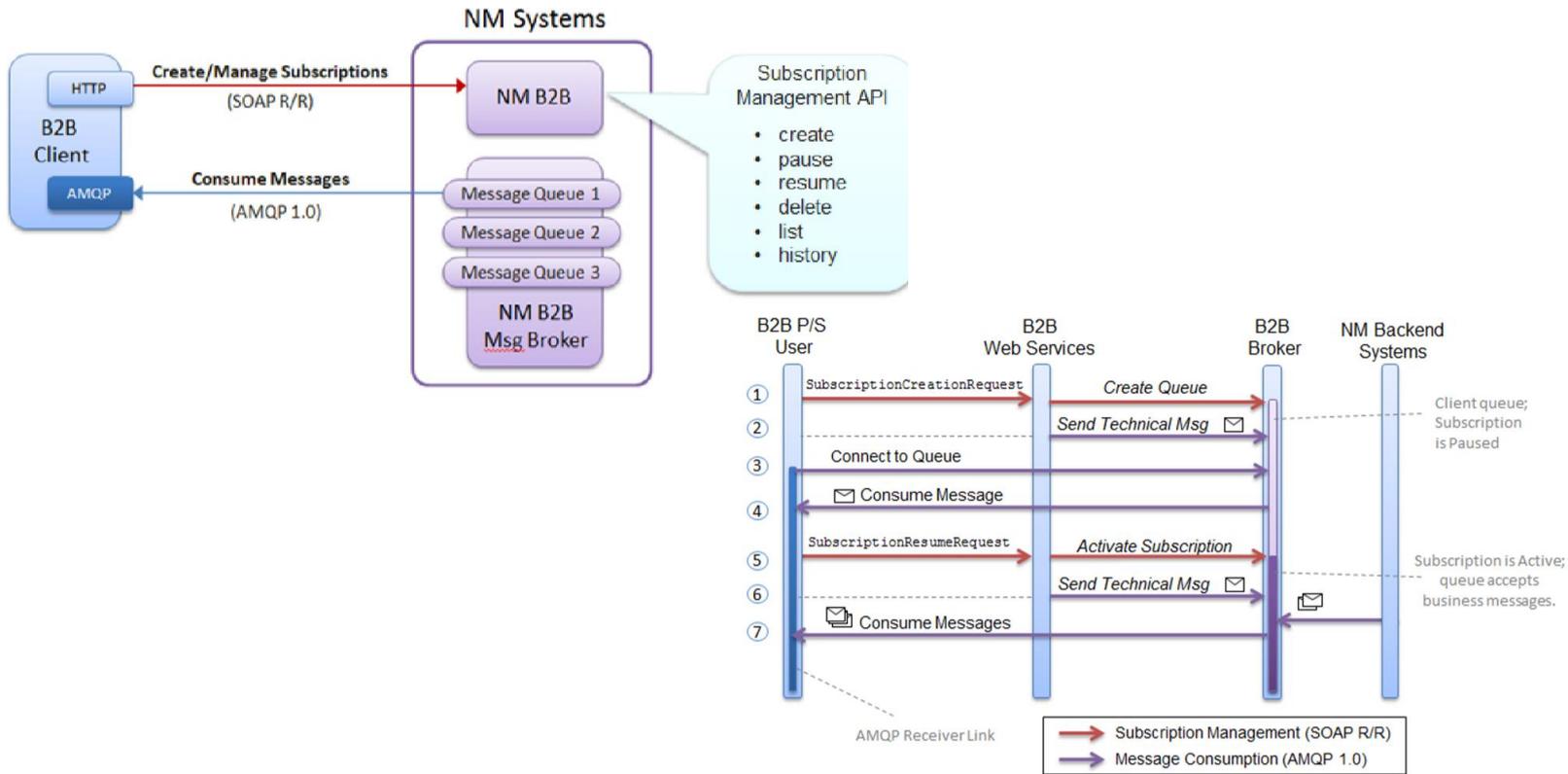
Search results

Actions	Protocol	Message Type	Received on	Processed on	Message text	Size
	NM_B2B_OVER_AMQP	NM_B2B_FLIGHT_DATA	29/03/2022 08:10 UTC	29/03/2022 08:10 UTC	...	4 KB
	NM_B2B_OVER_AMQP	NM_B2B_FLIGHT_DATA	29/03/2022 08:10 UTC	29/03/2022 08:10 UTC	...	4 KB

# CRONOS SWIM Gateway

- CRONOS allows integration with Eurocontrol services like:
  - **AIM-SL** > for communication and exchange of “dynamic” aeronautical information (TAM) with EAD
  - **PAMS** > for the download of Aeronautical Information Publications and Charts from EAD
  - **NM** > for the management and exchange of FPL by means of Network Manager B2B
- CRONOS – **APIs** used for
  - CRONOS MOBILE APP (Android / iOS) for Pilots
  - ARMS (Billing)
  - UTM

# CRONOS B2B services with Eurocontrol Network Manager



# CRONOS SWIM Gateway

Active Subscriptions

Subscriptions

Show 10 entries Search:

Actions	Status	Topics	Termination Time	Unsubscription Time
	ACTIVE	1	-	-
	EXPIRED	1	-	13/05/2020 17:08 UTC
	ACTIVE	1	-	-

Edit subscription

Available topic expressions

NOTAM (ESSA)

Topic expressions

Type NOTAM Office ESSA

Series

A B C D E H

Termination Time

Select date and time

Unsubscription Time

Select date and time

Pull Point

<http://vead03.cts.ead-ftp.com:8888/sims1/PullPoint/1.3/bfe34a80-2854-4d2-8cde-6c90ae9ee626>

Associated EAD certificate's name

AIMSL\_LFV

UNSUBSCRIBE NEW

NM B2B Subscriptions

Flight Plans Flight Filing Results Flight Data

Show 10 entries Search:

Actions	Last heartbeat received at	Description	State
	29/03/2022 15:23:06 UTC	EU L	ACTIVE
	29/03/2022 15:23:05 UTC	EU	ACTIVE
	-	TEST IT	PAUSED

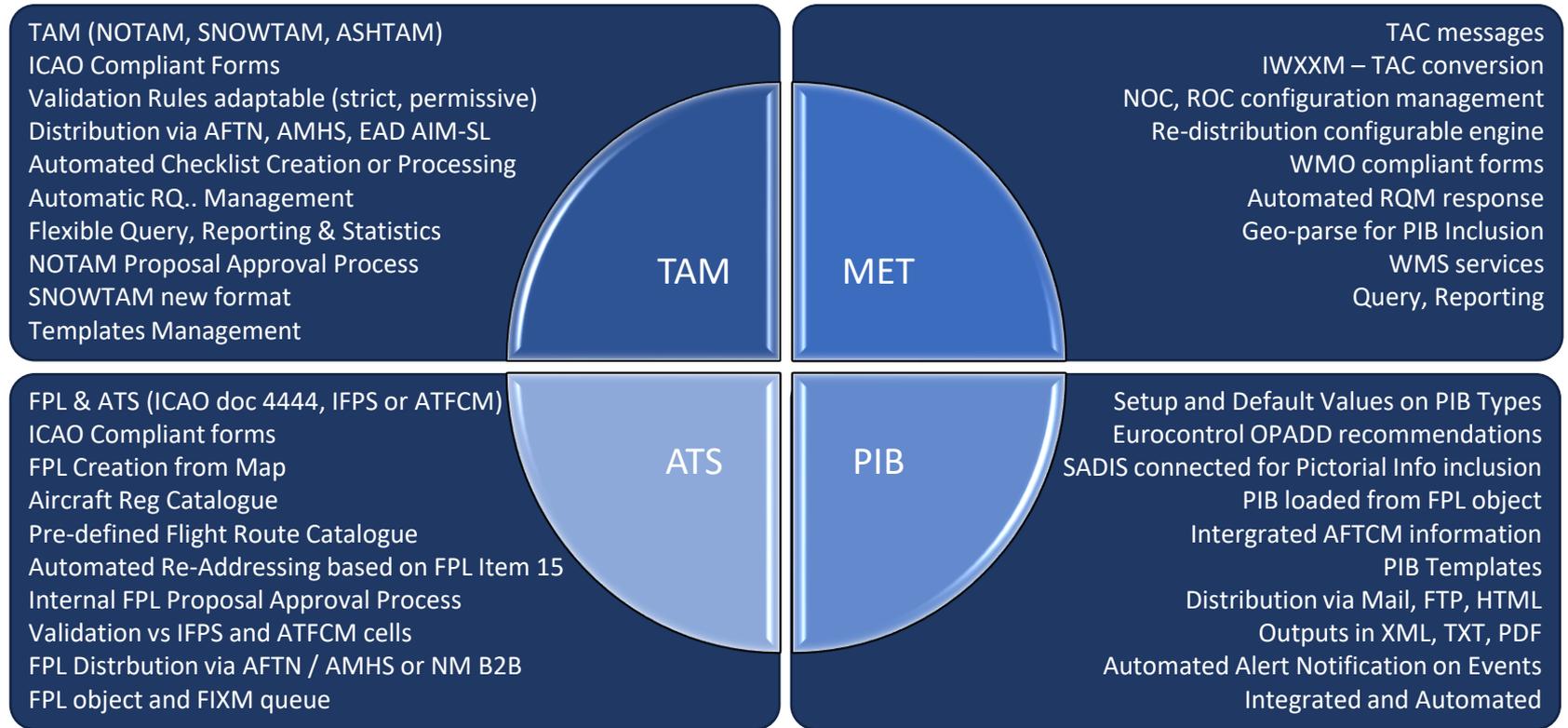
Showing 1 to 3 of 3 entries

Previous 1 Next

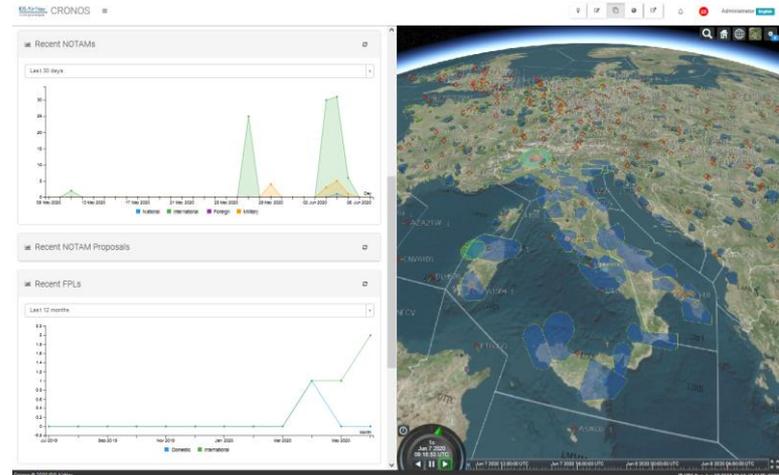
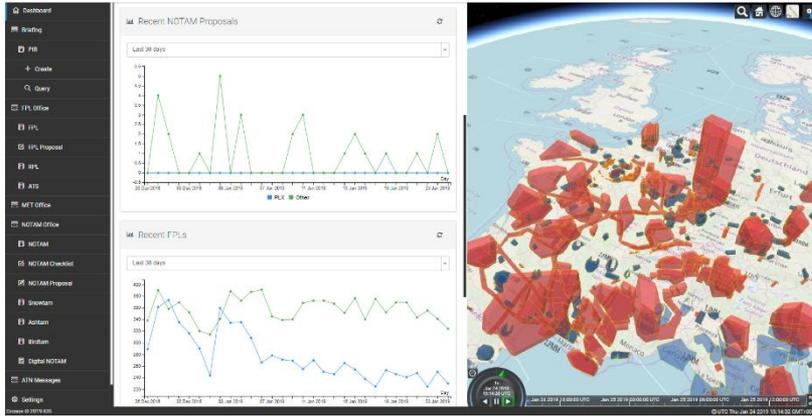
RELOAD RESULTS

SYNCH SUBSCRIPTIONS

# CRONOS Modules overview



# CRONOS Dashboard



# Agenda

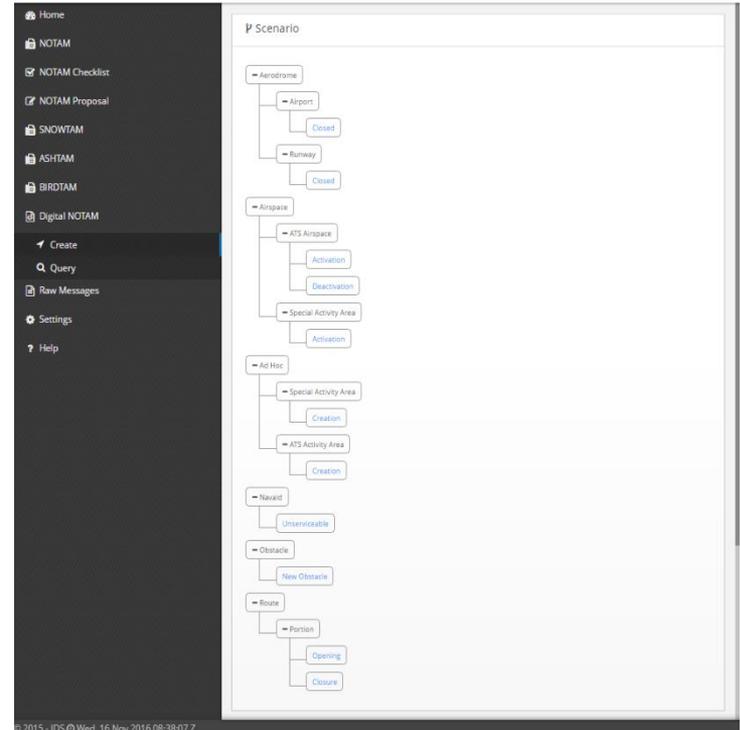
## TAM Module

# TAM Capabilities

- Dual Environment for traditional and D-NOTAM
- EAD Validation via AIM-SL
- SDO-Linkages

The screenshot displays the 'Create NOTAM' interface. At the top, there is a navigation bar with a hamburger menu, a notification icon, and the user's name 'Administrator' with a language dropdown set to 'English'. A prominent orange warning box states: 'WARNING: Item G does not match with Q-line. EAD Warning: The value in Upper item is not consistent with value in G) item. EAD Warning: The value in Upper item is not consistent with value in G) item.' Below this, a green success message reads: 'Operation completed successfully (F0148/20 NOTAMN) (Q) ESAA/RRRCA/IV/BO/WW/000/999/6759N02108E019 A) ESAA B) 2006071200 C) 2006081200 E) RESTRICTED AREA ESR01A ESRANGE (KIRUNA) ACTIVATED F) SFC 0) 1500FT AMSL'. The form fields include: 'Operation' (NOTAMN), 'Series' (F), 'Sequence' (empty), 'Number' (empty), 'Full Year' (empty), 'Item A' (Airport: Select airports, Airspaces: x ESAA (SWEDEN)), 'Item Q' (Q-Fir: ESAA (SWEDEN), Q-code: RRCA (Restricted area (specify national prefix an...), SDO LINKAGE (1)), and 'SDO Linkage Type' (Special Activity Area, Autorefresh Q Line: ENABLED). A list of linked features shows 'Restricted Area: ESRANGE (KIRUNA)(ESR01A), Type: R'. The bottom of the page shows 'Airspace Type' (R) and a search bar.

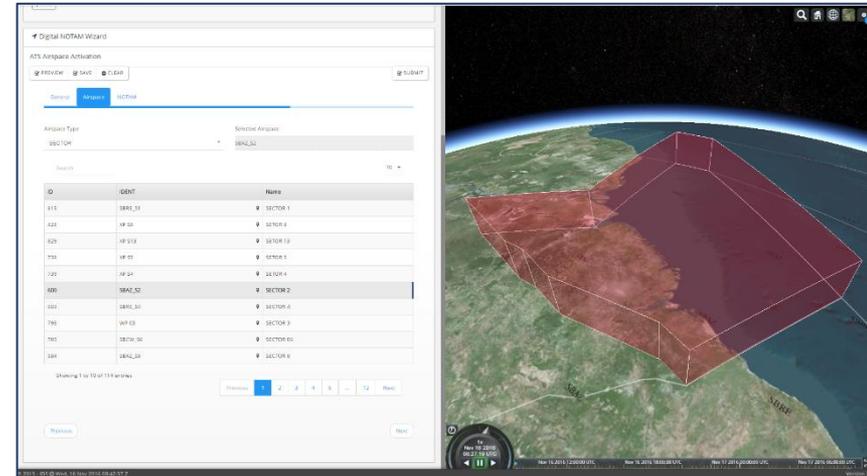
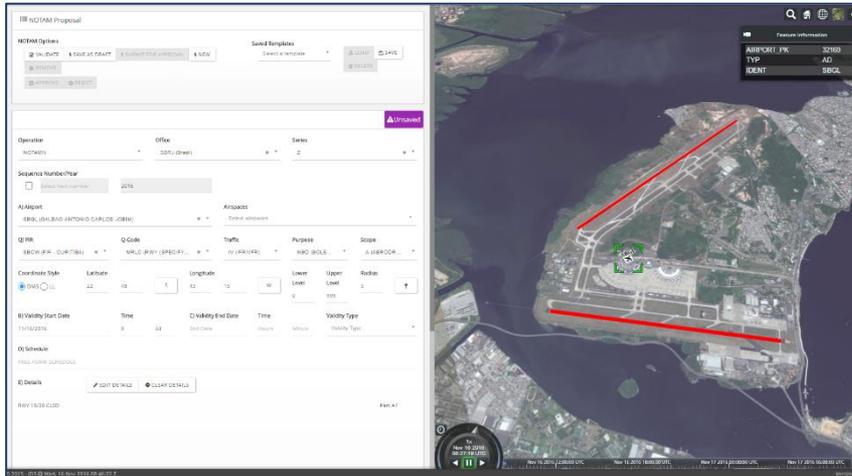
- Collection & Distribution via AFTN, AMHS, or Publish-Subscribe
- Web GIS visualization of Aeronautical Data



# TAM Capabilities

- NOTAM Proposal Approval Process
- NOTAM Dissemination via different channels
- TAM lists, querying and reporting
- Templates management
- Replacement and Cancelation
- ICAO Rules and data consistency validation
- SDO Linkage
- Auditing and traceability

- Aeronautical Event Approval Process
- D-NOTAM Dissemination
- D-NOTAM Event Lists, Querying and Reporting
- Scenarios Formats
- Eurocontrol Rules
- Event AIXM51 > TAM conversion
- Auditing and traceability



# Digital NOTAM Packages

- CRONOS implements 100% of the Event Scenarios of Eurocontrol Digital NOTAM Specifications

## Aerodrome (Airport, Runway)

- Closure
- Limitation

## Airways

- Route Portion Opening
- Route Portion Closure

## Airspace (ATS, SAA)

- Activation
- De-Activation
- Creation

## Obstacle

- Creation

## NAVAIDS

- Unserviceable



# Agenda

## MET Module

# MET Capabilities

- OPMET – TAC from AMHS, AFTN
- OPMET – IWXXM from SWIM Gateway
- OPMET automatic bulletin collection & distribution
- Storage and visualization of MET Products

CRONOS



OPMET MESSAGE

MET Type: LONG (LONG TAF) x A1A2 code: Choose one Distribution ID: 23 Report Type: FT-23

Modifier: Station ID: Report DTG: 07/06/2020 18:00 UTC

Body format type: TAC IWXXM

TAF YUDO 071800Z 1600/1618 13005MPS 9000 BKN020  
 BECMG 1606/1608 SCT015CB BKN020  
 TEMPO 1608/1612 17006G12MPS 1000 TSRA SCT010CB BKN020  
 FM161230 15004MPS 9999 BKN020

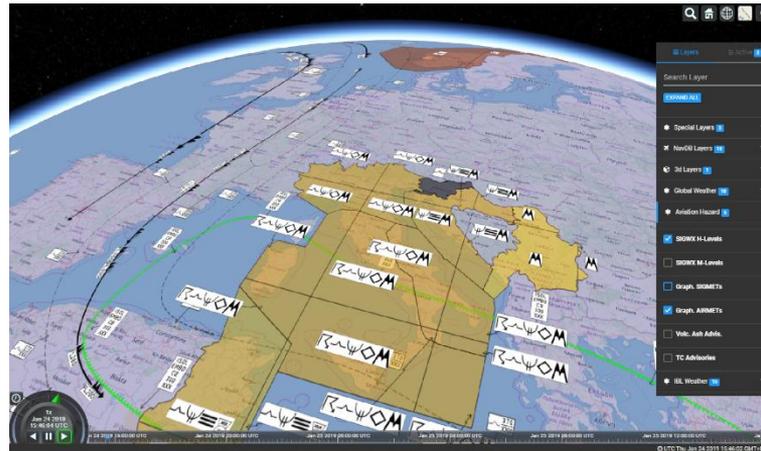
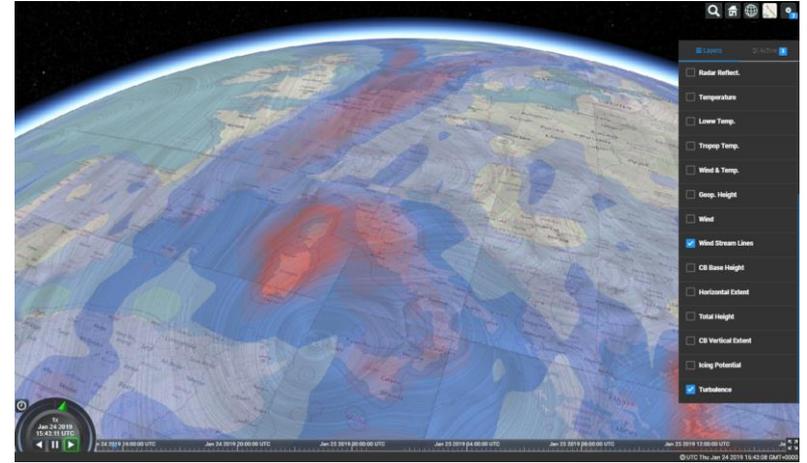
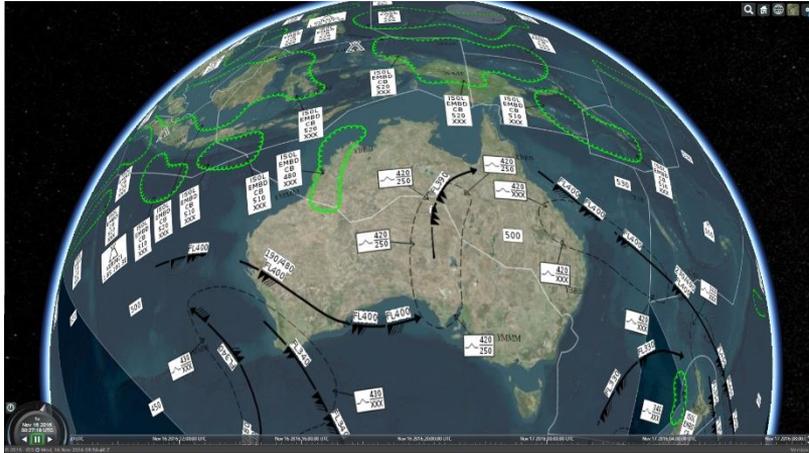
```

1 <iwxxm:TAF xsi:schemaLocation="http://icao.int/iwxxm/3.0 http
  ://schemas.wmo.int/iwxxm/3.0/iwxxm.xsd" gml:id="uid.d.06a85870
  -f32e-4ea8-8502-c7d9b7e0144" reportStatus="NORMAL"
  permissibleUsage="OPERATIONAL" xmlns:iwxxm="http://icao.int
  /iwxxm/3.0" xmlns:gml="http://www.opengis.net/gml/3.2" xmlns
  :xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3
  .org/2001/XMLSchema-instance" xmlns:aixm="http://www.aixm.aero
  /schema/5.1.1">
2 <iwxxm:issueTime>
3 <gml:TimeInstant gml:id="uid.d.0c02a083-22e8-4a66-b115-35544e7078f1">
4 <gml:timePosition>2012-08-15T18:00:00Z</gml:timePosition>
5 </gml:TimeInstant>
6 </iwxxm:issueTime>
7 <iwxxm:aerodrome>
8 <aixm:AirportHeliport gml:id="uid.d.a5a157ad-5b93-443d-a8e6
  -8324816cc07e">
9 <iwxxm:timeSlice>
10 <aixm:AirportHeliportTimeSlice gml:id="uid.d.9cf64bc2-0aca-452e-a330
  -9f6ce9f533e4">
11 <gml:validTime/>
    
```

UTC Sun Jun 07 2020 11:13:49 GMT+00:00



# MET Capabilities



# MET Capabilities

KCAA CRONOS 02.01.004 Administrator English

+ OPMET Query

Status Location Time

Search  
Enter keyword to search

Opmet Types: Choose one

Status:  Active

Transmission Status: Choose one or more

SEARCH RESET

Search results

Actions	Location	Type	Modifier	Station	Time	Status	Transmission Status
	HBBA	LONG		HKNA	23/01/2019 17:00 UTC	Active	Foreign
	HBBA	LONG		HKNA	23/01/2019 11:00 UTC	Active	Foreign
	HBBA	LONG		HKNA	23/01/2019 23:00 UTC	Active	Foreign
	HBBA	LONG	PAA	HKNA	24/01/2019 05:00 UTC	Active	Foreign
	HKEL	METAR		HKEL	23/01/2019 20:00 UTC	Active	Foreign
	HKEL	METAR		HKEL	23/01/2019 21:00 UTC	Active	Foreign

OPMET Message Details

Details Raw

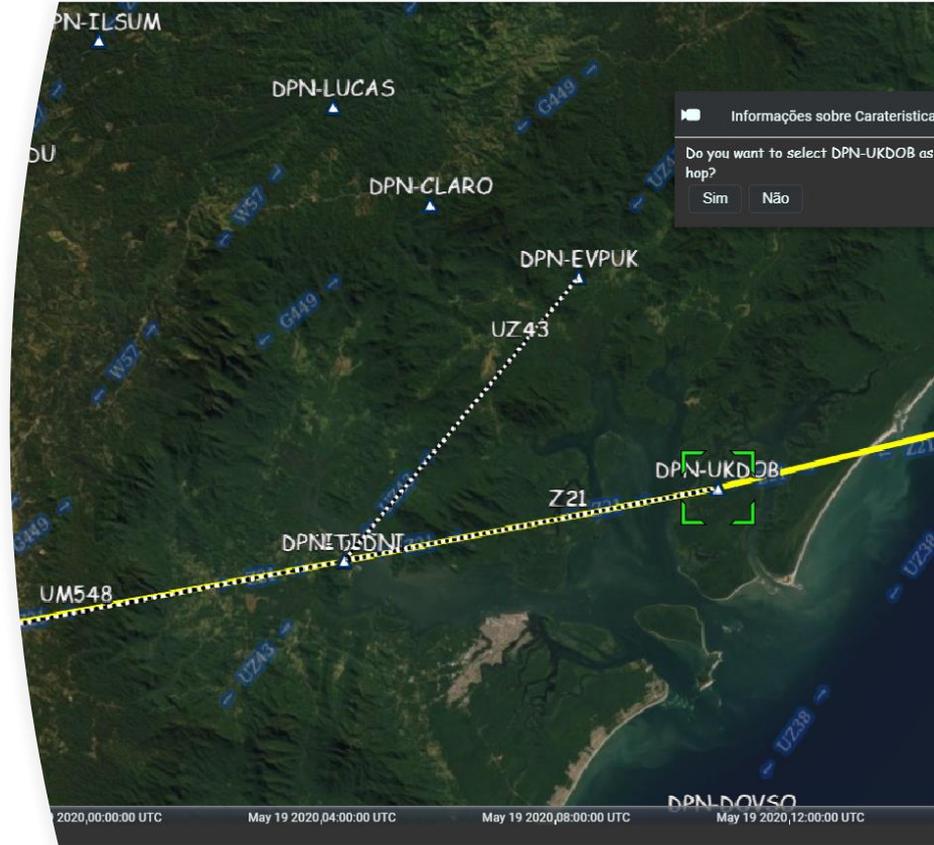
```
TAF HBBA 231700Z 2318/2424 VRB03KT 8000 FEW030 BKN100
BECMG 2402/2404 36004KT 5000 HZ FEW025 BKN100
BECMG 2407/2409 18010KT 8000 SCT030 BKN100
BECMG 2416/2418 00000KT CAVOK=
```

# Agenda

## ATS Module

# ATS Module

- FPL functions to create from a textual panel or directly on a WEB-GIS Map
- Composition wizard to compose a FPL and update it via ATS messages
- Update of SDO dataset from
  - Aero-DB (domestic flights)
  - SDO Import (AIXM, ARINC, DAFIF)
- Pre-defined flight route, Aircraft Reg Catalogue and Automatic Addressing of AFTN/AMHS in relation to the Flight Route



# ATS Module

- A cartographic interface to build up Item 15 of FPL
- Domestic Flight validated against SDO data synchronized with Aerodb
- Flights also evaluated against
  - SDO data imported from
    - AIXM packages from EAD-ESI
    - ARINC datasets from Jeppesen
    - DAFIF datasets
  - Dynamic data (TAM)
  - Aerodrome Working Hours
  - Special Activity Areas
  - IFPS / ATFCM
  - ICAO Doc 4444 / ADEXP
  - ICAO Annex 2

The screenshot displays the CRONOS ATS Module interface. At the top, there is a navigation bar with the CRONOS logo and a user profile. A prominent orange warning banner states: "WARNING The NOTAMs below are affecting your flight and require attention LIA W0013/20 LIA A0045/20 LIA A0026/20 LIA A0016/20". Below this, a green success message reads: "Operation completed successfully (FPL-LIES02-IS -A320/M-SDFGHRWY/H -LIRF1700 -N0470F360 SID TIBER DCT TIBER DCT ERLIT DCT NIKOL DCT NIFEI DCT TVAP Z33 RISUK ✓ DCT ARTUP DCT TOMTI P733 DIMEX Z172 RIVDI M607 ARM0D Z228 NILUG STAR ESSA0221 ESKN -DOF/200607 PBN/B283B485D101 REG/9ASLA EET/LMM0014 LDZ00020 LJLA0029 LMM0031 LJLA0031 LDV0037 LKAA0053 EPWW0112 ESSA0150)".

The main form is titled "FPL Create" and includes buttons for "VALIDATE", "CLEAR", and "SUBMIT". A blue "Route and time planning" button is also visible. The form contains several sections:

- Item 7 Callsign:** LIES02, with a "Select SSR Mode" dropdown.
- Item 8 Flight Rules:** Instrumental Flight Rules, Flight Type: S - Scheduled air service.
- Item 9 Aircraft Number:** A320, Aircraft Type: A320, Wake Turbulence: M - Medium.
- Item 13 Departure Aerodrome:** LIRF (FUMICINO), EOBT: 17:00.
- Item 15 Cruising Speed:** 0470 (N - Knots), Cruising Level: 360 (F - Flight Level in hundreds of feet).
- Item 16 Destination Aerodrome:** ESSA (ARLANDA), Total EET: 02:21.

The interface also shows language options (LI (Italy), ES (Sweden)) and a footer with "© 2018 IOS Aviation" and "© UTC Sun Jun 07 2020 14:13:59 GMT+0000".

# ATS Module

Select Registration Marks



Show 10 entries

Search: A320

REG	ICAO Designator	Wake Turbulence	Model	Maximum takeoff weight (Kg)	Maximum passengers
<input checked="" type="checkbox"/> 9ASLA	A320	M	Prestige (A-320)		
Equipment: SDFGHIRWY/H					
Item 18: PBN/B2B3B4B5D101					
Maximum cruising speed (K):					
Maximum cruising level (FL):					
<input type="checkbox"/> B8326	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFDCA	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFDRP	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFGKH	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFLSS	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFLSU	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFNVU	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFNVV	A320	M	Prestige (A-320)		
<input type="checkbox"/> CFPWD	A320	M	Prestige (A-320)		

Showing 1 to 10 of 544 entries

Previous **1** 2 3 4 5 ... 55 Next

Select Flight Route



Show 10 entries

Search:

Name	Departure AD	Destination AD	Route	Alternate AD	Alternate AD 2	Destination Addresses
AZ673-ALITALIA	SBGL	LIRF	SID UKENU UN857 LZR UN871 OSDAM UB28 BARPA UM985 PIMOS UM445 RIXUR UN851 MHN UM603 ELSAG DCT RUXOP DCT VALMA STAR	LIRN		SGBLYOYX, EUJECZMFP, EUJECZBFP
sbrj>sbct	SBRJ	SBCT	SID UMBAD UZ44 DIDUK UL310 SOVSI STAR			SBRJYOYX, SBCTYOYX

Showing 1 to 2 of 2 entries

Previous **1** Next

RELOAD RESULTS

Clicking Submit will set Departure Aerodrome, Destination Aerodrome, Route, Alternate Aerodrome, Alternate Aerodrome 2 and Destination addresses on current FPL.

CLOSE SUBMIT

# ATS Module

## • Traffic Flow Restrictions

- Configurable by Type
  - On departure flight
  - On arrival flight
  - On En-Route connectivity constraints
  - On DCT connectivity constraints
- Based on Time
- Constrained by Points or Segments or Areas



### Edit Traffic Flow Restrictions

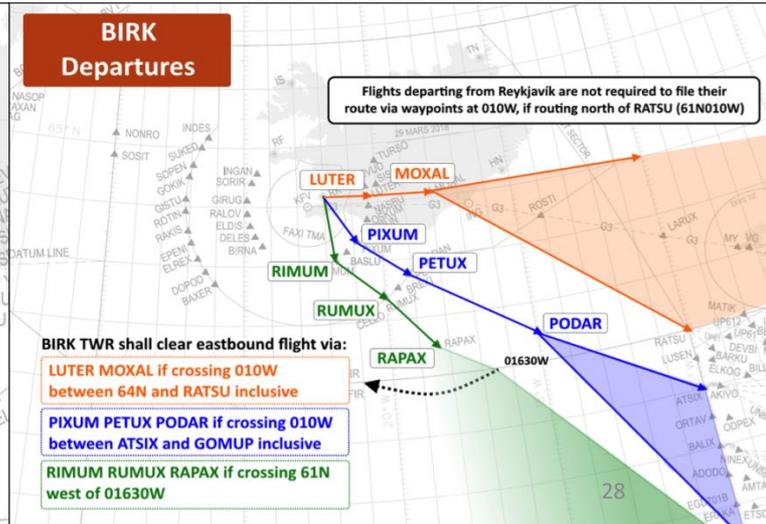
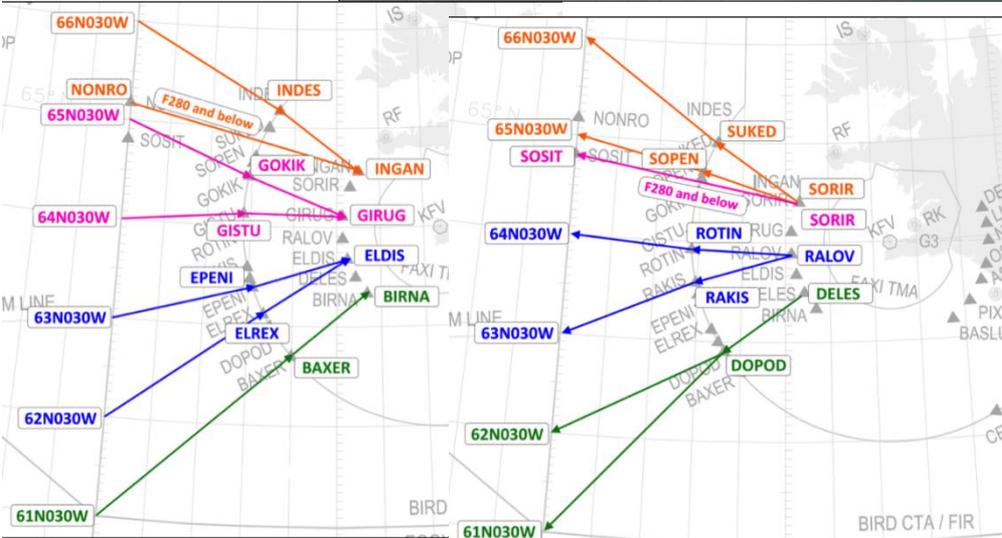
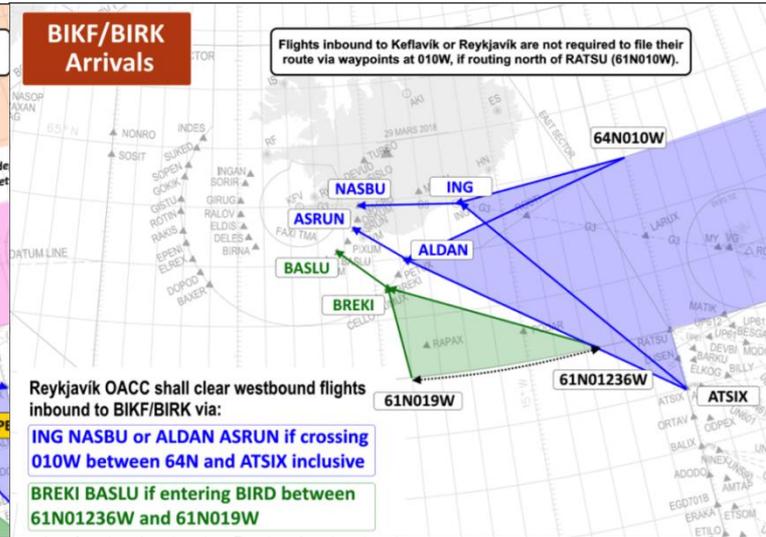
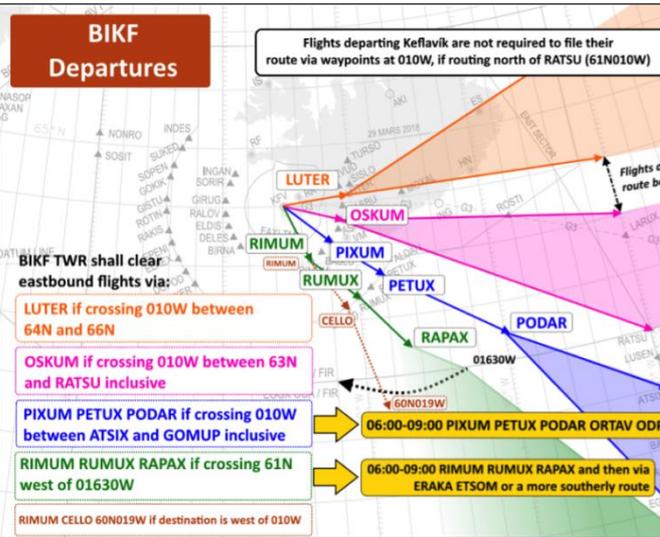
(BI)\*2020 / 00001

Name	Description			
BIKF departures to the east	BIKF departures to the east. See BI-ENR-1.8			
Expired At	Status			
	ACTIVE			
Effective From	Effective To	EOBT From	EOBT To	In/Out EOBT
28/04/2020	Select date	0600	0900	OUT... ▾
Country	Aerodrome	Traffic	Direction	
BI (Iceland) ▾	BIKF (Keflavik) ▾	ALL ▾	Departure ▾	
Restriction type	Created At	Created By		
Mandatory ▾	29/04/2020 09:34 UTC	Administrator		

#### Conditional Routing Elements

Condition	Routing Restriction	Description
BIKF	{LUTER,OSKUM,PIXUM,RIMUM,SORIR,RALOV,DELES}	If a flight departs from BIKF, the next waypoint must be
BIKF-LUTER	{[6400N01000W,6600N01000W]}	If a flight departs from BIKF, going through LUTER. its
BIKF-LUTER-[6400N01000W,6600N01000W]	{[SVIG,BARUD,IPTON,ERSER,V ALDI,GUNPA, [6400N0000W,9000N00000]}	If a flight departs from BIKF, going through LUTER and
BIKF-LUTER-OSKUM	{[6300N01000W,RATSU]}	If a flight departs

# ATS Module



# ATS Module

**FPL Proposal Create**

INDICATE | CLEAR | SAVE

Indicador de avaliação

Mapa de New planning | Equipament available | Search and Filter | Transparencia Information

Step 1: Origem

Step 2: Destino

Step 3: Aircraft Number

Step 4: Aircraft Type

Step 5: Aircraft Number

Step 6: Aircraft Type

Step 7: Aircraft Number

Step 8: Aircraft Type

Step 9: Aircraft Number

Step 10: Aircraft Type

Step 11: Aircraft Number

Step 12: Aircraft Type

Step 13: Aircraft Number

Step 14: Aircraft Type

Step 15: Aircraft Number

Step 16: Aircraft Type

Step 17: Aircraft Number

Step 18: Aircraft Type

Step 19: Aircraft Number

Step 20: Aircraft Type

Step 21: Aircraft Number

Step 22: Aircraft Type

Step 23: Aircraft Number

Step 24: Aircraft Type

Step 25: Aircraft Number

Step 26: Aircraft Type

Step 27: Aircraft Number

Step 28: Aircraft Type

Step 29: Aircraft Number

Step 30: Aircraft Type

Step 31: Aircraft Number

Step 32: Aircraft Type

Step 33: Aircraft Number

Step 34: Aircraft Type

Step 35: Aircraft Number

Step 36: Aircraft Type

Step 37: Aircraft Number

Step 38: Aircraft Type

Step 39: Aircraft Number

Step 40: Aircraft Type

Step 41: Aircraft Number

Step 42: Aircraft Type

Step 43: Aircraft Number

Step 44: Aircraft Type

Step 45: Aircraft Number

Step 46: Aircraft Type

Step 47: Aircraft Number

Step 48: Aircraft Type

Step 49: Aircraft Number

Step 50: Aircraft Type

Step 51: Aircraft Number

Step 52: Aircraft Type

Step 53: Aircraft Number

Step 54: Aircraft Type

Step 55: Aircraft Number

Step 56: Aircraft Type

Step 57: Aircraft Number

Step 58: Aircraft Type

Step 59: Aircraft Number

Step 60: Aircraft Type

Step 61: Aircraft Number

Step 62: Aircraft Type

Step 63: Aircraft Number

Step 64: Aircraft Type

Step 65: Aircraft Number

Step 66: Aircraft Type

Step 67: Aircraft Number

Step 68: Aircraft Type

Step 69: Aircraft Number

Step 70: Aircraft Type

Step 71: Aircraft Number

Step 72: Aircraft Type

Step 73: Aircraft Number

Step 74: Aircraft Type

Step 75: Aircraft Number

Step 76: Aircraft Type

Step 77: Aircraft Number

Step 78: Aircraft Type

Step 79: Aircraft Number

Step 80: Aircraft Type

Step 81: Aircraft Number

Step 82: Aircraft Type

Step 83: Aircraft Number

Step 84: Aircraft Type

Step 85: Aircraft Number

Step 86: Aircraft Type

Step 87: Aircraft Number

Step 88: Aircraft Type

Step 89: Aircraft Number

Step 90: Aircraft Type

Step 91: Aircraft Number

Step 92: Aircraft Type

Step 93: Aircraft Number

Step 94: Aircraft Type

Step 95: Aircraft Number

Step 96: Aircraft Type

Step 97: Aircraft Number

Step 98: Aircraft Type

Step 99: Aircraft Number

Step 100: Aircraft Type

**FPL Consulta**

Resultados da pesquisa

Actos result

Actos	Indicativo	Org AD	Dest AD	Data de Voo	OTDT	MTD	ATA	Port (Out Status)	SPR Status	LDM	Comments	Risk	Created por	Public & Type	
	HA01400	LARE	LPC	18/11/2019	07:00 UTC			active					PL000	Administrador IM	
	0238	LARE	LMA	18/11/2019	07:00 UTC			active					BP00	Administrador IM	
	HA01404	H03M	H03M	18/11/2019	13:00 UTC			active					007	Administrador IM	
	HA01404	LARE	H03M	18/11/2019	07:30 UTC			active					007	Administrador IM	
	HA03000	LARE	LPI	18/11/2019	06:00 UTC			active					PL000	Administrador IM	
	0040121	LARE	LRA	17/11/2019	13:00 UTC			active					H0000	Administrador VE	
	002001	LARE	LRA	17/11/2019	14:00 UTC		1418	active					TR0000	Administrador VM	
	HA01400	LCTT	LARE	17/11/2019	23:15 UTC			active					0000	Administrador IM	
	HA01400	LARE	LUCS	17/11/2019	08:00 UTC		0004	active					HA7 DEP.	ES00	Administrador IM
	HA01402	LPIE	LARE	17/11/2019	07:45 UTC			active					L0000	Administrador IM	

Mostrando para de 100 actos

Anterior 1 2 3 4 5 6 7 8 9 10 Seguir



CRONOS 02.01.014

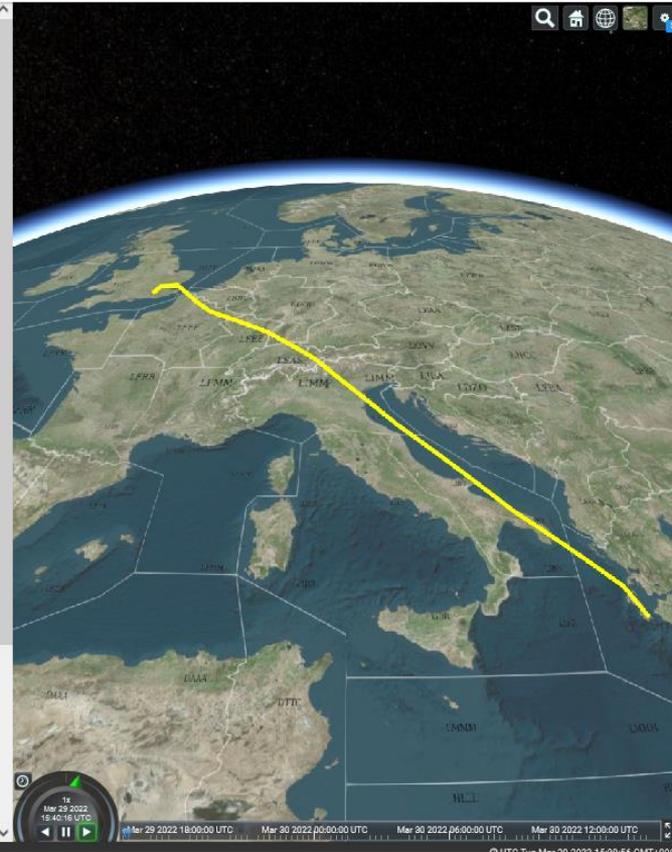
Administrator English

q FPL Query

Search results

Auto refresh

Actions	Callsign	ADEP	EOBD + EOBT	ATA	Post Dist Status	IFPS Status	LSM	Prefix
	TTJ613	LZIB	30/03/2022 07:00 UTC	-	Filed	ACK: AT00159083	-	-
	TSM500	LCLK	29/03/2022 15:50 UTC	-	Delayed	ACK: AT00154040	-	-
	SEMJT	LEMD	30/03/2022 05:30 UTC	-	Filed	ACK: AT00159061	-	-
	YUPDO	EGLF	30/03/2022 06:50 UTC	-	Filed	ACK: AT00159080	-	-
	EJU38WT	LEMH	29/03/2022 17:47 UTC	-	Delayed	ACK: AT00148459	-	-
	NJE087T	LFPB	29/03/2022 15:45 UTC	-	Delayed	ACK: AT00154021	-	-
	EZY89TR	EGKK	30/03/2022 04:40 UTC	-	Filed	ACK: AT00159079	-	-
	WUK820S	EGGW	30/03/2022 05:25 UTC	-	Filed	ACK: AT00159078	-	-
	THY4ES	LRCL	29/03/2022 18:35 UTC	-	Filed	ACK: AT00159077	-	-

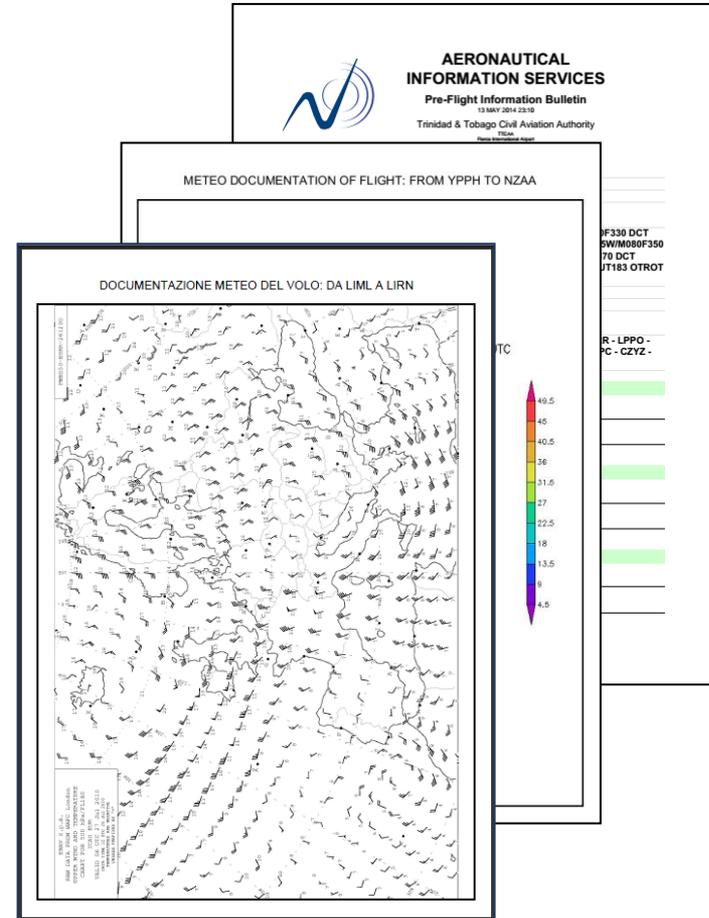


# Agenda

## PIB Module

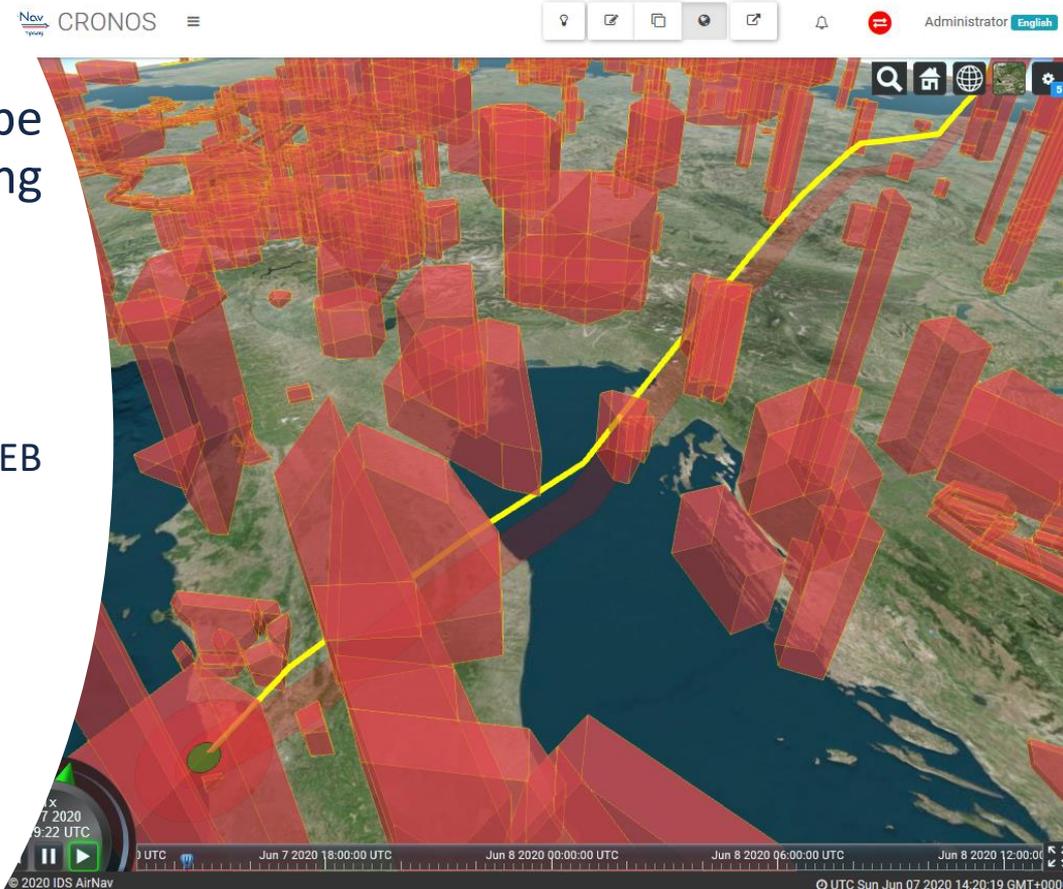
# PIB Module

- In addition to the aeronautical data, CRONOS can also manage meteorological data and charts by means of CRONOS – MET Module
- Interfaces like AMHS or SADIS are used as source of information also to build up a Pre-Flight Information bulletin
  - Automatic: bulletins (Full, Updates, Event) are sent automatically to the pilots
  - Integrated: bulletins can contain aeronautical and meteorological data, meteorological charts WMO and customer-constrained



# PIB Module

- Different **PIB types** can be requested, according Eurocontrol OPADD rules
- **PIB output** is
  - **Graphical** > immersed into the WEB – GIS Map component
  - **Textual** > presented as a report
  - **Received** automatically by
    - email , ftp



# Integrated Briefing ... not only for AIS-TAMs



## AERONAUTICAL INFORMATION SERVICES

### Pre-Flight Information Bulletin

15 DEC 2021 09:20 UTC

Aeronautica Militare Italiana  
Pagine di 1/06

Report Name	ARANCINO (LICC-LSGG)
Report Type	STANDARD ROUTE
Service Type	FULL
Message types:	OPMET, CHARTS
Validity (UTC)	15 DEC 2021 08:58 - 15 DEC 2021 10:58
Height Limits (lower/upper)	First: 100/340 Other: 000/340 Last: 000/340
Route	
Departure Aerodrome	LICC
Arrival Aerodrome	LSGG
Alternate Arrival	LFLS - LOWI
Aerodromes	
Alternate En-Route	LIBV - LIRF - LIPC - LIPS
Aerodromes	
En-route FIRs	LIRR - LIMM - LFMM - LSAS - LOVV - LIBB

### AERODROME (DEPARTURE): LICC (CATANIA/Fontanarossa)

#### MET

METAR LICC 180920Z 23005KT 200V260 CAYOK 13/08 Q1023#

TAF LICC 180800Z 1806/1606 YRBO6KT CAYOK#

### AERODROME (ARRIVAL): LSGG (GENEVE)

#### MET

METAR LSGG 180850Z YRBO1KT 0500 R04/0700M R22/0650M FG W7002 02/02 Q1021 NOSIG#

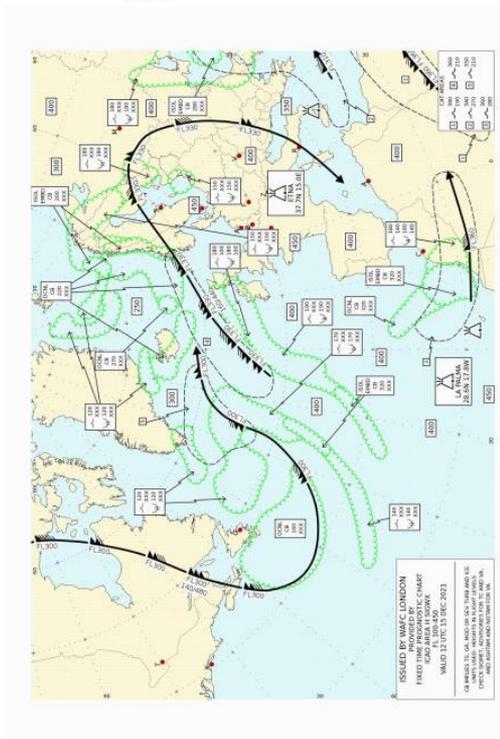
TAF LSGG 180825Z 1809/1615 YRBO2KT 0400 FG W7001 TX03/1514Z TX00/1608Z TX04/1614Z BECMG 1810/1812 3000 BR 070008 PROB30 1815/1820 6000 BRN012#

### AERODROME (ARRIVAL ALTERNATE): LFLS (GRENOBLE ISERE)

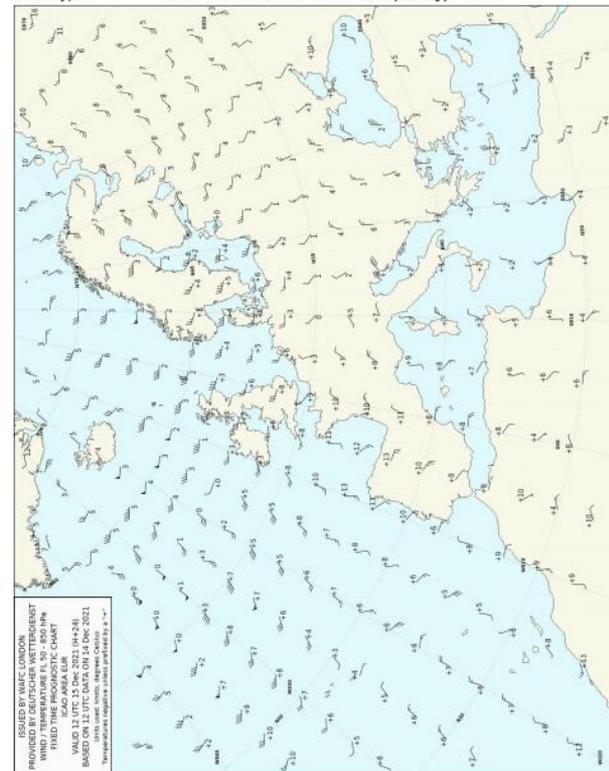
#### MET

METAR LFLS 180900Z AUTO 00000KT 6000 NSC M00/M00 Q1029 NOSIG#

Data Type: PGDE15 - Pictorial information(binary) - Significant weather SIGWX



Data Type: PWDE85 - Pictorial information(binary) - Wind



# Digital Briefing ... not only in paper format

The image displays two screenshots of the SAIP (Safety and Information Platform) digital briefing interface. The left screenshot shows the main briefing panel with various filters and options. The right screenshot shows a map view with a feature information popup and a detailed briefing panel.

**Left Screenshot: Main Briefing Panel**

- SAIP
- Total EET: 07:29
- Message type:
  - NOTAM
  - BIRDAM
  - SNOWTAM
  - ASHTAM
  - METEO
- Notam Options: **Only active NOTAMs**
- Notam Layout: PNB
- Sorting Order per AD/PR: NCTM Number Descending
- Briefing Type:
  - INT
  - NAT
  - MAL
- Scopes:
  - A
  - N
  - O
  - M
- Purpose:
  - N
  - B
  - O
  - M
- Flight Rules:
  - IFR
  - VFR
- Exclude country-wide NOTAMs
- Q Code
- Meteo Options
- Vertical limits

**Right Screenshot: Map View and Detailed Briefing Panel**

**Map View:** Shows a satellite map of Europe with a feature information popup for a volcano. The popup text reads: "VOLCANO ETNA ID 211995, POK COORDINATES 37.4620150014E, ELEV 10922.03358, ICELAND 23 ELE SHORE SONS OF LAREST ABOVE ITS PROHIBITED LEVEL, NO ASH FERRISON ICAO LEVEL OF ALERT COLOR YELLOW RISK FL LOWER SPEC UPPER, SML FROM 23 MAR 2022 16:37 TO 30 MAR 2022 16:00 EST NOTAM U WWW.902022".

**Detailed Briefing Panel:**

- Message type:
  - NOTAM
  - BIRDAM
  - SNOWTAM
  - ASHTAM
  - METEO
- Notam Options: **Only active NOTAMs**
- Meteo Options:
  - OPMET (5)
  - Charts (2):
    - Select All
    - Significant weather charts
    - Wind charts
    - NSWC
  - Selected Prefined Areas:
    - EURAFI (ICAO Area C)
    - Europe (ICAO Area EUR)
  - WC Vertical Levels:
    - FL300
    - FL320
    - FL340
    - FL360
- Vertical limits:
  - All
  - Detailed
  - Buffer
- Buffer (+/- FL):

# CRONOS-MOBILE Overview



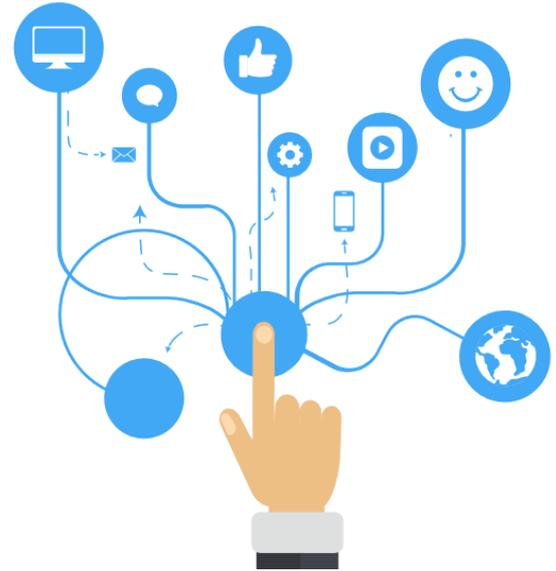
# CRONOS MOBILE APP

- A solution designed for
  - Pilots, Aircraft Operators to propose their own Flight Plan or ATS messages
  - ARO Users to get approvals or rejection of proposed Flights
  - Briefing Users to receive notifications on Flights and Pre-Flight Information
  - Makes use of REST-APIs' Services provided by the CRONOS-PORTAL
  - Connectivity between PORTAL and MOBILE must be granted



# CRONOS APIs

- ***Why APIs are so important for Aviation Industry ?***
  - It opens the possibility to consume or publish data – in a secure manner – across several channels and enables B2B usage
- ***What is an API ?***
  - Application Programming Interface is a way for an external party to use (consume) data from an entity in a controlled and secured manner.
- ***What are the benefits ?***
  - Enable Self – Service consumption of Aviation Data



# CRONOS – roadmap



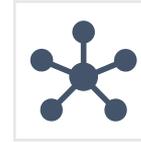
## Mobile

Completion of  
Mobile-CRONOS



## Regulation

ICAO Annex 3  
NM Updates



## Functional Aspects

IWXXM-2-TAC  
IWXXM over AMHS  
IWXXM over SWIM



## Infrastructure

Third Parties Upgrade  
Contingency site



**THANKS FOR YOUR ATTENTION**

Product Presentation

[enav.it](http://enav.it)