



ICAO



UNOOSA

# SPACE2016

# Commercial Space Transportation and the European Network

**Chris Brain**

*Free Route Airspace Manager, EUROCONTROL, NMD*

**ICAO / UNOOSA Symposium**

15–17 March 2016, Abu Dhabi, United Arab Emirates



ICAO

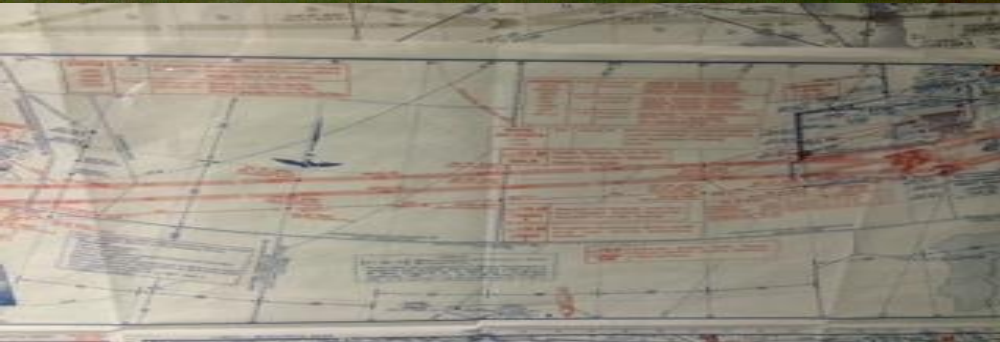


UNOOSA

# SPACE2016



October 24, 2003: Last BA Concorde flight





ICAO



UNOOSA

# SPACE2016





ICAO



UNOOSA

# SPACE2016

A window on the EUR network  
Traffic situation on Friday 5 September 2014 at 06:27 UTC

Network  
Strategy, plans  
& priorities

Balancing  
Demand &  
Capacity

Managing scarce  
resources

## Europe's Network Manager

Network  
Operations  
Planning

ATFM  
&  
IFPS

Mitigating,  
Disruptions &  
crises

Integrating  
Route Network  
Improvements

Integrating  
Airports into  
the Network

Network  
Safety Risks

Forecasting, monitoring  
analysing network performance

Current situation		
Planned flights	Airborne	Landed
23,382	4,034	2,021
Flights delayed more than 30 mins	Total amount of delays today (mins)	
79	11,615	

Today's top 5 accumulated delays (mins)	
NIH+KOH+LXH+LNN FL335+	2,226
APT: LONDON GATWICK	1,402
APT: CHANIA / IOANNIS DASKALOGI	948
AMSTERDAM FIR CROSS BORDER A	825
BORDEAUX R4	821

Live delay situation (mins)	
APT: LONDON GATWICK	> 30
APT: CHANIA / IOANNIS DASKALOGI	> 30
AMSTERDAM FIR CROSS BORDER A	> 15
CENTRAL	> 15
APT: PARIS CHARLES DE GAULLE	> 15

Legend (delay in mins/flight)

> 45



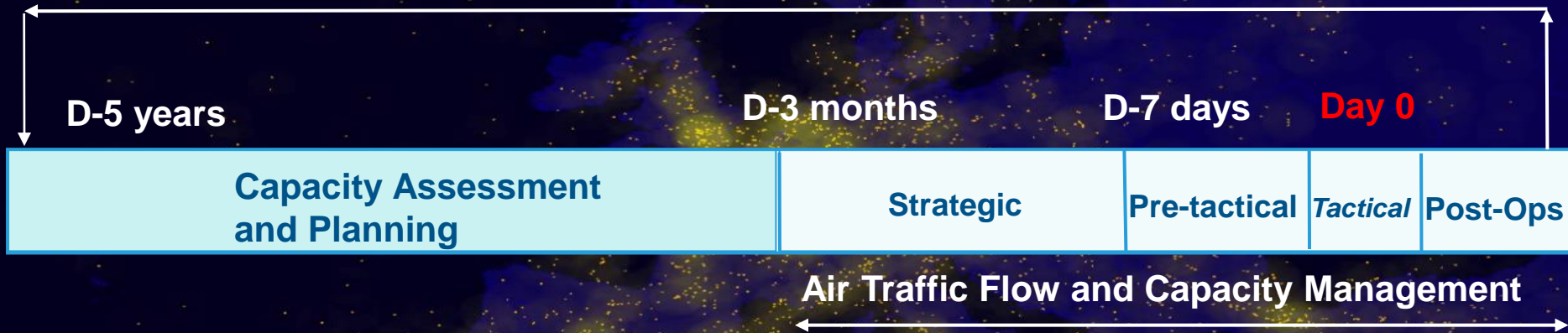
Network Manager  
nominated by  
the European Commission

Actual situation Friday 5th September: Low visibility in London Gatwick, and high demand for the Greek Islands. No significant enroute problems. Bardarbunga





## Network Operations Plan





| ICAO

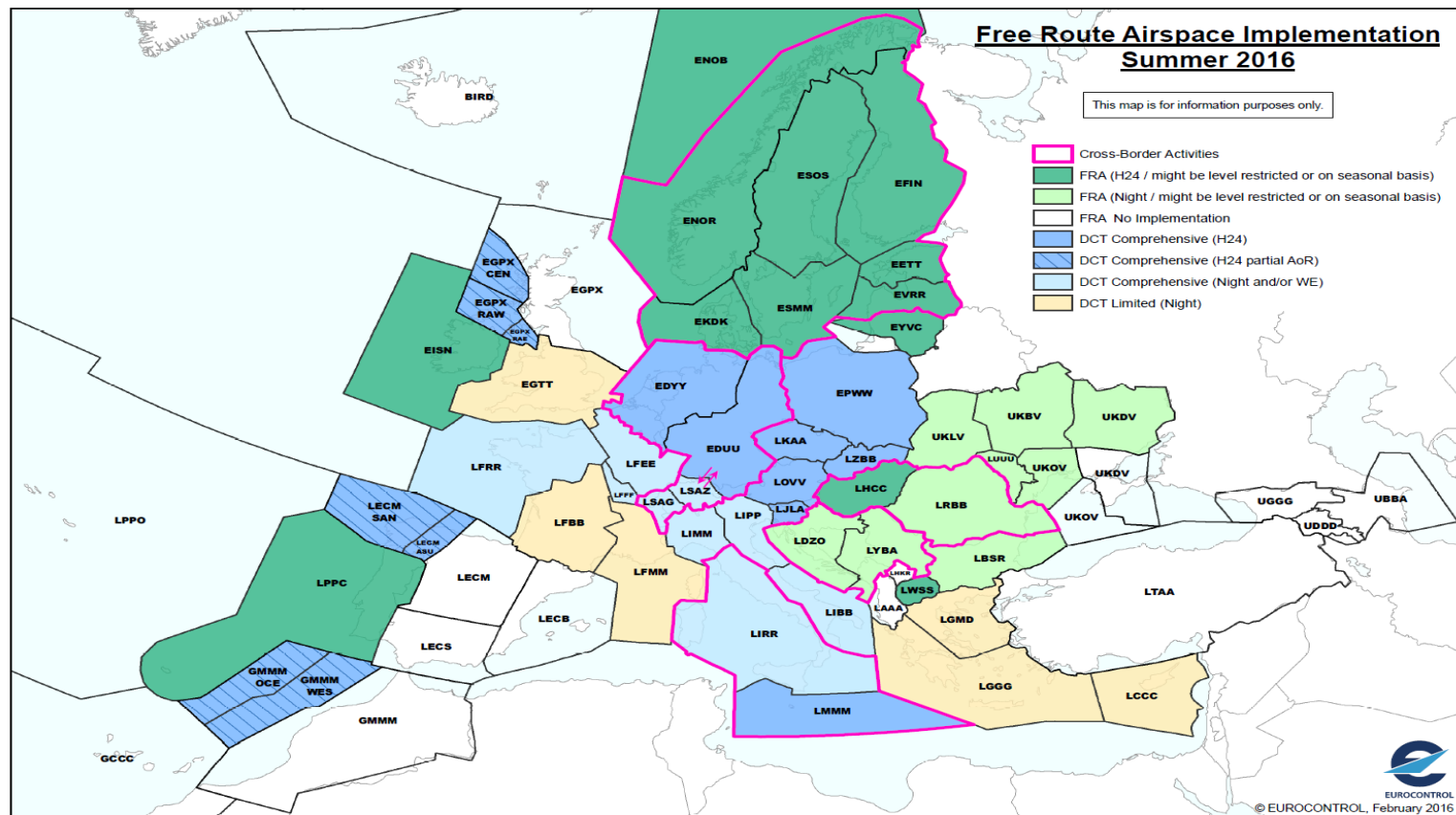


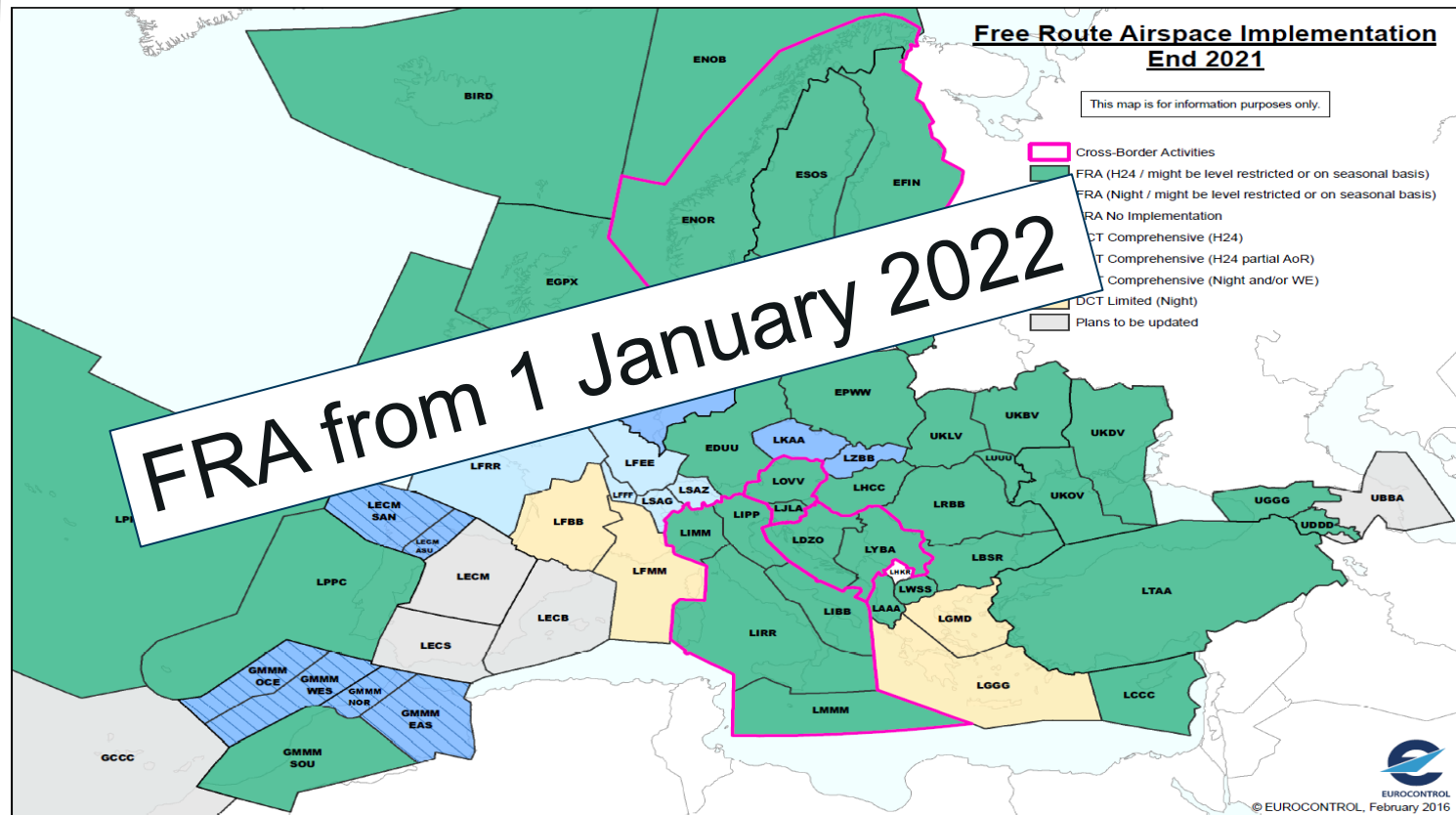
UNOOSA

# SPACE2016

## Free Route Airspace

A specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) way points, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.



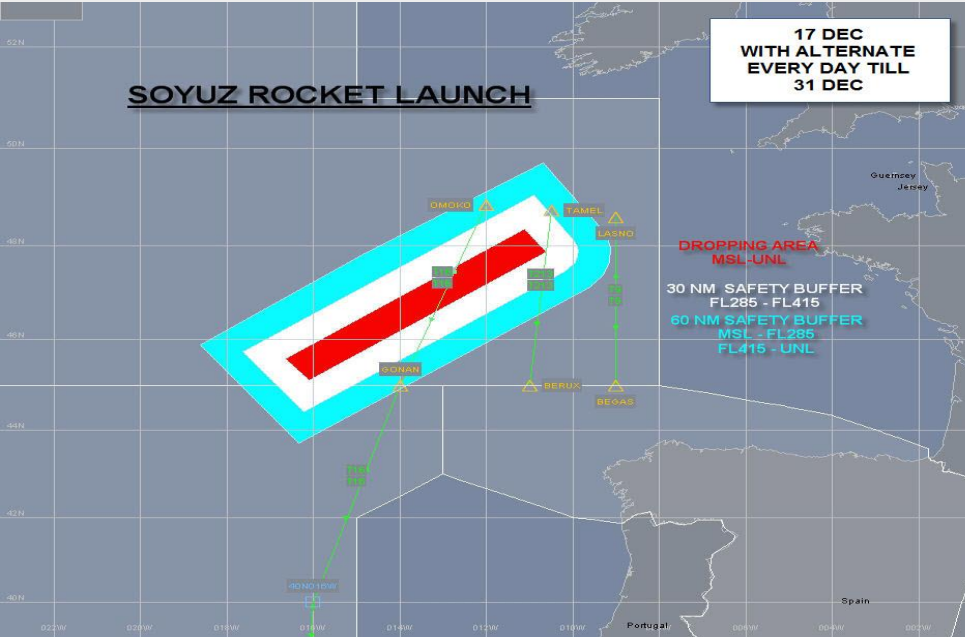




Disruptive  
Innovation?  
or  
Innovation  
that's  
Disruptive?

- New Actors?
- Location?
- Type and profile?
- Frequency?
- Segregation or non segregation?
- Operational procedures?
- Notification and duration?
- Contingency?





NMD/NOM/NOS	Operational Instruction			Temporary	Doc ID: OI/15-203
	Issued on: 09/12/2015	Subject: FRENCH GUYANA SOYUZ VS13 LAUNCH	By: ILI		
Applicability	AD <input checked="" type="checkbox"/>	FCM <input checked="" type="checkbox"/>	FPL <input checked="" type="checkbox"/>		Briefing: No

**Introduction**

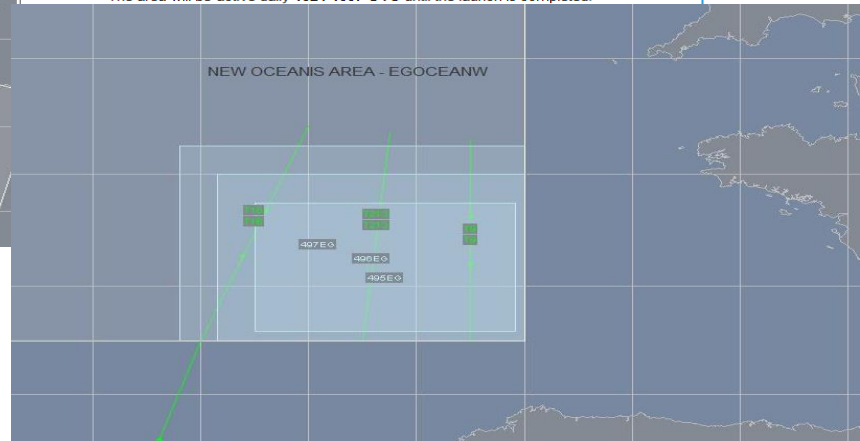
The European Space Centre will proceed to a SOYUZ launch (VS13) from French Guyana (South America) on 17 December with possible postponements till 31 December. The main propulsion stage will be recovered in an area located in **Shanwick (EGGX)** airspace.

**Procedure**

CADF will activate manually restriction **EUSOYUZ** for 17 DEC from 09:54 to 14:07 UTC. In case of postponement the same procedure will be applied daily, if spare days are required. The general procedure referring to these rocket launches is described in OI/15-009. This OI refers to the specific VS13 launch.

**2.1. Airspace**

- The recovery area has been defined with the following coordinates:  
**4821N01107W 4752N01037W 4507N01606W 4535N01638W**
- The area will be active daily **1024-1337 UTC** until the launch is completed.



## NM and Current Spaceflight Operations



ICAO



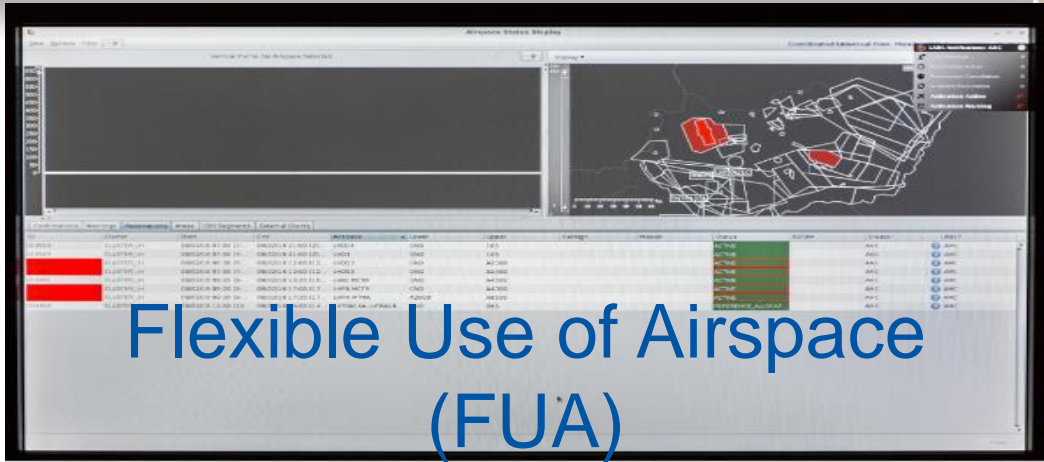
UNOOSA

# SPACE2016

## Remotely Piloted Aircraft Systems (RPAS) European CONOPS - ATM

### Type III - IFR above FL600 - Requirements:

- File a flight plan
- Meet CNS requirements
- Inform ATC in case of emergency re-entry into CAS
- Inform type of contingency procedure to be used
- Regional centralised system should have an overview of ops
- Joint ops centre should be established
- Departure/arrival procedures should be developed



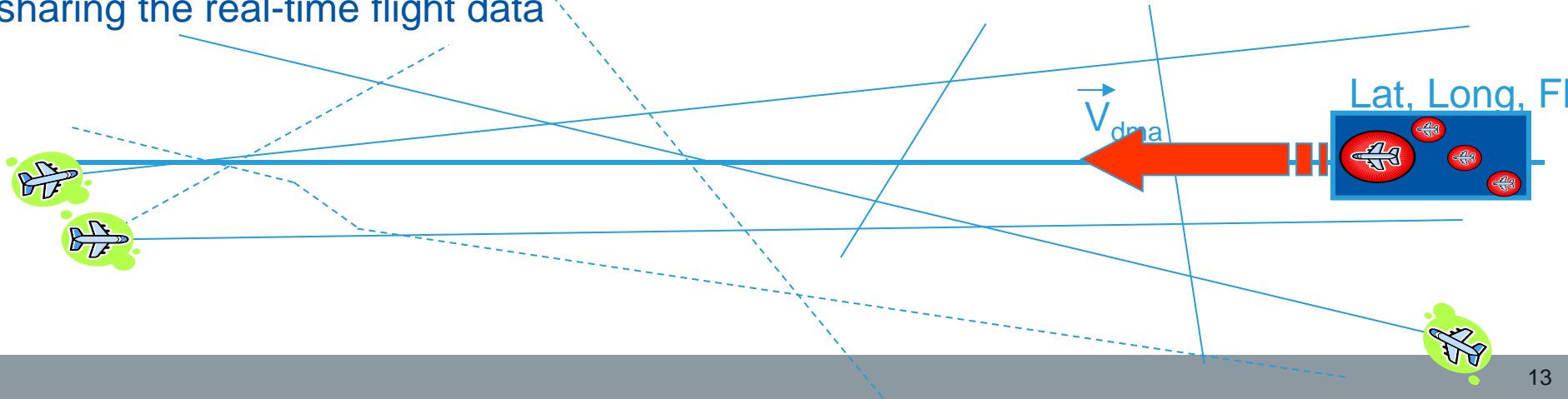
## Flexible Use of Airspace (FUA)

- Airspace is one continuum
- Conditional routes & temporary reserved areas
- Direct coordination between civil and military
- Strategic decisions - performance measurement



## Advanced FUA – Dynamic Mobile Areas

- Protects an activity or a flight along the path
- Area with defined lateral/vertical dimensions around moving activity to be protected
- Shared Mission Trajectory and moving airspace dimensions
- Area “attached” to the leading aircraft that should be in charge of sharing the real-time flight data



- New Actors ✓
- Location ✓
- Type and profile ✓
- Frequency ✓
- Segregation or non segregation ✓
- Operational procedures ✓
- Notification and Duration ✓
- Contingency ✓





ICAO



UNOOSA

# SPACE2016

# THANK YOU

## Chris Brain

*Free Route Airspace Project Manager*

*EUROCONTROL Network Manager*

**ICAO / UNOOSA Symposium**

15–17 March 2016, Abu Dhabi, United Arab Emirates

