



# EGNOS Programme Status

EGNOS Annual Workshop

Jean-Marc Piéplu – EGNOS Exploitation Programme Manager




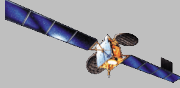






2 December 2021

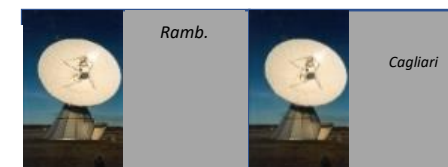


# EGNOS Operational System Configuration

Dec. 2021



<b>SPACE</b>	<b>SERVICE BROADCAST*</b>				<b>TEST / BACK-UP</b>		<b>TEST</b>			
	<b>GEO-1: SES-5</b> <b>PRN-136</b> 		<b>GEO-2: ASTRA-5B</b> <b>PRN-123</b> 		<b>Inmarsat 4F2</b> <b>PRN-126</b> 		<b>GEO-3: E5WB</b> <b>PRN-121</b> 			
<b>GROUND</b>	SYSTEM RELEASE 2.4.2-A since Oct. 2021									
	 <b>Redu-1 OP</b>  <b>Betzdorf-1 OP</b>  <b>Redu-2 OP</b>  <b>Betzdorf-2 OP</b>  <b>Burum-1 Test</b>  <b>Fucino Test</b>									
	<b>NLES</b>									
	<b>MCC CIAMPINO</b>			<b>MCC TORREJON</b>			<b>SC TORREJON</b>		<b>OCC TOULOUSE</b>	
	<b>CPF + CCF</b>					<b>ASQF</b>			<b>PACF</b>	
	<b>Abu Simbel</b>	<b>Azores Isl.</b>	<b>Agadir</b>	<b>Aalborg</b>	<b>Alexandria</b>	<b>Athens</b>	<b>Berlin</b>	<b>Canaries Isl.</b>	<b>Cork</b>	<b>Catania</b>
	<b>Djerba</b>	<b>Egilsstadir</b>	<b>Glasgow</b>	<b>Golbasi</b>	<b>Gavle</b>	<b>Hartebeeshoek</b>	<b>Haifa</b>	<b>Jan Mayen</b>	<b>Kirkeness</b>	
<b>Lappeenranta</b>	<b>La Palma</b>	<b>Lisbon</b>	<b>Svalbard</b>	<b>Madeira</b>	<b>Malaga</b>	<b>Moncton</b>	<b>Nouakchott</b>	<b>Paris</b>	<b>Palma de M.</b>	
<b>Reykjavik</b>	<b>Roma</b>	<b>Santiago de C.</b>	<b>Sofia</b>	<b>Swanwick</b>	<b>Toulouse</b>	<b>Trondheim</b>	<b>Tromso</b>	<b>Warsaw</b>	<b>Zurich</b>	
<b>RIMS: 39 RIMS in Operations</b>										

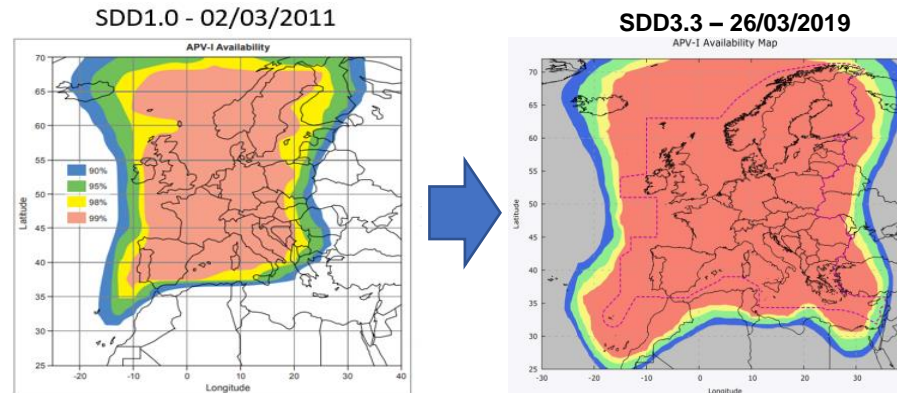
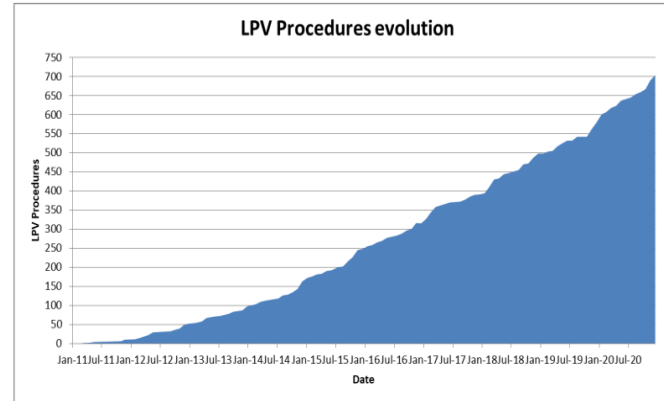


# EGNOS SoL Service turned 10

**2011**

First EGNOS LPV procedure published in Pau

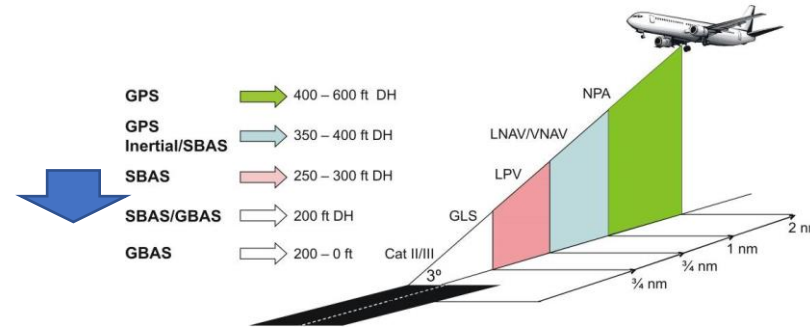
Initial SoL APV-I Service area



**2021**

> 700 procedures  
> 60% equipped instrumental runway ends

New users:  
helicopters,  
aerodromes with  
limited ATS



SoL APV-I extended to EU

Approach minima down to 200 ft (LPV-200 declared in 2015)

# Transition to EU Space Programme

(Regulation EU 2021/696 of 28 April 2021)



- **Renewed programme organisation:**
  - New Tri-partite Financial Framework Partnership Agreement (FFPA) signed in June 2021 by EC, EUSPA and ESA
  - Smooth transition to FFPA completed over July-Nov 2021 period
  - Welcome to Iceland participation to EGNOS
- **Renewed EGNOS objectives for 2021-27:**
  - Ensure Service Provision over EU Member States territories geographically located in Europe, in compliance with SBAS SARPS and Safety standards
  - Ensure Security (incl. EGNOS V2 and EGNOS V3 security accreditation)
  - Ensure EGNOS evolutions (EGNOS V2 to V3 transition)
  - Develop new EGNOS services (Maritime, Rail, DFMC, other domains)
  - Service extensions beyond EU (Iceland, North Africa, Ukraine)

# EGNOS Exploitation roadmap



2022

2024

2026

2028

2030

2032

**Constellations**

Galileo OS FOC

GPS L5 FOC

**EGNOS L1 GPS Services**

Maritime & Rail Initial Services

Aviation PBN

Galileo Aviation ICAO Standards

EGNOS L5 DFMC Test SIS

**EGNOS L1/L5-GPS/Galileo Services**

**User Segment**

Prototyping

EGNOS L1/L5-GPS/Galileo Commercial products, Adoption support

**Space Segment**

GEO-4

GEO-5

GEO-6

**EGNOS V3 Development**

System Development  
Operations Preparation

**EGNOS V3 Operations & Evolutions**

Initial Operations

3.1

3.2

Services Evolutions

**EGNOS V2 Operations & Evolutions**

OPS transition

2.4.2A

2.4.2B

2.4.3

Lifetime extension

# Towards new EGNOS services



- **EGNOS Maritime Service:**
  - Target: service declaration end 2023
  - EGNOS L1 Signal in Space (SiS) pseudo-range integrity
- **EGNOS for Rail:**
  - Inclusion of EGNOS in European Rail Traffic Management System (ERTMS)
  - EGNSS rail service for train localisation under study
- **EGNOS DFMC Service:**
  - Target: service declaration in 2028
  - GPS L1/L5 and Galileo E1/E5 augmentation
- **EGNOS SBAS authentication:**
  - SBAS authentication under study and assessment for SARPs



Linking space to user needs

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