



European
Global Navigation
Satellite Systems
Agency

E-GNSS engagement and opportunities and International Cooperation in H2020



NAVIGATION SOLUTIONS
POWERED BY EUROPE

iGNSS 2018

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9 February 2018, Sydney, Australia

Overview

1. Existing success story – Aus MEOLUT
2. International cooperation in H2020
3. Rules of participation for international partners
4. H2020 Galileo application projects involving Associated and Third countries
5. Future EGNSS applications R&D

The background of the slide is a deep blue space filled with white stars of varying sizes. In the center is a realistic-looking globe of the Earth, showing continents and oceans. Several glowing orange and red lines with arrowheads orbit the globe in various directions, suggesting global connectivity or movement. A semi-transparent grey rectangular box is positioned horizontally across the middle of the globe.

Existing Australian engagement success

GALILEO SAR – ONE OF THE FIVE GALILEO SERVICES

Open Service (OS)



Public Regulated Service (PRS)



Search and Rescue (SAR) - contribution



Commercial Service (CS)



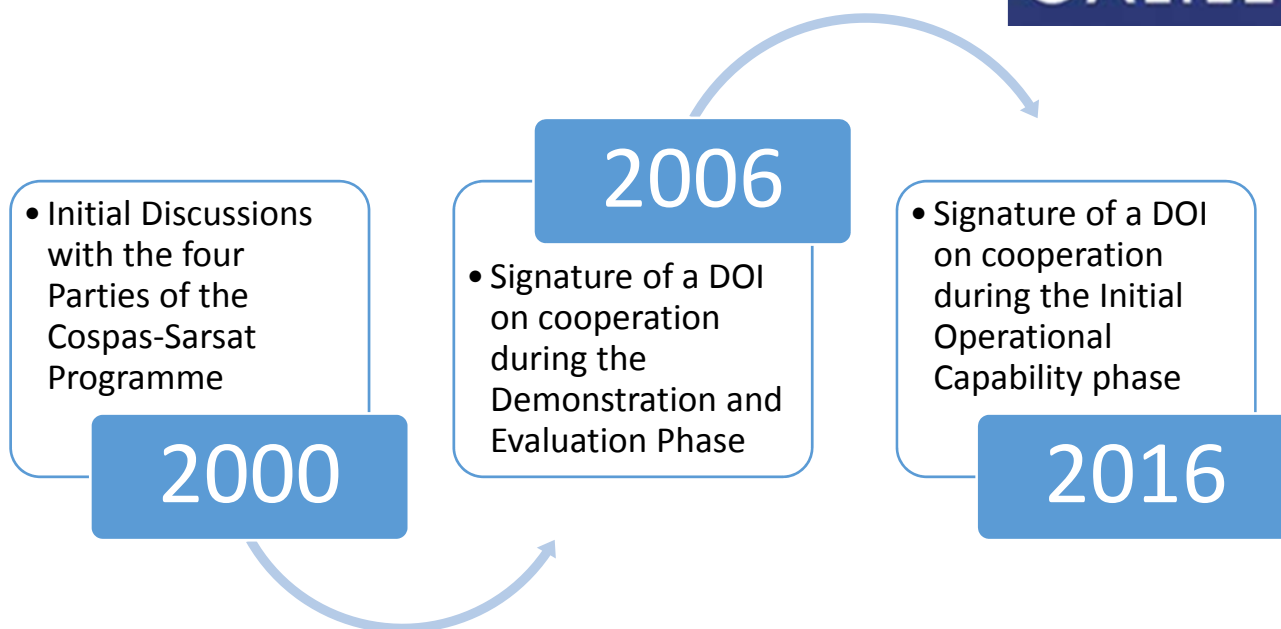
Safety-of-Life (SoL) - contribution



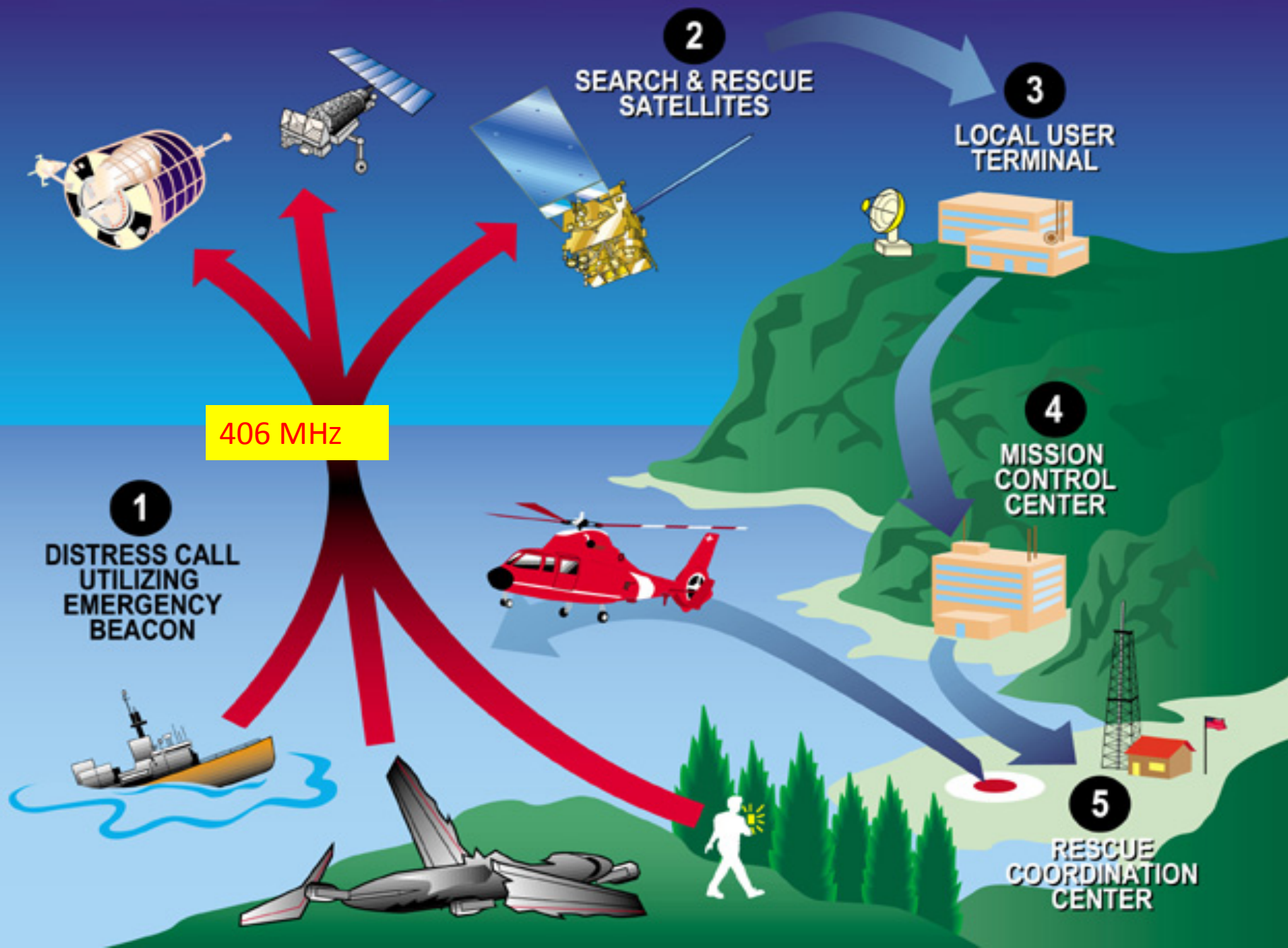
Initial SAR Service
on 15/12/2016

EU GNSS Regulation 1285/2013, Art. 4.2 (e): "to contribute to the Search and Rescue Support Service (SAR) of the Cospas-Sarsat System by detecting signals transmitted by beacons and relaying messages to them"

GALILEO SAR – EU CONTRIBUTION TO COSPAS-SARSAT



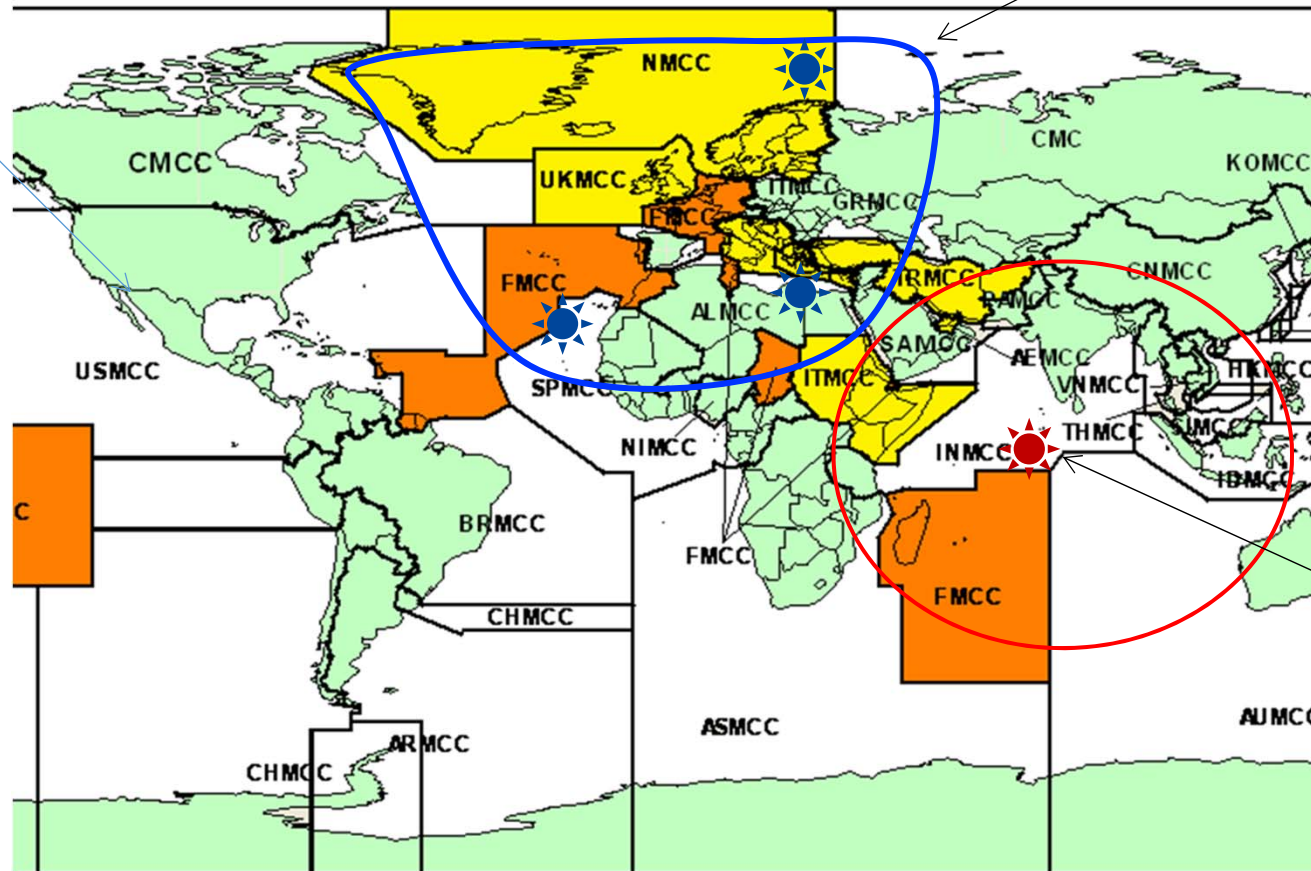
COSPAS-SARSAT System Overview



Australian Engagement in Cospas-Sarsat

Australia has an estimated 350,000 operational distress beacons. During 2012, 283 lives were saved due to Cospas-Sarsat distress beacon activations.

Deployed EU MEOLUTs
SGC Coverage



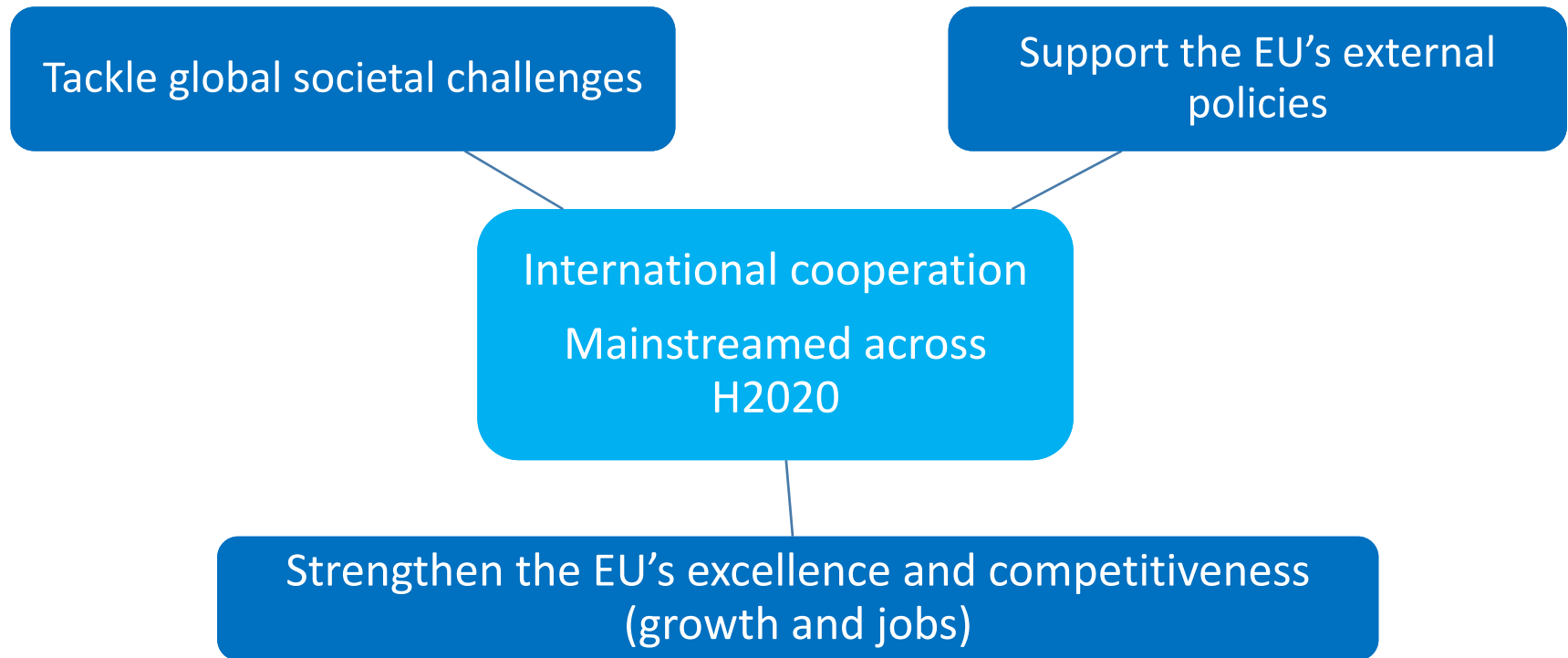
New EU
MEOLUT in
La Reunion
connected to
FMCC

Australian MEOLUT - Mingenew, Western Australia
RCC – Canberra (joint service area with NZ MEOLUT and RCC)

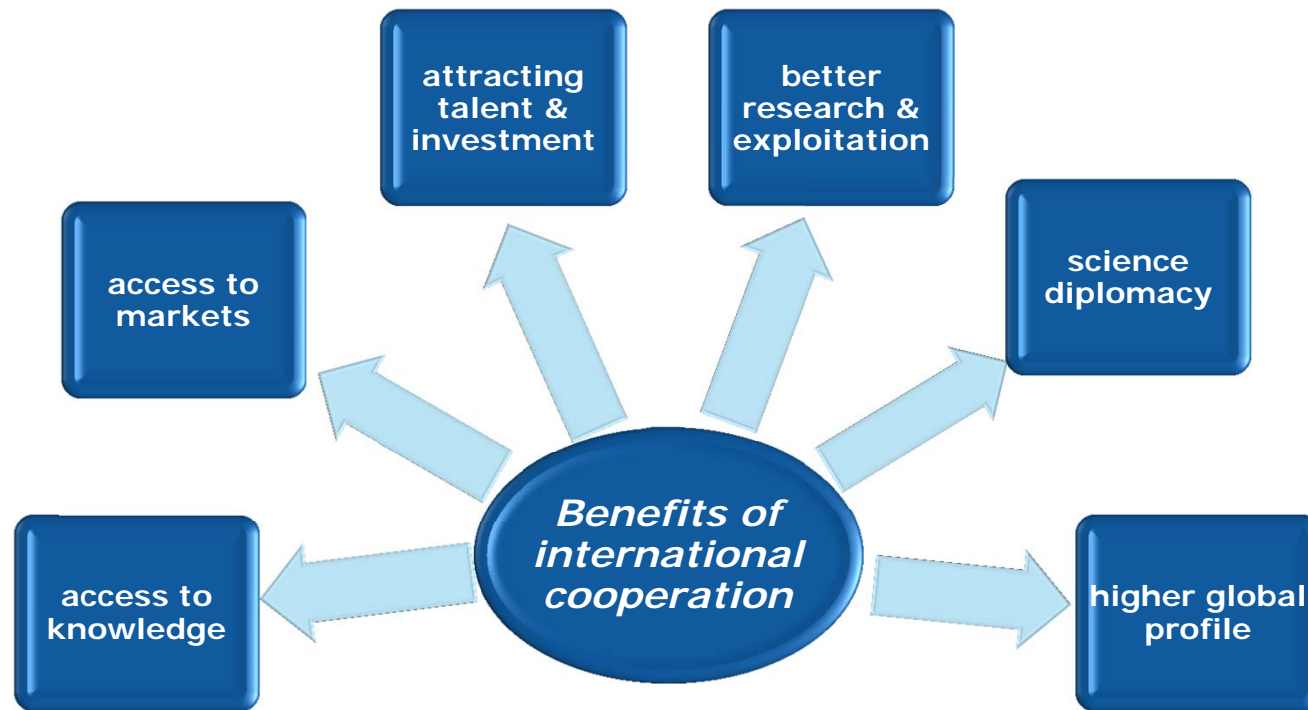


International cooperation in H2020

International Cooperation Strategy: Enhancing and focusing EU international cooperation in research and innovation



HORIZON 2020 Open to the world



1. Any project can include international partners (ambition: increase international participation)
2. Targeted opening (in some topics identified in the calls for proposals, inclusion of international partners is encouraged, e.g. [GALILEO-4-2017: EGNSS awareness raising and capacity building](#))



Rules of participation for international partners

International participation



- Applicants from non-EU countries are eligible to *take part* in Horizon 2020 programmes – even if not stated explicitly.
- However, they are not always automatically entitled to *funding*.
- Proposals must meet certain minimum conditions (Rules for Participation).

Eligibility for funding

Automatically eligible for funding:

- *EU-Member States*
- *Overseas Countries and Territories linked to Member States*
- *Countries associated to Horizon 2020*
- *Developing countries (low or medium per-capita income or low GDP)*
- *International European interest organisations*

*For applicants that are **not** automatically eligible*

Funding possible if:

- *provided for under a bilateral scientific and technological agreement*
- *stated in the Work Programme*
- *the Commission deems participation of entity as essential (i.e. outstanding competence/expertise; access to research infrastructure; access to particular geographical environments; or access to data)*



Case for Australian participants



H2020 Galileo application projects involving Associated and Third Countries

H2020 Galileo application Calls

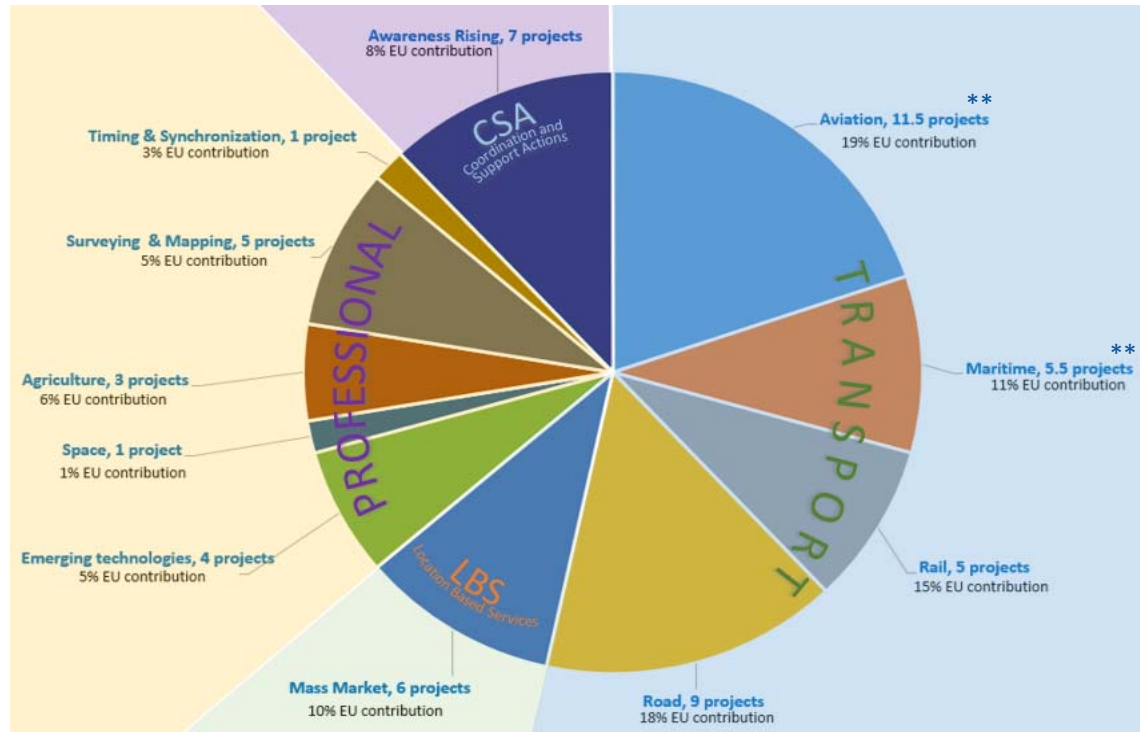
	1 st Call	2 nd Call	3 rd Call	TOTAL
Budget available	40.4M EUR	24.9M EUR	36.1M EUR	101.4M EUR
Budget requested	174.3M EUR	192.2M EUR	160.8M EUR	527.3M EUR
No of projects granted	27	13	18*	56
No of proposals submitted	105	89	78	272
	26% success rate	15% success rate	21% success rate	21% success rate
No of applicants	775	634	546	1 955
No of beneficiaries	221	100	131	452

*2 projects are still at the Grant Agreement Preparation Phase

H2020 Galileo Calls

Funded projects distributed by market segment

number of projects, %EU contribution*



NOTES:

*grant awarded by market segment/total EU contribution of EGNSS calls

**1 project related to both maritime and aviation

*5 projects are at the GAP stage

EGNSS 2014-2017

Calls for proposals

Total EU contribution (M€)**:	100,97
Number of projects*	58

H2020 1ST and 2ND Call results and examples



6 patents granted



>70 prototypes ready



22 products developed



Around 100 demonstrations/tests

GMCA



Aviation: GNSS performance monitoring system

G-Motit



Road: Galileo-Enhanced electric scooter sharing service for sustainable urban mobility

COREGAL



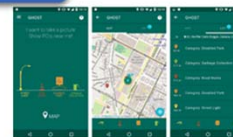
Surveying: Positioning platform used for carbon mapping and land management

SAT406M



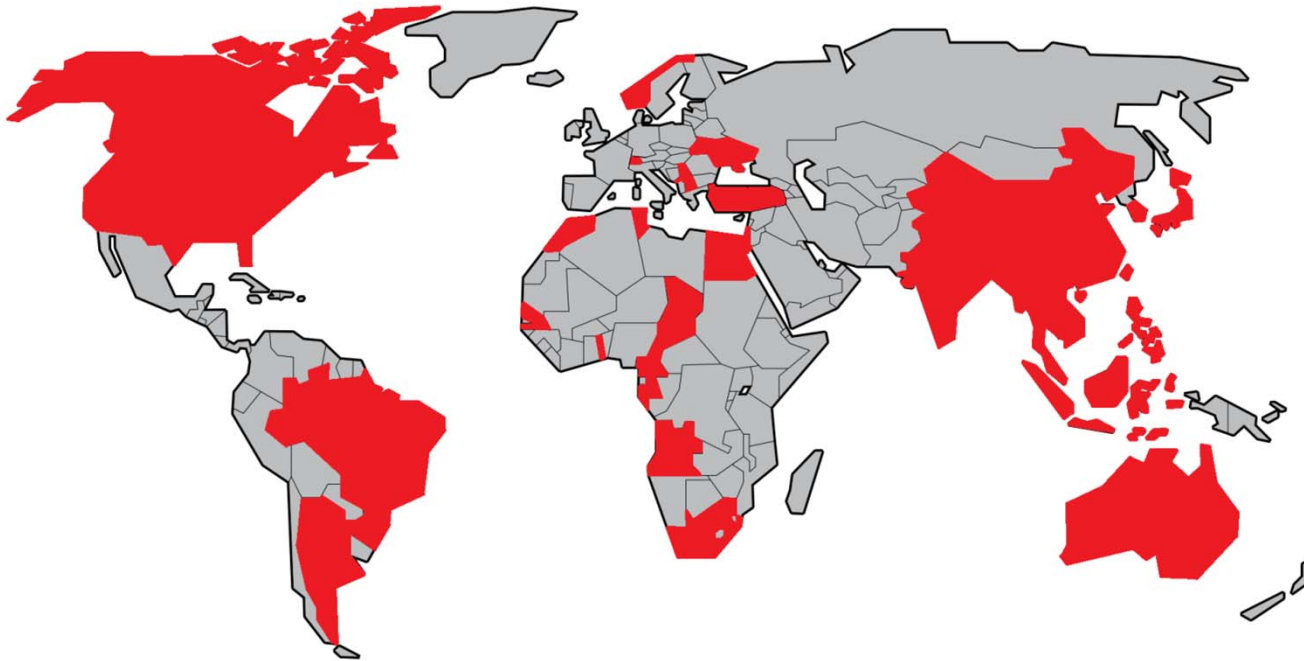
Maritime: Personal Location Beacon

GHOST



LBS: Application for Smart Cities- to detect infrastructure anomalies

H2020 International Cooperation in Galileo application calls



- **64.3 million euro** for international cooperation activities (meaning to non-EU beneficiaries)
- action in **29 countries** worldwide
- **>50 partners** from international companies
- Dedicated international cooperation topic in two **H2020-GALILEO Calls** with a budget of **3 million euro**

Examples of H2020 projects involving international cooperation



BELS: *Building European Links toward South East Asia in the field of GNSS*

The project implements a set of coordinated actions to promote EGNSS technology in South East Asia (SEA), supporting the competitiveness of EU enterprises facilitating their contacts with relevant GNSS in South-East Asia.



MAGNIFIQUE: *Multiplying In Africa European Global Navigation Initiatives Fostering Interlaced Cooperation*

MAGNIFIQUE project works towards the promotion of an African EGNOS through benefits that spread much beyond Civil Aviation Needs, the promotion of the Galileo Early services and the capacity building in Africa to boost the penetration of the EGNSS applications and services



GNSS.Asia2: *Industrial cooperation across continents*

The GNSS.Asia2 project assesses market areas of mutual interest for Europe and Asia, analyses the GNSS landscape in the target Eastern economies and provides expert guidance for European GNSS companies searching for business opportunities in Asia.



UKRAINE: *Ukraine Replication, Awareness and Innovation based on EGNSS*

The objectives of the UKRAINE project are to foster application development through international cooperation and to create a broad acceptance of EGNSS in Ukraine, creating at the same time opportunities both for knowledge building and at commercial level.

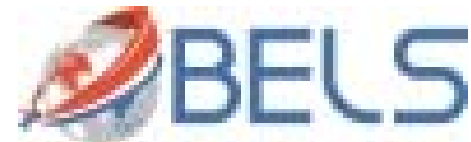
Australian Beneficiary in H2020 Galileo applications project

BELS- Building European Links toward South East Asia in the field of EGNSS

- **Objective:** facilitate the breakthrough of EGNSS technology, with a particular focus on South East Asia (SEA), conducting a set of coordinated activities for awareness raising and capacity building which are cooperatively implemented by different European and Asia-Oceania actors such as universities, research and technology transfer centres, governmental agencies, companies and industries. The project has a strong focus on industrial partnership and support to enterprises.



- Australian beneficiary: **University of New South Wales (UNSW)**
- *Role:*
 - contribution to the organization of the Multi-GNSS Asia Conference.
 - support organisation of EGNSS Competition. The competition aims to attract smart young researchers/entrepreneurs from ASEAN Member States to develop EGNSS-based business ideas/applications and offer them the possibility to interact with European companies and research institutions for their implementation.





Future EGNSS applications R&D

EGNSS R&D AND START-UP ACTIVITIES

OVERVIEW OF TODAY'S LANDSCAPE



~112M€ (2015-2020)

FUNDAMENTAL ELEMENTS

Galileo & EGNOS chipsets and receivers

~400M€ (2014-2020)

Space Work Programme

EGNSS)

Applications and
market uptake

EGNSS Evolution
Mission and Services
Infrastructure

EGNSS in **other**
Work
programmes

- Transport
- ICT
- Health
- Energy

START UP ACTIVITIES

Galileo Masters
Galileo Accelerator
Galileo Hackathons

SME Instrument

Fast Track to Innovation

GSA: Promote applications
ESA: Develop Infrastructure & Technology
EC: Define Mission and Services

EGNSS R&D in H2020 Space Work Programme

EGNSS RESEARCH CALLS in 2019 – 2020

Call – EGNSS market uptake 2019-2020

Topics	Type of Action			
		2018	2019	2020
SPACE-EGNSS-1-2019-2020: EGNSS applications fostering green, safe and smart mobility	IA		10.0	10.0
SPACE-EGNSS-2-2019-2020: EGNSS applications fostering digitisation	IA		4.0	5.0
SPACE-EGNSS-3-2019-2020: EGNSS applications fostering societal resilience and protecting the environment	IA		4.0	5.0
SPACE-EGNSS-4-2019: Awareness raising and capacity building	CSA		2.0	

Opening: 16 October 2018
Deadline: 05 March 2019

Other actions for 2018-2020 (sub-set)

Other actions	Type of Action			
		2018	2019	2020
Activity 7 – Galileo Evolution, Mission and Service related R&D activities	Public Procurement		2.6	1.8
Activity 8 – EGNOS Mission and Service related R&D activities	Public Procurement		0.4	0.2
Activity 9 – GNSS evolution, infrastructure-related R&D activities	DA - ESA	36.0	31.0	10.0
Activity 13 – Horizon 2020 project monitoring and audits EGNSS	Expert Contracts		0.5	0.5

IA: activities aimed at producing plans and arrangements or designs for new, altered or improved products, processes or services

CSA: consisting of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, policy dialogues and studies

LC-SPACE-EGNSS-1-2019:

EGNSS applications fostering green, safe and smart mobility

Scope: Proposals should contribute to efficient, climate and environmentally friendly transport that will be safe and seamless for all citizens

Aviation

Advanced navigation



CNS



Air Traffic Management



Unmanned vehicles



Road

Autonomous vehicles



eCall



Connected Cars



Digital tachograph



Maritime

Vessel navigation & Traffic Management



Port operations



Fisheries



Autonomous vessels



Rail

Train signalling/control



Passenger-crew services



Autonomous trains



Multimodal logistics



Project Indicative funding: 1 to 3 million €

* PRS (Public Regulated Service) applications are not in scope of this action

DT-SPACE-EGNSS-2-2019:

EGNSS applications fostering digitisation



Scope: Actions should deliver new innovative applications integrating digital technologies like Internet of Things (IoT), cloud computing, big data and robotics

Mass market applications

Secure financial transactions



Tracking solutions



Augmented reality



Commercial LBS



- Foster the adoption of EGNOS and Galileo in mass markets
- Applications that will make best use of EGNSS innovative features such as better multipath resistance, authentication...
- Foster competitiveness of the European GNSS industry in the area of mobile applications, with special focus on SMEs
- Maximise public benefits by supporting the development of applications that will address major societal challenges such as health, citizen safety, mobility, regional growth etc.

Project Indicative funding: 1 to 3 million €

* PRS (Public Regulated Service) applications are not in scope of this action

SU-SPACE-EGNSS-3-2019:

EGNSS applications fostering societal resilience and protecting the environment



Scope: Proposals may address social and professional applications to support **societal resilience, wellbeing of EU citizens, emergency and disaster management**

Social and Professional applications

Emergency and
disaster
management



Search and
Rescue



Surveying and
mapping



Efficient
Agriculture



Timing &
Synchronisation



- Professional application should leverage **Galileo and EGNOS differentiators** in order to reduce the price and increase the effectiveness of the solution
- Proposals addressing Galileo SAR service should leverage the **Forward and Return Link Services** to improve the users' safety
- Emergency and disaster management applications should target **integration of different sensors and position sources** to identify, locate and react in critical situations
- Applications in agriculture should **improve the productivity** and **decrease the negative environmental impact**

Project Indicative funding: 1 to 3 million €

* PRS (Public Regulated Service) applications are not in scope of this action



SPACE-EGNSS-4-2019:

Awareness raising and capacity building

Scope: Proposals should aim the development of EGNSS competences existing and emerging in EU Member States and Associated Countries

Awareness Raising and Capacity building

EGNSS dissemination



Creation of networks



International cooperation



- Support building of industrial relationships by gathering private and public institutions around services offered by EGNSS and related applications
- Support the competitiveness of EU industry by identifying strategic partners and by developing market opportunities
- Support to incentive schemes should foster the emergence of new downstream applications based on either Galileo and/or EGNOS and therefore to support the EU GNSS industry

Project Indicative funding: 0.5 to 1 million €

* PRS (Public Regulated Service) applications are not in scope of this action

EGNSS applications development

Synergies with other H2020 calls

Transport

Opening: 31/10/2017, Deadline: 30/1/2018 :

- LC-MG-1-2-2018:** Sustainable multi-modal inter-urban transport, regional mobility and spatial planning
- MG-3-2-2018:** The Autonomous Ship

Opening 5/9/2018, Deadline: 16/1/2019 :

- MG-2-9-2019:** Integrated multimodal, low-emission freight transport systems and logistics (Inco Flagship)
- MG-2-6-2019:** Moving freight by Water: Sustainable Infrastructure and Innovative Vessels
- MG-2-8-2019:** Innovative applications of drones for safety in transport

Opening: 31/10/2017, Deadline: 30/1/2018

- DT-ART-01-2018:** Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data
- DT-ART-02-2018:** Support for networking activities and impact assessment for road automation

Opening: 4/12/2018, Deadline: 24/4/2019

- DT-ART-04-2019:** Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all

Information and Communication Technologies

Opening: 31/10/2017, Deadline: 17/4/2018 :

- ICT-28-2018:** Future Hyper-connected Sociality

Opening: 26/7/2018, Deadline: 14/11/2018:

- DT-ICT-08-2019:** Agricultural digital integration platforms



Energy

LC-SC3-ES-6-2020: Research on advanced tools and technological development

Health

Opening: 7/11/2017, Deadline: 24/4/2018 :

- SC1-DTH-03-2018:** Adaptive smart working and living environments supporting active and healthy ageing.

Opening: 7/11/2017, Deadline: 24/4/2018

- SC1-DTH-05-2019:** Large scale implementation of digital innovation for health and care in an ageing society

Opening: 26/7/2018, Deadline: 16/4/2019

- SC1-BHC-13-2019:** Mining big data for early detection of infectious disease threats driven by climate change and other factors

These calls contain **specific references to EGNSS.**

Find out more at:

https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/call_updates.html

Further Info on H2020?

<https://www.gsa.europa.eu/gsa/grants>

RESEARCH@gsa.europa.eu

EGNOS-adoption-aviation@gsa.europa.eu



GNSS Market Report 5

Following the success of the previous publication, the 5th edition of the GSA's GNSS Market Report provides:

- a full description of the global GNSS market and its expected evolution up to 2025
- by market segments analyses including specific GNSS applications and trends



Download here:

<https://www.gsa.europa.eu/market/market-report>

- ✓ An **expanded section on technological macro-trends** where GNSS has become essential
- ✓ Segment-specific **user perspectives** and their increasingly stringent demands
- ✓ Impact of **Galileo Initial Services declaration** enhancing performance of GNSS applications
- ✓ The important role that GNSS plays in the growing **market of drones**

GSA: linking space to user needs

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