

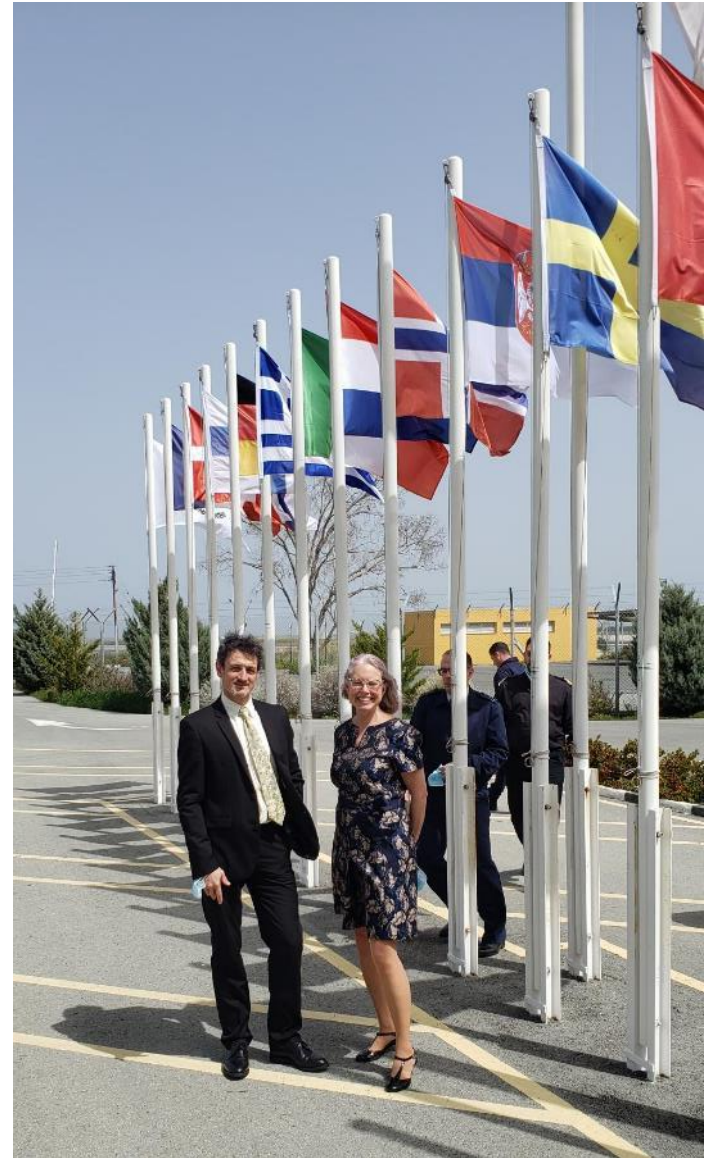


STATUS OF THE COSPAS-SARSAT PROGRAMME

Arnaud Sindou
Cheryl Bertoia

Cospas-Sarsat Secretariat

Eighth Meeting of the
ICAO Asia/Pacific Search and Rescue Working Group
(AP SAR/WG/8) *(Video Teleconference, 22 - 25 May 2023)*



System Operation

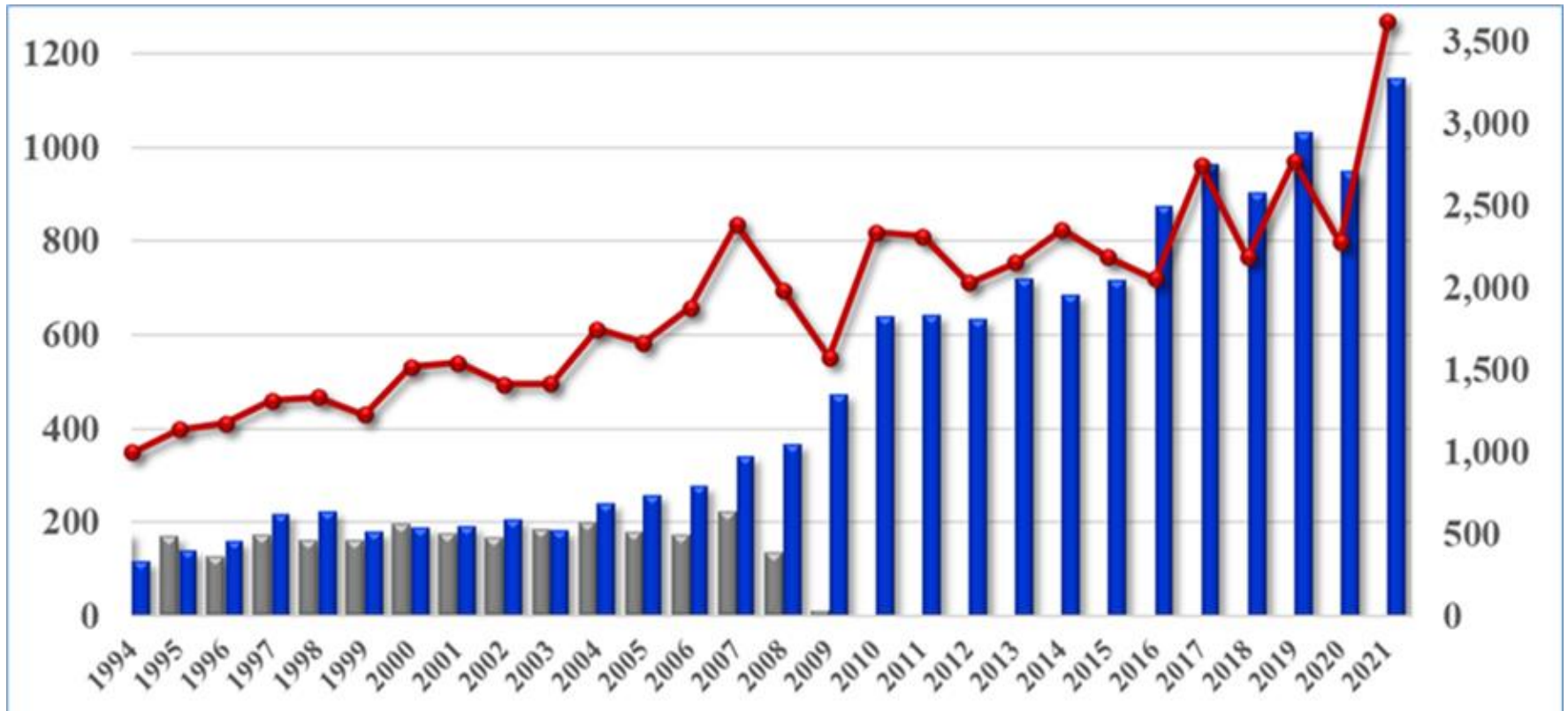


Figure 1: SAR Events with the Assistance of Cospas-Sarsat Data (Jan. 1994 - Dec. 2021)

System Operation

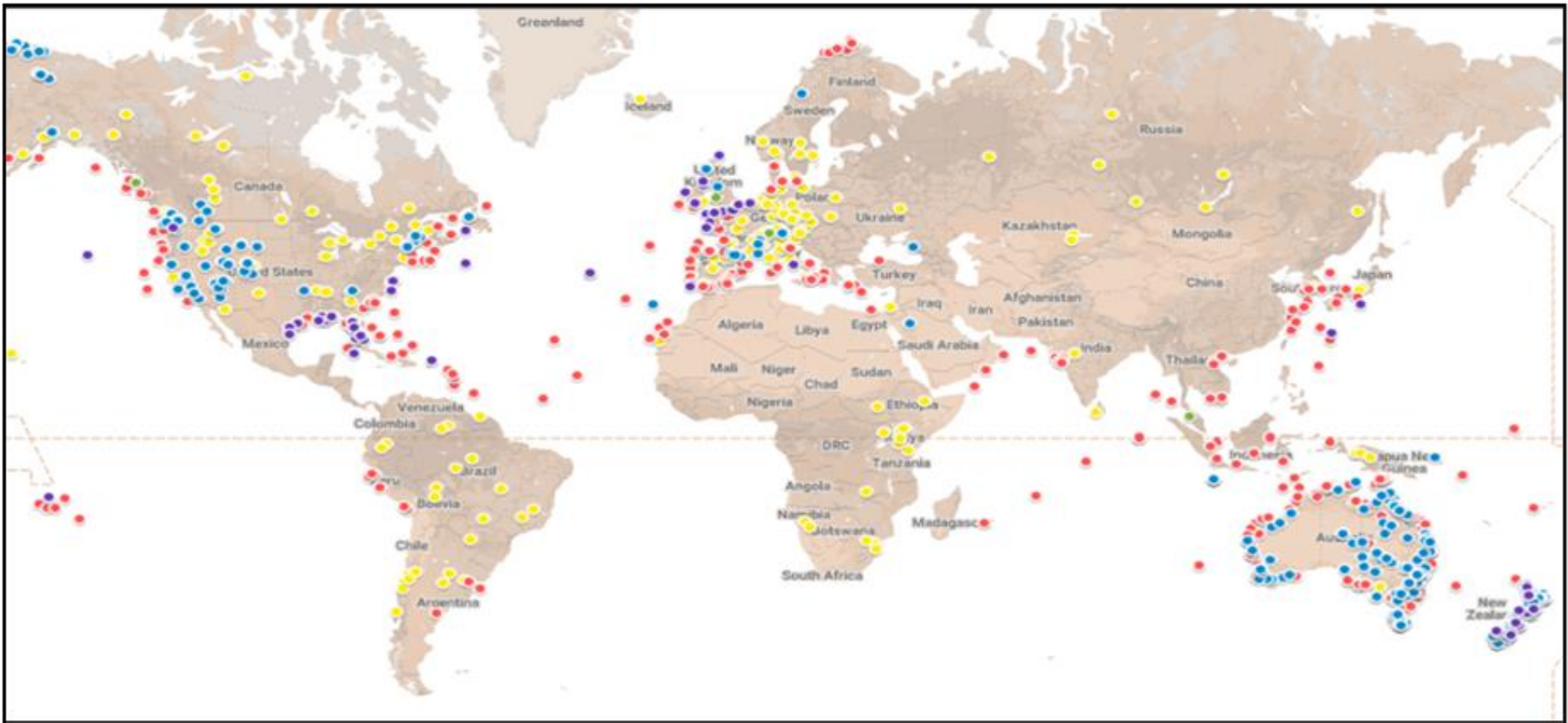


Figure 2: 2021 Geographic Distribution of SAR Events

406 MHz Beacons

2,955,000 beacons deployed (75% being GNSS capable) (2021)



406 MHz Beacons



WELCOME TO
THE
INTERNATIONAL
406MHZ BEACON
REGISTRATION
DATABASE

Registering a beacon for
the first time?

Sign up for an account



To register a beacon in the IBRD, you
must first create an IBRD profile
account.

- 167 Administrations
- 105,500+ beacons

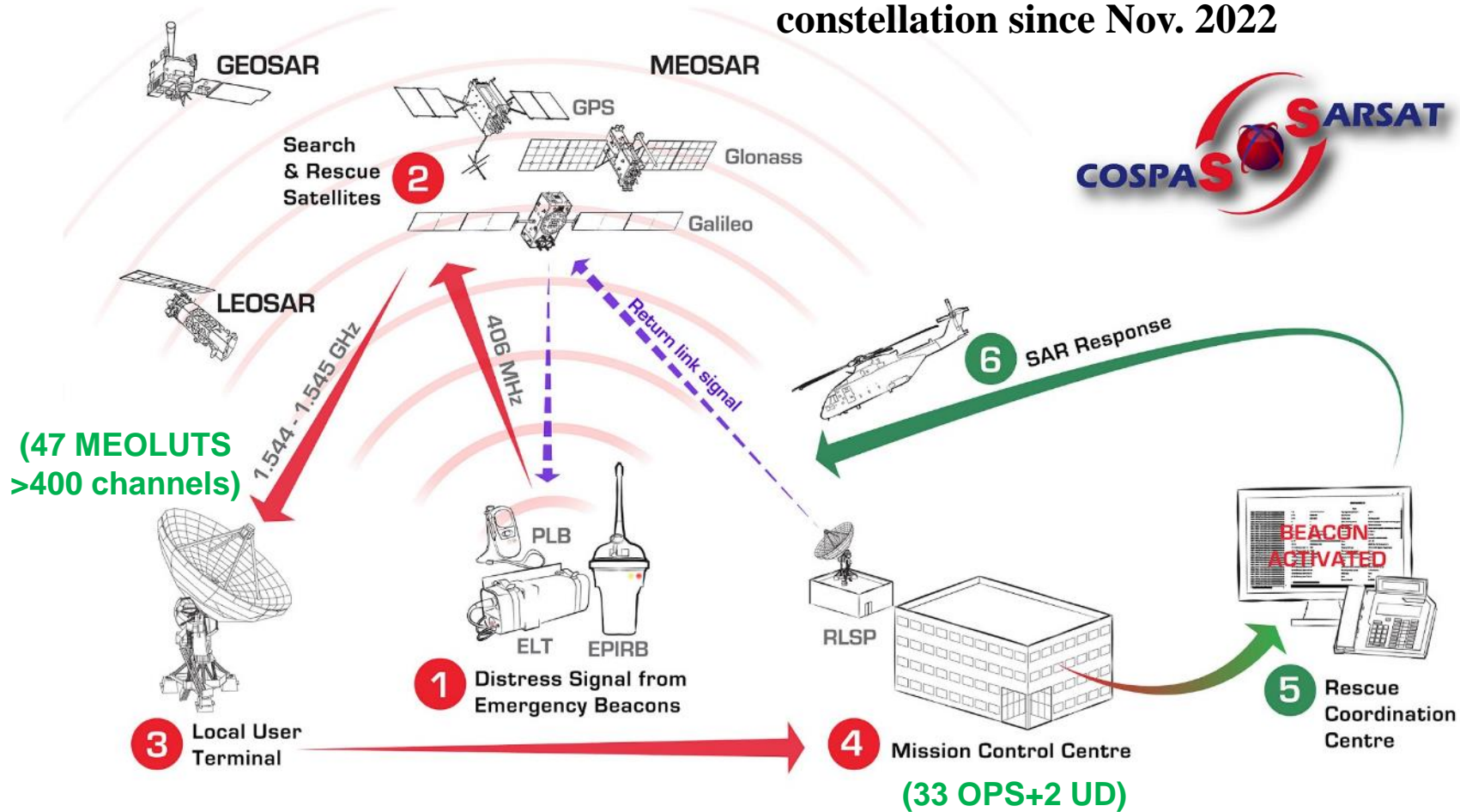
Allows:

All beacon types, including

- ELT(DT)s,
- RLS beacons,
- SGBs

The System

SAR/BDS (Beidou) as 4th MEOSAR constellation since Nov. 2022



SPOC Communication

	2018	2019	2020	2021	2022*
Number of SPOCs tested by MCCs	154	161	165	171	171
Non-responsive SPOCs (no response to tests)	8.44%	8.70%	7.23%	8.19%	5.85%
Rarely responsive SPOCs (less than 20% successful tests)	6.49%	5.59%	6.02%	3.51%	5.85%
SPOCs with low success ratio (between 20 and 50% successful tests)	10.39%	9.94%	7.23%	9.94%	7.0%
Insufficiently responsive SPOCs	25.32%	24.22%	20.48%	21.44%	18.70%

SPOC Communication



Figure 3: Map of Non-Responsive and Poorly Responsive SPOCs (2022)

MCC-SPOC Agreements

• **Algerian MCC – Niger**

- Chilean MCC –Paraguay (Rep. of)
- French MCC – Austria (Austrocontrol),
- French MCC – France, MRCC Antilles-G.
- French MCC – France, MRCC Gris-Nez
- French MCC – France, ARCC Lyon
- French MCC – France, MRCC La Réunion
- French MCC – France, JRCC Tahiti
- French MCC – Germany, ARCC Münster,
- French MCC – Morocco, ARCC Rabat
- French MCC – Switzerland
- French MCC – Tunisia, ACC Tunis
- Indian MCC – Nepal (CAA)

• **Italian MCC – Albania**

• **Italian MCC – Kenya**

• **Italian MCC – North Macedonia (Rep. of)**

• **Italian MCC – San Marino**

- Italian MCC – Serbia (Rep. of)
- Italian MCC – Somalia
- Italian MCC – Sudan (CAA)

- Norwegian MCC – Sweden (Maritime Admin.)

- Saudi Arabian MCC – Lebanon

- South African MCC – Mozambique

• **Spanish MCC – Benin**

• **Spanish MCC – Cameroon**

• **Spanish MCC – Gambia**

- Spanish MCC – Ghana

- UK Maritime and Coast Guard Agency – Irish Coast Guard

- USA MCC – Bermuda (Gov. of)

- USA MCC – COCESNA

- USA MCC – Dominican Republic

- USA MCC – Dutch Caribbean Coastguard

- USA MCC – Ecuador (Rep. of)

- USA MCC – Haiti (Rep. of)

- USA MCC – Panama (Rep. of)

- USA MCC – Trinidad and Tobago

• Vietnam MCC – Cambodia

• Vietnam MCC – Laos

New SIT 185

1. **DISTRESS** COSPAS-SARSAT INITIAL LOCATED ALERT

2. **MSG** NO 00741 AUMCC REF 3266E2019CFFBFF

3. **BEACON MESSAGE INFORMATION**

BEACON TYPE STANDARD LOCATION - ELT

AIRCRAFT 24 BIT ADDRESS 7100CE ASSIGNED TO SAUDI ARABIA

HEX ID 3266E2019CFFBFF

COUNTRY OF BEACON REGISTRATION 403/SAUDI

HOMING SIGNAL 121.5 MHZ

4. **ALERT POSITION INFORMATION**

GNSS – 32 49.6 M 081 55.5 E

MCC REFERENCE – 32 49.2 N 081 54.6 E

DETECTED AT 22 APR 07 0912 UTC BY LEOSAR SARSAT 10

DOPPLER A - 32 49.1 N 081 54.2 E PROB 69 PERCENT

DOPPLER B - 24 18.1 N 041 18.2 E PROB 31 PERCENT

5. **OTHER INFORMATION**

DETECTION FREQUENCY 406.0247 MHZ

LUT ID 4191

6. **REMARKS** NIL

END OF MESSAGE

- **Grouped into 6 Paragraphs**
- **GNSS vs ENCODED**
- **MCC REFERENCE POSITION vs CONFIRMED POSITION**
- **Omitted vs “NIL” when allowed**

System Enhancements

- **MEOSAR**
Initial
Operational
Capability
Apr. 2023



System Enhancements

Full
Operational
Capability
for
ELT(DT)s
FGB
1 Jan 2023



Scenario: ELT (DT) "Distress Tracking" 406 Beacon activates independently upon autonomous detection of in-flight aircraft emergency, signalling the distress to Cospas-Sarsat satellites



**Loss of
121.5
MHz**

System Enhancement

SGBs

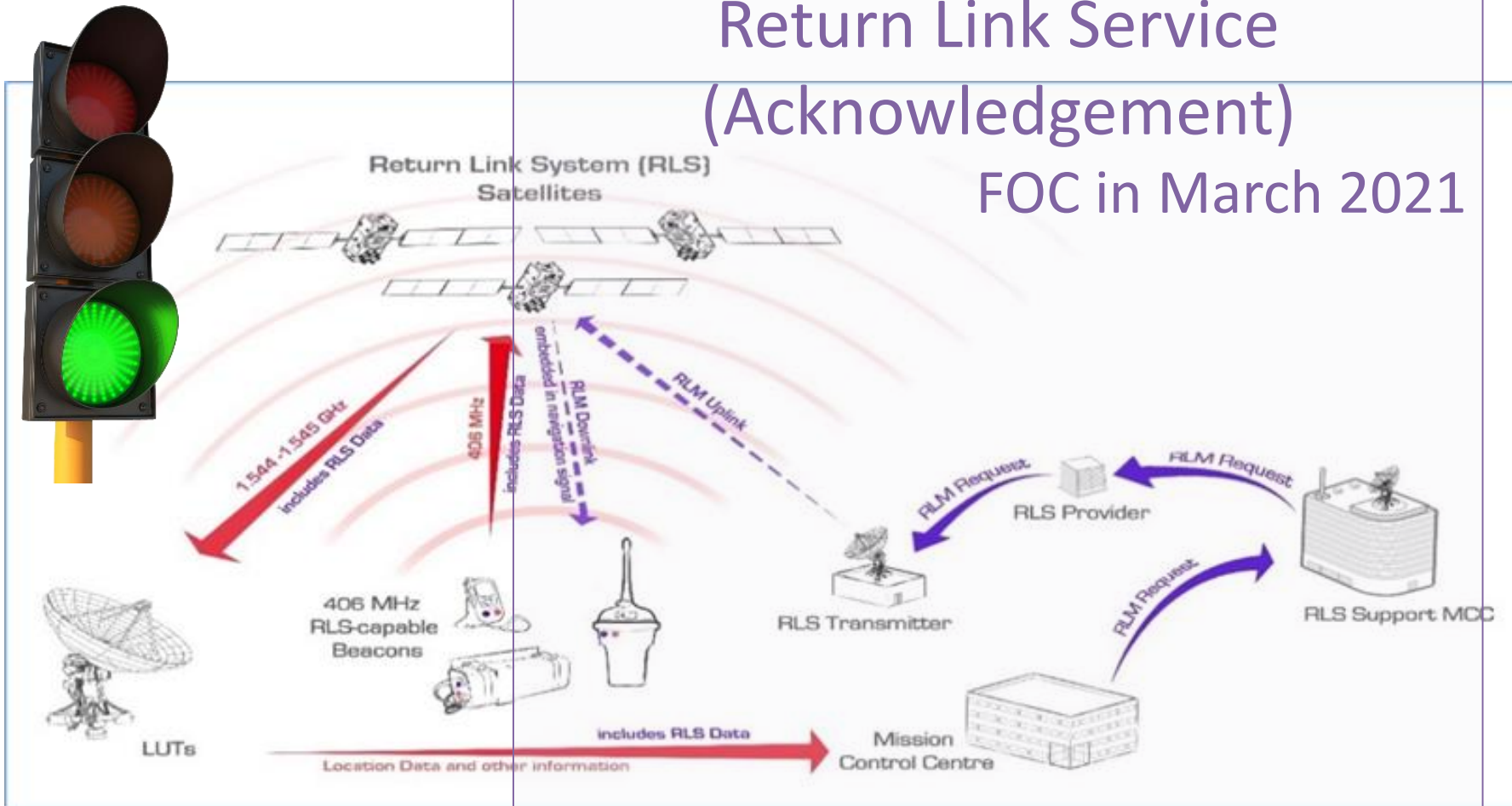
- more info in MSGs
- Greater accuracy
- Improved Transmiss. Rate
- Expected 2023/2024



System Enhancements

Return Link Service (Acknowledgement)

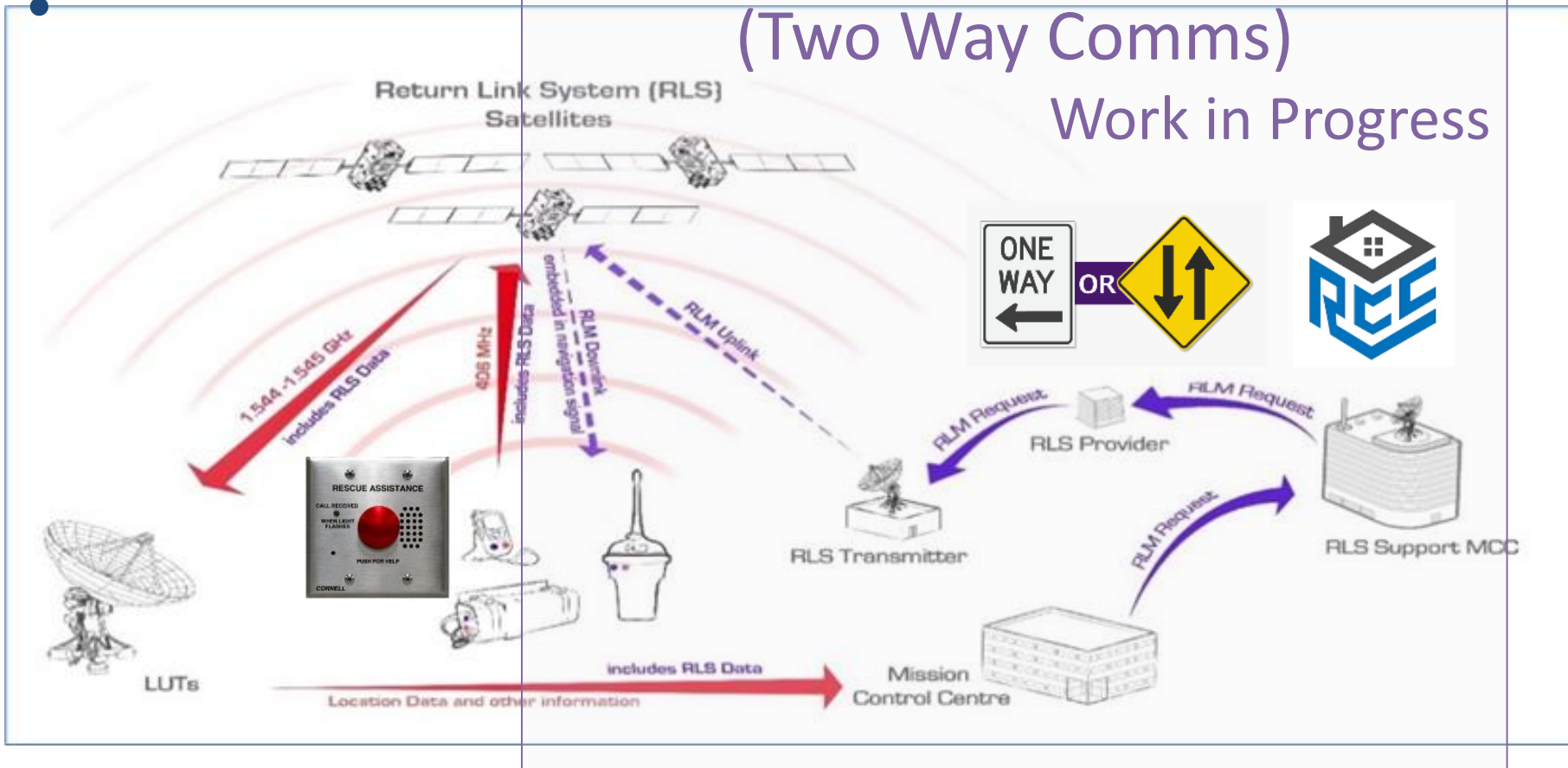
FOC in March 2021



System Enhancements

Return Link Service (Two Way Comms)

Work in Progress



Training Materials

- RCC Manual G.007
- Videos

You

Tube



moodle

<https://www.cospas-sarsat.int/en/search-and-rescue/programme-videos-en>

<https://moodle.406.org/>

Questions ?

COSPAS-SARSAT.INT
INTERNATIONAL SATELLITE SYSTEM FOR SEARCH AND RESCUE
406TM DISTRESS ALERTING SERVICE

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COSPAS-SARSAT PROFESSIONALS ▶

BEACON OWNERSHIP ▾ SYSTEM OVERVIEW ▾ MEDIA GALLERY ▾ ABOUT US ▾

COSPAS-SARSAT

SEARCH AND RESCUE SATELLITES
LISTEN **WORLDWIDE** FOR DISTRESS CALLS

Register Your Beacon

Ensure that Search and Rescue Authorities in an Emergency Can Retrieve Crucial Information About You, Your Aircraft or Vessel, and Your Emergency Contacts.

[REGISTER YOUR BEACON](#)

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- ▶ Videos About Us
- ▶ Rescue Stories
- ▶ Beacon Ownership
- ▶ Beacon FAQ
- ▶ Testing Your Beacon
- ▶ Inadvertent Alerts
- ▶ Information Bulletin