



MEOSAR: Early Operational Capability (EOC) Policy



Detect,

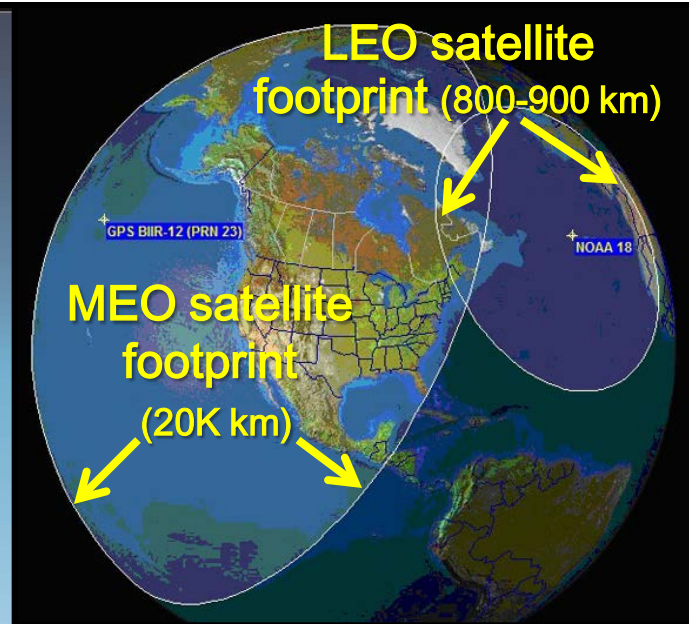
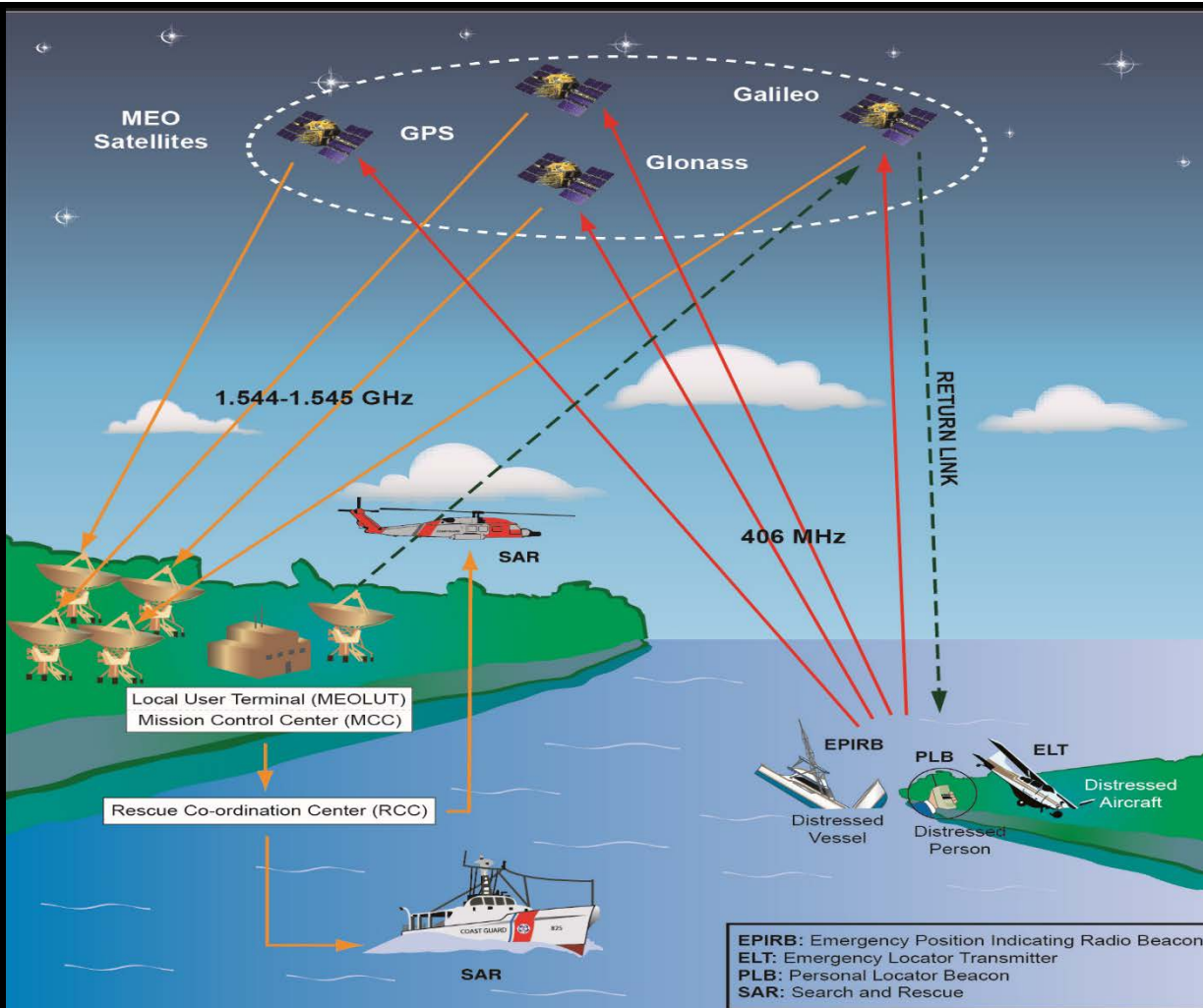
Locate,

Rescue

LCDR AARON ORTENZIO



MEOSAR: Next Generation Space-Based Distress Alerting



- Combines the best attributes of LEO/GEO
- Global coverage (including both poles)
- 3 Constellations: GPS (U.S.), Galileo (EU) & GLONASS (Russia)



Cospas Sarsat Early Operational Capability (EOC) Transition Status

Dec 2015: Council Approved Operational and Technical documents required for EOC internationally

Council Approved Development and Evaluation (D&E) Phase I Test Report

Council approved Initial Operational Capability (IOC) Work Plan

Jan 2016: D&E Phase II Testing is Complete: Analysis & Report in Progress



On Going EOC Activities



For EOC Declaration, Cospas-Sarsat requires:

- Commissioning of one LEO/GEO/MEO (LGM) MCC (USMCC ~ May 2016)
- Commissioning of one MEOLUT (U.S. FL and HI MEOLUTs commissioned ~ May 2016)
- Commissioning of remaining nodal MCCs or backups (FMCC ~ July 2016, AUMCC ~ Sep 2016)
- Demonstrate operational distribution of MEOSAR data among LGM MCCs (USMCC/FMCC ~ July 2016)
- Joint Committee 30 recommendation of D&E Phase II Report and recommendation to declare EOC (Sep 2016)
- Council approval of JC recommendation to declare EOC (Dec 2016)



MEOLUT Perf Standards: EOC vs. IOC/FOC

Relaxed MEOLUT Performance Requirements for EOC Phase	MEOLUT Performance Requirements for IOC and FOC
Single burst probability of obtaining independent location (Lat/Long) within 2 minutes shall be 75%	Single burst probability of obtaining independent location (Lat/Long) within 2 minutes shall be 90%
Multi burst probability of location (Lat/Long) shall be 98% within 20 minutes	Multi burst probability of location (Lat/Long) shall be 98% within 10 minutes
Single burst location accuracy shall be 70% within 5 km	Single burst location accuracy shall be 90% within 5 km
Single burst location accuracy shall be 90% within 10 km .	Single burst location accuracy shall be 90% within 5 km
Multi-burst location accuracy shall be 95% < 5 km and 98% < 10 km , within 20 minutes after activation	Multi-burst location accuracy shall be 95% < 5 km and 98% < 10 km , within 10 minutes after activation



CG guidance for EOC MEOSAR data



- LEO/GEO is the **OPERATIONAL** system and SHALL take precedence over MEOSAR.
- During EOC, MEOSAR will complement LEO/GEO system.
- US RCCs/RSCs will receive MEOSAR data.
- MEOSAR data should be used to validate LEOSAR initial position solutions.
- **Result:** May prompt RCC response actions prior to receiving subsequent LEOSAR satellite pass.



RCC guidance for EOC MEOSAR data

Type of MEOSAR Alerts:

- Un-located alerts with actionable information
- Alerts with encoded location (distress beacon is equipped with a GPS/GNSS chip – “E” solution)
- Alerts with independent location
- **If MEOSAR is the ONLY alert received by the RCC, it will be treated as a distress**



CG Addendum Response Policy

USCG SARSAT RESPONSE POLICY	
Beacon Alert	Emergency Phase
<ul style="list-style-type: none">• 406 MHz GEO registered alert• 406 MHz GEO unregistered, unlocated alert with digital encoded GPS position ("E" Solution)• 406 MHz LEO "A" solution alert• 406 MHz LEO registered, unlocated alert• 406 MHz MEO registered alert• 406 MHz MEO unregistered, unlocated alert with digital encoded GPS position ("E" Solution)• 406 MHz MEO unregistered, located (independent location)• 406 MHz MEO registered, located (independent location)• 121.5/243 MHz multiple reports of audible alert	<p>Initially evaluate as DISTRESS</p>
<ul style="list-style-type: none">• 406 MHz LEO "B" solution alert with probabilities > 20%• 121.5/243 MHz First report of audible alert	<p>Initially evaluate as ALERT. Investigate, reevaluate and respond as facts and circumstances warrant.</p>
<ul style="list-style-type: none">• 406 MHz LEO "B" solution alert with probabilities < 20%	<p>Initially evaluate as UNCERTAINTY. Investigate, reevaluate and respond as facts and circumstances warrant.</p>

Policy change



MEOSAR Policy Timeline

- Feb 2016: Policy presented to experienced RCC watchstanders for input
- Mar 2016: Concurrent clearance process
- May 2016: ALCOAST with policy change
- Jun 2016: MEO data flows to RCCs



SAROPS Integration

- CG-SAR, C3CEN, & USMCC testing transmission of MEOSAR data into SAROPS
- Funding provided to C3CEN for integration effort
- C3CEN / Northrop Grumman updating SAROPS parser for seamless integration of MEOSAR data
- SAROPS 2.0.3 will automatically process & display alerts, and notify the watchstander of the alert (4th Qtr FY16)



Questions?

