

# Iridium

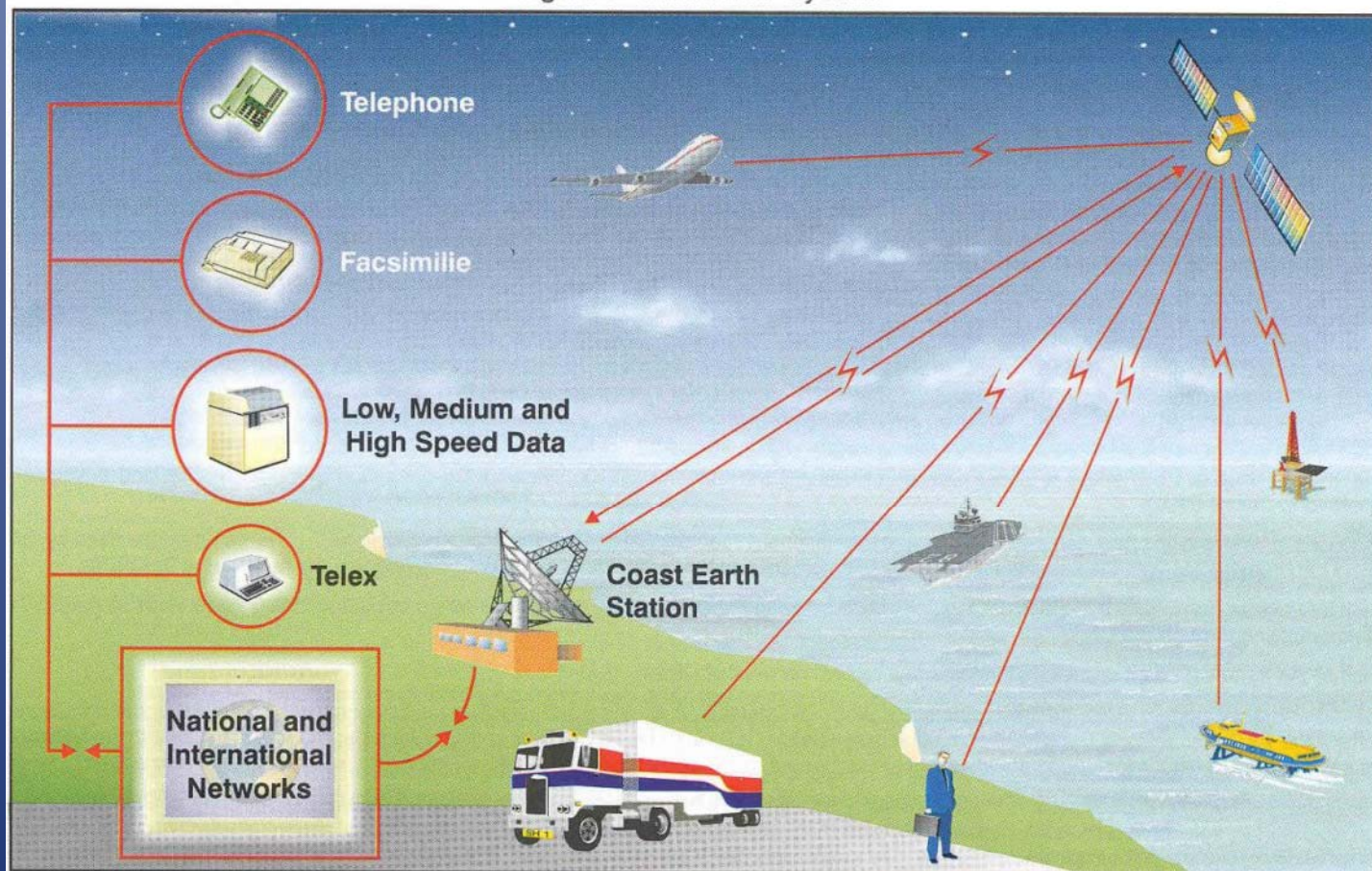


# Globalstar

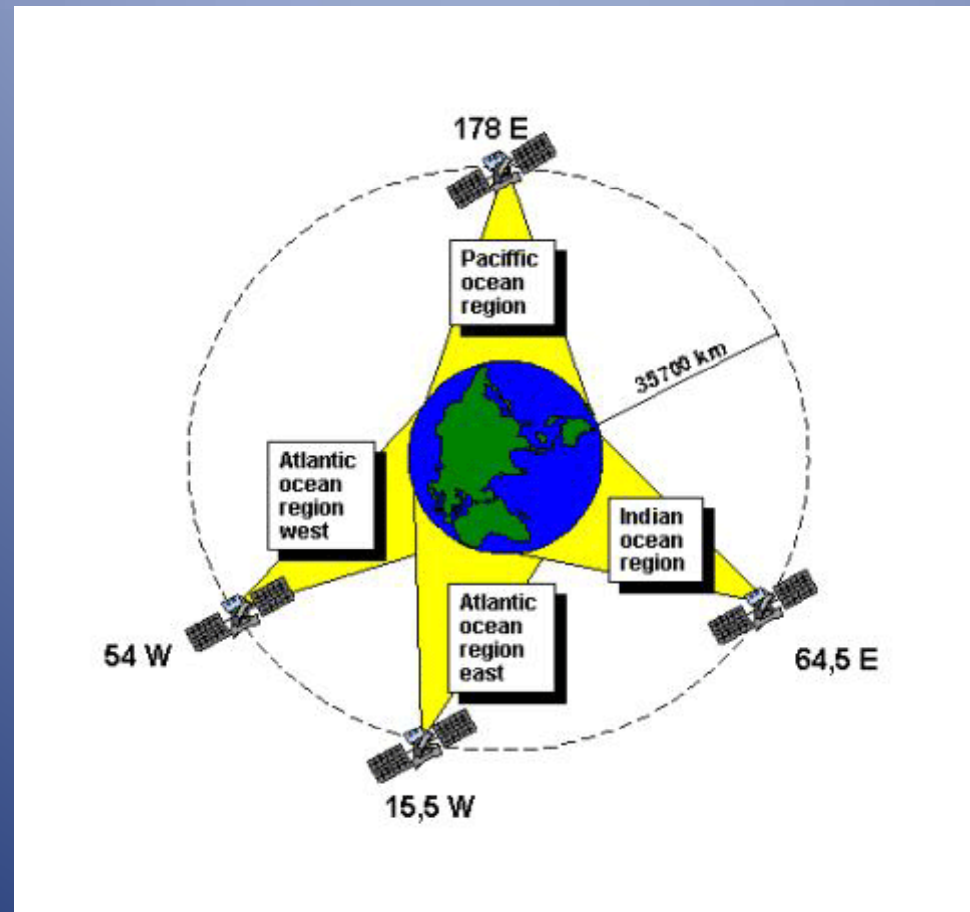


# Inmarsat

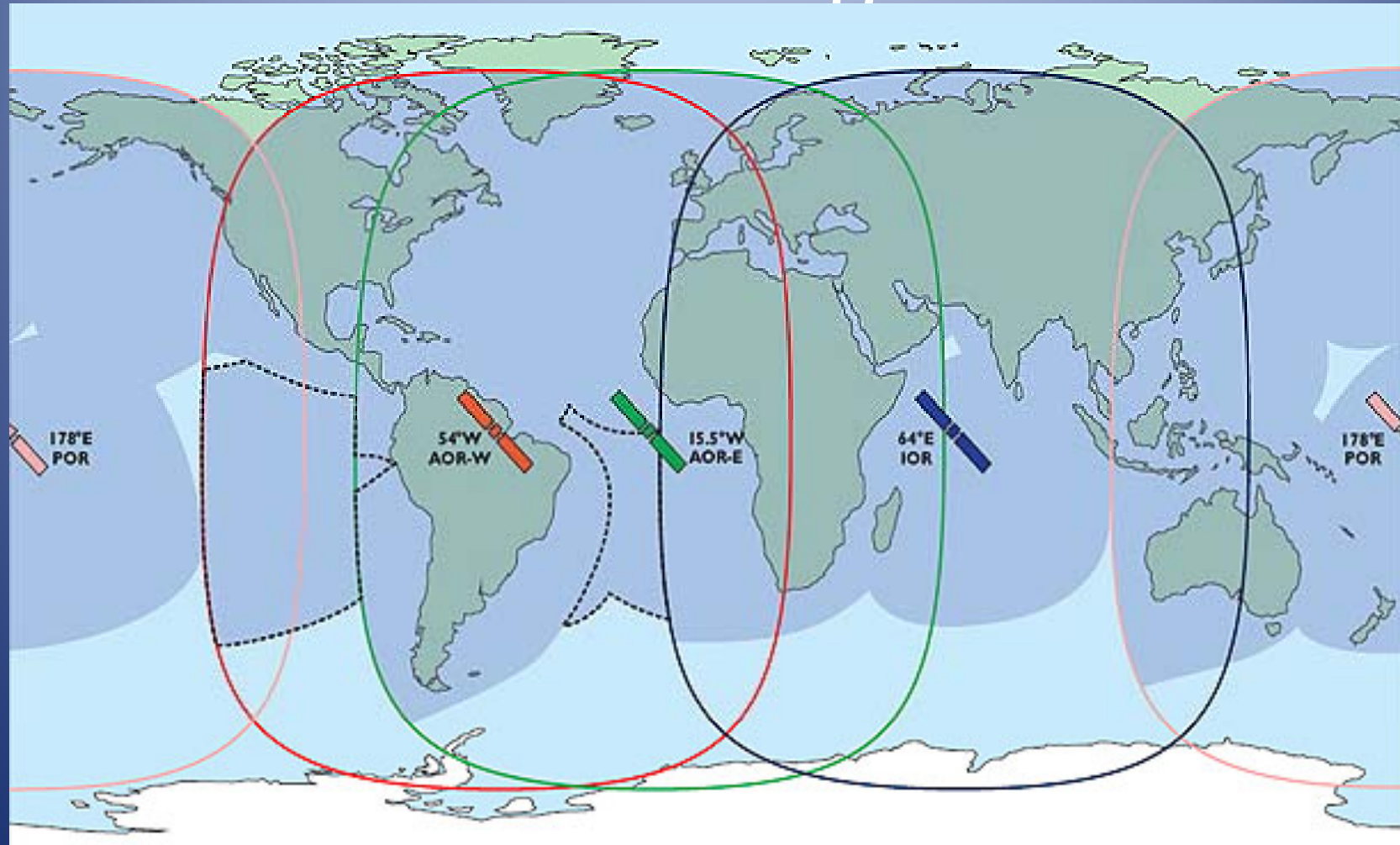
Figure 3 - INMARSAT System



# Rymdsegment



# Täckning



# Landsegment

- NOC -  
Network Operation Center
- SCC –  
Satellite Control Center

- NCS – Network Co-ordinating Station



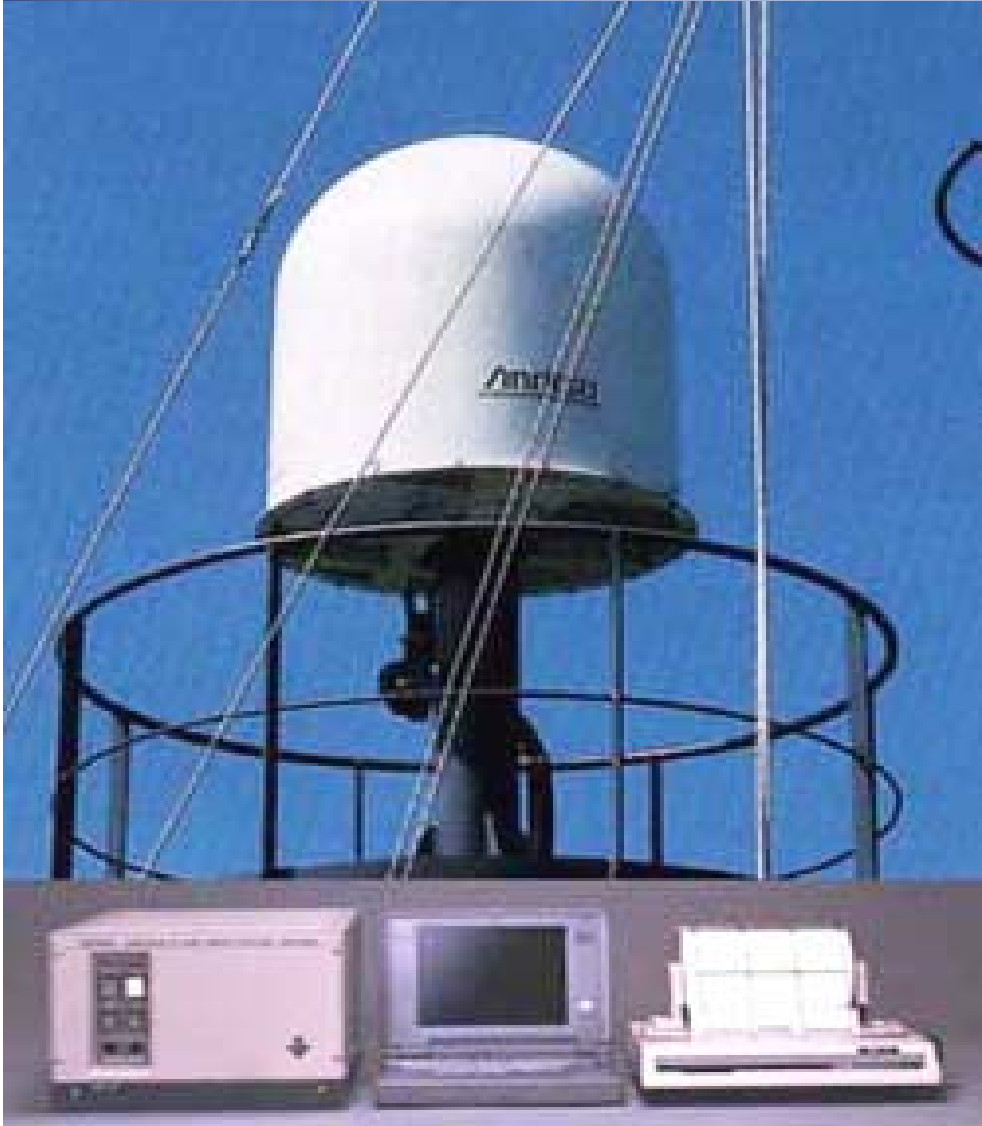
- LES  
Land Earth Station

**INMARSAT B LAND EARTH STATION OPERATORS AND ACCESS CODES**

Land Earth Station Operator	Country	AOR-E	AOR-W	IOR	POR
Bezeq	Israel	711		711	
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FT	France	011	011	011	011
	Germany	111	111	111	111
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Saudi Telecom	Saudi Arabia	025		025	
Singapore Telecom	Singapore	210	210	210	210
Stratos Mobile Networks	UK	002	002	002	002
	USA	013	013	013	013
Telecom D'Algerie	Algeria	777			
Telecom Italia	Italy	555	555	555	555
Malaysia Telecom	Malaysia	060	060	060	060
Telenor	Norway	004	004	004	004
	USA	001	001	001	001
VISHIPEL	Vietnam			009	
VSNL	India	306	306	306	306
Xantic	Netherlands	012	012	012	012
	Australia	222	222	222	222

**INMARSAT C LAND EARTH STATION OPERATORS AND ACCESS CODES**

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Polish Telecom	Poland	116		316	
Saudi Telecom	Saudi Arabia	125		325	
Singapore Telecom	Singapore			328	210
Stratos Mobile Networks	New Zealand				202
	UK	102	002	302	
TCI	Iran			314	
Telecom Italia	Italy	105		335	
Telenor	Norway	104	004	304	204
	USA	101	001	301	201
Türk Telekom	Turkey	110		310	
VISHIPEL	Vietnam			330	
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Xantic	Netherlands	112	012	312	212
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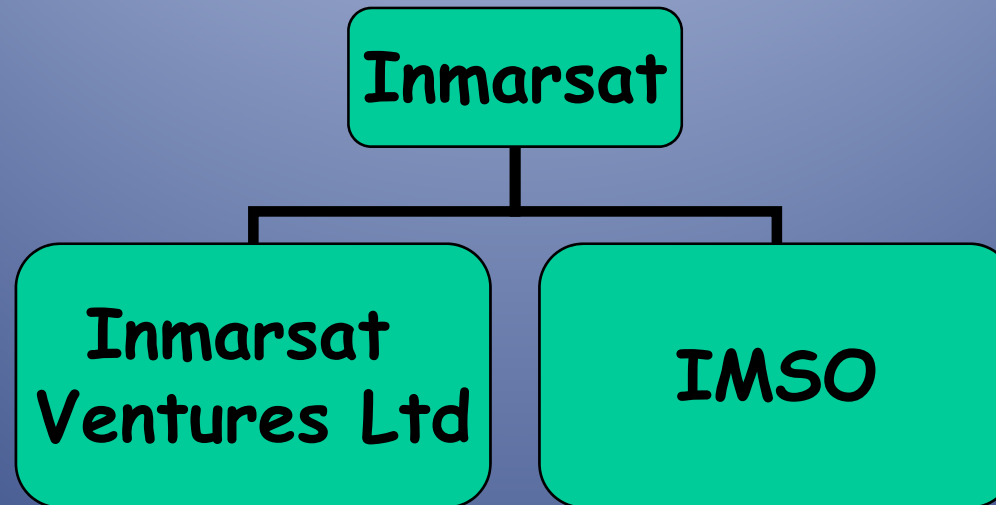
# Inm-B



# Inm-C



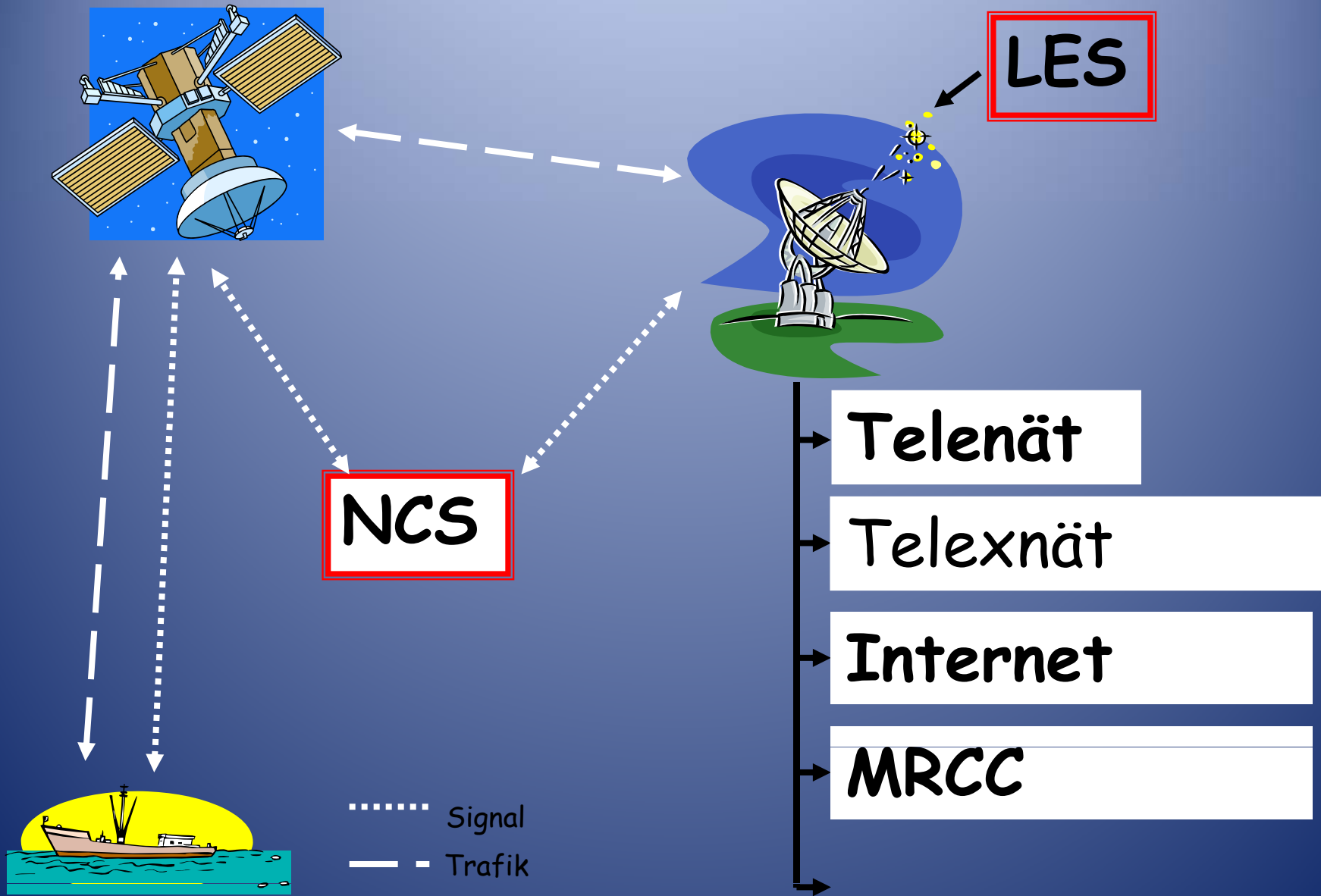
# Organisation



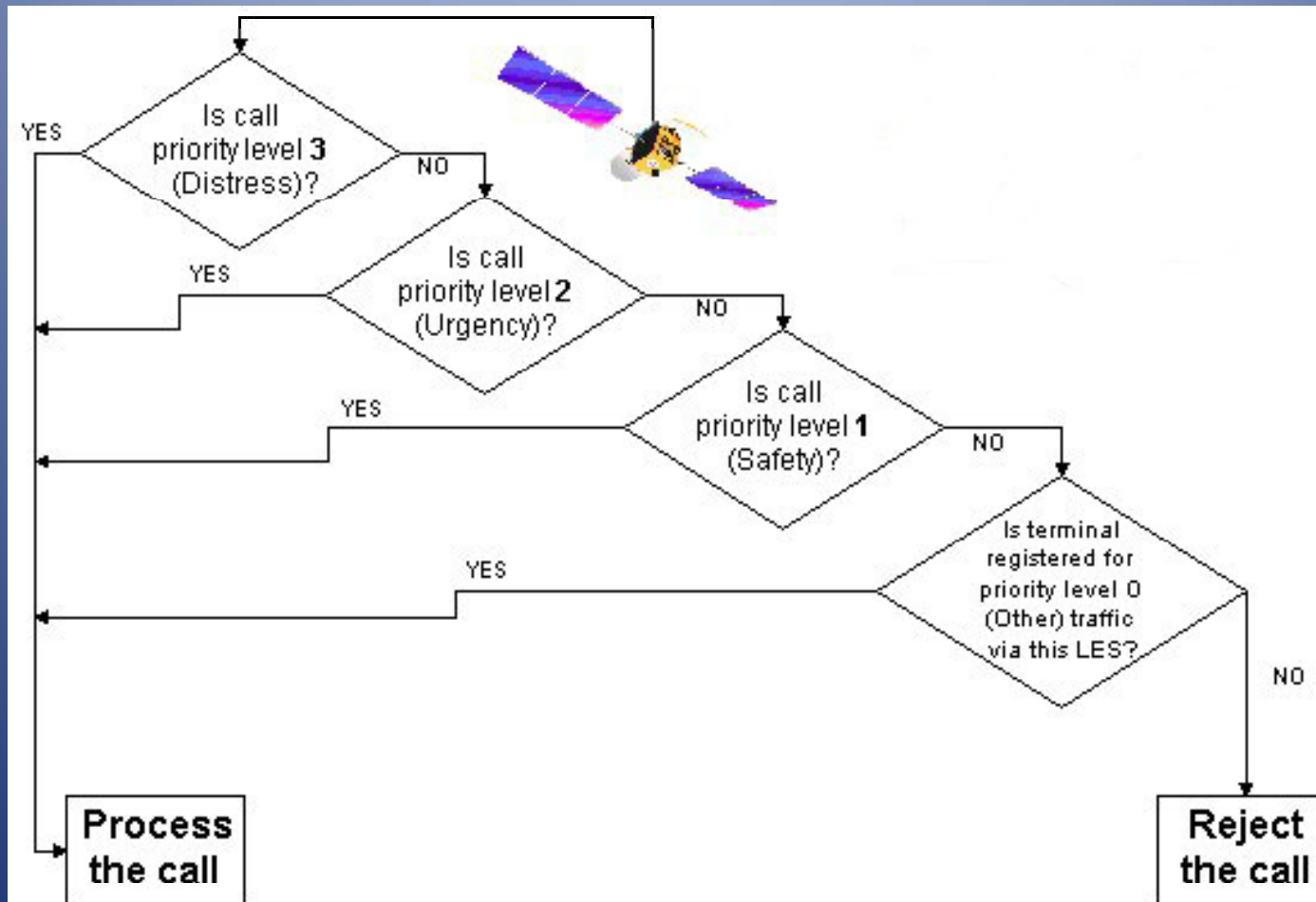
# GMDSS krav

Nödkommunikation

Driftsäkerhet



# Preemption



# Terminaler

## GMDSS;

- Inm – B
- Inm – C
- Fleet F77

## Icke GMDSS;

- Inm – M
- Inm – mini M
- Inm – D
- Inm – GAN
- Fleet F33, F55

# Inmarsat -C

- Store & Forward



# Meddelanden

## □ Sändning;

- o Fax, direkt
- o Telex, direkt
- o E-post via server
- o SMS via server

## □ Mottagning;

- o Telex, direkt
- o Fax via server
- o E-post via server
- o SMS via server

# Nödtrafik

## Distress Alert

Endast nödalarmering



## Distress Priority Message

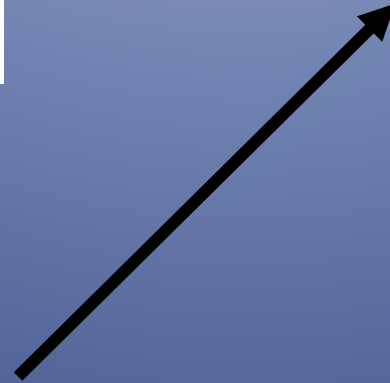
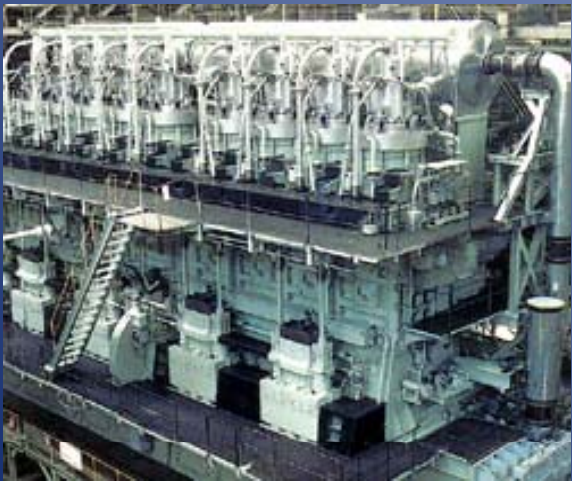
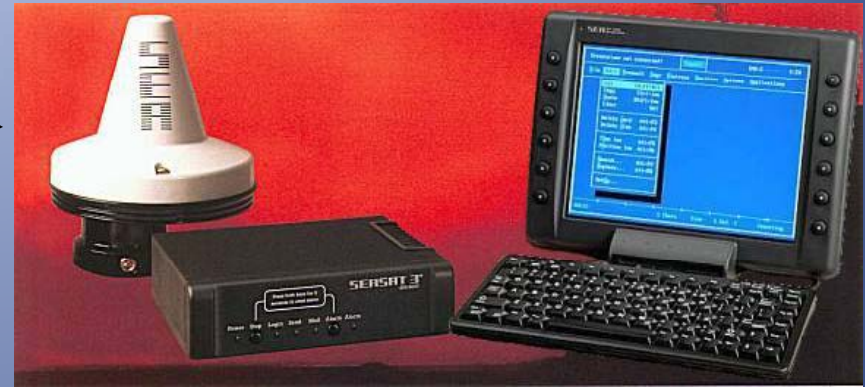
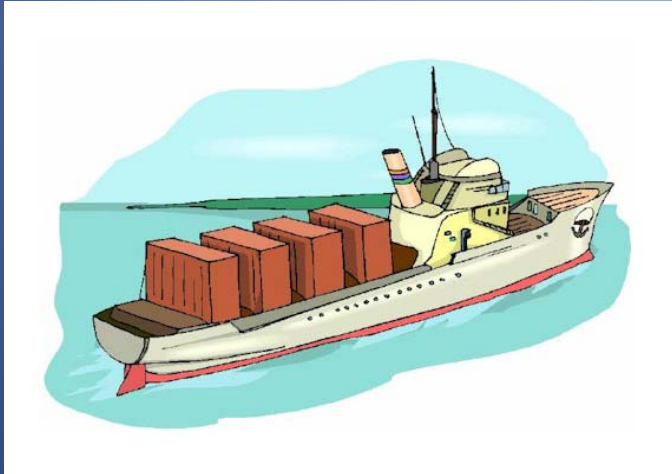
Möjlighet att beskriva situationen

# Kostnad

- Betalar för antal enheter om 256bit
- Maximal längd för ett meddelande 256 kbits



# Integration



# Inmarsat - B

- Direktkommunikation



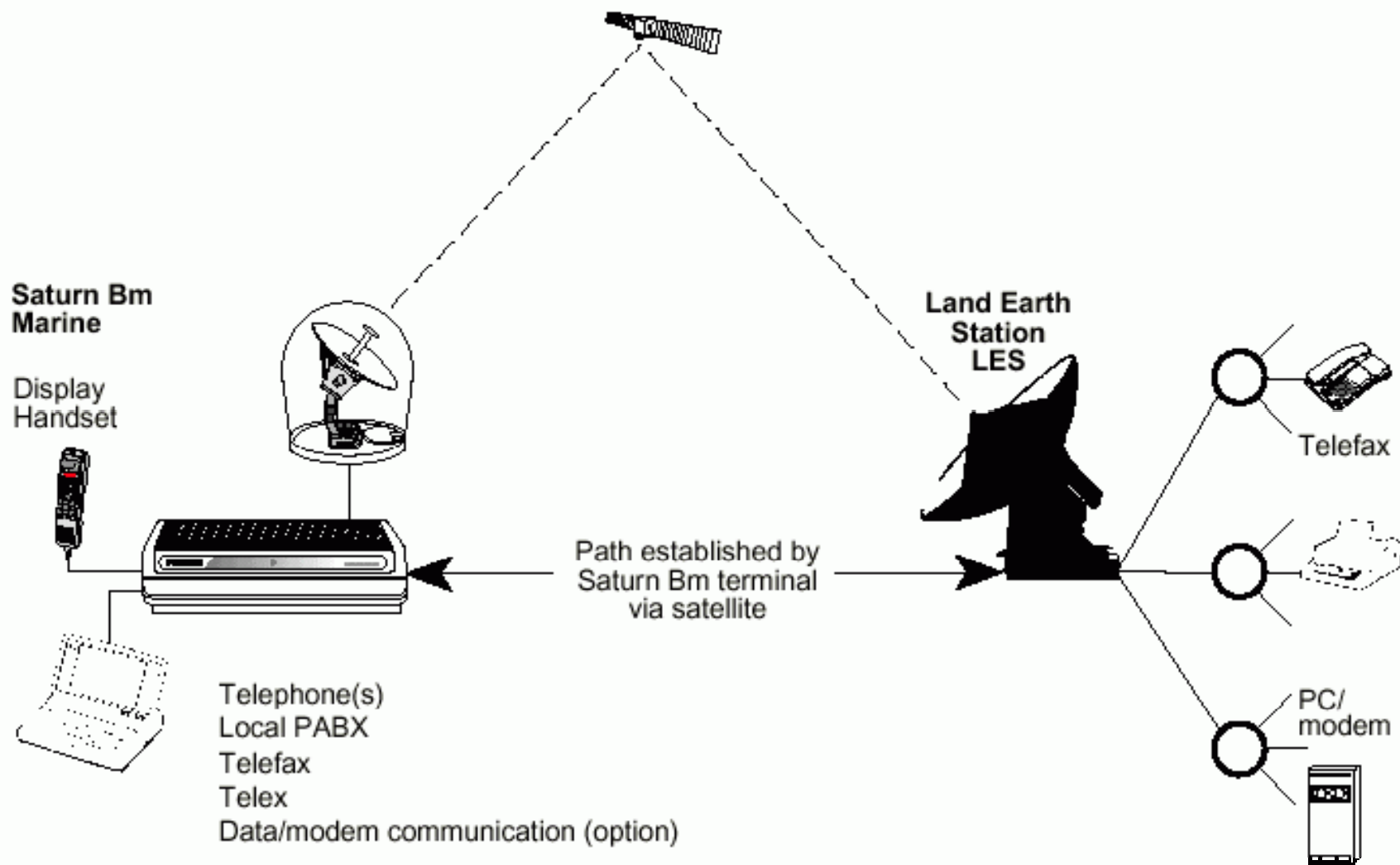
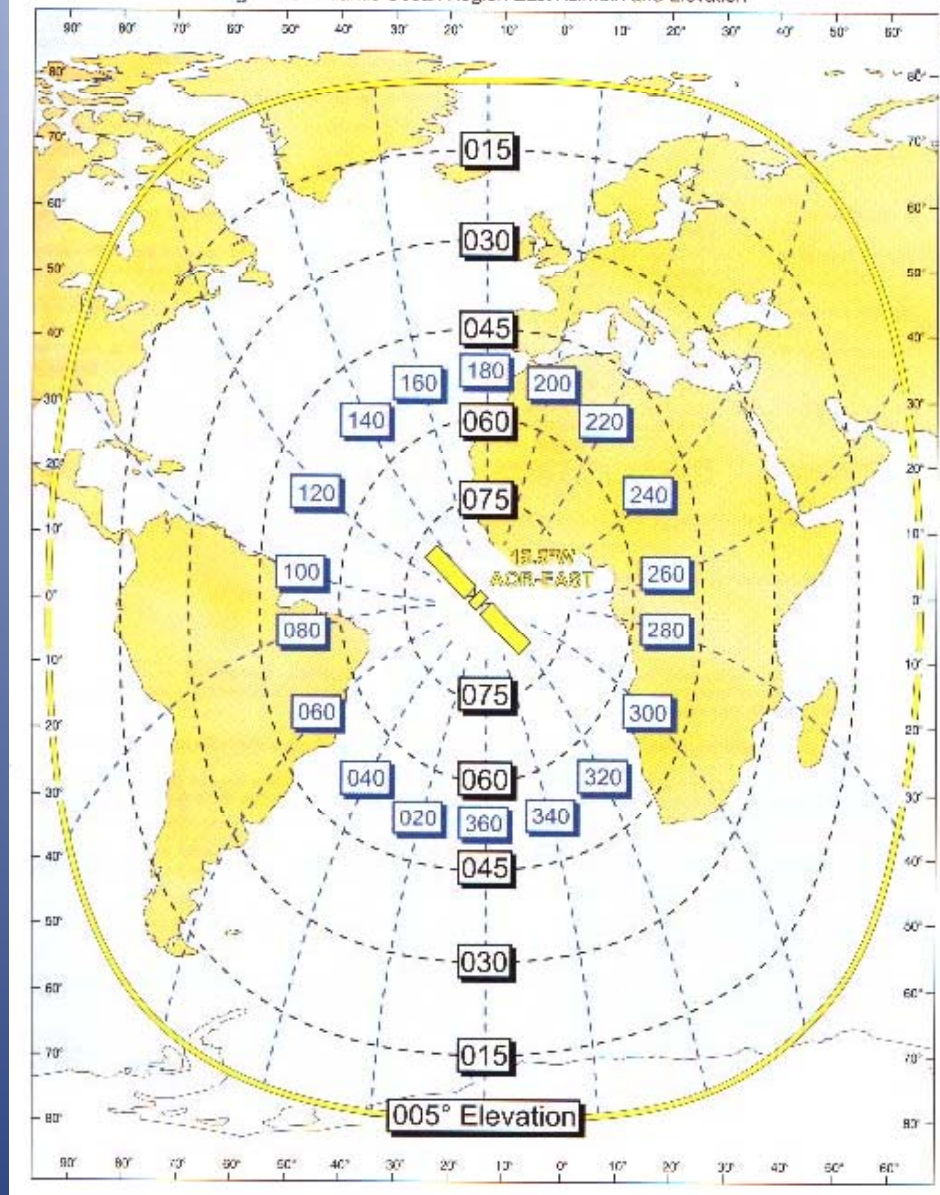
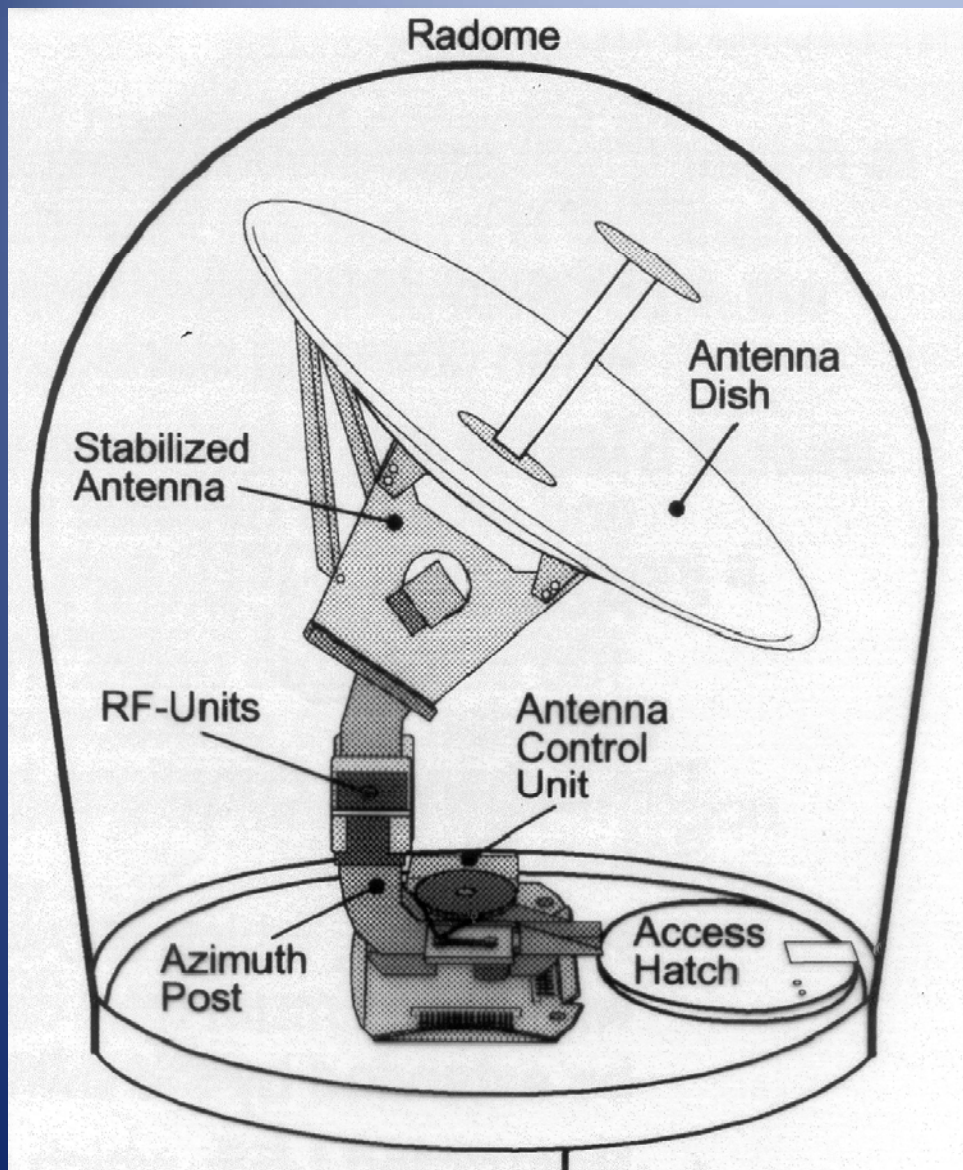


Figure 15 - Atlantic Ocean Region East Azimuth and Elevation

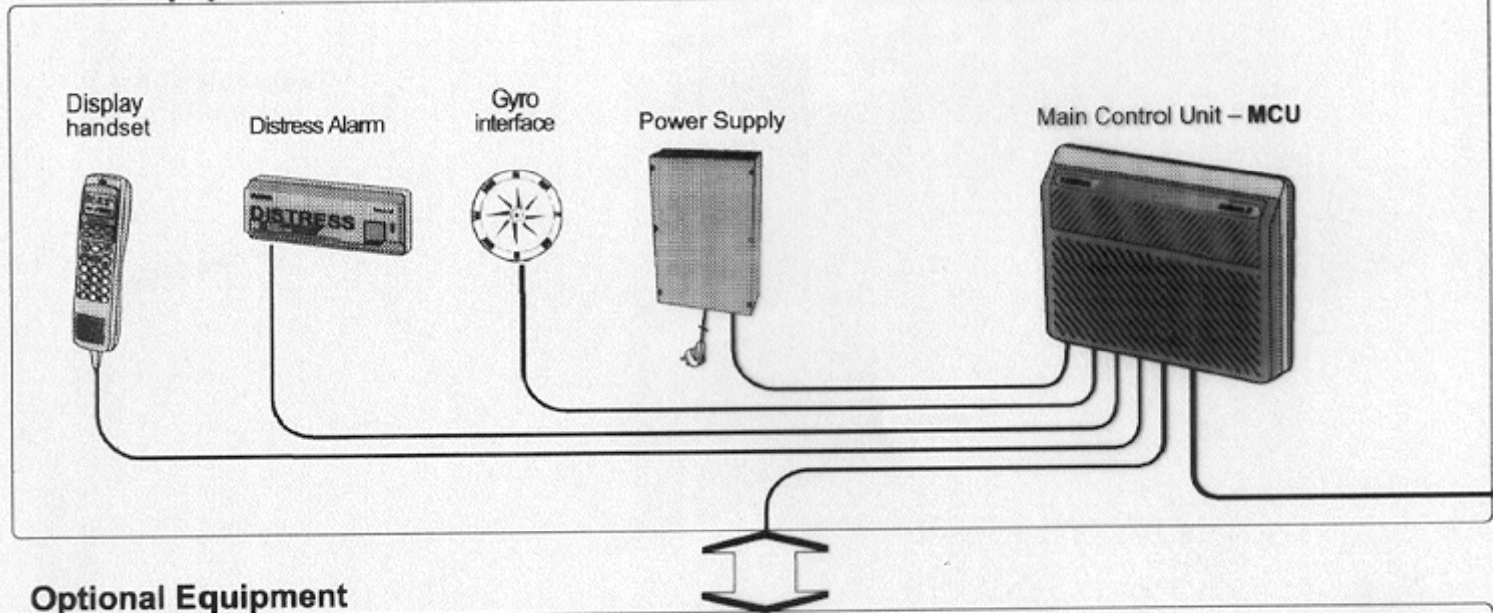




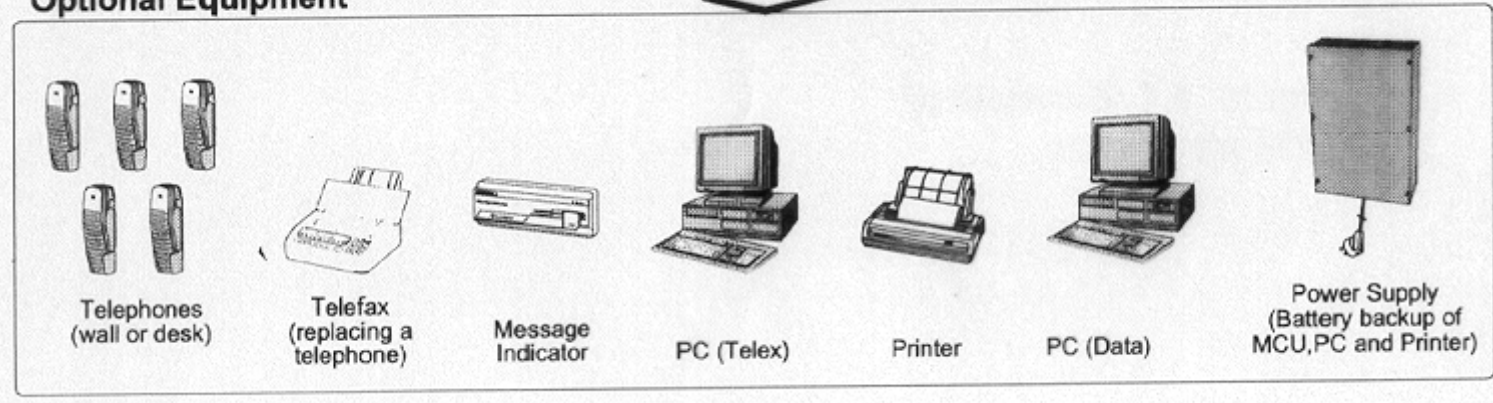
Antennen skall klara av att vid  $30^\circ$  rullning och  $10^\circ$  hävning behålla kontakten med satelliten.



## Basic Equipment



## Optional Equipment



# Nödtrafik

- Telefoni
- Telex



always  
connected

FLEET



# Global Services

- Distress Alarm
- L-band output (1,5GHz)
  - signal output for Inmarsat broadcast
    - GPS correction signals
    - Weather data
    - Chart updates
    - News



# Global Services

- Voice

- 4,8 kbps (mini-M Voice quality on global and spot beam)
- 64 kbps (ISDN voice quality)



- Data

- 64 kbps (ISDN)
- 56 kbps (ISDN)
- Mobile Packet Data Service (MPDS)
- 3.1 kHz Audio (Analogue data)



- Fax

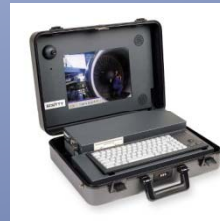


# Connecting devices



# Applications for Nera F77

- Data Transfer
- Video conference
- Video store & forward
- Video
- Surveillance
- Audio
- Voice
- Fax G3 and G4
- Multiplexers
- Encryption Devices

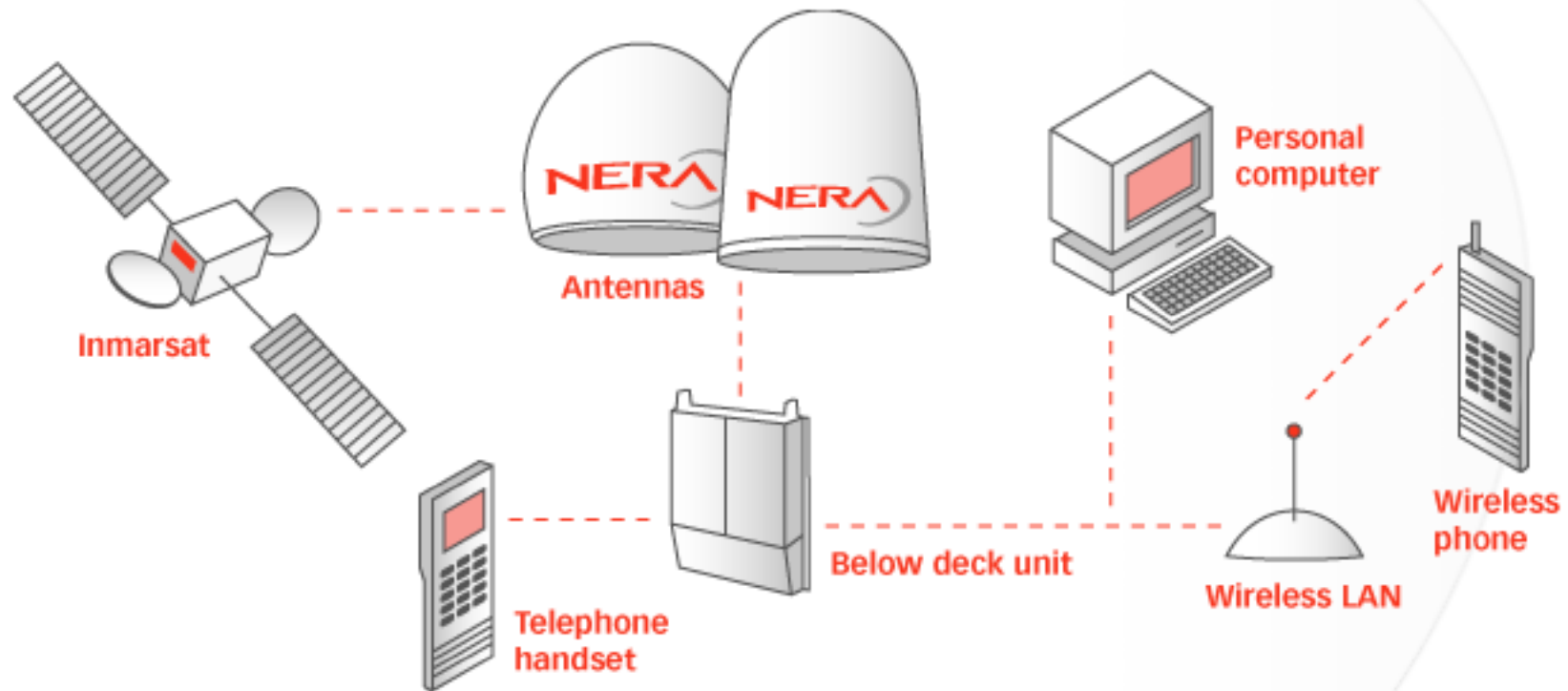


# Nera F77

- **Global Internet - 64 kbps**
- **Global phone - ISDN quality**
- **Global fax 9.6**
- **Global MPDS**
- **Global video conferencing & tele-medicine**
- **Global remote monitoring of engines, systems and equipment**
- **Global distress: safety**



# Nera fleet family is F33, F55 and F77



## 2 digit code

32	Medical advise	39	Maritime assistance
38	Medical assistance	43	Ship pos. report
37	Time and duration at the end of call	41	Meteorological reports
33	Technical assistance	35	Collect call*
11	International operator*	13	National operator*
36	Credit card call	24	Telex letter

# Id på stationer

Start siffra:	Terminal:	Exempel:
3	Inm – B	3 265 02910
4	Inm – C	4 265 02910
6	Inm – M	6 265 02910
7	Inm mini M	7 622 77382

# SATELLITE

INMARSAT

## MARITIME RESCUE CO-ORDINATION CENTRES ASSOCIATED WITH INMARSAT LAND EARTH STATIONS (LESs)

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This document is also available from the Inmarsat web site: [www.inmarsat.com/safety/rcc.htm](http://www.inmarsat.com/safety/rcc.htm)

Country	Associated LES	MRCC / Inmarsat Service	Contact details / Ocean Region Satellite																							
Algeria	Lakhadaria		<table border="1"> <tr> <td>B</td> <td>Tel:</td> <td rowspan="4">AOR-E</td> </tr> <tr> <td></td> <td>Fax:</td> </tr> <tr> <td></td> <td>Telex:</td> </tr> <tr> <td></td> <td>e-mail:</td> </tr> </table>	B	Tel:	AOR-E		Fax:		Telex:		e-mail:														
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	Fax:																									
	Telex:																									
	e-mail:																									
Australia	Perth	RCC AUSTRALIA Australian Maritime Safety Authority Level 3, 25 Constitution Ave GPO Box 2181 Canberra City ACT 2601	<table border="1"> <tr> <td>A</td> <td>Tel: +61 2 62306811</td> <td rowspan="5">IOR</td> </tr> <tr> <td>B</td> <td>Fax: +161 2 62306868</td> </tr> <tr> <td>C</td> <td>Telex: +71 62349 MRCCAUS</td> </tr> <tr> <td>E</td> <td>e-mail: rccaus@amsa.gov.au</td> </tr> <tr> <td>F77</td> <td></td> </tr> </table>	A	Tel: +61 2 62306811	IOR	B	Fax: +161 2 62306868	C	Telex: +71 62349 MRCCAUS	E	e-mail: rccaus@amsa.gov.au	F77													
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China	Beijing	MRCC CHINA 11 Jian Guo Men St Dong Chen Beijing 100736	<table border="1"> <tr> <td>A</td> <td>Tel: +86 10 65292221</td> <td rowspan="5">IOR</td> </tr> <tr> <td>B</td> <td>Fax: +86 10 65292245</td> </tr> <tr> <td>C</td> <td>Telex: +85 222258 CMSAR CN</td> </tr> <tr> <td></td> <td>e-mail: cnmrcc@msa.gov.cn</td> </tr> <tr> <td>F77</td> <td></td> </tr> </table>	A	Tel: +86 10 65292221	IOR	B	Fax: +86 10 65292245	C	Telex: +85 222258 CMSAR CN		e-mail: cnmrcc@msa.gov.cn	F77													
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China - Hong Kong SAR	Cape D'Aguilar	MRCC HONG KONG Marine Department 4/F Outer Island Macau Ferry Terminal Central Hong Kong SAR	<table border="1"> <tr> <td>A</td> <td>Tel: +852 25450181</td> <td rowspan="5">IOR</td> </tr> <tr> <td>B</td> <td>+852 22337999</td> </tr> <tr> <td></td> <td>Fax: +852 25417714</td> </tr> <tr> <td></td> <td>Telex: +802 82952 MRCC HX</td> </tr> <tr> <td></td> <td>e-mail: hkmrcc@mardep.gov.hk</td> </tr> </table>	A	Tel: +852 25450181	IOR	B	+852 22337999		Fax: +852 25417714		Telex: +802 82952 MRCC HX		e-mail: hkmrcc@mardep.gov.hk												
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France	Aussaguel	MRCC GRIS-NEZ (SARNET) CROSS Gris-Nez Audinghen F-62179 WISSANT	<table border="1"> <tr> <td>A</td> <td>Tel: +33 3 21872187</td> <td>AOR-E</td> </tr> <tr> <td>B</td> <td>Fax: +33 3 21877855</td> <td>AOR-W</td> </tr> <tr> <td>C</td> <td>Inmarsat C: 422799256</td> <td>IOR</td> </tr> <tr> <td>E</td> <td>e-mail: grisnezmrcc@hotmail.com</td> <td></td> </tr> <tr> <td>F77</td> <td></td> <td></td> </tr> </table>	A	Tel: +33 3 21872187	AOR-E	B	Fax: +33 3 21877855	AOR-W	C	Inmarsat C: 422799256	IOR	E	e-mail: grisnezmrcc@hotmail.com		F77										
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Greece	Thermopylae	JRCC PEIRAIÁS (SARNET) Ministry of Mercantile Marine Hellenic Coast Guard RCC - Maritime Section 150, Gr. Lambraki Ave. 185 18 Peiraiás	<table border="1"> <tr> <td>A</td> <td>Tel: +30 210 4112500 (emergency)</td> <td rowspan="2">AOR-E</td> </tr> <tr> <td></td> <td>+30 210 4220772 (emergency)</td> </tr> <tr> <td>B</td> <td>Fax: +30 210 4132398</td> <td></td> </tr> <tr> <td>C</td> <td>Telex: +601 211588 RCC GR</td> <td></td> </tr> <tr> <td></td> <td>+601 211254 RCC GR</td> <td>IOR</td> </tr> <tr> <td></td> <td>Inmarsat A: 1133207 RCCG</td> <td></td> </tr> <tr> <td></td> <td>Inmarsat C: 423767310 RCCG</td> <td></td> </tr> <tr> <td>F77</td> <td>e-mail: jrccpgr@mail.yen.gr</td> <td></td> </tr> </table>	A	Tel: +30 210 4112500 (emergency)	AOR-E		+30 210 4220772 (emergency)	B	Fax: +30 210 4132398		C	Telex: +601 211588 RCC GR			+601 211254 RCC GR	IOR		Inmarsat A: 1133207 RCCG			Inmarsat C: 423767310 RCCG		F77	e-mail: jrccpgr@mail.yen.gr	
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China - Hong Kong SAR	Cape D'Aguiar	MRCC HONG KONG Marine Department 4/F Outer Island Macau Ferry Terminal Central Hong Kong SAR	A Tel: +852 25450181 B Fax: +852 22337999 C Fax: +852 25417714 Telex: +802 82952 MRCC HX e-mail: hkmrcc@mardep.gov.hk IOR POR
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Greece	Thermopylae	JRCC PEIRAIAS (SARNET) Ministry of Mercantile Marine Hellenic Coast Guard RCC - Maritime Section 150, Gr. Lambraki Ave. 185 18 Peiraias	A Tel: +30 210 4112500 (emergency) B Fax: +30 210 4132398 C Telex: +601 211588 RCC GR E +601 211254 RCC GR F77 Inmarsat A: 1133207 RCCG Inmarsat C: 423767310 RCCG e-mail: jrccpgr@mail.yen.gr AOR-E IOR

# Återkallande av larm sänt via Inmarsat

## Meddela RCC

Hur?

- Gör ett "distress priority message"
- Sänd med distressprioritet via samma LES som larmats

# Nödprocedur Sat

OBS Endast kontakt med landstation (MRCC).  
Kontakt med enheter i närheten får ska med  
VHF eller MF

# Nödprocedur Sat

- Distress alert (knapptryckning) = LARM

och , eller

- Distress priority message = MEDDELANDE med distressprioritet

# SATELLITE

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Korea Telecom	Korea, South	006	006	006	006
MCN	China	868	868	868	868
Ministry of Post & Telecommunications	Algeria	777			
Morsviazspudnik	Russia	015	015	015	015
OTESAT	Greece	005	005	005	005
Polish Telecom	Poland	016		016	
Research Networks	Hong Kong SAR (China)	118	118	118	118
Saudi Telecom	Saudi Arabia	025		025	
Singapore Telecom	Singapore	210	210	210	210
Stratos Mobile Networks	UK	002	002	002	002
	USA	013	013	013	013
Telecom D'Algerie	Algeria	777			
Telecom Italia	Italy	555	555	555	555
Malaysia Telecom	Malaysia	060	060	060	060
Telenor	Norway	004	004	004	004
	USA	001	001	001	001
VISHIPEL	Vietnam			009	
VSNL	India	306	306	306	306
	Netherlands	012	012	012	012
Xantic	Australia	222	222	222	222

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KDDI	Japan	103	003	303	203
Korea Telecom	Korea, South			308	208
MCN	China			311	211
Morsviazspudnik	Russia	117		317	
OTESAT	Greece	120		305	
Polish Telecom	Poland	116		316	
Saudi Telecom	Saudi Arabia	125		325	
Singapore Telecom	Singapore			328	210
	New Zealand				202
Stratos Mobile Networks	UK	102	002	302	
	Iran			314	
Telecom Italia	Italy	105		335	
Telenor	Norway	104	004	304	204
	USA	101	001	301	201
Türk Telekom	Turkey	110		310	
VISHIPEL	Vietnam			330	
VSNL	India			306	
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Xantic	Australia	122	022	322	222

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FT	France	011	011	011	011
KDDI	Japan	003	003	003	003
Korea Telecom	Korea, South	600	600	006	006
MCN	China	868	868	868	868
OTESAT	Greece	005	005	005	005
Singapore Telecom	Singapore	210	210	210	210
Stratos Mobile Networks	New Zealand				002
	UK	002	002	002	
Telecom Italia	Italy	555		555	
Telecom Malaysia	Malaysia	060	060	060	060
Telenor	Norway	004	004	004	004
	USA	001	001	001	001
Xantic	Netherlands	012	012	012	012
	Australia			022	022

## GMDSS SERVICES

**Distress Alerting** is available on all maritime MESs enabling the MES in distress to send distress information on the signalling channel to MRCC for the required actions. The distress alerting information includes the MES identity (Inmarsat C Mobile Number), date, latitude, longitude, course, speed, time of position update and nature of distress. The position is updated either from integrated or external GPS receiver or manually from a keyboard.

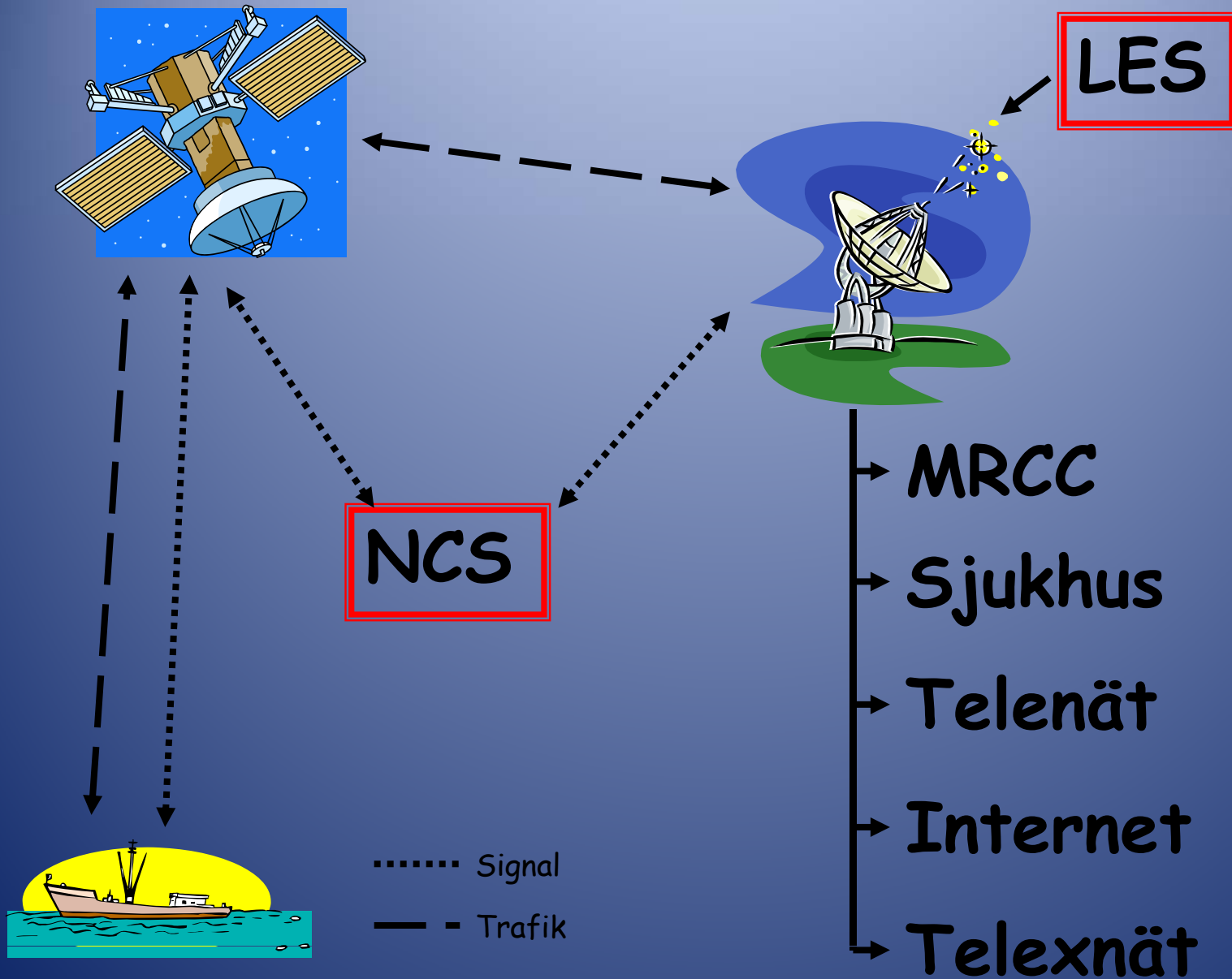
**Distress Priority** message is prepared in the MES text editor and sent on the messaging channel to MRCC regardless of the address given. The message may contain more detailed distress related information, eg. distress circumstances and assistance required.

The following services which relate directly to Distress and Safety are offered by all LESs as specified in the Radio Regulations under the GMDSS.

2 digit code	Service	Remarks
32	Medical Advice	Use this code to obtain medical advice. Some LES have direct connections with local hospitals when this code is used.
38	Medical Assistance	This code should be used if the condition of an ill or injured person on board the vessel requires urgent evacuation ashore or the services of a doctor aboard the vessel. This code will ensure that the call is routed to the appropriate agency/authority ashore to deal with the situation.
39	Maritime Assistance	This code should be used to obtain Maritime assistance if the vessel requires assistance or in cases of oil pollution, etc.
41	Meteorological Reports	This code should be used by weather observing vessels to send their weather observations. In most cases where this service is available the service is free of charge to the vessel, the National weather authority paying the relevant charges.
42	Navigational Hazards and Warnings	This code provides a connection to a navigational office for transmission of information from the vessel on any warnings hazards which could endanger safety of navigation (e.g. wrecks, derelicts, floating obstructions, defective radiobeacons or light vessels, icebergs, floating mines etc.).
43	Ship Position reports	This code provides a connection to an appropriate national or international centre collecting ship movement information for search and rescue (or other) purposes. e.g. AMVER, AUSREP etc.

See ALRS Volume 1 for a comprehensive list of the 2 digit codes relating to other services which are currently available through some or all LESs.

**For further information, contact Inmarsat customer services on +44(0)20 7728 1777.**



# Costal Warning Areas

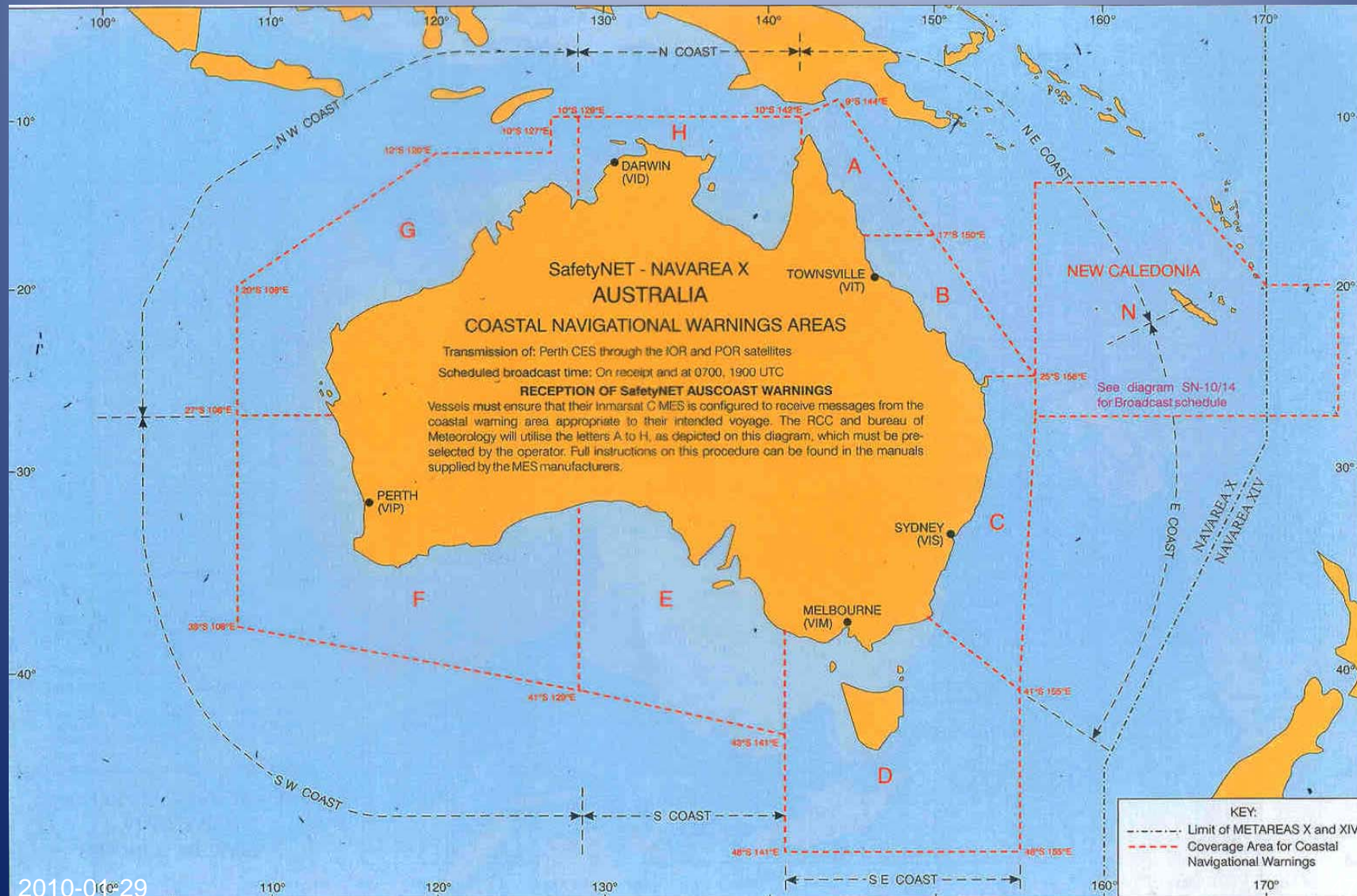
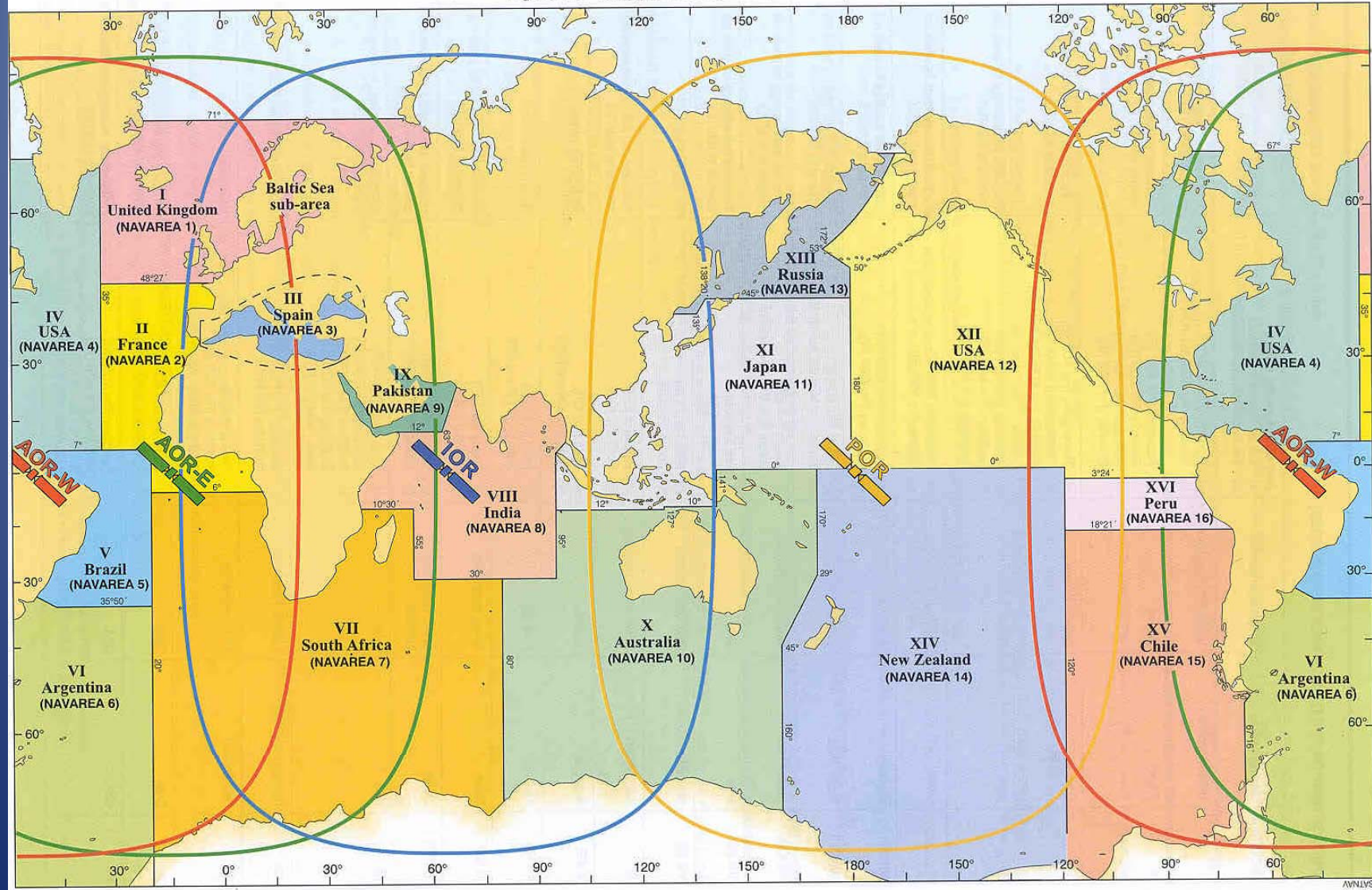
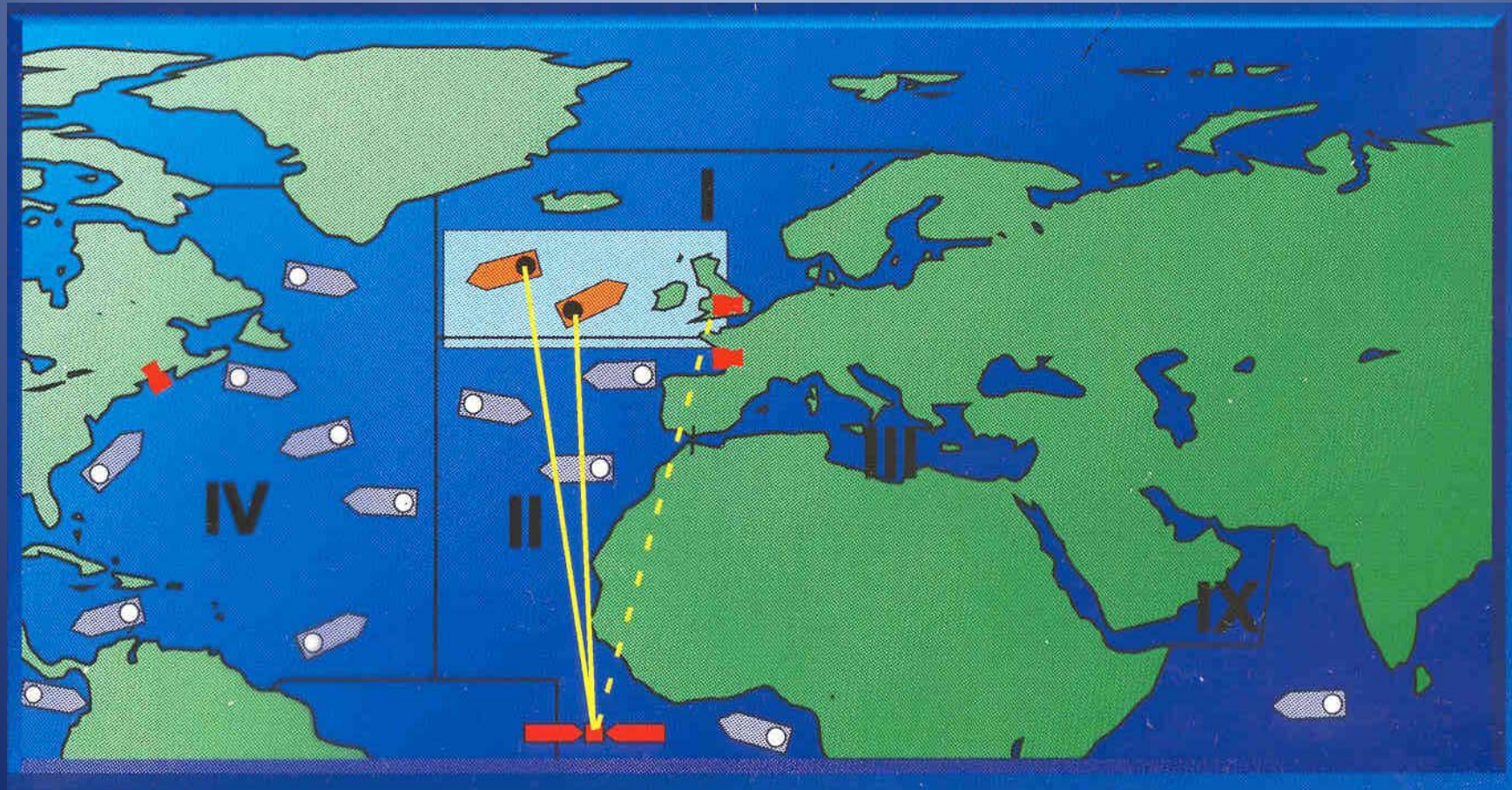


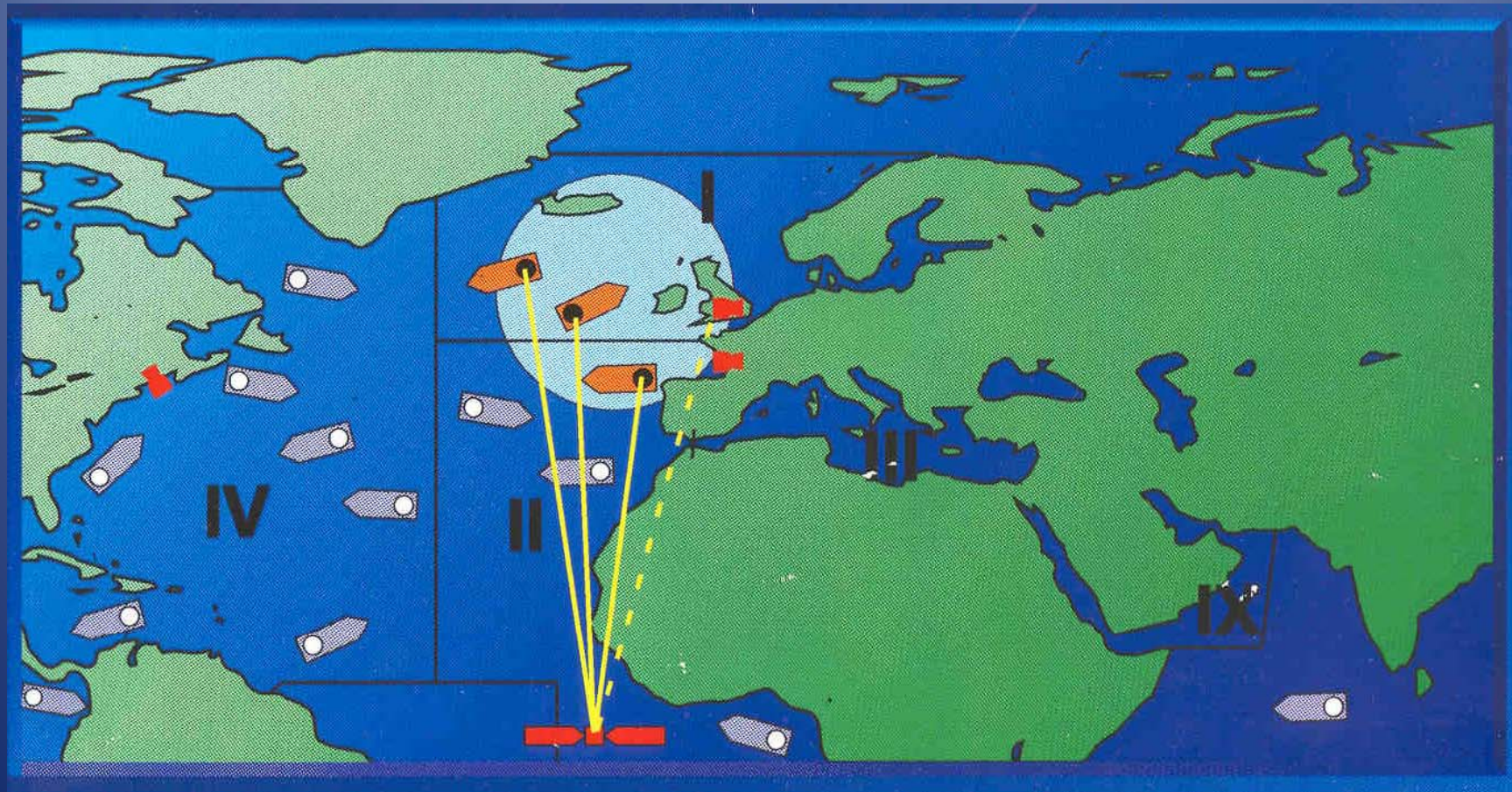
Figure 26 - NAVAREAS with Inmarsat footprints



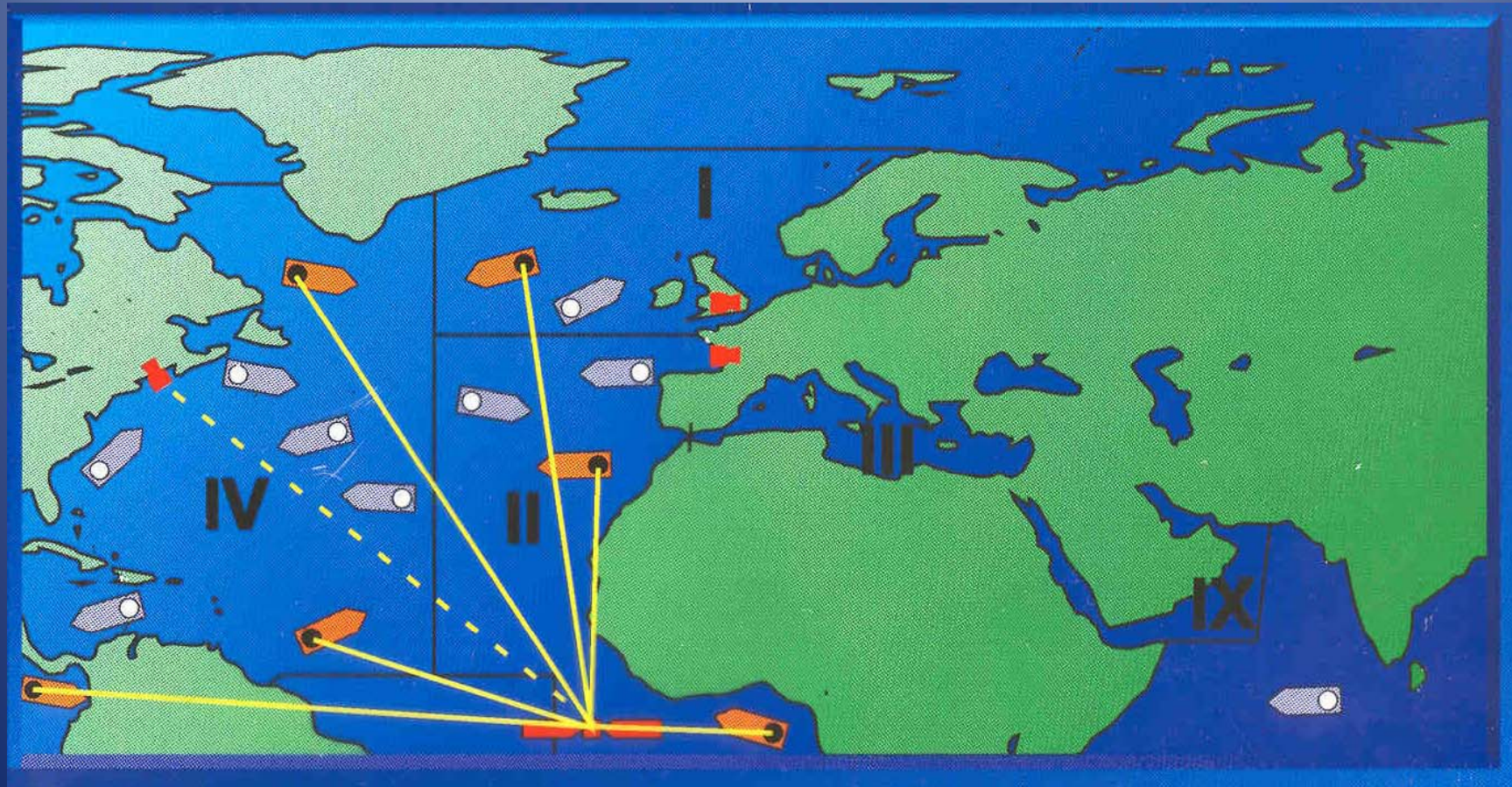
# Safetynet



# Safetynet



# Fleetnet



# MSI

Enhanced Group Call

```
graph TD; A[Enhanced Group Call] --> B[SafetyNET]; A --> C[System Msg]; A --> D[FleetNET];
```

SafetyNET

System Msg

FleetNET

