

COSPAS-SARSAT SYSTEM DATA

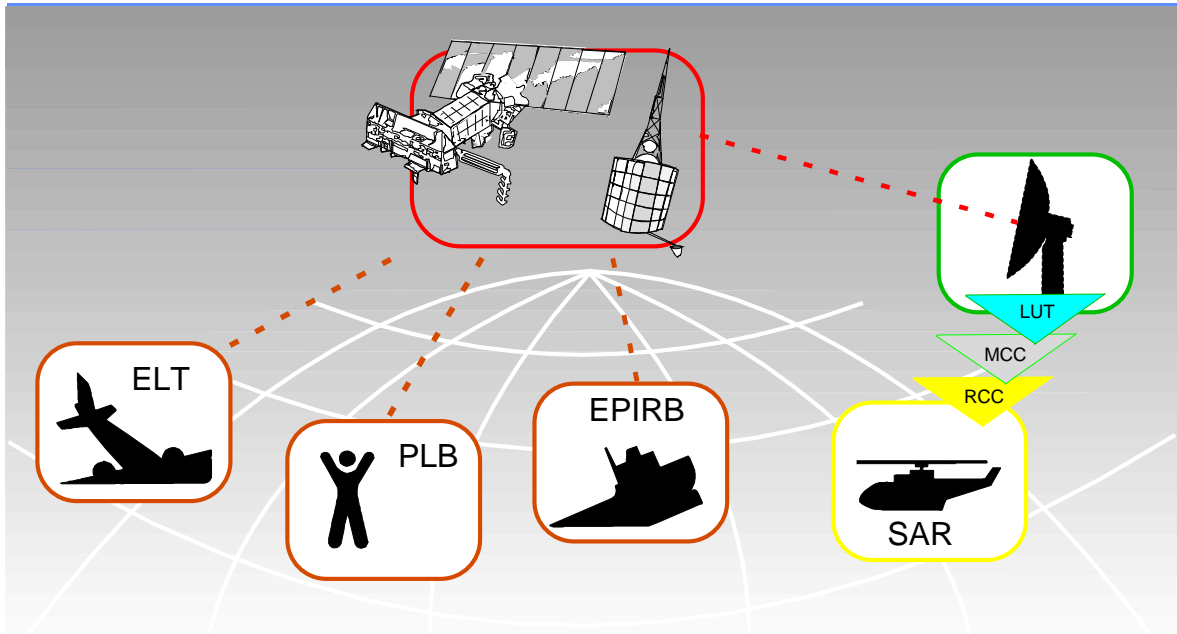
No.29
December 2003



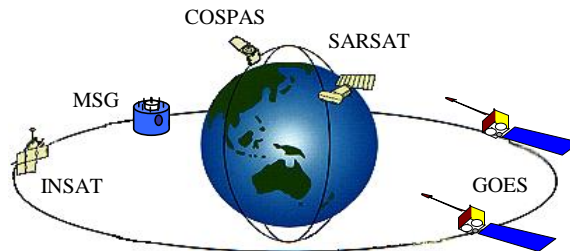
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COSPAS-SARSAT SYSTEM DATA

No.29, December 2003



Basic Concept of the Cospas-Sarsat System



Combined LEOSAR - GEOSAR Operations

Notes:

ELT Emergency locator transmitter
 EPIRB Emergency position-indicating radio beacon
 PLB Personal locator beacon

LUT Local user terminal
 MCC Mission control centre
 RCC Rescue coordination centre
 SAR Search and rescue

COSPAS Space system for the search of vessels
 in distress (Russia)
 GOES Geostationary operational environmental
 satellite (USA)
 INSAT Indian geostationary satellite

MSG Meteosat second generation satellite
 (EUMETSAT)
 SARSAT Search and rescue satellite-aided
 tracking system

GEOLUT Local user terminal in a GEOSAR system
 LEOLUT Local user terminal in a LEOSAR system

GEOSAR Geostationary satellite system for SAR
 LEOSAR Low Earth Orbit satellite system for SAR

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SUMMARY STATUS

Participants

• Parties to the Cospas-Sarsat Agreement	4
• Ground Segment Providers	22
• User States.....	9
• Participating Organizations	2
Total number of Participants	37

Space Segment

LEOSAR: 7 satellites in polar orbit

GEOSAR: 5 satellites in geostationary orbit

Distress Beacons Worldwide

121.5 MHz
Estimated number: 690,000

406 MHz
Estimated number: 314,000

Ground Segment

25 Mission Control Centres (MCCs)

39 Local User Terminals (LEOLUTs) in the
LEOSAR System

11 Local User Terminals (GEOLUTs) in the
GEOSAR System

System Operations

From January to December 2002, the Cospas-Sarsat System provided assistance in rescuing 1,411 persons in 373 SAR events:

- | | |
|----------------------|---------------------------------|
| • Aviation distress: | 57 persons in 44 SAR events |
| • Maritime distress: | 1,227 persons in 236 SAR events |
| • Land distress: | 127 persons in 93 SAR events |

The 406 MHz system was used in 207 of these events (1,062 persons rescued) and the 121.5 MHz system was used in the other 166 SAR events

From September 1982 to December 2002, the Cospas-Sarsat System provided assistance in rescuing 15,703 persons in 4,485 SAR events

Figure 1: Number of SAR Events Assisted by Cospas-Sarsat (January - December 2002)

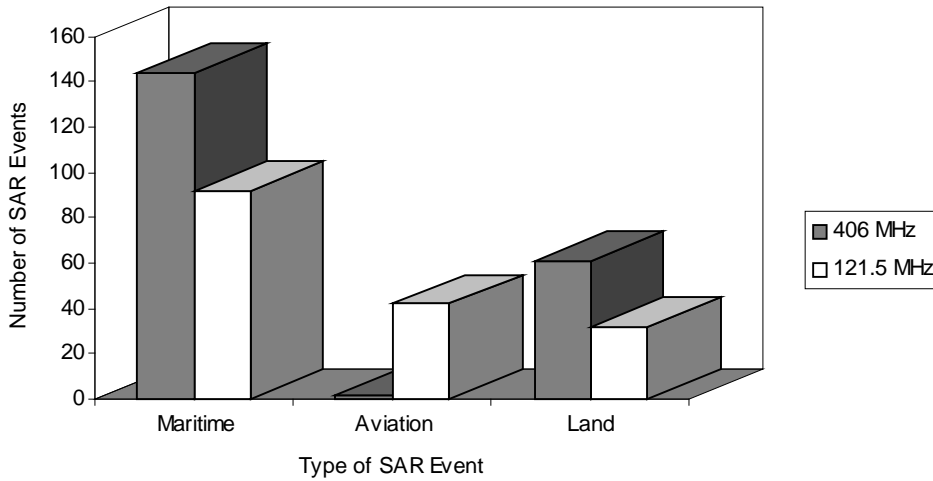


Figure 2: Number of Persons Rescued in SAR Events Assisted by Cospas-Sarsat (January - December 2002)

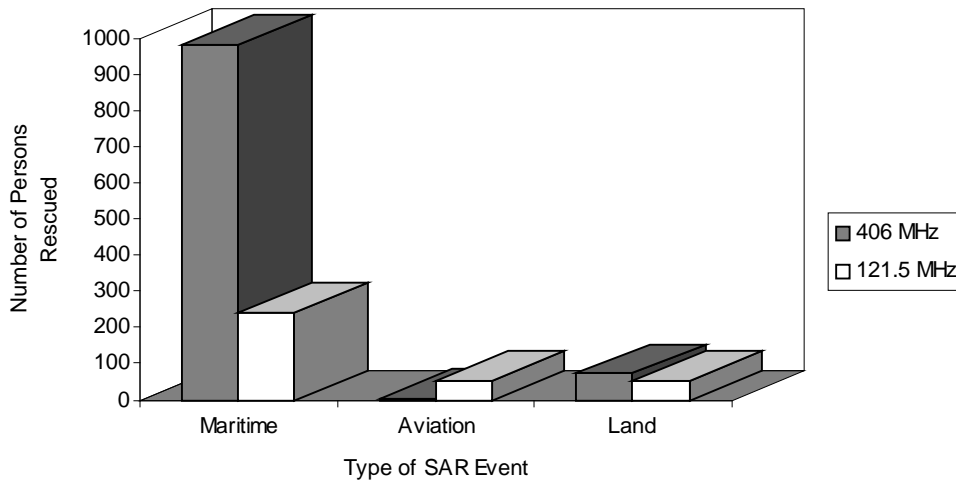


Figure 3: Number of SAR Events in which Cospas-Sarsat was used (January 1989 - December 2002)

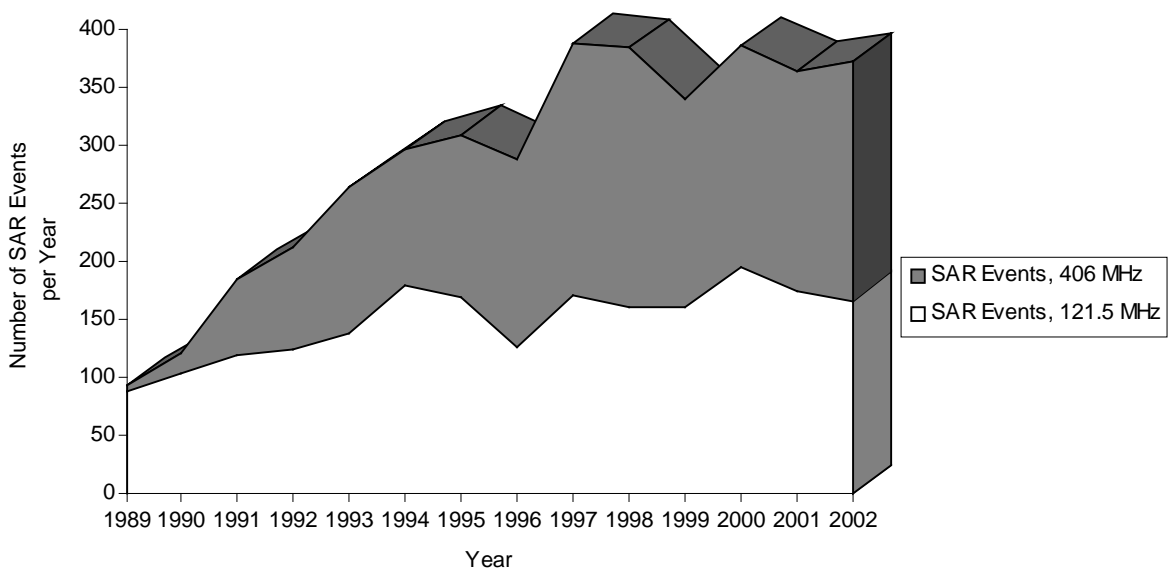


Table I - Cospas-Sarsat Participating Countries

Country	Agency	Status
Algeria	Ministry of Defense	Ground Segment Provider
Argentina	Department of Satellite Alerting for SAR	Ground Segment Provider
Australia	Australian Maritime Safety Authority (AMSA)	Ground Segment Provider
Brazil	Air Space Control Department (DECEA)	Ground Segment Provider
Canada	National Search and Rescue Secretariat (NSS)	Party-Space Segment Provider
Chile	Search and Rescue Service of the Chilean Air Force	Ground Segment Provider
China (P.R.of)	Maritime Safety Administration	Ground Segment Provider
Denmark	Civil Aviation Administration (Statens Luftfartsvesen)	User State
France	National Space Centre (CNES)	Party-Space Segment Provider
Germany	Ministry of Transport (Ab. Luft und Raumfahrt)	User State
Greece	Ministry of Merchant Marine	User State
India	Indian Space Research Organization (ISRO)	Ground Segment Provider
Indonesia	National SAR Agency (BASARNAS)	Ground Segment Provider
Italy	Department of Civil Protection	Ground Segment Provider
Japan	Japan Coast Guard	Ground Segment Provider
Korea (Rep.of)	Korea National Maritime Police Administration	Ground Segment Provider
Madagascar	Search and Rescue Co-ordination Centre	User State
Netherlands (The)	Ministry of Transport, Public Works and Water Management	User State
New Zealand	Civil Aviation Authority	Ground Segment Provider
Nigeria	National Emergency Management Agency	User State
Norway	Ministry of Justice and Police	Ground Segment Provider
Pakistan	Space and Upper Atmosphere Research Commission (SUPARCO)	Ground Segment Provider
Peru	Direction-General of Captaincy and Coastguard	Ground Segment Provider
Russian Federation	State Enterprise Morsviazsputnik of the Ministry of Transport	Party-Space Segment Provider
Saudi Arabia	Presidency of Civil Aviation	Ground Segment Provider
Singapore	Civil Aviation Authority of Singapore	Ground Segment Provider
South Africa	South African Maritime Safety Authority (SAMSA)	Ground Segment Provider
Spain	National Institute of Aerospace Engineering (INTA)	Ground Segment Provider
Sweden	Swedish Rescue Services Agency	User State
Switzerland	Federal Office for Civil Aviation	User State
Thailand	Department of Aviation	Ground Segment Provider
Tunisia	Ministry of Foreign Affairs	User State
UK	Maritime and Coastguard Agency, Dept. of Transport	Ground Segment Provider
USA	National Oceanic and Atmospheric Administration (NOAA)	Party-Space Segment Provider
Vietnam	Vietnam Maritime Communication and Electronics Co. (VISHIPEL)	Ground Segment Provider

Table II – Cospas-Sarsat Participating Organizations

The International Telecommunication Development Corporation (ITDC)	Ground Segment Operator
The Marine Department of Hong Kong, China	Ground Segment Operator

Table III - LEOSAR Spacecraft Availability

Cospas-Sarsat Payload	Spacecraft	Launch Date	Status
Cospas-1	Cosmos 1383	June 1982	Decommissioned (March 1988)
Cospas-2	Cosmos 1447	March 1983	Decommissioned (December 1989)
Cospas-3	Cosmos 1574	June 1984	Decommissioned (June 1990)
Cospas-4	Nadezhda-1	July 1989	Not in continuous operation
Cospas-5	Nadezhda-2	February 1990	Decommissioned (February 1996)
Cospas-6	Nadezhda-3	March 1991	Decommissioned (September 2001)
Cospas-7	Nadezhda-4	July 1994	Decommissioned (July 1997)
Cospas-8	Nadezhda-5	December 1998	Decommissioned (September 2001)
Cospas-9	Nadezhda-6	June 2000	In operation
Cospas-10	Nadezhda-7	September 2002	In operation
Cospas-11	Dedicated satellite	Projected 2005	Integration phase
Cospas-12	Dedicated satellite	Projected 2007	Integration phase
Sarsat-1	NOAA-8	March 1983	Decommissioned (December 1985)
Sarsat-2	NOAA-9	December 1984	Decommissioned (December 1997)
Sarsat-3	NOAA-10	September 1986	Decommissioned (August 2001)
Sarsat-4	NOAA-11	September 1988	In operation
Sarsat-5	NOAA-13	August 1993	Failed after launch
Sarsat-6	NOAA-14	December 1994	In operation
Sarsat-7	NOAA-15	May 1998	In operation
Sarsat-8	NOAA-16	September 2000	In operation
Sarsat-9	NOAA-17	June 2002	In operation
Sarsat-10	NOAA-N	Projected 2004	Integration phase
Sarsat-11	METOP-1	Projected 2005	Integration phase

Table IV - LEOSAR Space Segment Instrument Status (December 2003)

Cospas-Sarsat Payload	406 MHz SARP		406 MHz SARR	121.5 MHz SARR	243 MHz SARR
	Global Mode	Local Mode			
Cospas-9	N	N	NA	O	NA
Cospas-10	N	N	NA	O	NA
Sarsat-4	O	O	N	O ⁽¹⁾	O
Sarsat-6	N	N	O	O	O
Sarsat-7	O	O	O	O	O ⁽²⁾
Sarsat-8	O	O	O	O	N
Sarsat-9	O	O	O	O	O

Notes: N - Not operational. (1) - Some Electromagnetic Interference (EMI) degradation.
 NA - Not applicable. (2) - Operates intermittently.
 O - Operational.
 SARP - SAR processor.
 SARR - SAR repeater.

Table V - GEOSAR Spacecraft Availability

Spacecraft	Launch Date	Position	Status
GOES-9	May 1995	155° E	In operation
GOES-10	April 1997	135° W	In operation (GOES-W)
GOES-11	May 2000	105° W	In-orbit spare
GOES-12	July 2001	75° W	In operation (GOES-E)
INSAT-3A	April 2003	93.5° E	In operation
INSAT-3D	2004	83.5° E	Projected
MSG-1	August 2002	10.5° W (final position 3.5°W)	In operation
MSG-2	2005	To be determined	Projected
Electro-L	2006	74° E	Projected

Table VI - LEOSAR Ground Segment Status (December 2003)

Participant	MCC			LEOLUT			
	Designator	Location	Status	Location	406 MHz SARP	406 MHz SARR	121.5 MHz SARR
Algeria	ALMCC	Algiers	O	Ouargla	O	O	O
Argentina	ARMCC	Ezeiza	O	Parana Rio Grande	O O	O O	O O
Australia	AUMCC	Canberra	O	Albany Bundaberg	O O	O O	O O
Brazil	BRMCC	Brasilia	O	Brasilia Manaus Recife	UD UD UD	TBD TBD TBD	UD UD UD
Canada	CMCC	Trenton	O	Churchill Edmonton Goose Bay	O O O	O O O	O O O
Chile	CHMCC	Santiago	O	Easter Island Punter Arenas Santiago	O O O	O O O	O O O
China (P.R.of)	CNMCC	Beijing	O	Beijing	O	O	O
France	FMCC	Toulouse	O	Toulouse	O	O	O
Hong Kong, China	HKMCC	Hong Kong	O	Hong Kong	O	O	O
India	INMCC	Bangalore	O	Bangalore Lucknow	O O	O O	O O
Indonesia	IDMCC	Jakarta	O	Jakarta	O	NA	O
Italy	ITMCC	Bari	O	Bari	O	O	O
ITDC	TAMCC	Taipei	O	Keelung	O	O	O
Japan	JAMCC	Tokyo	O	Yokohama	O	O	O
Korea (Rep.of)	KOMCC	Daejeon	O	Daejeon	O	O	O
New Zealand	-	(1)	-	Wellington	O	O	O
Nigeria	NIMCC	Abuja	UD	Abuja	UD	UD	UD
Norway	NMCC	Bodoe	O	Tromsoe Spitsbergen	O O	O O	O O
Pakistan	PAMCC	Lahore	UD	Lahore	O ⁽²⁾	NA	O ⁽²⁾
Peru	PEMCC	Callao	O	Callao	O	O	O
Russia	CMC	Moscow	O	Arkhangelsk Moscow ⁽³⁾ Nakhodka	O N O	NA NA NA	O N O
Saudi Arabia	SAMCC	Jeddah	O	Jeddah	O	O	O
Singapore	SIMCC	Singapore	O	Singapore	O	O	O
South Africa	ASMCC	Cape Town	O	Cape Town	O	O	O
Spain	SPMCC	Maspalomas	O	Maspalomas	O	O	O
Thailand	THMCC	Bangkok	O	Bangkok	UD	UD	UD
UK	UKMCC	Kinloss	O	Combe Martin	O	O	O
USA	USMCC	Suitland	O	Alaska California Florida Guam Hawaii Texas	O O O O O O	O O O O O O	O O O O O O
Vietnam	VNMCC	Haiphong	UD	Haiphong	UD	UD	UD

- Notes:**
- N - Not operational.
 - NA - Not applicable.
 - O - Operational.
 - SARP - SAR processor (provides the 406 MHz local and global mode coverage).
 - SARR - SAR repeater (provides 121.5 MHz and 406 MHz local mode coverage only).
 - TBD - To be determined.
 - UD - Under development.
 - (1) - The NZ LUT is directly connected to the Australian MCC (AUMCC).
 - (2) - LEOLUT data not distributed internationally.
 - (3) - Out of operation from 15 October 2001 due to relocation.

**Figure 4: Satellite Visibility Area of Cospas-Sarsat Operational LEOLUTs
(December 2003)**
(white area: 406 MHz and 121.5 MHz coverage; grey area: only 406 MHz coverage)

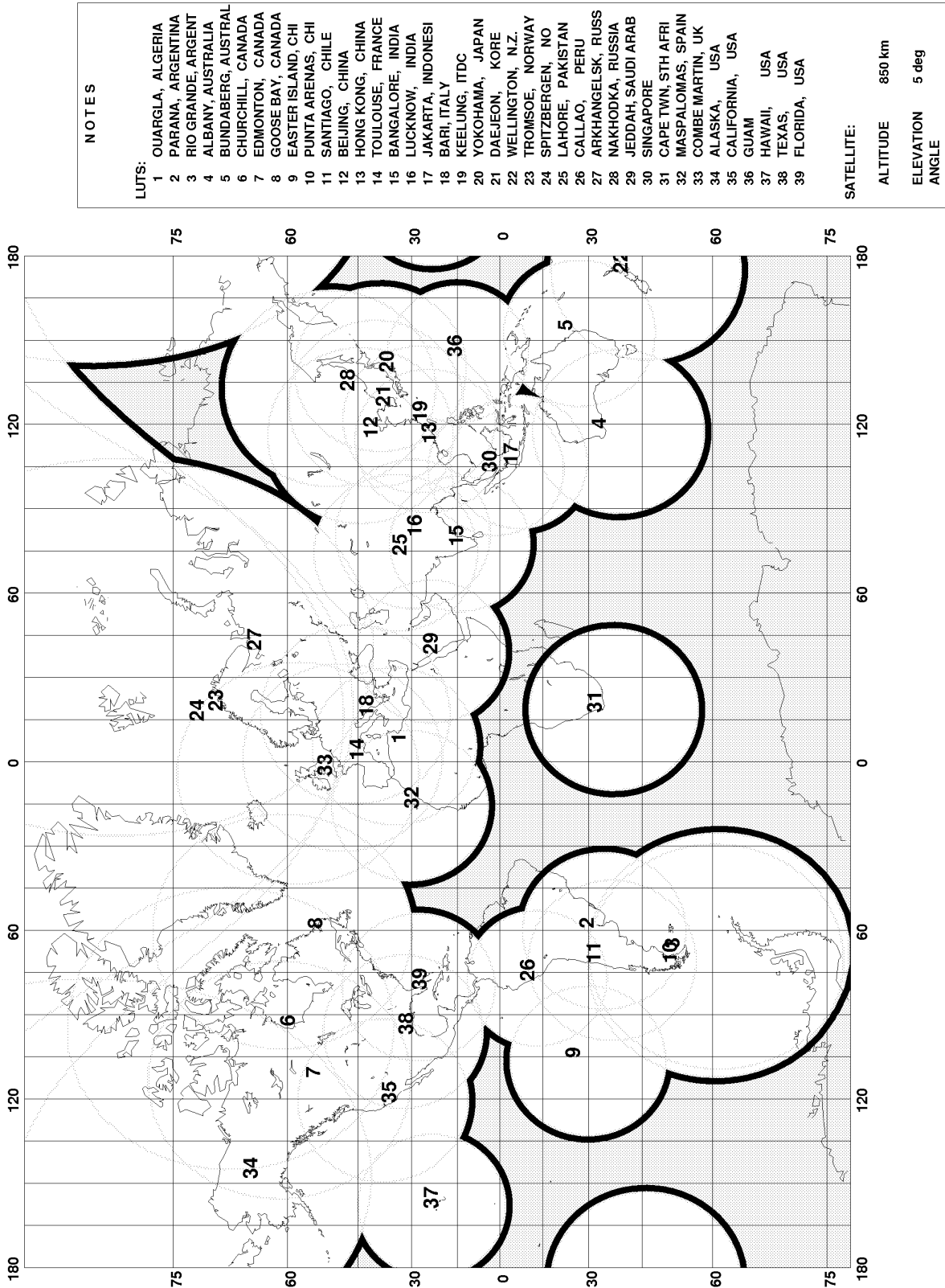


Table VII - GEOSAR Ground Segment Status (December 2003)

GEOLUT	Geostationary Satellite	GEOLUT Status
Ezeiza, Argentina	GOES-12	In operation, commissioned
Brasilia, Brazil	GOES-12	In operation, commissioned
Recife, Brazil	GOES-12	In operation, commissioned
Trenton, Canada	GOES-12	In operation, commissioned
Trenton, Canada	GOES-10	In operation, commissioned
Santiago, Chile	GOES-12	In operation, commissioned
Toulouse, France	MSG-1	In operation (a)
Bangalore, India	INSAT-3A	In operation (a)
Wellington, New Zealand	GOES-10	In operation, commissioned
Wellington, New Zealand	GOES-9	Under development
Maspalomas, Spain	GOES-12	In operation, commissioned
Maspalomas, Spain	MSG-1	Under development
Combe Martin, UK	GOES-12	In operation, commissioned

Note: (a) GEOLUTs have not been commissioned, however, alert data are used operationally.

Figure 5: 406 MHz GEOSAR Satellite Coverage and GEOLUTs (December 2003)

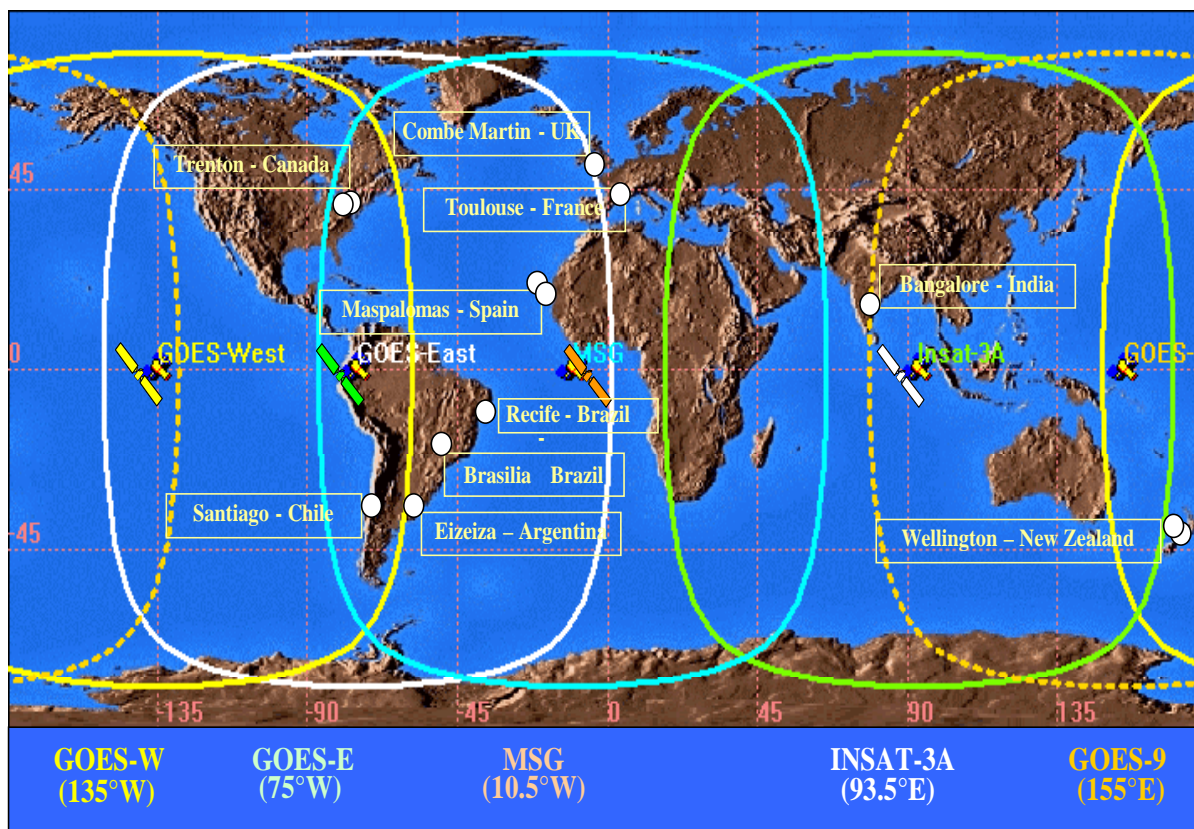


Table VIII - List of 406 MHz Beacon Manufacturers 1/3
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AUSTRALIA

ADI Limited	858 Knights Road, Albury New South Wales, 2640, Australia	Tel: 61-2 60251100 Fax: 61-2 60401990
BAE Systems Australia Ltd.	40-52 Talvera Road, North Ryde New South Wales, Australia	Tel: 61-2 98558973 Fax: 61-2 98558909 E-mail: ed.spicer@baesystems.com
Standard Communications Pty. Ltd.	6 Frank Street Gladesville NSW 2111 Australia	Tel: 61-2 98446666 Fax: 61-2 98446600 E-mail: cduncan@gme.net.au

BULGARIA

Bitova Electronic Co.	Kvartal Cholakovtzi Veliko Turnovo Bulgaria	Tel: 359-62 20038 Tlx: 66551 Fax: 359-62 44868
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CANADA

AlliedSignal Aerospace Canada	(See Honeywell - Canada)	
DRS Flight Safety & Communications	40 Concourse Gate Nepean, Ontario Canada K2E 8A6	Tel: 1-613 7274148 Fax: 1-613 7274124 E-mail: raustin@drs.ca
EMS Technologies Canada	1725 Woodward Drive Ottawa, Ontario Canada K2C 0P9	Tel: 1-613 7276277 Ext 3297 Fax: 1-613 7278737 E-mail: lee.jc@ems-t.com
Honeywell	3333 Unity Drive Mississauga, Ontario Canada 5L5 3S6	Tel: 1-905 6086000 Fax: 1-905 6086189 E-mail: carl.weisser@honeywell.com
MPR Teltech Ltd.	(See Northern Airborne Technology Ltd. - Canada)	
Northern Airborne Technology Ltd.	14-1925 Kirschener Road, Kelowna British Columbia, Canada V1Y 4N7	Tel: 1-250 7632232 Fax: 1-250 7623374 E-mail: steveb@natech.com
PRO-Find Safety, Inc.	(See Seimac Ltd. - Canada)	
Seimac Ltd.	271 Brownlow Avenue Dartmouth, N.S. Canada B3B 1W6	Tel.: 1-902 4683007 Fax: 1-902 4683009 E-mail: dtremblay@nat-inc.com

FRANCE

Air Precision	5 Avenue Denis Papin 92350 Le Plessis Robinson France	Tel: 33-1 46012122 Fax: 33-1 46012090 E-mail: pierre-prisset@wanadoo.fr E-mail: pierre.prisset@airprecision.com
CEIS TM	(See ELTA - France)	
ELTA	14, Place Marcel Dassault BP 48, 31702 Blagnac Cedex France	Tel: 33 534361000 Fax: 33 534361001 E-mail: des@elta.fr
SERPE-IESM	Zone Industrielle des Cinq-Chemins 56520 Guidel France	Tel: 33 297024949 Tlx: 950535F Fax: 33 297650020 E-mail: contact@serpe-iesm.com

Table VIII - List of 406 MHz Beacon Manufacturers 2/3
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FRANCE (Cont.)

Socata (See Air Precision - France)

GERMANY

Becker Flugfunkwerk GmbH	Baden Airpark 77836 Rheinmuenster Germany	Tel: 49-722 93050 Fax: 49-722 9305217 E-mail: Schuehle@Becker-Avionics.de
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JAPAN

Japan Radio Co. Ltd.	Mitaka Plant 1-1 Shimorenjaku 5-chome Mitaka-shi Tokyo 181, Japan	Tel: 81-422 459547 Tlx: 2822351 Fax: 81-422 459957
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NEC Radio & Electronics Ltd. (See TAIYO MUSEN Co. Ltd. - Japan)

TAIYO MUSEN Co. Ltd.	20-7, 2-chome , Ebisu-Nishi Sibuya-ku, Tokyo 150-0021 Japan	Tel: 81-3 37803267 Fax: 81-3 54890571 E-mail: chimura@hon.taiyomusen.co.jp
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KOREA

Saracom Co. Ltd	141-37, 3Ka Namhang-Dong Youngdo-Ku, Pusan, Korea	Tel: 82-51 4135000 Tlx: K53700 SUNMAX Fax: 82-51 4135002
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Samyung Electronic Co. Ltd.	65-20, 2Ga Namhang-Dong Youngdo-Gu, Busan, 606-032, Korea	Tel: 82-51 4134445 (Direct) Tel: 82-51 4165555 (Rep.) Fax: 82-51 4126616 E-mail: planning@sam-yung.co.kr
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NORWAY

Jotron Electronics A.S.	P.O. Box 58 3280 Tjodalynng Norway	Tel: 47-33 139700 Fax: 47-33 126780 E-mail: Salesmar@jotron.com
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RUSSIA

Yaroslavsky Radio Engineering Works	13 Industrialnaya St. Yaroslavl 150010 Russia	Tel: 7-085 2299281 Tlx: 217229 PTB Fax: 7-085 2463552 E-mail: yakbr@yaroslavl.ru
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FUSE ISDE	53 Aviamotornaya St. Moscow 111250 Russia	Tel: 7-095 2739294, 7-095 2739303 Fax: 7-095 2734719, 7-095 2731659 E-mail: fgupniikp@mtu-net.ru
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SPAIN

ENA Telecomunicaciones S.A.	C/San Rafael, 14 Poligono Industrial Alcobendas 28100 Alcobendas (Madrid), Spain	Tel: 34-1 6616227 Fax: 34-1 6618941 E-mail: julian.gallego@avanzit.com
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UKRAINE

Musson-Exim	29 Vakulenchuk St. Box 20, Sevastopol 335053 Ukraine	Tel: 380-692 238081 Tlx: 197304 Fax: 380-692 233490
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State Designer's Bureau of Radiocommunication	29 Vakulenchuk St. Sevastopol 335053 Ukraine	Tel: 380-692 247173 Fax: 380-692 243170
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Table VIII - List of 406 MHz Beacon Manufacturers 3/3

UNITED KINGDOM

Caledonian Airborne Systems Ltd.	6 Ninian Road Dyce, Aberdeen Airport AB2 0PD Scotland, UK	Tel: 44-1224 722274 Tlx: 73645 CASABZ G Fax: 44-1224 722896
Lokata Ltd. (models no longer in production, but supported by Sartech Engineering)	Sartech Engineering, 80 Brighton Road Lower Kingswood, Surrey KT20 6SY UK	Tel: 44-1737 832237 Fax: 44-1737 833903 E-mail: pforey@sartech.co.uk
McMurdo Ltd.	Silver Point, Airport Service Road Portsmouth Hampshire PO3 5PB, UK	Tel: 44-2392 623900 Fax: 44-2392 623997 E-mail: sales@mcmurdo.co.uk
Nova Marine Systems Ltd.	(See McMurdo Ltd. - UK)	
Signature Industry Ltd.	Tom Cribb Road Thamesmead London SE28 0BH, UK	Tel: 44-20 83164477 Tel: 44-20 83171717 Fax: 44-20 83166218 E-mail: brain.clayton@sarbe.com
Techtest Limited	Street Court Kingland, Leominster Herefordshire HR6 9QA, UK	Tel: 44-1568 708744 Fax: 44-1568 708713
Thales Underwater Systems Ltd.	Ocean House, Templecombe Somerset BA8 0DH, UK	Tel: 44-1963 372362 E-mail:gareth.jenkins@uk.thalesgroup.com

UNITED STATES OF AMERICA

ACR Electronics, Inc.	5757 Ravenswood Road Ft. Lauderdale Florida 33312 USA	Tel: 1-954 9813333 Tlx: 519645 Fax: 1-954 9835087 Fax: 1-508 8982427 E-mail: jflood@acrelectronics.com
Alden Marine	(See Northern Airborne Technology Ltd. - Canada)	
Artex Aircraft Supplies, Inc.	14405 Keil Road, NE Aurora, Oregon 97002 USA	Tel: 1-503 6787929 Fax: 1-503 6787930 E-mail: info@artex.net
BAE SYSTEMS - Ocean Systems	115 Bay State Drive Braintree, Massachusetts 02184 USA	Tel: 1-781 8483400 Fax: 1-781 8432153 E-mail: hartigan@hazeltine.com
DME Corporation	6830 N.W. 16th Terrace Fort Lauderdale Florida 33309-1518, USA	Tel: 1-954 975 2100 Fax: 1-954 979 3313 E-mail: michaelwooster@dmecorp.com
Microwave Monolithics, Inc.	2263 Ward Avenue Simi Valley California 93065, USA	Tel: 1-805 5846642 Fax: 1-805 5849594

Table IX - C/S Type Approved 406 MHz Beacons Listed by Manufacturer * 1/4

Manufacturer	Model Names	C/S Type Approval Certificate No. (a)	C/S Class (b)	Application (c)
ADI Limited	SERB MkII	118	2	Float-Free EPIRB
ACR Electronics, Inc.	RLB-23	17	2	Float-Free EPIRB
	RLB-24	18	2	Non Float-Free EPIRB
	RLB-23E1	82	1	Float-Free EPIRB
	RLB-27 or Satellite 406 (see Note d)	83	1 or 2	Float-Free EPIRB
	RLB-28 or Satellite 406 (see Note d)	84	1 or 2	Non Float-Free EPIRB
	RLB-32	107	1	Float-Free EPIRB
	RLB-33 (see Note e)	108	1	Float-Free EPIRB
	PLB-100 / RLB-100 (see Note e)	109	1	PLB / N.Float-Free EPIRB
	RLB-35 (see Note n)	127	1	Float-Free EPIRB
	RLB35 (see Note n)	136	1	Float-Free EPIRB
Air Precision (see Note a1)	ELT 96 and ELT 97	74	2	Automatic ELT
	ELT 96 S	74	2	Manual ELT
Artex Aircraft Supplies, Inc.	ELT 110-406, ELT B406-1	67	2	Automatic ELT
	ELT 110-406 NAV, 110-406 HM NAV, B406-2 NAV, 110-406ED NAV (see Note e)	104	2	Automatic ELT
	C406-1, C406-1HM, C406-2, C406-2HM, B406-4, G406-4 (see Note e)	112	2	Automatic ELT
	G406-1, G406-2 (see Note e)	126	2	Automatic ELT
	G406-N or G406-N HM	135	2	Automatic ELT
Aviation and Marine Techn., Inc.	Avmar M1-406 (see Note f)	58	2	Float-Free EPIRB
BAE SYSTEMS	T-1630/SRT Buoy, Radio Transmitting SEPIRB (see Note n)	116	2	Non Float-Free EPIRB
Becker Flugfunkwerk GmbH	MR 509/1	132	2	PLB
Bitova Electronic Co.	SEVT-406	45	2	Float-Free EPIRB
Caledonian Airborne Systems Ltd.	CPT-600M (see Note d)	8	1 or 2	Float-Free EPIRB
	CPT-600N	33	2	Float-Free EPIRB
	ADELTA CPT 609	90	2	Automatic ELT
DME Corporation	SRB-406	133	2	Automatic ELT (see Note a6)
DRS Flight Safety and Communications	BAU-35, BAU-35A (see Note e)	121	2	Automatic ELT
ELTA (CEIS TM)	BSU 85	3	2	Non Float-Free EPIRB
	BSP 86	9	2	Float-Free EPIRB
	M 02	16	1	Float-Free EPIRB
	A06	20	2	Automatic ELT
	S06	20	2	Manual ELT
	M 04	24	2	Float-Free EPIRB
	MT06	34	2	Non Float-Free EPIRB
	H-06	44	2	Automatic ELT
	P-07	51	2	PLB
	M05 Sealife (see Note d)	69	1 or 2	Float-Free EPIRB
	MO56	79	2	Float-Free EPIRB
	P076	89	2	PLB
ADT406 AF/AP	131	2	Automatic ELT	
EMS Technologies	EMS-406-1	134	2	Automatic ELT
ENA Telecomunicaciones S.A.	ENASAT-406 A	81	2	Float-Free EPIRB
	ENASAT-406 M	81	2	Non Float-Free EPIRB
FUSE ISDE	ARM-406 AC1	125	1	Manual ELT
	ARM-406 P	130	1	Automatic ELT
GEC-Marconi Radar Defence Systems	639 SIU	100	2	Float-Free EPIRB
(The) Guest Co., Inc. (see Note z)	948 (see Note g)	19	2	Float-Free EPIRB
	948 (see Note g)	29	2	Non Float-Free EPIRB

Table IX - C/S Type Approved 406 MHz Beacons Listed by Manufacturer 2/4

Manufacturer	Model Names	C/S Type Approval Certificate No. (a)	C/S Class (b)	Application (c)	
(The) Guest Co., Inc. (Cont.)	952-02 (see Note g)	57	2	Non Float-Free EPIRB	
	952-01 (see Note g)	73	2	Float-Free EPIRB	
Honeywell (see Note y)	Rescu 406	88	2	Manual ELT	
	Rescu 406AF	124	2	Automatic ELT	
Japan Radio Co. Ltd.	JQE-2A	15,30	1	Float-Free EPIRB	
	JQE-2A	49	1	Float-Free EPIRB	
	JQE-2A	21	2	Float-Free EPIRB	
	JQE-3A	80	2	Float-Free EPIRB	
Jotron Electronics A.S.	Tron 30S (see Note f)	1	2	Float-Free EPIRB	
	Tron 30 S mkII	50,66	2	Float-Free EPIRB	
	Tron 40S	95	2	Float-Free EPIRB	
	Tron 45 SX	98	2	Non Float-Free EPIRB	
	Tron 45 S	99	2	Non Float-Free EPIRB	
	Tron 40 GPS (see Note n)	122	2	Float-Free EPIRB	
Litton Special Devices (see Note z)	952-21 or 952-25	76	2	Automatic ELT	
	952-23	76	2	Manual ELT	
Lokata Ltd. (see Note a2)	406 P (see Note f)	10	2	Non Float-Free EPIRB	
	406 M (see Note f)	11	2	Non Float-Free EPIRB	
	406 H (see Note f)	12	2	Float-Free EPIRB	
	406 P(Y) (see Note f)	25	2	Non Float-Free EPIRB	
	406 M (Y) (see Note f)	26	2	Non Float-Free EPIRB	
	406 H(Y) (see Note f)	27	2	Float-Free EPIRB	
	406 PF(Y) (see Note f)	54	2	Non Float-Free EPIRB	
	Honeywell ECB (see Note f)	55	2	Non Float-Free EPIRB	
	406 MH(Y) (see Note f)	63	2	Float-Free EPIRB	
	406 M(Y)E (see Note f)	64	2	Non Float-Free EPIRB	
	406 MH(Y)E (see Note f)	65	2	Float-Free EPIRB	
	406-2A or 406-2AH (see Note f)	75	2	Float-Free EPIRB	
	406-2M (see Note f)	75	2	Non Float-Free EPIRB	
McMurdo Ltd.	Locat LDT 61	53	2	Float-Free EPIRB	
	Locat LDT 62	53	2	Non Float-Free EPIRB	
	Locat LDT 61A	85	2	Float-Free EPIRB	
	Locat LDT 62A	85	2	Non Float-Free EPIRB	
	E3a (see Note h)	106	1	Float-Free EPIRB	
	E3c (see Note i)	106	1	Non Float-Free EPIRB	
	E3m (see Note j)	106	1	Non Float-Free EPIRB	
	G4a (see Notes v and n)	119	2	Float-Free EPIRB	
	G4m (see Notes w and n)	119	2	Non Float-Free EPIRB	
	G4c (see Notes x and n)	119	2	Non Float-Free EPIRB	
	Fastfind or Fastfind Plus (see Note n)	129	1 or 2	PLB / N. Float-Free EPIRB (see Note a3)	
	Microwave Monolithics, Inc.	MBT-040600, MBT-04600D (see Note e)	110	2	PLB
		MBT-040600A	113	2	PLB
MBT-040600B, MBT-04600E (see Note e)		114	2	PLB	
MBT-040600C		115	2	PLB	
MPR Teltech Ltd. (see Note z)	L-1000 (see Note f)	38	1	PLB	
	SATFIND-406 _{TM} M (see Note f)	43	2	Float-Free EPIRB	
Musson-Exim	ARB-MK	36	2	Float-Free EPIRB	
	ARB-PC	52	1	PLB	
	ARB-M	61	2	Float-Free EPIRB	
	Musson-501 (see Note d)	62	1 or 2	Float-Free EPIRB	
	Cospas-ARB-MK1	68	2	Float-Free EPIRB	
Northern Airborne Technology Ltd.	SATFIND-406 _{TM} Pocket PLB (see Note m)	71	1	PLB	
	SATFIND-406 _{TM} Survival EPIRB (see Note m)	78	2	Float-Free / N.Float-Free EPIRB	
	SATFIND-406 ELT	93	2	Automatic ELT	
	Model A-1000 (see Note m)				

Table IX – C/S Type Approved 406 MHz Beacons Listed by Manufacturer 3/4

Manufacturer	Model Names	C/S Type Approval Certificate No. (a)	C/S Class (b)	Application (c)
Northern Airborne Technology Ltd. (Cont.)	SATFIND-406 GPIRB™ (see Note n)	102	2	Float-Free EPIRB
	A 1500 SATFIND-406 ELT (see Note e)	120	2	Automatic ELT
Nova Marine Systems Ltd.	RT 160M (see Note o)	2	1	Float-Free EPIRB
	RT 161M	28	2	Float-Free EPIRB
	RT 160	31	1	Non Float-Free EPIRB
	RT 161	32	2	Non Float-Free EPIRB
	RT 260M (see Note p)	70	2	Float-Free EPIRB
	RT 260 (see Note q)	72	2	Non Float-Free EPIRB
Samyang Radio (see Note a5)	EB-10	94	2	Float-Free EPIRB
Samyung Electronics	SEP-406	117	2	Float-Free EPIRB
Seimac Ltd.	PROFind 406 or Satfind 406™ PRO (see Note a4)	123	1	Float-Free EPIRB
SERPE-IESM	Kannad 406	5	2	Non Float-Free EPIRB
	Kannad 406 S (see Note d)	13	1 or 2	Non Float-Free EPIRB
	Kannad 406 S	22	2	Non Float-Free EPIRB
	Kannad 406 S (or SW) (see Note r)	39	2	Non Float-Free EPIRB
	Kannad 406 F	7	2	Float-Free EPIRB
	Kannad 406 F(or P) (see Note d)	14	1 or 2	Float-Free EPIRB
	Kannad 406 F (or P)	23,40	2	Float-Free EPIRB
	Kannad 406 FH (or PH)	35	2	Float-Free EPIRB
	Kannad 406 FH (or PH or WH) (see Note s)	41	2	Float-Free EPIRB
	Kannad 406 ATP	42,91	2	Automatic ELT
	Kannad 406 m	92	1 or 2	PLB / N.Float-Free EPIRB
	Kannad 406 XS	101	2	Non Float-Free EPIRB / Manual ELT / PLB
		Kannad 406 AP/AF/AF-H/AS	105	2
	Kannad 406 XS-2 GPS	138	2	PLB
Sextant	SDT 406 M (see Note f)	4	2	Non Float-Free EPIRB
	SDT 406 A (see Note f)	6	2	Automatic ELT
Signature Industry Ltd.	SARBE10-I286	128	2	Non Float-Free EPIRB
Skanti (see Note z)	TP 2	77	1	Float-Free EPIRB
Standard Comm.	MT400	139	2	Non Float-Free EPIRB
State Designer's Bureau of Radiocommunication	SM-511	96	2	Float-Free EPIRB
TAIYO MUSEN Co. Ltd. (see Note u)	REB-22 (see Note k)	56	2	Float-Free EPIRB
	REB-23-01 (see Note l)	86	2	Float-Free EPIRB
	REB-23-02	86	2	Non Float-Free EPIRB
	REB-24	87	2	Non Float-Free EPIRB
Techtest Limited	ELT 503-1	97	1	Manual ELT
	ELT 503-3	97	1	Automatic ELT
	ELT 503-11	97	1	Automatic ELT
	ELT 503-2, ELT 503-8	103	1	Automatic ELT
	ELT 503-12	103	1	Manual ELT
	PLB 500-4, PLB 500-20 500-12	103 111	1 2	PLB Automatic ELT or PLB
Thales Underwater Systems Ltd.	SEPIRB 406	137	2	Float-Free EPIRB
TOYO Communication Equipment Co. Ltd. (see Note z)	C-2277 (see Note t)	37	2	Float-Free EPIRB
Yaroslavsky Radio Engineering Works	ARB-PK	46	2	PLB
	ARB-PK1	47	1	PLB
	ARB-PK10	48	1	PLB
	ARB-MKS "Afalina"	59	1	Float-Free EPIRB
	ARB-PKE "Excom"	60	1	PLB

Table IX - C/S Type Approved 406 MHz Beacons Listed by Manufacturer 4/4
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Notes:

- * Information on Cospas-Sarsat type approved 406 MHz beacons listed by certificate number, as well as a list of aircraft external antennas for 406 MHz ELTs tested to Cospas-Sarsat requirements are available at Cospas-Sarsat web site address: <http://www.cospas-sarsat.org>
- (a) Cospas-Sarsat Type Approval is a confirmation of compatibility with equipment in the Cospas-Sarsat System. It does not affect the manufacturer's obligations to obtain national type acceptance and/or relevant authorizations from national Administrations regarding registration and use of 406 MHz distress beacons.
- (b) Cospas-Sarsat Classes (operating temperature range):

Class 1:	-40°C to +55°C;
Class 2:	-20°C to +55°C.
- (c) As stated by manufacturer. Installation characteristics are not addressed in Cospas-Sarsat specification and type approval testing.
- (d) Class of the beacon (1 or 2) is dependent on type of battery installed.
- (e) With external navigation device.
- (f) Models no longer in production.
- (g) On 31 January 1996, Litton Special Devices (USA) sold the design and production rights for EPIRB Models 948 and 952 (Certificates Nos. 19, 29, 57, 73) to The Guest Company, Inc. (USA).
- (h) Also sold as SOS Rescue 406m, Sea 406m, Sailor 406m (Certificate No.119).
- (i) Also sold as SOS Rescue 406c, Sea 406c, Sailor 406c (Certificate No.119).
- (j) Also sold as Rescue 406a, Sea 406a, Sailor 406a (Certificate No.119).
- (k) Also sold as Anritsu RJ301A and ZENICALL EP (Certificate No.56).
- (l) Also sold as Anritsu RJ302A and ZENICALL-F (Certificate No.86).
- (m) On 3 July 1996, Northern Airborne Technology Ltd. (Canada) purchased the designs from MPR Teltech (Canada) and production from Alden Electronics (USA) for SATFIND-406TM Pocket PLB (Certificate No.71), SATFIND-406TM Survival EPIRB (Certificate No.78) and SATFIND-406 ELT Model A-1000 (Certificate No.93).
- (n) With internal navigation device.
- (o) Also sold as McMurdo RB406 (Certificate No.2).
- (p) Also sold as Newcom NC-270, Tellumat PT 280-A and McMurdo MCM 406A (Certificate No.70).
- (q) Also sold as Newcom NC-270a, Tellumat PT 280-M and McMurdo MCM 406M (Certificate No.72).
- (r) Also sold as Rescuer 406 S (Certificate No.39).
- (s) Also sold as Rescuer 406 P and as Rescuer PW (Certificate No.41).
- (t) Also sold as Furuno FSO-400 (Certificate No.37).
- (u) On 1 April 2000, NEC Radio Electronics Co. Ltd. (Japan) sold the design and production rights for EPIRB Models REB-22, REB-23-01, REB-23-02 and REB-24 (Certificates Nos. 56, 86 and 87) to TAIYO MUSEN Co. Ltd (Japan).
- (v) Also sold as SOS Precision 406a, Sailor GPS 406a (see Note n) (Certificate No.119).
- (w) Also sold as SOS Precision 406m, Sailor GPS 406m (see Note n) (Certificate No.119).
- (x) Also sold as SOS Precision 406c, Sailor GPS 406c (see Note n) (Certificate No.119).
- (y) On 1 January 2000, company name was changed from AlliedSignal Aerospace Canada to Honeywel.
- (z) Stopped beacon manufacturing.
- (a1) In July 2000, Socata (France) sold the design and production rights for models ELT 96, ELT96 S and ELT 97 (Certif. No.74) to Air Precision (France).
- (a2) Models no longer in production, but supported by Sartech Engineering.
- (a3) Non Float-Free EPIRB - Class 2.
- (a4) Beacon is produced by Seimac Ltd., but marketed by Northern Airborne Technology Ltd.
- (a5) New company name Saracom Co. Ltd.
- (a6) For life raft installation.

Table X - Cospas-Sarsat System Documents 1/2

<u>General:</u>	Introduction to the Cospas-Sarsat System C/S G.003, Issue 5 - Revision 1, October 1999
	Cospas-Sarsat Glossary C/S G.004, Issue 1 - Revision 4, October 1999
	Cospas-Sarsat Guidelines on 406 MHz Beacon Coding, Registration and Type Approval C/S G.005, Issue 2 - Revision 1, October 1999
<u>Technical:</u>	Specification for Cospas-Sarsat 406 MHz Distress Beacons C/S T.001, Issue 3 - Revision 5, October 2003
	Cospas-Sarsat LEOLUT Performance Specification and Design Guidelines C/S T.002, Issue 3 - Revision 2, October 2002
	Description of the Payloads Used in the Cospas-Sarsat LEOSAR System C/S T.003, Issue 3 - Revision 2, October 2003
	Cospas-Sarsat LEOSAR Space Segment Commissioning Standard C/S T.004, Issue 1 - Revision 3, October 2001
	Cospas-Sarsat LEOLUT Commissioning Standard C/S T.005, Issue 2 - Revision 3, October 2003
	Cospas-Sarsat Orbitography Network Specification C/S T.006, Issue 2, October 2001
	Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard C/S T.007, Issue 3 - Revision 10, October 2003
	Cospas-Sarsat Acceptance of 406 MHz Beacon Type Approval Test Facilities C/S T.008, Issue 1 - Revision 2, October 2000
	Cospas-Sarsat GEOLUT Performance Specification and Design Guidelines C/S T.009, Issue 1 - Revision 2, October 2002
	Cospas-Sarsat GEOLUT Commissioning Standard C/S T.010, Issue 1 - Revision 3, October 2003
	Description of 406 MHz Payloads Used in the Cospas-Sarsat GEOSAR System C/S T.011, Issue 1 - Revision 3, October 2001
	Cospas-Sarsat 406 MHz Frequency Management Plan C/S T.012, Issue 1 - Revision 1, October 2003
	Cospas-Sarsat GEOSAR Space Segment Commissioning Standard C/S T.013, Issue 1, October 2001
	Cospas-Sarsat Frequency Requirements and Coordination Procedures C/S T.014, Issue 1, October 2003

Table X - Cospas-Sarsat System Documents 2/2

Operational:

Cospas-Sarsat Data Distribution Plan
C/S A.001, Issue 4 - Revision 6, October 2003

Cospas-Sarsat Mission Control Centres Standard Interface Description
C/S A.002, Issue 4 - Revision 7, October 2003

Cospas-Sarsat System Monitoring and Reporting
C/S A.003, Issue 1 - Revision 10, October 2003

Cospas-Sarsat System Exercising
C/S A.004, Issue 1 - Revision 1, June 1998

Cospas-Sarsat Mission Control Centre Performance Specification and Design Guidelines
C/S A.005, Issue 3 - Revision 2, October 2002

Cospas-Sarsat Mission Control Centre Commissioning Standard
C/S A.006, Issue 3, October 2003

Reports:

1990 Exercise of the Cospas-Sarsat 406 MHz System
C/S R.005, October 1992 (Summary Report)

GEOSAR D&E Summary Report
C/S R.009, October 1999

Cospas-Sarsat Report on System Status and Operations
C/S R.007, No.19: January - December 2002

Cospas-Sarsat Phase-Out Plan for 121.5/243 MHz Satellite Alerting Services
C/S R.010, Issue 1 - Revision 2, October 2003

Cospas-Sarsat Meteosat Second Generation (MSC) GEOSAR Performance Evaluation Plan
C/S R.011, Issue 1 - Revision 1, October 2003

ONLY FIVE YEARS TO GO

**On 1 February 2009 Cospas-Sarsat satellites will cease relaying
121.5 MHz beacon signals.**

Make sure you are ready to switch to 406 MHz!

Cospas-Sarsat Secretariat
99 City Road, London EC1Y 1AX, United Kingdom
Telephone: National 020-7728 1391 International +44 20-7728 1391
Facsimile +44 20-7728 1170 Internet e-mail: cospas_sarsat@imso.org

Cospas-Sarsat Web Site Address: <http://www.cospas-sarsat.org>
