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COSPAS-SARSAT RCC MESSAGE FORMATS

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COSPAS-SARSAT RCC MESSAGE FORMATS

References:

IAMSAR Manual Vol 2, Appendix B
C-S System Interface Description (SID),
Document C/S A.002

Note: MCC to MCC Message Formats are not discussed



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COSPAS-SARSAT RCC MESSAGE FORMATS

- Why have a world wide standard format?
- Use of message fields for building an alert message
- Not all message fields are supported for the various types of alert messages
- Need for RCCs to understand ALL message fields in an alert message



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COSPAS-SARSAT MESSAGE BUILDING BLOCKS (1)

MF#	TITLE
45	MESSAGE TYPE
46	CURRENT MESSAGE NUMBER
47	MCC REFERENCE
48	DETECTION TIME & SPACECRAFT ID
49	DETECTION FREQUENCY
50	COUNTRY OF BEACON REGISTRATION
51	USER CLASS OF BEACON
52	IDENTIFICATION
53	EMERGENCY CODE



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COSPAS-SARSAT MESSAGE BUILDING BLOCKS (2)

MF#	TITLE
54	POSITIONS
54a	RESOLVED POSITION
54b	A POSITION & PROBABILITY
54c	B POSITION & PROBABILITY
54d	ENCODED POSITION AND TIME OF UPDATE
55	SOURCE OF ENCODED POSITION DATA
56	NEXT PASS TIMES



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COSPAS-SARSAT MESSAGE BUILDING BLOCKS (3)

MF#	TITLE
57	BEACON HEX ID & HOMING SIGNAL
58	ACTIVATION TYPE
59	BEACON NUMBER
60	OTHER ENCODED INFORMATION
61	OPERATIONAL INFORMATION
62	REMARKS
63	END OF MESSAGE



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RCC 121.5 MHz ALERT

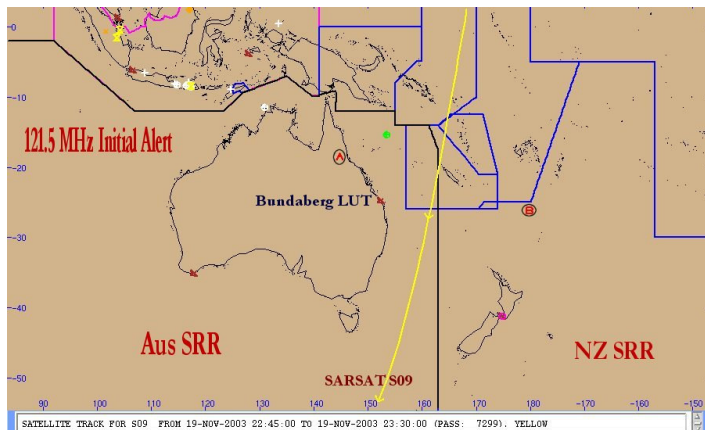
P 192326Z NOV 03

FM RCC AUSTRALIA/AUMCC

TO RCC AUSTRALIA

BT

1. DISTRESS COSPAS-SARSAT INITIAL ALERT
 2. MSG NO: 47761 AUMCC REF: 32503/32504
 3. DETECTED AT: 19 NOV 03 2314 UTC BY SARSAT S09
 4. DETECTION FREQUENCY: 121.5007 MHz
 5. COUNTRY OF BEACON REGISTRATION: NIL
 6. USER CLASS: NIL
 7. EMERGENCY CODE: NIL
 8. POSITIONS:
 - RESOLVED - NIL
 - DOPPLER A - 18 29 S 144 52 E PROBABILITY 50 PERCENT
 - DOPPLER B - 26 13 S 179 54 E PROBABILITY 50 PERCENT
 - ENCODED - NIL
 9. ENCODED POSITION PROVIDED BY: NIL
 10. NEXT PASS TIMES (UTC):
 - RESOLVED - NIL
 - DOPPLER A - 19 NOV 03 2325
 - DOPPLER B - 19 NOV 03 2325
 - ENCODED - NIL
 11. HEX ID: NIL
 12. ACTIVATION TYPE: NIL
 13. BEACON NUMBER ON AIRCRAFT OR VESSEL: NIL
 14. OTHER ENCODED INFORMATION: NIL
 15. OPERATIONAL INFORMATION:
 - LUT ID: AULUTE BUNDABERG, AUSTRALIA
 16. REMARKS: NIL
- END OF MESSAGE





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RCC 406 MHz INITIAL ALERT

P 171905Z NOV 03

FM RCC AUSTRALIA/AUMCC

TO AFTN RCC WELLINGTON

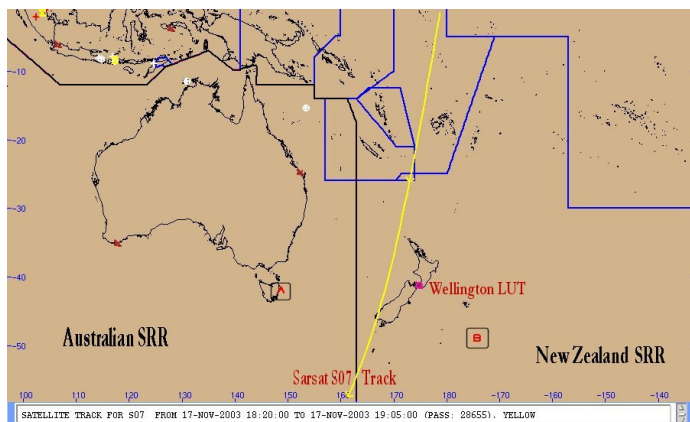
EMAIL RCC WELLINGTON

BT

1. DISTRESS COSPAS-SARSAT INITIAL ALERT
 2. MSG NO: 23123 AUMCC REF: 9D0E0DB3FC00001
 3. DETECTED AT: 17 NOV 03 1856 UTC BY SARSAT S07
 4. DETECTION FREQUENCY: 406.0256 MHz
 5. COUNTRY OF BEACON REGISTRATION: 232/ G. BRITAIN
 6. USER CLASS: USER-LOCATION - SERIAL USER
MARITIME (NON FLOAT FREE) SERIAL NO: 0224511
 7. EMERGENCY CODE: UNSPECIFIED DISTRESS
 8. POSITIONS:

RESOLVED	-	NIL
DOPPLER A	- 41 56 S 148 45 E	PROBABILITY 56 PERCENT
DOPPLER B	- 48 53 S 174 13 W	PROBABILITY 44 PERCENT
 - ENCODED -
 9. ENCODED POSITION PROVIDED BY: NIL
 10. NEXT PASS TIMES (UTC):

RESOLVED	-	NIL
DOPPLER A	- 17 NOV 03 2038	
DOPPLER B	- 17 NOV 03 2038	
ENCODED	-	NIL
 11. HEX ID: 9D0E0DB3FC00001 HOMING SIGNAL: 121.5 MHZ
 12. ACTIVATION TYPE: MANUAL
 13. BEACON NUMBER ON AIRCRAFT OR VESSEL NO:
 14. OTHER ENCODED INFORMATION: NIL
 15. OPERATIONAL INFORMATION:
RELIABILITY OF DOPPLER POSITION DATA - SUSPECT
LUT ID: NZLUT WELLINGTON, NEW ZEALAND
 16. REMARKS: NIL
- END OF MESSAGE





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OTHER ENCODED INFORMATION

- Type Approval Certificate Nr.
 - Provides information on beacon manufacturer and beacon model
- 24-BIT Address
 - Provides information on country allocation
- Location Protocol Position Accuracy
 - 2, 4 & 15 Mins of Lat/Long



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OPERATIONAL INFORMATION (1)

- Doppler solution reliability indicator
 - Solution suspect when certain technical parameters are below the ideal
 - During Satellite Manoeuvres
- Parameters include
 - Window Factor
 - CTA
 - Bias Standard Deviation
 - Number of points



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OPERATIONAL INFORMATION (2)

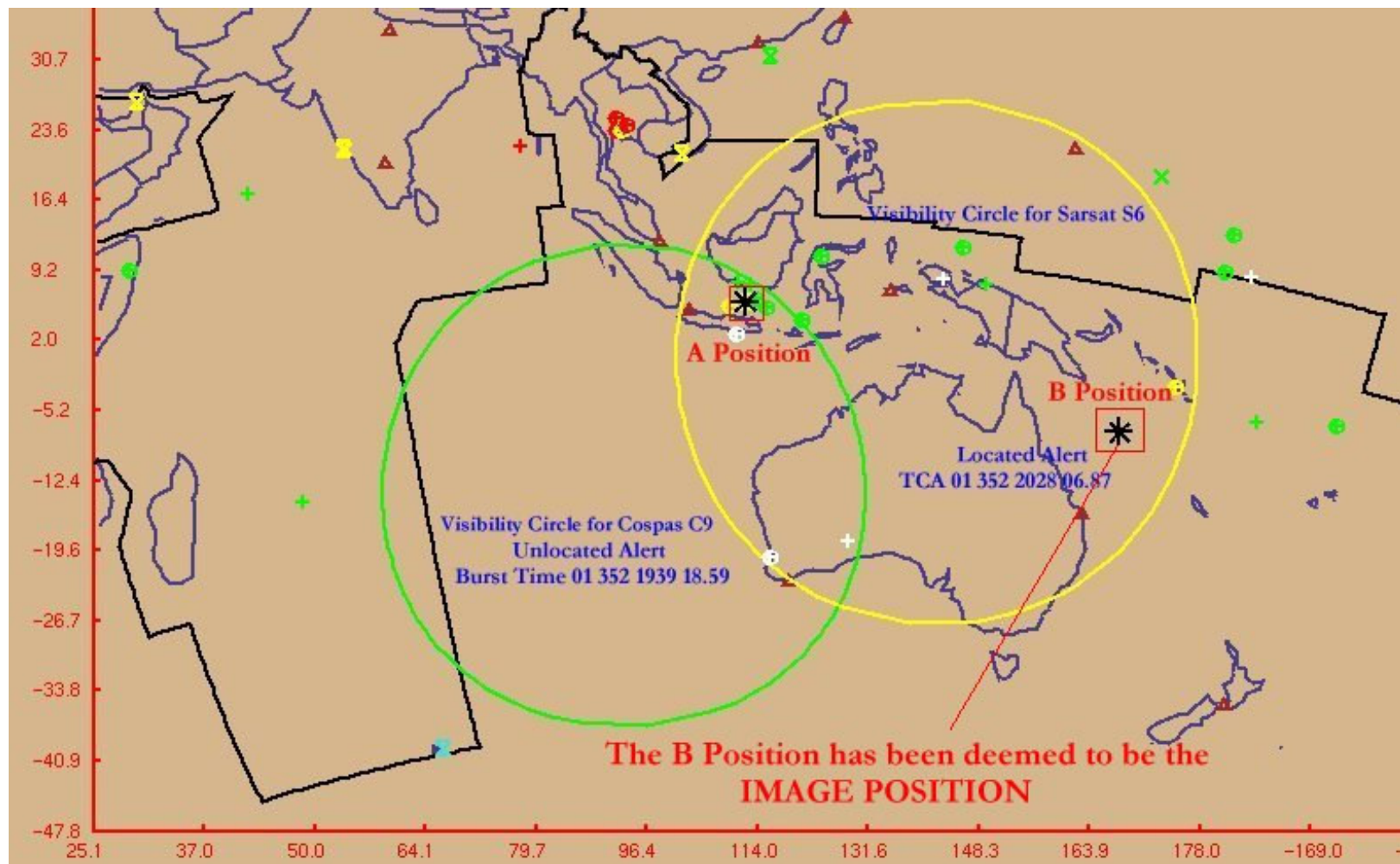
- Image Notification
 - Not to be construed as ambiguity resolved
- Conflict Alerts
 - Distance between alerts
- Miscoded Beacon
 - BCH errors



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IMAGE DETERMINATION





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BETTER QUALITY ALERTS

- Same Beacon Event (SBE) Concept
 - Same satellite, same beacon, same TCA
- Applies to “Conflict” Alerts
- Technical parameters used to establish better quality alert
 - Bias Standard Deviation, Window Factor and Error Ellipse



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121.5/243 MHz ALERT FORMAT TYPES

- **RCC 121.5/243 MHz INITIAL ALERT**
- **RCC 121.5/243 MHz RESOLVED ALERT**
- **RCC 121.5/243 MHz MISSED ALERT**



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406 MHz ALERT FORMAT TYPES (1)

- **406 MHz UNLOCATED ALERT**
- **406 MHz INITIAL ALERT**
- **406 MHz NOCR ALERT**
- **406 MHz CONFLICT ALERT**
- **406 MHz RESOLVED ALERT**



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406 MHz ALERT FORMAT TYPES (2)

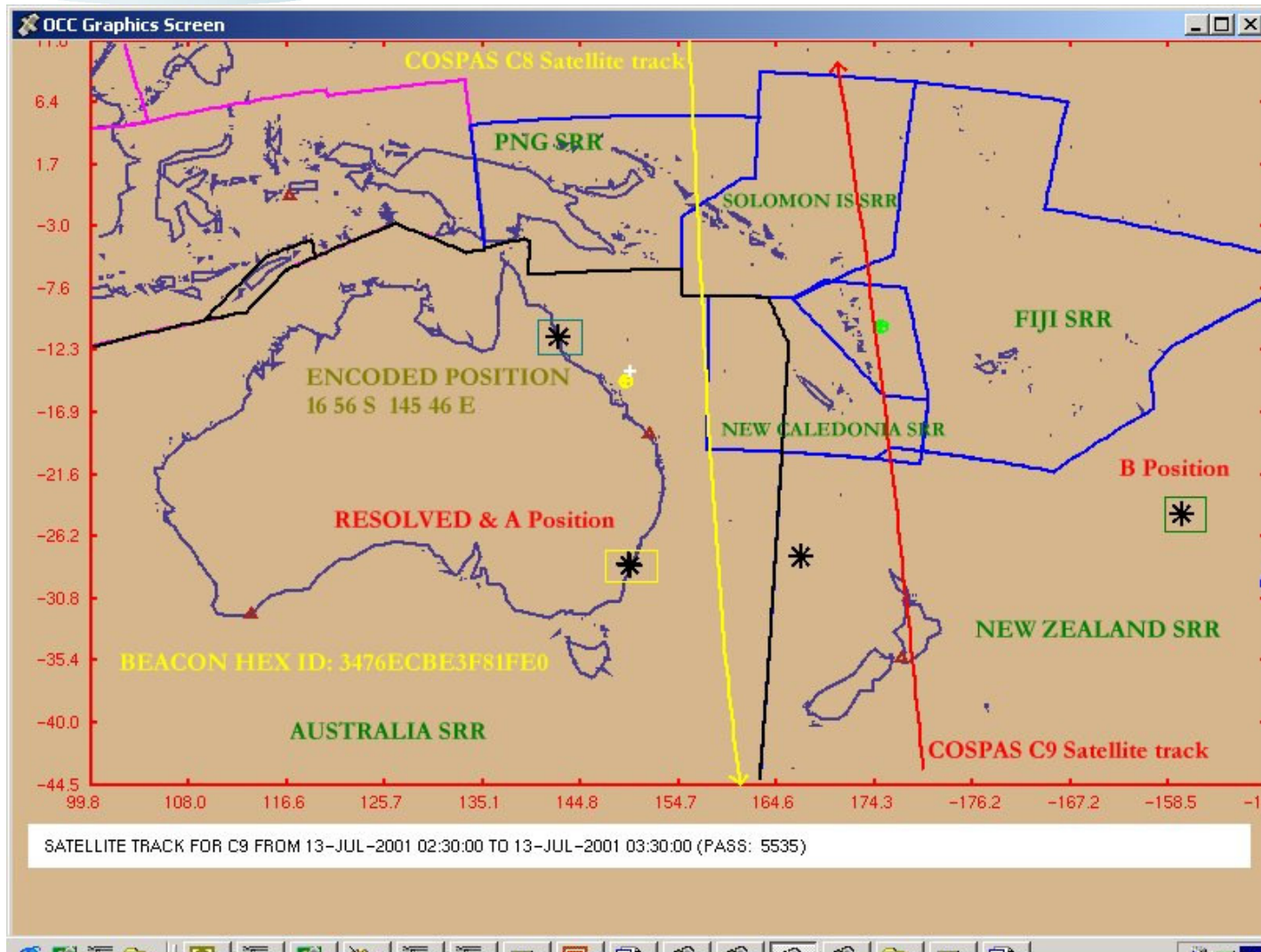
- **406 MHz ENCODED ALERT**
- **406 MHz MIRROR ALERT**
- **406 MHz MISSED ALERT**



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ENCODED, CONFLICT & RESOLVED ALERTS





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QUESTIONS?

Albany LUT



Bundaberg LUT

