

# ***INSTANT***

Makassar Mooring Deployments

Baruna Jaya I

January 14-20, 2004

Mooring diagrams, component lists, release codes,  
and triangulation data

INSTANT

MAK East Initial Deployment

Baruna Jaya I

Date: 18 Jan 2004  
 Position Start  
 Anchor drop  
 Top float under  
 Surveyed

Lat	Long	Time (gps)	Depth
		04:27	
02° 51.246' S	118° 37.716' E	06:30	1617 m
02° 51.398' S	118° 37.209' E	06:45	1661 m
02° 51.522' S	118° 37.734' E		1613 <sup>1</sup> (pdr)

Instrument/Package	Serial #	Depth (design)	Time (gps)	CSIRO Tag
Syntactic 32"		113	04:27	91
Argos beacon <sup>2</sup>	ID 43507	113	04:27	
Radio/strobe Novatech			04:27	
Microcat T.C	2709	115	04:30	76
Microcat T,C <sup>3</sup>	1778	265	04:40	180
SBE 39	1246	294	04:59	185
45" syntactic			05:00	
ADCP Longranger	3221	300		59
32" Syntactic			05:00	
Work Horse 300	3483	307		89
Aquadopp clamp on	0976	400	05:07	335
Benthos x 4		746	05:20	
RCM 11	96	750	05:20	331
Benthos x 4		1159	05:33	
Parachute			05:52	
Benthos x 4		1585	06:06	
8242 release	16042	1587	06:06	111
8242 release	17121	1587		111
Anchor		1610	06:29	

<sup>1</sup> Have PDR depth only at surveyed position. Too acoustically noisy to get range on Edgetech deck box.

<sup>2</sup> Top float deployed without activating strobe/flasher or ARGOS beacon. Argos beacon should be ok, as it has a seawater switch which is shorted on deck via loose alligator clips.

<sup>3</sup> Extra CSIRO-owned instrument, inserted in mooring during deployment at nom depth 265 m

Release codes

Mooring	SN	Enable	Disable A/B	Release	Interrogate A/B (KHz)	Reply A/B (KHz)
<b>E</b>	<b>16042</b>	<b>537556</b>	<b>537533</b> <b>537575</b>	<b>533145</b>	<b>11</b> <b>9</b>	<b>12</b> <b>11</b>
<b>E</b>	<b>17121</b>	<b>564756</b>	<b>564733</b> <b>564775</b>	<b>543536</b>	<b>11</b> <b>9</b>	<b>12</b> <b>11</b>
W	705105	404016	403772 <sup>4</sup>	424653	11	8
W	16209	555135	555116 555150	534241	11 9	12 11

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<sup>4</sup> corrected from original report per K Miller email – was 403722. bah

INSTANT Mooring  
**Makassar East**

Target Position:

2° 51.24' S 118° 37.69' E

Target Depth: 1610 m

<b>Anchor drop</b>	
Lat:	02° 51.246' S
Lon:	118° 37.716' E
Date:	18 Jan 2004
Time(Z):	06:29
Depth(m):	1617 m
<b>Top Float Under</b>	
Lat:	02° 51.398' S
Lon:	118° 37.209' E
Date:	18 Jan 2004
Time(Z):	06:45
Depth(m):	1660 m

CSIRO Instr  
 added during  
 deployment

Nominal depth	component	S/N	CSIRO tag	length	rope
113 m	Syntactic Float 32" w/ Argos flasher		91	1 m	5mm wire jc
115 m	Microcat T,C,P	2709	76	179 m	5mm wire jc
—265 m	Microcat T,C	1778	180		
	SBE39 Trec	1246	185	5 m	5mm wire jc
294 m	45" ADCP Buoy LongRanger	3221	59	5 m	chain 13mm
307 m	32" ADCP Buoy WH300	3483	89	91 m	7mm wire jc
400 m	Aquadopp	0976	335	344 m	7mm wire jc
746 m	Benthos		(4)	2 m	chain 13mm
750 m	RCM 11	96	331	406 m	7mm wire jc
1159 m	Benthos		(4)	400 m	7mm wire jc
				5 m	7mm wire jc
	12' Drouge			15 m	8tonne strop
1585 m	Benthos		(4)		
1587 m	8242 release(2)	16042	111	15 m	8tonne strop
		17121		5 m	chain 13mm
	anchor 3105 kg				

ARGOS beacon: ID 43507

sn \_\_\_\_\_

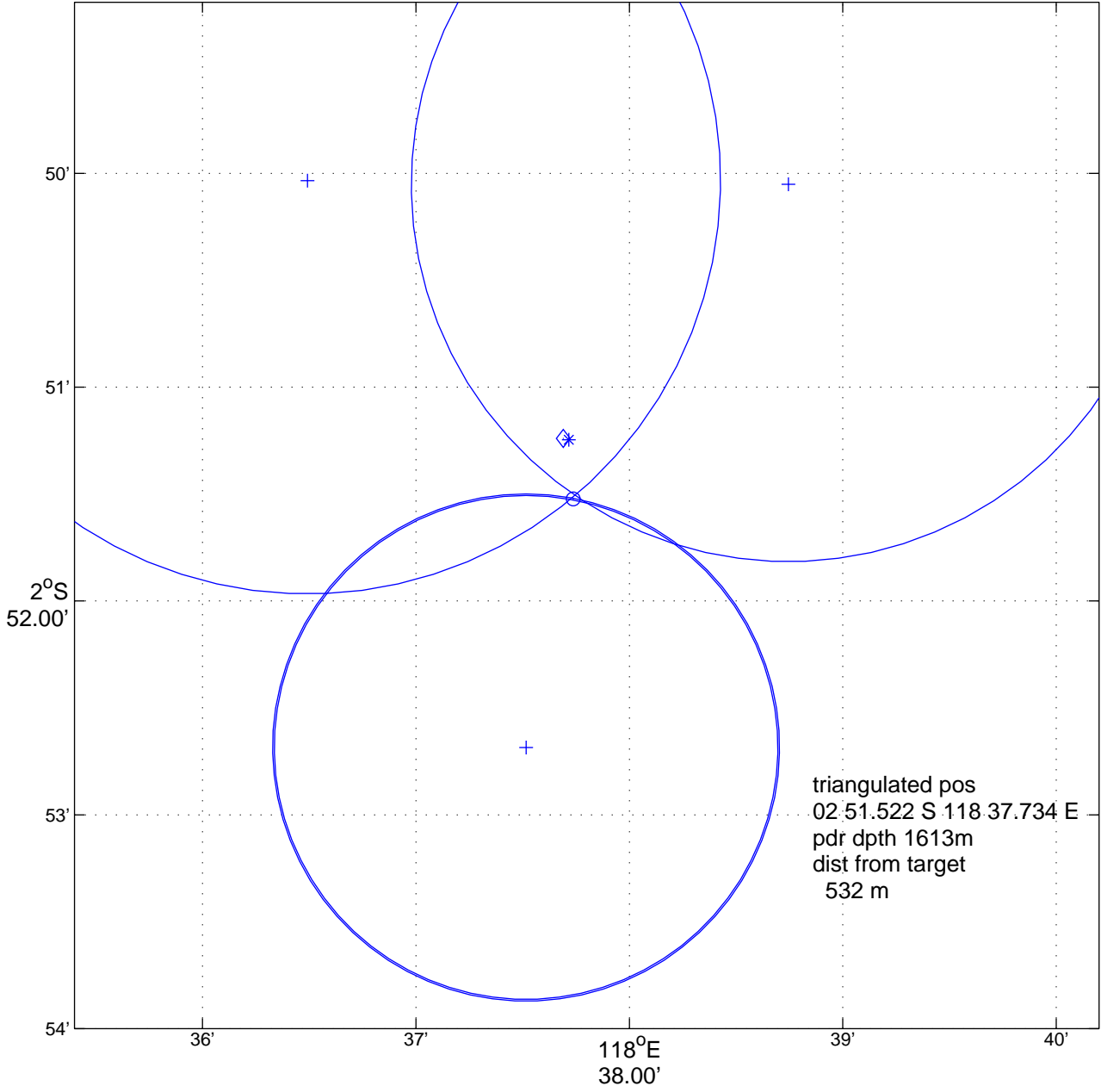
**Release codes:**

sn	en	dis	rel	freq	
16042	537556	537533	533145	11	12
		537575		9	11
17121	564756	564733	543536	11	12
		564775		9	11

**Triangulated position:**

02° 51.522' S 118° 37.734 E  
 Depth 1613 m

INSTANT MAK East Deployment 18 Jan 2004



Date: 18 Jan 04	Lat	Long	Time (gps)	Depth
Position Start			09:47	
Anchor drop	02° 51.711' S	118° 27.052' E	12:50	2147
Top float under	Not observed (darkness)			
Surveyed	02° 51.888' S	118° 27.276' E		2146 (BJ I) 2117 (deck box range <sup>1</sup> )

Instrument/Package	Serial #	Depth (design)	Time	Tag
Syntactic 32"				
Argos beacon	ID43508	38	09:47	50
Aquadopp adcm	0968	38		
Radio/strobe Novatech		38		
SBE 39	1238	45	09:48	334
SBE 39	1241	60	09:49	30
SBE 39	1245	80	09:51	139
SBE 39	1243	100	09:54	338
Microcat T.C	2708	115	09:56	175
SBE 39	1244	129	09:57	144
SBE 39	1242	150	09:59	197
SBE 39	1240	170	10:01	186
Benthos x 2		196	10:10	
Sontech ACM	0254	200	10:10	337
SBE 39	1239	205	10:11	381
SBE 39	1237	225	10:12	333
SBE 39	1236	244	10:13	154
Microcat T.C	2707	265	10:15	172
SBE 39	1235	294	10:17	332
45" syntactic		300		
ADCP Longranger	3370	300	10:32	113
32" Syntactic				
Work Horse 300	3441	307	10:32	155

<sup>1</sup> Releases are ~ 21 m off bottom, and transducer was ~10 m below water surface during survey. Survey deck box set for sound speed = 1500 m/s.

Instrument/Package	Serial #	Depth (design)	Time	Tag
SBE 39	1231	332	10:34	6
SBE 39	1233	366	10:37	41
Aquadopp clamp on	0973	400	10:41	52
SBE 39	1234	434	10:44	398
SBE 39	1232	468	10:48	355
Benthos x 8		736	11:07	
Aquadopp clamp on	1005	750	11:12	23
Benthos x 8		1495	11:42	
MAVS ACM	10138	1500	11:42	24
Parachute			12:23	
Benthos x 4		2110	12:32	
8242 release	16209	2113	12:32	102
8242 release	705105	2113	12:32	
Anchor		2137	12:50	

Release codes

Mooring	SN	Enable	Disable A/B	Release	Interrogate A/B (KHz)	Reply A/B (KHz)
E	16042	537556	537533 537575	533145	11 9	12 11
E	17121	564756	564733 564775	543536	11 9	12 11
<b>W</b>	<b>705105</b>	<b>404016</b>	<b>403772<sup>2</sup></b>	<b>424653</b>	<b>11</b>	<b>8</b>
<b>W</b>	<b>16209</b>	<b>555135</b>	<b>555116</b> <b>555150</b>	<b>534241</b>	<b>11</b> <b>9</b>	<b>12</b> <b>11</b>

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<sup>2</sup> corrected from original per K Miller email – was 403722. bah

INSTANT Mooring  
**Makassar West**

Target Position:  
 2° 51.69' S 118° 27.51' E

Target Depth: 2138 m

**Anchor drop**  
 Lat: 02° 51.711' S  
 Lon: 118° 27.052' E  
 Date: 18 Jan 2004  
 Time(Z): 12:50  
 Depth(m): 2147 m

**Top Float Under**  
 Lat:  
 Lon: Dark - not observed, but  
 Date: later survey determined  
 Time(Z): mooring had settled  
 Depth(m):

depth	component	S/N	CSIRO	length	rope
38 m	Syntactic Float 32" w/ Aquadopp Argos flasher		50		
			srs		5mm wire jc
45 m		1238	SBE39 Trec	334	5 m
60 m		1241	SBE39 Trec	30	15 m
80 m		1245	SBE39 Trec	139	20 m
100 m		1243	SBE39 Trec	338	20 m
115 m	Microcat T,C	2708		175	15 m
		1244	SBE39 Trec	144	14 m
129 m		1242	SBE39 Trec	197	21 m
150 m		1240	SBE39 Trec	186	20 m
170 m					25 m
196 m	Benthos				
			srs (2)		
200 m	Sontek ACM	0254		337	2 m
			srs		chain 13mm
		1239	SBE39 Trec	381	4 m
205 m		1237	SBE39 Trec	333	20 m
225 m		1236	SBE39 Trec	154	19 m
244 m					21 m
265 m	Microcat T,C	2707		172	
		1235	SBE39 Trec	332	29 m
294 m					6 m
300 m	45" ADCP Buoy LongRanger	3370		113	
			srs		2 m*
307 m	32" ADCP Buoy WH300	3441		155	chain 13mm
		1231	SBE39 Trec	6	23 m
332 m		1233	SBE39 Trec	41	34 m
366 m					33 m
400 m	Aquadopp clamp-on	0973		52	
		1234	SBE39 Trec	398	34 m
434 m		1232	SBE39 Trec	355	34 m
468 m					267 m
736 m	Benthos				
			srs (8)		
			srs		10 m
750 m	Aquadopp clamp-on	1005		23	
					741 m
1495 m	Benthos				
			srs (8)		
			s		2 m
1500 m	MAVS ACM	10138		24	
			srs		584 m
			srs		5 m
	12' Drouge				
					15 m
2110 m	Benthos				
			srs (4)		
2113 m	8242 release(2)			102	
		16209			
		705105			
			srs		15 m
			srs		8tonne strop
			srs		5 m
			srs		chain 13mm
2137 m	anchor 3565 kg				

ARGOS beacon: ID 43508

sn \_\_\_\_\_

**Release codes:**

sn	en	dis	rel	freq	
16209	555135	555116	534241	11	12
		555150		9	11
705105	404016	403722	424653	11	8

**Triangulated position:**

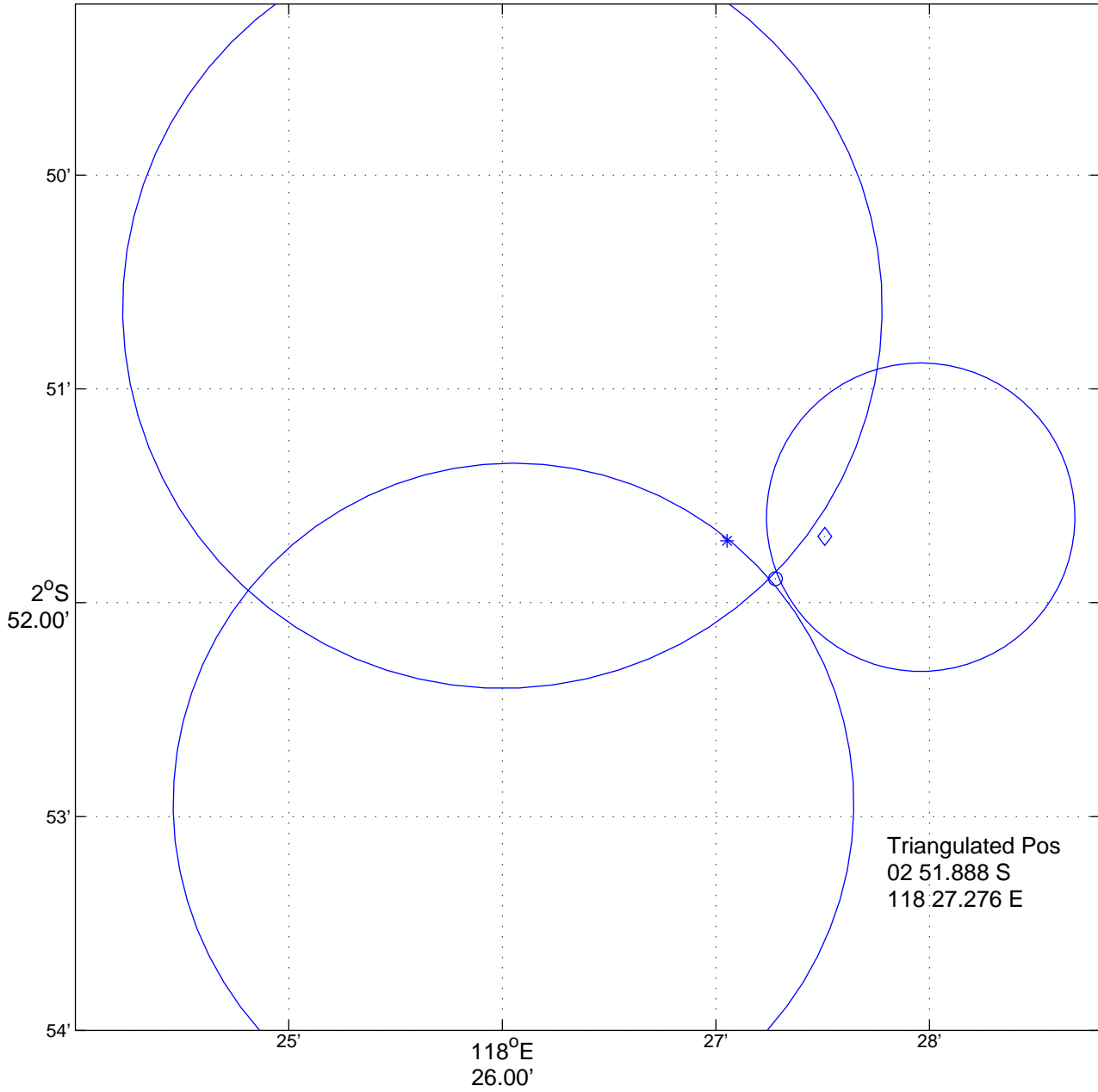
02° 51.888 S 118° 27.276 E  
 Depth 2145

NOTE - chain between 45" and 32" syntactic buoys shortened from 5 to 2 m to simplify deployment



- \* anchor drop
- triangulated
- ◇ target

INSTANT MAK West Deployment 18 Jan 2004



Mooring Triangulation Surveys

**Mak West: 02° 51.888' S 118° 27.276' E Depth 2146 m**

Latitude	Longitude	Slant Range (m)	Notes
02° 51.600'S	118° 27.959' E	2439	Deck box set for sound speed 1446 m/s. Corrected to 1500 m/s during triangulation calculation
02° 52.939'S	118° 26.052'E	3520	Deck box set for sound speed 1446 m/s. Corrected to 1500 m/s during triangulation calculation
02° 50.624'S	118° 26.000'E	3792	Deck box set for sound speed 1446 m/s. Corrected to 1500 m/s during triangulation calculation
02° 50.624'S	118° 26.000'E	3937	Deck box reset for sound speed = 1500 m/s. This value not used in calculation, just for check

**Mak East: 02° 51.522' S 118° 37.734' E Depth 1613 m**

Latitude	Longitude	Slant Range (m)	Notes
02° 52.685'S	118° 37.516'E	2719	Deck box set for sound speed 1500 m/s
02° 50.051'S	118° 38.745'E	3643	Deck box set for sound speed 1500 m/s
02° 50.034'S	118° 36.492'E	3926	Deck box set for sound speed 1500 m/s

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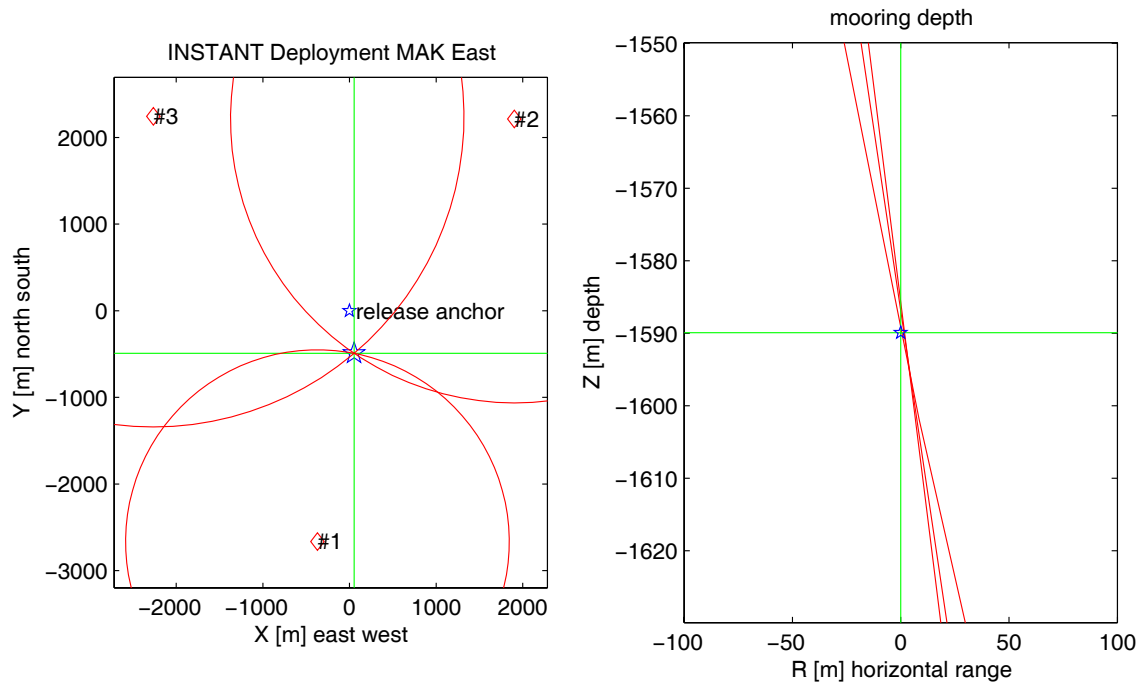
MAK East and West Initial Deployments

Baruna Jaya I

Addendum to triangulation surveys - Nov 18 2004

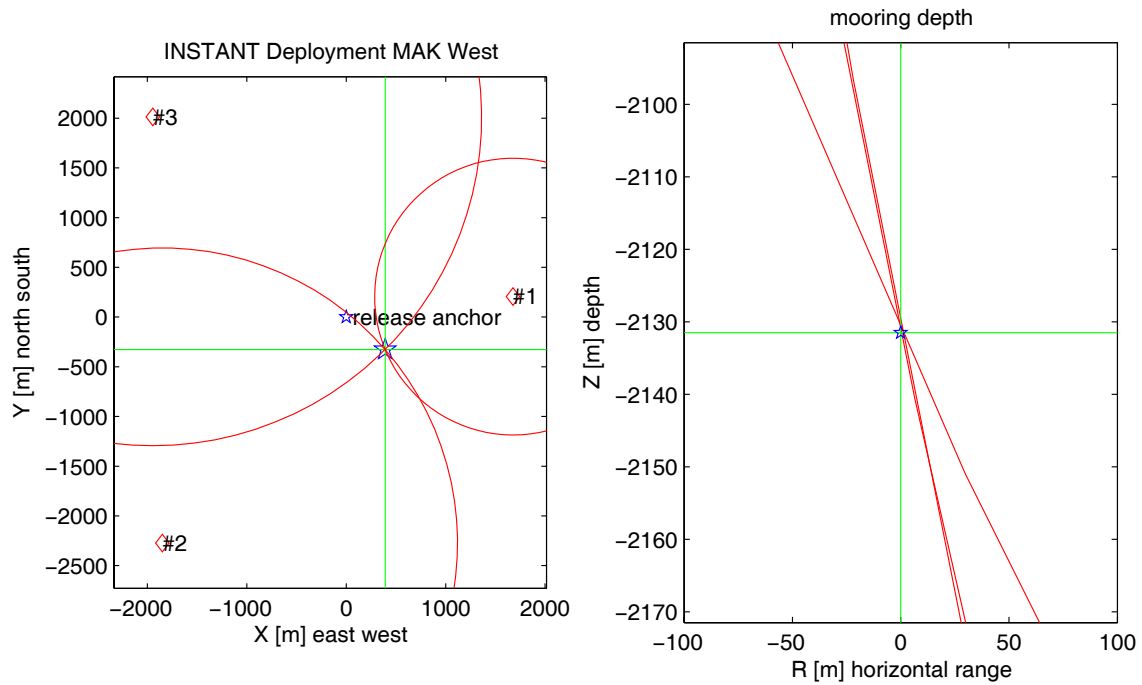
The following 2 figures represent triangulation calculations from M Visbeck's matlab program locatemoor\_m4sv, written during NBP0402 (April 2004).

B Huber



3D mooring position 2°S 51.511' 118°E 37.745'  
 mooring depth: 1590 [m]  
 slant error:0 [m] horizontal error:0 [m] vertical error:0 [m]  
 2D mooring position 2°S 51.510' 118°E 37.743'  
 horizontal error:12 [m]  
 anchor release position 2°S 51.246' 118°E 37.716' depth: 1617 [m]  
 drift: 495[m] heading: 174 [o]  
 sound speed at site 1494 [m/s]

#1 pos: 2°S 52.685' 118°E 37.516' range: 2708[m] range soundspeed 1500  
 #2 pos: 2°S 50.051' 118°E 38.745' range: 3628[m] range soundspeed 1500  
 #3 pos: 2°S 50.034' 118°E 36.492' range: 3910[m] range soundspeed 1500



3D mooring position 2°S 51.887' 118°E 27.264'  
 mooring depth: 2131 [m]  
 slant error:0 [m] horizontal error:0 [m] vertical error:0 [m]  
 2D mooring position 2°S 51.885' 118°E 27.261'  
 horizontal error:9 [m]  
 anchor release position 2°S 51.711' 118°E 27.052' depth: 2147 [m]  
 drift: 510[m] heading: 130 [o]  
 sound speed at site 1494 [m/s]

#1 pos: 2°S 51.600' 118°E 27.959' range: 2520[m] range soundspeed 1446  
 #2 pos: 2°S 52.939' 118°E 26.052' range: 3637[m] range soundspeed 1446  
 #3 pos: 2°S 50.624' 118°E 26.000' range: 3918[m] range soundspeed 1446

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MAK East and West Initial Deployments

Baruna Jaya I

Corrections to report – 1 June 2005

Per email from Kevin Miller:

- corrected triangulated position indicated for Mak East on the triangulation figure; corrected same error in A Gordon's cruise report (all references to the position should read 02 51.522 S not 02 51.222 S )
- corrected disable code in tables for Mak West release s/n 705105; should read 403772 not 403722.