

CASIUS Calibration Report



Vessel: Rachel Carson

Device No: 4789

Date/Time: 09 June 2015 18:40:06

Tcvt=Starboard USBL; Beacon=2913; GPS=GPS 1; Heading=Starboard Lodestar
[Corrections(P:0,R:0,H:1.8899999999999999)]; Attitude=Starboard Lodestar [Corrections(P:0,R:0,H:1.8899999999999999)]

Settings:

Initial Estimates for BoxIn	
Transceiver depth offset	2.693m
Transceiver depth	2.693m
Antenna starboard offset	2.272m
Antenna forward offset	11.507m
Antenna height offset	8.925m

Error Estimates for BoxIn	
DGPS lags USBL	0.00s
Range measurement	0.2m
Range gate	1.0m
DGPS position	2.0m
Beacon position	30.0m
Beacon depth	5.0m
Sound velocity	15.0m/s
Transceiver depth	0.5m
Transceiver offset	1.0m

Transceiver & Beacon	
Transceiver Index	11
Beacon Name	2913
Turn Around Time	160.0ms

Depth Aiding	
Boresight Angle Limit	22.0°
Depth Difference Limit	1.0m

Transceiver Attitude Calculation Inputs	
Angle Gate	2.0°
Known Heading Correction	n/a

Values Used During Data Collection	
Transceiver Pitch Correction	-0.43°
Transceiver Roll Correction	-0.30°
Transceiver Heading Correction	-0.86°
Sound Velocity	1485.0m/s

Results:

Beacon BoxIn	Beacon Eastings	Beacon Northings	Beacon Depth	Sound Velocity	Transceiver Starboard Offset	Transceiver Forward Offset
Before	568675.58m	4063118.43m	1083.06m	1485.00m/s	2.04m	4.99m
Calculated	568674.62m	4063117.93m	1084.82m	1479.21m/s	1.39m	5.05m
Calculated Accuracy	0.05m	0.05m	0.30m	0.25m/s	0.03m	0.07m

Transceiver Attitude	Pitch Correction	Roll Correction	Heading Correction
Before	-0.43°	-0.30°	-0.86°
Calculated	-0.44°	-0.30°	-0.86°
Calculated Accuracy	0.00°	0.00°	0.02°

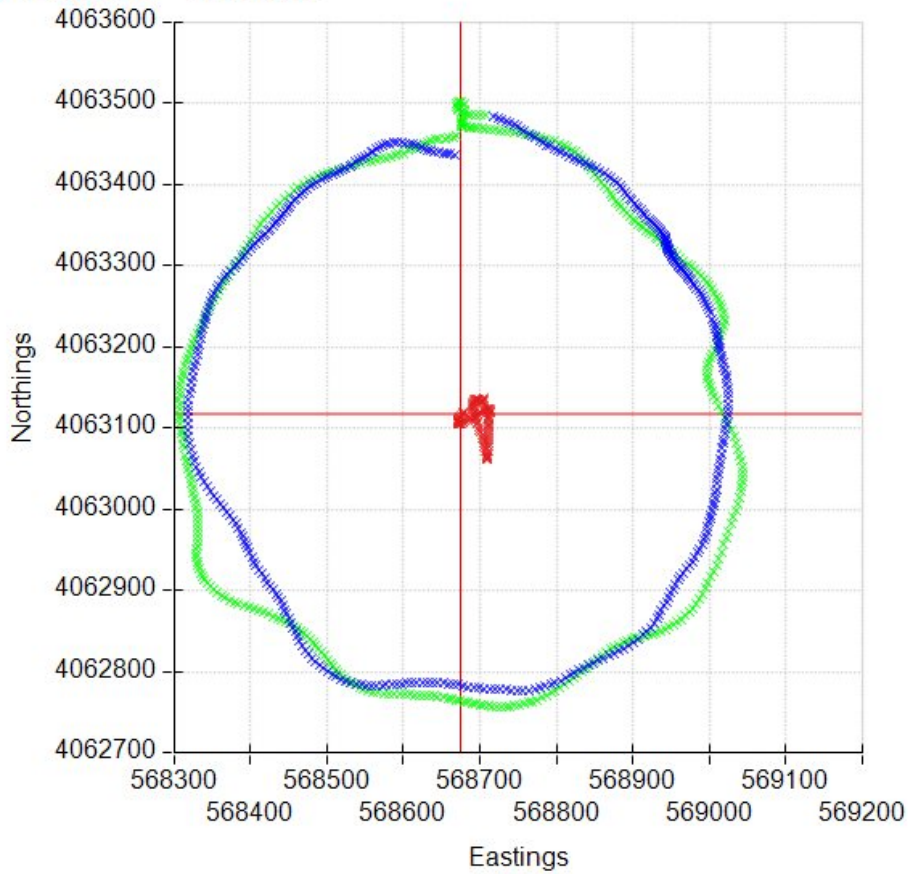
Statistics:

	Before CASIUS (distance)	After CASIUS (distance)	Before CASIUS (% depth)	After CASIUS (% depth)
39.4% Beacon Positions (1 sigma)	1.5m	2.3m	0.14	0.21
50.0% Beacon Positions (CEP)	1.8m	2.8m	0.17	0.26
63.2% Beacon Positions (1 Drms)	2.3m	3.3m	0.21	0.30
86.5% Beacon Positions (2 sigma)	3.4m	4.7m	0.31	0.43
98.2% Beacon Positions (2 Drms)	5.2m	6.7m	0.48	0.62

General:

	Beacon BoxIn	Transceiver Attitude
Number of Iterations	3	3
Number of Fixes Used	896	895
Number Depth Aided		0
Average weighted residuals	0.008	0.363

Vessel Track

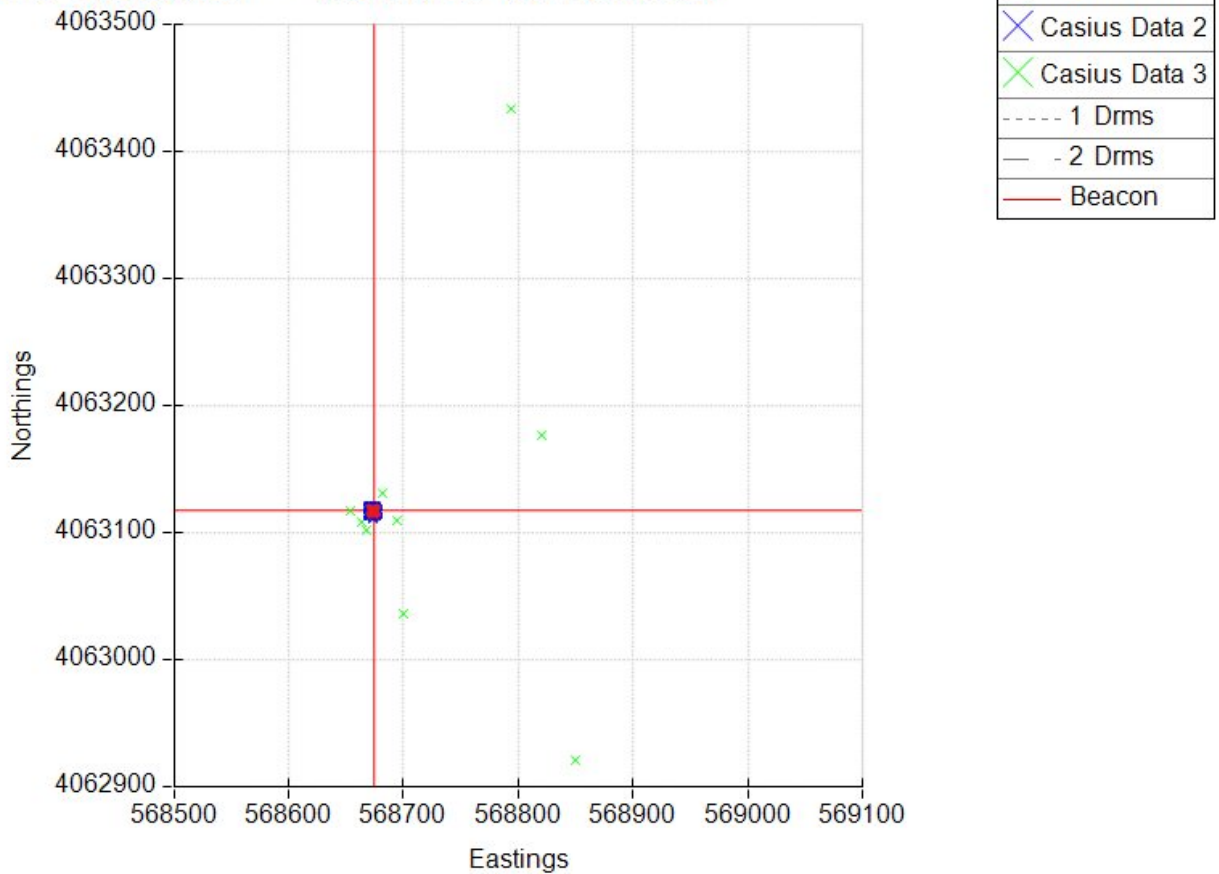


×	Casius Data 1
×	Casius Data 2
×	Casius Data 3
—	Beacon

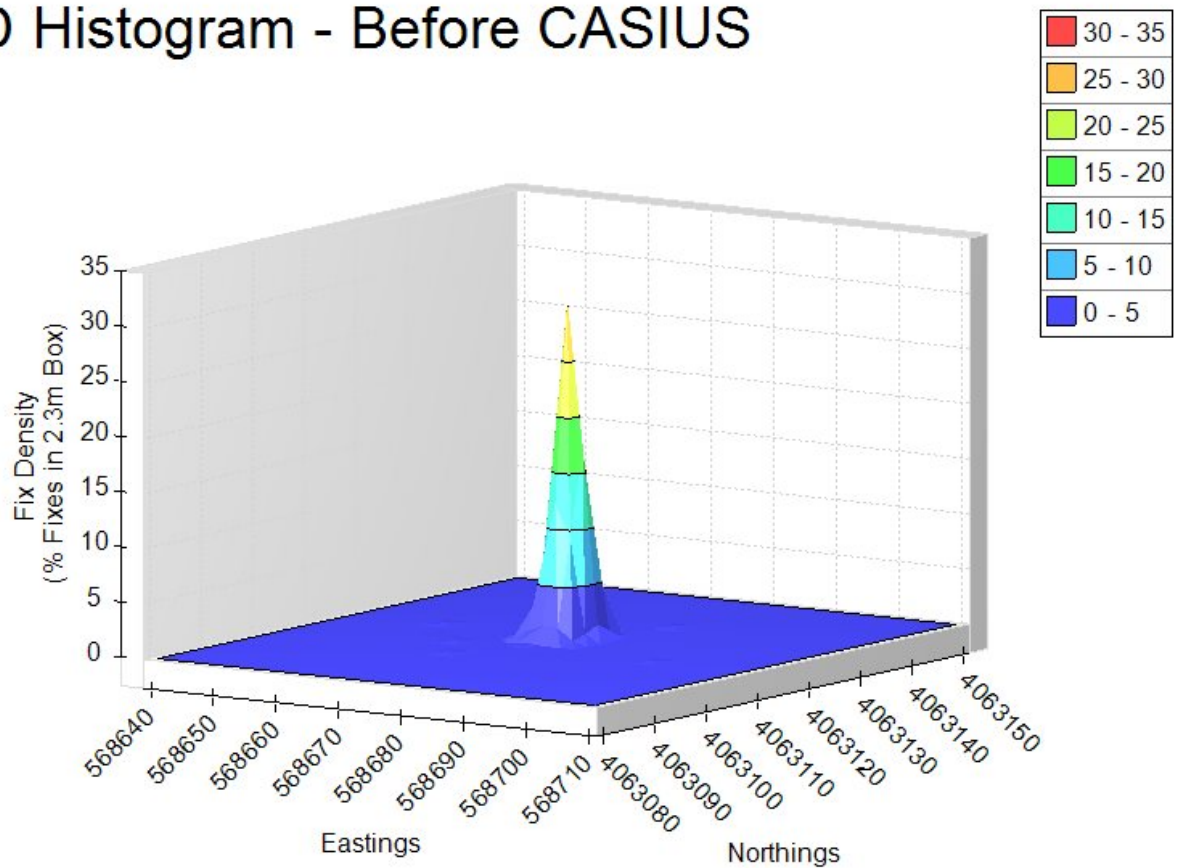
Data used:

Name	Filename	Start	End	#Acoustic	#Position
Casius Data 1	n/a	09/06/2015 18:40:06	09/06/2015 18:48:40	100	513
Casius Data 2	n/a	09/06/2015 20:02:39	09/06/2015 20:37:19	406	2080
Casius Data 3	n/a	09/06/2015 20:37:24	09/06/2015 21:11:04	391	2020

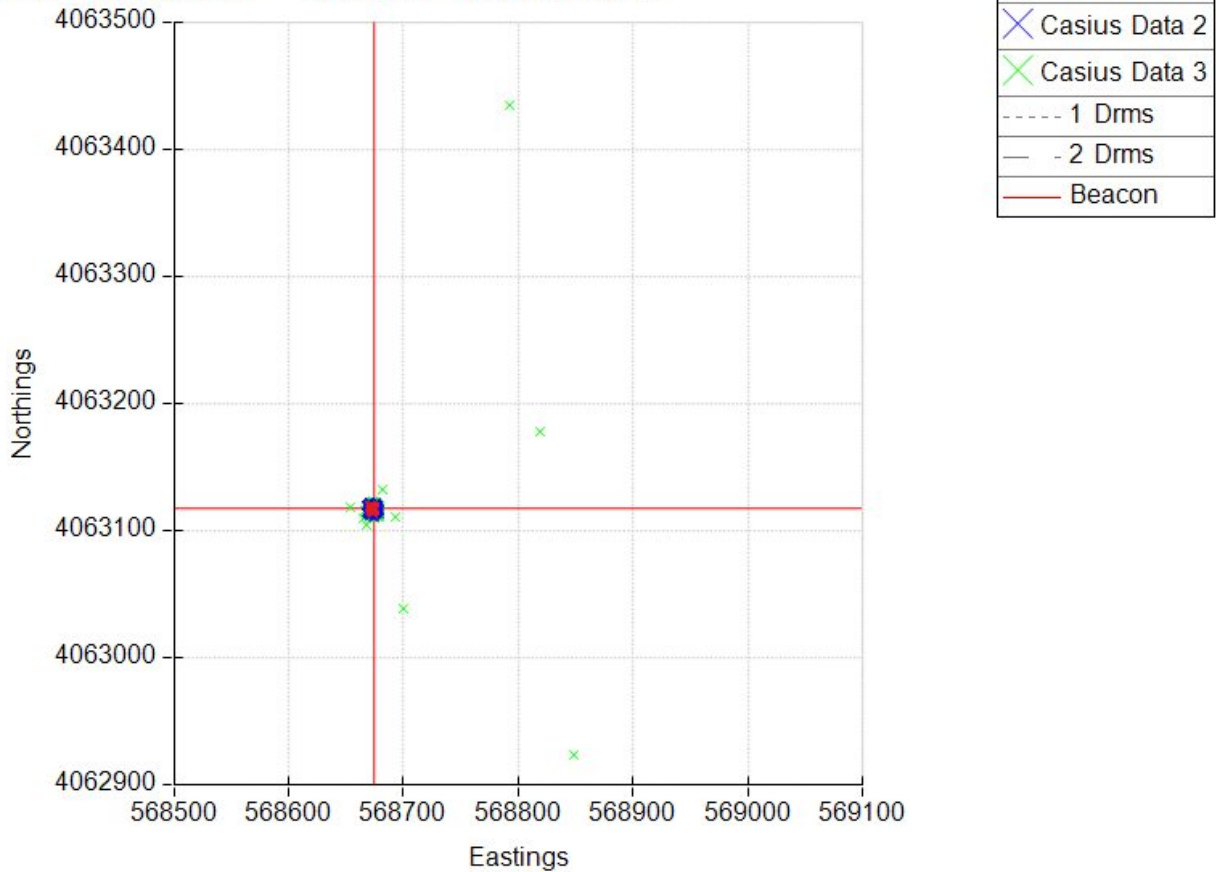
2D Scatter - Before CASIUS



3D Histogram - Before CASIUS



2D Scatter - After CASIUS



3D Histogram - After CASIUS

