

CASIUS Calibration Report



Vessel: Ship 1

Device No: 1663

Date/Time: 15 April 2019 05:47:26

Tcvt=Transceiver 1; Beacon=1012 1012; GPS=GNSS 1; Heading=PitchRoll 1 [Corrections(P:0,R:0,H:0)];
Attitude=PitchRoll 1 [Corrections(P:0,R:0,H:0)]

Settings:

Initial Estimates for BoxIn	
Transceiver depth offset	4.767m
Transceiver depth	7.180m
Antenna starboard offset	-3.382m
Antenna forward offset	-10.189m
Antenna height offset	27.443m

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	3.0m
Sound velocity	5.0m/s
Transceiver depth	0.5m
Transceiver offset	1.0m

Transceiver & Beacon	
Transceiver Index	11
Beacon Name	1012 1012
Turn Around Time	320.0ms

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	0.00°
Transceiver Roll Correction	0.00°
Transceiver Heading Correction	0.00°
Sound Velocity	1493.8m/s

Results:

Beacon BoxIn	Beacon Eastings	Beacon Northings	Beacon Depth	Sound Velocity	Transceiver Starboard Offset	Transceiver Forward Offset
Before	577750.85m	1087629.93m	2505.00m	1493.81m/s	-2.30m	-5.91m
Calculated	577751.85m	1087637.35m	2505.74m	1492.10m/s	-2.54m	-6.40m
Calculated Accuracy	0.04m	0.04m	0.24m	0.09m/s	0.04m	0.04m

Transceiver Attitude	Pitch Correction	Roll Correction	Heading Correction
Before	0.00°	0.00°	0.00°
Calculated	-0.17°	-0.28°	2.02°
Calculated Accuracy	0.00°	0.00°	0.02°

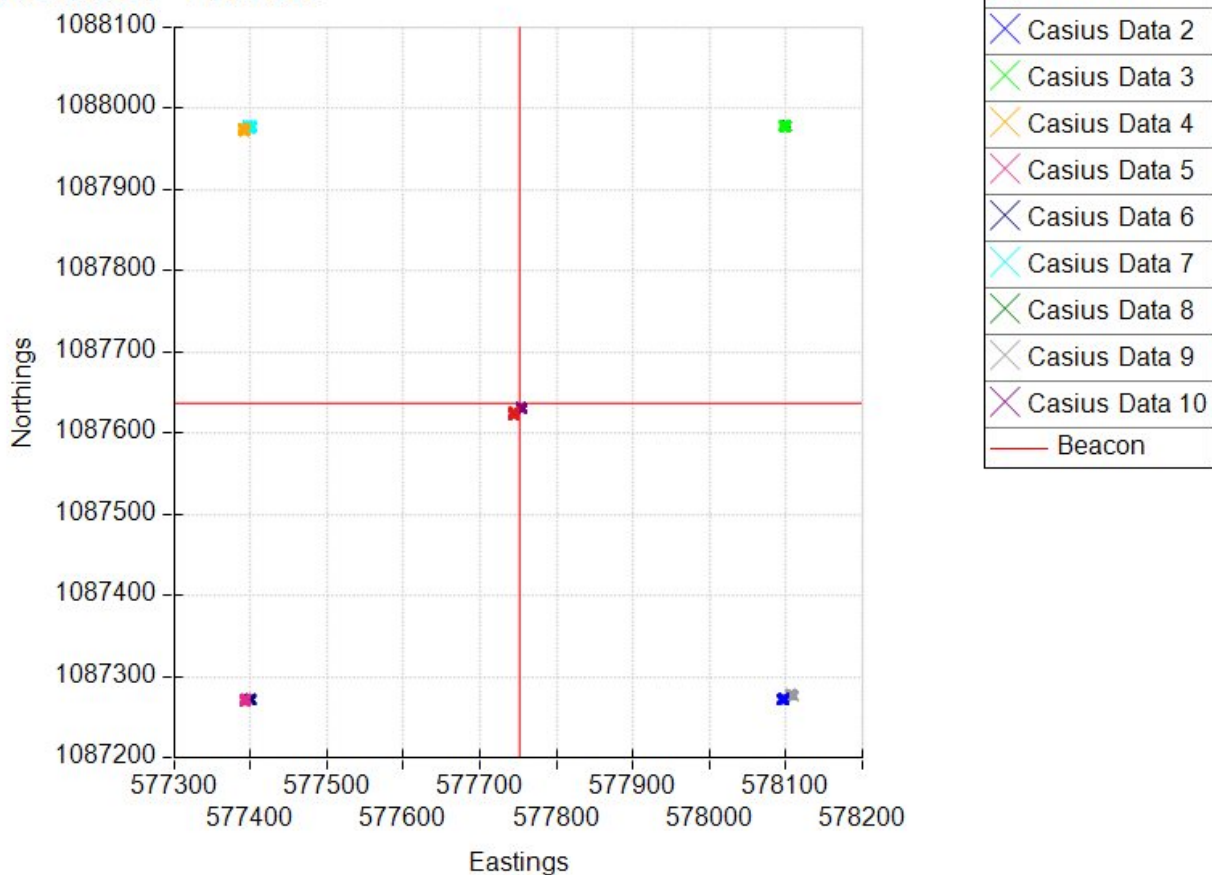
Statistics:

	Before CASIUS (distance)	After CASIUS (distance)	Before CASIUS (% depth)	After CASIUS (% depth)
39.4% Beacon Positions (1 sigma)	16.3m	8.0m	0.65	0.32
50.0% Beacon Positions (CEP)	20.4m	9.1m	0.81	0.36
63.2% Beacon Positions (1 Drms)	24.9m	10.4m	0.99	0.42
86.5% Beacon Positions (2 sigma)	32.4m	13.2m	1.29	0.53
98.2% Beacon Positions (2 Drms)	38.0m	24.6m	1.52	0.98

General:

	Beacon BoxIn	Transceiver Attitude
Number of Iterations	3	3
Number of Fixes Used	1992	1992
Number Depth Aided		0
Average weighted residuals	0.010	0.551

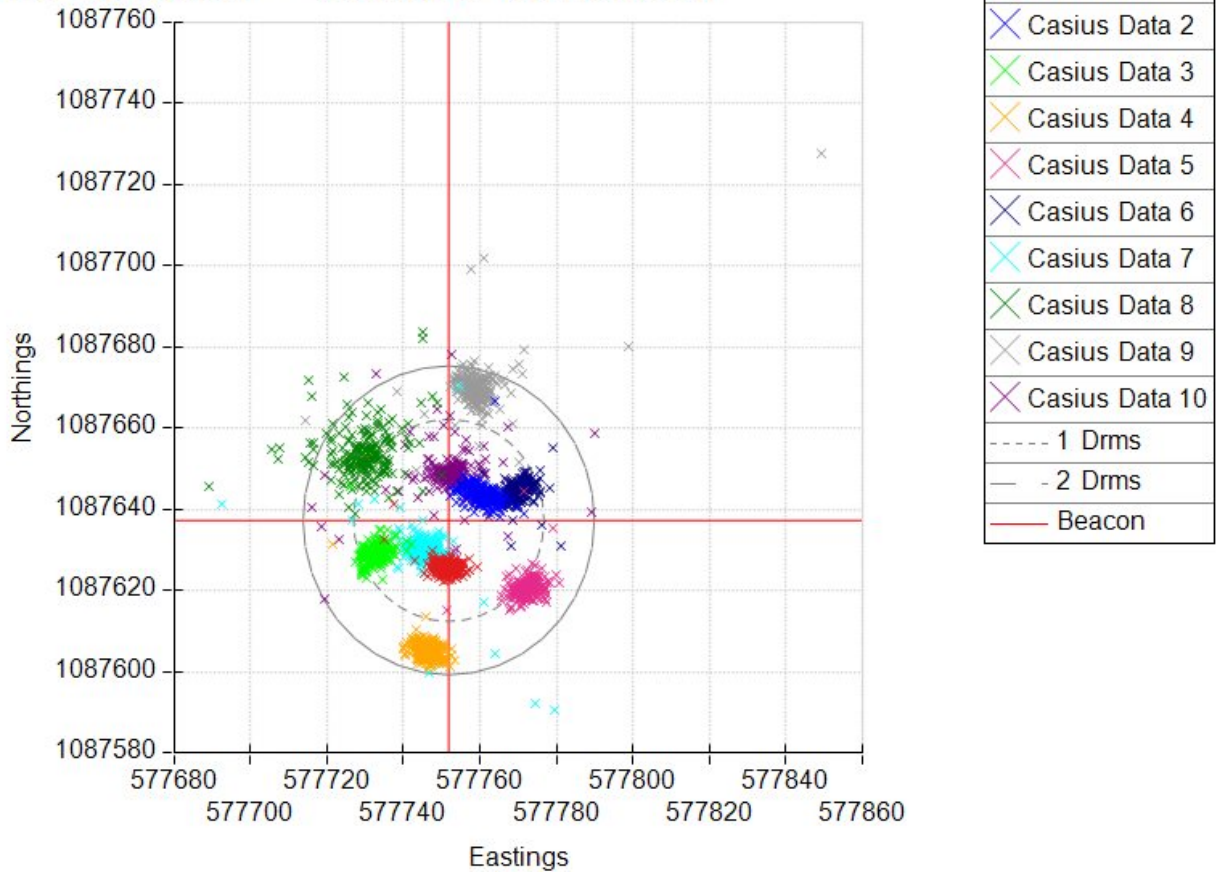
Vessel Track



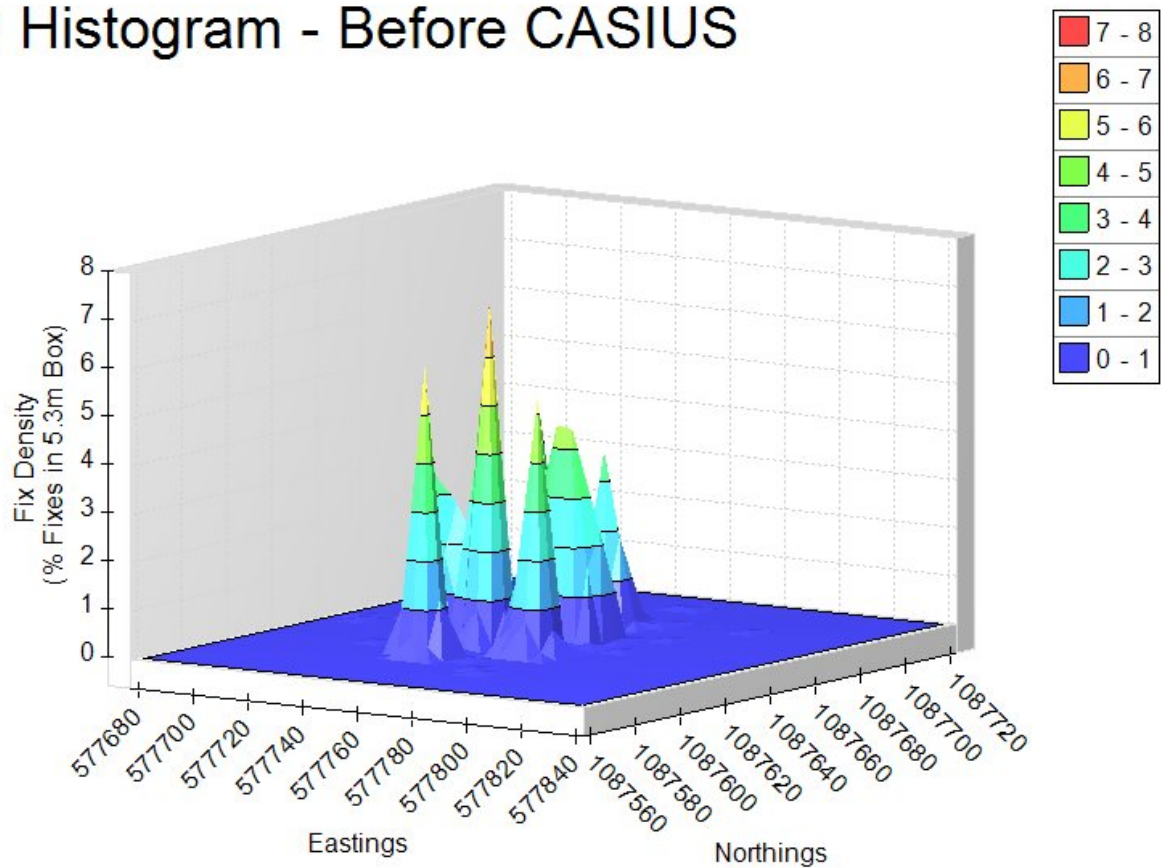
Data used:

Name	Filename	Start	End	#Acoustic	#Position
Casius Data 1	n/a	15/04/2019 05:47:26	15/04/2019 06:37:36	200	3010
Casius Data 2	n/a	15/04/2019 07:02:27	15/04/2019 07:33:34	200	1867
Casius Data 3	n/a	15/04/2019 07:54:54	15/04/2019 08:19:54	200	1500
Casius Data 4	n/a	15/04/2019 08:44:48	15/04/2019 09:09:39	200	1491
Casius Data 5	n/a	15/04/2019 09:30:37	15/04/2019 09:55:26	200	1489
Casius Data 6	n/a	15/04/2019 10:11:01	15/04/2019 10:36:01	200	1500
Casius Data 7	n/a	15/04/2019 11:06:04	15/04/2019 11:31:04	200	1500
Casius Data 8	n/a	15/04/2019 11:58:35	15/04/2019 12:23:33	200	1498
Casius Data 9	n/a	15/04/2019 12:45:07	15/04/2019 13:10:01	200	1494
Casius Data 10	n/a	15/04/2019 13:42:31	15/04/2019 14:07:17	200	1486

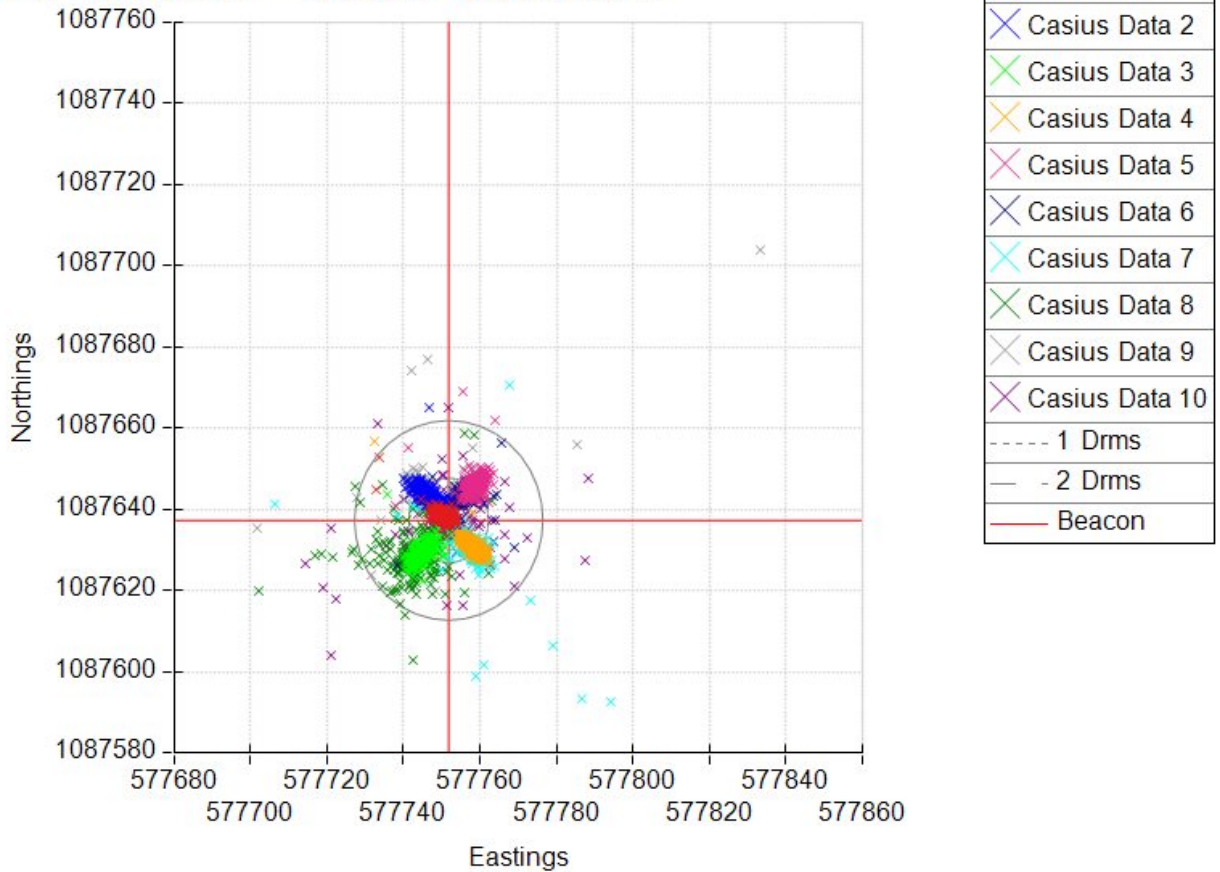
2D Scatter - Before CASIUS



3D Histogram - Before CASIUS



2D Scatter - After CASIUS



3D Histogram - After CASIUS

