

Company: L-DEO - Lamont - Doherty Earth Observatory  
Vessel: Marcus G. Langseth  
Client: Bangs - UTIG / NSF

Project: MGL1701 - CEVICHE  
Area: South Atlantic Ocean, Chile  
Start Date: 10-Jan-17

Vessel Sensor Offsets

Towing Offsets

Towing Configuration

Acoustic Overhead

Gun Array Offsets

Streamer Front End

Streamer Tail End

Streamer Complete

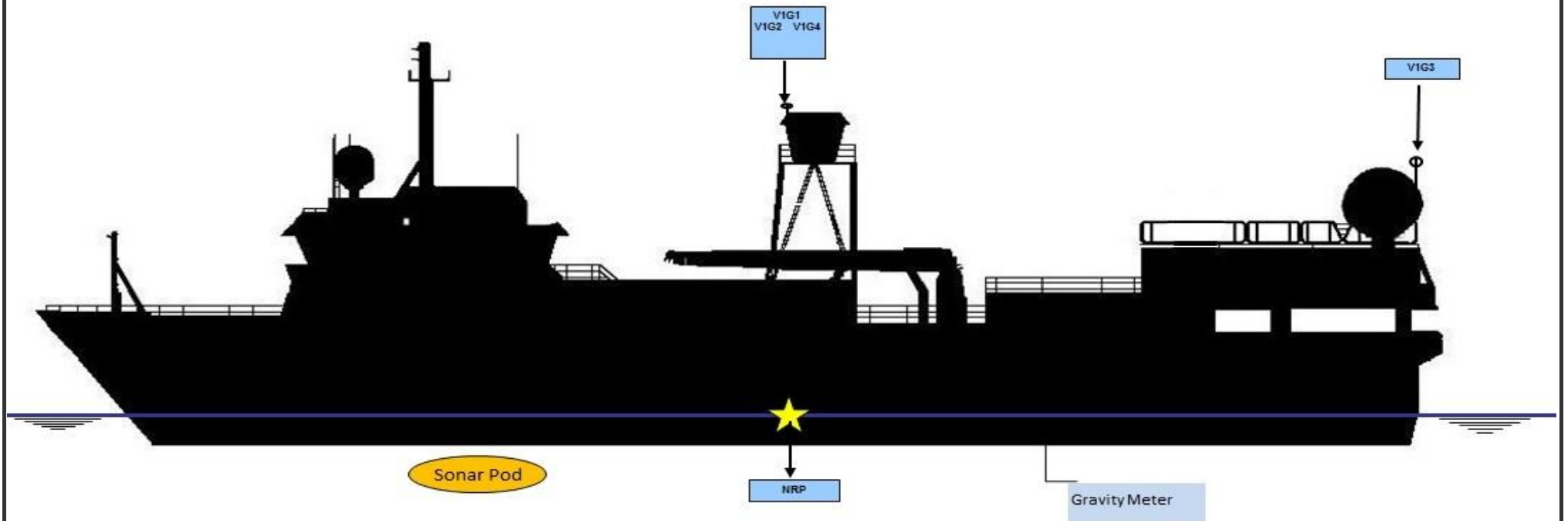
Hydrophone Offsets

Tailbuoy Offsets

Timing



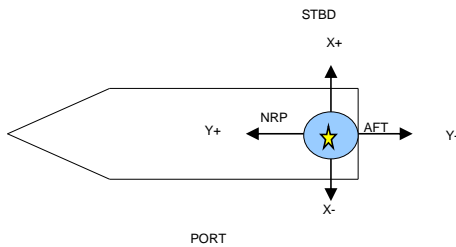
## R/V Marcus G. Langseth - Vessel Sensor Offsets



Negative values are above water line  
All measurements in meters

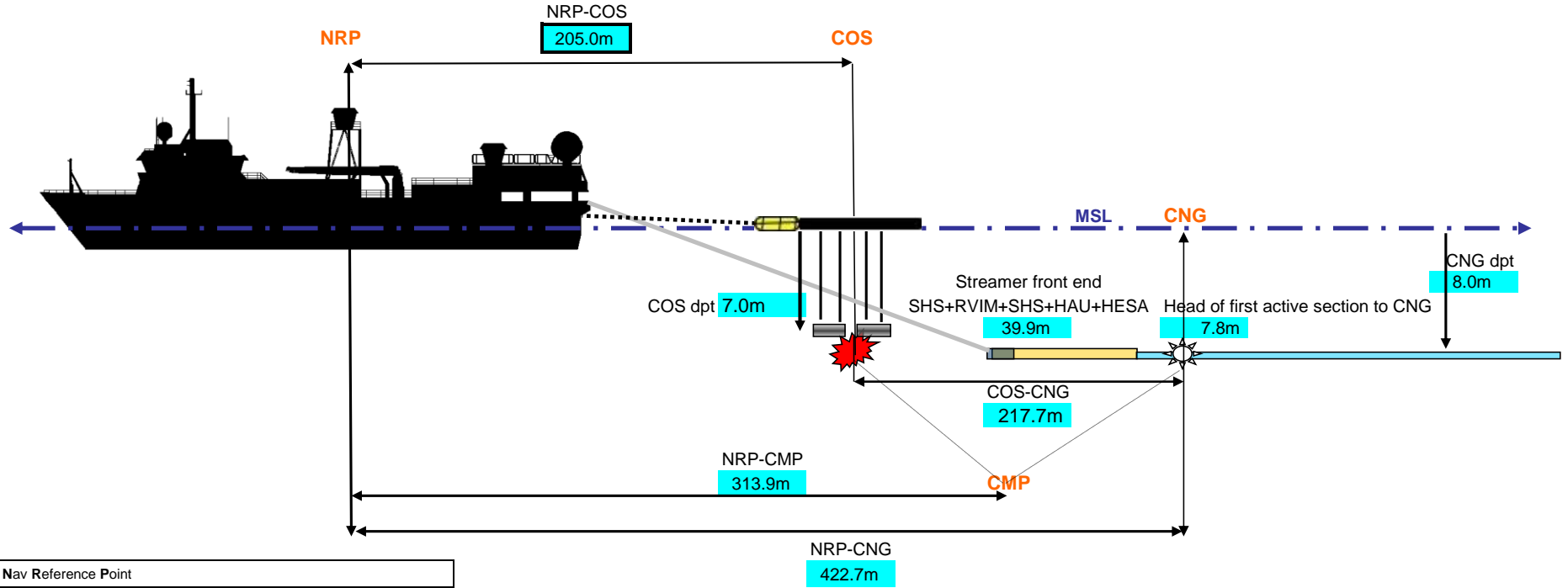


		STBD/PORT (X)	FORE/AFT (Y)	UP/DOWN (Z)
NRP	NAVIGATION REFERENCE POINT	0.00	0.00	0.00
V1G1	C-Nav 3050	0.00	0.00	-16.90
V1G2	SeaPath 200	0.00	1.50	-16.90
V1G3	C-Nav 2000	-2.10	-29.20	-14.50
V1G4	Pos MV	-1.30	1.20	-16.90
V1R1	PosNet	-1.30	0.00	-16.90
Sonar Pod	EM122 Knudsen ADCP	0.00	20.20	7.49
	EM122 Center Beam offset (in Spectra)	0.00	13.4	7.49
MRU	Seapath MRU	2.30	14.16	-4.30
BGM	Bell Gravity Meter	0.00	-13.10	1.10



Note: All Echosounders are used in Spectra with 6.6m ship's draft correction applied.

# R/V Marcus G. Langseth - Towing Offsets



NRP	Nav Reference Point
COS	Centre of Source
CNG	Centre of Near Group      Trace # 1 Of S1
CMP	Common Mid-Point
MSL	Mean Sea Level
NRP-Stern	29.5m
NRP-COS	205.0m

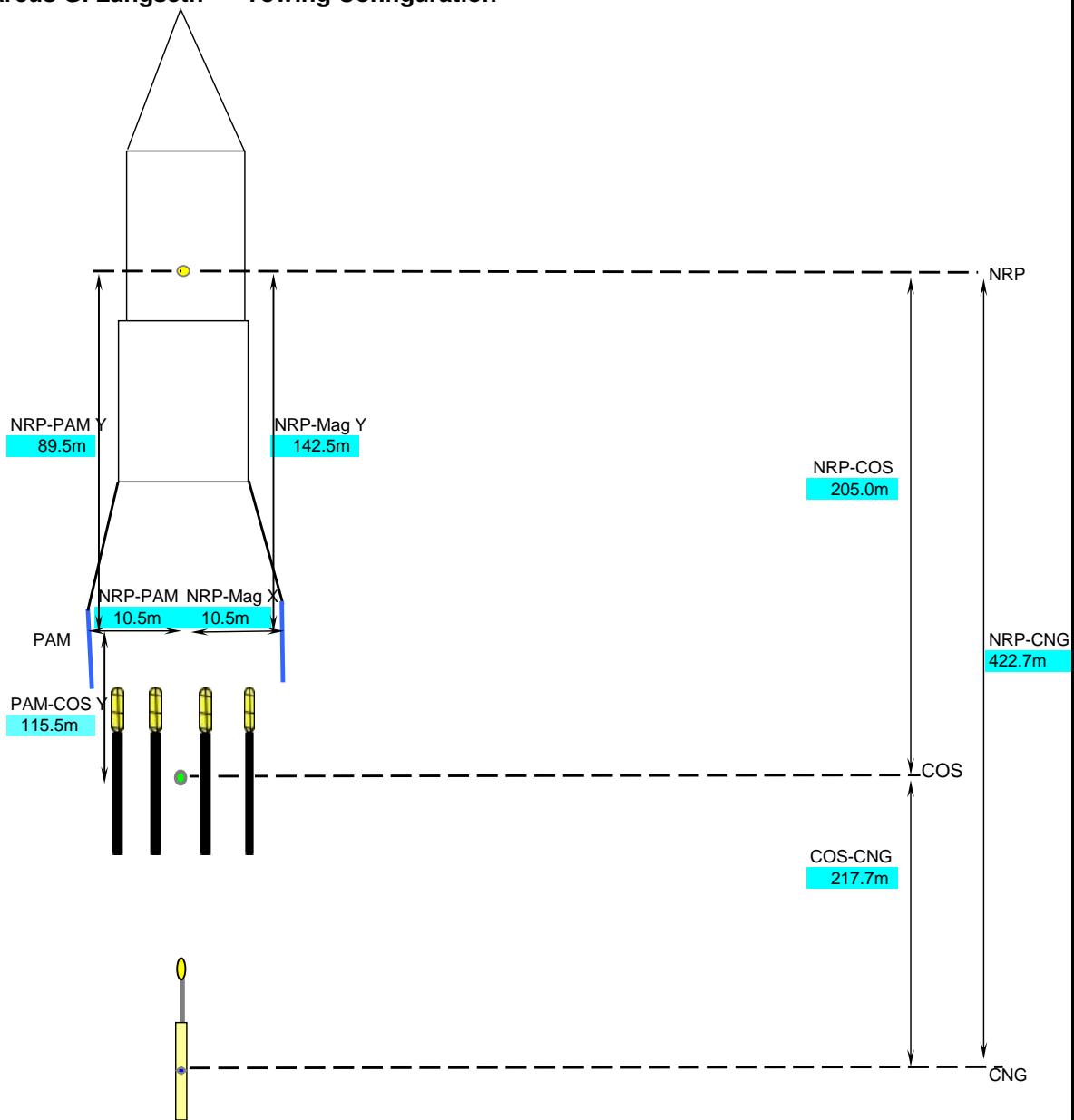
All measurements in meters



Cell contents referenced from Config\_offsets tab

### R/V Marcus G. Langseth - Towing Configuration

	# Streamers	Length	Channels	Spacing
SEAL	1	15150	1212	12.5m
# Gun Strings Used	4	Vol (in^3)	6600	



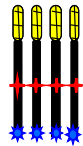
NOT to Scale

Cell contents referenced from Config\_offsets tab

### R/V Marcus G. Langseth - Acoustic Offsets

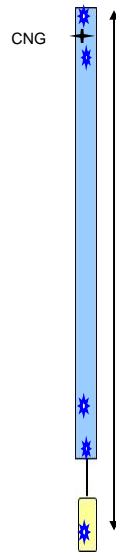


Source acoustic offsets are referenced to COS on individual gun string



- G1T1 -9.6m
- G2T1 -9.6m
- G3T1 -9.6m
- G4T1 -9.6m

Streamer acoustic offsets are referenced to CNG on individual streamer



- S1T1 -17.0m
- S1T2 -167.3m
- S1T1-S1T2 150.3m

Head of first section to Tail buoy  
#####

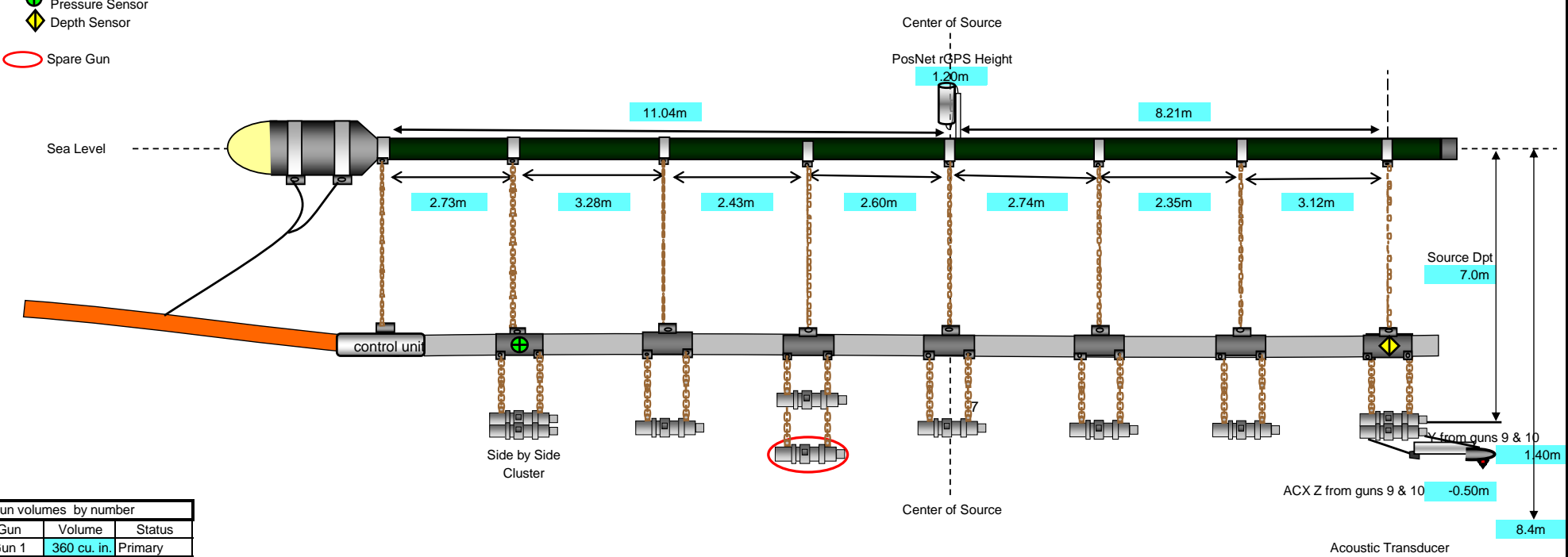
- S1T3 #####
- S1T4 #####
- S1T3-S1T4 149.7m
- S1T4-S1T5 200.8m

S1T5 1.0m Tailbuoy acoustics referenced to RGPS pod

Cell contents referenced from Config\_offsets tab

## R/V Marcus G. Langseth - Gun Array Offsets

- + Pressure Sensor
- ♦ Depth Sensor
- Spare Gun



Gun volumes by number		
Gun	Volume	Status
Gun 1	360 cu. in.	Primary
Gun 2	360 cu. in.	Primary
Gun 3	40 cu. in.	Primary & Mitigation
Gun 4	180 cu. in.	Primary
Gun 5	180 cu. in.	Spare
Gun 6	90 cu. in.	Primary
Gun 7	120 cu. in.	Primary
Gun 8	60 cu. in.	Primary
Gun 9	220 cu. in.	Primary
Gun 10	220 cu. in.	Primary

Array total volume (without spares) is 6600 cu. in.  
 Guns (1 & 2) in a horizontal cluster, (5 & 6) and (9 & 10) in a vertical cluster  
 Gun clusters have 0.75m between guns and hang 0.95m from center of hanger

Total volume/string (without spare) 1650 cu. in.  
 Horizontal Clusters are 1m from gun port to gun port  
 Single guns hang from hanger 1.15m

**All measurements in meters**  
**NOTE: drawing not to scale**

All gun volumes, numbering, locations, and offsets were inspected and verified by Chief Source Mechanic.

Cell contents referenced from Config\_offsets tab

# R/V Marcus G. Langseth - Gun Configuration

DT = Depth Transducer  
 ACX = Acoustic  
 P = Pressure Sensor - located  
 in front of gun's 1 & 2

Center of Source

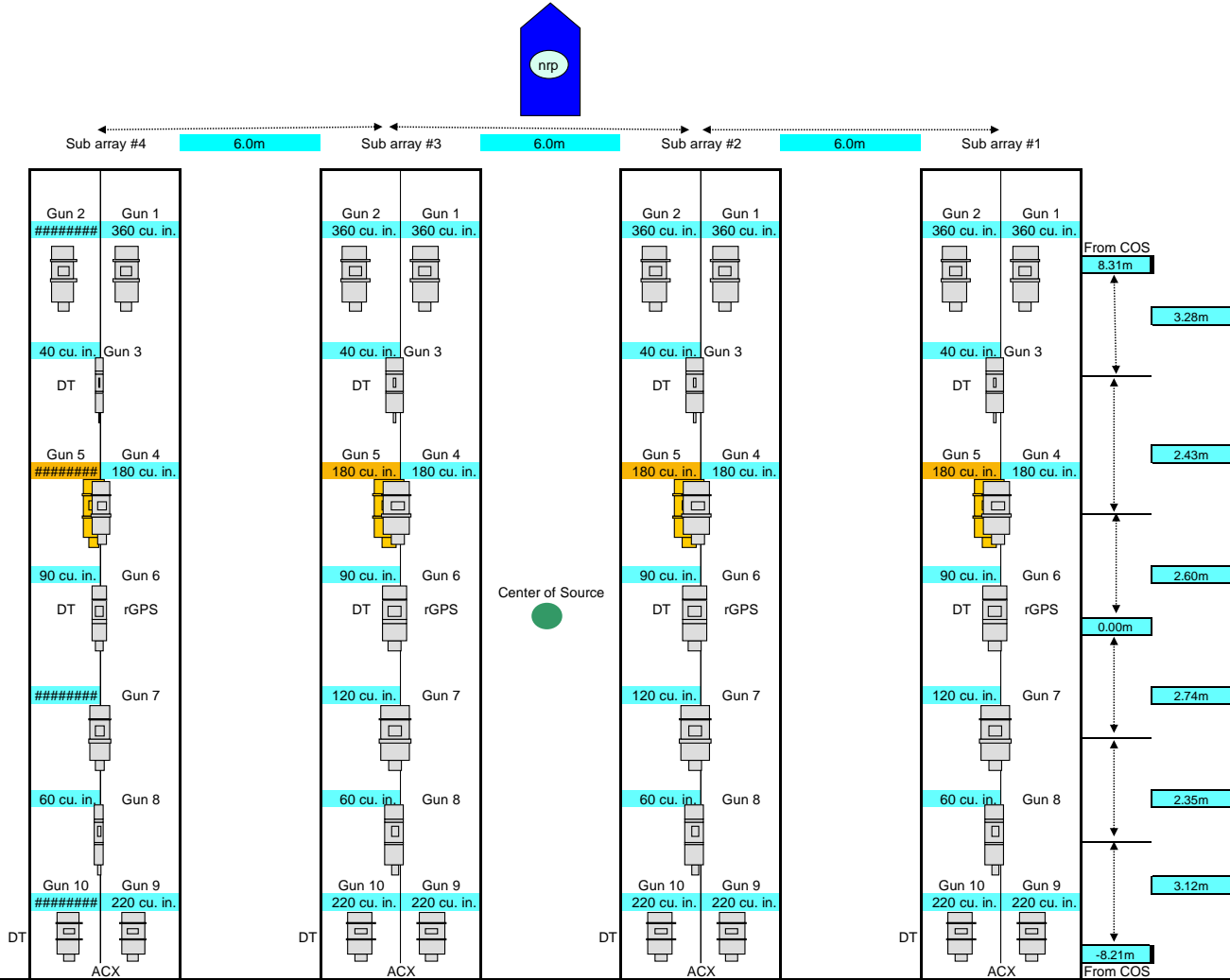
Spare Gun

Gun Clusters  
 Guns 1 & 2 horizontal array  
 Guns 4 & 5 vertical array  
 Guns 9 & 10 horizontal array

Gun Offsets relative to Center of String

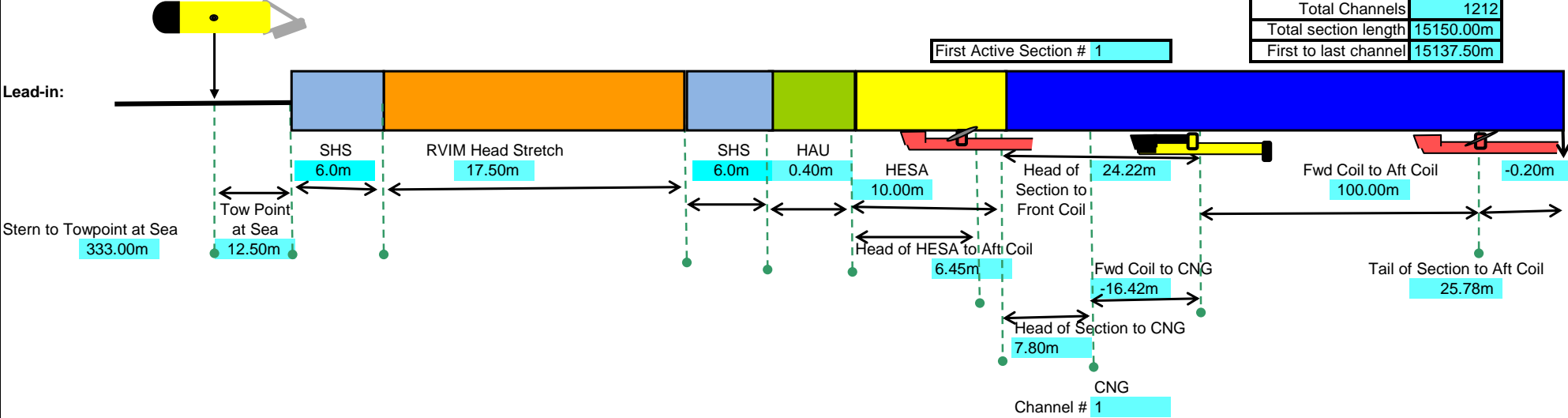
	X	Y
Gun 1	0.50m	8.31m
Gun 2	-0.50m	8.31m
Gun 3	0.00m	5.03m
Gun 4	0.00m	2.60m
Gun 5	0.00m	2.60m
Gun 6	0.00m	0.00m
Gun 7	0.00m	-2.74m
Gun 8	0.00m	-5.09m
Gun 9	0.50m	-8.21m
Gun 10	-0.50m	-8.21m

All measurements in meters



### R/V Marcus G. Langseth - Streamer Front End

Total active sections	101
Total Channels	1212
Total section length	15150.00m
First to last channel	15137.50m



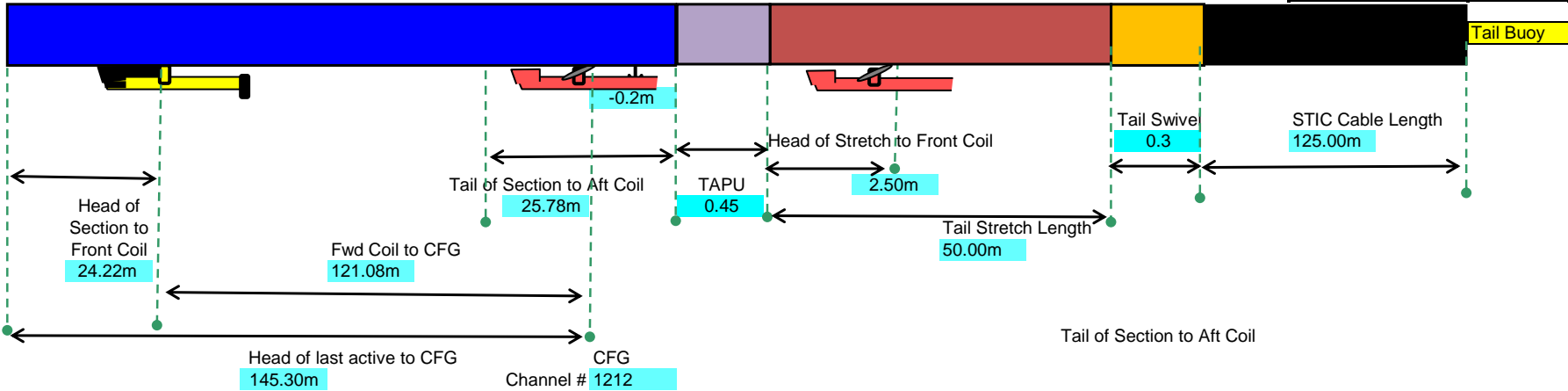
Cell contents referenced from Config\_offsets tab



### R/V Marcus G. Langseth - Streamer Tail End

Total active sections	101
Total Channels	1212
Total section length	15150.00m
First to last channel	15137.50m
CFG to TB RGPS	181.95m

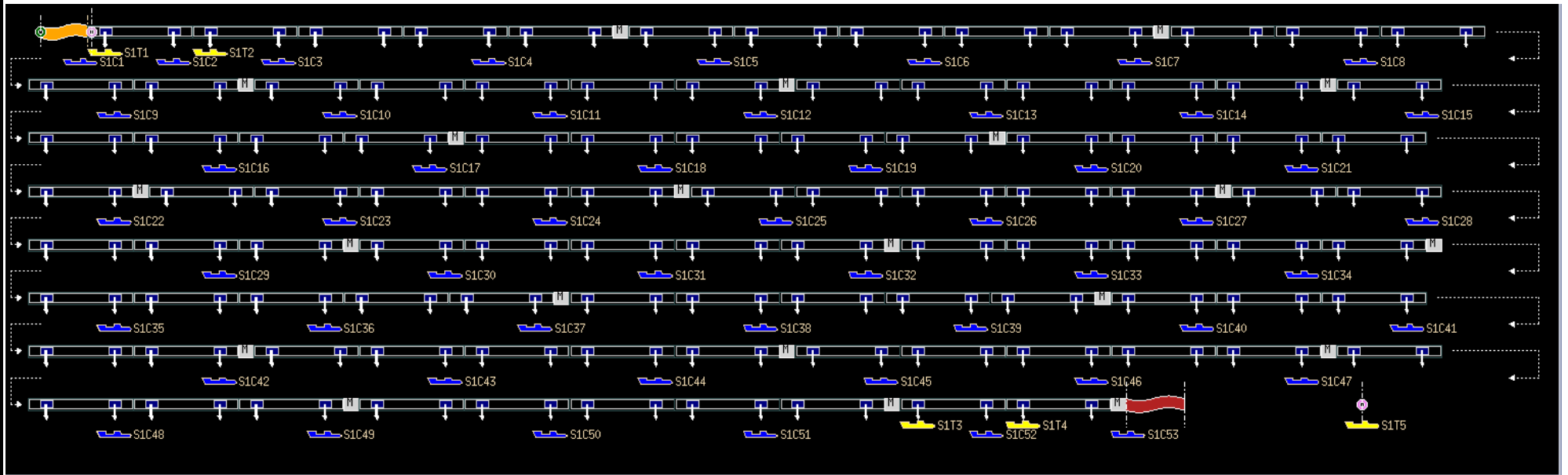
Last Active Section # 101



Cell contents referenced from Config\_offsets tab

# R/V Marcus G. Langseth - Streamer Complete

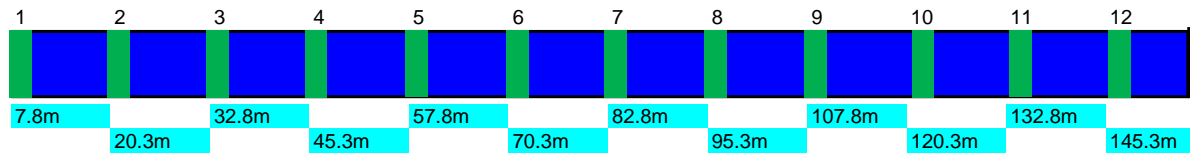
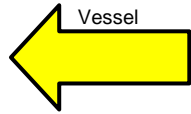
Total active sections	101
Total Channels	1212
Total section length	15150.00m
First to last channel	15137.50m



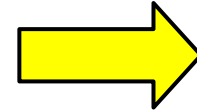
Cell contents referenced from Config\_offsets tab

R/V Marcus G. Langseth - Hydrophone Offsets  
Sercel 150meter SSAS

Number of SSAS Sections 101  
Channels per active section 12  
Total channels 1212

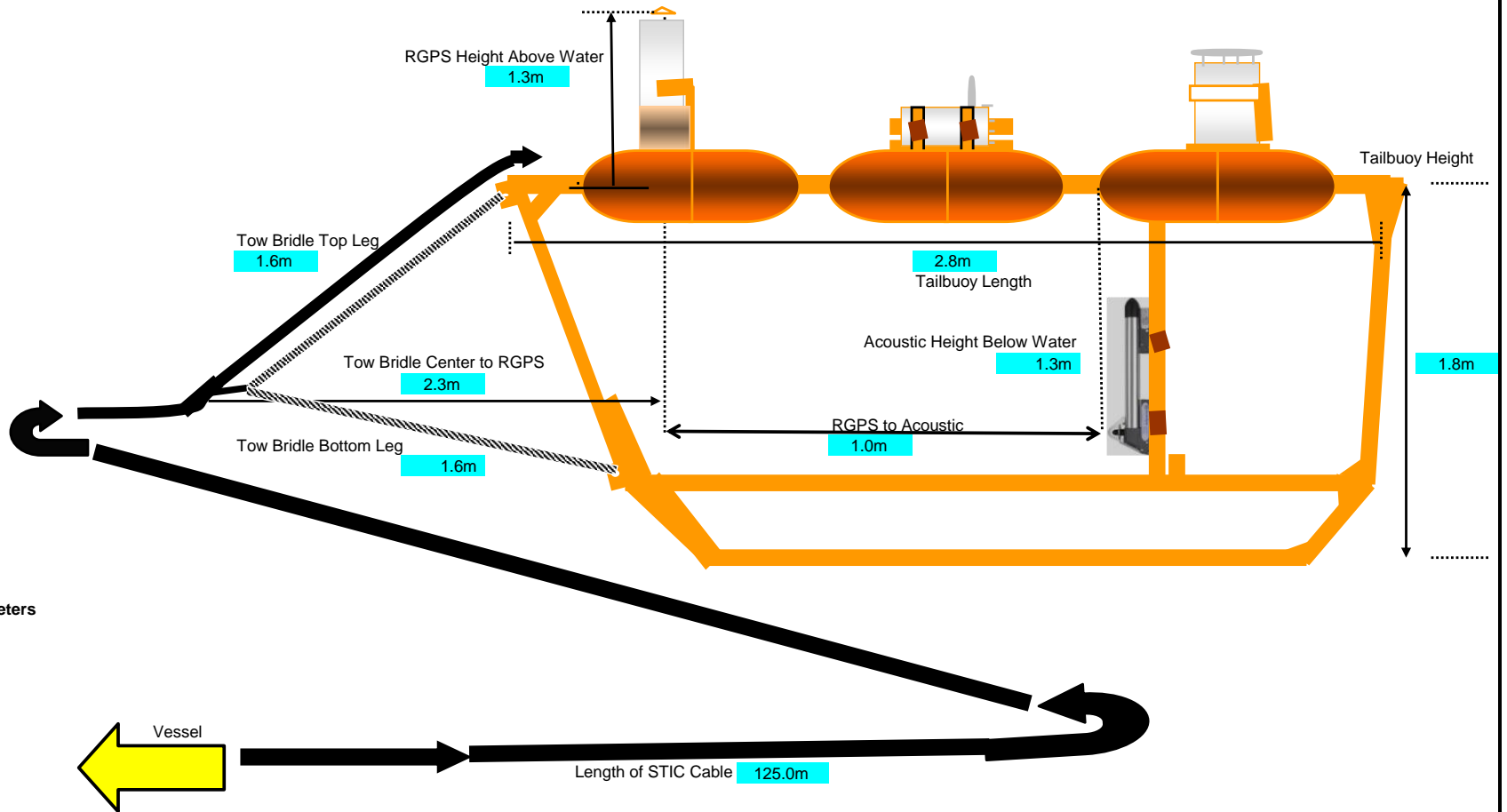


Tail buoy



Cell contents referenced from Config\_offsets tab

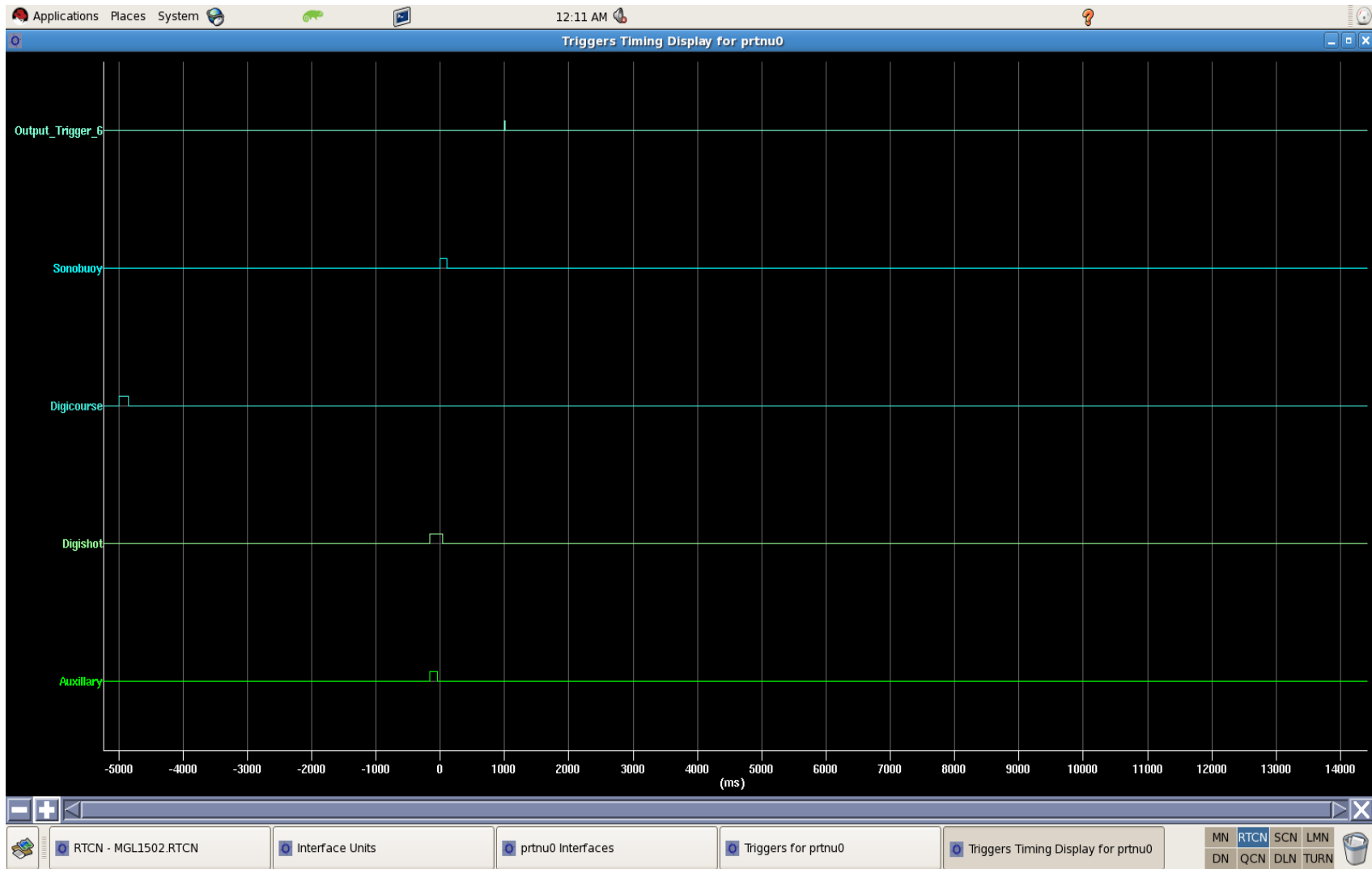
# R/V Marcus G. Langseth - Tailbuoy



All measurements in meters

Cell contents referenced from Config\_offsets tab

R/V Marcus G. Langseth - System Timing Diagram



Navigation and control elements at the bottom of the window:

- Buttons:  RTCN - MGL1502.RTCN,  Interface Units,  prtnu0 Interfaces,  Triggers for prtnu0,  Triggers Timing Display for prtnu0
- Legend: MN, RTCN, SCN, LMN, DN, QCN, DLN, TURN,

