



GOBIERNO
DE ESPAÑA

MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD

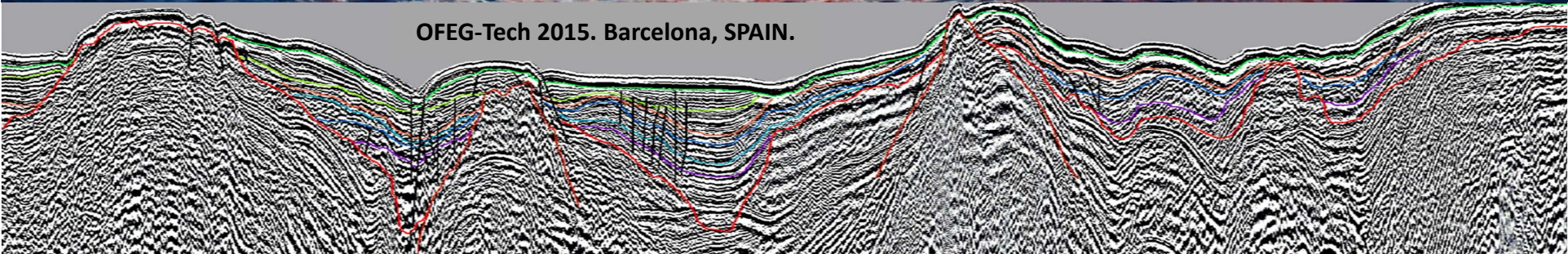


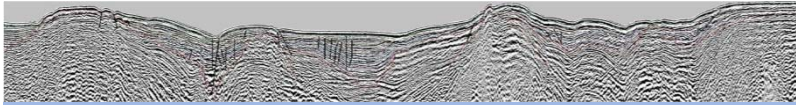
UTM
UNIDAD DE TECNOLOGÍA MARINA



***Design and development of a
Seismic "portable" system.
Evaluation and improvements***

OFEQ-Tech 2015. Barcelona, SPAIN.

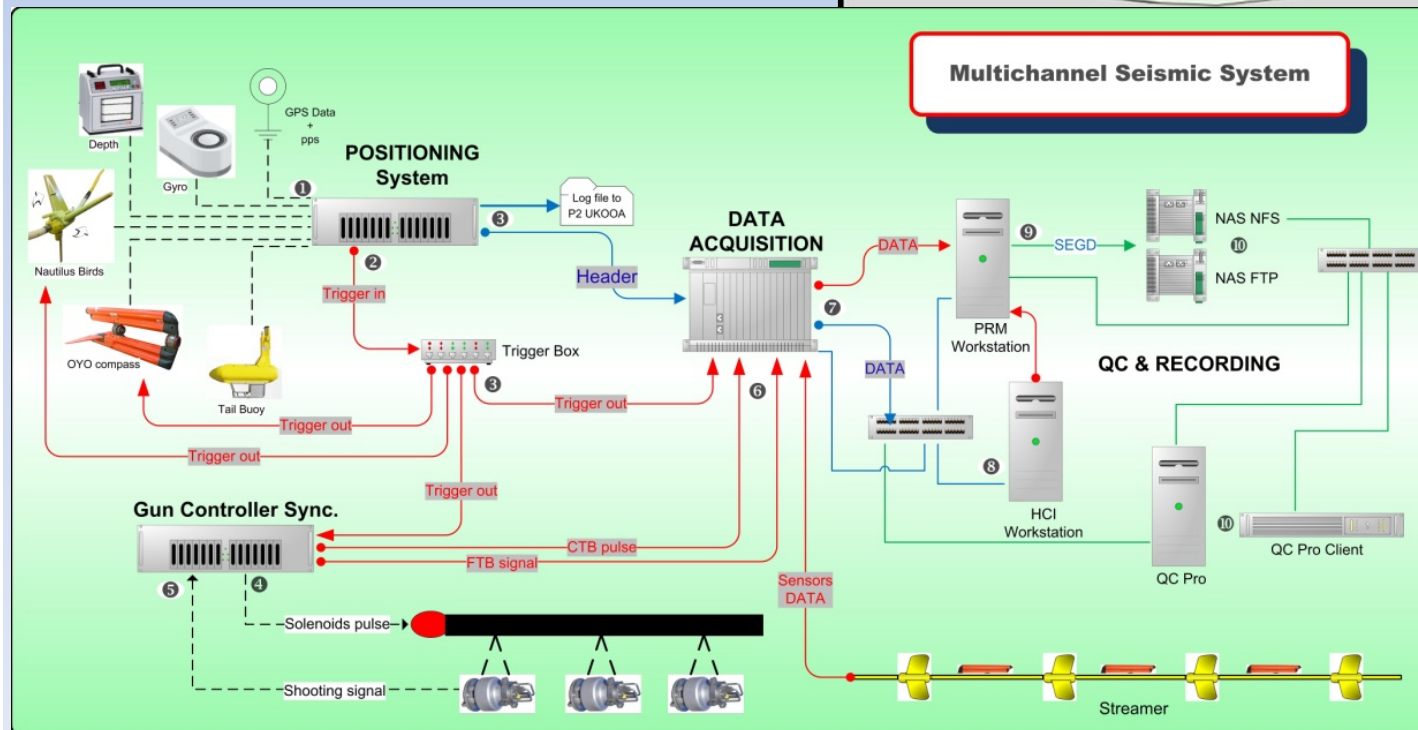
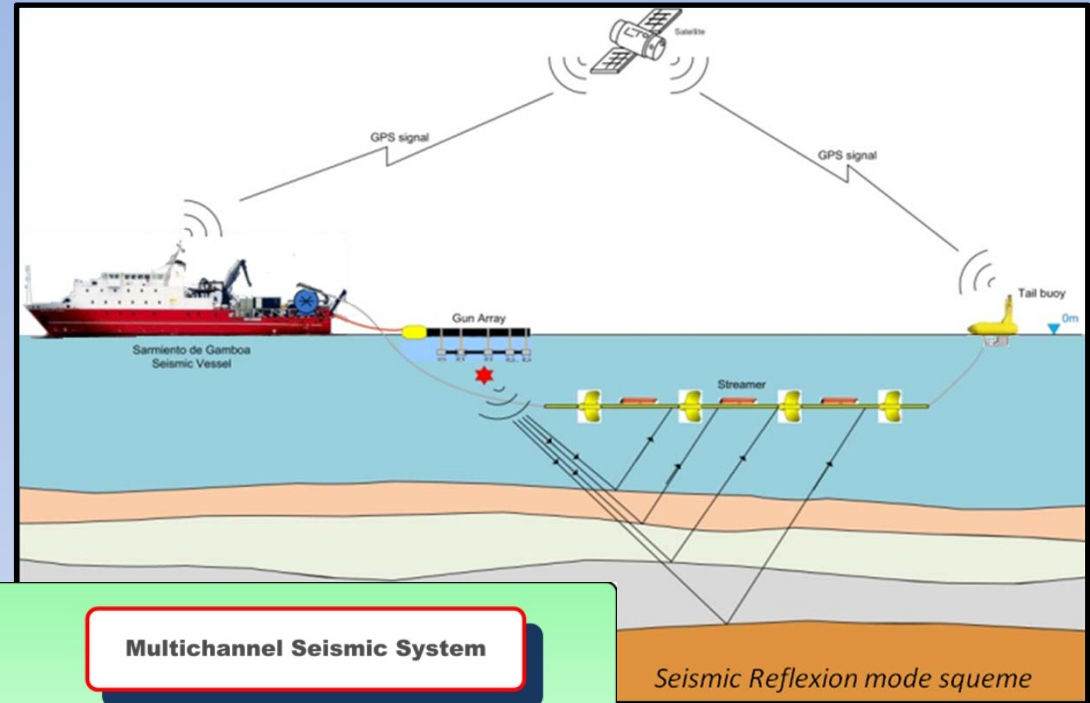




GENERAL VIEW

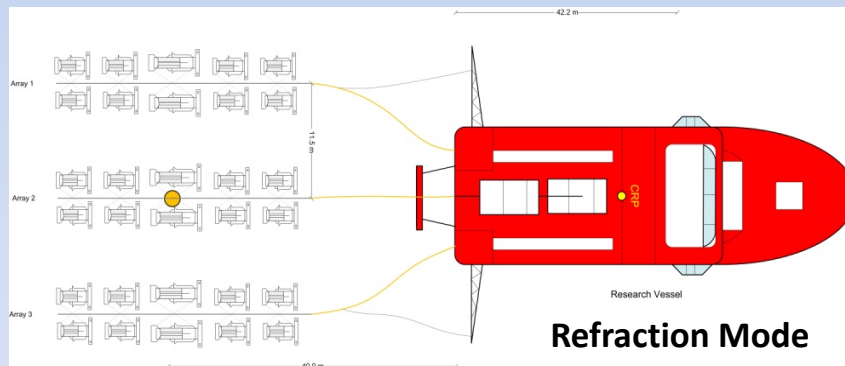
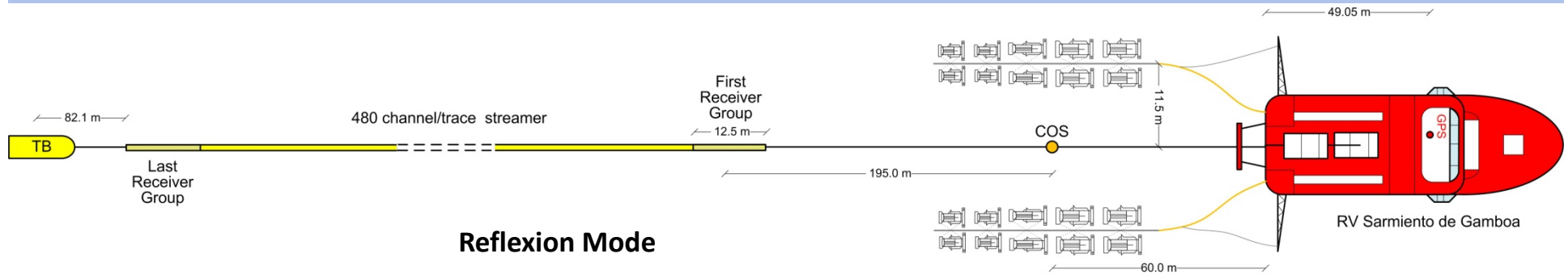
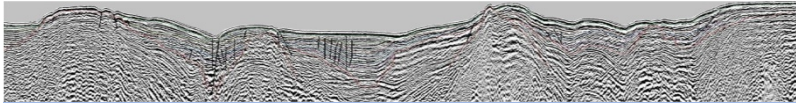
MARINE SEISMICS

- [Power source](#) (provides a pulse of acoustic energy)
- [Acquisition and Control Systems](#) (operate and set deployed equipment, record the signals reflected and/or refracted by the seabed)
- [Processing Systems](#) (algorithms and mathematical process applied to the raw data for analysis and clear/help geological interpretation)

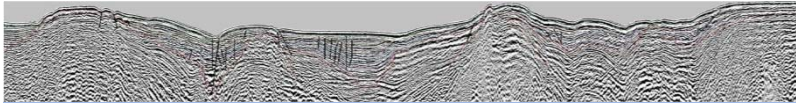


Marine Technology Unit (UTM) has made great efforts to set, complete, improve, upgrade and perform all CSIC marine seismic techniques. UTM is responsible for the installation, operation, maintenance, design and improvements of all these devices.

Even we usually offer our services in Spanish vessels, we already carried out seismic surveys for any other nationality vessels with official convention or agreement (closely with our British NOC colleagues).



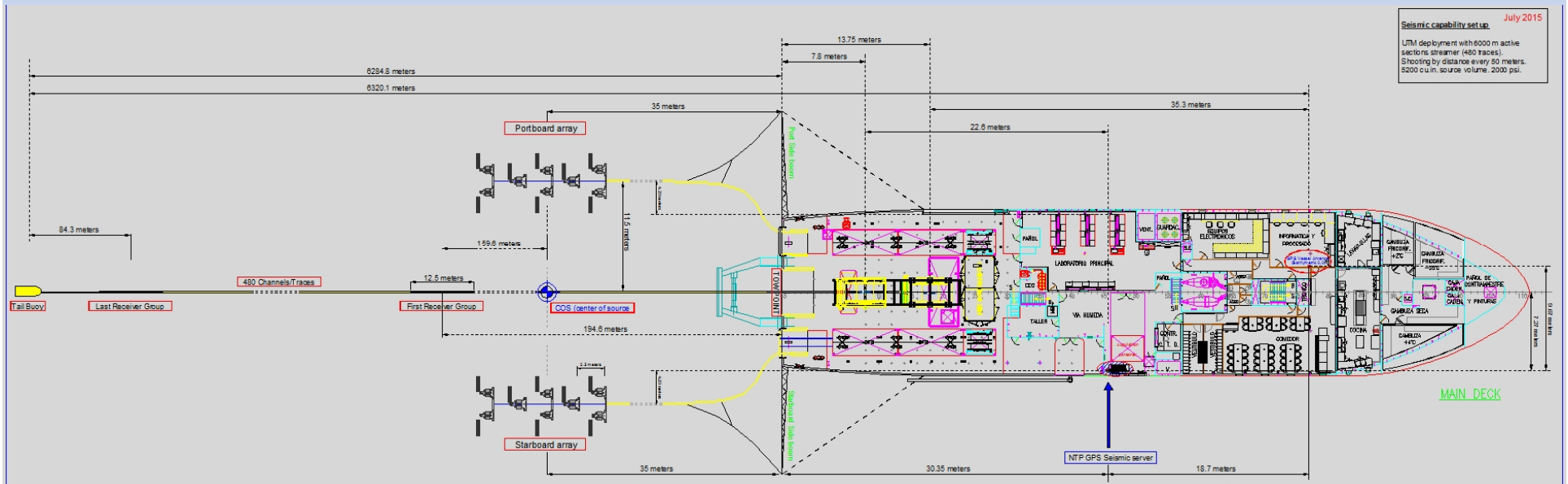
Seismic Scenario has to be arranged according to the scope of work.

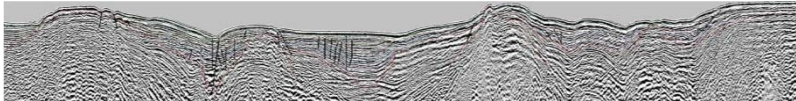


UTM Seismic Portable System Evaluation and improvements



General Plan View. CSIC-Sarmiento deck chart.

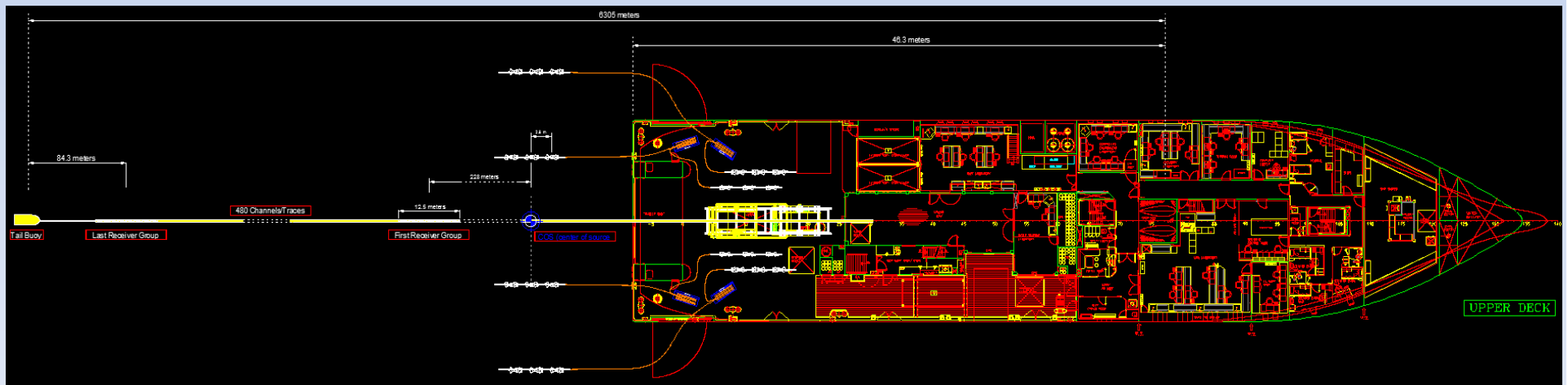




UTM Seismic Portable System Evaluation and improvements



General Plan View. NOC_James Cook deck chart.



MOBILIZATION

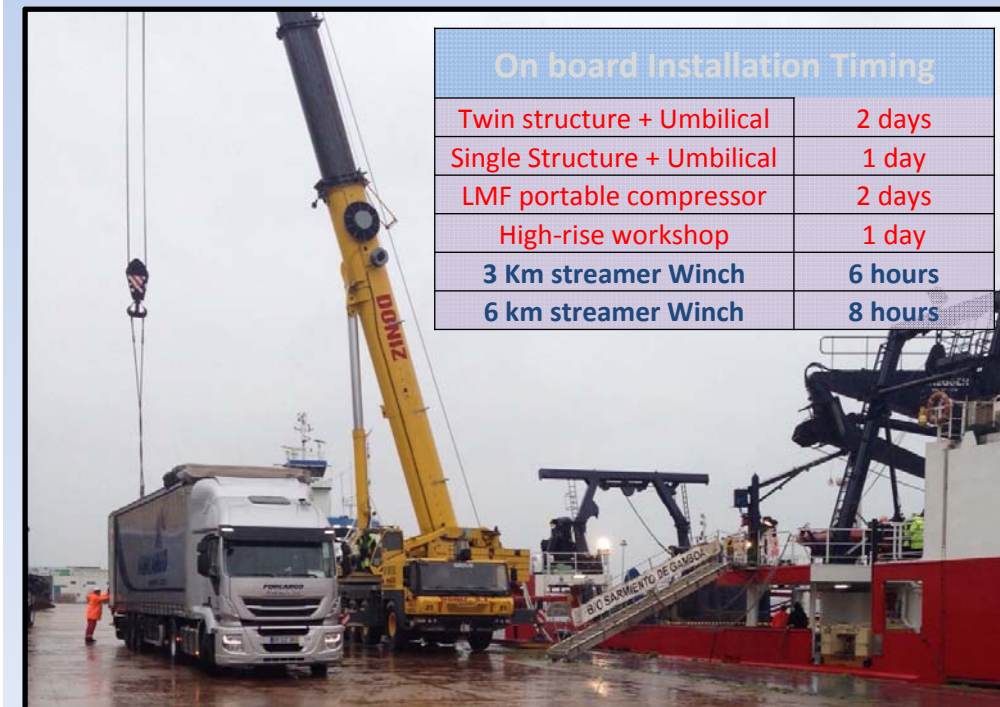
Loading Seismic parts



	Weight (Tones)	Qty	Footprint (feet)
LMF compressor	18 net	1	20
	26 isolated	1	high cube & extra-width
Lönne frequency converters	9	2	10
Source structure with 2 strings	16	1	40 feet
Source structure with 1 string	13	1	40 feet
Twin winch + umbilicals	10	1	10
Single umbilical Winch	4.5	1	10 (bottom frame)
3 km streamer + winch	33.5	2	20 (bottom frame)
Workshop & Storage	5	1	20
Acquisition & Electronics	3	1	10
Total	180.5		



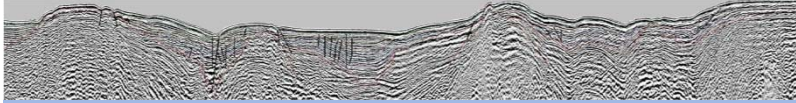
Standard footprint container and frames
Mounted and fixed with twist locks
Cranes high load capacity



On board Installation Timing

Twin structure + Umbilical	2 days
Single Structure + Umbilical	1 day
LMF portable compressor	2 days
High-rise workshop	1 day
3 Km streamer Winch	6 hours
6 km streamer Winch	8 hours

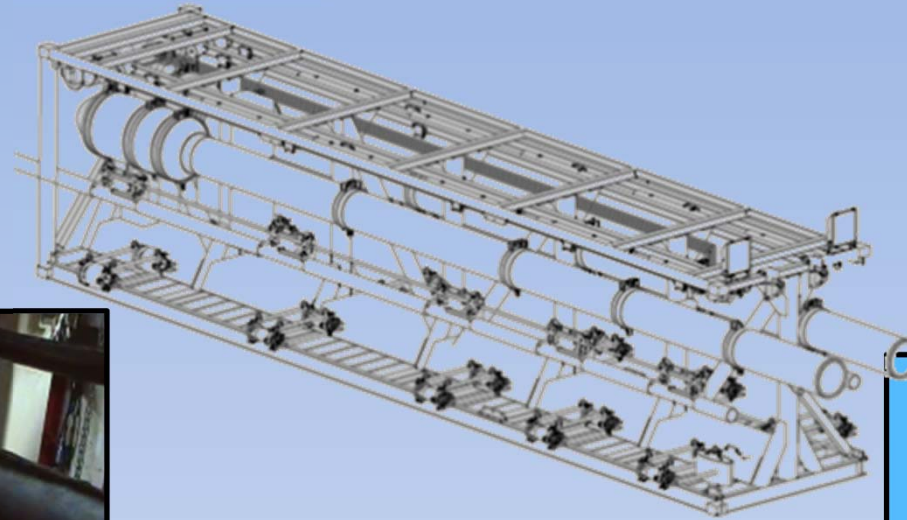




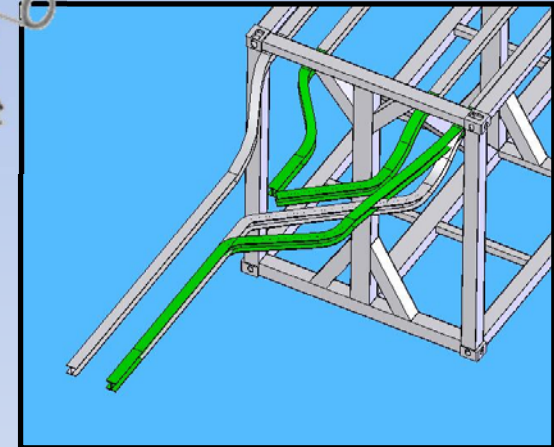
SOURCE DEPLOYMENT

Set up

Wrong estimated
dimensions

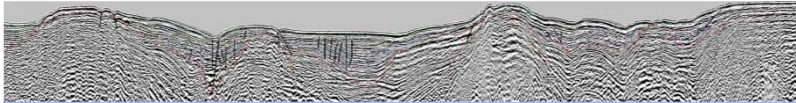


Sharp angle of rails

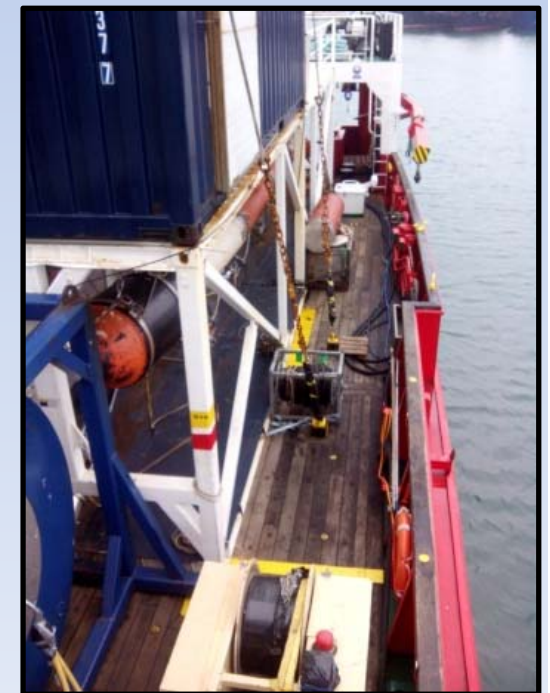
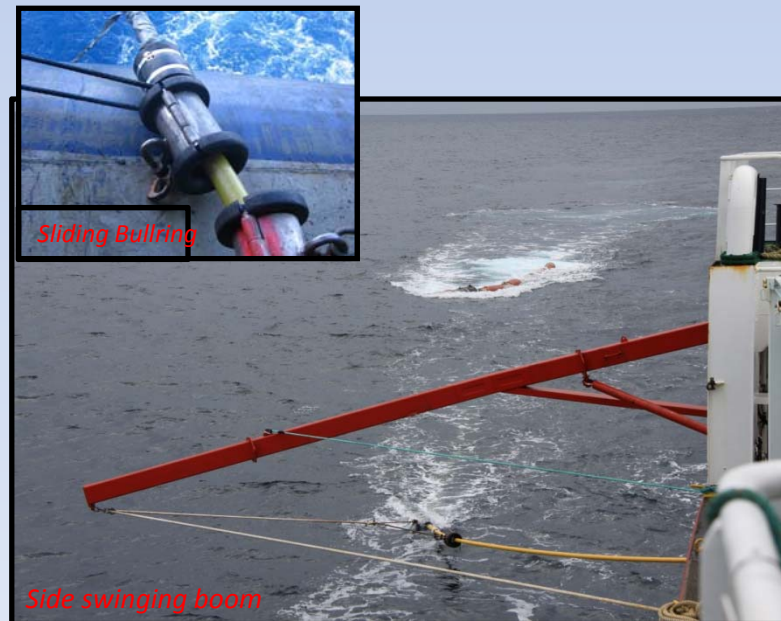
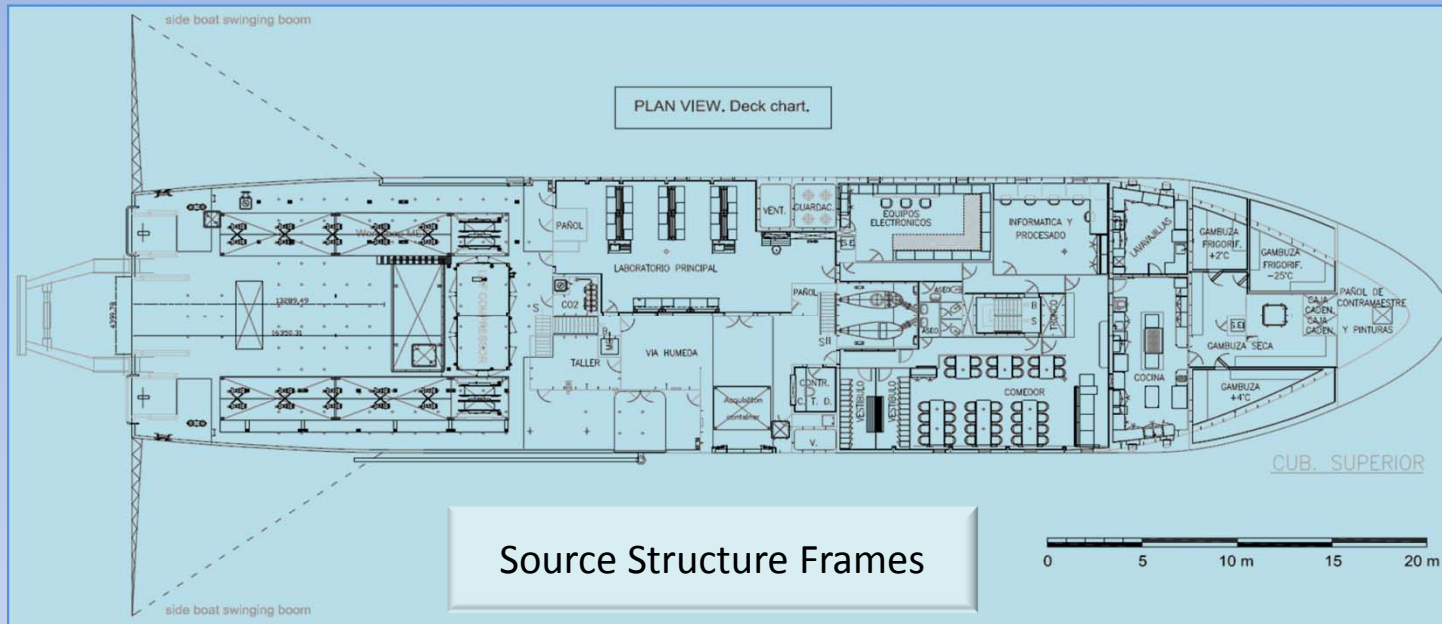


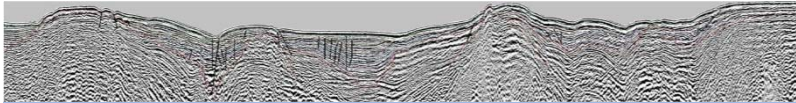
Initial wrong designs
and mistakes
Learned lessons





UTM Seismic Portable System Evaluation and improvements

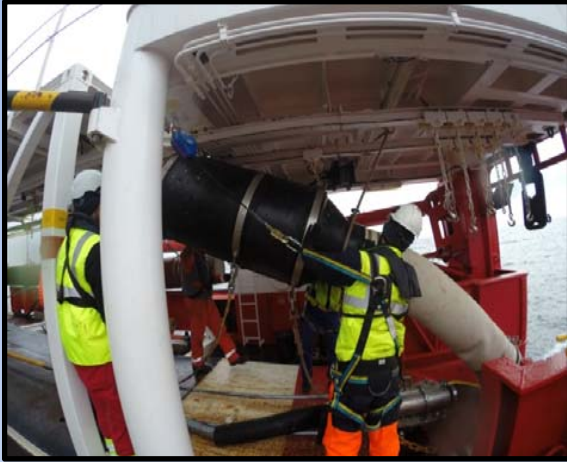
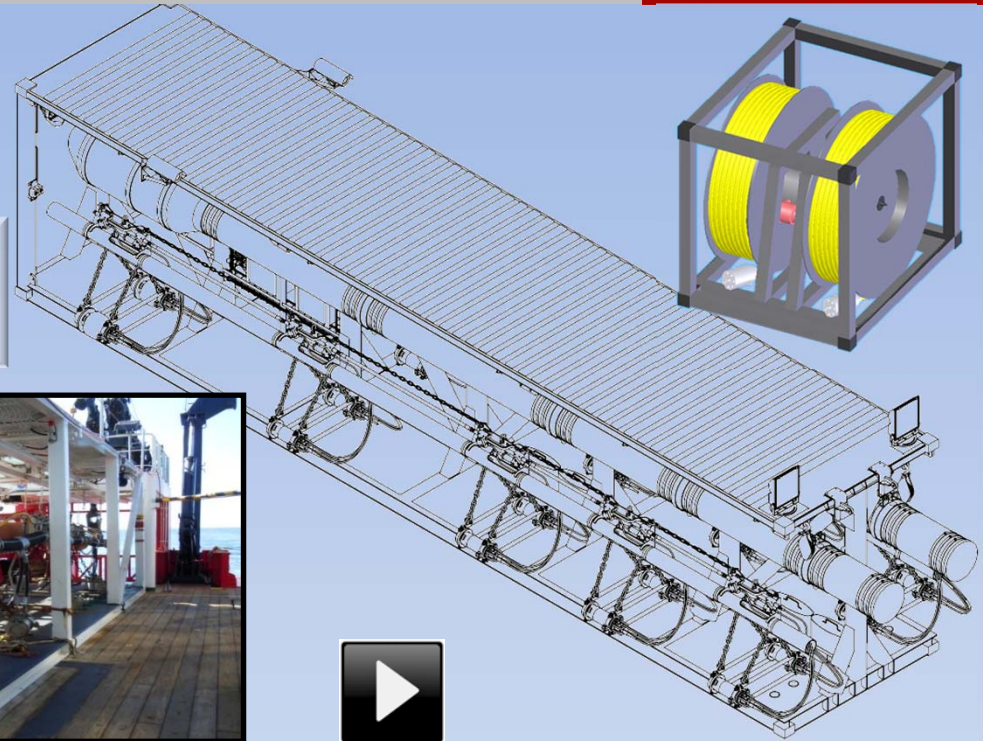




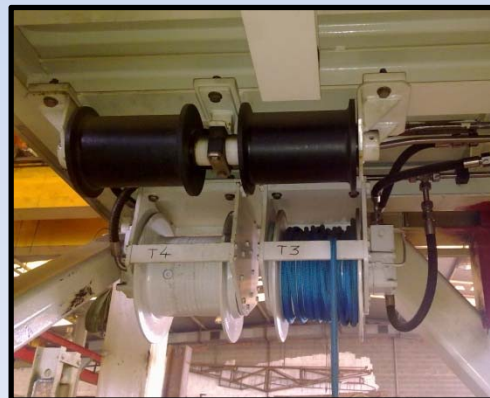
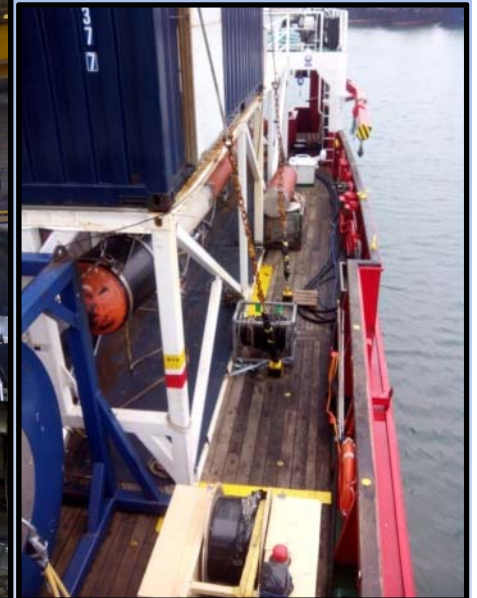
UTM Seismic Portable System Evaluation and improvements



Twin
Seismic Structure



Single
Seismic Structure

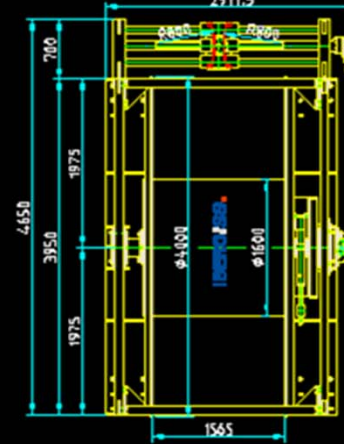
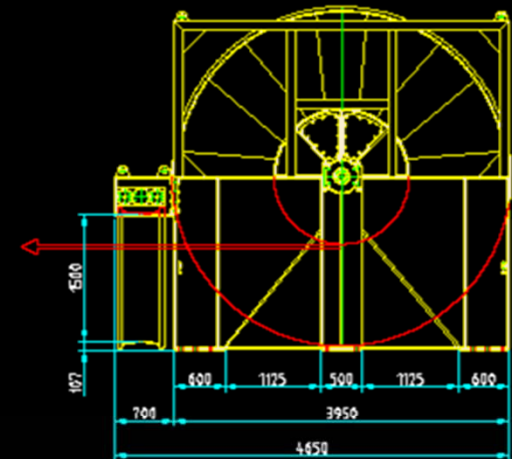
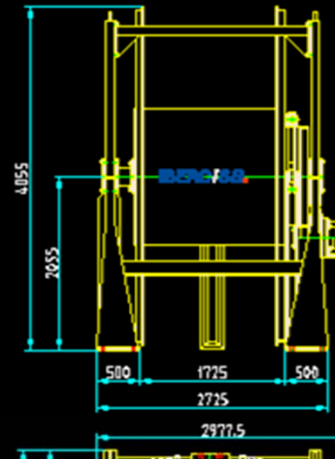
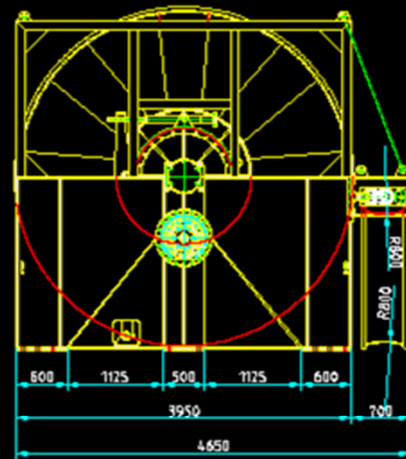


STREAMER

Set up



Twin simetric
streamer winches



JC RV Deployment

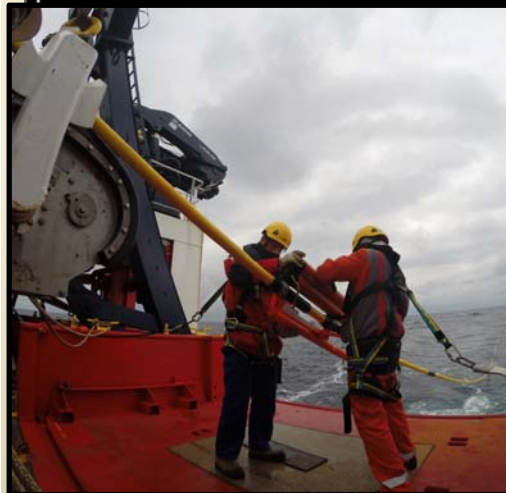




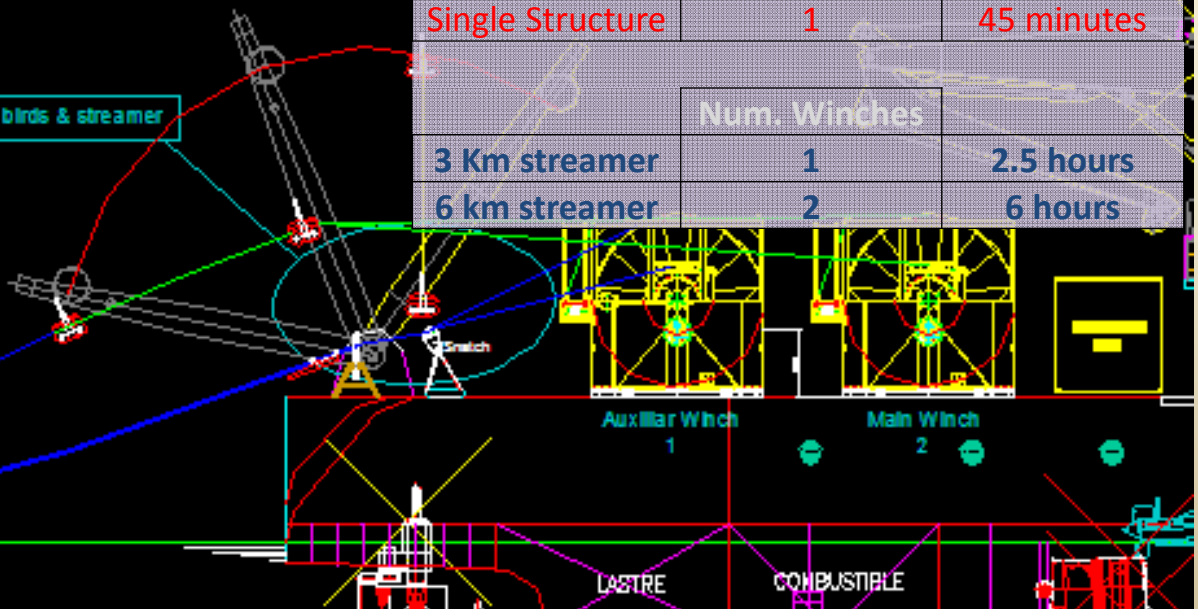
Streamer Deployment
Sarmiento RV Restriction area
& Deck Operations



WARD LINE. 6 km Streamer deployment.

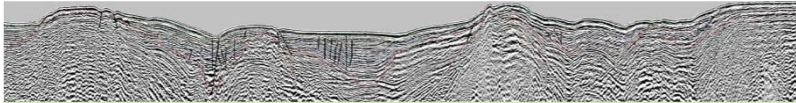


Zone to assemble birds & streamer



Effective Deployment Timing		
	Num. Arrays	
Twin structure	2	75 minutes
Twin structure	1	40 minutes
Single Structure	1	45 minutes
Num. Winches		
3 Km streamer	1	2.5 hours
6 km streamer	2	6 hours

MONITORING
Acquisition room
&
Remote lab



Acquisition Dry
Areas



10 foot electronics



James Cook's Remote Lab



Sarmiento's Remote Lab

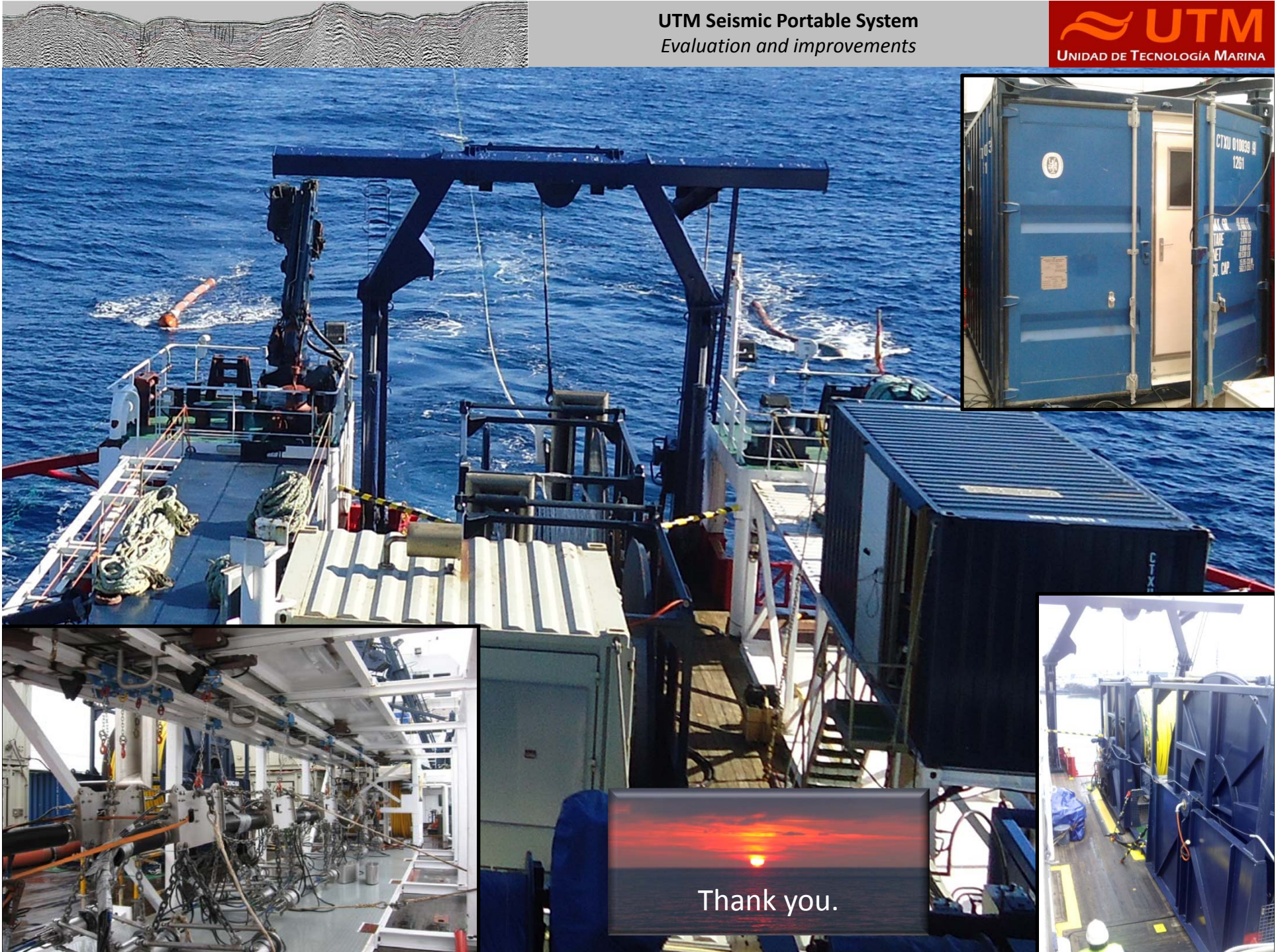
Empty



Sarmiento's Remote Lab

Mounted

UTM Seismic Portable System
Evaluation and improvements



Thank you.

A rectangular box with a sunset background, showing a bright orange sun low on the horizon over a dark sea. The text "Thank you." is centered in white, sans-serif font.