

## LBL Acoustic Positioning Service : Tracking Excellence

Subsea positioning, cut-to-length calculation, acoustic rig positioning, field development



**ADVANCED SUBSEA Service is based on the following key features:** Field-proven methods optimized for project-specific requirements, Acoustic Experts involved at early stage of projects, smart interfaces with Survey spreads, use of up-to-date software and hardware. Strong Quality Control procedures .

This service is dedicated to Oil&Gas Companies, Engineering, Construction and Survey companies and is currently available in West Africa, GOM, Brazil -

### 1- Tracking Excellence in LBL Positioning

Advanced Subsea's LBL positioning services include innovative methods, industry proven software and Hardware operated by acoustic positioning experts.

Acoustic positioning services are based on MF and LF acoustic systems.

Enhanced QA/QC system is implemented.

### 2- Ultra-long « Hybrid » LBL Positioning Techniques

In order to cope with deepwater pipelaying requirements, Advanced Subsea developed specific « Hybrid » methods using both LF and MF transponder arrays, which allow to calculate cut-to-length meeting severe accuracy requirements.

Innovative, easy-to-deploy, multi-transponder low-cost stand design allows to reach Ultra-long baselines.

### 3- Ultra-large LBL Arrays

In order to cope with deepwater field acoustic reference arrays, Advanced Subsea developed a specific incremental methods based on step-by-step sub-arrays déploiement & calibration, step-by-step intégration to previous calibrated arrays, then global adjustment of the whole array (Dalia 115 nodes, AKPO 105 nodes)

In addition, AS developed an innovative, easy-to-deploy, multi-transponder low-cost stand (up to 10m high, allowing to reach Ultra-long ranges.

### 4- Nasnet and Reverse LBL

Advanced Subsea proposes Reverse LBL services based on Underwater-GPS technics as an alternative, easy-to-deploy solution for shallow to medium water opérations. AS developed for TUPNI the first application of NASNET MS acoustic Rig Positioning (Total AKPO Drilling program)

### 5- References in LBL

\* Hybrid LBL methods for Deep Water projects : Total Canyon Express (GoM)

\* Large Array Calibration Method : Total E&P : Matterhorn, Dalia, Rosa, Akpo, Moho

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