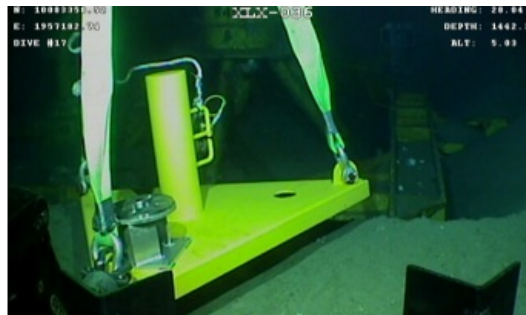


Positioning Buoys without Need of Seabed Array



Pre-spud buoy sets have traditionally required an LBL array for a relative positioning accuracy of better than 1m or 3ft. Using Zupt's inertial navigation system, accurate buoy sets can be delivered without the need to deploy or calibrate an array on the seabed, thus saving significant vessel time.

Using a known coordinate from a nearby subsea structure (manifold) Zupt's INS will stab into a receptacle and align. After this alignment the INS can begin to accurately position buoys relative to this coordinate.

Pre-set Subsea Receptacles

Zupt has deployed subsea receptacles installed onto simple frames with known offsets that can butt up to a nearby structure to provide an alignment location for the INS. The dimensional control of the structure in addition to the known offsets on the frame provide sub meter accuracy from the structure to the buoy set pattern. We can also align in any transponder frame or "bucket".

Buoy Set Frames

Zupt's buoy set frames allow the INS to position multiple buoys as a single task, instead of individual buoys. This method promises to provide exceptional relative accuracy between buoys.

If a unique buoy pattern exists and no lead time is available to fabricate a frame, the INS will place each buoy relative to the alignment point. Independently placing each buoy relative to the subsea receptacle will deliver metrology level tolerances between the buoys.