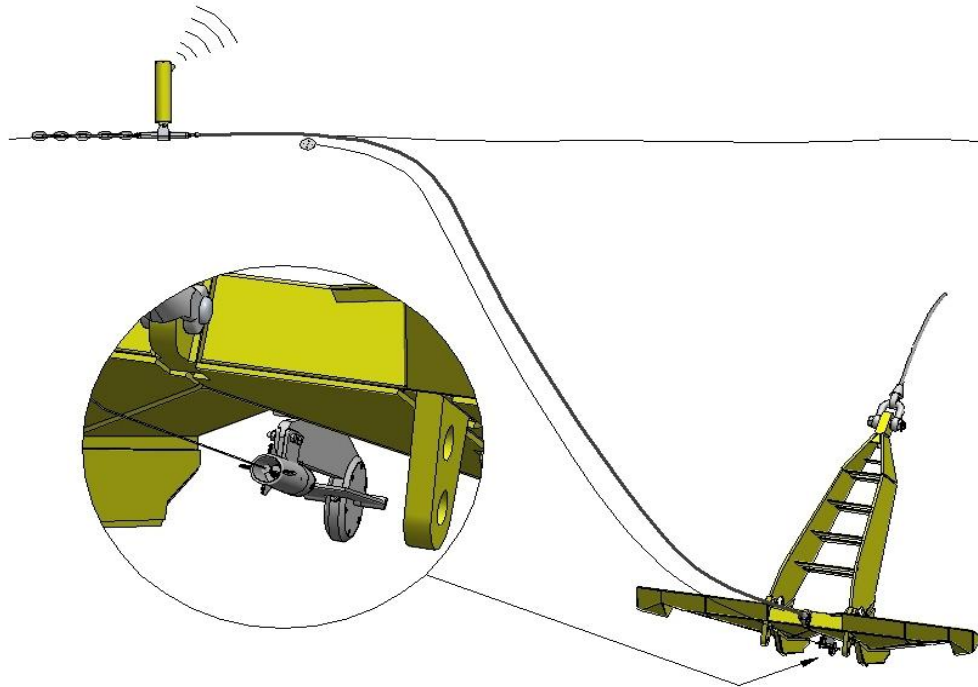


Bruce Tracker and Anchor Communication System (Patent pending)



Tracking a Bruce FFTS GP anchor



Real-time monitoring of anchor embedment from installation to recovery of a mooring spread

The Bruce Tracker and Anchor Communication System consists of instrumentation at the shackle of an anchor, inclinometers and a trajectory meter housed in a unit on the fluke, and a directional acoustic transponder at the end of a drogue tail which transmits data to an omni-directional acoustic transponder lowered from a surface vessel or moored structure.

During anchor installation, a resistance plate detaches from the trajectory meter and remains at the seabed surface as the anchor embeds. This enables a line to be hauled out from a cassette in the meter and measured automatically. The line out information is combined with data from the inclinometers and from the shackle instrumentation to give an accurate record of drag distance, depth of embedment of the anchor, magnitude and direction of load at the anchor shackle, and orientation of the anchor. The information is sent via the drogue tail to the directional transponder which relays it to the surface vessel or moored structure where it is displayed in real time on a laptop (display overleaf).

With the mooring spread installed, data from the instrumentation on each anchor is beamed towards the centre of the spread and received by an omni-directional transponder suspended below the moored structure at an appropriate depth to avoid interference from surface noise. The system provides two-way communication, enabling the instrumentation to be interrogated as required.

Batteries in the directional acoustic transponder power both the transponder and the instrumentation on the anchor. The batteries can be replaced by a ROV, as can the transponder itself. This arrangement enables the instrumentation on the anchor to be interrogated indefinitely for monitoring of installation parameters throughout the life of the mooring.

The Bruce Tracker and Anchor Communication System (Patent pending)



Operator's Screen Display