



*Fusion 2 INS combines the world's most popular Long BaseLine (LBL) acoustic positioning system with our trusted INS architecture, thus removing the interfacing complexity of two separate systems. Fusion 2 also improves the efficiency of tracking a target by embedding sensor measurement updates into the ranging cycles. Simultaneous Localisation And Mapping (SLAM) is achieved by combining very precise relative inertial movement with acoustic ranges to determine the position, relative separation and orientation of a sparse array, or single transponder.*

### COURSE OBJECTIVES

This online course provides the basic theoretical knowledge together with a thorough practical understanding of the operation of Sonardyne's Fusion 2 software utilising our 6G+ subsea acoustic positioning hardware. The course aims to teach the user the methodologies for operating and calibrating sparse arrays, through trainer-guided practical hands-on scenarios using Fusion 2 INS software and simulators via remote access online.

### WHO SHOULD ATTEND?

- Hydrographic Surveyors
- Survey Engineers

### COURSE DURATION

Comprises three 2.5hr live online sessions with our trainer, each preceded by some Pre-Learning Material that we send out in advance to be reviewed and completed in the candidate's own time.

**Session 1** - 'Group Session' for up to 3 people (Overview of Fusion 2 software and live demonstration of LBL workflows)

**Sessions 2&3** - One-to-One/two-to-one Practical Sessions (Guided practical scenarios, candidate using Fusion 2 INS in remote access mode via video conferencing tools)

### BOOKING AND CONFIRMATION

Details of course dates and current availability of places can be found at the Training Course section of Sonardyne's website: [www.sonardyne.com/products/training](http://www.sonardyne.com/products/training)

To reserve a place on a course, please email: [training@sonardyne.com](mailto:training@sonardyne.com)

### Other info

Upon successful completion of all sessions candidates will be sent a "Fusion 2 INS Certificate of Training"

## COURSE SYLLABUS

### Theory

- Introduction to Sonardyne & Acoustic positioning systems.
- Long Baseline Positioning Principles Recap
- SPRINT INS overview
- 6G+ Command Language updates
- Sparse LBL and Range aided INS
- Real-time SLAM calibration of Sparse arrays
- Post processed SLAM calibration

### Practical

- Fusion 2 Hardware setup and Configuration (serial and acoustic testing)
- Fusion 2 Software configuration
- SLAM Calibration and QC of Calibration Data (2D and 3D)
- INS/Tracking Diagnostic Tools (travel times)
- Application of Geodesy, Convergence and Scale Factor
- SLAM Calibration scenarios
- Troubleshooting and Support procedures
- JANUS INS Processing Introduction