

Introduction to Inertial Navigation

The increased use of inertial navigation systems (INS), particularly in support of offshore survey, installation and inspection tasks, has emphasised the need for a general introduction and outline of the use of inertial navigation technology for offshore applications.

The International Marine Contractors Association (IMCA) has risen to the challenge and published 'An Introduction to Inertial Navigation Systems' (IMCA S 022) produced for the association by Gordon Johnson under the direction of the IMCA Offshore Survey Division Management Committee.

The document provides a broad overview of INS technology currently in use in surface and subsurface positioning solutions, giving a general overview of the technologies, the applications and a number of important considerations in their use. This is very much a developing area and, as ever, proper planning, preparation and risk assessment is critical to ensuring the successful use of these systems.

Technology and Applications

Sections in the 34-page publication look at INS technology. Application of INS technology for positioning; INS aiding techniques; current limitations of INS solutions; future developments and there is a useful glossary and definitions section as well as appendix containing details on inertial measurement units (IMU) types, export licensing, and references and further reading.

IMCA S 022 can be [downloaded free of charge](#) for members and non-members alike and printed copies are available.

<https://www.hydro-international.com/content/news/introduction-to-inertial-navigation>
