Much of the world’s remaining offshore hydrocarbon accumulations are deposited within complex petroleum systems, hidden beneath dense overburdens or masked by geological uncertainty.

This means that greater demands are placed on seismic acquisition and processing technologies to obtain accurate measurements of the seismic wavefield—at both small and large scales.

Geological and geophysical teams require the highest possible data quality for effective interpretation and certainty during prospect identification, drilling, and reserves estimation.

**Only IsoMetrix** marine isometric seismic technology delivers high-fidelity seismic data while overcoming spatial bandwidth compromises that have limited all previous marine seismic acquisition technologies.
Achieve true 3D broadband seismic data finely sampled in all directions

Only IsoMetrix marine isometric seismic technology provides single-sensor true 3D broadband measurements for full-bandwidth imaging of fine-scale structures in the subsurface in all directions—vertically, along the streamer, and crossline between the streamers—for the most detailed imaging from seabed to reservoir.

Fine-scale isometric subsurface characterization enables generation of 3D interpretation attributes independent of the orientation of viewing. This translates into more detailed representations of the subsurface structure and stratigraphic variations, enabling a new level of insight into the geology of an asset.

Fine-scale isometric subsurface characterization of the Loppa High fault system.
The three measurements of IsoMetrix technology allow for full 3D deghosting and dealiasing. Dense wavefield reconstruction provides the only truly broadband product in all three directions—vertically, along the streamer, and crossline between the streamers.
Conventional marine 3D surveys are typically acquired using a single vessel with 50-m source separation and streamers towed 50 to 100 m apart, leading to sparse sampling of the wavefield in the crossline direction. Using this type of acquisition, the only way to improve efficiency is to compromise data quality.

IsoMetrix technology enables you to acquire more data and increase coverage using a single vessel with 250-m wide-tow source separation, improving efficiency by 15% without degrading the subsurface image.

Conventional marine 3D seismic acquisition compared with IsoMetrix technology acquisition. Wider source separation on a single vessel improves efficiency 15% without compromising data quality.
Double subsurface coverage with multivessel acquisition geometries

Multivessel acquisition geometries enable maximum source separation to record more data per pass. With a second source array on another vessel and IsoMetrix technology, you can double subsurface coverage and acquisition rates to expand beyond conventional limitations and further improve efficiency.

Conventional marine 3D seismic acquisition compared with IsoMetrix technology acquisition. By using IsoMetrix technology with a second source array on another vessel, subsurface coverage is doubled.
Tow wider and deeper with advanced deghosting capabilities

The three measurements provided by the IsoMetrix technology multimeasurement streamer make it possible to reconstruct spatially dealiased wavefields between the cables where there are no sensors—offering the ability to tow streamers farther apart—resulting in a continuous, reliable representation of the deghosted wavefield in all directions.

Advanced deghosting capabilities make it possible to tow the entire length of the streamer spread at greater depths, extending the weather window and providing powerful attenuation of noise from rigs or other seismic surveys.

Deep-tow benefits of a quieter environment and boosted low-frequency component across the full offset range. Left: A simple stack of vertical accelerometer data clearly shows good signal content below 25 Hz and all the way down to less than 10 Hz. Right: For very low frequencies, hydrophone data can be sufficient. A single shot record has good signal separation below 2.5 Hz for reflections and early-arrival energy across the full offset range.
Achieve a new level of detail from seabed to reservoir

IsoMetrix technology makes it possible to accurately reconstruct the full 3D wavefield between the streamers, isometrically sampled at a 6.25-m by 6.25-m surface grid of data for every shot record.

This fine sampling makes the data suitable for use in a wide range of interpretation and modeling applications, including high-resolution near-surface imaging, deep reservoir characterization, field development planning, and 4D (time-lapse) production monitoring.

Improvement from IsoMetrix technology for prestack inversion cubes at the reservoir level. Left: Conventional hydrophone-only data (P) shows some indication of formations within the reservoir interval, but they are broken up. Right: IsoMetrix technology’s data (PZY) is more continuous and reliable for reservoir characterization and development of reservoir drainage strategies.
Seismic technology that provides true 3D broadband measurements
IsoMetrix technology enables the industry's most efficient and cost-effective acquisition of seismic surveys—improving data quality and reducing operational and environmental exposure.
IsoMetrix
Marine isometric seismic technology