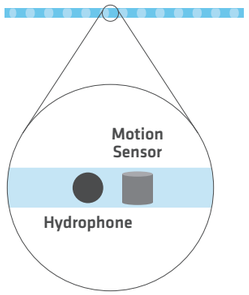
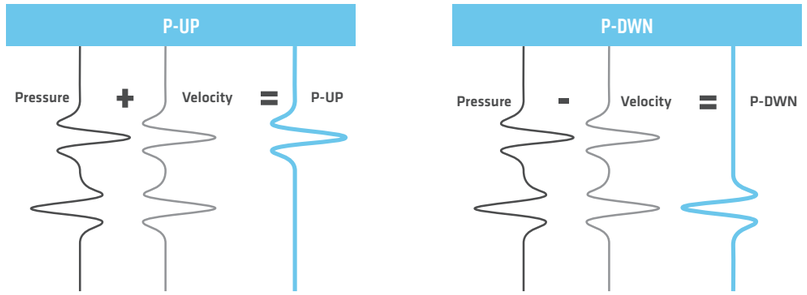
PGS SWIM®

Extending Illumination and Angular Diversity

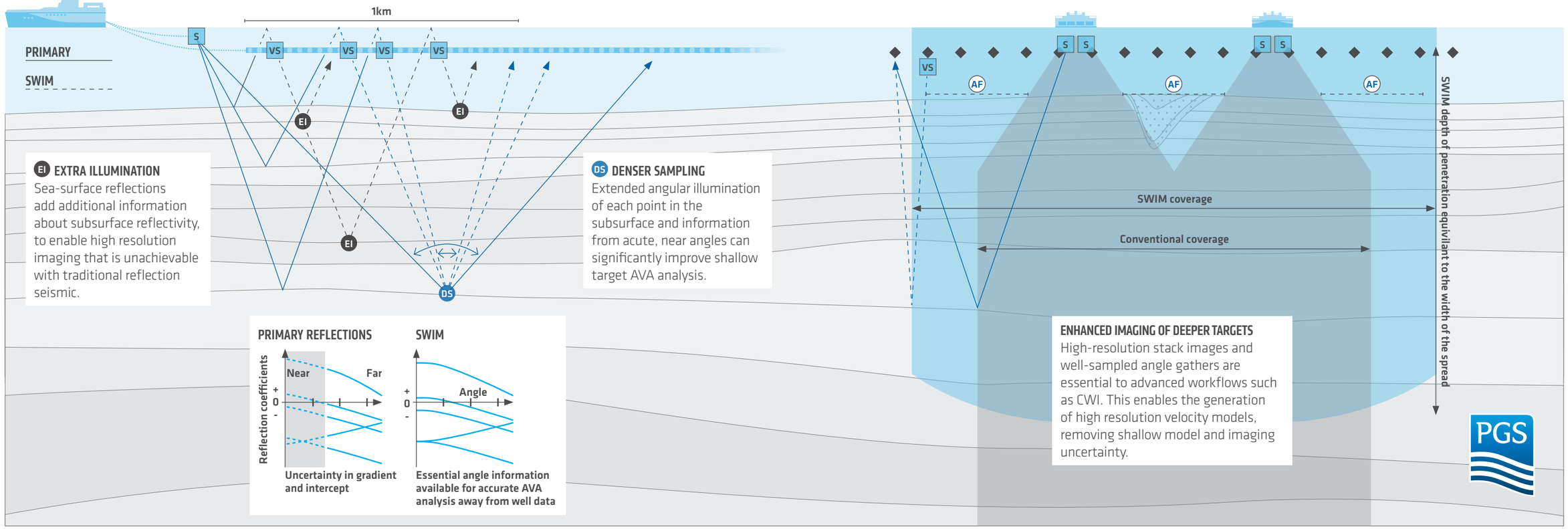
GeoStreamer data and SWIM imaging

Separated Wavefield Imaging (SWIM) is an innovative depth-imaging technology that uses both up- and down-going wavefields, recorded by GeoStreamer® dual hydrophone and motion sensors.





VS **VIRTUAL SOURCES** Utilizing sea-surface reflections and making each receiver a virtual source results in the survey area having increased source sampling and improved angular diversity and illumination.



EI EXTRA ILLUMINATION
Sea-surface reflections add additional information about subsurface reflectivity, to enable high resolution imaging that is unachievable with traditional reflection seismic.

DS DENSER SAMPLING
Extended angular illumination of each point in the subsurface and information from acute, near angles can significantly improve shallow target AVA analysis.

PRIMARY REFLECTIONS

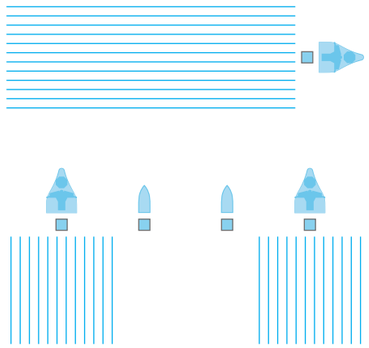
Uncertainty in gradient and intercept

SWIM

Essential angle information available for accurate AVA analysis away from well data

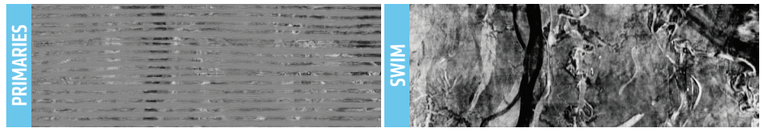
ENHANCED IMAGING OF DEEPER TARGETS
High-resolution stack images and well-sampled angle gathers are essential to advanced workflows such as CWI. This enables the generation of high resolution velocity models, removing shallow model and imaging uncertainty.

SWIM + Survey Geometries



NARROW AZIMUTH TO WIDE TOW SWIM enables the design and use of cost effective acquisition geometries such as super-wide tow. For narrow azimuth surveys in shallow water SWIM yields better sampled data in the angle domain.

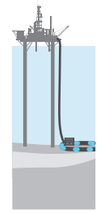
WIDE AZIMUTH The extra subsurface illumination of sea-surface reflections combined with Wide Azimuth (WAZ) acquisition facilitates the imaging of salt flanks and other steeply dipping structures.



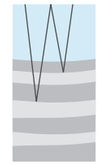
Reduce Acquisition Footprint

Turning the receiver spread into virtual sources VS and receiver arrays reduces source sampling in the crossline direction from the distance between sail lines to that between streamers. Using SWIM in shallow water fills in gaps in near-surface coverage successfully reducing the acquisition footprint AF.

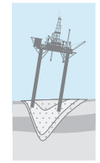
Further Uses



OCEAN BOTTOM DATA
SWIM has been successfully applied to seabed data such as ocean bottom node and cable recordings. SWIM can increase the shallow image area of the seabed and the underlying sediments by up to 700%.



IMPROVED MULTIPLE REMOVAL
SWIM enables the generation of detailed shallow overburden images that are a requirement for some data-driven 3D SRME multiple removal methods.



REDUCING DRILLING RISK Superior illumination of the overburden using SWIM provides high-resolution images suitable for shallow hazard work, helping to identify drilling risks.

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