

# 2-D and 3-D Sonar Imaging

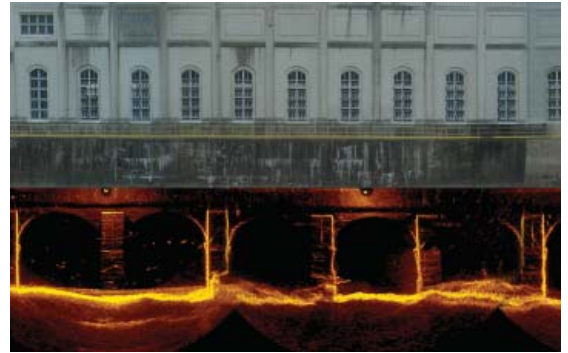
## DUAL AXIS SONAR SURVEYS

ASI's dual axis technology provides underwater infrastructure operators accurate inspection data, without the burden of costly downtime.

The system employs two axes of rotation aligned perpendicular, resulting in the ability to point the transponder in any direction. By calculating the distance to objects from the transponder head at multiple angular positions, a three dimensional point cloud representation of the structure and any surrounding debris may be obtained. Sensors on board the system can dynamically monitor and account for changes in temperature, pressure and salinity,

used in speed of sound calculations. Changes in the attitude (roll, pitch and yaw) of the system, as a result of high flow past the system, can also be dynamically corrected.

This technology is typically used to obtain full coverage scans of flooded surge shafts or to scan intake structures of hydro electric penstocks, and fore-bays of a nuclear plant, all while under fully operational conditions. Dimensioned maps are generated providing data regarding debris accumulation on the face of the structure, "as-built" information, and sediment deposition (bathymetric information) in the vicinity of the structure.



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