Petroleum Development Oman (PDO) has upgraded its seismic crews to enable high channel count and high-productivity acquisition of wide-azimuth (WAZ), finely-sampled seismic data ("New Generation Seismic"). These crews operate 24 hrs per day using simultaneous vibroseis sourcing and are consistently setting world-class production records well in excess of 13,000 VPs per day. The typical PDO WAZ survey acquired by these crews is approximately 2,700 km2 of 4000+ fold data in 25x25 m common midpoint bins. The resulting data volume per survey is approximately 25 billion seismic traces and 130 Terrabytes.

As a result of these changes the volume of seismic data arriving at PDO’s In-House Seismic Processing Centre each month has increased by a factor in excess of 10 in the last year alone. Currently the processing centre receives over 20 Terrabytes of field data per month from two crews. This data explosion has necessitated large scale upgrades to the processing centre, including substantial increases in CPU capacity, network bandwidth and online and offline data storage. Total disk storage for ongoing project work, for instance, is set to rise to 2.8 Petabytes. Despite upgrades, CPU demand will outstrip local capacity and external resources will be accessed to provide the in-house centre with "unlimited" CPU.

In addition to the hardware upgrades, geophysical software developments have been equally important. These developments include data-adaptive ground roll attenuation, software to facilitate azimuthal velocity analysis, a new 3D Radon multiple attenuation module and the implementation of Common Offset Vector and 5D interpolation.

The transformation of PDO’s in-house seismic data processing centre to accommodate and fully utilize New Generation Seismic will be described in this paper.
NO FULL PAPER AVAILABLE