

P1Tools

P1Tools is a Windows based program used to perform Quality Control of navigation data for seismic surveys recorded in the industry standard UKOOA P1/90 format, and which also provides an extensive set of utilities relating to P1/90 and Shell Processing Support (SPS) datasets.

Quality Control Modules

QC Offsets and Integrity

- Computes ranges between pairs of nodes as configured by the user. The following components are computed for each pair configured:
 - Radial, cross line and along line distance
 - Azimuth
- Azimuth for along and across line components is selectable from course made good and line heading (first to last shot).
- Output to csv file summary results: mean, minimum and maximum values.
- Interactive time series plots of the computed components.
- Record integrity checking:
 - Number of vessels, streamers, receiver groups
 - Source firing sequence
 - Shotpoint interval
- Comprehensive format checking.
- Batch mode supported.

QC Nodes

- Computes shot to shot movement and depth of nodes configured by the user. The following components are computed for each node configured:
 - Radial, cross line and along line distance
 - Delta cross line and delta along line distance
 - Depth
- The waypoints for line azimuth for computing the along and cross line components are selectable from:
 - First and last shotpoints
 - SeisPos generated P1/90 header – the waypoints defined in the P2 header – allowing analysis of vessel steering and offset.
 - User defined
- Output to csv file summary results: mean, minimum and maximum values.
- Interactive time series plots of the computed components.
- Batch mode supported.

Compare

- Performs shot by shot comparison of positions and depths between two P1/90 files for nodes configured by the user. The following components are computed for each node:
 - Radial, cross line and along line distance
 - Depth
- Output to csv file summary results: mean, minimum and maximum values.
- Interactive time series plots of the computed components.

Trend Analysis

- Line-by-line time series plots of:
 - Node offsets
 - Node movement
 - P1/90 Comparison

Statistical Testing

- Application of user defined acceptance criteria to:
 - Node offsets
 - Node movement
 - P1/90 Comparison
- Statistics available:
 - Average
 - Standard deviation
 - Percentile
- Tests:
 - Equality
 - Inequality
 - Greater than
 - Less than
 - Inclusion

Replay

- Interactive graphical replay of P1/90.
- Displays:
 - Vessel, sources, receiver groups, tailbuoys.
 - Survey line.
 - Waypoints (from SeisPos generated header).
- Highlights anomalous receiver group intervals.
- Zooming and scaling functions.
- Supports onscreen measurements.
- The waypoints for line azimuth are selectable from:
 - First and last shotpoints.
 - SeisPos generated P1/90 header – the waypoints defined in the P1 header, allowing analysis of vessel steering and offset.
 - User defined.

Streamer Shape Plot

- Plot user specifiable selection of Vessels, Source, Streamers and Tailbuoys
- Specifiable receiver group interval
- Specifiable shot range
- Supports application of streamer rotation to improve clarity of display
- Plot to screen and printer/plotter

Receiver Separation Report

- For each receiver pair:
 - Mean, minimum and maximum distance
- Overall:
 - Minimum and maximum distance

Utilities**Extract**

- Extracts data from P1/90 file in field delimited or P1/90 format.
- User specifiable record and attribute configuration.
- Supports P1/90 decimation.
- Specifiable inclusive or exclusive shot range and interval.
- Batch mode supported.
- Zipfile input supported.

Coordinate Conversions

- Use P1/90 header parameters or manually specified parameters
- Zipfile input supported.
- Batch conversions.
- EPSG ellipsoid definitions.
- Projections currently supported are:
 - UTM
 - Transverse Mercator
 - Lambert Conic Conformal 1 and 2 Parallel
 - Oblique Mercator
 - New Zealand Map Grid

Preplot

- 2D
- 3D
- Grid or ellipsoidal distance computations
- Interactive graphical editing
- Final map production
- Output options:
 - Sail lines
 - CMP lines

- Binning grid
 - Individual shotpoint locations
- Output formats:
 - P1/90
 - SPS
 - DXF

P1/90 to DXF (postplot)

- Zipfile input supported.
- Batch mode supported.
- Select records from:
 - Vessel
 - Source
 - CMP
 - Antenna
 - Echosounder
 - Tailbuoy
 - Z-record
 - Near receiver group
- Symbol specifications:
 - Type
 - Size
 - Label interval
 - Label size
 - DXF Layer

Concatenation

- Zipfile input supported.
- Header from first file

Intersection

- Zipfile input supported.
- Batch mode supported.
- SPS supported.
- Compute reverse intersections option.
- Output format options:
 - Native
 - Omega

Tide

- Tidal reductions from flexible format text file
- Zipfile input supported.
- Batch mode supported