



## **1 OVERVIEW**

SeisPos is a MS Windows software program for the processing of raw navigation data for marine seismic streamer surveys from UKOOA P2 raw data format to UKOOA P1/90 final data format. The program has been tested on all versions of MS Windows.

The installation and licensing of this program is documented separately from this manual.

This operation manual should not be considered as substitute for training. Training courses are run by FGPS on a request basis.

Data formats supported are UKOOA P2/86, P2/91 and P2/94.



## **1.1 Data Flow**

The diagram below represents the fundamental steps taken when processing a line. These steps follow the ordering of the module icons on the main panel. All modules in this flow must be executed in the processing of a line unless stated to be optional.

When the Automatic Processing option is used this is the flow that is followed, with all modules executed except for the loading of defaults if defaults have not already been saved.

Throughout this process extensive analytical and data manipulation functions are provided. These are described in detail under the appropriate module descriptions. An overview of the main modules is given in the next section.

Further analysis and quality control of the output P1/90 can be performed using FGPS' P1Tools program. This program is covered in a separate manual.

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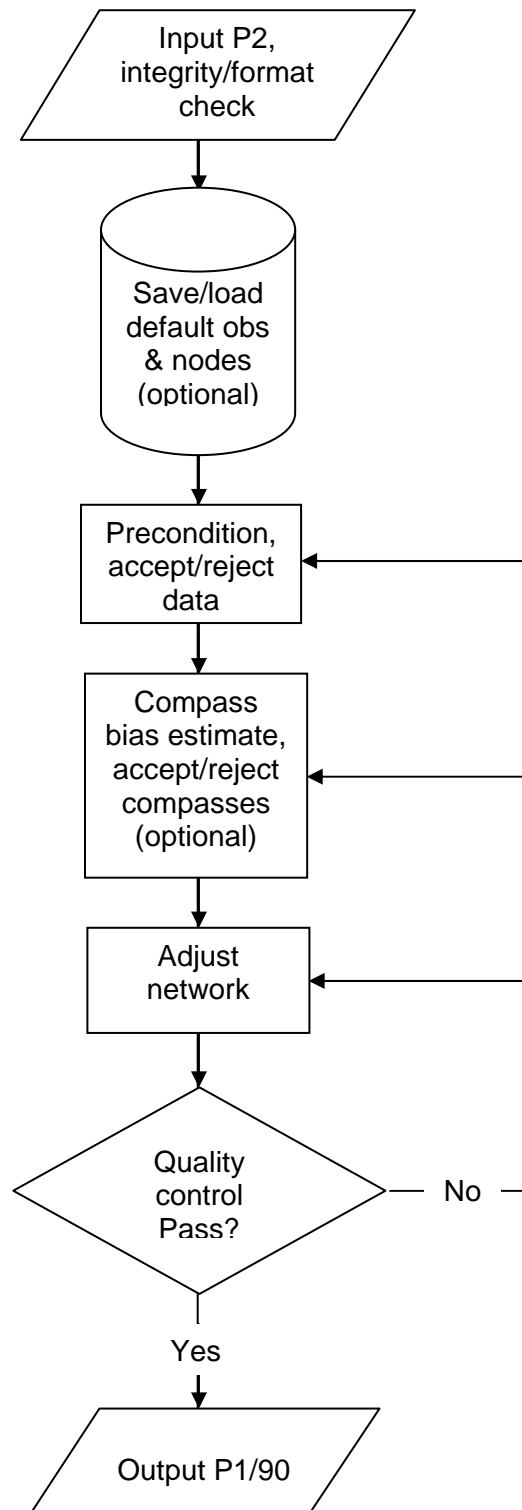


Figure 1.1



## 1.2 Main Toolbar

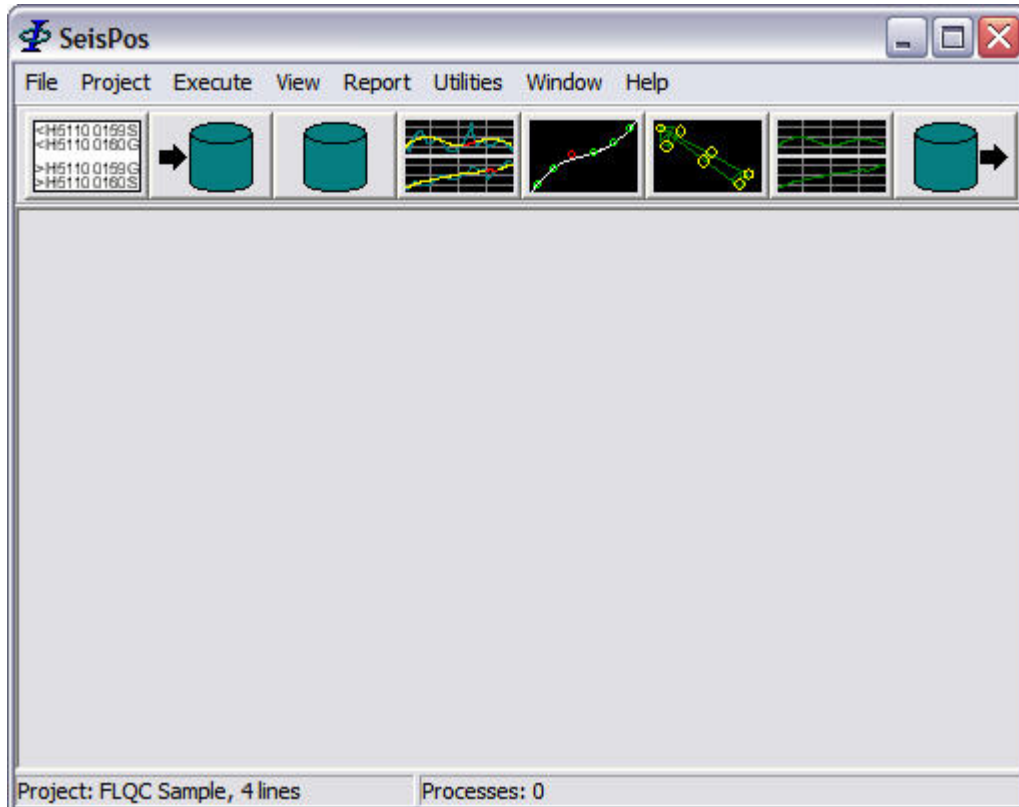
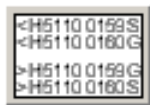


Figure 1.2



### 1.2.1 Compare P2 Headers

- Displays differences, omissions and additions between header records of selected UKOOA P2 files.
- Browse/Edit Database



### 1.2.2 Input UKOOA P2

- Builds a proprietary database of nodes and observations from header and raw data from UKOOA P2/91 or P2/94 file.
- Performs automated format checking and data integrity checks.
- Optionally start automatic processing.

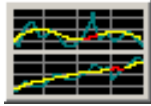


### 1.2.3 Database

- Provides interactive database of all header and event data.
- Aids in checking UKOOA format compliance.
- Edit data.

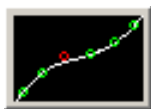


- Create nodes and observations.
- Export data in Microsoft Excel compatible format (csv).
- Precondition Data



#### 1.2.4 *Precondition*

- Auto-precondition and interactive time series preconditioning of data.
- Despiking, editing, filtering, interpolation/extrapolation and de-skew to shot event.
- Dynamically displays detailed statistical data for each observation.
- Combines with network display to show effect on network of rejected/missing data.
- Display rate of change, delta, comparison plots.



#### 1.2.5 *Compass Bias Estimate*

- Perform streamer compass bias estimate by polynomial model or spatial method. Optionally reject compasses.



#### 1.2.6 *Adjust Network*

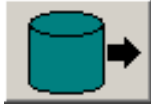
- Multi-vessel, multi-streamer.
- Fully integrated weighted least squares solution.
- Dynamic interactive graphics.
- Allows multiple network/sub-network configurations.
- User configurable Delft method statistical testing and rejection/weighting.
- Least squares solution for streamer rotations and stretch.
- Staged configurable output of all positioning and QC data
- Comprehensive QC statistics



#### 1.2.7 *Quality Control*

- Interactive time series plots of all adjustment QC data:
- Adjustment unit variance, redundancy and number of iterations.
- Observation value, residual, normalised residual, MDE and SD.
- Node position, error ellipse external reliability and number of observations.
- Node movement in-line and cross-line.
- Streamer rotation, stretch and feather.
- Shot distance, time interval and vessel speed and course made good.

#### 1.2.8 *Output*



- Outputs user configurable positioning data in UKOOA P1/90 or SPS format.



### **1.3 Main Menu**

#### *1.3.1 File*

- Printer Setup:* Windows printer setup dialogue.
- Remove Licence:* Disable program and produce unlicense code to terminate lease.
- Update Licence:* Extend licence period
- Exit:* Exit the program.

#### *1.3.2 Project*

- New:* Define a new project.
- Open:* Open an existing project.
- Edit:* Edit/browse an existing project.
- Delete:* Delete an existing project.
- Log:* Display the project log.

#### *1.3.3 Execute*

- Auto Precondition:* Non-interactive processing of all observations.
- Stop Batch Processing:* Stop batch processing.

#### *1.3.4 View*

- Network Diagram:* Interactive network view, edit node and observation attributes
- Log:* View audit trail
- Format Violations:* View format violations
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*Warnings:* View warnings

*Comments:* View comments recorded in P2

### 1.3.5 Report

Refer to section [12.Reports](#).

### 1.3.6 Utilities

*Extract P2:* Extract partial P2 to file. Optionally exclude raw GPS data.

*Split P2:* Splits a file containing multiple datasets into individual files, each named according to the line name defined in the header.

*List P2:* Produces a line listing from the selected files. Each record contains *filename, line name, Sequence, FSP, LSP, First Shot Time, Last Shot Time*.

*Explorer:* Opens the *Project Database* folder in Windows Explorer.

*Coordinate Conversions:* Starts the Coordinate Conversion utility.

### 1.3.7 Help

*Manual:* Displays the User Manual using the default PDF viewer.

*About:* Display version, licence number, number of days remaining on a time limited licence and contact e-mail for technical support.

*Online Services:* Starts the Online Services module for upgrading the program and uploading data.

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