**DESCRIPTION OF THE SUBJECT OF THE CONTRACT**

**Tender procedure entitled "Supply of software for interpretation of seismic data**

**together with a licence** **and technical support",** reference number: DZP-2310-1/2021

The subject-matter of the contract is the supply of single-station, specialist software for seismic data interpretation. The contract includes a perpetual licence to use the programme and technical support in English (maintenance).

The seismic interpretation software for 2D and 3D digital seismic data shall satisfy the following conditions listed below and provide the following functionality:

1. import/export of the following types of data and analysis results, including:

* 2D and 3D seismic data (in \*.sgy file format)
* borehole geophysics logs (including the following file formats: \*.las, \*.tiff, \*.dib, \*.sif, \*.dat, \*.asc, \*.prn, \*.txt, \*.1)
* hole headers and trajectory information (\*.wv2, \*.wcs, \*.pid, \*98f, \*.wds, \*.wba, \*.abs, \*.dat, \*.wel, \*.dat, \*.asc, \*.prn, \*.txt, \*.dev)
* files with information containing stratigraphic markers (\*.dat, \*.asc, \*.prn, \*.txt)
* faults and fault planes (\*.dat, \*.asc, \*.prn, \*.txt.)
* time-depth relationship curves (\*.asc, \*.dat, \*.prn, \*.txt, \*.7, \*.8)
* synthetic seismograms (\*.sgy, \*.asc, \*.1, \*.dat, \*.txt)
* seismic horizons and grids (\*.dat, \*.xyz, \*.asc)
* coordinate system files (\*.dat, \*.xyz., \*.asc, \*.sp1, \*.uko)
* maps and other files embedded in a coordinate system (\*.asc, \*.dxf, \*.bas, \*.tif, \*.twf, \*.ecw)

1. the software shall allow to perform structural interpretation of 2D and 3D seismic data (interpretation of non-conformity surfaces, seismic horizons and faults), including automatic correlation of seismic horizons, creation of grids, time and velocity maps, the ability to visualise 3D seismic volumes and create a basic 3D grid framework during interactive interpretation. This module shall also allow to generate basic seismic attributes. The software shall allow for interactive visualisation of interpreted horizons, faults and other 2D and 3D surfaces.
2. the programme shall allow for interactive calibration of borehole and seismic data by means of acoustic profiling and average velocity curves *(checkshot)*, wavelet extraction and construction of synthetic seismograms, both for 2D and 3D seismic data. The programme has to allow to edit average velocity curves or to correct acoustic profiles, manipulate and adjust them, including to interactively edit seismograms using a "*stretch and squeeze*" function to relate seismic data to borehole data. The software has to allow for extraction of analytical elementary wavelets with statistical and deterministic methods (including deterministic extractions with *Walden-White* and *Wiener-Lewison* methods), allow for wavelet variation as a function of time, its rotation and shift with preview of amplitude and phase spectrum. Visualisation of the constructed synthetic seismograms shall allow for their comparison against background of attached seismic data, selected borehole data and their display together with seismic interpretation and stratigraphic boundaries.

The software should allow for time/depth conversion on all related objects in these domains, such as surfaces, horizons, faults, borehole data and synthetic seismograms, as well as models and grids. The software shall provide the ability to calculate time-depth functions in the process of constructing synthetic seismograms, create a velocity (variability) model and calibrate it against the boreholes, and apply the time-depth functions calculated for selected boreholes to other boreholes by sharing the time-depth curve.

As part of the software functionality for calibrating borehole and seismic data, it must also be possible to interactively display, manage and interpret stratigraphic markers, borehole logs, time/depth curves, checkshots, synthetic seismograms and seismic data, as well as image files (\*.jpeg, \*.bmp, \*.tiff). The programme should support (\*.lic) format, allowing for depth calibration of raster files, i.e. (\*.jpeg and \*.tiff) files for selected boreholes.

1. the software shall be supported in a working environment with the following hardware and application requirements:

* permanent access to the Internet with a guaranteed bandwidth of at least 512 kbps,
* a PC, with the following configuration: memory min. 16 GB Ram, Intel Core i7 2.7 GHZ or Intel Xeon E5 2.0 GHZ or newer versions, operating system - MS Windows 10,
* any web browser installed;
* activated service of JavaScript,
* installed Adobe Acrobat Reader or any other programme that supports the pdf format.

1. Common terms and conditions of the technical support and warranty:
2. The technical support services for the software shall be provided for the period from the date of signing the software acceptance protocol to 30 September 2022. These services include the right to subscription, failure reporting and technical support.
3. The software subscription includes the right to upgrade to the latest then-current version of the software and the right to install any then-current updates and patches.
4. The Contractor shall grant a warranty for the period specified in paragraph 1.
5. As part of the technical support, the Ordering Party shall receive software support as follows: 8h x 5 days per week (Monday to Friday from 9 am to 4 pm on working days) by telephone, e-mail, website form, etc. As part of the above, the Ordering Party shall also gain access to the documentation, technical resources, knowledge base and discussion forums related to the use of the software.
6. The Ordering Party shall be entitled to an unlimited number of failure reports.
7. Software support shall be provided by the manufacturer or a contractor authorised by the manufacturer.
8. Failure reports shall be accepted on a 24/7 basis (7 days per week, 24 hours per day) by e-mail, fax or phone.
9. The Contractor shall provide fault reporting and technical support services in English.
10. Response time to a failure report - within not more than 2 consecutive working days. The response time shall be understood as confirmation of acceptance of the failure report.
11. Required repair times: not more than 2 working days of the response to the failure report.
12. Remedy of the failure shall be understood as restoring the original functionality of the software or launching and implementing the replacement procedures proposed by the Contractor and accepted by the Ordering Party, which guarantee restoring the full functionality of the software.