

# Tesseral 2D Release Notes

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## 7.2.9 Minor feature release

### Fixed Bugs:

- 1) fixed coordinate recognition in the post-stack time migration procedures MIG and MIGW

## 7.2.8 Minor feature release

### Improvements:

- 1) improved licensing:
  - FlexLM support
  - use of “register.ini” and “Tesseral.ini” as alternative storages of license keys (for the cases of insufficient permissions to write in registry)
- 2) improved source & receiver positioning on relief

### Fixed Bugs:

- 3) fixed spontaneously pop-up of error message

## 7.2.6 Minor feature release

### Improvements:

- 1) GPU computing support in HASP licensing
- 2) extended TAM project file format (more parameters are stored)

## 7.2.4 Minor feature release

### Improvements:

- 1) added support of passive seismic sources and horizontal monopole source
- 2) improved error messages and notification
- 3) the tact values entered by user is stored for future use
- 4) new command “Edit > Smooth Polygon”, the corresponded context menu command
- 5) group smoothing of the polygons generated from well logs

### Fixed Bugs:

- 6) corrected an error message text (on finite-difference schema stability fail)

## 7.2.2 Minor feature release

### Improvements:

- 1) improved comparison of SEG-Y and model coordinates when exporting SEG-Y from TGR for better fitting receiver coordinates

- 2) saving additional visualization parameters (Grouping & Interval) in exported SEG-Y and using final scale from the visualization options dialog
- 3) output of used CPU cores and GPU in the modeling progress dialog
- 4) improved default sampling step in the Eikonal Ray Tracing settings

#### Fixed Bugs:

- 5) in “Reset” in the “Time to Depth Transform” dialog
- 6) corrected implementation of cable distances between receivers
- 7) corrected title of SEG-Y export dialog
- 8) corrected title in the modeling progress dialog when running Eikonal Ray Tracing
- 9) fixed memory leaks in Eikonal Ray Tracing

### 7.2.1 Minor feature release

#### Improvements:

- 1) added support of cable distances between sources

#### Fixed Bugs:

- 2) corrected implementation of cable distances between receivers

### 7.2.0 Major feature release

#### Improvements:

- 1) minimal-phase signal is computed always by FFT (in the past it was not so for the signal lengths different from  $2^k$ )
- 2) better support of gradient media in Eikonal Ray Tracing
- 3) support of import and export for TGR and SEG-Y files of the only trace
- 4) the unused button “Export to Velocity” on the tab “Time” is hidden for the procedures CDPVSP and MIGVSP
- 5) increased the number of threads (CPU cores) available by default in the evaluation licenses issued in the form of alpha-digital Incoming Key

#### Fixed Bugs:

- 6) in the model coordinates if the background TGR is not found
- 7) in importing model from SEG-Y in feet
- 8) fixed size and functionality of the “Help” buttons in several dialogs
- 9) fixed scale in the wavelet and approximation charts in the framework signal dialog tab
- 10) saving the frequency after the signal approximation by Ricker/Puzirov wavelets in the framework signal dialog tab

### 7.1.4 Minor feature release

#### Improvements:

- 1) added support of a new licensing mechanism “Tesseral License Service” on special user’s requirement
- 2) a new menu command “Help > Register...”

#### Fixed Bugs:

- 3) in import of LAS files with depth in feet
- 4) in export of TGR to SDS-PC for VSP and as result corrected the CDPVSP procedure

### 7.1.3 Minor feature release

#### Improvements:

- 1) added the ability to run multi-threaded calculation in the case of alpha-numeric license

#### Fixed Bugs:

- 2) in NMO procedure when using TGR file format
- 3) in displaying the number of threads in use during computation

### 7.1.2 Minor feature release

#### Improvements:

- 1) migrations (except for VSP) use TGR and SEG-Y files directly without conversion to SDS-PC
- 2) automatic creation of SEG-Y import configuration (\*.xgy) files for the VSPSEC procedure
- 3) default output format for migration (except VSP) is SEG-Y
- 4) improved default apertures for the MIGVSP procedure

#### Fixed Bugs:

- 5) in migration options initialization
- 6) small bug fixes in 2D simulation

### 7.1.1 Minor feature release

#### Improvements:

- 1) computations now natively support x64 CPUs on 64-bit OS and can use all available memory (>3GB)
- 2) important improvements of Eikonal Ray Tracing method: illumination distribution over Fresnel zones, reflections from polygon bottoms and better diffraction point handling

#### Fixed Bugs:

- 3) in simulation of exploding horizons by all finite-difference methods
- 4) corrected energy component in first arrival time field

### 7.1.0 Major feature release

#### Improvements:

- 1) ability to project shotpoints or receivers also onto the bottom of a polygon

- 2) automatic correlation of synphase lines for direct and reflected waves during 2D AVO modeling; the lines can also be edited manually
- 3) automatic (silent) import of SEG-Y files obtained as the result of a migration or another processing in the program

Fixed Bugs:

- 4) bug fixes and stability improvements

## 7.0.5 Minor feature release

Improvements:

- 1) ability to change the order of polygons

Fixed Bugs:

- 2) in polygons generation from LAS-files
- 3) in task generation for 2.5D simulation

## 7.0.4 Minor feature release

Fixed Bugs:

- 1) in Eikonal Ray Tracing simulation
- 2) in VSP simulation
- 3) NMO procedure

## 7.0.3 Minor feature release

Fixed Bugs:

- 1) in first arrival method of time field generation
- 2) in anisotropic modeling

## 7.0.2 Minor feature release

Improvements:

- 1) ability to manually specify the number of cores per process for parallel tasks

## 7.0.1 Minor feature release

Improvements:

- 1) information on processor utilization during computations
- 2) storing default startup directory in the system registry for editing and reuse
- 3) generating .MSI setup package in addition to .EXE (for system administrators)
- 4) saving the license keys in the registry folder HKEY\_LOCAL\_MACHINE so other users may use them

Fixed Bugs:

- 5) fixed an error message for old Sentinel RMS licenses

## 7.0.0 Product release

Tesseral 2D is widely used as an educational tool in the study of wavefield propagation phenomena, survey planning, processing and interpretation of seismic data. The program is intended for the interactive analysis and examination of depth-velocity models, processing and interpretation of 2D seismic data.

Application allows assigning various seismic acquisition geometries, numerical model building of complex seismic sections and modeling propagation of seismic waves in heterogeneous medium for the scalar, acoustic, elastic and elastic anisotropic wave equations.

Algorithms use fast and accurate computational scheme based on the finite difference method, which allows effective modeling of arbitrarily complex geological medium, including the combination of solid and liquid state bodies.

In addition to the previous version (6.5) two more simulation methods have been added in the version 7:

- 1) Visco Elastic modeling procedure for precise accounting the frequency dependent absorption
- 2) Eikonal Ray Tracing modeling procedure for generating synthetics without multiples