



# INPHO SOFTWARE

## SCOP++

GENERATE AND MANAGE VERY LARGE DIGITAL TERRAIN MODELS (DTM) SUCH AS NATION-WIDE DTMS WITH DATA COMING FROM LIDAR, PHOTOGRAMMETRY OR ANY OTHER SOURCE.

### KEY FEATURES

SCOP++'s flexible architecture allows for a variety of DTM operations and visualizations:

Task-oriented modular structure, to easily adapt to customers needs

Easy integration into any third-party workflows

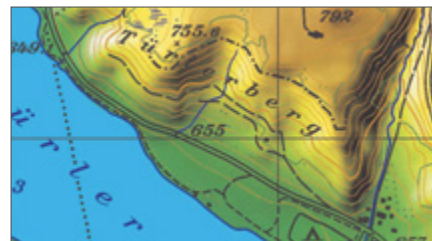
Efficiently process hundreds of millions of DTM points with unsurpassed quality of interpolation, filtering, management, application and visualization.

SCOP++ uses robust interpolation techniques with flexible adaptation to terrain type and terrain coverage to provide a complete solution for powerful filtering, classification, quality control and editing of LiDAR data:

- TopDM utilizes an integrated database system well-suited to managing very large DTM projects, up to nation-wide DTMs
- Efficient hybrid DTM data structure and flexible, advanced interpolation guarantees rigorous consideration of break-lines and qualified data filtering
- Numerous DTM applications are covered, such as contouring, hill-shading, profiling, volume calculations, or slope analysis, and many more
- Work with points from LiDAR, photogrammetry or other sources
- Automatically filter airborne laser scanning to classify raw point clouds into terrain and off-terrain points and effectively extract true ground points for further DTM processing

### PRODUCT HIGHLIGHTS

- Proven DTM technology
- High-productivity through effective, high-capacity data and batch processing
- Suitable for management of nation-wide DTMs
- Precise interpolation and filtering for excellent DTM quality
- Scalable with additional SCOP modules available for pre- and postprocessing of DTM data



## FEATURES OVERVIEW

### SCOP++ Kernel

- Precise DTM interpolation with or without filtering
- Generation of DTMs consisting of up to one billion points
- Data densification and data reduction
- Contouring with cartographic quality
- Basic profiling
- Flexible Z-coding and hill-shading
- Integrated raster and vector graphics
- Combined visualization of geo-referenced raster graphics (e. g. digital map) with DTM views
- Interpolation of check point elevations

### SCOP++ LIDAR

- Filtering of airborne laser scanning data for automatic classification of the raw point cloud into terrain and off-terrain points, to extract true ground points for further DTM processing
- Robust interpolation techniques with flexible adaption to terrain type and terrain coverage
- User-controlled hierarchical process using point cloud pyramids
- Elimination of gross errors in any DTM data

### SCOP++ Analyzer

- DTM algebra (including difference DTMs)
- Volume computation
- Profiling, cross-sections
- Digital slope models and slope maps
- Mosaicking and feathering of overlapping DTMs

### SCOP++ Visualizer

- Perspective DTM views in form of raster graphics generated by SCOP++ Kernel, or of wire-frame models
- Panoramic views with annotation of geographic names
- Silhouette views

### SCOP++ TopDM

- Topographic Data Management designed for storing, managing and archiving nation-wide digital elevation information
- Geocoded relational data base
- Georeferencing (map projections and coordinate transformations, geodetic datum transformations)
- Management of DTM data: DTM selection and export; merging DTMs; extracting parts from DTMs; DTM resampling
- On request: interfacing with ORACLE databases:
- Management for LiDAR point clouds

## OPTIONS

- Monthly rental and upgrades from competitive products available
- Maintenance includes support and version updates

## SYSTEM REQUIREMENTS

- PC workstation
- 4 GB RAM
- Windows 7, 64 bit
- To complete the workflow of DTM processing, in addition to SCOP++, DTMaster is recommended for DTM quality control and editing

## BUNDLES

### LiDAR Box

- Bundle of SCOP++ LiDAR with DTMaster visualization and editing

## SUPPORTED FORMATS

### Data input

- SCOP Winput, Binary SCOP Winput, AutoCad DXF, ArcInfo Generate, XYZ, Binary XYZ, ASCII Text File, Kotenband, LAS, ESRI Shapefile

### Model input

- SCOP RDH, ArcInfo ASCII Grid, Raw Binary, TIFF, USGS DEM Raster, USGS SDTS Raster, SRTM, DTED Level 0, DTED Level 1, DTED Level 2, ESRI .hdr, ENVI.hdr, ERMapper, Golden Software ASCII Grid, Golden Software Binary Grid, ERDAS Imagine, Intergraph Raster, NASA Planetary Data System

### Image overlay input

- \*.pyr, \*.tif, \*.jpg, \*.pix

### Data Export

- SCOP Winput, Binary SCOP Winput, AutoCad DXF, ArcInfo Generate, XYZ, Binary XYZ, Kotenband

### Parameter Export

- SCOP setup file

### Model Export and secondary model export

- Hybrid DTM
  - SCOP RDH, ArcInfo ASCII Grid, Raw Binary, AutoCad DXF, VRML, SCOP Winput, Binary SCOP Winput, XYZ, Binary XYZ, STL, REB, Unstructured Cell Data File, Surfacewater Modelling System 2DM File, CityGrid XML, DTED Level 0, DTED Level 1, DTED Level 2, DGM-Band, XYZ-Slope, VESTRA Winput, TIFF, USGS DEM Raster, SRTM, ESRI.hdr, ENVI.hdr, ERMapper, Golden Software ASCII Grid, Golden Software Binary Grid, ERDAS Imagine, Intergraph Raster
- Grid
  - ArcInfo ASCII Grid, Raw Binary, AutoCad DXF, VRML, XYZ, Binary XYZ, DTED Level 0, DTED Level 1, DTED Level 2, DGM-Band, XYZ-Slope, TIFF, USGS DEM Raster, SRTM, ESRI.hdr, ENVI.hdr, ERMapper, Golden Software ASCII Grid, Golden Software Binary Grid, ERDAS Imagine, Intergraph Raster, SCOP RDH, STL, REB, Unstructured Cell Data File, Surfacewater Modelling System 2DM File, CityGrid XML, SCOP Winput, Binary SCOP Winput, VESTRA Winput
- TIN
  - VRML, AutoCad DXF, STL, REB, Unstructured Cell Data File, Surfacewater Modelling System 2DM File, CityGrid XML, SCOP Winput, Binary SCOP Winput, SCOP RDH, ArcInfo ASCII Grid, Raw Binary, XYZ, Binary XYZ, DTED Level 0, DTED Level 1, DTED Level 2, DGM-Band, XYZ-Slope, TIFF, USGS DEM Raster, SRTM, ESRI.hdr, ENVI.hdr, ERMapper, Golden Software ASCII Grid, Golden Software Binary Grid, ERDAS Imagine, Intergraph Raster
- Vector
  - SCOP Winput, Binary SCOP Winput, XYZ, Binary XYZ, AutoCad DXF, VESTRA Winput, SCOP RDH, STL, REB, Unstructured Cell Data File, Surfacewater Modelling System 2DM File, CityGrid XML, ArcInfo ASCII Grid, Raw Binary, VRML, DTED Level 0, DTED Level 1, DTED Level 2, DGM-Band, XYZ-Slope, TIFF, USGS DEM Raster, SRTM, ESRI.hdr, ENVI.hdr, ERMapper, Golden Software ASCII Grid, Golden Software Binary Grid, ERDAS Imagine, Intergraph Raster

### View Export

- Isolines
  - HPGL, SCOP, AutoCad DXF, HL-Band
- Shading and Z-Coding
  - TIFF, Tiled TIFF, TIFF LZW, Tiled TIFF LZW, JPEG, SCOP Pixel
- Profiles
  - Station, AutoCad DXF, SCOP Winput, Binary SCOP Winput, XYZ, Binary XYZ
- Image Overlay export
  - TIFF, SCOP Pixel, Tiled TIFF, TIFF LZW, Tiled TIFF LZW

SCOP++ is a joint trademark of Trimble and Institute of Photogrammetry and Remote Sensing, Technical University Vienna.

For prices and distribution partner information please contact: sales@inpho.de