nanoCAD Topoplan模組透過數位地形建模和文檔記錄工具延伸nanoCAD platform。
主要在提高測量員的工作效率。

New in Topoplan Module

- ✓ Recalculation of coordinates
- ✓ Mesh simplification
- ✓ 3D slope
- ✓ 3D polyline offset
- ✓ Surface Difference
- ✓ Coloring Elevation Legend
- ✓ Creating Geopoints Manually
- ✓ Creating a Group of Geopoints Manually
- ✓ Editing, Renaming and Deleting a Group
- ✓ New Grips of Geopoints
- ✓ Creating Geopoints by Points and Texts
- ✓ Export Geopoints
- ✓ Points Conversion
- ✓ Creating Label and Marker Styles of Geopoints
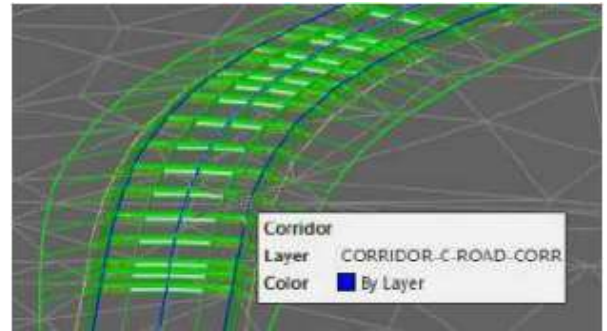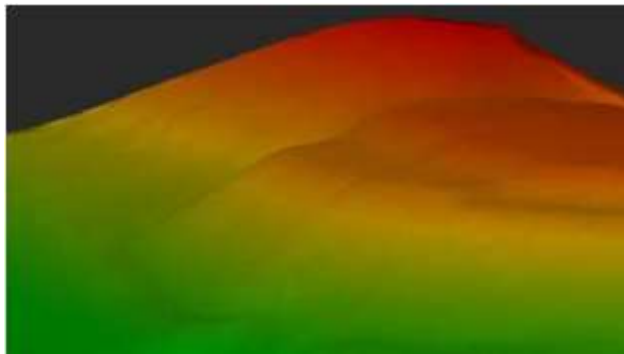- ✓ User-Defined Properties of Geopoints

模組特點
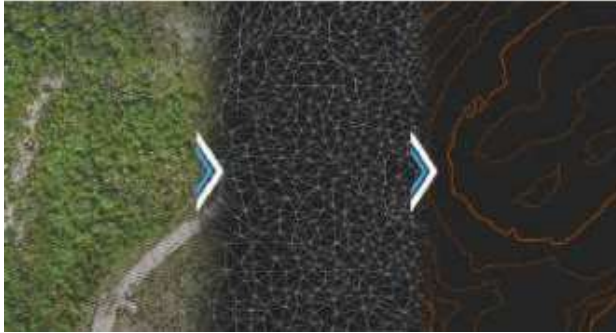
高級曲面創建

拓撲圖模組通過多種方法創建曲面：

➢ 按點創建 TIN(Create TINs by points)

➢ 將雲分解為點(Explode clouds into points)

➢ 導入高程格網(Import elevation grids)

➢ 將模型轉換為3D面、子網格和多邊形面網格
(Convert models to 3D faces, submeshes, and polyface meshes)

支援民用3D物件

地形圖模組現在支持顯示民用 3D 中的物件。它們不再顯示為代理圖形。「屬性」面板可編輯屬性及顯示樣式。

應用於網格的紋理和執行的計算

拓撲圖模組在曲面上應用紋理：

➢ 平面紋理疊加將紋理應用於點雲中的表面(**Flat Texture Overlay** applies textures to surfaces from point clouds)

➢ 柵格紋理映射將影像圖像作為紋理應用於曲面上(**Raster texture mapping** applies raster images as textures on surfaces)

➢ 按高度劃分的網格著色根據表面的高程對表面進行著色(**Mesh coloring by height** colors surfaces according to their elevation)

➢ 計算模型之間的體積可計算表面體積 - 總體積、差體積和平衡體積，用於挖掘工程(**Calculating volumes between models** calculates volumes of surfaces - total, difference, and balanced for excavation works)
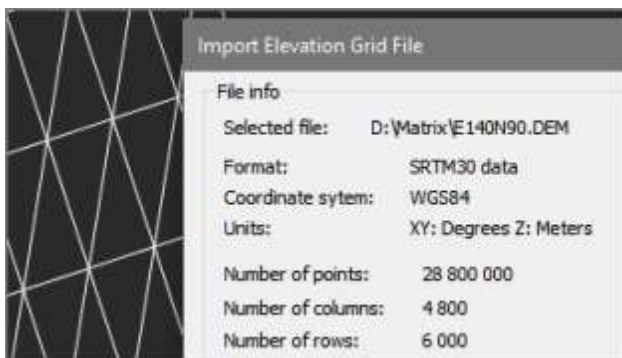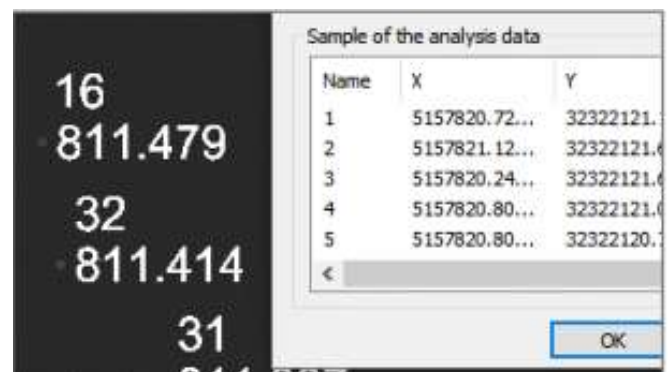

用於創建數位地形模型的多個數據源

模組從多個數據源創建數位地形模型：

➢ 從文字檔匯入點(Importing points from text files)

➢ DEM匯入(DEM imports)

➢ 從先前匯入的點雲中卸載點 (Unloading points from previously imported point clouds)

匯入-匯出選項

拓撲圖模組提供以下匯入和匯出選項：

➢ 匯入地理點匯入XYZ和TXT格式的文字檔(**Import geopoints** imports text files in XYZ and TXT formats)

- 從LandXML匯入以LandXML格式匯入曲面，創建網格物件(**Import from LandXML** imports surfaces in LandXML format, creating mesh objects)
- 匯出到LandXML可將曲面(網格物件)匯出為LandXML格式，以便在其他應用程式中使用(**Export to LandXML** exports surfaces (mesh objects) to the LandXML format for use in other applications)
- 從GIS匯入從*匯入折線和點物件.SHP和*.MIF 檔(**Import from GIS imports** polylines and point objects from *.SHP and *.MIF files)
- 匯出到GIS會將折線和點對象匯出到*.SHP和*.MIF檔(**Export to GIS exports** polylines and point objects to *.SHP and *.MIF files)

表面和輪廓結構

拓撲圖模組具有用於處理曲面和構建輪廓的綜合工具：

- 翻轉和刪除邊緣(Flipping and deleting edges)
- 添加、移動、更改和刪除頂點(Adding, moving, changing, and deleting vertexes)
- 添加結構線(Adding structure lines)
- 通過網格邊界刪除具有特定長度邊緣的面(Removing faces with edges of a certain length through mesh boundaries)
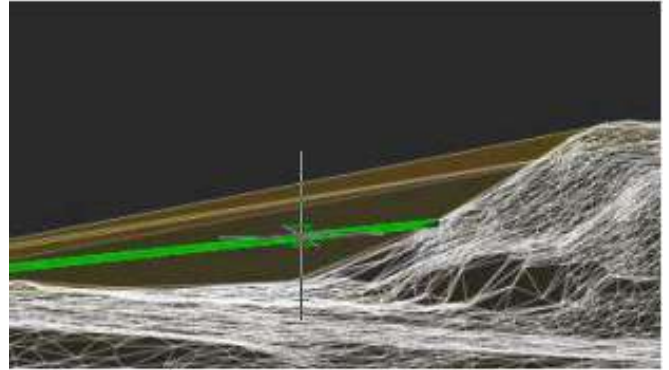

大地表面的地形

地形圖模組提供以下工具用於處理地貌圖元：

- 構建等高線(Constructing contours)
- 輪廓線去除(Contour line removal)
- 剖面線(剖面線)、等值線和標籤(Bergstriches (hatching), contour lines, and labels)
- 構建型材線(Building profile lines)
- 在網格上生成3D折線物件(Generating 3D polyline objects on meshes)

其他曲面工具

拓撲圖模組具有用於處理曲面的附加工具：

- 切割網格(Cutting meshes)
- 網格的分類，將其劃分為類，例如將路面與草坪分開 (Classification of meshes that divides them into classes, such as to separate road surfaces from lawns)
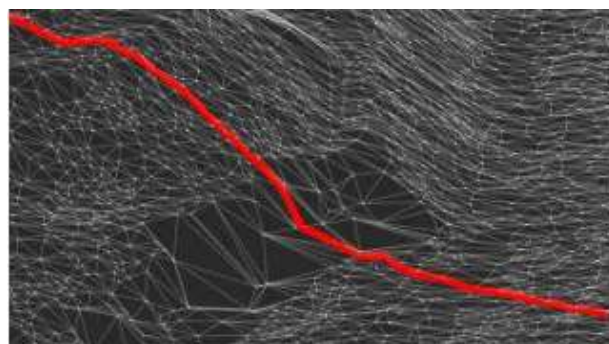
其他地形元素工具

地形圖模組具有以下用於處理地形的附加工具：

- 將線投影到網格上(Projecting lines onto meshes)
- 通過更改3D折線的高程(Z座標)來校正零高程(Correcting the elevation of zero by changing elevations (Z coordinates) of 3D polylines)