

# TerraStereo New Features

# Fast Binary based Project Conversion

- During the conversion TerraStereo makes an octree of each of the blocks in the project and a single common octree for all these blocks
- This common octree defines project boundaries and can be used to visualize those parts of the project that are not close to the viewer
- If source block files are in fast binary format and sorted during conversion, some of the project wide channels are faster to create and take very little hard disk space

# Conversion – Sorted Fast Binary

The top screenshot shows a Windows Explorer window at the path 'Tietokone > AVILAS (F:) > laser\_stream'. The file list is as follows:

Nimi	Muokauspäivä	Tyyppi	Koko
octree	31.1.2013 15:22	Tiedostokansio	
vt6_000015.fbi	29.1.2013 15:26	FBI-tiedosto	420 654 kt
vt6_000016.fbi	29.1.2013 15:27	FBI-tiedosto	378 505 kt
vt6_000017.fbi	29.1.2013 15:27	FBI-tiedosto	406 162 kt
vt6_debug.prj	24.1.2013 10:36	PRJ-tiedosto	1 kt

The bottom screenshot shows the 'octree' subdirectory. The file list is as follows:

Nimi	Muokauspäivä	Tyyppi	Koko
vt6_000015.oct	29.1.2013 16:51	OCT-tiedosto	3 137 kt
vt6_000016.oct	29.1.2013 16:51	OCT-tiedosto	3 102 kt
vt6_000017.oct	29.1.2013 16:51	OCT-tiedosto	3 761 kt
vt6_debug.oct	29.1.2013 17:01	OCT-tiedosto	2 562 kt
vt6_debug.inf	29.1.2013 17:01	Asennustiedot	5 kt

At the bottom of the second window, it says '5 kohdetta' (5 items).

# Conversion – Unsorted Fast Binary

The image displays two screenshots of a Windows Explorer window, illustrating the conversion of files from a source directory to a destination directory.

**Top Screenshot (Source Directory):**

- Path: Tietokone > AVILAS (F:) > laser\_stream
- Files:

Nimi	Muokauspäivä	Tyyppi	Koko
octree	31.1.2013 15:22	Tiedostokansio	
vt6_000015.fbi	29.1.2013 15:26	FBI-tiedosto	420 654 kt
vt6_000016.fbi	29.1.2013 15:27	FBI-tiedosto	378 505 kt
vt6_000017.fbi	29.1.2013 15:27	FBI-tiedosto	406 162 kt
vt6_debug.prj	24.1.2013 10:36	PRJ-tiedosto	1 kt

**Bottom Screenshot (Destination Directory):**

- Path: AVILAS (F:) > fast\_binary\_public > octree
- Files:

Nimi	Muokauspäivä	Tyyppi	Koko
vt6_000015.oct	25.1.2013 17:54	OCT-tiedosto	108 300 kt
vt6_000016.oct	25.1.2013 17:55	OCT-tiedosto	97 728 kt
vt6_000017.oct	25.1.2013 17:55	OCT-tiedosto	105 301 kt
vt6_debug.inf	29.1.2013 17:01	Asennustiedot	5 kt
vt6_debug.oct	25.1.2013 17:55	OCT-tiedosto	2 562 kt

Kansiot: 5 kohdetta

# Improved Channel: Surface Shading





# Raw Intensity vs. average: Raw





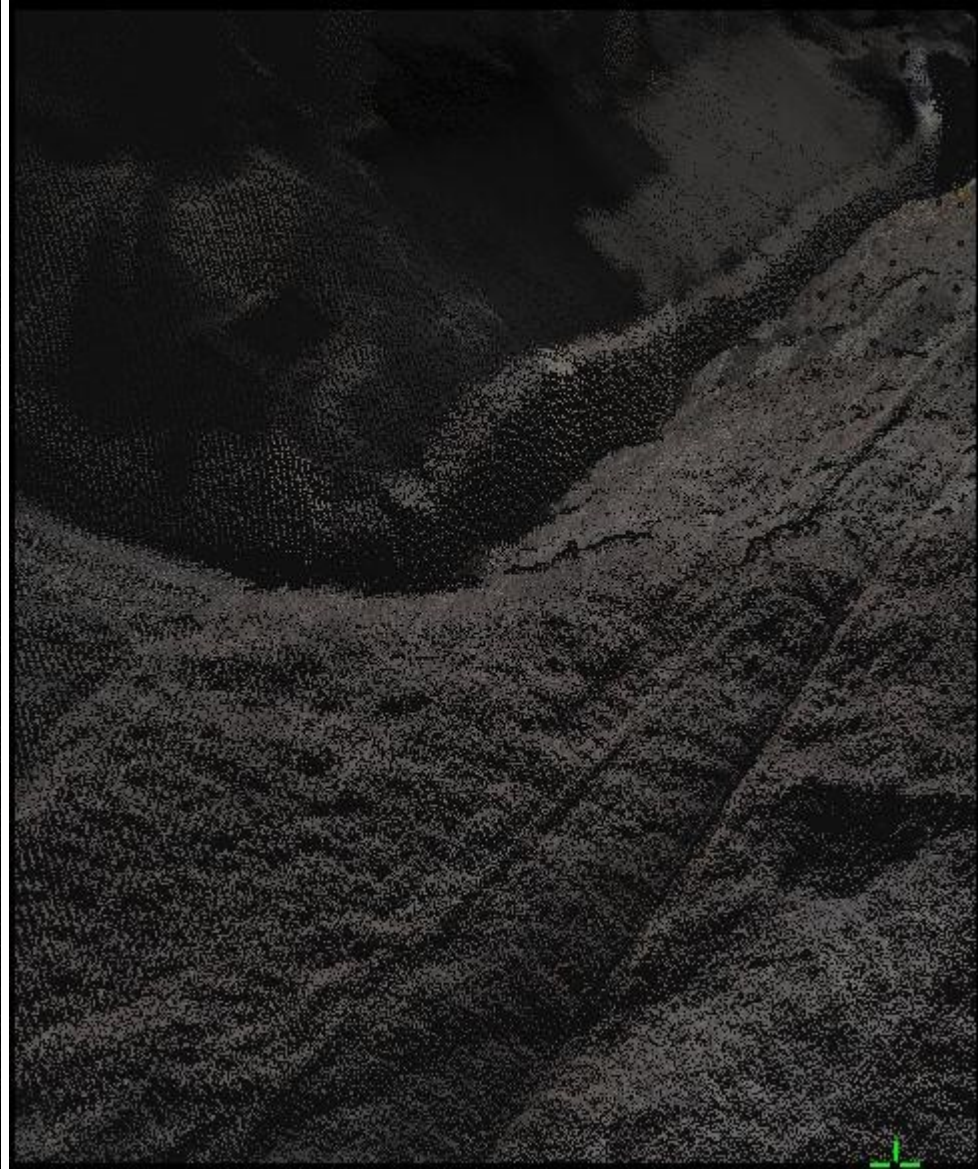
# Raw Intensity vs. average: Filtered



# Normal vs. Elevation Highlight

- The wear and minor misalignments of the street or road are hard to see
- One way is to use a special coloring for slopes (like in TerraScan)
- In TerraStereo you can magnify the elevation coordinate resulting a visualization from which you can try to 'see' the actual problem formations; especially when using stereo hardware and/or movement





# Inverse Surfaces

- TerraStereo does not model the points into a surface, but it makes some calculations and assumptions
- When the trajectories of the scan and timestamps of the points are known the surface shading can calculate the facing direction of the point
- The point that is not facing towards the camera is then either drawn with dimmed color or clipped from the view



# Inverse Surfaces - Dimmed





# Inverse Surfaces – Transparent

