

## gexcel R<sup>3</sup> Tools

*gexcel R<sup>3</sup>* is an innovative set of tools that can be included in your JRC 3D Reconstructor software, for visualizing and processing huge point cloud datasets processed within *JRC 3D Reconstructor*.

Based on the Xstream technology, *gexcel R<sup>3</sup>* allows to easily navigate models composed of billions of points generated by JRC 3D Reconstructor from any point cloud.

*gexcel R<sup>3</sup>* is provided with two main tools *gexcel R<sup>3</sup> view* and *gexcel R<sup>3</sup> solid image* with CAD plug-in.

### gexcel R<sup>3</sup> view

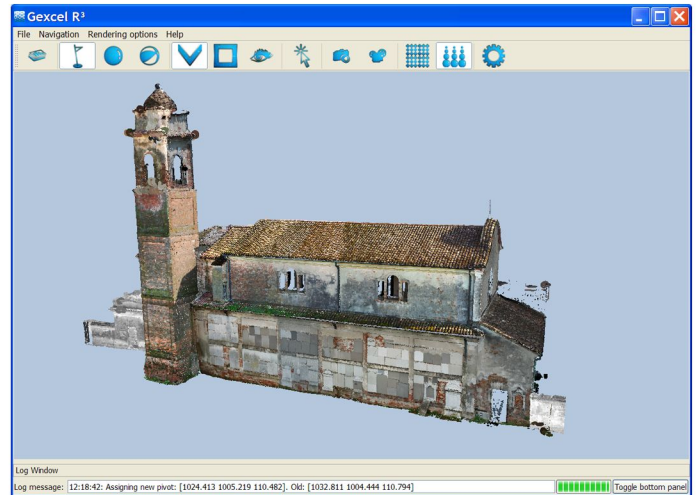


It allows the creation of videos of flight-through across a user-defined trajectory. Each video frame is captured interpolating again a temporary surface among the visible points. The most common video formats and resolutions are supported.

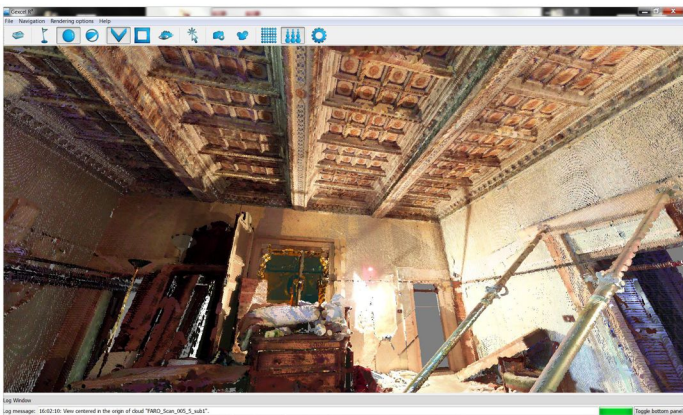
### gexcel R<sup>3</sup> solid image with CAD plug in



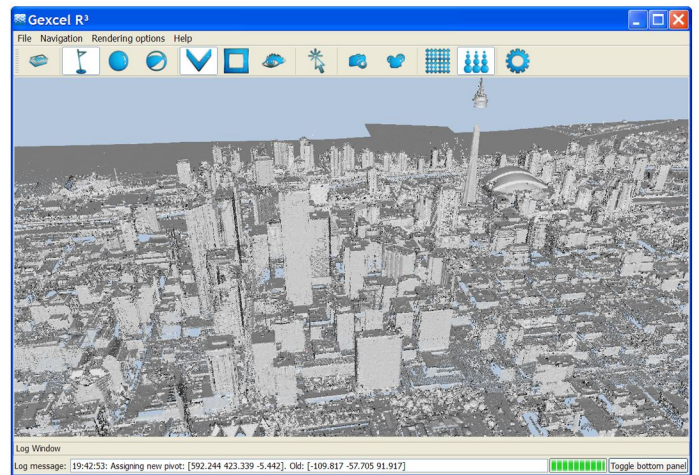
For many applications, users need orthophotos of 3D models, together with 3D coordinates of points in the photo. *gexcel R<sup>3</sup>* is designed to meet this need: orthophotos from *gexcel R<sup>3</sup> solid image* can be exported to CAD, and a Gexcel plug-in allows the user to draw in CAD on the orthophoto selecting the 3D point "behind" each 2D pixel. Furthermore, the "solid images" created by *gexcel R<sup>3</sup>* can have huge resolutions thanks to an automatic tiling system. It is therefore easy to create a prospect of a building with resolution e.g. 20000x30000 and 3D information for each pixel.



A 300 millions coloured point cloud and a high resolution densified solid image in CAD.



Bubble view from large laser pointcloud with overlapped color (building damaged by an earthquake). *gexcel R<sup>3</sup>* creates a temporary surface through the visible points



Large multi sensor LIDAR data sets managed in real time (Toronto LIDAR data - Courtesy of

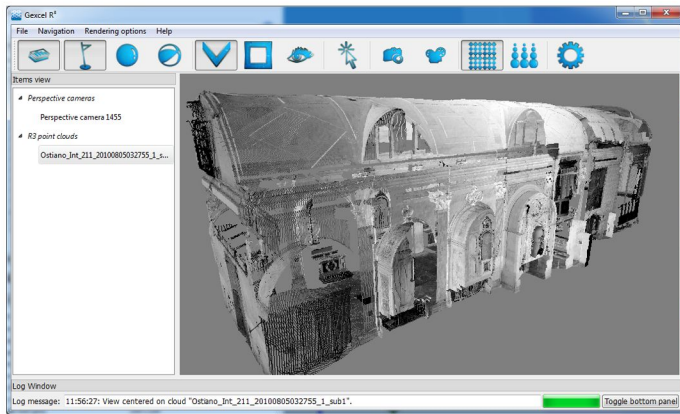
## MARKETING NOTES

COMPATIBILITY with any software of JRC 3D Reconstructor 2.8 package (*Full, Educational, Photo, Construction, Heritage, Mining, Arm, STM, STM Stop&Go, CMS*)  
 CAD PLUG-IN to export from *gexcel R<sup>3</sup> solid image* to CAD the 2,5D orthophoto at high resolution  
 LANGUAGES English - Italian  
 DEMO VERSION (30 DAYS) To test all the functions of *gexcel R<sup>3</sup>* + JRC 3D Reconstructor (saving is locked)

## CONTACTS

### WORKFLOW

- Step 1.** Import mesh models or point clouds raw data from the main laser scanners
- Step 2.** Processing workflow in any JRC 3D Reconstructor package (in the full package: pre-processing registration, meshing texture mapping, virtual scan)
- Step 3.** *gexcel R<sup>3</sup>* data base creation
- Step 4.** Solid images extraction and orthophoto import in CAD with a dedicated plug-in (*gexcel R<sup>3</sup> solid image*)
- Step 5.** Creation of videos of flight-through across a user-defined trajectory



A large data sets point cloud easily managed with *gexcel R<sup>3</sup>*

### EXCLUSIVE TOOLS

- Solid Image:** tool to generate large orthographic views
- CAD plug in:** plug-in to import solid images (orthophotos) in CAD and to digitize in 3D.

### IMPORT - EXPORT AND NAVIGATION

#### Import

- Large point clouds filtered, aligned and edited in JRC 3D Reconstructor with RGB, Reflectance, Inclination layer.
- Large point clouds from JRC 3D Reconstructor *virtual scan* tool.

#### Export

- Solid image importable in CAD with Gexcel CAD plug-in.
- Standard videos.
- Further export depending on the associated JRC 3D Reconstructor packages.

#### Navigation

- Navigation of point clouds of any size.
- 3D viewing of point clouds mapped with normal, intensity or RGB information.
- Perspective, orthographical and "bubble" view.
- Navigation with antirolling and in walk mode.

### USERS

Engineers | Architects | Archaeologists | Surveyors and Professionals in cultural heritage and restoration fields | Museums | Restorers | Researchers | Policemen and Forensic

### APPLICATION FIELDS

Cultural heritage | Restoration planning and Documentation | Design | Building deterioration analysis | Urban and large data set management from mobile and airborne | Forensic

### OBJECTS

Building façades | Historical Buildings | Archaeological sites | Monuments | Large urban areas or territory

### RESULTS

High resolution orthophotos | Professional videos | Further results depending on associated JRC 3D Reconstructor packages

### SYSTEM REQUIREMENTS

- Operative System:** Windows XP SP2 | Windows Vista and Windows 7 | 64 bit and 32 bit version
- Graphics cards:** NVIDIA GeForce FX or later
- Recommended:** Multi-core processor | At least 4GB RAM | NVIDIA GeForce 500 with at least 512MB

