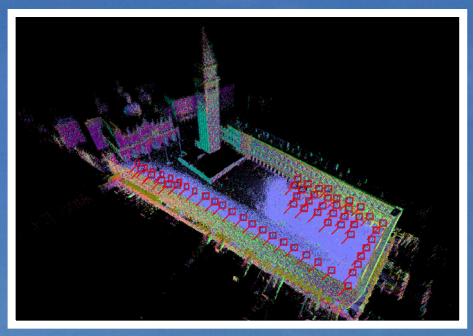
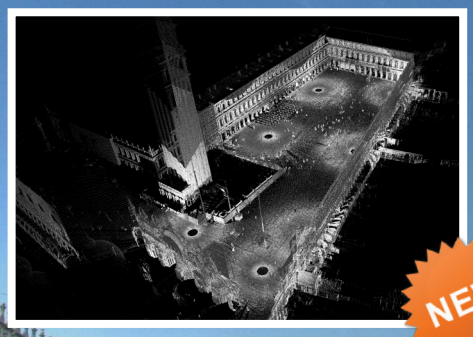
SMART Point Clouds

The best for your LiDAR data and 3D imaging !





NEW

Automatic Target-less Registration

Gexcel involved in RAMSES Project – 3D Survey of Venice City – Courtesy of Insula Spa

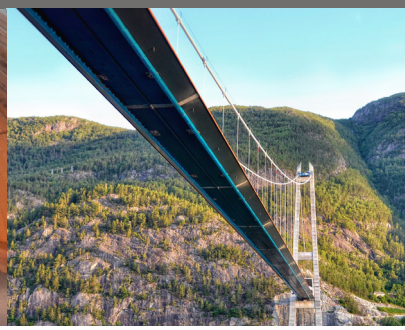
GEXCEL

FARO Optech STONEX RIEGL Zoller+Fröhlich

Software

Powerful Easy Advanced



JRC 3D Reconstructor®

The worldwide well known process software for Lidar data!

New version 3.0

Two revolutionary tools: LineUp® and LineUp® *Pro* (for automatic target-less registration)

A completely new and user friendly interface!

FULL (Educational offer available)

The leading and worldwide well known top level Gexcel software to easily integrate multi-platforms and multi-resolution 3D models and manage large cartographic coordinates (UTM, …), Lidar data, Hi-Res RGB images, GNSS topographic 3D surveyed points and 3D mesh models.

CONSTRUCTION

Designed for construction, infrastructures and civil engineering surveying projects. The perfect answer to the needs of surveyors working in civil engineering.

- Cross sections and front buildings, orthographic views easy extraction
- Displacement and verticality maps, areas and volumes evaluation
- Easy transfer the results in CAD for easy deliverables production

MINING/TUNNELLING

The outstanding solution for mines and tunnels surveying projects using lidar sensors and UAVs.

- Contour lines, crests&toes, cut&fill volumes, profiles and plan views
- DTM generation and editing with an easy workflow
- UAV GeoTIFF mapping

HERITAGE/ARCHITECTURAL

The worldwide outstanding software for cultural heritage and architectural projects.

Designed to easily create 3D colored models using Hi-Res RGB images acquired both from the cameras mounted on the laser and from independent external cameras.

- Create mesh models from point clouds or import meshes from third parties software
- Calibrate and map full resolution RGB images on mesh models
- Extract Hi-Res orthophotos for a perfect colored representation

FORENSIC *new*

The success history of JRC 3D Reconstructor in forensic is now improved by a new dedicated software package.

- **LineUp® *Pro*** included for automatic alignment (target-less)
- Inspection tool to point out the geometric differences of the crime scenes in time
- Easy 3D measuring tools and mapping Hi-Res RGB images on mesh models

PointR³

The perfect software to merge point clouds from any Lidar source (mobile, terrestrial laser scanner, UAV, airborne) without limit on the file dimensions.

- Easily manage no limits point clouds, in different formats
- Generate HD measurable depth images (*Solid Images*) and easily extract 3D draws using the *gexcel CAD plug-in*
- Extract orthophotos, videos and CAD drawings

PixR³

Extract the 3D from images!
An easy and affordable tool to get colored 3D point clouds from images.

- Automatic data processing and camera calibration
- Unlimited number of images
- Colored 3D point clouds and meshes generation

Suites

UAV Mines&Land

The extraction of point clouds and mesh models from UAVs images has never been so simple!

Imaging&Heritage

The compleate software solution perfect for cultural heritage and architectural applications.

Data Elaboration Workflow

Complete User friendly Customized

FARO Optech STONEX ZF Zoller+Fröhlich

JRC 3D Reconstructor® Registration Tools

LineUp®

- Point clouds importing and filtering
- Automatic target detection
- Geo-referencing
- Scans alignment per groups
- Cloud to cloud best fitting alignment
- Bundle adjustment

LineUp® *Pro*

- Automatic target-less registration
- Interactive validation process
- Automation and user control balancing

Data Elaboration

JRC 3D Reconstructor®

- Managing and merging of different data
- Data filtering and editing
- 3D meshing and Hi-Res texturing
- DTM creation
- Hi-Res images calibration (also spherical)

Deliverables

- Elevations, plans, cross sections (*.dxf polylines)
- Models comparison for planarity, verticality and change detections maps
- Texturized 3D meshes (several formats available)
- True orthophotos ready for CAD
- Mining/Tunnelling tools (cut&fill volumes, crests&toes, tunnel cross sections, etc.)
- Unwrapping of cylindrical and spherical surfaces

No Limits Point Clouds Manager

PointR³

- Import JRC 3D Reconstructor® projects, Lidar data and 3D meshes
- Handling and visualization of massive point cloud models

Deliverables

- HD elevations and plans as *Solid Images* (high resolution depth image measurable in 3D)
- *Solid Images* exportable in JRC 3D Reconstructor® (or third-party software)
- Large change detection maps
- Fly-through videos of large models

Deliverables for CAD

gexcel CAD plug-in

- Read *Solid Images* in CAD
- Digitize *Solid Images* in 3D

Technical notes

	Construction	Mining Tunnelling	Heritage Architectural	Forensic	Full
LiDAR data importing	ANY	ANY	ANY	ANY	ANY
LineUp® - Point clouds importing and filtering	•	•	•	•	•
LineUp® - Automatic target detection and geo-referencing	•	•	•	•	•
LineUp® - Scans registration per groups	•	•	•	•	•
LineUp® - Cloud to cloud best fitting registration	•	•	•	•	•
LineUp® - Bundle adjustment	•	•	•	•	•
LineUp® *Pro* - Automatic target-less registration	Add-on	Add-on	Add-on	•	Add-on
Meshing type 1. Uniform and multi-resolution mesh	•	•	•	•	•
Meshing type 2. Mesh from current view	•	•	•		•
Meshing type 3. Topographic mesh - DTM		•			•
Virtual Scan and points clustering tools	•	•	•	•	•
Verification tool for planarity and change detection maps	•	•	•	•	•
Point clouds color editing	•		•	•	•
Any external camera calibration and HR texture mapping			•	•	•
Internal camera calibration tools			•	•	•
Spherical images calibration			•	•	•
UAV GeoTIFF mapping		•	•		•
Cross sections	•	•	•	•	•
Orthophoto, cylindrical and spherical images extraction	•	•	•	•	•
Orthophotos using high resolution textured models			•	•	•
Linear distances, areas and volumes, link to CAD	•	•	•	•	•
Tunnelling tools (cross section along tunnel axes)		•			•
Cut & fill volumes		•			•
Crests & toes for mining		•			•
Mesh border edges detection	•	•	•	•	•
Fly-through videos of 3D models	•	•	•	•	•

System Requirements

Minimal

- OS: Windows (XP SP2, Vista, 7, 8)
- Version: 32 bit
- Graphics card: NVIDIA GeForce with 512MB at least
- RAM: 4GB at least

Recommended

- OS: Windows (XP SP2, Vista, 7, 8)
- Version: 64 bit
- CPU: multi-core processor (8 Cores at least)
- Graphics card:
  - NVIDIA GeForce GTX 2GB ram (for large use of points)
  - NVIDIA Quadro (for large use of mesh and texture)
- RAM: 16 GB

Marketing Notes

- Languages: English - Chinese - Spanish - Italian
- Licensed with USB dongle key
- Demo version: 30 days evaluation | All functions available | Saving locked | Available on Gexcel Download web page (www.gexcel.it)
- Educational offer available for JRC 3D Reconstructor® Full

Automatic Monitoring and Surveying Systems

Real Time Alarms 3D Monitoring

Open Pit Mine Monitoring System®

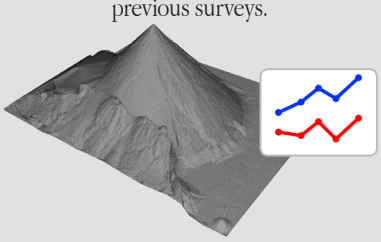
The full solution for safety and monitoring in Open Pit Mines

Mining Safety

Protect employees, tools and equipment.
Introduce a safety tool in your daily work.

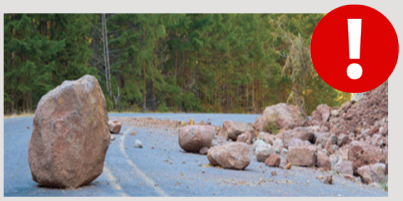
Production Monitoring

Calculate volumes and compare to previous surveys.



Automatic Landslide Alert

If movements surpass a defined threshold, workers and managers get automatic alerts.



- Optech ILRIS long range terrestrial laser scanner and Gexcel OPMMS® software
- Industrial computer and Control Unit for remote control
- List of accessories for a quick and safety installation
- Powerful JRC 3D Reconstuctor® engine working in background
- On line support fully remotly web based
- Accessories (solar panels, protective encolusure for Optech ILRIS TLS, batteries, Wi-Fi tools)

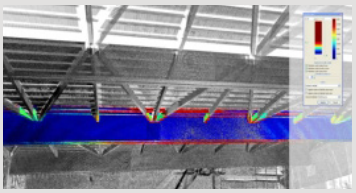
IMP - 4D Inspector® NEW

The full solution for automatic 3D monitoring and survey in Construction - Tunnelling - Infrastructures

ScanArmor is optional

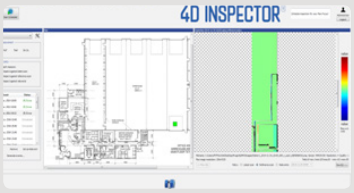
3D Deformation Monitoring

Manage the 3D survey and automatically check the deformazion values.



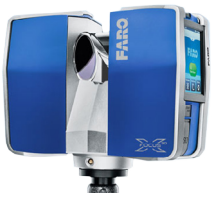
Automatic and Remote Control

Fully automatic manage the monitoring sessions, via LAN remotely controlled.



Alarm Settings

Alert via E-mail when deformation movements surpass a defined threshold.



- Easy automatic Focus^{3D} and ScanArmor Remote Control
- Automatically and remotely switch on and off the Focus^{3D}
- Automatic data transfer to the Control Unit
- Both Focus^{3D} and ScanArmor controlled via a single LAN connection
- Powerful JRC 3D Reconstuctor® engine working in background
- Real time scan based deformation measures and checks
- 4 levels of user interaction (from Administrator to simple viewer)

GEXCEL

Gexcel Srl . Geomatics & Excellence | sales@gexcel.it | www.gexcel.it

Central Administration | Sales Office: c/o CSMT Via Branze 45, I-25123 Brescia, Italy | T. (+39) 030 65 95 001
Registered Office | R&D Lab: c/o *Polaris* Technology Park, Loc. Piscinamanna, I-09010 Pula (CA), Italy | T. (+39) 070 92 43 2901

La Sardegna cresce con l'Europa
Progetto cofinanziato dall'Unione Europea
FESR Fondo Europeo di Sviluppo Regionale
REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA