



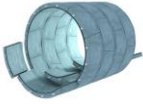
CIVILSEGMENTS

TRACEABILITY AND MANAGEMENT OF PRECAST SEGMENTS

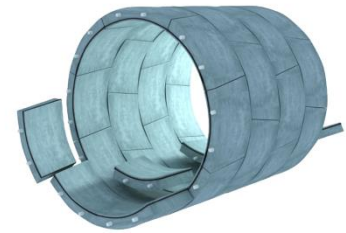
- VISUAL SYSTEM
- GIS & CAD
- BIM
- TRACEABILITY
- QUALITY
- DOCUMENTAL MANAGEMENT
- DESKTOP/WEB

WWW.CIVILNOVA.COM





CIVILSEGMENTS is an advanced prefab production & management system. Developed by our technicians based on the experience accumulated in recent years by our company in this type of systems, incorporates innovative features and technologies that allow us to offer a customized solution for your project. Implement only the solution you need, simple and efficient.



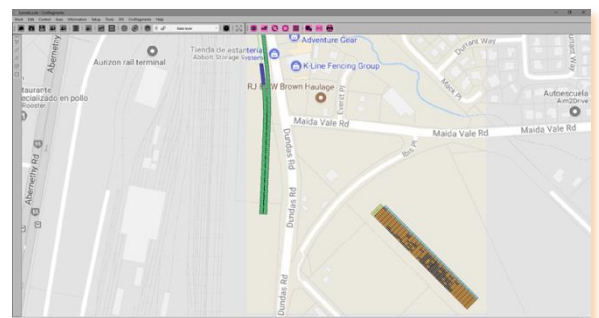
Web o Desktop

Our system is designed to work both, as Desktop software (native application) installing the system in a local server and accessing the information using the desktop client, or using our Web version through our platform CWS (CivilWorks Web Services), that allows access to the system from any computer with Internet access using a browser. In both cases the system has mechanisms for access control and the management of different profiles to limit the attributions of each user of the platform.



GIS & CAD. A visual system

The basis of our platform has always been a GIS system, with the necessary CAD tools to reach a really powerful solution. For this reason we can, if necessary, load the alignment of the tunnels (axes) to know the construction progress of the tubes in case of metro works i.e. or referencing the rings in the storage yards in their exact position on a real plan, visualize cartography of the area, use orthophotos, upload maps of external servers, etc. In addition, the system allows full access all the time to the information of each element, documentation, inspections, etc. from its representation with a simple mouse click.



Tunnel and storage yard view



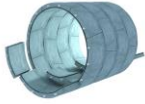
The system allows the 3D representation and the BIM model generation of the tunnel tubes in full detail. Based on the geometry of the segments and the project alignment, we can obtain a precise model with a direct link to the traceability and quality information, documentation and other data collected during the manufacturing and installation process.



A large pile of curved wooden formwork panels, likely for a dome or circular structure. The panels are light-colored wood, curved in a consistent arc, and stacked together. Some panels have small holes or markings. The overall image has a warm, yellowish-orange tint.

[illegible]

Documental management



Full solution

We provide the client, in addition to the necessary software to perform the management of the information, the labels printers, the labels themselves, mobile devices, etc.

We also advise the client to design their own labels and about the best technological solutions that may be more interesting depending on the conditions of the civil work.

We are **Zebra** and **Honeywell** Partners.



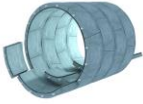
Mobile devices & printers



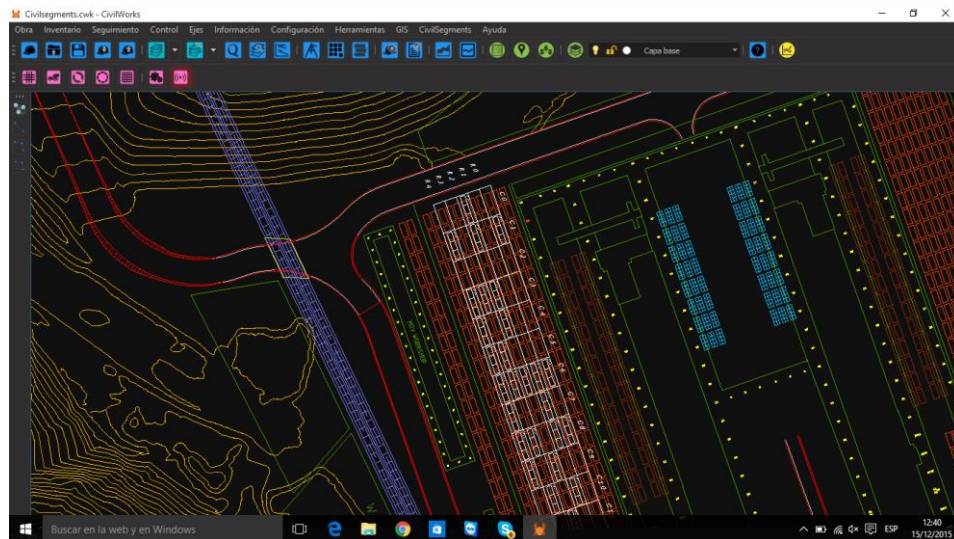
Specifications

VISUALIZATION

- ✓ Visual control of the storage yard using both the schematic or the real ground plans
- ✓ Visual control of ring position (2D & 3D) using both the schematic or the real alignment of the project
- ✓ Tunnel construction progress control



Storage yard. Schema



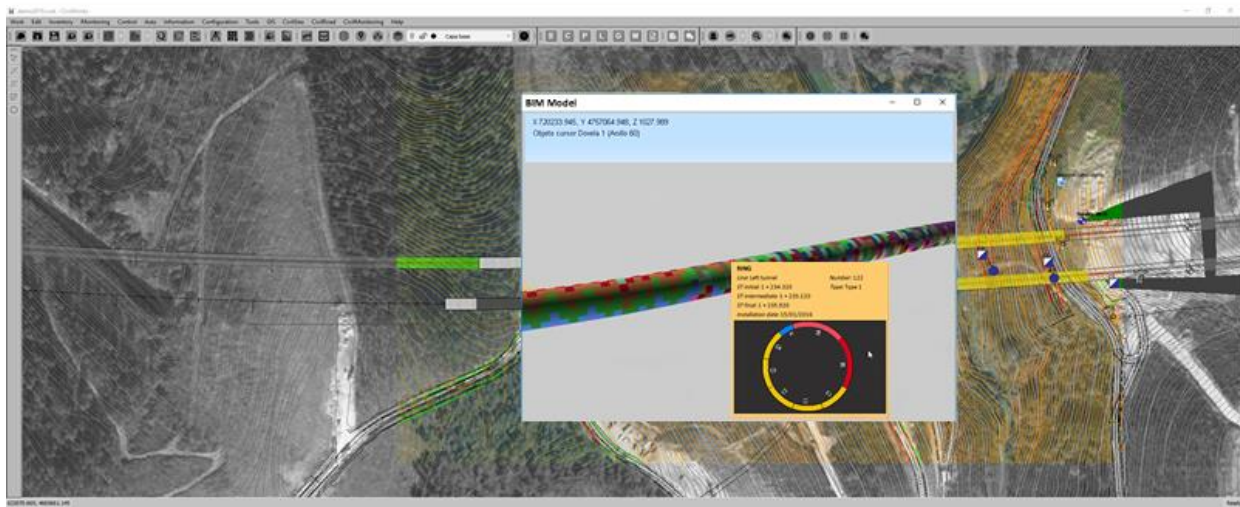
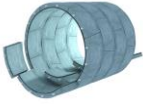
Storage yard real plan

GIS

- ✓ Dxf, dwg, shape and kmz compatible
- ✓ Connectivity with WMS, WFS servers
- ✓ Google Maps, Google StreetView and OpenStreetMaps connectivity
- ✓ Layers management
- ✓ Links between graphic and alphanumeric information
- ✓ Third elements inventory (structures, drainages, installations, etc.)
- ✓ Interoperable and scalable

CAD & BIM

- ✓ Design end editing CAD tools
- ✓ 3D platform
- ✓ Tunnel BIM model



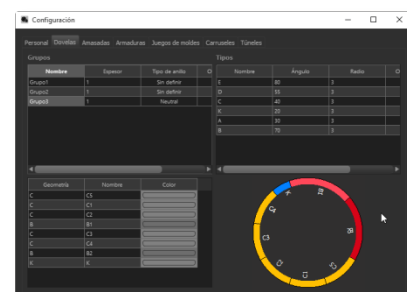
Túnel sobre orofoto y cartografía. Modelo 3D. Esquema de anillo

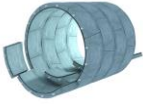
WORKING MODE

- ✓ Real-time mode using Wifi or 4G
- ✓ Off line mode or batch mode (Wifi, USB, Ethernet)
- ✓ Multiplatform system

TRACEABILITY & QUALITY

- ✓ Multi-factory management
- ✓ Multi-storage yards management
- ✓ Customized storage yards schemas
- ✓ Real storage yards plans integration
- ✓ Rings traceability
- ✓ Segments traceability
- ✓ Reinforcements traceability
- ✓ Mixtures traceability
- ✓ Moulds traceability
- ✓ Rings moves traceability. Gantry cranes management
- ✓ Customization of control points for manufacturing segments process
- ✓ Rings traceability in 2D and 3D
- ✓ Stacked ring view
- ✓ Customized rings and segments design view
- ✓ Control and quality parameters management
- ✓ Customized manufacturing control points
- ✓ Quality control
- ✓ Segments monitoring control
- ✓ Delivering facilities and transportation management
- ✓ Tunnel ring final position traced
- ✓ Documents and images related with project management
- ✓ Quality and status alarms management.
- ✓ Automated report generation



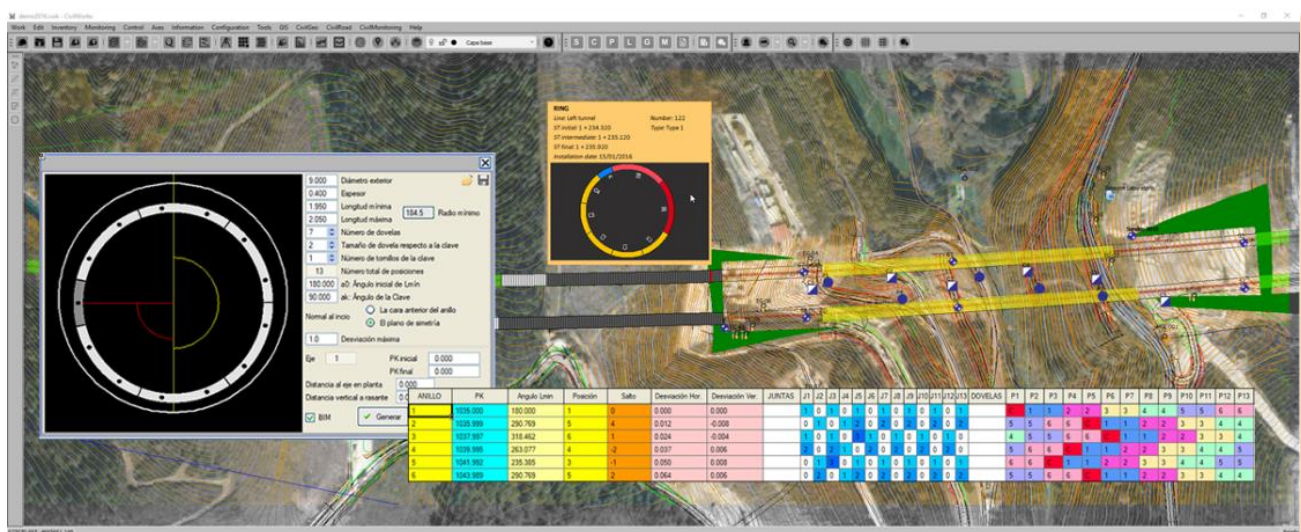


PRECAST RING PRODUCTIVITY					
Code	Geometry Type	Mould	Casting Date	Scanning Date	Location
CS03170928110855003	Type I	D1	28/09/2017	28/09/2017	Prestock-Yard Y3
CS03170928110855002	Type I	C1	28/09/2017	28/09/2017	
CS03170928110855001	Type I	B1	28/09/2017	28/09/2017	
CS03170928110855000	Type I	A1	28/09/2017	28/09/2017	
CS03170920073729017	Type I	A4	20/09/2017	20/09/2017	
CS03170920073729018	Type I	B4	20/09/2017	20/09/2017	
CS03170920073729016	Type I	K3	20/09/2017	20/09/2017	
CS03170920073729015	Type I	E3	20/09/2017	20/09/2017	
CS03170920073729014	Type I	D3	20/09/2017	20/09/2017	
CS03170920073729013	Type I	C3	20/09/2017	20/09/2017	
CS03170920073729010	Type I	K2	20/09/2017	20/09/2017	

PRECAST RING PRODUCTIVITY					
Tunnel 1					
Date of casting	Mould number	Segment ID	Segment type	Type of ring	Ring number
19/07/2017	B3	CS03170710180736007	B	Type I	43
19/07/2017	D3	CS03170710180736009	D	Type I	41
19/07/2017	E3	CS03170710180736010	E	Type I	45
19/07/2017	K3	CS03170710180736011	K	Type I	43
19/07/2017	C3	CS03170710180736008	C	Type I	41
19/07/2017	A3	CS03170710180736006	A	Type I	45
20/07/2017	D3	CS03170720182114003	D	Type I	43
20/07/2017	E3	CS03170720182114004	E	Type I	43
20/07/2017	A3	CS03170720182114005	A	Type I	43

Reports

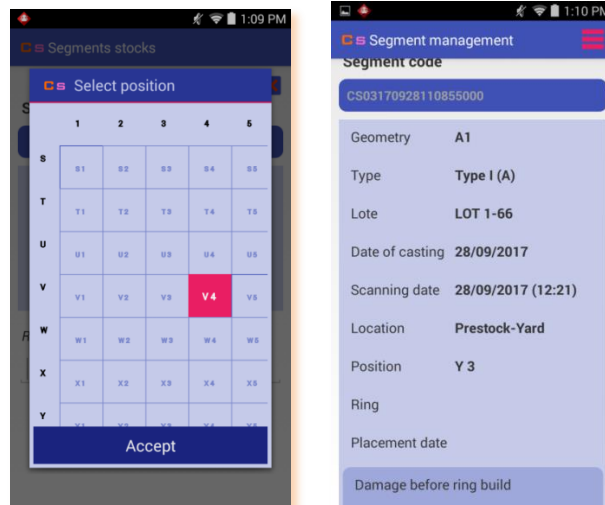
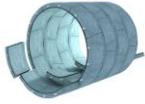
- ✓ Spatial queries and geo-processing available
- ✓ 1-clic report generation



Desarrollo del túnel. Esquema de dovelas

MOBILE SYSTEM

- ✓ Android App
- ✓ Easy to use interface
- ✓ Multipoint control (Factories, storage yards, TBMs)
- ✓ Messages and alarms generation
- ✓ Data transfer using USB, Wifi, Ethernet or 4G
- ✓ We can help you to choose the best mobile device for your civil work



Imágenes de la App móvil

LABELLING SOLUTIONS

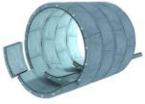
- ✓ We can design your labels
- ✓ We can help you with the most suitable labels model
- ✓ We can help you with the printer system

SECURITY

- ✓ Users management
- ✓ Customized user profiles for your work

SUPPORT SERVICE

- ✓ Technical support (email, phone or remote access)
- ✓ Access to the last platform updates and functionalities
- ✓ Development of customized functionalities



PROJECTS

PERTH :: AUSTRALIA

Forrestfield Airport Link

Length: 2 x 8,000 m.
Diameter: 6,160 mm.
Segments: 60,000



CARTAGO :: COSTA RICA

Hidroelectric plant El Torito

Length: 1 x 3,860 m.
Diameter: 7,800 mm.
Segments: 17,000



OTHER CIVILWORKS MODULES THAT MAY BE INTERESTING TO COMBINE WITH CIVILSEGMENTS

CWS

Monitoring management for tunnels, structures, slopes, etc. Controls all type of monitoring devices, reports generation, manages documentation, and all of them can be combined with CivilSegments data.

<https://www.civilnova.com/index.php/es/cws>

CIVILGEO

Geotechnical information detailed management. Boreholes, penetrometers, soil pits, samples, laboratory tests, geophysics, etc. combined with the information derived from CivilSegments.

<https://www.civilnova.com/index.php/es/soluciones/civilgeo>

CIVILWORKS

WWW.CIVILNOVA.COM

Software Development Centre

Parque Tecnológico de Asturias
Ed. Centroelena II 1ºB
Llanera. Asturias - SPAIN
(+34) 984 086 393
ventas@civilnova.com