

## STUDIES AND RESEARCH REGARDING TOPOGRAPHIC ENGINEERING SURVEYS FOR 3D REPRESENTATION AND MODELING OF THE ENTRANCE OF PRESSURE VESSELS

### Goal of the project

3D representation and modeling of the entrance of pressure vessels

### Short description of the project

The project involved topographic measurements using methods and technologies specific to surveying engineering in order to obtain tridimensional representations of the entrance of pressure vessels.

- Realizing planimetric and altimetric measurements of the pressure vessels;
- The topographic surveys is executed in a local reference system. The positions (given in coordinates) of the benchmarks (reflector tapes) installed by the beneficiary on the exits of the pressure vessels have been determined.
- Creating 3D models of the pressure vessels

Traditional survey methods generally require access to any points that need to be measured. One exception would be to record a vertical and horizontal angle to a single point from at least two different positions. The coordinates could then be calculated. While this is possible, it would also be time consuming, especially if there were a large number of "hard-to-see points".

Regarding precision, the words accurate and precise are generally interchangeable. In surveying however, accuracy and precision refer to separate results. Accuracy refers to the result's closeness to the true or accepted value. Precision refers to the spread of results for a number of measurements.

### Project implemented by

Assoc. prof. Sorin Herban

### Implementation period

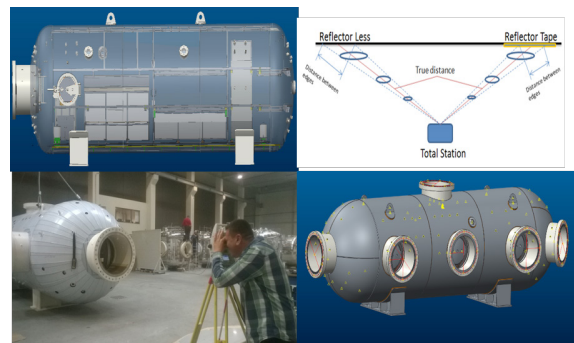
BC 68 / 16.06.2015 - 45 days

### Main activities

- Topographic surveys using high performance total stations and processing of data using specialized software

### Results

- Realizing 3D models of the pressure vessels



### Applicability and transferability of the results

Pressure vessel engineering technology is of importance in many branches of industry. Its practical application could lead to major improvements in economy, reliability and environmental effects

### Financed through/by

SC Pressafe SRL

### Research Centre

Research Centre for Construction and Transportation Substructures

### Research team

Assoc. Prof. Sorin Herban, PhD  
 Prof. Carmen Grecea, PhD  
 PhD student Adrian Alionescu  
 Lecturer Cosmin Mușat, PhD  
 Lecturer Alina Bălă, PhD  
 Asist. Prof. Beatrice Vilceanu, PhD

### Contact information

Assoc. prof. Sorin HERBAN, PhD  
 Civil Engineering Faculty  
 Address: Traian Lalescu Street, No. 2, RO 300223, Timișoara  
 Phone: (+40) 256 403978  
 Mobile: (+40) 722223952  
 E-mail: sorin.herban@upt.ro  
 Web: <http://www.ct.upt.ro/users/SorinHerban/index.htm>