

PROJECT

V-Con

Virtual Construction for Roads

Funding: European (7th RTD Framework Programme)

Duration: Oct 2012 - Mar 2017

Status: Complete with results

Total project cost: €3,461,804

EU contribution: €2,163,000



Call for proposal: FP7-ICT-2011-8

[CORDIS RCN : 105551](#)

Objectives:

The Virtual Construction for Roads (V-Con) project aims at improving the efficiency and effectiveness of the National Road Authorities by improving data exchange in the civil infrastructure sector using the Building Information Modelling (BIM) approach.

BIM has already been successfully implemented in other sectors. And BIM is a worldwide development. However, the civil infrastructural sector still lags behind. This sector feels no need to invest in standardisation of data exchange formats. The software industry hesitates to develop software for their clients when there is too much uncertainty about the market potential of their products. Without supporting software Road Authorities will not use information standards in their own processes and will not demand the use of the standards from the contractors.

V-Con will break out of this circle of an ICT-standstill by defining a first standard, procuring the necessary software and launch a PCP for BIMserver and software tooling.

V-Con has two primary objectives. The first is to establish a draft version of a standardised information and data exchange structure. The second is to procure and test software systems in a PCP that comply with this structure. The results will be embedded in the procurement of two large infra projects, one in the Netherlands and one in Sweden.

Coordination activities are foreseen: first between the two leading research institutes in this field, TNO from the Netherlands and CSTB from France. Secondly, with the National Road Authorities in the Netherlands (RWS) and Sweden (TV). Thirdly, with the software vendors in the sector. And fourthly with the rest of the civil infrastructural sector. The result will be a draft version of a standard that will be used in the software that will be procured in the CP part of the project. Dissemination of V-cons results will take place in the appropriate networks of these types of organisations.

Parent Programmes:

[FP7-ICT - Information and Communication Technologies](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: ICT-2011.11.1 Ensuring more efficient, higher quality public services through Pre-Commercial Procurement

Lead Organisation:

Ministerie Van Infrastructuur En Waterstaat

Address:

RIJNSTRAAT 8
2500 EX DEN HAAG
Netherlands

Organisation Website:

<http://www.rijksoverheid.nl/ministeries/ienm>

EU Contribution: €1,076,100

Partner Organisations:**Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek Tno****Address:**

ANNA VAN BUERENPLEIN 1
2595 DA DEN HAAG
Netherlands

Organisation Website:

<http://www.tno.nl>

EU Contribution: €431,389

Trafikverket**Address:**

RodaVagen 1
781 89 BORLANGE
Sweden

Organisation Website:

<http://www.trafikverket.se>

EU Contribution: €339,100

Centre Scientifique Et Technique Du Bâtiment**Address:**

N/a
6904 Sophia Antipolis Cedex
France

EU Contribution: €316,411

Technologies:

Road and traffic management systems
Road conditions data analysis

Development phase: Research/Invention

Key Results:**An information sharing tool to optimise road maintenance and construction decisions**

In a recent publication, the European Road Federation warns about the lack of investment in road maintenance in Europe, along a growing backlog that causes irreversible deterioration to the road network. Pre-Commercial Procurement (PCP)-backed use of Building Information Modelling (BIM) — a shared knowledge resource to facilitate decisions about an infrastructure over its life-cycle — could help break the deadlock.

In a context of decreasing public expenditure affecting just about every sector, European roads have never been so jeopardised. National road authorities (NRAs) have to watch every cent as effectiveness and efficiency progressively become their focus, and software tools facilitating the exchange of comprehensive road information would be most welcome.

So far the standardisation of data exchange formats has been hindered by the uncertainty surrounding its market potential. However, the team behind the <http://www.rijkswaterstaat.nl/english/about-us/doing-business-with-rijks...> (V-CON) (Virtual Construction for Roads) project is hopeful that a promising solution lies in BIM, which has already been successfully implemented in other sectors. They

believe that the latter could be improved and brought to National Road Authorities with the help of PCP.

‘Information management over the whole life cycle is of vital importance for National Road Authorities,’ says Benno Koehorst of Rijkswaterstaat, coordinator of the project. ‘When (re)construction works or maintenance are executed, information needs to be handed over to contractors. Later in the process, as-built or as-maintained information needs to be handed over to the asset management system of the NRAs. Such exchange of information needs to be done digitally according to the structure defined by the NRA, and preferably using an open-source or vendor-independent software to process the data.’ Until now, such software didn’t exist.

The V-CON project consisted in two parts: a development and standardisation part, and a pre-commercial procurement (PCP) part embedded in the procurement of two large infrastructure process projects taking place respectively in the Netherlands and Sweden.

The project team initially received a total of 14 proposals, six of which have been selected. The selection process then continued until V-CON partners were fully satisfied with the proposed solutions: ‘Out of the six proposals, four have been selected for the development of a prototype in phase 2, and two have been selected for the final phase — the development of the V-CON solution. The NRAs from Sweden (Trafikverket) and the Netherlands (Rijkswaterstaat) are pleased with the results so far,’ Koehorst says.

Whilst the final phase of the project is still ongoing, the team has already reached some preliminary conclusions; notably that bringing more structure in the management of information, as well as being clear about the requirements regarding information and the information exchange may lead to less deviation in the contract and its deliverables.

The project will run until the end of March 2017. Until then, the V-CON solution will keep being developed before the team can proceed with the dissemination phase. ‘Eventually, our hope is that a commercial market for the V-CON solutions will emerge, and that this may lead to a wider international adoption of linked data technology in BIM for the construction industry,’ Koehorst concludes.

STRIA Roadmaps: Infrastructure

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other