

Roads construction across the ages

Since Roman times with the first paved roads, man has always wanted to build road to facilitate his movements. For many decades, the roads are usually characterized by planar cross sections. These geometric elements take into account, mainly tabular data, and require many hours of work for each station. Sometimes these kinds of sections are used to create a 3D model, to provide an overview only.



Your estimates are reliable?

Reduce your doubts with ScyRoads

Thanks to **ScyRoads**, this solution proposes a design of roads with a digital 3D model, from the first phase of engineering. **ScyRoads** offers speed, accuracy and versatility. ScyForm is a pioneer in this field, with the Dassault Systèmes solutions, it offers a business-oriented and innovative solution.

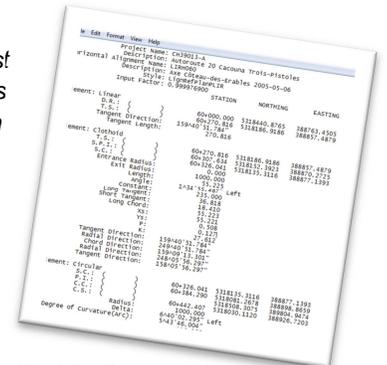
The challenge of the industry

The number of data produced by the principals, such as ministries of transport, request **many hours of manpower**. The volume of data is such that it is impossible to make a synthesis easily assimilated by a designer. The consistency of those data, and therefore their validation involves **considerable effort**, to ensure the production of documents for the construction site. In addition, building regulations issued by different government pillars are adding a level of complexity, making the task even more difficult.

The complexity of these data set leads to many estimates for materials, the percentage may fluctuate a lot and impact the **profit margin of projects**.

A **competitive advantage**, is to have the most accurate and realistic data, to respond to RFP and RFA in the best conditions.

Finally, delivery time is a predominant factor for road projects. The quality of data provided to the sites, **the effectiveness of communication among stakeholders**, ease of interpretation, are all elements that can break the success of a road infrastructure project.



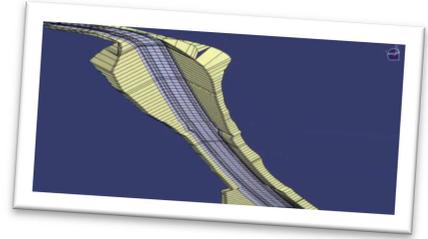
A new approach



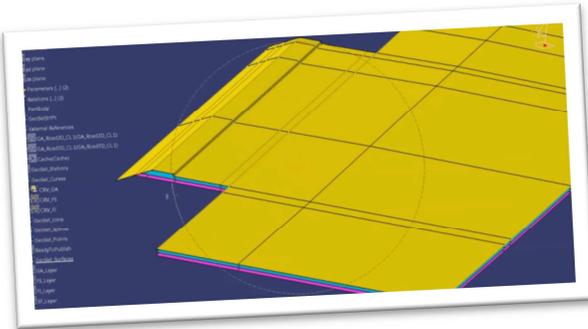
The creation of a **3D digital mock-up**, very early in the road definition process, represents a new approach. Many industries, whether automobile or aerospace, to name a few, have already taken this approach, and continue to capitalize on a 3D digital model. Some industries have no more need to produce 2D drawings for their manufacturing process. The civil engineering industry should **benefit of the same technology to increase its effectiveness, its performance**. Today all the tools are ready, with a proven maturity, to serve all civil engineering industries.

ScyRoads approach

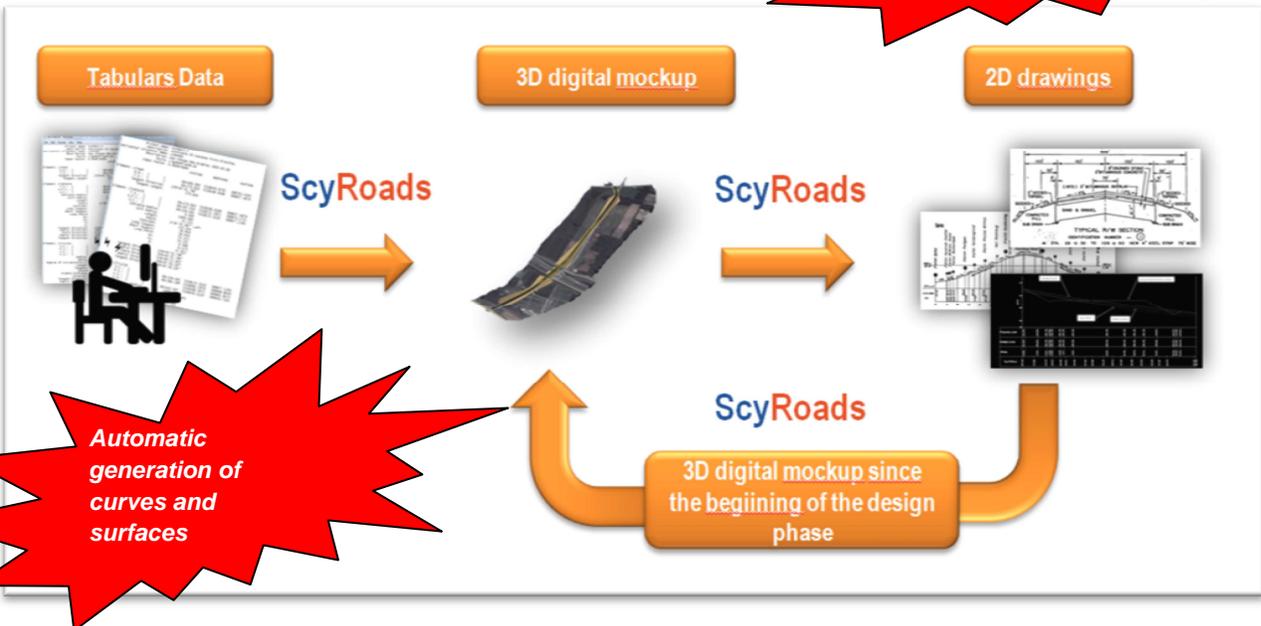
ScyForm with its knowledge of the road process construction, and in conjunction with its experience of Dassault Systèmes 3D solutions, was able to develop a **solution for this industry** : **ScyRoads**. All information to describe a road, are available very soon in the design process so it was natural to capitalize on these datas to create a 3D virtual model.



By maximizing the capabilities offered by CATIA, with algorithms that can interpret and ensure the consistency of these enormous data sets, **users can finally focus on the real issues**. **ScyRoads** delivers a virtual 3D model taking into account the constraints of the land, tabular data, and rules of the state of the art for each province or country. With this approach, it is possible to visualize the whole of the road, and **all the stations in the smallest details**. With this last point, it becomes possible to embrace the fullroad topology, and optimize the points that could improve performance and efficiency, during construction. Finally, the virtual model having all the design data, **ScyRoads** automatically generates a large number of documents that can be used in the works.



Automatic generation of cross-section and quantities



The **ScyRoads** approach is unique, and no other solution on the market offers this new way of designing roads.

Some benefits of the **ScyRoads** approach

The benefits of the approach proposed by **ScyRoads** are multiple.

Simplicity and speed

The user can stay concentrated on the road definition limiting these interactions with the CAD tool itself. **The overall geometry being controlled by parameters managed by ScyRoads.**

Checking data consistency

After each modification or introduction of new data, ScyRoads ensures the validity of the entire data set. **ScyRoads** checks, permanently, the consistency of the data set, helping the user in its approach.

An accurate model for accurate estimates

Contrary to a purely 2D approach **ScyRoads** not only provide estimates, but the real quantities based on digital 3D model. On specific projects, it was possible to determine an improved estimate of the amounts up to of **10%**. The distribution of stations along the road has a direct impact on the estimates, and so impact your responses to RFA and RFP. **ScyRoads** allow to have the number of stations you want, without additional effort.

The quality of the surfaces with CATIA from terrain scans, allows to keep a maximum precision for the most accurate result.

Scalable Solution

In addition, **ScyRoads** being developed entirely by ScyForm and having an open architecture, it is very easy to interface with other software already in use in your company, or add some specific requirements to meet your needs.

Multiple scenarios

ScyRoads allows you to play several scenarios very quickly, to meet the winning conditions for the success of your projects. A field change, a realignment of the track can be taken into account very quickly, to provide all the elements suitable to take a better decision.



Grâce à l'outil **ScyRoads**, nous avons trouvé la lumière au bout du tunnel et maintenant nous pouvons réaliser nos travaux de calculs et de préparation de données d'implantation sans avoir à utiliser une multitude de logiciels. Un seul outil pour toutes les opérations. Nous en rêvions depuis longtemps!

" Thanks to the **ScyRoads** tool, we found the light at the end of the tunnel and now we can make our work calculations, and site data preparation without having to use a multitude of software. A single tool for all operations. We dreamed about this a long time! "

Jérémie Bolduc-Fradette,
Directeur de projet, Service Arpentech



With **ScyRoads**, ScyForm offers a full range of services to make your **ScyRoads** experience a success.

Whether CATIA training, coaching on **ScyRoads**, data conversion, or customization to meet your needs, ScyForm is your partner of choice to make your life easier in your project road design.

About

ScyForm provides several services to help its customers maximize their investments in the 3D digital experience. At each step of the technical analysis, ScyForm will assist you in order to ensure peace of mind and a smoother transition to the use of Dassault Systèmes solutions. ScyForm brings knowledge and value to customers from various industries : Aerospace, Energy, Industrial equipment and Transportation.

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As Dassault Systèmes partner, ScyForm offers a full range of Dassault Systèmes product.

