SparxSystems CE:
Models for public infrastructure

The Dutch company „The Collective - model based systems engineers & consultants" uses the Sparx Systems Product Suite (Enterprise Architect, ProCloudServer and Prolaborate) in customer projects, but also in the development of its own quality management system (ISO9001) and for resource planning.

Vienna/Zwijndrecht – Jan de Liefde is the founder and CTO of the Dutch company „The Collective - model based systems engineers & consultants", which mainly models in the field of public infrastructure (water supply and wastewater disposal, tunnels, bridges, rail transport, etc.). For this purpose, they use Enterprise Architect, ProCloudServer and Prolaborate in order to be able to provide the many stakeholders in such projects with high-quality information: „In the Netherlands, modelling in public infrastructure projects is widespread, something I have not seen in any other country so far. We use the Sparx Systems Product Suite because it allows us to involve all stakeholders in the complex planning processes and provide them with information."

Peter Lieber, founder and CEO of SparxSystems CE, comments: „Especially in the field of public infrastructure, many projects are very complex and can be prepared through modelling in such a way that they become understandable and comprehensible for all parties involved. The Collective is taking an exemplary approach in the field of public infrastructure, which we hope will spread to other countries."

A lot of experience with modelling
Founded in 2017, The Collective's expertise lies in providing integrated design across infrastructure, manufacturing, water and energy using model-based systems engineering (MBSE). The focus is on the system model and linking processes to that model. The enthusiasm for models here goes so far that even meeting minutes are modelled: This ensures traceability between participants, documentation, problems, diagrams, decisions and measures at all times. „In our company, we constantly discuss the effective use of models and frameworks for customer projects. Therefore, over the years, we have created a broad pool for the most diverse applications and combined it in SIGMA. Enterprise Architect with SysML is used as the default modelling language. With Prolaborate, we then prepare the results graphically so that they are easy to understand for all stakeholders
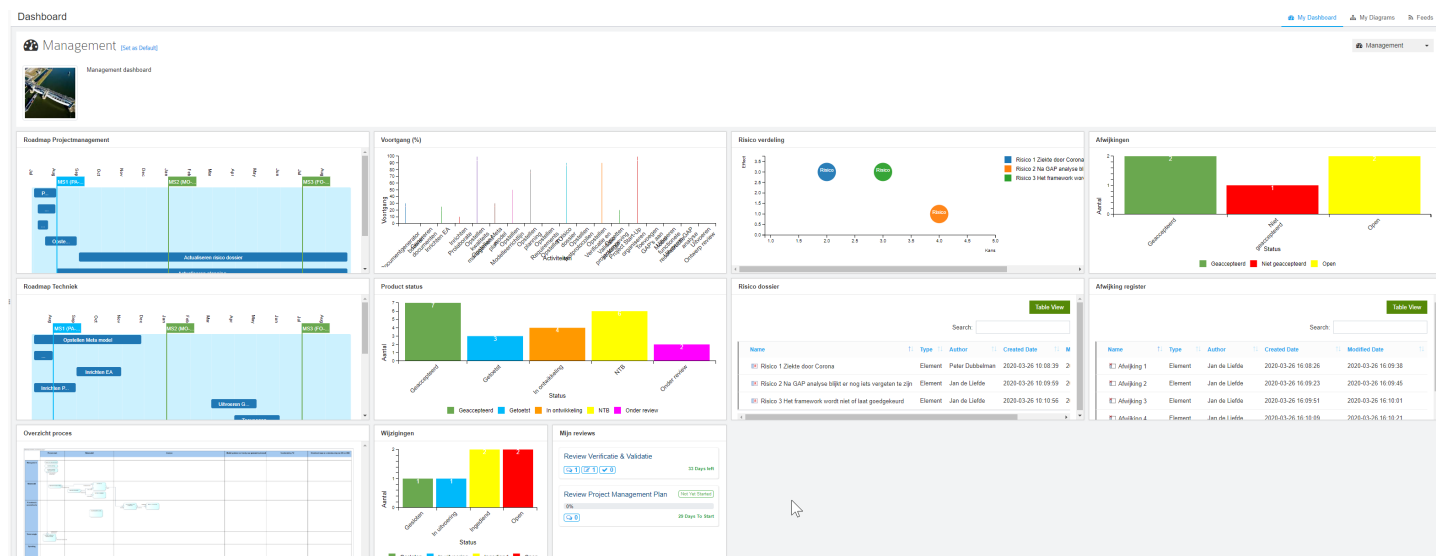

Peter Lieber, founder and managing director of SparxSystems Central Europe.

©ÖGV/Fabian Sorger, 2023

and optimise the communication and decision-making process," explains the design manager. But models are also used internally, for example for the quality management system (ISO9001) and resource planning.

Extension possibilities intensively used
Enterprise Architect is praised worldwide for its openness and excellent extensibility. For example, MDG technologies for specific domains and notations can be seamlessly integrated into Enterprise Architect to provide additional toolboxes, UML profiles, patterns, templates and other modelling resources. The Dutch company makes extensive
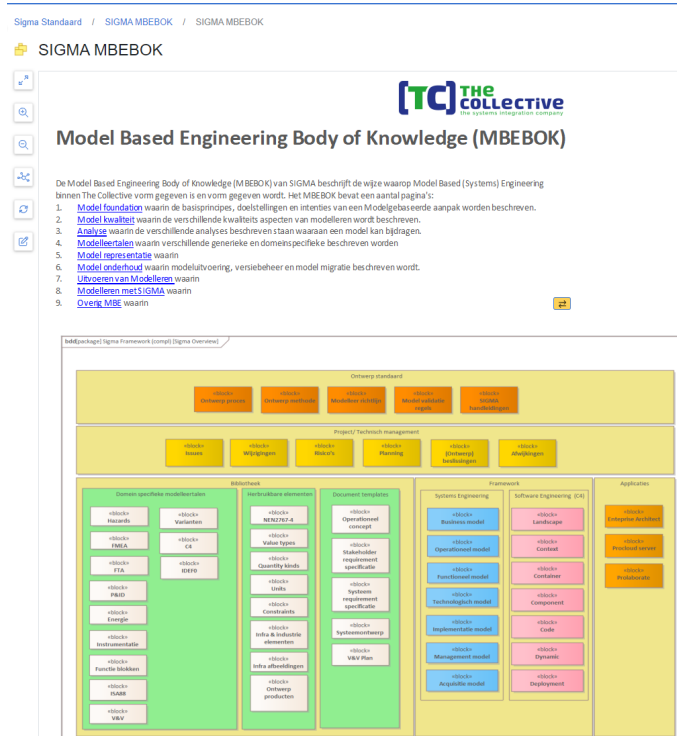

Risk and Decision management in Prolaborate

use of this capability, not only for public infrastructure projects, but also in the industrial sector. Specific diagrams and toolboxes have been created in the areas of energy, piping and instrumentation, failure mode & effect analysis, fault tree analysis, management, industrial automation and testing. In addition, they developed their own MDG to model systems according to ISA88/IEC 61512 (batch industry): „The use of Enterprise Architect in the process industry is not widespread. We have developed an MDG for the (batch) process industry based on the ANSI/ISA S88 standard and extended it with the ability to create piping and instrumentation diagrams (P&ID) and functional block diagrams (FBD)," explains Jan de Liefde.

ISA S88 (International Society of Automation) is a standard for batch process control and a design philosophy for describing equipment and procedures. This standard applies equally to software and manual processes. „With our development, both the physical model and the procedures and recipes can be modelled in a standard-conform way."

Prolaborate facilitates broad communication

Jan de Liefde remembers that right from the first presentation of Prolaborate, he was thrilled to now be able to make the content from the models available in a vivid graphical format as desired. „We often noticed that especially in management or in specialist departments, the handling of Enterprise Architect was not possible. But in order to be able to involve this broad group of people in project handling and provide them with the desired information from the models, we urgently needed a tool like Prolaborate." Therefore, they began to develop specific profiles for Prolaborate as well, making use of the diverse discussion and review options as well as the meaningful visualisation. For example, in project execution, work is done according to Scrum/Kanban and progress in modelling is continuously visualised via Prolaborate. „We want to be a knowledge centre for MBSE and constantly develop ourselves further. We learn a lot from our customers, but we are also happy to pass on our collected and processed knowledge in training courses, workshops or through coaching," Jan de Liefde sums up.

SIGMA MBSE Body of Knowledge as part of SIGMA implemented in Prolaborate

Jan de Liefde, founder and CTO of the Dutch company „The Collective - model based systems engineers & consultants" (Graphics: The Collective)

⬡ Custom Properties

	Property Name ⇅	Description ⇅	Classification ⇅	Type ⇅	Values ⇅
☐	Alternative	Alternative	EA Custom Attribute	Memo	
☐	ApprovalDate		EA Custom Attribute	Date	
☐	Assumption	Assumption	EA Custom Attribute	Memo	
☐	ChangeStatus		EA Custom Attribute	Enum	● Approved ● N/A ● Not approved ● Open
☐	ClosingDate	Closing Date	EA Custom Attribute	Date	
☐	Datum binnenkomst		EA Custom Attribute	Date	
☐	Decision	Decision	EA Custom Attribute	Memo	
☐	DecisionType		EA Custom Attribute	Enum	● Availability ● Constraint ● Cybersecurity ● Environmental ●
☐	Description		EA Custom Attribute	Memo	
☐	Due Date	Due Date	EA Custom Attribute	Date	
☐	Gerelateerde beslissingen	Gerelateerde beslissinger ⋯	Connector Attribute	Connector_Design ⋯	
☐	Gerelateerde issues	Gerelateerde issues	Connector Attribute	Connector_Design ⋯	
☐	Gerelateerde modelelemente ⋯		Connector Attribute	Connector_Design ⋯	
☐	Gerelateerde modelelemente ⋯	Gerelateerde modeleleme ⋯	Connector Attribute	Connector_Design ⋯	
☐	Gevolg		EA Custom Attribute	Integer	
☐	Heeft impact op	Wijziging heeft impact op	Connector Attribute	Connector_Design ⋯	
☐	Hyperlink		EA Custom Attribute	URL	
☐	Id		EA Custom Attribute	String	
☐	Impact door	Impact door een wijziging ⋯	Connector Attribute	Connector_Design ⋯	
☐	IssueStatus	Status	EA Custom Attribute	Enum	● Close ● Open
☐	Kans		EA Custom Attribute	Integer	
☐	Perspective		EA Custom Attribute	Enum	● Contract ● Management ● N/A ● Operational ● Solution
☐	Prioriteit	Prioriteit	EA Custom Attribute	Enum	● 0 ● 1 ● 2 ● 3 ● 4 ● 5
☐	Purpose		EA Custom Attribute	Memo	
☐	Rationale	Rationale	EA Custom Attribute	Memo	
☐	Risico	Risico van optreden	EA Custom Attribute	Integer	
☐	Text		EA Custom Attribute	Memo	

Custom properties in Prolaborate

About „The Collective - model based systems engineers & consultants"

The Collective founded in 2017 is a (Systems) Engineering agency in the Infra, Water and Industry domain. We are specialized in using model based engineering to support engineering and management activities. We developed SIGMA as complementary modulair toolkit for Enterprise Architect and Prolaborate to extend their capabilities. SIGMA contains two frameworks (Systems Engineering and C4), different domain specific toolboxen and diagrams, guidelines, reusable elements, templates, etc. With SIGMA we can serve a broad range of customers with our engineering and management services.

thecollective.nl

About SparxSystems Central Europe

Sparx Systems Pty Ltd (Australia) was founded in 1996 and is the manufacturer of Enterprise Architect, a globally successful UML modeling platform. Enterprise Architect is used to design and build software systems, to model business processes and to model any process or system. Enterprise Architect in its current version 16 is valued by over one million users for its performance at an unbeatable price. Enterprise Architect is an easy-to-understand, team-oriented modeling environment that supports companies in the analysis, design and creation of precisely traceable and documented systems. With the help of this tool, companies are enabled to centrally collect and display the often very distributed knowledge of teams and departments.

In order to offer the best service around Enterprise Architect to the numerous customers in their language and time zone, SparxSystems Software Central Europe was created in 2004, which supports the entire German-speaking region in the acquisition of licenses as well as through training and consulting.

sparxsystems.eu