SparxSystems CE: Extension for the chemical industry

Jan de Liefde from the Dutch company The Collective. "The Systems Integration Company"

One of the great advantages of Enterprise Architect is the ability to extend its modeling capabilities to specific domains and notations using MDG Technologies. A Dutch company has now taken advantage of this and developed an extension mainly for the chemical industry (batch processes).

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 by the possibility to create piping and instrumentation diagrams (P&ID) and functional block diagrams (FBD).

Enterprise Architect is praised by its approximately 740,000 users worldwide for its openness and excellent extension possibilities. 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 modeling resources. Jan de Liefde from the Dutch company „The Collective. The Systems Integration Company" has used this opportunity to give interested parties the opportunity to model systems according to ISA88/IEC 61512 (batch industry): „The use of Enterprise Architect in the process industry is not wides-

pread. We have developed an MDG for the (batch) process industry based on the ANSI/ISA S88 standard and extended it by the possibility to create piping and instrumentation diagrams (P&ID) and functional block diagrams (FBD)."

Hans Bartmann, Managing Director of SparxSystems CE: „We are very pleased that MDG technology is now available for the important process industry. This means that the advantages of Enterprise Architect can also be used in this technologically demanding industry, which is characterized by continuous innovation."

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Enterprise Architect guarantees compliance with standards

In contrast to a continuous process, in batch (discontinuous/batch) processing material is processed in a production vessel and then completely removed. ISA 88 (International Society of Automation) is a standard for batch process control and a design philosophy for describing equipment and pro-
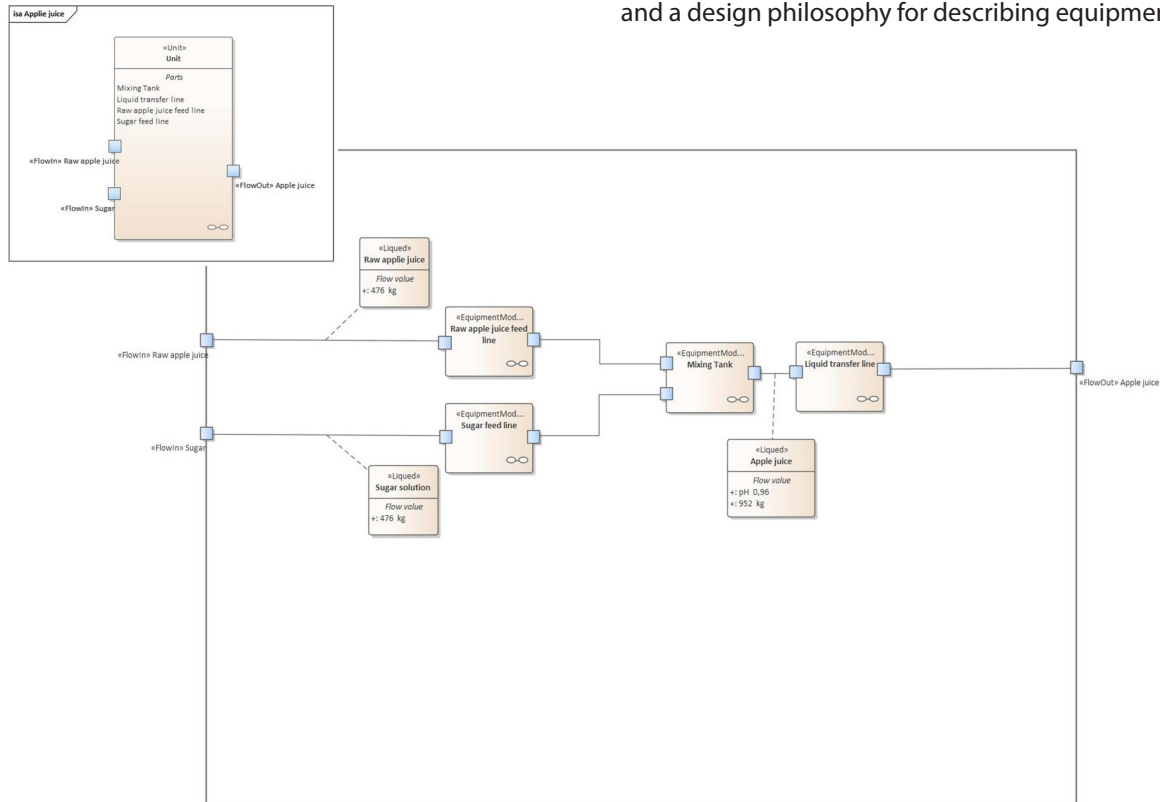

With the new solution, units can be assembled into devices and connections can be defined and detailed by physical units (e.g. liquid, gas, etc.).

cesses. This standard applies equally to software and manual processes. Jan de Liefde: „With our development, the physical model as well as the processes and recipes can be modelled in a standard-conform way."

Toolboxes facilitate modelling

The toolbox for the physical model supports in different process flows such as liquid, gas and steam. Such physical models are converted into Piping & Instrumentation Model (P&ID) diagrams using the „PID Toolbox". This toolbox contains objects like valves, vessels, instrumentation and pumps.
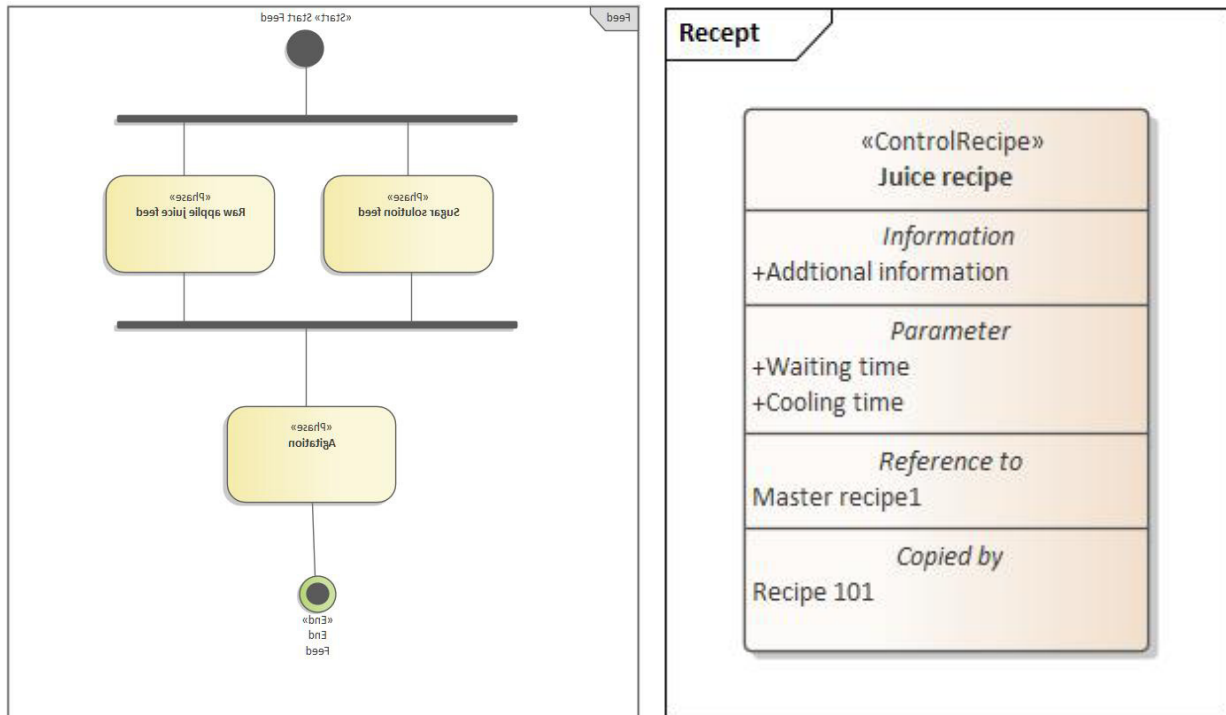
Procedure including material flow can be defined at different levels (e.g. Procedure, Operation, Phase and Action). Recipes as the basis be defined including parameters and additional information.

The „Procedure Toolbox" in turn supports the development of process models in procedures, operations, phases and actions. „The flow between the elements in these process models can be generated by control flows or conditional control flows and extended by material flows", says the developer.

The „Recipe Toolbox" supports the creation of recipe models in which recipes can be extended with additional information and parameters. The various recipes can be linked to each other by reference or copy.

For further process automation, objects such as motors, valves, containers and instrumentation must be monitored and controlled. IEC61131 describes so-called functional block diagrams (FBD) for this purpose. "The „FBD Toolbox", also created by us, supports the creation of functional block diagrams. These composite diagrams can also be associated with actions defined in the process diagram", concludes Jan de Liefde.
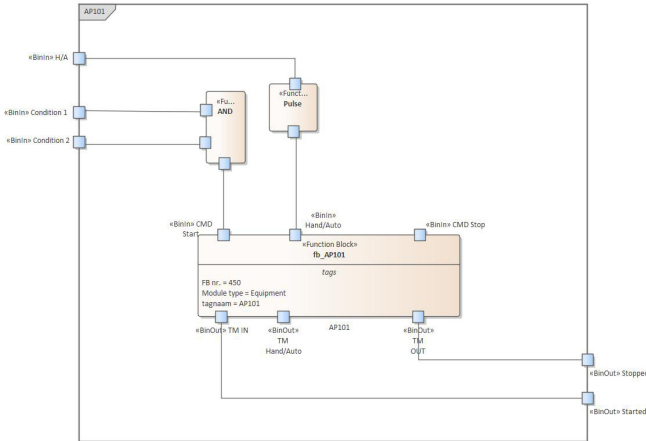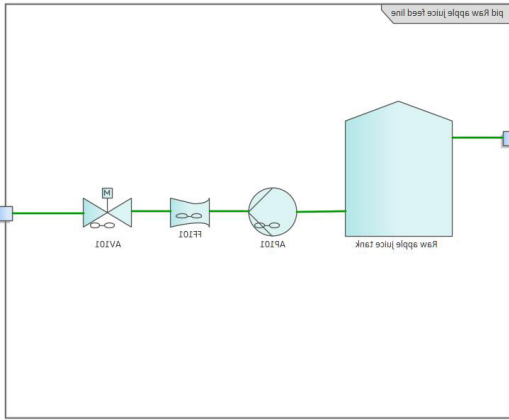
P&ID and Functional Block diagrams closed the gap between the Batch model and the Process Automation model .

About THE COLLECTIVE. "The Systems Integration Company"

The Collective SI B.V. (The Netherlands) was founded in 2017 and is a consulting company with a strong focus on Model Based (Systems) Engineering and Systems Integration. Enterprise Architect is used to model different kind of systems within the domains infrastructure (e.g. sluices, locks, tunnel, rail, etc.) and industry.

www.thecollective.si

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 15 is valued by over 740,000 users for its performance at an unbeatable price. Enterprise Architect is an understandable, 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 be able 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.

www.sparxsystems.eu