Hannover Messe 2016, Hall 9, Booth D35
TIA Portal V14 engineering framework: increased productivity, reduced time to market

- TIA Portal V14: expanded functionality focuses on diagnostics, virtual commissioning and multi-users
- Digital enterprise functions and Industrie 4.0 requirements
- Enhanced energy management and motion control, cloud connectivity and digital twin for virtual commissioning

The new V14 version of the TIA Portal (Totally Integrated Automation) shortens the time to market for machine manufacturers and increases the productivity of end users. Siemens has enriched Version 14 of the engineering framework with a wide range of new functionalities for the digital enterprise and the requirements of Industrie 4.0.

The TIA Portal interacts with other systems and exchanges data through open interfaces. The Teamcenter gateway has a new interface for product data management in Teamcenter, the Siemens data collaboration platform for design, planning and engineering. The user can easily create model-based programs with a new interface to Matlab/Simulink. The cloud-based engineering is also new. From their private cloud, users can access the plant controller with the new TIA Portal Cloud Connector, or use MindSphere, the Siemens cloud solution for industry, for additional digital services from Siemens. Another new feature is PLCSim Advanced with interfaces to simulation software, such as Plant Simulation and Process Simulate. A Simatic S7-1500 controller can be simulated as a digital twin with PLCSim Advanced to achieve efficient, virtual commissioning.

Based on the "one for all" guiding principle, the TIA Portal combines parameter assignment and programming of automation components – from controllers and HMI...
devices to drives – with over-arching functionalities, such as security and safety. A harmonized package, comprising the Simatic Advanced Controller and the Sinamics servo drive system, has been integrated into the V14 TIA Portal for motion control applications. The new Simatic S7-1500 T-CPU controller handles the control tasks and the new Sinamics V90 servo drive system with Profinet brings the required speed and precision into the machine. The new package now enables Simatic users to solve advanced motion control tasks, such as gearing and camming, in a familiar environment. The new multi-user function is applied for decentralized work concepts. This provides several operatives with efficient and simultaneous access to a server project, based on automatic synchronization, facilitating device, object and function-based organization of automation tasks. Parameter assignment and evaluation of the 3VA molded-case circuit breaker and the 7KM PAC series of measuring instruments are also new features of the TIA Portal V14. This simplifies acquisition of energy values for the infeed system, electrical outputs and individual loads.

Further new functionalities in TIA Portal V14 reduce engineering requirements and increase transparency during operations. The ProDiag option offers detailed plant and machine monitoring with minimal configuration and visualization costs and provides support thanks to automated code generation and synchronization of HMI devices. ProDiag detects errors in the user process and can supply information on the type, location and cause of such errors on a display device, together with data on how to correct the error. The Simatic Energy Suite facilitates easy parameter assignment and evaluation of many measuring components, with the requisite control program being generated simply by pressing a button. The Simatic Energy Suite increases the transparency of energy flows and helps to save energy in accordance with ISO 50001. The energy data is easily acquired, and integrated into the automation solution. WinCC/WebUX help not only to monitor plant processes but also, if necessary, to control them via the Internet or intranet via mobile HMI devices, such as tablet PCs and smartphones. The process data are available worldwide providing easy access to the machine. The TIA Portal V14 now gives all Simatic S7-1500 controllers OPC UA server functionality, such as for standardized connections to a Manufacturing Execution System for vertical plant integration.
Background information:
The Siemens TIA Portal (Totally Integrated Automation Portal) enables users to perform automation and drive tasks quickly and intuitively through efficient configuration. The software architecture is designed for high efficiency and ease of use, and is suitable for both new and experienced users. It offers a standardized operating concept for controllers, human machine interfaces (HMI) and drives, as well as for shared data storage and consistency, for example during configuration, communication and diagnostics, as well as offering powerful libraries for all automation objects. The simple engineering in the TIA Portal facilitates full access to the entire digitized automation, such as digital planning, integrated engineering and transparent operation. Alongside PLM (Product Lifecycle Management) and MES (Manufacturing Execution Systems) within the Digital Enterprise Software Suite, the TIA Portal complements the holistic range of software from Siemens for companies on the path toward Industrie 4.0.

You will find this press release and a press photo at www.siemens.com/press/PR2016030165DFEN
You will find further information at www.siemens.com/tia-portal
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