

# Strong Protection against Reverse Engineering

The manufacturing industry demands the capability to prevent unauthorized imitation and counterfeiting of machinery and their controls in order to protect their investments. The answer to this demand is the successful partnership of software protection provider WIBU-SYSTEMS AG and 3S-Smart Software Solutions GmbH, the vendor of the PLC software CODESYS.



## CodeMeter®

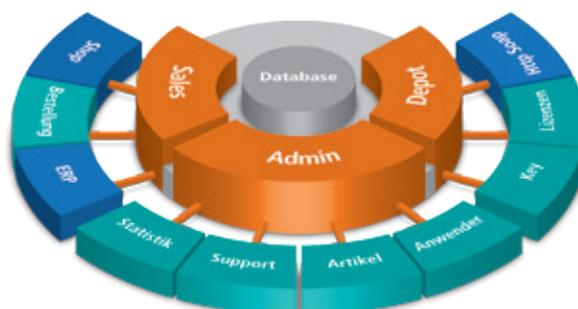
The CodeMeter® secure software licensing solution has been extended to address the needs of the industrial vertical: CodeMeter® provides protection of intellectual property for embedded software and machinery controls, and also of production data, machine logs and service documents. The CodeMeter® protection utilizes encryption with standard algorithms such as AES, Elliptic Curve, and RSA. The keys and the usage parameters are stored in the Product Items and Product Item Option of the CodeMeter® License Container. They can be stored either in an encrypted and signed CmActLicense license file or in an extremely secure Smart Card based hardware device, the CmDongle. There is a variety of CmDongles for different needs such as USB, CF card, SD card or microSD card.

## Encryption tools AxProtector and IxProtector

In addition to the secure storage of the license and the use of the protected software on the target system, CodeMeter® provides tools for the developers to integrate the protection in their software. AxProtector is used for the encryption of the completed program code without any changes to the source code, and IxProtector which is used to provide encryption at the function level.

## Secure software licensing for the production machines

The functionality of a production machine is determined by the software. Different features or functions can be licensed on a modular basis. The CodeMeter License Central supports the creation, management and delivery of licenses for these modules, and CodeMeter License Central easily integrates with the existing sales processes by connecting to the ERP, CRM, and ecommerce systems.



## Flexible Usage

CodeMeter® runs platform independent on Windows 32 bit, Windows 64 bit, Windows Mobile, Mac OS X or Linux. CodeMeter® also supports the platforms most often used in manufacturing such as Windows Embedded, Windows CE, OSADL Real Time Linux, VxWorks, and the SoftSPS system CODESYS. This support includes the required runtime software as well as the integration tools and protection utilities. CodeMeter® provides the protection and flexible licensing required to support embedded software.

# Integration of CodeMeter® in CODESYS V3.5

Starting with CODESYS Version V3.5, the CodeMeter® encryption tools are completely integrated into the CODESYS development environment and are available as CODESYS Security. CODESYS Security uses the CodeMeter® protection hardware CmDongle and provides a high level of security and license flexibility to address the needs of the manufacturing automation vertical.

## Protection against piracy, integrity protection and new business models

CODESYS V3.5 in combination with the protection hardware, the CODESYS Security Key, allows manufacturers of automation solutions to effectively protect their developed solutions based on IEC 61131-3 against product piracy.

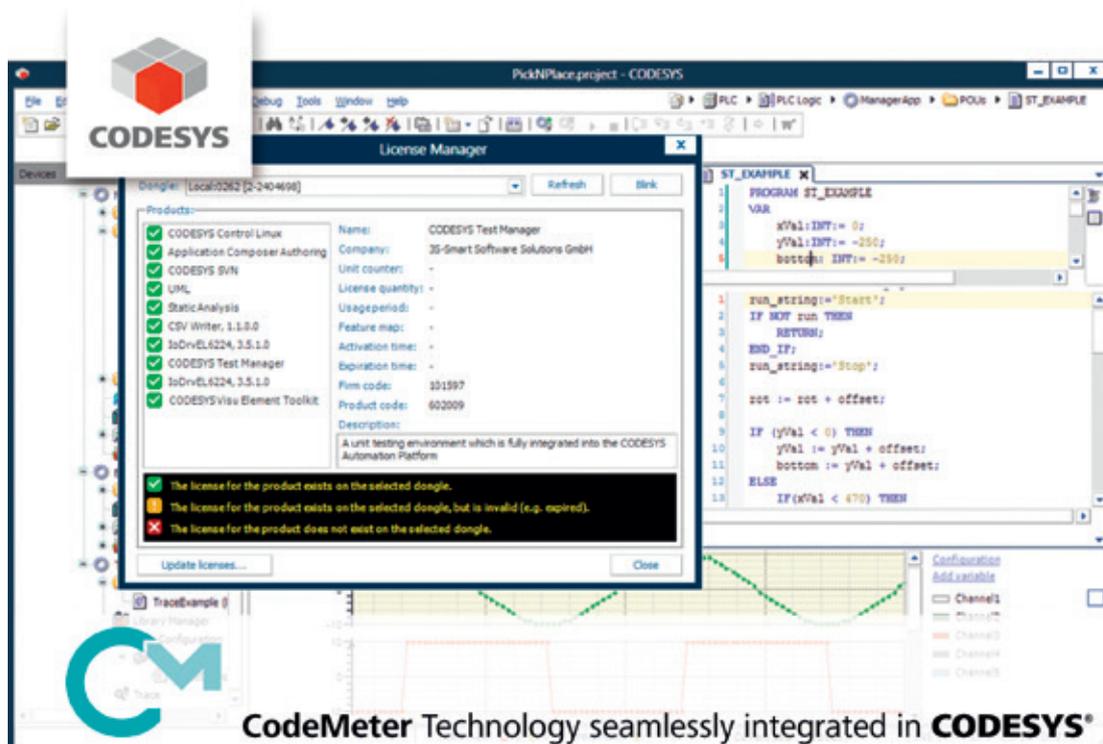
CODESYS Security is completely integrated in CODESYS and includes the following functions:

- Intellectual property protection
- Usage control
- License security

Thus, the CODESYS security system helps to protect valuable intellectual property against reverse engineering, unauthorized copying, and transfer to other PLCs.

The request for an integrated protection system offering security in relevant industrial machinery will be fulfilled by these additional security functions: "signed application" and "encrypted communication" between programming PCs and PLCs. In combination with an integrated user administration tool, the manipulation of a PLC by a third person is prevented.

Additionally the manufacturers of machines can introduce new business models such as Pay-per-Use or Feature-on-Demand for their PLC's, and can easily create and supply required licenses for their customers. Software protection using CODESYS Security Key (CmDongle) allows for effective license management and ease of use as all information is accessible anytime and anywhere. All CODESYS security functions are optionally and can be used independently.



CodeMeter Technology seamlessly integrated in CODESYS®