



# KEYnote 27

THE WIBU-MAGAZINE

## 25 Years Wibu-Systems

Protection – Licensing – Security

### Topics

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- 1 Two Sides of Licensing



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## Dear customers and partners,



25 years propelling your business to new heights — an awesome journey with you!



On January 10th, 1989, essentially twenty-five years ago, Marcellus Buchheit and I founded Wibu-Systems. Since the beginning, our goal has been to offer a flexible and secure software licensing system to ISVs. Over time, Wibu-Systems has grown to boost one hundred highly-motivated specialists and aggregate subsidiaries in the USA and China, as well as sales offices in Europe and distributors in many more countries.

After twenty-five years of constant innovation, the new market requirements are driving us to offer even more. Thanks to the patents we hold and the uncanny resourcefulness of our developers, Wibu-Systems keeps creating ingenious solutions to support our customers' success.

Our solutions span across three main areas:

"Protection." Protecting your intellectual property against counterfeiting and reverse engineering. "Licensing." Our flexible Feature-on-Demand license schemes enable enhanced logistics and new after-sales business models and integration in operational processes and ERP systems. "Security." Providing secure boot and tamper protection against cyber-attacks.

Increased connectivity, Internet of Things, Integrated Industries (such as Germany's Industry 4.0), and today's espionage activities lead security solutions like ours to the forefront of governments' agendas.

You will find more information about all these topics in this issue of our KEYnote magazine. Some customers' testimonials might inspire you furthermore.

I would like to thank you for your trust and confidence over these 25 years together, and for your investment in our technology. We remain committed to provide benefits for your business with solutions that will outperform your requirements. I would be happy to meet you in person at one of the many events coming up and learn about your experiences and expectations.

Yours,

Oliver Winzenried (CEO)

# SECURITY LICENSING PERFECTION IN PROTECTION

CodeMeter is designed as a single comprehensive solution that offers numerous benefits for software vendors (ISVs) and users alike. The added value it provides ranges from additional security to the simple management of licenses and digital rights.

## Protection

'Protection' means safeguarding software or other digital content from illicit copies and imitation. Strong cryptographic protocols are used to protect data and executable files against unauthorized access on diverse operating systems, including Windows, Linux, OS X, VxWorks, and Android. This prevents the copying and the analysis of software for reverse engineering purposes.

Protection guards the intellectual property of ISVs against reverse engineering and piracy.

## Licensing

'Licensing' covers the creation, distribution, and management of licenses by ISVs and the tracking of access and use by the end user. License creation and delivery can be integrated directly into ERP, CRM, and e-commerce systems, avoiding costly manual operation and reducing the costs of license production. The quick distribution of licenses ensures satisfaction and acceptance on the user's side.

Users can track which licenses are accessed and monitor their active use by employees for greater transparency. Multi-user licenses can be allocated to specific cost units and the number of actually required licenses can be chosen with certainty.

Licensing means the transparent management of licenses.

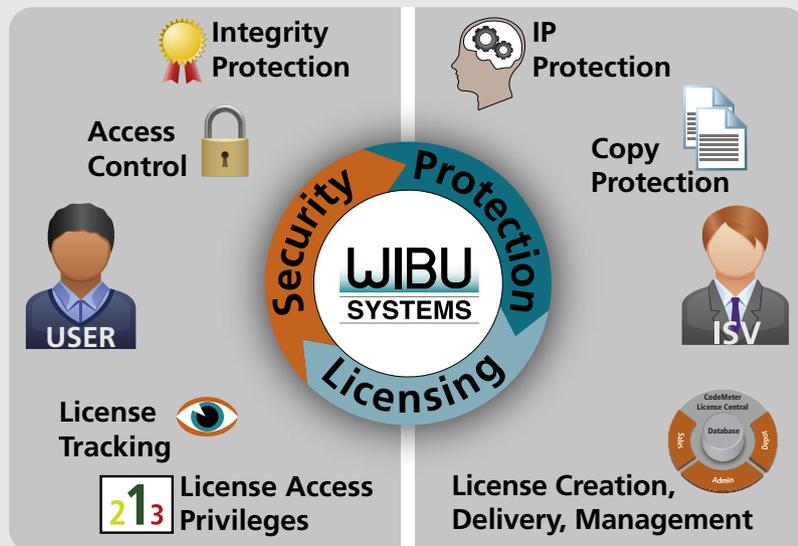
## Security

'Security' stands for security options for users. A minor issue for software running on local desktop computers, data security becomes a major factor in cloud computing. This also applies to protecting the integrity of and guarding access to embedded systems.

CodeMeter offers the confidential and tamperproof storage of the usage and login data of users in the cloud. With CodeMeter security,

no malware can be run on embedded systems, and all unauthorized access is made impossible. CodeMeter provides both the cryptographic means to authorize software with certainty and the tools to manage the necessary access rights.

Security protects users from sabotage and data theft.





## Salesforce Integration

For software publishers, distributing the right licenses to their users is one of the most important steps in the entire sales process. The procedure needs to be simple, secure and transparent. No more than a few clicks should be required for the user to have the license on his or her system. At the same time, the independent software vendor (ISV) wants to immediately see how many licenses have been sold and how many are active on the user's side. This needs a perfect integration between the back-office systems used by the ISV and CodeMeter® License Central, the comprehensive license management solution for all the software vendor's needs.

### Objectives

The market for CRM (Customer Relationship Management) and ERP systems (Enterprise Resource Planning) is an embarrassment of riches with the many different solutions offered by SAP, Oracle, Sage, Microsoft, and other providers. Many ISVs also rely on their own, home-grown applications for the purpose. Among cloud-based CRM applications, Salesforce has long been one of the market leaders – which is why we'll take a closer look at how CodeMeter License Central (Internet Edition) can be made to work with Salesforce in just a handful of clicks. License Central gives ISVs the full versatility of the licensing solutions made by Wibu-Systems right in Salesforce and combines the advantages of both systems in a perfectly designed Web service.

For this purpose, CodeMeter License Central is automatically integrated to create license requests for the customer's data, which is kept on Salesforce via a dedicated SOAP interface. These requests include one or more licenses for the customer and are identified by unique ticket IDs. For each request, the ticket is sent back to Salesforce, before it is delivered to the customer by email or a delivery slip. The user retrieves his or her licenses for this ticket via the ISV's web portal (License Central WebDepot) or directly from within the software.

### Which edition of Salesforce.com works?

In order to integrate with CodeMeter License Central, the ISV needs to use either the Enterprise or Performance Edition of Salesforce.

These two editions include integration capabilities via the Webservice API, which is needed for the automatic integration of CodeMeter License Central via the SOAP interface (see P1).

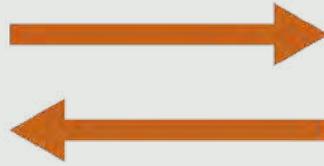
### Which changes need to be made in CodeMeter License Central?

For CodeMeter License Central to create new requests and generate licenses, it only needs the addition of the required item.

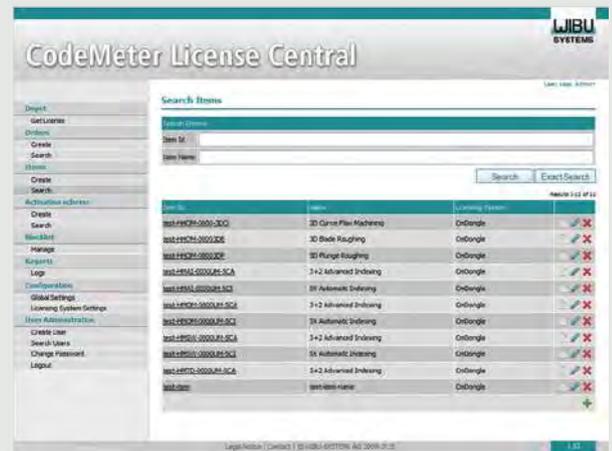
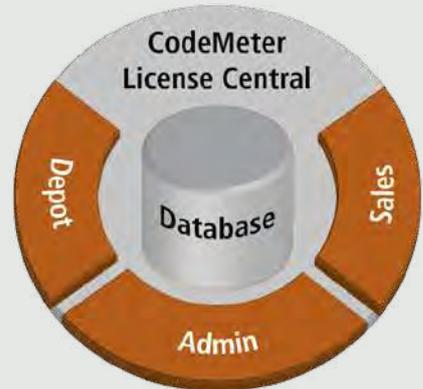
The item is identified securely via a defined Item Id, which Salesforce must know, and which is transmitted as a parameter when the web service is accessed for the automatic creation of a new request (see P2).



Project, Licenses



Activations



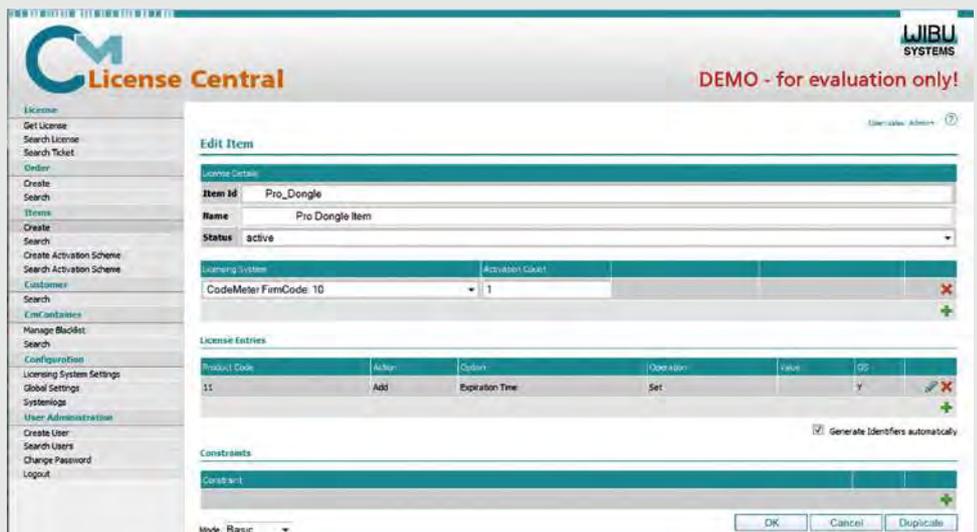
P1: The perfect combination of the Salesforce CRM system with License Central (Internet Edition)

### Which changes are needed in Salesforce.com?

For a request to be generated in CodeMeter License Central, an object needs to be created to hold the necessary information, such as:

- Customer's information to allocate the request and the ticket in CodeMeter License Central to a specific customer in Salesforce.
- Product information that CodeMeter License Central needs to generate the right licenses.

Additional fields are required to identify the request generated in CodeMeter License Central, and to store the resulting ticket. This ticket allows the customer to be authenticated and to retrieve the actual license.



P2: Editing an item in CodeMeter License Central

One basic action that is needed is for the Web service that connects CodeMeter License Central with Salesforce to be made known in Salesforce. For this purpose, it needs to be entered and set up as a remote site in the Remote Site Settings in Administration Setup > Security Controls (see P3).

Finally, a few lines of VisualForce markup code need to be produced for the Web service of CodeMeter License Central to be accessed by Salesforce with the right parameters for creating the request. As a result, the Web service returns the ticket to Salesforce (see P4).

Now a new request can be created in CodeMeter License Central directly from Salesforce. The resulting ticket is made available for further use, such as its delivery to the client by email or as a Ticket ID on the customer's delivery papers.

### How do the licenses reach the customer?

It's not until the last steps of the process that the customer comes into play. The customer retrieves the licenses by using the created ticket (e.g., via the License Central WebDepot). The licenses are copied to a CmStick connected to the user's PC. If the ISV chooses to use software-based licenses, the customer can activate these directly on his or her PC by following the same route (see P5).

### Summary

Combining CRM or ERP systems with CodeMeter License Central allows the professional distribution and monitoring of licenses. Comprehensive Web services allow the entire license administration and activation functionality of License Central to be integrated into an already established back-office system. This sample based on Salesforce shows that this is not only the case for familiar in-house systems like SAP or similar options, but also for cloud-based solutions.

All systems that allow the integration of Web services can integrate the license management functions transparently and with little effort. And if you need some help or don't want to do it yourself, our Professional Service Team is always available to help you achieve this goal.

Action	Remote Site Name	Namespace Prefix	Remote Site URL	Active	Created By	Created Date	Last Modified By	Last Modified Date
Edit   Del	Apex2Public	-	http://www.apex2vnet.com	✓		23.12.2013 16:55		23.12.2013 16:55
Edit   Del	codemeter.com	-	https://c-admin.codemeter.com	✓		05.09.2013 13:11		05.09.2013 13:13
Edit   Del	HelloLicenseCentral	-	http://10.49.2012.11.8080	✓		05.09.2013 16:29		06.09.2013 06:30

P3: Web services administration in Salesforce

```

<apex:page controller="WebserviceCall">
  <apex:form>
    <apex:pageLock>
      <apex:commandButton action="{!sayHello}" value="Initiate HelloLicenseCentral"/> <br/><br/>
      Name: <apex:inputText value="{!name}"/> <br/>
      Output: <apex:outputText value="{!message}"/>
    </apex:pageLock>
  </apex:form>
</apex:page>

```

P4: VisualForce code created in Salesforce

PERFECTION IN SOFTWARE PROTECTION

Home | Get Licenses | English

#### Your Licenses

- Choose the licenses you want to activate.
- Choose the locally connected CmContainer.
- Click "Activate Licenses".

Product Name	Status
salesforce Pro Dongle Item	Available

Choose your CmContainer  
2-1407290

Activate Licenses

Offline Activation

Legal Notice | © 2012-2013 WJBU-SYSTEMS AG | CodeMeter License Central WebDepot v13.12.100.500.ws | 2014-02-13 05:56:20 (UTC)

P5: Retrieving licenses from the WebDepot

# 7 WebSockets



All roads lead to Rome. Some are rocky, some are highways, some byways. The story is similar when it comes to transferring a license from CodeMeter License Central into a local container via a browser.

In order to transfer licenses via browsers, the website or, more specifically, a JavaScript on that website needs to be able to communicate with the local CodeMeter Service, which guarantees secure access to CmDongles and handles the computer-bound CmActLicenses.

## Java

The route preferred in the past – Java – has been made virtually impassable by the aftershocks of massive security problems. Exploits in Java allowed malware to be injected into and executed on the host system. All it took was for the user to access an infected or deliberately spiked website, without warning or notification. The perpetrators had access to complete kits that enabled even script kiddies to produce viruses and unleash them into the Java world. Germany's high-profile "federal Trojan" was one such intruder made from these kits.

## ActiveX

Moving beyond Java, CodeMeter allows a route via ActiveX. Long believed dead and buried, ActiveX is still a great means of adding browser functionality, with each element only requiring one-off consent by the user. However, this route is only open for users of Windows and Microsoft Internet Explorer, which narrows the target group considerably.

## Manual File Transfers

The third route relies on file transfers. A license request file is created on the computer and uploaded to the server. The license update is then made available for download to the computer. This barebones approach is a workable option even for users of outdated browsers or users without JavaScript. At the same time, the necessary manual transfer makes this route one of the less preferred options for most users.

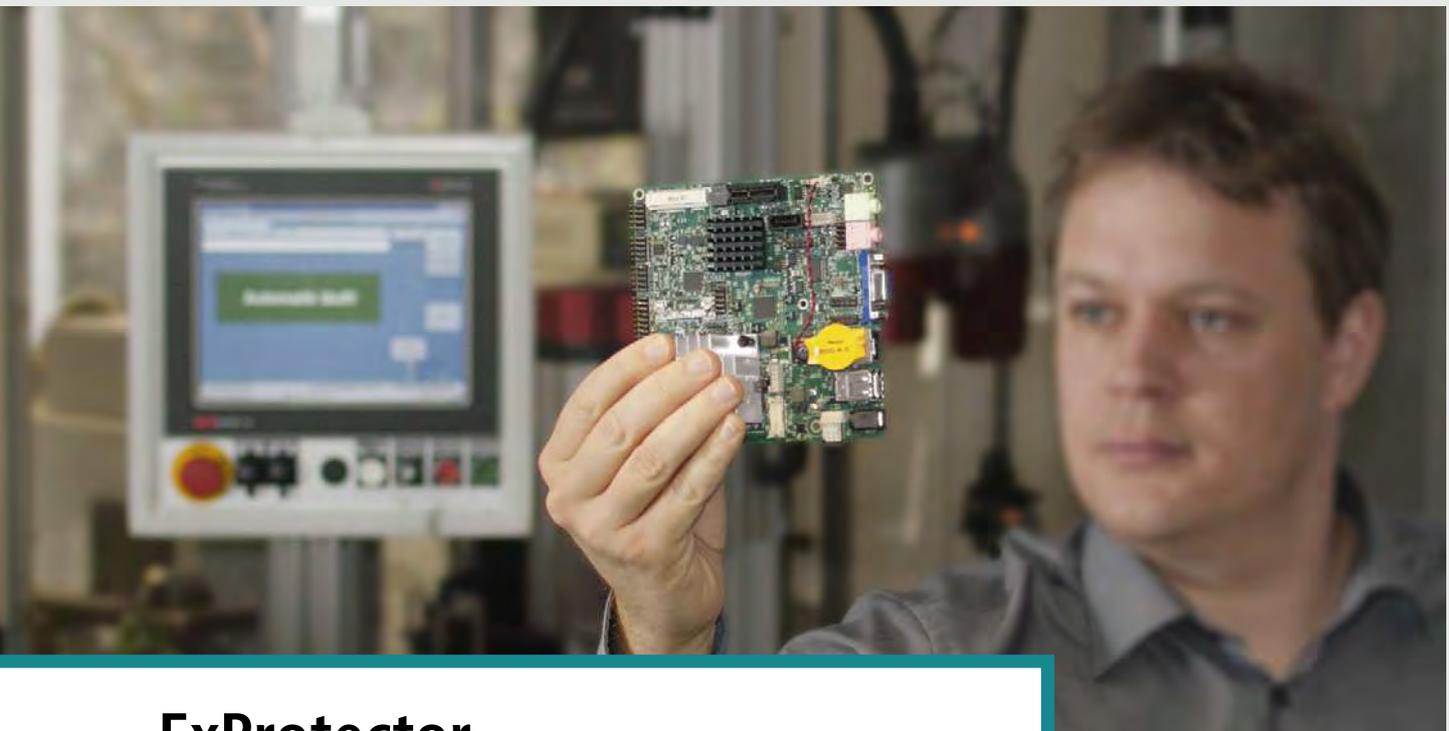
## New: WebSockets

CodeMeter 5.10 adds a fourth universal route: WebSockets. The CodeMeter service comes with a WebSocket server for transferring licenses. JavaScript in the browser can now communicate directly with the CodeMeter service without taking the long route via ActiveX or Java.

This opens up a new highway for all platforms and all current standard browsers that avoids the many limitations that come with Java and ActiveX.

## It's all in the mix

Have we found the direct route to Rome? No – it's all in the mix. The purists among our users will still see the file transfer as the royal road, avoiding JavaScript in its entirety. Secure websites (https) also do not allow access to CodeMeter WebSockets. Neither does Internet Explorer on Windows XP and, even though Microsoft has announced the end of support for Windows XP in April 2014, CodeMeter will remain active on many legacy systems. For this reason, the web interface used for acquiring licenses (WebDepot) comes with automatic recognition of the environment and chooses the best possible transfer option. WebSockets are not the be-all-and-end-all, but they are a major part of a fully rounded online activation portfolio. 



## ExProtector

The world is changing. Smaller, connected computers are used more and more around us. They are pushing out the old proprietary solutions in all technical aspects of industry and even in our everyday lives. Wibu-Systems offers manufacturers and users simple-to-use tools to protect their systems and know-how.

The market for embedded systems continues to grow. Controllers that used to rely on specific and dedicated functions are being replaced with powerful and versatile computers, independent systems with the familiar traits that we all know from desktop PCs. Besides CPU and RAM, they come with flash memory storage, sometimes displays, network ports, and typically a number of USB ports. These systems tend to operate with specialized versions of common desktop operating systems like Linux, Windows Embedded, or VxWorks, with the newest kid on the block being Android, which has become a favorite for many small-scale systems. The routers that most people use for internet access are one type of such embedded systems, but smartphones and tablet computers can also be considered embedded devices. On a larger scale, modern cars come with a multitude of similar systems. In the manufacturing industry, machines work with PLCs. Building controls, CCTV cameras, automatic doors, traffic lights, smart meters, and even airliner avionics rely on embedded

systems. In essence, all these disparate technologies use a similar architecture.

The devices need to be programmed, maintained, and increasingly supervised, and controlled from the outside. The interfaces used for that purpose employ common standards: Local access relies on USB or Bluetooth; in networks, the systems can be reached by their IP address, using Ethernet, WLAN, or industrial field busses.

With all of these components increasingly interconnected with each other and with standard operating systems used for versatile and powerful platforms, new avenues are also open for attack and intrusion that the former proprietary systems without network or USB access did not offer potential perpetrators.

### Targets

Attacks usually have one of two purposes: the theft or the manipulation of software and data. The victims can be the producers of the

system or machine, or their users. The reasons behind these attacks can be attributed to one of four categories:

- A** Theft of the know-how of the plant manufacturer (control software, type of implementation, possible exploits)
- B** Theft of the know-how of the plant operator (formulas, process parameters, log files)
- C** Manipulation of the operating data by the system operator to hide any improper usage, make illicit warranty claims, or tamper with the records for pay-by-use models.
- D** Sabotage by disgruntled workers, competitors, or secret services. The highest-profile historical incident in this respect is the Stuxnet attack.



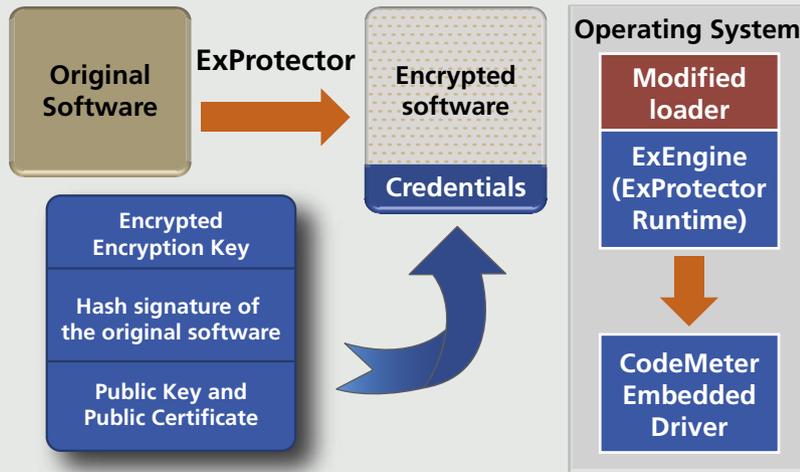
## Wibu-Systems' Protection Suite for PCs and Embedded Systems

The increasingly loud call for better protection for industrial applications and data has encouraged Wibu-Systems in its commitment to improving protection in the sector with its Protection Suite. In traditional PCs, memory or processing power are not an issue anymore, whereas embedded systems often use small-scale, resource-efficient architectures. Open systems like VxWorks, Android, or Linux also play a more prominent role here than they do in the desktop world, as they allow individual adjustments to the given needs.

AxProtector, for PCs, and ExProtector, for embedded devices, are able to encrypt complete applications or single libraries securely without any change to the applications source code. The CodeMeter software takes care of decrypting these files for the run-time environment and scans for any potential attacks.

AxProtector creates an encrypted archive of the original application code and adds self-extraction functionality as well as the necessary license parameters to authorize the decryption by the CodeMeter runtime. This adds only a few kilobytes to the encrypted file. After the archive has been authorized and extracted, it checks its integrity automatically.

Embedded systems often have higher requirements in terms of real-time capabilities, while having less memory and processing



Process of integrity check

power than their desktop counterparts. That's why we optimized AxProtector concept for embedded systems' specific restrictions.

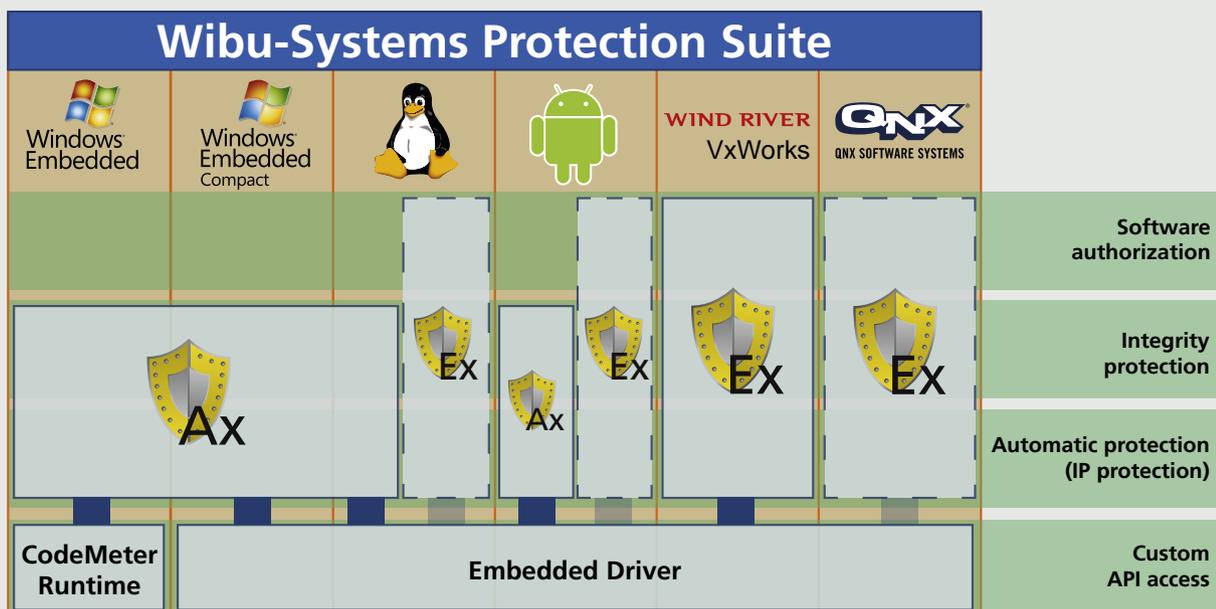
### ExProtector

ExProtector encrypts applications, libraries, or data files for embedded systems. The encrypted file includes only a handful of additional bytes with the license parameters required for decryption and the signed hash (checksum) in the header.

All cryptographic functionality is already built into the operating system itself, including the drivers for accessing licenses on dongles or software-based CmActLicenses as native code.

Wind River offers VxWorks with the CodeMeter Loader completely integrated from the start. A similar integration in Linux and Android is easy because of the flexible modifications allowed by these operating systems.

This deep integration in the operating system makes for greater efficiency and greater security. The Loader uses the hashes and signatures to check the integrity of the applications or files encrypted by ExProtector after their authorization and extraction. Combined with secure boot procedures, which CodeMeter's technology also covers, one can produce a completely copy- and tamper-proof system without the need for additional software.



Wibu-Systems Protection Suite with the current Protectors (solid border) and planned Protectors (striped border)



## Live from the drivers' seats

1989-2014: “25 years propelling your business to new heights” is a bold statement that only exceptional company founders and top managers can make. In this interview, Oliver Winzenried, CEO of WIBU-SYSTEMS AG, and Marcellus Buchheit, CEO of WIBU-SYSTEMS USA, Inc., reveal some exclusive details about their personal journey and the ingredients of their special recipe which made them achieve a long-term vision and gain world recognition as one of the top three leading vendors in software protection, licensing, and security.

### When did the two of you meet, and what caused you to form Wibu-Systems?

**[Marcellus]** Oliver and I first met at the Karlsruhe University while we were working on a mixed software/hardware project for the university's amateur radio station. Over the next couple of years, while still attending classes during the day, we developed several custom-specific projects at night. They were all successful and this made us confident that we could create a product that we could sell to the mass market. We soon realized that original software for PCs could be easily hacked and that security solutions on the market were still in a primordial stage. The plan took shape in 1987, when Oliver developed the WibuKey chip and its hardware, and I focused on the protection technology and tools on the PC.

### WIBU-SYSTEMS has kept a unique vertical focus over the years. How did you spot this niche, and why have you not embraced additional technologies?

**[Oliver]** WibuKey 1.0 was released for DOS and already contained a basic version of the sophisticated automatic protection to come. Over the following years, the number of operating systems exploded – 16-bit Windows, OS/2, Novell, Linux, 32-bit Windows, MacOS, etc. We wanted to present a universal solution for all platforms to our customers. However, supporting so many platforms with a single architecture and one unique programming interface (API) was challenging, and our development resources were limited. Meanwhile the software protection market was growing

worldwide, so we decided to keep faith to our original technological challenge. With a clear technological focus, we could listen to prospects' and customers' demands and provide them with an unprecedented advanced technology. We felt that to enter other security markets would dilute our core focus of software protection. At the end of the day, still in our niche, our solutions have gone through tremendous development: from IP “Protection” against counterfeiting and reverse engineering, to “Licensing” as an enabler of new business models, to “Security” to prevent tampering and cyber-attacks.



### Alexander H. Delaney, President, eSim Games, USA

Happy birthday and congratulations for your 25th anniversary! We're looking forward to the next 25 years of innovation and excellent service.

**John Gibs, Product Manager  
Agfa Licensing Software,  
Agfa, Belgium**

Congratulations to the whole team at Wibu-Systems! Working with you for the past eight years has been a pleasure. We are looking forward to securely growing our business together.

**Where did the idea of CodeMeter originate?**

**[Marcellus]** Before the Internet, software was burned on a CD and shipped in a box; adding a dongle was a no-brainer. In the Internet age, CDs became obsolete and software was all downloaded, which completely changed the rules of the game. Threats multiplied, allowing us in turn to grow our market share, but at the same time we had to rethink the concept of the product itself. We ended up envisioning a dongle which could be shared by many software publishers, but strictly programmable and upgradable at the end user's computer. After lot of brainstorming we came up with the idea that the name for this new product would be "CodeMeter" to express the purpose of the technology, namely that the "metering" aspect related to the use of software, so that the act of measuring could be used as an attribute of the source code.



**Being the CEO of a company for 25 years is not an easy business; what is your way to keep a clear vision of the future strategies you want to pursue?**

**[Oliver]** WIBU-SYSTEMS' first core value is to be of service to our customers so that their business can expand, once their assets are protected. And for that we listen closely to customers' wishes; they are an incredible source of ideas due to their diversity in their markets, cultures, and perspectives. Further, we try to anticipate the market trends, and that's where our active role in several international business organizations and standardization bodies lets our imagination flies to a different



Even the busiest people need to take a break sometimes

level. Last but not least, competition and new security threats challenge our brain and ensure we continuously evolve our products.

**CodeMeter seems to be a complex product. How can it be described simply?**

**[Marcellus]** In our early years our attention was fully taken by dongles as they represent the utmost security level when it comes to software protection. But we also knew that the criteria for adopting such a technology would sometimes include other circumstances, like at times the impossibility to connect to hardware at the end user's site, or a peculiar license distribution model, or a security solution so advanced that it was the most expensive part of the application. This is why we added CmActLicense to our portfolio. It still resides under the same CodeMeter umbrella, because

licenses can actually be stored in a mix of containers, all handled by the same core technology. CodeMeter is still involved when it comes to the creation, management, and distribution of licenses, but now it's a different layer of the CodeMeter technology – License Central. License Central interfaces with hard- and soft-license holders and streamlines the whole process in conjunction with the existing business ERP, CRM, and e-commerce systems in place.

**Who are WIBU-SYSTEMS' ideal customers?**

**[Oliver]** Essentially we are coming across two main user groups. One uses PC software in office environments, while the other consists of manufacturers that deal with industrial applications and embedded devices. The former is gradually implementing a centralized license

**Christian Vardin, President, ControlEng, Canada**

Happy 25th Birthday. We first started using WibuKey back in 2004 to protect our flagship product "SERVOsoft". We now use CodeMeter for both protection and license management. Thanks for responding so quickly over the years to our requests and the requests of our customers and distributors.



F.l.r Oliver Winzenried and Marcellus Buchheit

management solution to handle all new license models and automate the related processes. The latter is facing not just global counterfeiting but also sabotage, tampering, and cyber-attacks which are unprecedented in history, and therefore needs to become knowledgeable in security and to implement integrity protection solutions. In the case of ISVs, the product can easily be a standard package with optional customization features. For OEMs, the scenario is more complex for both sides, which is why we have begun forming strategic partnerships in order to generate facilitated solutions for developers. We are extremely satisfied with our customers and the long-term relationships we have with many of them testify to this mutual feeling.



**Guido Walther, Director Technical Support, Wincor Nixdorf, Germany**

We have been using CodeMeter successfully for CryptTA since 2009. Thank you for your co-operation and our congratulations for the 25-year anniversary of Wibu-Systems. We'll continue to rely on Wibu-Systems' technology for protection and process integration.

**The approach to market has changed as technology has pervaded our lives; are you a precursor of new trends or do you keep a more conservative attitude?**

[Marcellus] We have always strived to be creative and develop innovative and proprietary solutions, and to support new emerging technologies, whether it's a new operating system, a trend like the cloud, a revolution like connected systems in industrial automation, or the portability found in mobile technology. That's the approach we started with 25 years ago when we first began protecting Windows applications without requiring any source code modification, or later with Wibu-Box in the

**Socorro Sesma, Director of Technology and Product Management, INDRA Sistemas, Spain**

Congratulations for your 25th anniversary! It's been a pleasure working with you over the last seven years. We'll continue to rely on your products, confident that you will keep on innovating and delivering the best solution as you have been doing so far.

form factor of a PC Card, or later on with the USB interface, and even today with CodeMeter units available as µSD cards or CFast cards, to today's support of PLCs and real time operating systems.

At the same time customers are right in asking for backwards compatibility and retrofitting, and we work hard to ensure our oldest dongles are still compatible with our newest technologies. This is a great benefit for their business continuity even though it somehow limits our possibilities.

**You have opened other subsidiaries of Wibu-Systems across the world. What drove your decision to start a business in the US and in China? Are you considering further expansion?**

[Oliver] The foundations of software development are pretty much identical around the globe – same platforms, computer models, development tools, etc. Other factors determine the success of a company abroad, like the completeness of the localization services, the skills of the local support team, and the training of the sales team. The liaison between the headquarters and the local realities are challenged by time differences, distinctive cultural approaches, linguistic barriers, diverse legal problems. We will definitely expand further on, but since we want to make sure we offer a tailored approach that meets the regional demands, we'll proceed progressively at a pace that allows us in the end to have a stable and competent foothold in each country.

**Ing. Georg Wenninger, General Management, WSCAD, Germany**

WSCAD has been using Wibu-Systems technology since 1990 and has been able to follow the evolution of the company. We have no regret whatsoever about the decision we took back then. Congratulations for your first 25 years of success, and keep going.



**Markus Stoll, Director Engineering IAM Diagnostic Software, Bosch, Germany**

We are pleased with the integration of Wibu-Systems CodeMeterAct, which has allowed us to put an even safer solution in place.

We are very excited about our burgeoning growth into Latin America and Africa: these continents are amazing in terms of their economic potential and we would be excited to start local collaborations there.

**Many of your co-workers have been with you for an exceptionally long time. What is the secret behind such a loyal team?**

**[Marcellus]** Employees are the engine of innovation and design. Their input is very respected. Our company is growing in a stable fashion aiming at a broad ultimate picture; we are not the typical "hire and fire" business driven by short sighted financial results. At Wibu-Systems, the staff members of all departments contribute with their ideas and influence company's decisions. The atmosphere is cheerful, doors are open to invite dialogue, we all enjoy a high level of reciprocal trust combined with a receptiveness to cultural interchange both within our headquartered team and with all our offices and partners scattered all over the world. The company promotes high ethical

**Dieter Hess, General Manager, 3S-Smart Software Solutions, Germany**

Wibu-Systems is our partner for license protection and security on all desktop and embedded platforms. The reasons that led us to choose Wibu-Systems are the strong commitment to the industrial market, the long-term experience in the license protection technology, and the willingness to continue to improve the products together with us.

values which makes it easier for all to identify with them and pursue the common goals we set together. Last but not least, we invest in continuous training and education of our staff and share our commercial success with them.

**Matthew Fowles, Group Marketing Manager, LVD Group, Belgium**

After years of working with Wibu-Systems, we continue to be impressed with the extreme reliability and the easy handling of its security technology. CodeMeter supports us admirably in coping with LVD's ongoing technological evolution.

**You have achieved a proven track record of patents and awards. What is your role to this day with the educational world? And how much are you involved in training new students?**

**[Oliver]** Yes, that's true, we own several trademarks, domains and patents in the US, Japan, and Europe. Patents are the true essence of the value of a company. And to make sure our innovations keep being top-notch, we are very active in research and development, and thus cooperate with, among others, the Karlsruhe Institute of Technology, the Fraunhofer organizations, and DFKI -- the German Research Center for Artificial Intelligence.

**Antoon Laane, Product Manager EMEA, Controllers & Design Software, Rockwell Automation, Belgium**

Wibu-Systems has proven to be a solid business partner, clearly showing their understanding of the Industrial Automation market and the critical role of security in our industry. It is truly a pleasure to work with every member of the team.

Thanks to this constant exchange of knowledge, students are welcome for their internships in our headquarters or offices abroad while they complete their PhD. Moreover, we promote engineering, computer science, and other technology-oriented disciplines directly in primary schools, where we introduce pupils to these professions.

**If there was something flattering you were to say about your top competitors, what would it be?**

**[Marcellus]** We have a decent amount of competitors in the field, not too few and not too many, which gives us the right kind of encouragement to offer high-value products to our customers and spurs us to differentiate our offering. As independent analysts recently highlighted in a Hot Company Watchlist for our market segment, Wibu-Systems is actually one of the two top world leaders in hardware-based software protection and one of the three top global vendors in license management. Given that we have an innate tendency to over-engineer, the competition also plays a role in keeping us on track. With some vendors driven by sheer profit and others who have mainly turned their company from an entrepreneurial activity to a financial venture, we are happy to sit in the midst of all this and maintain our feet right on the ground and our minds in free rein mode.

**What is the legacy that you'd like to convey to aspirational entrepreneurs?**

**[Oliver]** Wait until you have a bright idea, but when it comes to you and you've tested it, start pursuing it no matter what. And then keep a good balance between external suggestions and your own insight. Patience and endurance are also top ingredients for a good mix. 



## Two Sides of Licensing

The prime purpose of CodeMeter is the protection and licensing of software. In license management, CodeMeter protection covers two complete dimensions: the independent software vendors (ISVs) and their software users.

### The ISVs' Perspective

CodeMeter offers many solutions and added value for ISVs. The three essential functions are:

- Technical monitoring of licenses on the user's side
- Handling of the desired licensing models
- Distribution and management of licenses

### License Monitoring

ISVs integrate their license controls in their software either individually by means of CodeMeter API or automatically via Wibu Protector Suite. The automatic integration option allows the quick and easy encryption of the complete application, a technology that is available for Windows, Linux, and OS X under the AxProtector and IxProtector brands. For Java and .NET applications, automatic encryption and obfuscation tools are available. On embedded devices, ExProtector offers not only encryption, but also the option of preventing the execution of unauthorized software modules.

Wibu-Systems' Protector Suite promises a high degree of protection with minimal efforts for integration. This protection can be made even

stronger by implementing additional security mechanisms by API.

### Licensing Models

CodeMeter supports any desired licensing model, with the most common types already included in the package. These turnkey models include single-user licenses, network licenses, licenses for features-on-demand, demo and trial licenses, and lease or pay-per-use models.

One excellent example of a preinstalled license model is the functionality offered for maintenance services. When finalizing the license, the ISV enters the start and end dates of the service contract, and the release date of the software is recorded in its protection. Everything else is handled automatically and securely by CodeMeter, since the release date is an integral part of the cryptographic data. If an attacker tries to modify the release date, the software will not open, since the cryptographic key has changed.

Wibu Protection Suite						
Windows	Mac Universal	Linux	Microsoft .NET Framework	Java SE & EE	Embedded Operating Systems	
						Software authorization (Secure Loader)
	AX		AX for .NET	AX for Java	EX	Integrity protection (Tamper Protection)
						Automatic protection (IP Protection)
						Encryption of specific functions

Unusual or complex licensing models can also be covered with minimal effort.

### License Distribution and Management

One essential task for ISVs is the creation, distribution, and management of licenses. The flexibility and versatility of CodeMeter License Central lets you choose the complexity of your licensing management: from a stand-alone installation for smaller sets of licenses to the full integration in the sales process or the ISV's ERP and CRM systems, as a local appliance, or as a cloud-based solution.

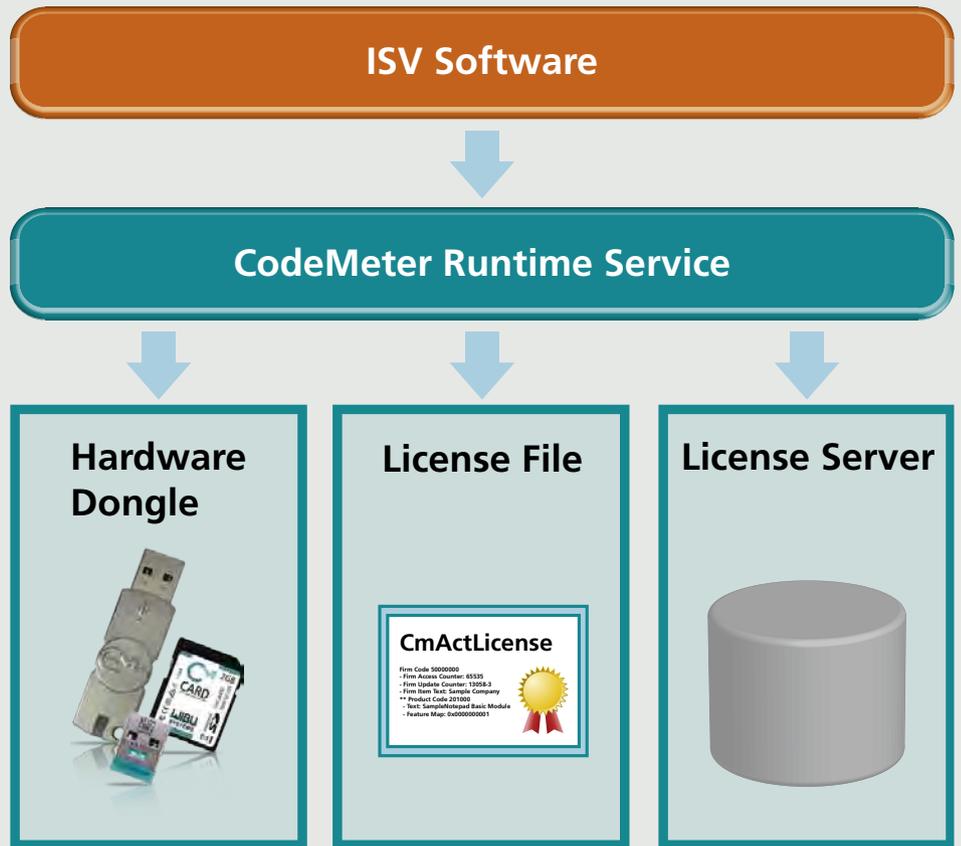
**CodeMeter License Central is available in the following editions:**

- **Desktop Edition:** Stand-alone as a local appliance.
- **Internet Edition:** As a local appliance for integration in the ISV's systems, with internet connection for cloud-based online activation.
- **Datacenter Edition:** Cloud-based solution operated by Wibu-Systems on behalf of the ISV as a stand-alone appliance in the Wibu-Cloud.
- **Dedicated Server Edition:** Cloud-based solution operated by Wibu-Systems on behalf of the ISV with the additional option of integration in back-end systems, such as SAP, Salesforce, and others.

### Scalable Licenses

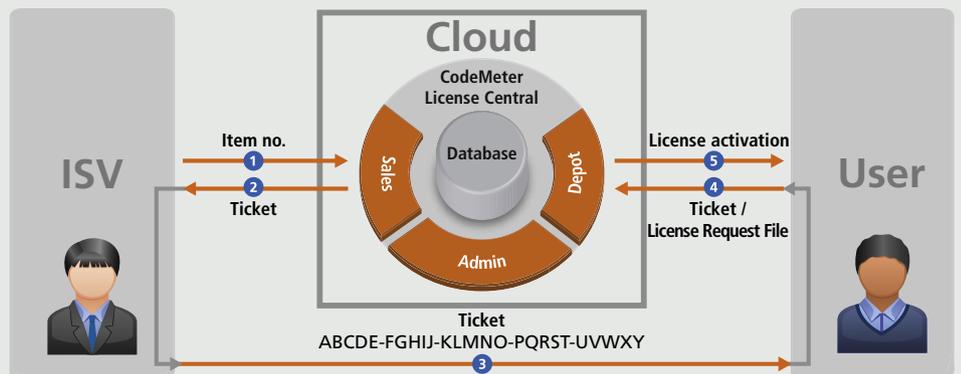
When using CodeMeter, the ISV decides the manner in which licenses are fixed and stored at the customer's location. The user can then choose between the options made available by the ISV, including:

- **CmDongle:** The license is tied to a CmDongle and stored completely on that dongle, with all cryptographic keys. These keys can be used by the software, but never taken off the dongle.
- **CmActLicense:** The license is tied to a dynamic fingerprint of the computer and stored in an encrypted license file. The fingerprint has a defined degree of tolerance (SmartBind®) for changes and modifications to the computer. Anti-debug measures and the use of the fingerprint as a key stop the unauthorized copying of licenses to other devices.



■ **License Server:** The license is copied to a license server and stored on a CmDongle or in a CmActLicense. Choosing a computer fingerprint allows the license server to be operated in the cloud if the ISV so chooses. The licenses are made available to the end users via a network (LAN, WAN, Cloud), in full compliance with the rules defined by the user.

This degree of scalability enables ISVs to define the level of security that they need and the maximum flexibility that they want to allow their users. The rule of thumb is that a CmDongle offers the most secure solution while keeping the license easily transportable. A license server kept in the ISV's cloud also offers very good levels of security. Storing a CmActLicense on a computer or license server still promises a high degree of state-of-the-art security.



The complete process. From buying to activation of the software.

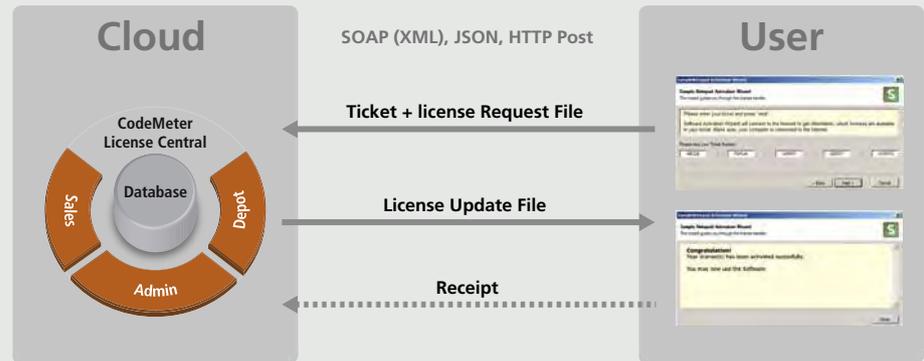
## From the ISV to the User

Licenses can make their way from ISVs to users via multiple alternative routes. With the flexibility and power of License Central, it's easy to come up with the solutions that are perfect for you. But that complexity can be overwhelming, so it's important to select licensing options that are best for you and your users.

The best practice seems to be for ISVs to find the best routes for their specific target groups. The most common route goes online, and is offered as the standard choice for users. One or more fall-back options should be offered for problem cases, usually including at least one offline route.

The multiple delivery options for perfect license transfers are displayed in the orange box below.

The choice of the best route depends on many factors. When determining these factors, some good questions to ask are: Are you working mostly with new customers or mostly with an established customer base? Are your customers



Online activation

regular internet users or do they prefer offline options? Are the licenses managed by an administrator? How technologically skilled are your customers?

Wibu-Systems' licensing experts are always available to contribute their know-how and best practices for choosing the optimal route.

## The User's Perspective

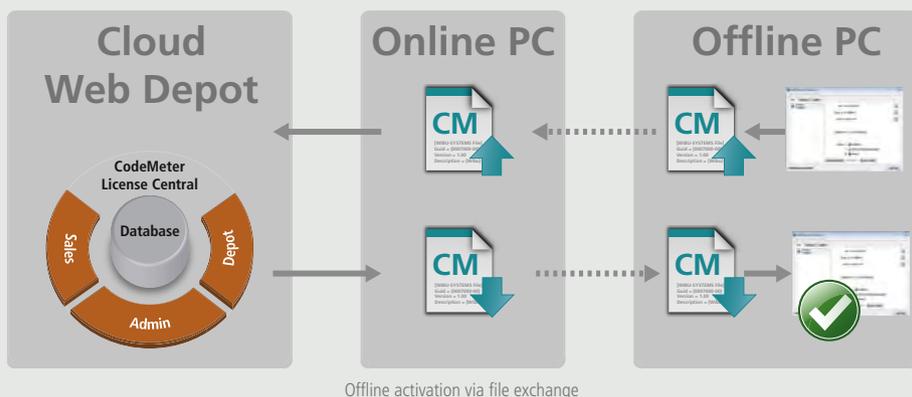
For users, licensing should be a simple process that does not interfere with their everyday work.

They expect answers for the following questions from license management:

- Which licenses have I bought and where are they?
- Who can use which licenses?
- Which employees have used which licenses for how long?

## Multiple delivery options for perfect license transfer to the user:

- A** The ISV programmes a CmDongle and mails it to the user.
- B** The ISV creates a ticket and the user activates the license directly from the ISV's software. The ISV can decide whether the license is tied to the PC as a CmActLicense or copied to a CmDongle, or whether the user himself can make that choice.
- C** The ISV stores the license for a specific PC (serial number of the CmActLicense) or a specific CmDongle (serial number) and the user opts for "automatic updating" in the ISV's software.
- D** The ISV offers activation via web portal. The user is given a ticket to transfer the license directly via his browser.
- E** The ISV creates a license for a PC or a CmDongle and the user transfers it directly via his browser.
- F** The ISV integrates activation functionality in a customer portal. The ISV places a license for the user on that portal (tied to the user's account), which the user accesses and copies via his browser.
- G** The ISV offers the user the option of creating a license request right from within the software. This request is transferred offline to an internet-connected PC, where the user uses the ticket and the request file to download an activation file from the web portal. This activation file is taken back to the target device, where the license is activated on a CmDongle or software-based CmActLicense.
- H** The activation process works as in (G). In the place of the ticket, the account of the user is used instead.
- I** The activation works as in (G). In the place of the ticket, the serial number of the CmDongle or CmActLicense is used instead.
- J** As in (G) to (I). Instead of the ISV's software, the available standard tools of Wibu-Systems are used (CodeMeter control centre, the command line interface programme cmu, or double-click on a license activation file).
- K** The user creates a license request from within the ISV's software and sends this by email to the ISV, where an activation file is created and emailed back to the user.
- L** As in (L) Instead of the ISV's software, the standard tools of Wibu-Systems are used. Alternatively, the license request can also be created via the network, either on an administrator's workstation if the license server is integrated in the network or on a service technician's laptop if the license is to be transferred to a control device.



Offline activation via file exchange

### User Portal in the CodeMeter License Central

The Web Depot included in CodeMeter License Central offers users not only a means of transferring their licenses, but also a simple overview over all of the licenses they have bought.

The SOAP interface in the CodeMeter License Central gives ISVs the option of integrating a license overview in their user portals. The user accesses this portal typically with a login name and password to see a list of all tickets and the licenses included in the tickets. Depending on the chosen configuration of the ISV, the following data can be shown for each license:

- Product name
- Product number
- Ticket
- Retrieval state
- Date of purchase
- Serial number of the CmContainers that keeps the license

The ISV determines whether users can hand back licenses and transfer them to other CmContainers. Another parameter that can be set by the ISV is the number and sequence of re-activations without actual return of the license. This is particularly important for software-based licensing with CmActLicenses tied to specific computers, since users will regularly change their workstations and equally regularly forget to hand back their licenses when they do so. A degree of tolerance for such re-activation can help reduce the need for support, although there need to be limits to prevent abuse.

### CodeMeter License Server - License Tracking

The CodeMeter License Server makes licenses available via networks. The ISV defines the number of licenses that can be used concurrently and chooses a monitoring mechanism, such as the number per active application or the number per workstation. When workstations are counted, each virtual machine and each terminal server session is counted as a real PC.

The user switches on CodeMeter License Tracking to record every access to available licenses (and every denied access). This records the username, computer ID / IP address, and license. A CodeMeter WebAdmin interface lets the user create simple statistics for his licenses; more complex assessments can be exported and processed in dedicated license tracking files.

With CodeMeter License Tracking, larger companies can achieve cost-unit-precise accounting of their licenses. The overview of active licenses allows the user to see how his licenses are utilized by every cost unit.

In addition to promising transparency in terms of costs, CodeMeter License Tracking also allows the option of identifying licenses that are not used and licenses that are missing, enabling users and ISVs alike to find new ways for optimized licensing. Combined with overflow licenses (where the ISV allows the user to use more licenses that he has bought), the exact number of active licenses can be established and, if they so choose, billed.

### CodeMeter License Server – Access Privileges

Version 5.20 replaces CodeMeter's Access Control with the Access Privileges Module.

This new module allows licenses to be flagged for individual employees or complete Active Directory groups. Such a configuration dataset includes the following details:

- Username / AD group / IP address
- Minimum number of licenses
- Maximum number of licenses

The minimum number of licenses states how many licenses have been reserved for the employee (or group, or IP address). This number of licenses can never be held by others. The maximum number of licenses states how many licenses the employee can hold. A configuration of minimum = 1 and maximum = 1 defines that one license has been reserved exclusively for the employee. It is always available for that defined user.

The configuration can be set separately for every license (every product item) in a CmContainer, or the access rights are pre-defined as the standard values for the entire server. On a detailed page, all access rights can be displayed for a given user name (or group, or IP address).

This feature allows the sharing of licenses between two departments. For example, ten licenses for an application are bought that are needed by the sales and the support team. One license each is reserved for the team leaders. The support group is to be given another five reserved licenses, and the sales team one reserved license. The right configuration would look as follows:

#### CodeMeter License Server – Access Privileges

**User:rk@wibu.de; Minimum = 1; Maximum = 1**  
**User:vw@wibu.de; Minimum = 1; Maximum = 1**  
**Group:support@wibu.de; Minimum = 5; Maximum = 7**  
**Group:sales@wibu.de; Minimum = 1; Maximum = 3**

CodeMeter recognizes the user names and group allocations automatically without any specific involvement of the ISV. If a specific rule is defined for a single user name, this overrides the group allocation of that user's name. If no rules are set up for the user's name, the user is included in the rules for the first group that he is allocated to. These simple rules are flexible enough for almost every possible configuration. 

# Latests news summary

## Upgrade for CodeMeter License Central WebDepot

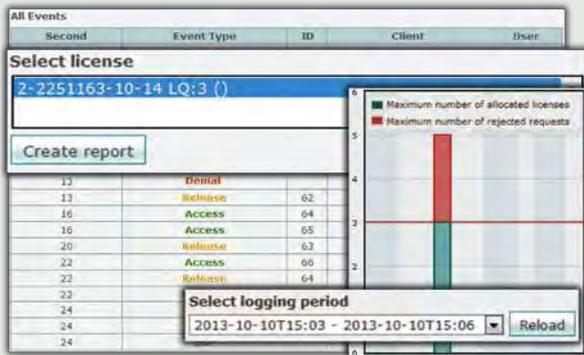
The new CodeMeter License Central WebDepot offers greater flexibility and easier customization functionalities. Among the enhanced features are the selection of CmContainer types, either software-based (CmActLicense) or hardware-based (CmDongle), online and offline license transfers, the definition of displayed list fields belonging to a ticket, language selection, and much more.



## CodeMeter Runtime 5.10

The CodeMeter WebAdmin can create reports and visualize basic tracking data. It is easier now to show how the licensed software is used, how many licenses are used at the same time, and when licenses have not been granted because the number of available licenses was not sufficient.

The CodeMeter Runtime now supports WebSocket communications for updating licenses from a browser at the user's side. This avoids conflicts with installed Java versions.



## AxProtector 9.0

AxProtector for native applications can now check the authenticity of different executables and DLLs that belong to an application. This guarantees the integrity of an application while in use and prevents any component from being tampered or patched.



AxProtector Java now supports different licenses for different methods without the need of any source code modification. Please read the release notes to see all the additional improvements introduced.

## WibuKey driver Windows 8 and 8.1 Logo certified



The new WibuKey drivers for 32- and 64-bit operating systems have successfully passed the Microsoft Windows 8 and 8.1 logo test. This guarantees the hassle-free use of WibuKey with the new Windows versions. Furthermore, ISVs can directly pass the Windows logo test themselves for their WibuKey protected applications.

## Cooperation with Infineon Technologies

Wibu-Systems and Infineon Technologies started a strategic cooperation in 2013. The goal is to use the latest Infineon Security controller for industrial security applications. This year, Infineon, a global leader in chip cards and security systems, began delivery of their SLE97 security controller with USB interface and related crypto libraries, both certified according to Common Criteria EAL 5+. Wibu-Systems chose Infineon as a supplier due to, in part, the high commitment we both share towards the industrial market, well-represented by a controller supporting an extended temperature range of -40°C to +105°C.



All WibuBox/U+ and /RU+ units with serial numbers 12-xxxx and 13-xxxx (manufactured since January 2014) are the first Wibu-Systems products with this new smart card chip on board. CodeMeter form factors will follow, beginning in mid-2014, and will be available as ASIC in a VQFN-package as well.

## Successful Webinar series

Our monthly webinars are continuing to complement our educational programming and focus on special topics. In January we talked about "Data Security in the Cloud" and in February we covered "Customization of the License Deployment Process." With a large number of participants, these webinars have proved valuable to all. Don't miss the next events and register soon. As a registered listener, you will receive the link with the recordings.

## Whitepaper Virtualization

Virtualization offers, besides scalable performance and fail-safe setups, a number of additional benefits for enterprises. Licensing in virtual environments is, however, a challenge for ISVs. Our whitepaper explains the principles CodeMeter relies on and its different features. It is available for download at [www.wibu.com](http://www.wibu.com), just like new case studies we add regularly. Check out our website for the resources that are most relevant for your scenario.

## CodeMeter wins 2014 SIIA CODiE Award



This year CodeMeter was awarded by SIIA with the prestigious CODiE for the category "Best Content Rights and Delivery Solution." The jury declared CodeMeter to be the best solution for flexible creation and deployment of licenses, as well as protection of digital content and software. We are very proud of this international prize. It encourages us to stay ahead of average solutions and spurs us to offer continuous product enhancements.

## GenKey success story



GenKey is founded on two technological pillars. On the one hand, they have originated a special process for biometric data matching which features a speed rate of up to a hundred million fingerprint matches per second on a single CPU, approximately ten thousand times faster than standard techniques. On the other hand, their technology secures the biometric data to the extent that no additional cryptography is required to comply with privacy laws.

To secure its software code, GenKey deploys CodeMeter, Wibu-Systems' flagship product for protection, licensing and security demands. One of its main advantages is that it can be integrated at the end of the production process without changing the source code. Another benefit is that CodeMeter is a one-stop solution for licensing permissions, code protection, as well as a vehicle to secure others' application data. Moreover, the security solution from Wibu-Systems is hardware independent.

### The challenge

Elections in the African country Ghana involve some fifteen million voters, each requiring individual fingerprint identity accreditation. The challenge is to prevent fraud and protect the GenKey software in the countrywide deployment of up to 26 thousand voting machines.

### The solution

Before a GenKey system is shipped, it is loaded with software that is protected with CodeMeter. This software from Wibu-Systems encrypts the GenKey code, bundling it with a license file into a complete package.



When each systems boots up, the embedded software calls up this file, using a digital signature to verify if it is original. No additional hardware is required.

### The results

The implementation of CodeMeter eliminates the monumental costs and logistics associated with a national election. It ensures a high level of security and integrity of biometric data, additionally protecting the GenKey software against potential counterfeiting and misuse during polls.



### Tom Kevenaer,

Director Technology, GenKey

"The development of the GenKey technology required over fifty man-years of research and development so there is a significant value in the software that we put at the disposal of customers in developing countries for democratic elections. Our ultimate goal is to finally stop fraud at the detriment of our software by eradicating the possibility of illegal copy and misuse."





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**10 - 14 March 2014**

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Hall 12, Stand B77



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**19 - 20 March 2014**

CNIT Paris La Defence, France  
Stand D22



**Hannover Messe 2014**

**07 - 11 April 2014**

Hanover, Germany  
Hall 8, Stand D05



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**Industrial Automation Beijing**

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**Automation & Engineering 2014**

**14 - 15 May 2014**

Hall 1, Brussels Expo, Belgium  
Stand A003



**Device Developers Conference 2014**

**20 May 2014**, The Holiday Inn, Bristol, UK

**22 May 2014**, The Menzies Hotel, Cambridge, UK

**03 June 2014**, Cheadel House, Manchester, UK

**05 June 2014**, Houstoun House, Uphall (Scotland), UK

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**Software Licensing & Secure Code Seminars**

Wibu-Systems offers you the opportunity to participate in one of the special seminars about:

- Software Monetization, Back office integration
- Licensing of software, with hardware or software-based keys (SmartBind)
- Code protection against illegal use & reverse engineering
- Solutions for embedded software in systems or cloud applications

Training location	Date	Time
Office Paris, Gares du Nord & de l'Est (FR)	18 March 2014	11.00-15.00
Kennedy Hotel, Kortrijk (BE)	23 April 2014	11.00-15.00
Restaurant De Koperen Hoogte, Zwolle (NL)	24 April 2014	11.00-15.00
High-Tech Campus, Eindhoven (NL)	24 Juni 2014	11.00-15.00
Restaurant Graaf Floris V, Muiden (NL)	23 Sept 2014	11.00-15.00
Shangri-La Hotel, The Shard, London (UK)	30 Sept 2014	11.00-15.00
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SECURITY LICENSING  
PERFECTION IN PROTECTION

