New Licensing with dSPACE Releases as of 2017-B (Floating Network Licenses)

Objective	This document is intended as a quick start guide for experienced users. It will be updated regularly. New users will also benefit from reading it because it provides background information that does not describe product features and is therefore not included in the user documentation. A quick start guide for new users not upgrading from earlier Releases is also provided.

Reference manuals	▪ *Installing dSPACE Software* ▪ *Working with CodeMeter Licensing Technology* ▪ *Managing dSPACE Software Installations*

Terms used in this document	Some new terms were introduced in Working with CodeMeter Licensing Technology and are presupposed. A few more are defined here to ease understanding and avoid misinterpretation.

Term	Definition
AutoUpdate	A dSPACE process to provide customers with SMS contracts with new software versions and license files twice in a year. No more AutoUpdates are expected after you update to dSPACE Release 2017-B or later.
CodeMeter license	Any software license as of dSPACE Release 2017-B.
CodeMeter-ready CmDongle	A CmDongle able to store CodeMeter licenses.
CodeMeter release	Any dSPACE Release as of dSPACE Release 2017-B.
FNL	Abbreviation of floating network license.
Legacy license	License or license file for a legacy release.
Legacy release	Any dSPACE Release preceding dSPACE Release 2017-B.

Term	Definition
License Overview	An Excel file containing ticket IDs for CodeMeter licenses. The License Overview file replaces `License.dsp` files of legacy releases.
SYNECT user license	SYNECT user licenses let you work on a SYNECT server with a specific SYNECT user or from a PC with a specific host name.
WibuKey ID	A number (license ID) that is stored on a CmDongle and emulates legacy licensing.

Introduction

As of dSPACE Release 2017-B, software installation and licensing has changed significantly. As usual, the dSPACE Release DVDs and the downloaded images provide access to the PDF versions of the above-mentioned reference manuals.

Recommended reading to get started: *Working with CodeMeter Licensing Technology* on page 11.

The new licensing technology might seem complex at first. However, once familiar with the new approach, you will see that it is a tremendous time saver, mainly because of two features:

- Licenses are release-independent and downward compatible as of dSPACE Release 2017-B.
- Once activated, a license update (SMS) is installed at the click of a button.

The key benefits are: No more AutoUpdates, no more license file handling with every new dSPACE Release or when purchasing SMS. We are confident that you will appreciate automatic license updates.

> **Note**
>
> If you encounter a problem when using dSPACE products, contact dSPACE Support. Refer to How to Contact dSPACE Support on page 12.

EULA update for floating network licenses

For floating network licenses, the CodeMeter licensing technology cannot provide downward compatibility with Releases earlier than dSPACE Release 2017-B. If you need to use product versions of dSPACE Releases earlier than dSPACE Release 2017-B, you have to keep your FlexNet License Server running in parallel. Both FlexNet and CodeMeter floating network servers can be hosted on the same PC.

> **Note**
>
> The dSPACE EULA does not allow FlexNet and CodeMeter license servers to provide the *same floating network license* in parallel. If you have any questions or encounter any problems, contact your local dSPACE sales representative.

Leaving feedback

dSPACE is always ready to listen to our customer's voices. Once you have gained some experience with the new CodeMeter licensing technology and with how we have implemented it in our products, please feel free to leave feedback about what you like or dislike, features or licensing options you are missing.

Send your comments about licensing in general to LicensingFeedback@dspace.de.

Up to dSPACE Release 2017-A, different licensing technologies were used for single-user dongle licenses and floating network licenses. As of dSPACE Release 2017-B, the same CodeMeter technology is used for both kinds of licenses. FlexNet Publisher can no longer be used for dSPACE Release 2017-B and later. We are particularly interested in feedback from our FNL customers. Feel free to pinpoint areas of improvement and let dSPACE know if there are use cases that require floating network licenses. Describe your demands regarding license monitoring or a high availability of licenses, for example. We will carefully take your feedback into consideration to enhance our products in order to meet your requirements even better.

Send your comments specific to floating network licensing to LicensingFeedbackFNL@dspace.de.

> **Note**
>
> Please do not use the addresses above for support requests or anything else that requires immediate attention.

Where to go from here

Information in this section

New Rules and Important Tips

Introduction

Experienced users as well as new users are recommended to study the following rules carefully. They describe changes to the sales process and the preconditions to be met before dSPACE can provide licenses for legacy releases. These processes deviate significantly from what you are used to.

List of rules and tips

1. As of dSPACE Release 2017-B, whenever you purchase any new software product or software update, dSPACE by default only delivers software and licenses for the latest CodeMeter release.

2. It is not required to order an additional software product for a certain CmContainer serial number. You will always receive the CodeMeter license for the product. For new products, you are free to decide in which CmContainer to activate the license.

3. FNL customers who want to add the legacy version of newly ordered products or more licenses to an existing FlexNet Publisher FNL server have to specify the respective license ID (e.g., #N30123) as before. If dSPACE knows the server's MAC address already, you will receive a permanent license. Otherwise, a temporary license will be issued until the server's MAC address is communicated.

4. For CodeMeter FNLs, it is not required to know the server's MAC address. CodeMeter FNLs can either be activated on a CmDongle or in a CmActLicense container called *dSPACE Activation Container*. A CmActLicense container is bound to several characteristics of the PC it is created on and cannot be copied or moved to another PC.

5. Until now, new, Release-specific license files were sent to customers with an SMS contract as an AutoUpdate twice a year, soon after a new dSPACE Release became available. As of dSPACE Release 2017-B, license updates are generated and License Overviews sent to you when your SMS purchase order is processed. You can download a new Release as soon as it available. You can use it if the maintenance periods of the product licenses exceed the release date of the new software version.

Safety Concerns

Internet access

Some customers do not allow Internet access on end user PCs and, in particular, not on FNL servers. To avoid misunderstandings, read the following information:

- Internet access is *never* required to execute dSPACE software products.
- Client PCs using only floating-network licenses do not have a local CmContainer. Therefore, they do not need Internet access *at any time*.
- Internet access is required *only for a short period of time* when activating or updating licenses or when migrating dongles.

- License activation, license updates and dongle migration require an Internet connection to the dSPACE license gateway. Refer to *Working with CodeMeter Licensing Technology* on page 21.
- CmDongles contain microchips with firmware in ROM. Dongle migration requires a firmware update. CodeMeter Control Center requires an Internet connection to the Wibu update server.

If Internet access is limited, consider the following options:

- For license activation and updates, connect dongles to a central PC with Internet access and Installation Manager. This PC does not have to be connected to the LAN.
- Use a laptop with Internet access and Installation Manager and perform license and dongle migration activities at the CmDongle's location. This laptop does not have to be connected to the LAN.
- A central administrator PC with Internet access and Installation Manager installed can access both kinds of CmContainers (CmDongles, CmActLicense) located on "remote" PCs via the LAN. This remote CmContainer access requires only the same CodeMeter internal LAN access functions as used in FNL setups.

> **Note**
>
> In dSPACE Release 2017-B, dSPACE Installation Manager 5.0 limited this scenario to FNLs being stored in such remote CmContainers. As of dSPACE Release 2018-A and dSPACE Installation Manager 5.1 this limitation was removed. Single-user licenses stored in remote CmContainers on end user PCs can now also be activated and updated via LAN from a central administrator PC. Refer to *Working with CodeMeter Licensing Technology* on page 76.

CmDongles and data transfer

Some customers do not permit dongles to be carried into and out of restricted areas or labs to prevent loss of confidential data. Although CmDongles are connected via USB, they can hardly be used for hidden data transfers.

- The CmDongle model dSPACE provides does not have freely accessible flash memory. It does not contain a flash drive. It is not a Windows mass storage device.
- Its Windows device class is HID. In Device Manager, it is neither visible under USB devices nor as a drive or volume. Compared to USB devices or drives, HIDs are handled differently in Windows. Other HIDs are the keyboard and mouse, which can also not be used to transfer data. For more information, refer to *Working with CodeMeter Licensing Technology* on page 12.

Basics on CodeMeter for Floating Network Licenses

Introduction

For all software versions preceding dSPACE Release 2017-B, dSPACE used FlexNet Publisher for floating network licenses. With dSPACE Release 2017-B, dSPACE changed to CodeMeter so you do not have to work with two licensing products. The Product Development department of dSPACE uses CodeMeter floating network licenses on a high number of developer PCs and has determined it to be reliable. dSPACE customers using dSPACE Releases as of 2017-B with FNL setups also reported success. However, the basic principles of CodeMeter are different from those of FlexNet Publisher.

Working with CodeMeter FNLs

- CodeMeter does not require a dedicated FNL server, but you can use one if you prefer. Every PC, including the FNL server, has exactly the same CodeMeter Runtime software installed. No extra software needs to be installed on a PC intended as an FNL server.
- With a few clicks in CodeMeter WebAdmin, you can configure any PC as an FNL server. Refer to *Working with CodeMeter Licensing Technology* on page 135.
- By default, CodeMeter Runtime is installed and configured in a way that the PC does not connect to the LAN, but searches for licenses only on local CmContainers. On client PCs, adding the IP address of an FNL server to the client's server search list tells the client to search on that FNL server in case if it cannot find the required license in a local CmContainer.

> **Note**
>
> This applies only if the CodeMeter Runtime is installed together with software versions as of Installation Manager 5.0 or dSPACE Release 2017-B software. dSPACE setup adds *localhost* to the client's server search list in order to avoid unwanted broadcasts. CodeMeter Runtime instances installed separately do not have *localhost* configured and will therefore broadcast in the LAN in case a required license cannot be found in a local CmContainer. It is possible to install native CodeMeter Runtime instances for any operating system supported by Wibu-Systems. However, dSPACE does not test this and cannot provide support for non-Windows versions.

- Whether a license is a floating network license is a characteristic of each particular license. dSPACE "burns" this characteristic into the license when we generate its ticket.
- If an FNL is stored in a CmContainer on a PC configured as a server, it can be accessed by client PCs via LAN.
- An FNL stored in a CmContainer on a PC that is not configured as a server cannot be accessed via LAN.
- A single-user license stored in a CmContainer on a PC configured as a server is not an FNL and cannot be accessed via LAN.
- You can also use FNLs locally on the PC specified as the server. The FNL then functions like a local single-user license.

- To install dSPACE software or Installation Manager on a server PC, the PC requires a Windows version supported by the used dSPACE Release (as of dSPACE Release 2017-B). Linux or Windows server versions are not supported.
- FNLs are typically stored in smart-bind CmActLicense containers. These containers are called dSPACE Activation Containers in Installation Manager.
- dSPACE Activation Containers are bound to different characteristics of the PC, not only to the MAC address. Trying to copy or move such containers to a different PC breaks the licenses stored in that container.
- dSPACE does not need to know the FNL server's MAC address. Binding information for a certain PC is created when creating the dSPACE Activation Container on that PC.
- FNLs can also be stored on CmDongles and are then easily portable and only bound to the CmDongle.

> **Note**
>
> This document assumes that FNLs are stored in a dSPACE Activation Container because this is what FlexNet Publisher users are used to. It also assumes pure FNL setups, you can combine FNLs with any type of dongle with single-user licenses on the FNL client PCs. dSPACE software products will first search locally on the client PC for the required license, then on the configured FNL servers if it does not find any.

Triad License Server configuration vs. Wibu Triple Mode Redundancy

Currently, CodeMeter and thus dSPACE Releases as of 2017-B do not support triad servers or other redundancy concepts to ensure a high availability of concurrent floating network licenses. A solution called Triple Mode Redundancy (TMR) is currently being developed at Wibu-Systems but will not be available for dSPACE Releases until 2019. As soon as TMR is available, it is planned that dSPACE Releases as of Release 2017-B will retroactively be qualified to support TMR as well. FNLs delivered until then will have to be updated.

Until TMR is released, the following options are available to ensure a high availability of concurrent licenses:

- Store FNLs on CmDongles to make them portable. If the server crashes, there will be a short downtime, but the licenses can quickly be made available again by moving the dongle to another PC and configuring it as a server if this is not the case yet. The IP address of the new server then has to be specified on the client PCs.
- Instead of one central server, you can use local PCs in smaller workgroups that have only the licenses used in that workgroup. If one server crashes, the other workgroups are not affected.
- If you want to use an existing Triad License Server configuration, you can install CodeMeter Runtime on all three servers, store FNLs on dongles, and configure all three servers in the clients' search lists. If the server to which a dongle is connected crashes, move the dongle to one of the other two servers. There is short downtime, but the CodeMeter Runtime software on a client PC will automatically switch to the next server on its search list if it cannot get a license from the previously used server again.

- You can also use a combination of these options.
- If these options are not sufficient and you need a high availability of concurrent floating network licenses before TMR becomes available, contact dSPACE Support.

Addressing CodeMeter FNL-specific issues

FNL server administrators have to address issues such as:
- License monitoring
- License access permissions

For more information refer to the CodeMeter Administrator Manual, which is available for download at https://www.wibu.com/manuals-guides. Not every feature described in the manual is currently supported by or enabled in dSPACE products.

Addressing general FNL-specific issues

If you have more questions specific to FNLs or you want to provide feedback, use the address LicensingFeedbackFNL@dspace.de. Consider the following examples:

What is the best way to compact licenses?
- Ten licenses ControlDesk — License Quantity 1.
- One license ControlDesk — License Quantity 10.
- Something in between.

Do you need different maintenance periods for parts of the licenses for the same product?
- TargetLink — License Quantity 5 - maintenance end 2018/06/30

+

- TargetLink — License Quantity 5 - maintenance end 2018/12/31

or

- TargetLink — License Quantity 10 – maintenance end 2018/12/31

Provide your input to discuss the pros and cons of the different approaches.

Use Cases for Starting with dSPACE Releases as of 2017-B (Floating Network Licenses)

Using SYNECT

> **Note**
>
> For specific information regarding SYNECT user licenses introduced with dSPACE Release 2018-B, refer to *SYNECT User Licenses to Replace SYNECT Dongle Licenses*.

Migrating floating network licenses

Use Case	License Overview	Instructions
FNL 2	**XLSX** File name pattern: **FlexID-xxxxx.xlsx** <xxxxx> matches your former FlexNet Publisher license ID.	Refer to FNL Use Case 2.

Updating maintenance period of activated licenses (SMS contracts)

Use Case	License Overview		Instructions
FNL 3	**XLSX** File name pattern: **CM-130-xxxxx.xlsx** <130-xxxxx> matches the serial number of the CmActLicense container (dSPACE Activation Container).	**XLSX** File name pattern: **CM-3-xxxxx.xlsx** <3-xxxxx> matches the serial number of the CmDongle.	Required steps: ▪ Update licenses Refer to FNL Use Case 3.

Updating from dSPACE Release 2017-B (or later) to a later Release

Use Case	License Overview	Instructions
FNL 4	-	Required steps: ▪ Install new dSPACE Release ▪ Decrypt encrypted software archives Refer to FNL Use Case 4.

Appendix: Comparison of Legacy Licensing and CodeMeter Licensing

Main differences

The following table describes the main differences between the former, WibuKey-based, legacy licensing technology and the new, CodeMeter-based, licensing technology. Legacy licensing for single-user licenses works with both a real WibuKey dongle and a CmDongle with an embedded WibuKey ID.

Legacy	CodeMeter
The dongle has a fixed embedded dongle number/license ID/WibuKey ID. This number is unique, and only this unique number is used to bind licenses. The actual license information is stored in separate license files (`License.dsp`), on the hard drive. The product licenses stored in each license file work only with the dongle with the corresponding license ID.	CodeMeter licenses are stored in CmContainers. These can be either CmDongles or CmActLicense containers, which are called dSPACE Activation Containers in Installation Manager. The license information of an *activated* license is bound to the unique serial number of the associated CmContainer. However, at the time of shipping, the licenses are not activated yet and you can choose in which CmContainer to activate them. Therefore, it is not possible to associate a ticket ID with a certain dongle number or CmDongle serial number before you activate it. New single-user licenses can be activated on any CodeMeter-ready CmDongle provided by dSPACE. New FNLs can be activated on any CodeMeter-ready CmDongle or in a dSPACE Activation Container, which is a CodeMeter CmActLicense container. Because the unique serial numbers of CmActLicense containers are generated when the container is created on the PC, dSPACE does not know it when sending you the ticket IDs.
A license cannot easily be moved from one dongle to another. dSPACE has to create a new `License.dsp` file for the target dongle. The source dongle must be returned to dSPACE, because otherwise there is no evidence that the formerly generated license file is no longer used with the source dongle in addition to the target dongle with the new license file. This makes moving licenses (dongle splitting) inconvenient.	CodeMeter licenses can be traceably returned to dSPACE License Central. This makes it easy to move a single license from one CmDongle to another. However, since the corresponding legacy version of a product license is also bound to the same dongle's WibuKey ID and can therefore not be traceably returned, this option has limitations. Contact dSPACE if you need to move a license from one CmDongle to another.
License files used to be specific to each dSPACE Release. A new license file had to be generated twice a year according to our release schedule, sent to the customer as well as distributed to and installed on the end-user PC. If the same dongle was used on different PCs, this had to be repeated on every PC.	Licenses are Release-independent. The number of Releases a particular license can cover depends on the maintenance period of a license. The maintenance period can be extended by purchasing SMS. Refer to *Working with CodeMeter Licensing Technology* on page 16. When you purchase SMS, activated licenses can be updated with a click of a button. You do not have to work with ticket IDs or any other information. You can use a license on any PC by connecting the CmDongle. No license information has to be installed on the PCs.
CmDongles have an embedded WibuKey ID. This ID is used to emulate legacy licensing. With the exception of type 5 and type 6 dongles, CmDongles are always shipped with a unique embedded WibuKey ID. Type 5 and type 6 dongles receive their WibuKey ID from the source dongle during dongle migration.	-
FlexNet Publisher for FNL: With FlexNet Publisher, specific software has to be installed on a dedicated floating network license server. On the server, license information is stored in a license.dat file. This file is bound to the MAC address of the server. The file has to be updated manually when licenses are added, or a new dSPACE Release has to be supported by purchasing SMS. On each FNL client PC, a dSPACE Release has to be installed together with Release-specific license files similar to dongle-based legacy licensing.	*CodeMeter for FNL:* No special software has to be installed on a server. No dedicated FNL server is required. The same CodeMeter Runtime software is installed on every PC. The PCs are not configured as FNL servers by default, but every PC can be made a server in a few minutes with just a few clicks in a configuration tab. Refer to Working with CodeMeter Licensing Technology on page 135. License information is stored in a CmContainer on the server. This can be either a CmDongle, making the FNLs portable, or a smart-bind CmActLicense container, called dSPACE Activation Container. If you purchased SMS, an FNL can be updated automatically in the same way as single-user licenses. A new dSPACE Release can be installed on any FNL client PC without having to consider license information. No license information is needed at all on FNL client PCs.

Appendix: License Overview

Introduction

License Overviews are generated according to defined rules, and so are their file names. The following explains the rules according to which the License Overview files introduced with dSPACE Release 2017-B are generated.

General rules

- License Overviews can be compared to delivery notes. They are generated per purchase order. A single purchase order can cause more than one License Overview to be generated.
- Therefore, a single License Overview never contains ticket IDs from different purchase orders.
- A single License Overview only contains ticket IDs of licenses that are added or updated by the related purchase order. It does not contain ticket IDs related to other licenses that might also be activated in a related CmContainer.

  Example: Licenses for 10 products are activated on one CmDongle, the purchase order contains an SMS update for three of them. The generated License Overview contains only three ticket IDs for the licenses to be updated.

- For licenses that have already been activated, dSPACE knows the serial number of the CmContainer they are stored in. For these licenses, one License Overview per CmContainer is generated.

  Example: You enter an SMS contract for three dSPACE Activation Containers. You will receive three License Overviews, one for each CmContainer. From a technical point of view, License Overviews are not needed. SMS license updates are automated. License Overviews are for documentation purposes only. They serve as a kind of delivery note.

- One additional License Overview is generated per purchase order for all other licenses for which dSPACE does not have a CmContainer serial number: ticket IDs for newly purchased products (you are free to decide on which CmContainer to activate them), ticket IDs for SMS updates for licenses that have not been activated. In this License Overview, ticket IDs are sorted alphabetically by product name.

License Overview file name conventions

You can open a License Overview to see what use case it is for. However, this is not necessary, because the file name indicates the use case:

File Name	Purpose
<OrderNumber>.xlsx	The file name resembles the order number of your purchase as closely as the Windows file name conventions permit. This type of License Overview contains ticket IDs for newly purchased licenses that have not been activated yet. Licenses can be activated on any CodeMeter-ready CmDongle or, in case of FNLs, also in a dSPACE Activation Container (CmActLicense).

File Name	Purpose

CM-x-xxxxx.xlsx	The number corresponds to the serial number of a CmContainer you own, and the licenses in the License Overview were activated in that CmContainer before. This License Overview contains ticket IDs of the licenses for which updates are available. This is usually the case when you purchase the SMS to extend the license maintenance period. The License Overview only documents the delivery and indicates that the related purchase order was processed. The ticket IDs are *not needed* to activate license updates and the ticket IDs are the same as the ones used to initially activate the licenses.
	▪ CM 3-xxxxx.xlsx:
	  This License Overview is relevant for a CmDongle.
	▪ CM 130-xxxxx.xlsx
	  This License Overview is relevant for a CmActLicense container.

FlexID-xxxxx.xlsx	The number corresponds to the number of a legacy FlexNet Publisher license number. The content of the License Overview is identical to that of newly purchased licenses. This License Overview type is sent once when a legacy FlexNet Publisher license number is migrated to the corresponding CodeMeter licenses. Once migrated, License Overviews for updates will follow the `CM-x-xxxxx.xlsx` naming convention.

How to Contact dSPACE Support

If you encounter a problem when using dSPACE products, contact your local dSPACE representative:

▪ Local dSPACE companies and distributors:
http://www.dspace.com/go/locations

▪ For countries not listed, contact dSPACE GmbH in Paderborn, Germany.
Tel.: +49 5251 1638-941 or e-mail: support@dspace.de

You can also use the support request form:
http://www.dspace.com/go/supportrequest. If you are logged on to mydSPACE, you are automatically identified and do not need to add your contact details manually.

If possible, always provide the relevant dSPACE License ID or the serial number of the CmContainer in your support request.