

9

Signed measurement plans

This chapter contains:

Basics of signed measurement plans	9-2
Prerequisites for digital signing	9-3
What is signed?	9-4
Working with signed measurement plans.....	9-5

Basics of signed measurement plans

CALYPSO enables you to sign measurement plans digitally and work with signed measurement plans of your organization. Signed measurement plans are protected against changes by unauthorized persons. If the measurement plan is changed, its signature loses its validity.

You can have reports from signed measurement plans signed automatically. Such signed reports also cannot be changed anymore. They are, so to speak, stamped with a validity stamp.

If signed measurement plans or reports are handed over to you by other employees, you can verify them, i.e. check their authenticity.

Two methods

CALYPSO allows two different methods of signing and verifying the signature:

- Two-eyes principle
One user signs the measurement plan.
- Four-eyes principle:
Two different users both sign the same measurement plan one after the other.

When verifying a signed measurement plan, the method used for signing must be set.

Prerequisites for digital signing

In order to be able to sign measurement plans and reports and use signed measurement plans, you must have installed an individual certificate on your system. This certificate guarantees the authenticity of the signature to the recipient of the signed measurement plan.

In addition, you require user rights for “digitally signing measurement plans”.

Additional certificates must be installed on your system to validate your individual certificate (certificate chain). The IT department of your organization or company creates the required certificates and places them at your disposal. All you have to do is to specify your certificate in CALYPSO; CALYPSO takes care of everything else for you.

You manage your certificates in Windows 10 with the Certificate Manager.

User rights for signed measurement plans

The following user rights refer to the digital signature in CALYPSO:

- Digital signing of measurement plans:
Enables the user to sign a measurement plan digitally.
- Execute invalid signed measurement plans:
Enables the user to open a measurement plan even if the verification of this measurement plan's files failed.

Both user rights are disabled by default. They can be assigned only by the “Master” user.

What is signed?

When signing a measurement plan, the following files are considered in the measurement plan directory and thus “fixed”:

- *autoruninf*
- *compModes*
- *inspection*
- *inspect*
- *macroInspections*
- *macroSettings*
- *protDic*
- *ProtocolOrder*
- All files with the extension *.jpg*
- All files with the extension *.png*
- All files with CAD formats supported by CALYPSO

All other files are not associated with the digital signature, and therefore can be changed.

Signed reports

If automatic signing of reports has been configured for a signed measurement plan, this creates signed reports.

All TXT files and all PDF reports are signed here. If the default report is not empty, it also will be signed. The XML code is inserted in the TXT files when signing.

Working with signed measurement plans

Measurement run with signed measurement plans

If you work with signed measurement plans, you have the following options:

- ➤ *Configuring a digital signature* [⇒ 9-5]
- ➤ *Activating report signing* [⇒ 9-6]
- ➤ *Signing a measurement plan* [⇒ 9-6]
- ➤ *Signing a measurement plan revision* [⇒ 9-7]
- ➤ *Showing signature information* [⇒ 9-8]
- ➤ *Checking signed measurement plans* [⇒ 9-8]
- ➤ *Checking signed TXT reports* [⇒ 9-9]

Using signed measurement plans

You can run signed measurement plans and display the results. However, you can save the measurement plan only if you have the right to “Sign measurement plans digitally”.

As soon as a measurement plan has been changed, its signature becomes invalid. You must sign it again to restore its status as a validly signed measurement plan. To do this, you require the right to “Sign measurement plans digitally”.

Configuring a digital signature

You can make the settings for the digital signature in the system settings.

Conditions

- You have the user right to “Sign measurement plans digitally”.

- 1** Select **Extras** → **Settings** → **Miscellaneous**.
- 2** Open the **Signature** notebook page.
- 3** Select the signing principle:
 - 2 eyes principle: one signature is required.
 - 4 eyes principle: two different signatures are required.
- 4** Select the desired certificate issuer.

- 5 Under **Automatic validation of signed measurement plans**, tick **Verification** if CALYPSO you want Calypso to verify that measurement plans have been signed when opening them.

Configuration of report signing

You can define that reports created from signed measurement plans will be signed. All TXT files and PDF reports are recognized as reports. Signing TXT files converts their contents to XML code.

Conditions

- The digital signature is configured.
- The measurement plan is validly signed.
- The measurement plan is open.

- 1 Select **Resources → Results to File...**
- 2 In the **Results to File** window, tick the **Automatic signing of reports** check box and click **Configuration**.

The **Configure automatic signature** window then opens.

- 3 Enter the certificate issuer and the signing reason.
- 4 Click **OK** to confirm.

All reports of the measurement plan and the default report, provided that they are not empty, will automatically be signed after the next CNC run of the unchanged measurement plan.

Signing a measurement plan

You can digitally sign a measurement plan, thus guaranteeing its authenticity.

Conditions

- The digital signature is configured.
- You have and, if necessary, another user has the right to “Sign measurement plans digitally”.
- The measurement plan directory is not open in the file explorer.

- 1 Open the measurement plan.



- 2 Click the **Sign** icon.

The **Digital signature** window opens. It displays the certificate issuer specified in the configuration.

- 3 Enter the reason for signing.
- 4 Click **OK** to confirm.

NOTE

Do not save the measurement plan in any case, as that would make the signature invalid.

- 5 Close the measurement plan without saving it.
- 6 If you selected the 4 eyes principle, change users.
- 7 Then the other user must perform steps 1 to 5 with a different certificate and with the measurement plan open.

The files *CzSummaryRoot*, *CzSummarySig1* and, additionally for the 4 eyes principle, *CzSummarySig2* have been created in the *signature* subdirectory of the measurement plan directory.

The data on the certificates used for signing is located in the *...\signature\cert* subdirectory of the measurement plan directory.

Signing a measurement plan revision

If you have activated local versioning, you also can digitally sign revisions of a measurement plan.

Conditions

- Local versioning is activated.
 - The digital signature is configured.
 - You have and, if necessary, another user has the right to “Sign measurement plans digitally”.
 - The measurement plan directory is not open in the file explorer.
 - The measurement plan is open.
- 1 Save the measurement plan.
You will be prompted to sign the revision.
 - 2 Confirm with **Yes**.
The **Digital signature** window opens. It displays the certificate issuer specified in the configuration.
 - 3 Enter the reason for signing.
 - 4 Click **OK** to confirm.
 - 5 Close the measurement plan without saving it.
 - 6 If you selected the 4 eyes principle, change users.
 - 7 Then the other user must perform steps 1 to 5 with a different certificate and with the measurement plan open.

The files *CzSummaryRoot*, *CzSummarySig1* and, additionally for the 4 eyes principle, *CzSummarySig2* have been created in the *signature* subdirectory of the measurement plan directory.

The data on the certificates used for signing is located in the ...*signature*\cert subdirectory of the measurement plan directory.

Showing signature information

You can show signature information for signed measurement plans.

1 Select **Resources** → **Measurement plan signature information**.

If a signed measurement plan is open, its signature information will be displayed.

If no signed measurement plan is open, the file selection window then opens.

2 Select the desired measurement plan.

If a signed measurement plan is involved, its signature information will be displayed.

Checking a signed measurement plan

CALYPSO checks the signature of a signed measurement plan for authenticity. For this purpose, you must use the method which was used when signing.

Conditions

- The appropriate method is set in the system settings.
- Verification is activated in the system settings.

1 Open the measurement plan.

If the check is successful, the measurement plan opens and the **Signature information** window is displayed. You can work with the measurement plan.

If the check fails, the **Verification view** window specifying the respective reason appears.

2 In the latter case, evaluate the information in the window.

3 Click **Continue**, if you nevertheless want to open the measurement plan.

You must have either the “Sign measurement plans digitally” or the “Execute invalid signed measurement plans” access right in order to open the measurement plan.

Checking signed reports

You can define that reports created from signed measurement plans will be checked for their authenticity. To do this, you must know the certificate issue.

Only signed TXT files can be checked. Signed PDF files must be checked independently of CALYPSO by means of another program.

Conditions

- Verification is activated in the system settings.

1 Select **Extras** → **Check signed files**.

The **Verification** window opens.

2 Specify the certificate issuer.

3 Click **Browse** and select the files to be verified.

4 Click **Start verification**.

The result of the check is displayed.