Aalto University

School of Electrical Engineering

Metrology Research Institute

Petri Kärhä

Janne Askola

Digital signing of calibration certificates and quality documents

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1.   Introduction

During the Corona virus epidemic in spring 2020, it appeared difficult to physically sign documents such as calibration certificates and quality documents. MIKES-Aalto therefore adopts digital signing to be used at least during the period(s) of remote working. Digital signing can be used to sign Adobe Portable Document Format (PDF) files in Adobe Acrobat Reader. This manual describes procedures for creating, modifying and using the signature.

2.   Creating the identity

1. In Adobe Acrobat Reader, click the Edit menu, and choose Preferences -> Signatures.
2. On the right, click More for "Identities & Trusted Certificates."

3. Select "Digital IDs" on the left and click the Add ID button .
4. Select option "A new digital ID I want to create now" and click Next.
5. Specify where to store the digital ID (New PKCS#12 Digital ID File) and click Next. Your digital ID information is stored in a file that has extension .pfx in Windows and .p12 in Mac OS. You can use the files interchangeably between operating systems. If you move a file from one operating system to another, Acrobat still recognizes it.
6. Fill in your identity
   a. Type your name, Organizational Unit (MIKES-Aalto), Organization Name (Aalto University), Country (FI – Finland) for your digital ID. When you certify or sign a document, the name appears in the Signatures panel and in the Signature field.
   b. Choose an option from the Key Algorithm menu. The 2048-bit RSA option offers more security than 1024-bit RSA, but 1024-bit RSA is more universally compatible.
   c. From the "Use Digital ID For" menu, choose whether you want to use the digital ID for signatures, data encryption, or both.
   d. Click Next.
7. Give ID location and password
   a. Note the location of your ID file. The digital ID file is stored at the default location as shown in the "File Name" field. If you want to save it somewhere else, click Browse and choose the location.
   b. Give a password for your digital identity and confirm it.
   c. Click Finish.
8. The ID is created. If preferred, you can export and send your certificate file to contacts who can use it to validate your signature.

3.   Changing the appearance of the signature

1. Prepare a signature for you.
   a. Sign on a white paper and scan your signature. File format must be such that the "white" background is transparent.

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b. You can also take a picture of your signature and convert the picture to vector graphics with your preferred software e.g. Inkscape (instructions can be found in internet, for example http://techshangrila.blogspot.com/2015/04/how-to-vector-ize-your-signature-with.html).

c. Convert the figure to PDF.

2. Find file "SignatureLogo.pdf" in directory

    \\work.org.aalto.fi\t405\MIKES-Aalto\Quality\

and copy it on your computer in folder

    C:\Users\(username)\AppData\Roaming\Adobe\Acrobat\DC\Security\

Alternately, this can be the folder where you stored your ID file at point 7. above. The file contains the gray "A!" used as watermark in the ID.

3. In Acrobat Reader, click the Edit menu and choose Preferences -> Signatures.

4. On the right, click More for "Creation & Appearance."

5. On the opening page "Creation and Appearance Preferences," tick boxes "Show reasons," "Show location and contact information," "Include signature's revocation status."

6. To format your signature, click "New" on Appearances.

7. Add title for the appearance, e.g. YourName_MRI_DigitalSignature.

8. In box "Configure Graphic," Choose "Imported graphic" and click File to search for the figure of your digitalized signature. The file needs to be in .pdf format.

9. In box "Configure text," tick items you want visible in the signature. In calibration certificates, these are Name, Date, Logo and Labels. You may create other appearances for other purposes.

10. Click OK to accept the changes, and again OK to close the Creation and Appearance Preferences.

4. Using the signature

1. Open the PDF file you want to sign in Adobe Acrobat Reader. Go to the area where your signature is needed.

2. Click Tools -> Certificates.

3. In middle of screen, above your file, click "Digitally sign."

4. As instructed, draw a box for your signature in the correct place.

5. Select the ID you want to use, or just check that the one ID you have is selected. Click "Continue."

6. Check that the signature has the Appearance you created. Change if necessary. Check that the image of the signature appears as you wish.

7. Choose the reason for the signature: "I am the author of this document" and "I am the reviewer of this document" for calibration certificates. In the quality documents, the last signature is "I am approving this document."

8. Type your password and click sign.

9. Check the appearance of the final signature. Click it to see the information that it contains. If you find mistakes, close the file, and sign again. Note, that the signature cannot be deleted after saving.

10. After you are happy with the signature, save the file with a new name.

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5.   Process for electrical signing of certificates

1.   Before starting the calibration, reserve the number for the certificate (T-R XXXX or INT-XXX) in Calsched.xlsx.
2.   Open the template for checking of certificates, fill in the first section (things to check before starting the calibration), and save the file with name Calibration_Checklist_T-R XXXX.xlsx.
3.   Note that all files of calibration should be in directory \\work.org.aalto.fi\t405\MIKES-Aalto\Users\#Your_name#\Calibrations\ so they are later accessible to lab personnel.
4.   Perform the measurements.
5.   After the measurements, create the calibration certificate and save it with name T-R_XXXX.docx.
6.   Prepare possible appendixes, and name them T-R_XXXX.xlsx, etc.
7.   Using the check list, go through your certificate ticking all items as you check them.
8.   Send to the person checking the certificate all files T-R_XXXX.docx, Calibration_Checklist_T-R_XXXX.xlsx, and possible appendices via E-mail. Alternately, send them via Teams file sharing.
9.   Checker: Fill in the checklist. Do your possible changes into files with Track-Changes on, and save the changed files with your initials at the end, e.g. T-R_XXXX_PK.docx. In Teams, you can keep the original file names.
10. Checker: Send the changed files back to the calibrator. On minimum, this includes the calibration check list with your initials. In Teams, notify the calibrator that you have completed the review.
11. Calibrator: Make possible changes needed, and accept the changes. Print the certificate as PDF and sign it electrically, T-R_XXXX.pdf. Send the certificate to checker.
12. Checker: Sign the certificate electrically, and send it back, T-R_XXXX_signed.pdf.
13. Calibrator: Note the items in the calibration check list that are to be carried out after the calibrations, and tick the items in the check list.
14. Clean all files (file name extensions) produced and pack them in a zip-file T-R_XXXX.zip: T-R_XXXX.docx, T-R_XXXX_signed.pdf, Calibration_Checklist_T-R XXXX.xlsx, possible appendices e.g T-R XXXX.xlsx, possible computer models etc., and store the file in \\work.org.aalto.fi\t405\MIKES-Aalto\Calibrations\REPORTS\