

What is PDF/A-3 good for?

Dietrich von Seggern

Managing Director

callas software

Overview

- **What makes PDF/A-3 different from PDF/A-2 and PDF/A-1?**
- **PDF/A-3 use cases**
- **Conclusion and Outlook**

PDF/A Standard parts and attachments

PDF/A-1

No Attachments



2005

PDF/A-2

PDF/A attachments



2011

PDF/A-3

Arbitrary attachments



2012

PDF/A-3 requires additional metadata for each attachment

- **File type (MIME type)**
E.g. MS Word: “application/msword”
- **Type of relation between attachment and main PDF, predefined values:**
 - Source
 - Alternative
 - Supplement
 - Data
 - Unspecified

Custom values possible to support private workflows
- **One or more indicators in the document structure:**
Attachments may be specific to the document, a page, a page object, ...

PDF 2.0

and PDF/A-3

- **PDF/A-3 metadata entries for embedded files (AFRelationship and AF) defined in PDF 2.0**
=> Broader use (outside of PDF/A-3) possible
- **URL references to embedded files**
E.g. “file:///myfile.pdf&myembeddedfile.doc”
=> Direct access from outside
=> File references from management systems

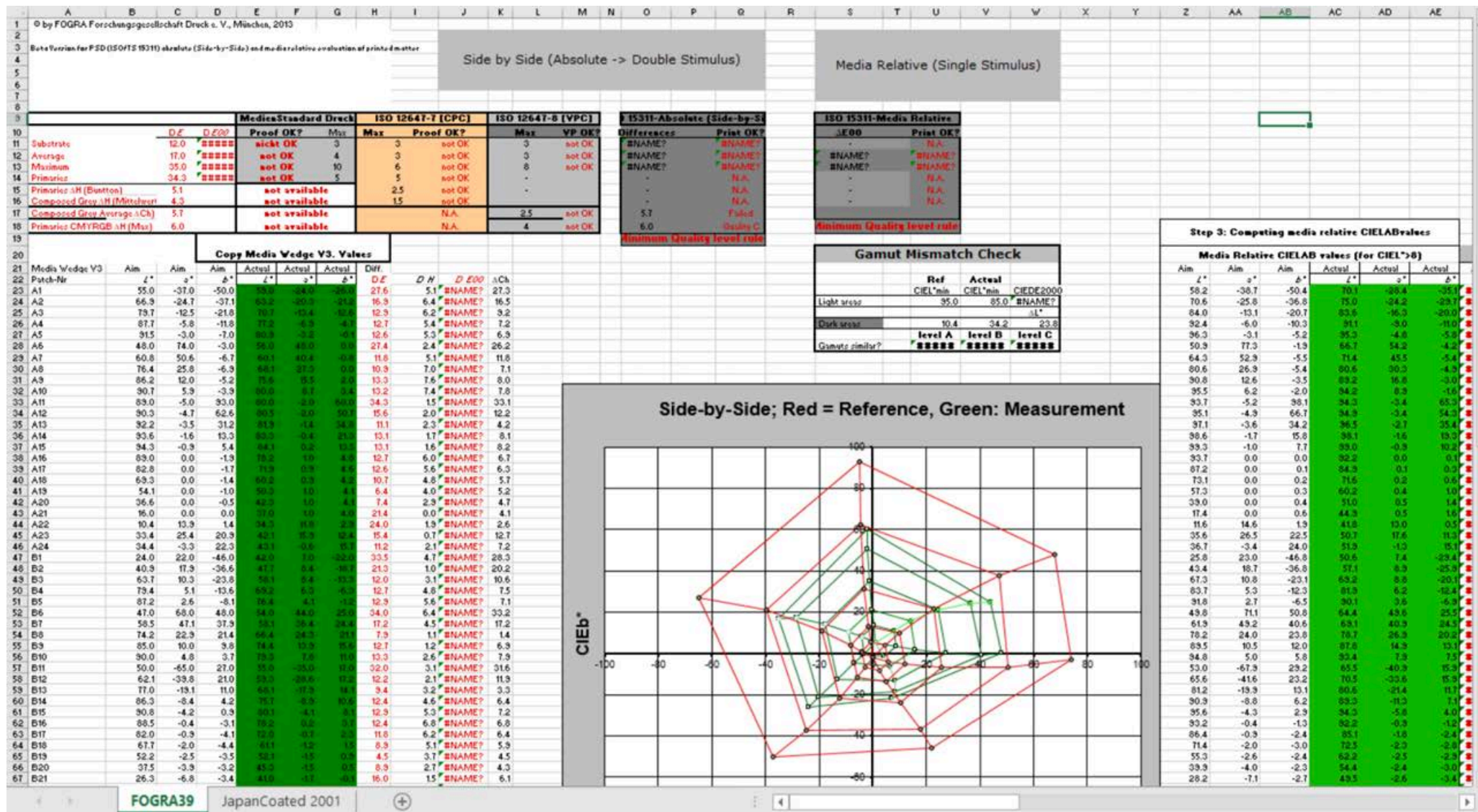
When should I use PDF/A-3 - and when not?

- **PDF/A-1 and PDF/A-2 specify:**
 - A reliable, paper like format for digital documents
 - Requirements for a PDF/A viewer
- **PDF/A-3 guarantees reliability only for the PDF “shell”, but not for arbitrary attachments**
 - This may sound like a contradiction
 - So, we should look at some real world scenarios...



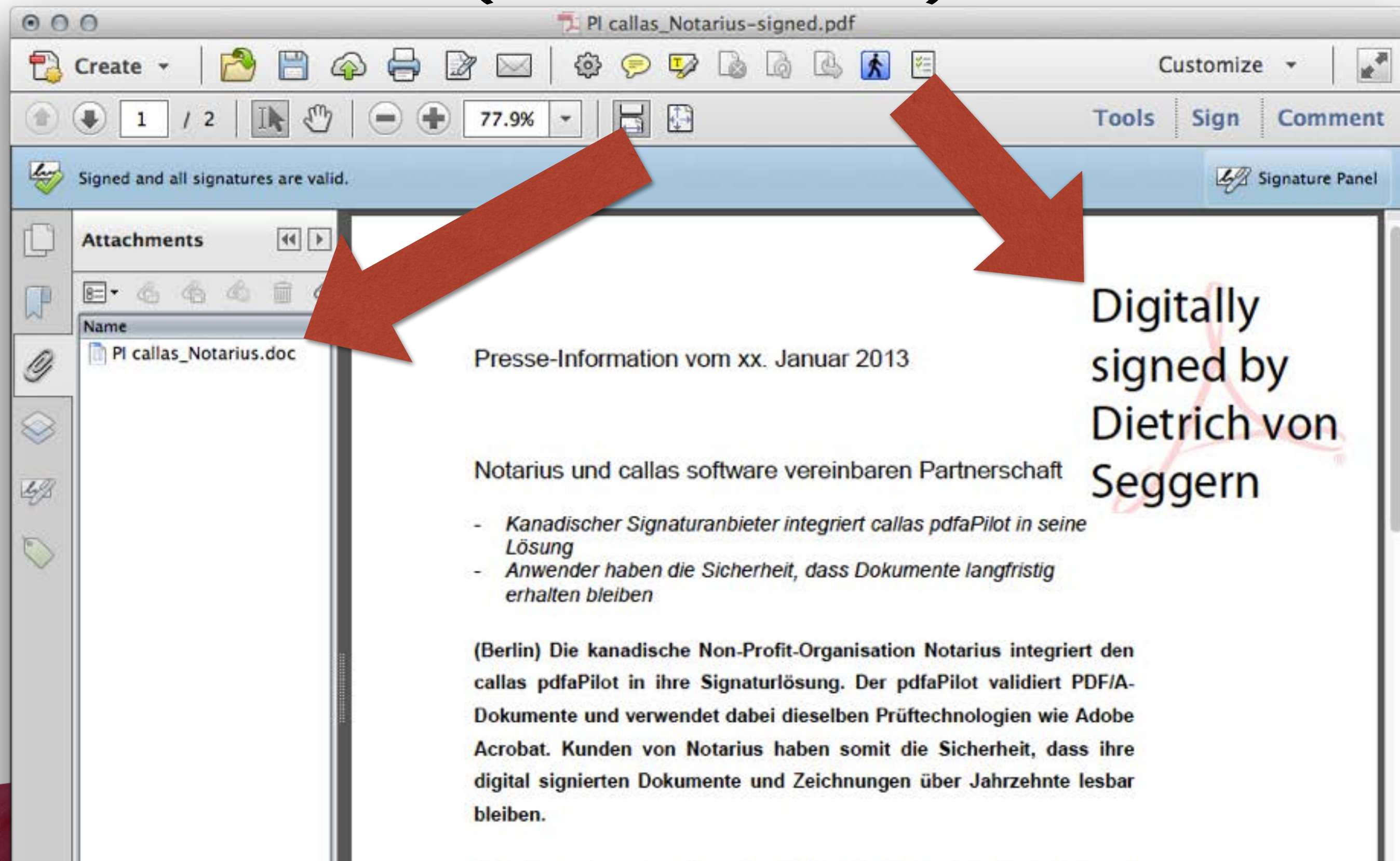
PDF/A-3 for office documents **“Source file always available”**

Spread sheet (MS Excel)...



The screenshot displays a PDF viewer window with the title bar "DTS_15311-1_Annex_B_electronic_attachment.pdf". The interface includes a sidebar on the left with a "Name" field and a list of files, including "ISO-TC130_N3575...ic_attachment.xlsx". The main area shows a technical document with multiple tables of data and radar charts. A red arrow points to a specific table. The document content includes sections for "Side-by-Side" and "Media Relative" comparisons, with data presented in columns and rows. The radar charts compare various parameters across different categories. The PDF viewer interface also includes a top bar with a status message: "This file claims compliance with the PDF/A standard and has been opened read-only to protect your privacy." and a button labeled "Enable Editing".

Digitally signed documents (PDF and Office)



In certain cases legally required

- **Requirement for engineering drawings by (e.g.) Quebec transport ministry**
- **CAD source files (e.g. Autocad, DWG, Revit, Catia)**
- **PDF/A-3 file has to be electronically signed ensuring authenticity**
- **Combines the benefits of rich, editable - but proprietary - files with long-term archival requirements such as integrity**

A short summary:

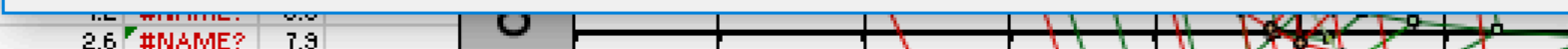
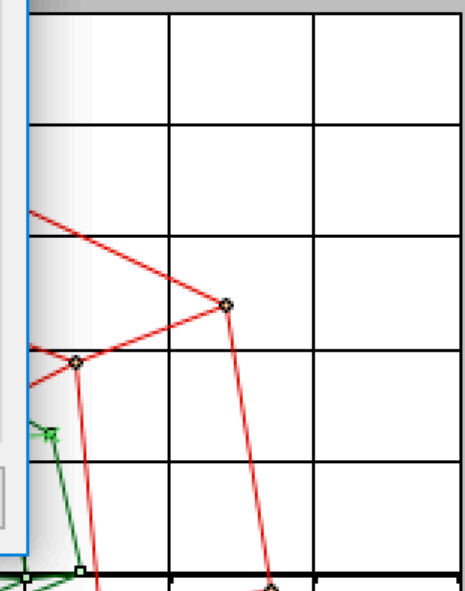
Hybrid PDF for Office files

- **PDF/A-3 specialities:**
 - **Relationship entry: Source**
- **Blind file exchange**
- **Archive at any time**
- **Modifications still possible**
- **But, too cumbersome to use?**
 - **Actually not,
e.g. Acrobat PDF Maker...**

D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

to (Side-by-Side) and media relative evaluation of printed

Copy Media Wedge V3. Values

Stimulus)n: Measurement

PDF/A-3 and XML

- **Electronic Invoicing**
 - **ZUGFeRD (Germany)**
 - **Blind exchange of digital invoices**
 - **Reliable paper like invoice that can be printed and used by every accountant**
 - **XML structure based on UN/CEFACT for recipients using compatible ERP programs**
 - **Retrieving the XML is “easy” because PDF/A-3 defines a standardized embedding model**
- **German civil registry office**
- **Relationship entry: Alternative**



Digital Dossier

Dossiers with PDF/A-3

- **Different file formats**
 - Documents (e.g. PDF, Word, Excel, CAD)
 - Machine readable files (XML)
 - Images, audio, movies
 - Raw data (e.g. measurements)
- **Examples**
 - E-Mail
 - Plain text or HTML + arbitrary attachments
 - Engineering and Manufacturing
 - 3D models, technical documentation, project documentation

Use case:

Project archival at Sika, Switzerland

Contact | Sika Group |

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Enter keyword



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EXPANSION JOINT
MANUFACTURER
EMSEAL

SIKA GROUP



Motivation

- **Project documentation has to be archived**
 - Documentation of quality management
 - Products used in critical environments like bridges or vehicles (e.g. industrial glue)
- **Digital archive**
 - Faster retrieval
 - Archive is used as knowledgebase
- **Painful experiences when an “old” document management system had to be replaced**
 - Project documentation had to be manually reconstructed

Requirments for the digital archive

- **Standard format to be used for archival of projects (and not just of documents)**
 - Independent from document management system (Hype)
- **“Indexfiles” to be automatically created for each archived project**
- **Automated archiving when a project is finalized (set to the final workflow status)**
 - Conversion during nights when system load is low
- **Export metadata from the system into the project files (title, author, project number, etc.)**
- **Numbers**
 - 17000 active projects
 - 40000 attachments

Sika / Hype: Product Development

Example

Status: PDP Released
Type: PDP



on Field Test Proposal Release Proposal **PDP Overview** Team PCP HELP Digital Signatures PCP Log ◀ ▶

Proposal PDP

Requestor (Project Manager) ?  RnD.InfoCenter 

Request Date ? 18.06.2013

Title PDP

Abstract

Co-Author(s)

Milestone M1 

Expected Release Date 

Index file for “Sikaflex” PDF/A-3 archive

PDP_Sikaflex123_0002.pdf - Adobe Reader

Datei Bearbeiten Anzeige Fenster Hilfe

1 / 1 110% Werkzeuge Signieren Kommentar

Anlagen







Öffnen

Name

- DevelopmentDoc_Sikaflex123.pdf
- FieldTestProposal_Sikaflex123.pdf
- FieldTestProposal_Sikaflex123.xls
- ProjectDetails_PDP-2013-0123.p...
- ProjectProposal_Sikaflex123.doc
- ProjectProposal_Sikaflex123.pdf

Product Development Process: Sikaflex123

pdfaPilot: - Zusammenfassungsbericht der eingebetteten Dateien erzeugt von Win7 am Mittwoch, 3. Juli 2013 um 13:13 - 6 eingebettete Dateien

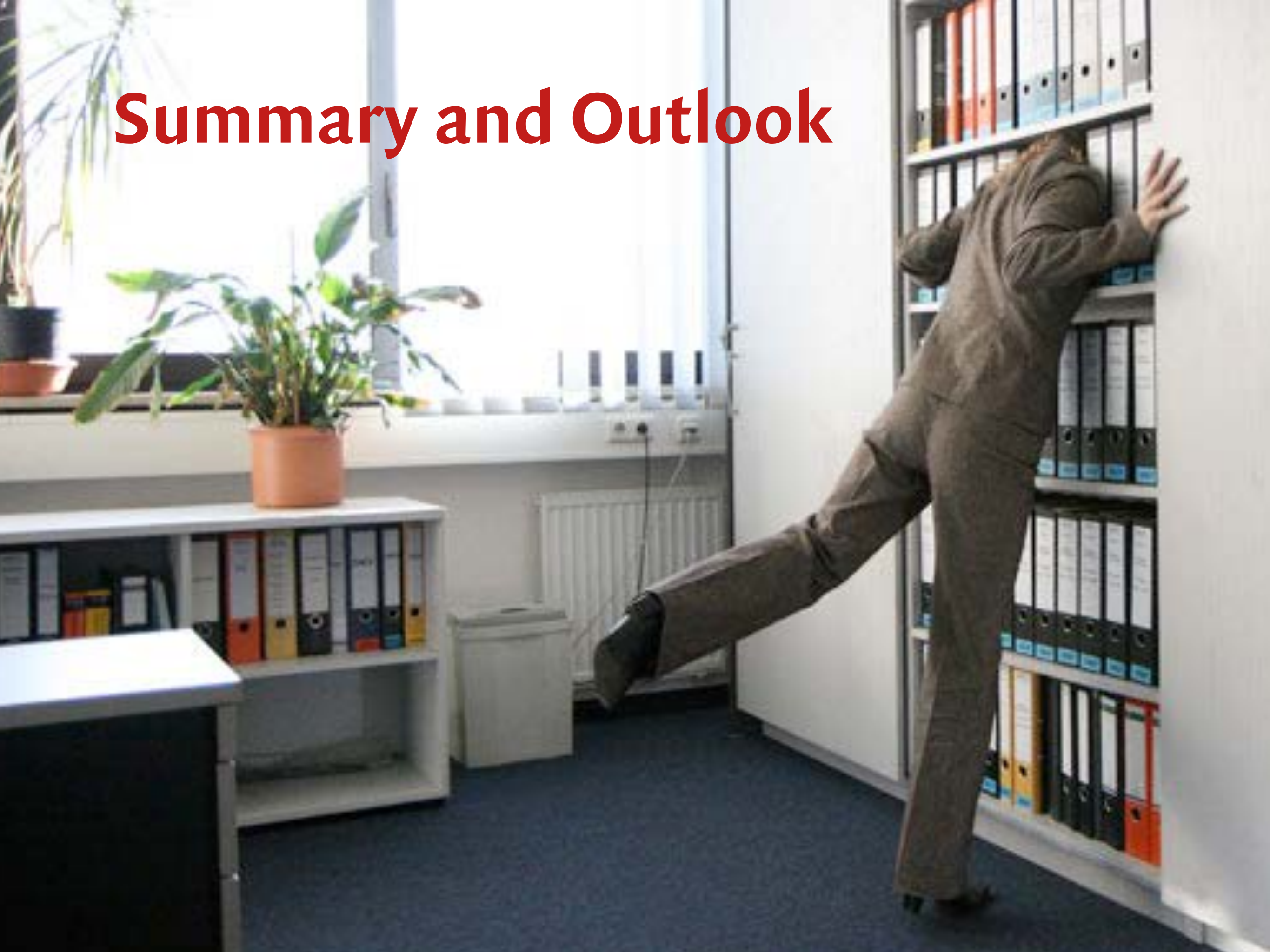
Name der eingebetteten Datei	Dateigröße	Erzeugt am	Geändert am
 ProjectDetails_PDP-2013-0123.pdf	3.5 MB	03.06.2013 15:56	03.06.2013 15:56
 ProjectProposal_Sikaflex123.doc	92.5 KB	09.10.2012 16:32	09.10.2012 16:32
 ProjectProposal_Sikaflex123.pdf	208.9 KB	03.07.2013 10:21	03.07.2013 10:21
 DevelopmentDoc_Sikaflex123.pdf	61.4 KB	29.08.2012 14:09	29.08.2012 14:21
 FieldTestProposal_Sikaflex123.pdf	252.05 KB	03.07.2013 10:21	03.07.2013 10:24
 FieldTestProposal_Sikaflex123.xls	14.06 KB	04.10.2012 14:11	04.10.2012 14:11

A short summary:

Digital PDF/A-3 project dossier

- **PDF/A-3 specialities:**
 - **Relationship: Supplement**
- **Various file formats combined into a PDF/A-3 dossier**
“Richer” formats than PDF/A: 3D, Movies, ...

Summary and Outlook



Good reasons for PDF/A-3 in archives

- **“Source file always available”**
 - Minimal conversion when archiving
 - Visual integrity when working with documents
- **Machine readable (XML) attachments combined with a reliable rendering for humans**
- **Digital Dossiers with richer files (cannot be converted to PDF/A)**

PDF/A-3 as archive format

- **PDF/A-1 and PDF/A-2 are always archive formats:**
 - **When archiving convert any file into PDF/A and validate**
- **PDF/A-3 as archive format:**
 - **Validation does usually not cover all attached files**
 - **Use cases**
 - **Known workflows**
 - **Higher level standards building on PDF/A-3**
 - **Might be combined with validation for individual requirements e.g.**
 - **Only a single Excel file with relationship “Source”**
 - **Only if attachment name is the same as container name**
 - **Only a single XML file**

What is PDF/A-3 good for?

Further questions?

Dietrich von Seggern

d.seggern@callassoftware.com

Managing Director

callas software