

ISO 23504-1:2020 (PDF/R)

for modern, reliable and secure image transfers

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Document management applications –
Raster image transport and storage

for modern, reliable and secure image transfers

Introduction

- René Rebe – founder and CEO of ExactCODE GmbH
- TWAIN Working Group board member
- PDF/R ISO Project Leader

Why a new PDF standard?

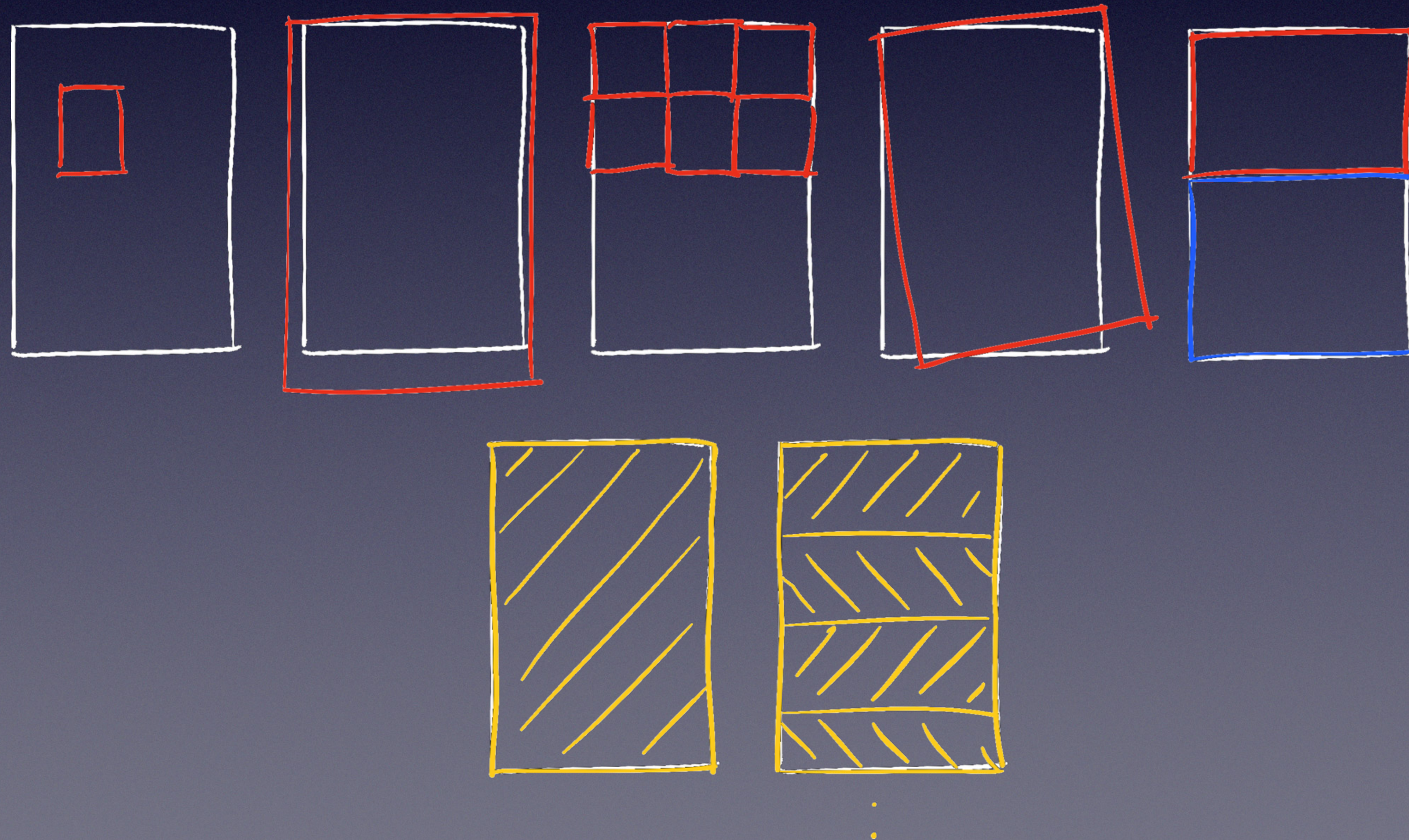
- created ~2016 for TWAIN Direct, a new and modern standard for driver agnostic network / cloud scanning
- historically transferred RAW, in-memory data or BMP, TIFF or JPEG
- but JPEG does not support multiple pages, or black & white
- TIFF compatibility and limited browser support
- also looking for encryption and digital signatures

Why a new PDF standard?

- Although very versatile and feature rich, for some use cases PDF has too many features: vector graphics, text, forms, 3D, multimedia, ...
- with a thousand pages and even more features PDF support more than image exchange usually needs
- ~2016 TWAIN WG & PDF Association started drafting a PDF subset for image raster data, scans, photos, printing, ...

Why a new PDF standard?

- XObject placement with existing PDF images:



Our solution: PDF/R

- 24 pages describing the allowed standard ISO PDF subset
- 100% compatible with existing PDF software
- only images, compressed or uncompressed
- well defined image data placements and alignment
- PDF/A compatible with ICC profiles!
- encryption and signatures

PDF/R features

- multi pages
- ICC profiles
- no affine transformation (skew, rotation, ...) no cropping
- easy image data access
- no page content stream parsing required
- multiple image strips per page for long images

PDF/R benefits

- easily and efficiently extract original raster image pixel data
- guarantee simplicity and compatibility for consumers for mobile devices and cloud applications
- small enough for scanner firmware, drivers & mobile apps

PDF/R benefits

- can be written with a few hundred lines of codes
- maybe even easier to write than TIFF!
- improved security due significant smaller:

Trusted Computing Base (TCB)

PDF/R file magic

- PDF/R file trailer:

%PDF-raster-1.0

startxref

12345

%%EOF

PDF/R For who and where?

- can be used everywhere as modern TIFF and JPEG replacement
- scanner, printer, MFP, smartphone, digital camera
- image processing workflows
- mobile & cloud applications
- e-Governance

Use in TWAIN Direct / Cloud



Use in TWAIN Direct / Cloud

- Network Scanning Protocol / Language
- JSON based web API
- emphasis on success
- Simplified application development

TWAIN Direct Example

```
{"actions": [  
  {"action": "configure",  
  
  "streams": [  
    {"sources": [  
      {"source": "any", "pixelFormats": [  
        {"pixelFormat": "rgb24", "attributes": [  
          {"attribute": "resolution", "exception": "fail", "values": [  
            {"value": 300 }, {"value": 200 }  
          ] }  
        ] }  
      ] }  
    ] }  
  ] }  
]
```


Use in TWAIN Direct

- receive PDF directly from your scanner or MFP!
- driver-less, e.g. on mobile devices
- locally or thru the cloud

Future PDF/R revisions?

- Maybe allow Object Streams?
- Improved / new encryption
- New compression algorithms, like:
- High Efficiency Image File Format? AV1?
- Open to your suggestions!

Q & A

- More information online:

<https://pdfraster.org>

<https://twaindirect.org>

rebe@exactcode.com