ADOCHS

Quality Management

in a Heritage and Documentary Digitisation Project

Image & Data Processing In the Cultural Heritage Sector Study Day

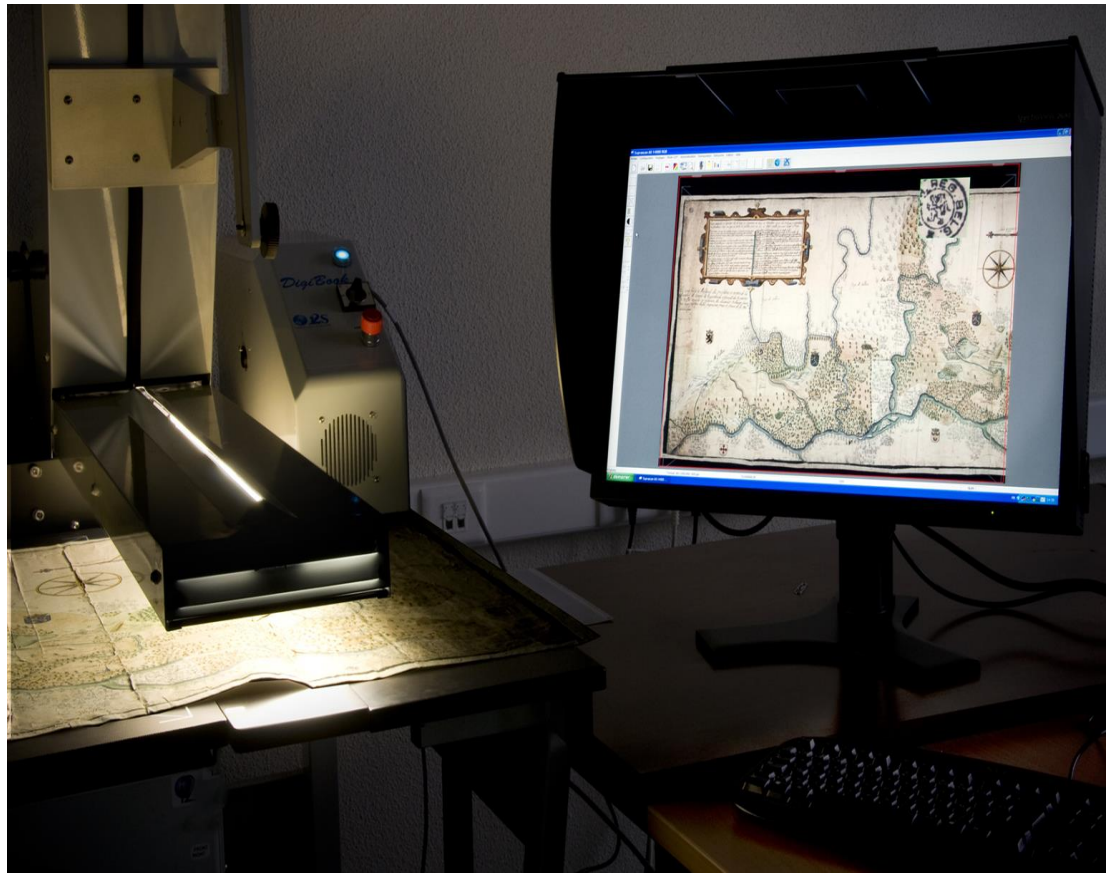
14.09.2021

Chloé Brault

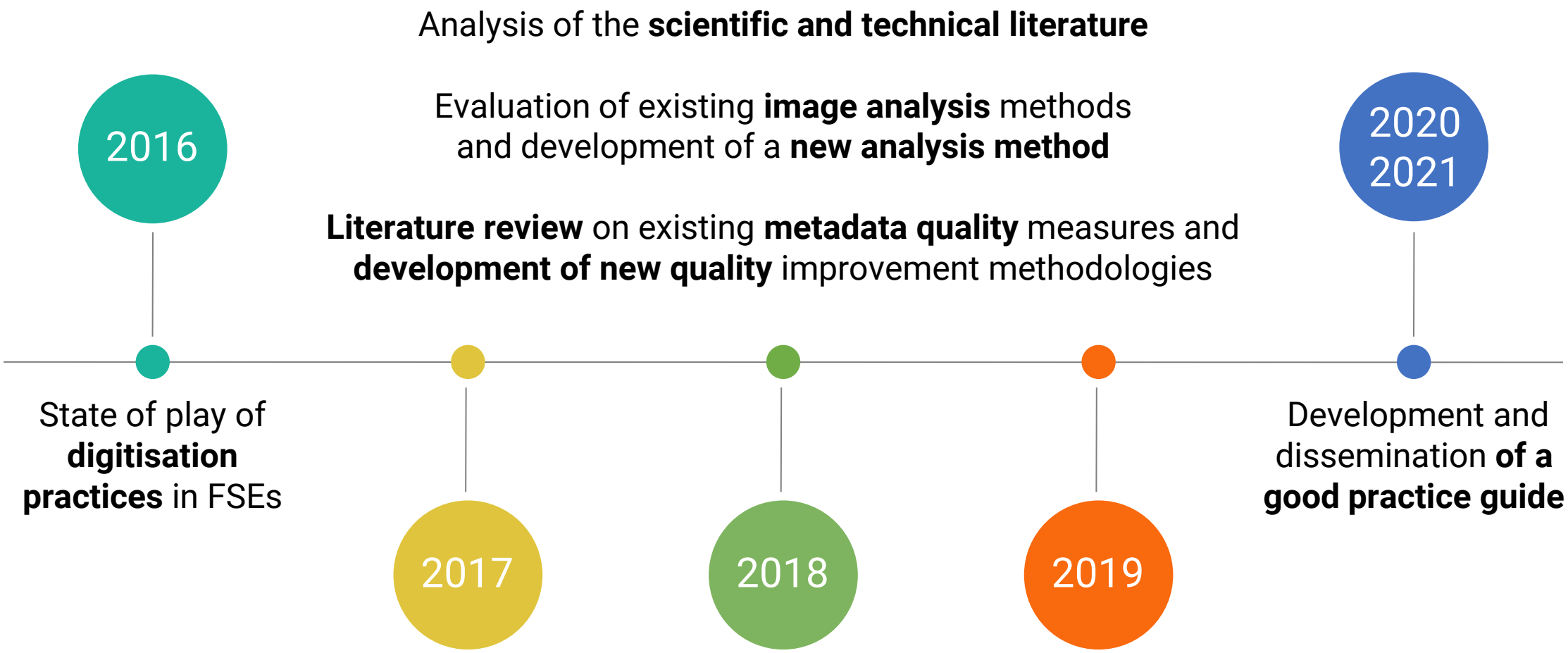
ADOCHS Objectives

- To propose **methodological and technical working tools** to ensure the **quality of the digital data** produced at each stage of the process.

- SFE's Digitization Service



Evolution of the guide elaboration



Content of the guide

Interviews of heritage actors involved in digitisation

Theoretical prerequisites

Referrals to **existing ressources** for quality management

Workflow of the digitisation process

Methodological sheets

Guide Objectives

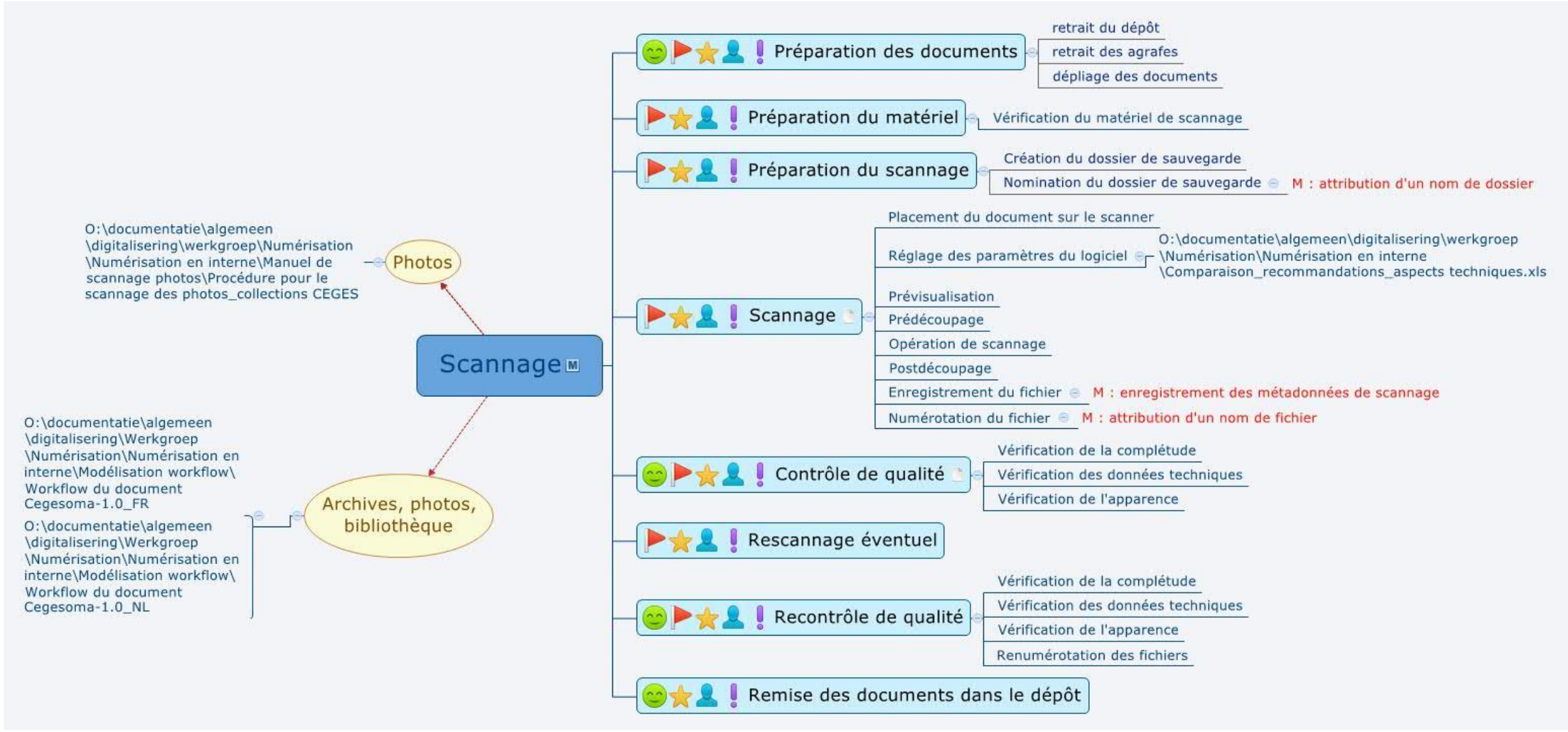
- Raise awareness of the issue of **good governance of digital data**
- **Standardise and harmonise practices within FSI**
- Provide a **global perspective and understanding of digitalisation** to make it more meaningful for teams.

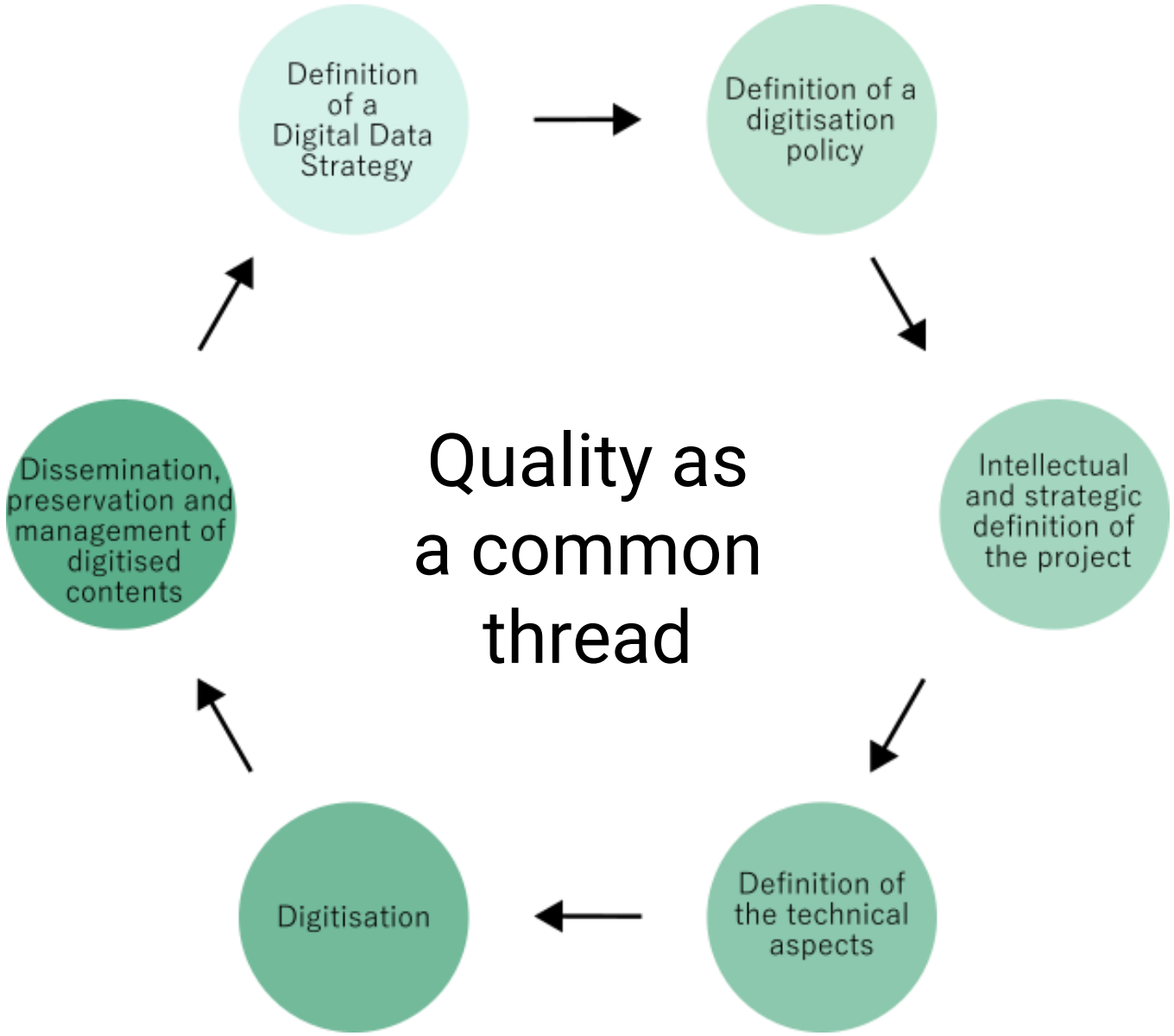
Quality definition

“ all of the characteristics and properties of a product, a process or a service that influence its ability to meet identified or implicit requirements”

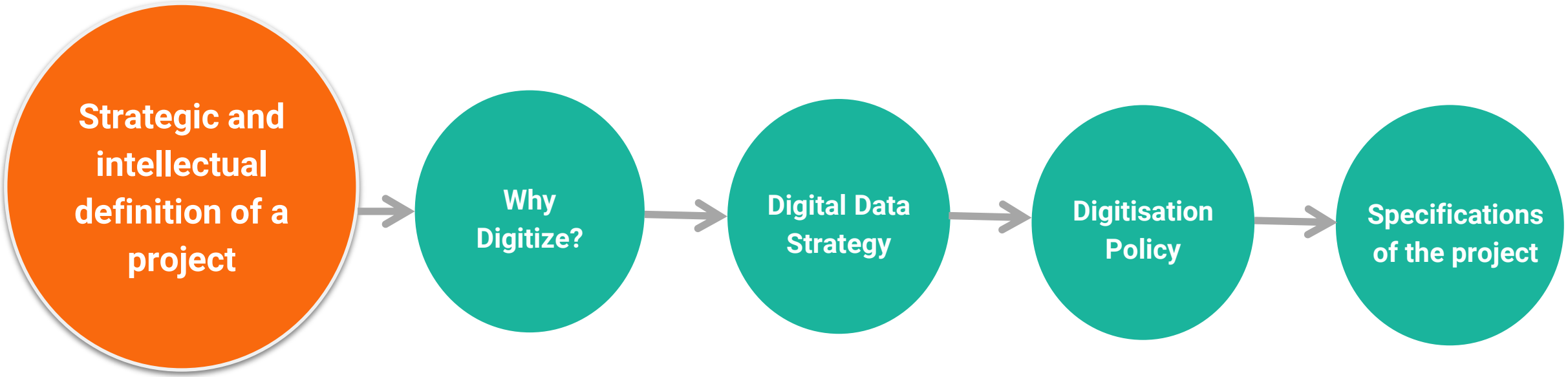
ISO 9000:2015, Quality Management Systems — Essential principles and vocabulary

Example of workflow : CegeSoma

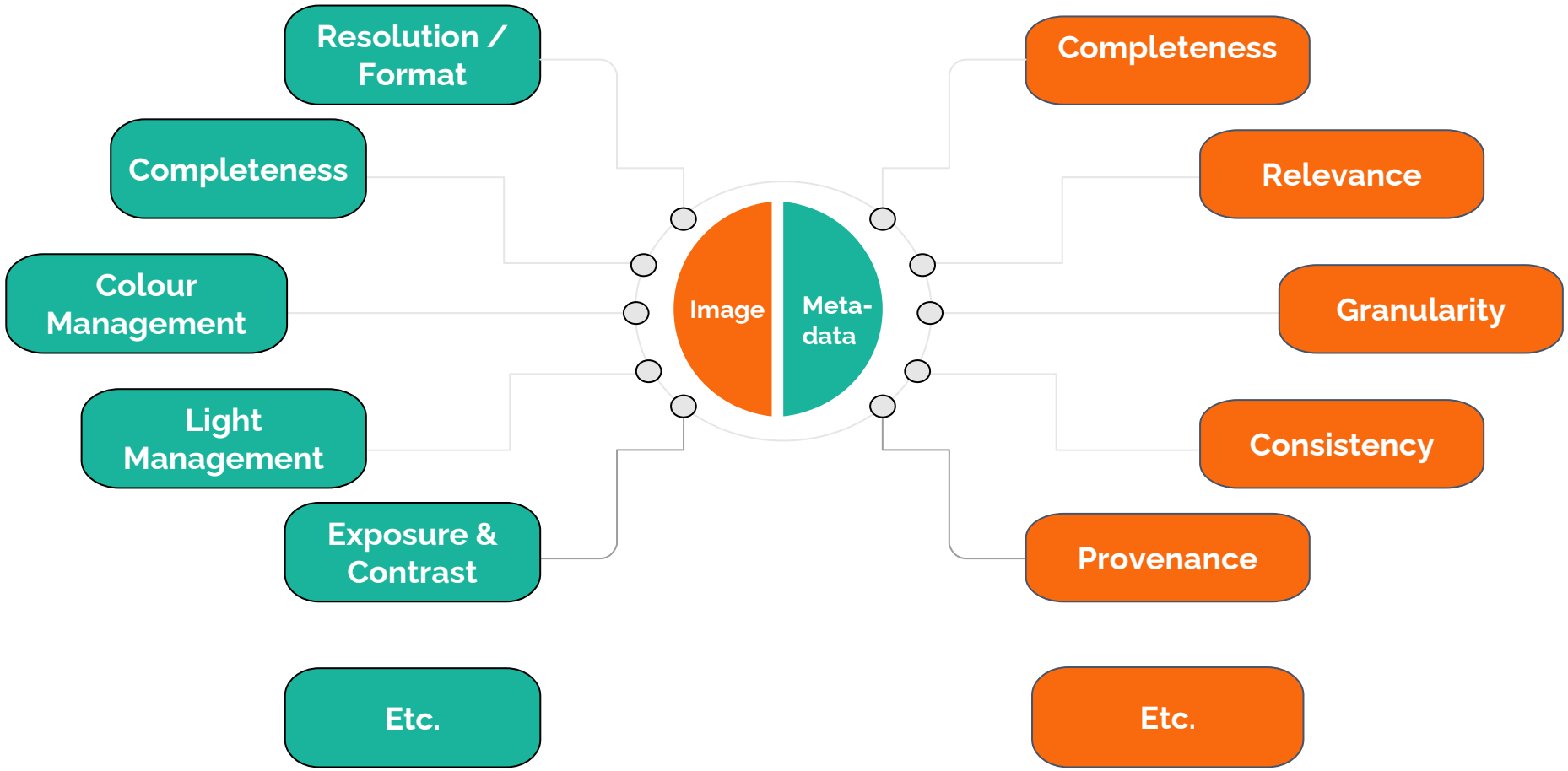



Definition of a Digital Data Strategy
Definition of a digitisation policy
Intellectual and strategic definition of the project
Definition of the technical aspects
Digitisation
Dissemination, preservation and management of digitised contents
Quality as a common thread

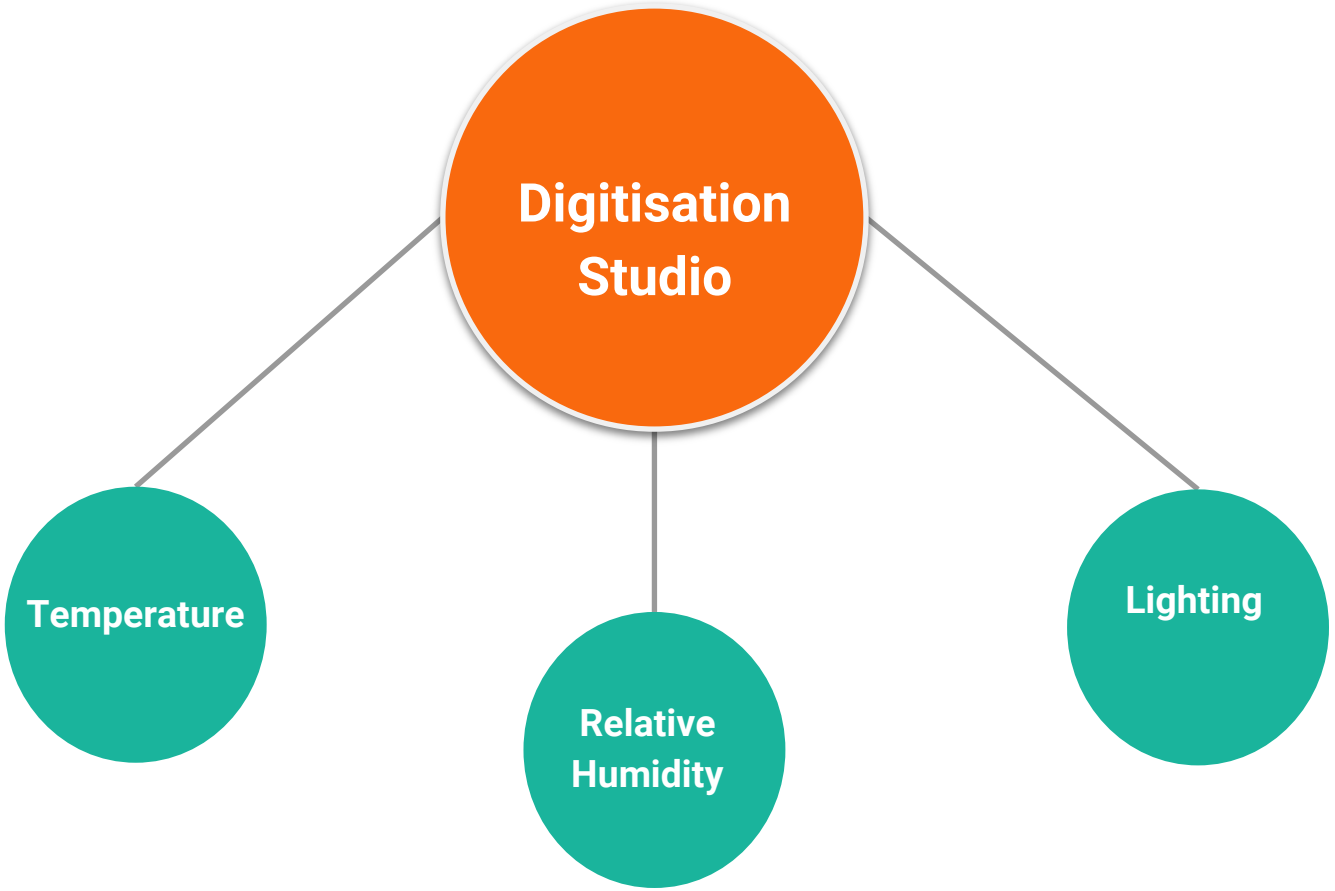
Cognitive phase of a digitisation project



Some of the Image & Metadata Quality Criterias



Management of the Digitisation Studio



Methodological Sheets based on Digitisation Workflow

Intellectual & strategic definition of the project

- Defining your reference systems
- Establishing and implementing quality approach
- Quality of deliverables
- How and when to involve quality control
- Controlling quality in case of outsourcing

Definition of the technical aspects

- Choosing digitisation equipment
- Choosing illuminants
- Calibrating the digitisation chain

Digitisation

- General rules of capture
- Creating and filling the medata inventory
- Saving and naming of files

Post Production

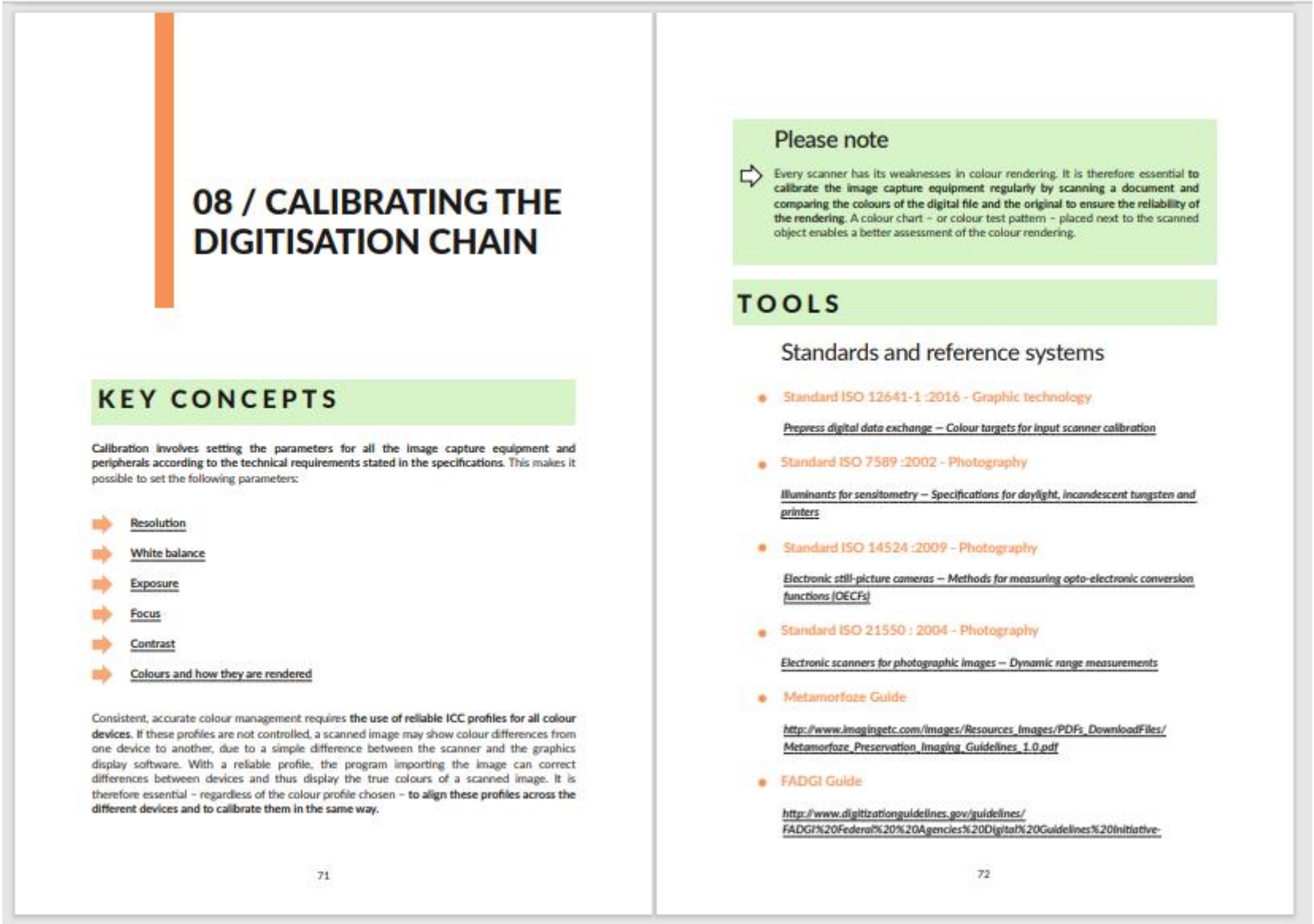
- Retouching Image file
- OCR
- Encapusating MD
- Final Quality Control

Dissemination Conservation

- Choosing Data Management System

Methodological Sheets

- **Theoretical notions**
- **Tools**
- Practice recommendations
- References to bibliographical sources / tutorials
- References to practices of foreign institutions



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KEY CONCEPTS

Calibration involves setting the parameters for all the image capture equipment and peripherals according to the technical requirements stated in the specifications. This makes it possible to set the following parameters:

- Resolution
- White balance
- Exposure
- Focus
- Contrast
- Colours and how they are rendered

Consistent, accurate colour management requires **the use of reliable ICC profiles for all colour devices.** If these profiles are not controlled, a scanned image may show colour differences from one device to another, due to a simple difference between the scanner and the graphics display software. With a reliable profile, the program importing the image can correct differences between devices and thus display the true colours of a scanned image. It is therefore essential – regardless of the colour profile chosen – **to align these profiles across the different devices and to calibrate them in the same way.**

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Please note

Every scanner has its weaknesses in colour rendering. It is therefore essential **to calibrate the image capture equipment regularly by scanning a document and comparing the colours of the digital file and the original to ensure the reliability of the rendering.** A colour chart – or colour test pattern – placed next to the scanned object enables a better assessment of the colour rendering.

TOOLS

Standards and reference systems

- Standard ISO 12641-1 :2016 - Graphic technology

  Prepress digital data exchange – Colour targets for input scanner calibration
- Standard ISO 7589 :2002 - Photography

  Illuminants for sensitometry – Specifications for daylight, incandescent tungsten and printers
- Standard ISO 14524 :2009 - Photography

  Electronic still-picture cameras – Methods for measuring opto-electronic conversion functions (OECFs)
- Standard ISO 21550 : 2004 - Photography

  Electronic scanners for photographic images – Dynamic range measurements
- Metamorfoze Guide

  http://www.imagingetc.com/images/Resources_Images/PDFs_DownloadFiles/Metamorfoze_Preservation_Imaging_Guidelines_1.0.pdf
- FADGI Guide

  http://www.digitizationguidelines.gov/guidelines/FADGI%20Federal%20%20Agencies%20Digital%20Guidelines%20Initiative-

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Methodological Sheets

- Theoretical notions
- Tools
- **Practice recommendations**
- **References to bibliographical sources / tutorials**
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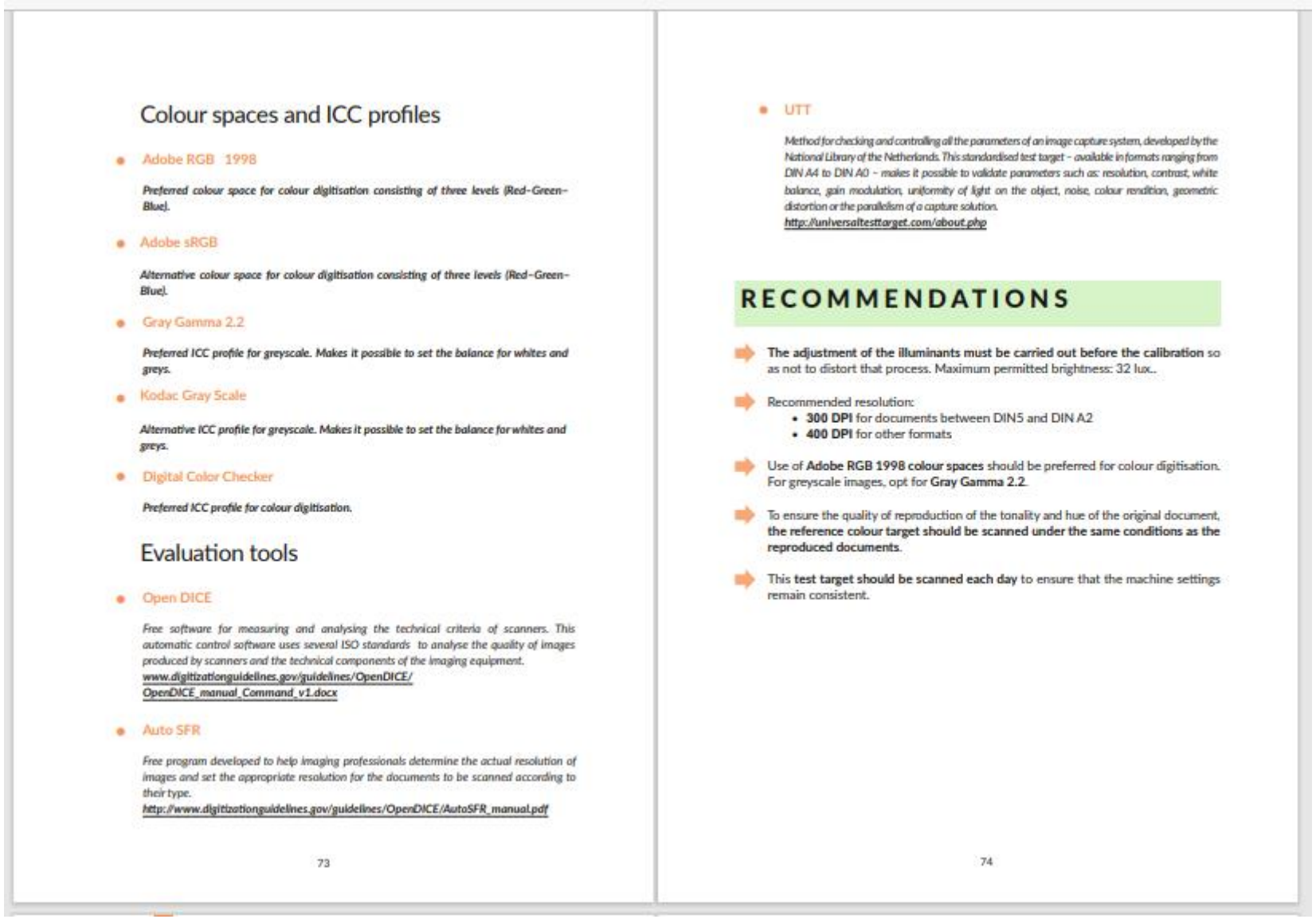

Colour spaces and ICC profiles

- Adobe RGB 1998

Preferred colour space for colour digitisation consisting of three levels (Red-Green-Blue).

- Adobe sRGB

Alternative colour space for colour digitisation consisting of three levels (Red-Green-Blue).

- Gray Gamma 2.2

Preferred ICC profile for greyscale. Makes it possible to set the balance for whites and greys.

- Kodac Gray Scale

Alternative ICC profile for greyscale. Makes it possible to set the balance for whites and greys.

- Digital Color Checker

Preferred ICC profile for colour digitisation.

Evaluation tools

- Open DICE

Free software for measuring and analysing the technical criteria of scanners. This automatic control software uses several ISO standards to analyse the quality of images produced by scanners and the technical components of the imaging equipment.
www.digitizationguidelines.gov/guidelines/OpenDICE/OpenDICE_manual_Command_v1.docx

- Auto SFR

Free program developed to help imaging professionals determine the actual resolution of images and set the appropriate resolution for the documents to be scanned according to their type.
http://www.digitizationguidelines.gov/guidelines/OpenDICE/AutoSFR_manual.pdf

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- UTT

Method for checking and controlling all the parameters of an image capture system, developed by the National Library of the Netherlands. This standardised test target – available in formats ranging from DIN A4 to DIN A0 – makes it possible to validate parameters such as: resolution, contrast, white balance, gain modulation, uniformity of light on the object, noise, colour rendition, geometric distortion or the parallelism of a capture solution.
http://universaltesttarget.com/about.php

RECOMMENDATIONS

- **The adjustment of the illuminants must be carried out before the calibration** so as not to distort that process. Maximum permitted brightness: 32 lux..
- Recommended resolution:
  - **300 DPI** for documents between DIN5 and DIN A2
  - **400 DPI** for other formats
- Use of **Adobe RGB 1998 colour spaces** should be preferred for colour digitisation. For greyscale images, opt for **Gray Gamma 2.2**.
- To ensure the quality of reproduction of the tonality and hue of the original document, **the reference colour target should be scanned under the same conditions as the reproduced documents**.
- This **test target should be scanned each day** to ensure that the machine settings remain consistent.

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In practice

- Guide available in **three languages**: English, French and Dutch
- Download on the Cegesoma web site
- French and Dutch versions **available from 30 September**