

## KOST-Val released by the TI/A Standard Initiative team



KOST-Val is an open source validator for different file formats (TIFF, SIARD, PDF/A, JP2, JPEG) and Submission Information Package (SIP).

It has been developed by [KOST-CECO](#), is a Swiss coordination office which is member of the [TI/A Standard Initiative](#) team, a group of experts focussing on the definition of a specification of a Archival TIFF Format

For further information visit the [KOST-Val page in the Community Owned digital Preservation Tool Registry \(COPTR\)](#).

### Functional Principle

KOST-Val complies with the following requirements.

- TIFF validation: KOST-Val reads a TIFF file and uses [JHOVE](#) to validate the structure, the content, and [ExifTool](#) to validate the key properties such as compression, colour space, and multipage. These properties can be configured.]
- SIARD validation: KOST-Val reads a SIARD (eCH-0165 v1 ) file and validates the structure and the content.
- PDF/A validation: KOST-Val reads a PDF or PDF/A file (ISO 19005-1 and 19005-2) and uses 3-Heights? [PDF/A Validator](#) by PDF-Tools or [PDF/A Manager](#) by PDFTron to validate the structure and the content of the PDF file. KOST-Val organises the different error messages into main categories such as fonts, graphics, and metadata. KOST-Val supplies only a limited version from 3-Heights? PDF/A Validator by PDF-Tools. Module J extracts (with [iText](#)) and validates the JPEG and JP2 images contained in the PDF file (depending on the configuration). It is also possible to configure whether the JBIG2 compression is accepted or not.]
- JP2 validation: KOST-Val reads a JP2 file (ISO 15444) and uses [Jpylyzer](#) to validate the structure and the content.]
- JPEG validation: KOST-Val reads a JPEG file (ISO 10918-1) and uses [Bad Peggy](#) to validate the structure and the content.]
- SIP validation: KOST-Val reads an SIP (eCH-0160 v1 as well as Swiss Federal Archives SFA v1 and v4 ) and validates the mandatory requirements of the SIP specification. The validated requirements are organised into groups such as folder structure, schema validation, and checksum validation. At the outset, a file format validation is performed.

The results (including information on inconsistencies and errors) are output for every step and written into a validation log. The validation steps are executed sequentially. Whenever possible the validation shall continue after an error has been detected in order to reduce the number of correction cycles.

### Third-party applications

KOST-Val uses unmodified components of other manufacturers by embedding them directly into the source code. Users of KOST-Val are requested to adhere to these components' terms of licence.

- The TIFF validation module uses [JHOVE](#) and [ExifTool](#) and evaluates its output further.]
- For the PDF/A validation module [PDF-A Manager](#) or [3-Heights PDF/A Validator](#) are used.]
- The JP2 validation module uses [Jpylyzer](#) and translates the failed tests into appropriate error messages (DE/FR/EN).]
- The JPEG validation module uses [Bad Peggy](#) and evaluates the error message "Not a JPEG file" further.]
- To extract the JPEG and JP2 images from PDF/A the [iText library](#) is used.]

- For the file format identification [DROID](#) is used. For performance and granularity reasons an own SignatureFile is used instead of the official PRONOM registry.]



About the TI/A Standard initiative]

The TI/A Standard initiative is promoted by the [Digital Humanities Lab](#) of the University of Basel, the [Agents Research Lab](#) of the University of Girona and [Easy Innova](#) with the support of many interested memory institutions.

This standard will be created in parallel with [DPF Manager](#), an open source TIFF format validator that, in addition to the current TIFF ISO Standards, will be the first conformance checker for the TI/A new standard.

This initiative has been boosted by [PREFORMA](#), a PCP project that aims to address the challenge of implementing good quality standardised file formats for preserving data content in the long term.