



FUNDING OPEN SOURCE

Bert Lemmens | PACKED vzw
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Funding open source

- Sustainability of open source
- Funding open source through the PREFORMA PCP
- Role of archives in funding open source

Roads and Bridges:

The Unseen Labor Behind
Our Digital Infrastructure

WRITTEN BY
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"Nearly all software today relies on free, public code (called "open source" code), written and maintained by communities of developers and other talent."

"Much like roads or bridges, which anyone can walk or drive on, open source code can be used by anyone - from companies to individuals - to build software."

"This type of code makes up the digital infrastructure of our society today. [...] Just like physical infrastructure, digital infrastructure needs regular upkeep and maintenance."

Free and open source software

- freedom to **run** the program for any purpose.
- freedom to **study** how the program works, and change it to make it do what you wish.
- freedom to **redistribute** and make copies so you can help your neighbor.
- freedom to **improve** the program, and release your improvements (and modified versions in general) to the public, so that the whole community benefits

(Free Software's four freedoms, Richard Stallman 1986)

Why not charging for software?

political motive - free software

- makes technology **accessible** to people of all demographics (empowerment)
- avoid technological **dependencies** on a single company
- open source code is potentially more **stable** and **secure** (if there is a thriving community)

economical motive - open software

- easier and cheaper to **build** software solutions
- cheaper to **maintain** code in community
- easier to start a **new company** (venture capital)

“Ticking time-bomb”

- $\frac{2}{3}$ of top 130 most-used projects on Github is maintained by one or two people.
- building themselves a reputation, but hardly any paid work
- burnout and overworked maintainers:

“It's knowing you did something for free, out of love, and there's an endless stream out people going ‘more! more!’ and getting angry when you won't accommodate their edge case.”

“Tragedy of the Commons”



Funding models for open source ecosystems

- “labor of love” > cuts deep in the resources of the community.
 - crowdsourcing > works for new features
 - sponsorship > works for strategically important projects (Linux Foundation)
 - monetize access (Wordpress), hosting (Github), services (RedHat) > works for projects with huge large user communities
- >>> but, how does that work for audiovisual preservation?

Funding open source in PREFORMA

- a Pre-Commercial Procurement project co-funded by the European Commission under the **FP7-ICT Programme**.
- jan 2014 - dec 2017 (48 month)
- total budget procurement: **2.805.000 EUR**
- www.preforma-project.eu
- Contacts:
 - Project Coordinator: **Borje Justrell**, Riksarkivet, borje.justrell@riksarkivet.se
 - Technical Coordinator: **Antonella Fresa**, Promoter Srl, fresa@promoter.it
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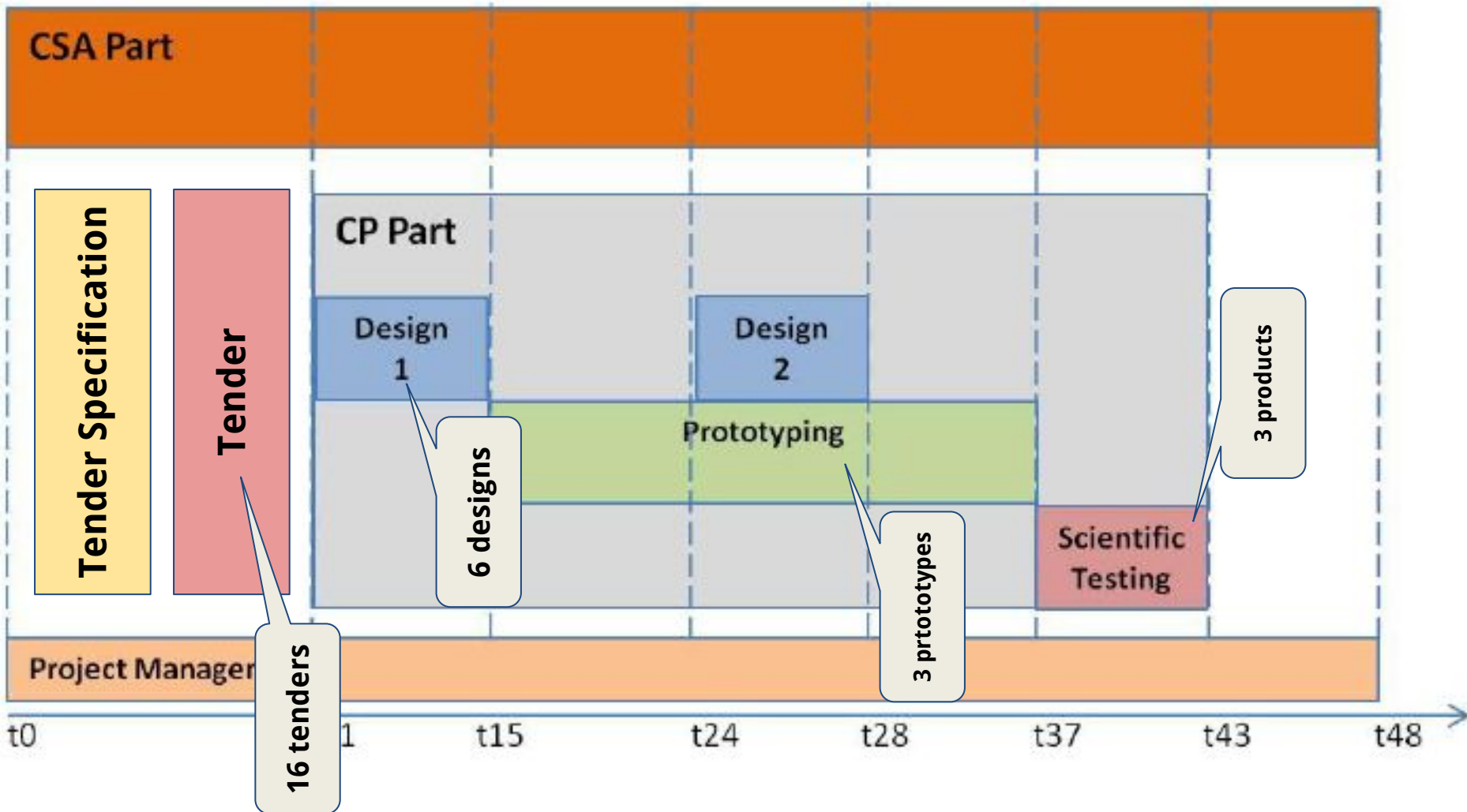


PREFORMA

Pre-Commercial Procurement (PCP)

- phased, competition-like procurement of R&D services
- result: multiple solutions for a single challenge, creating a new market
- goal: enable public sector bodies to engage with innovative businesses, developing solutions that address specific public sector needs.
- PREFORMA PCP = kickstart open source digital preservation tools
- sponsoring R&D + enable monetization of services

Pre-Commercial Procurement (PCP)



Open source & open assets

- Establish a **sustainable research and development community**
- Ensure **long-term availability of the software** beyond memory institutions and suppliers involved.
- All **software**: “**GPLv3 or later**” and “**MPLv2 or later**”.
- All **digital assets**: **Creative Commons CC-BY v4.0** and in **open file formats**.

Challenge Brief

*Empower memory institutions
to **gain** full control over the **technical
properties of digital content** intended for
long-term preservation.*

Conformance checker + reference implementation

	AUDIO VISUAL			TEXT	IMAGE
	broadcast	film	Consumer		
PREFORMA stakeholders	MPEG-IMX (MXF/MPEG2) XDCAM HD422 (MXF/MPEG4)	DPX DCP (MXF/JPEG2000)	MOV/MPEG2 AVI/MPEG2 MPEG/MPEG2 MPEG/MPEG4 -AVC	PDF 1.4 PDF/A1	TIFF 6.0 JPEG JPEG2000 RAW
Industry standards	AS 07 (MXF/MPEG2) (MXF/JPEG2000) FIMS (MXF/MPEG2)	DCDM (TIFF 6.0) DCP (MXF/JPEG2000) IMF (MXF/MPEG4)	MPEG-AF	PDF	JPEG2000 TIFF
Open standards	MKV/FFV1 OGG/Dirac	PNG	WebM/VP8 OGG/Theora	PDF/A1 PDF/A3 PDF/A3	PNG
PREFORMA	MKV FFV1			PDF/A	TIFF 6.0

Industry Supported PDF/A Validation

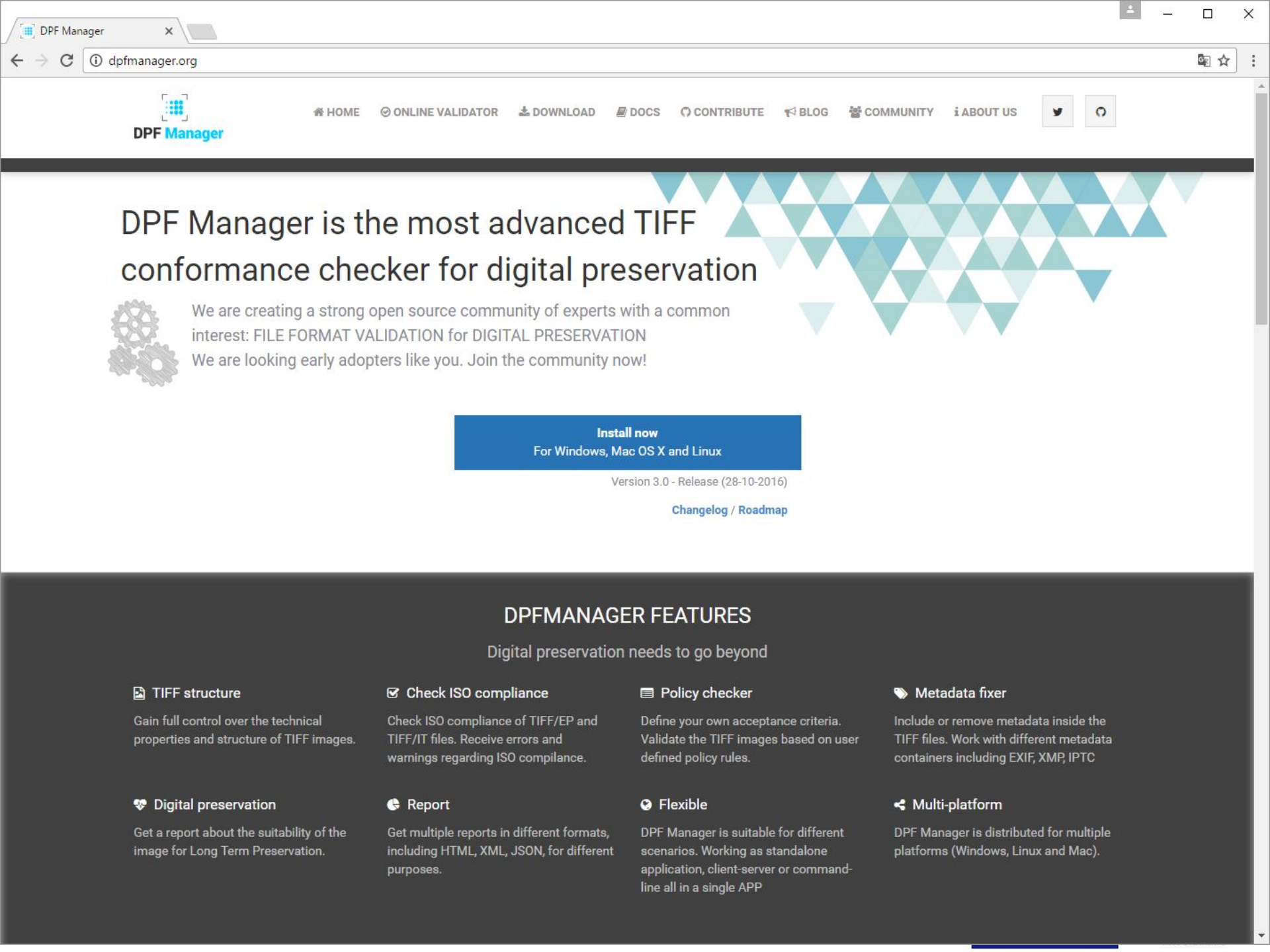


veraPDF is a purpose-built, open source, file-format validator covering all PDF/A parts and conformance levels.

veraPDF is designed to meet the needs of digital preservationists and is supported by the PDF software developer community.

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DPF Manager is the most advanced TIFF conformance checker for digital preservation



We are creating a strong open source community of experts with a common interest: FILE FORMAT VALIDATION for DIGITAL PRESERVATION
We are looking early adopters like you. Join the community now!

Install now
For Windows, Mac OS X and Linux

Version 3.0 - Release (28-10-2016)

[Changelog / Roadmap](#)

DPFMANAGER FEATURES

Digital preservation needs to go beyond

TIFF structure

Gain full control over the technical properties and structure of TIFF images.

Check ISO compliance

Check ISO compliance of TIFF/EP and TIFF/IT files. Receive errors and warnings regarding ISO compliance.

Policy checker

Define your own acceptance criteria. Validate the TIFF images based on user defined policy rules.

Metadata fixer

Include or remove metadata inside the TIFF files. Work with different metadata containers including EXIF, XMP, IPTC

Digital preservation

Get a report about the suitability of the image for Long Term Preservation.

Report

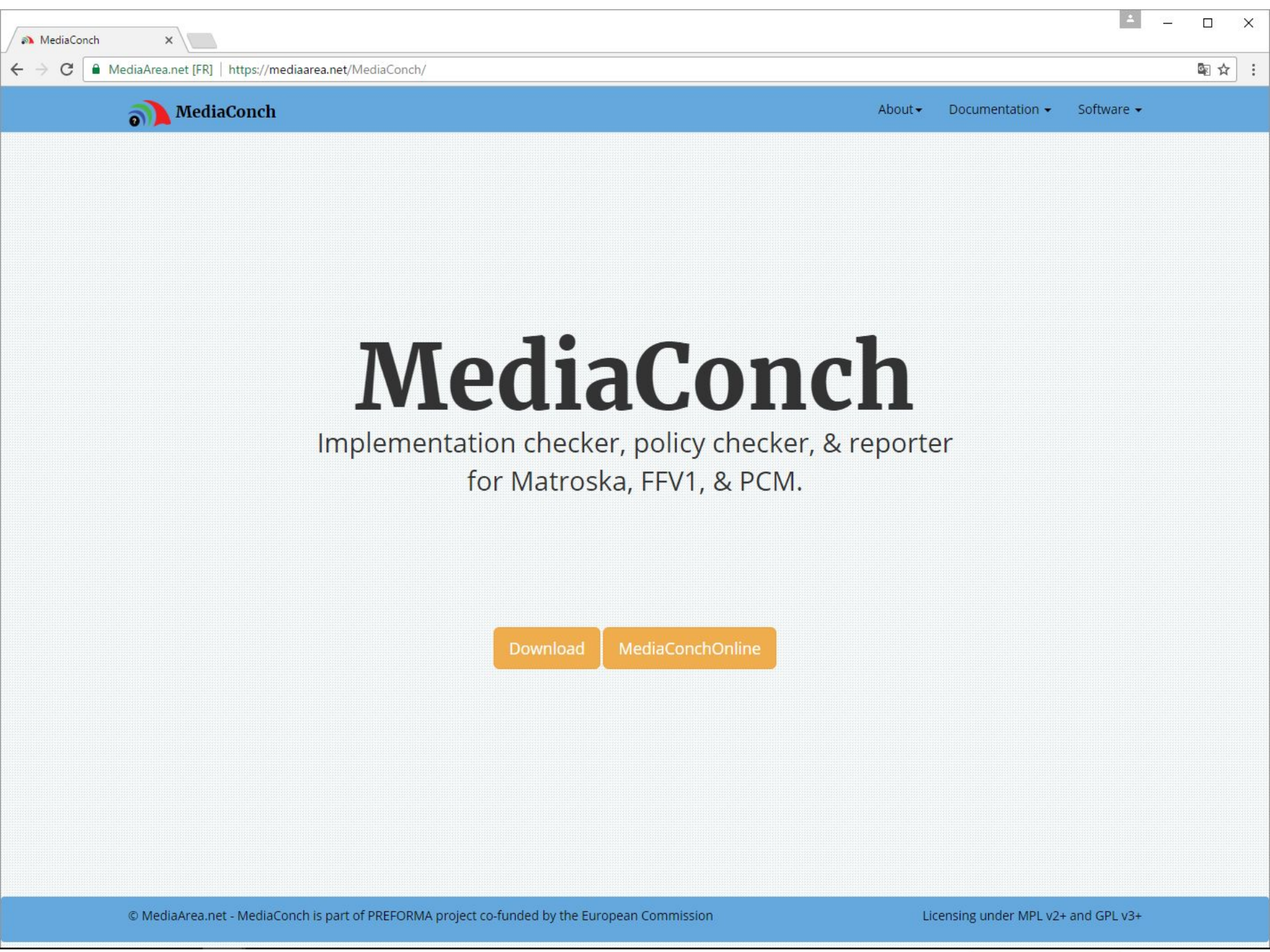
Get multiple reports in different formats, including HTML, XML, JSON, for different purposes.

Flexible

DPF Manager is suitable for different scenarios. Working as standalone application, client-server or command-line all in a single APP

Multi-platform

DPF Manager is distributed for multiple platforms (Windows, Linux and Mac).



MediaConch

Implementation checker, policy checker, & reporter
for Matroska, FFV1, & PCM.

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Small survey among the procurers:

- Who has used one of the tools? > 8 out of 8
- Who convinced colleagues to use the tool? > 8 out of 8
- Who convinced his management the archive should use the tool? > 1 out of 8
- Who is deploying the tool in the archive? >1 out of 8
- Who considers paying someone to deploy the tool? > 2 out of 8

Thresholds for adoption / paid work!

- “We are not allowed to pay for something that is already available for free.”
- “It is ‘complicated’ to procure development /deployment work instead of a from-the-shelve solution.”
- Sharing feels counterintuitive: “We have to demonstrate the added value of the tool. (What’s in it for the archive?”
- Open source requires a policy change. It takes time... (Were we wrong in the past?)

Role of archives in supporting the open source ecosystem

- patronage: archives should fund strategically important projects. (ensure testing and maintenance of software)
- organise sponsorship via a dedicated foundation for digital preservation (lower the administrative burden, develop a long term funding strategy)
- R&D should have a dedicated place in each archive (learn to fail!)



thx!

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