

OpenMediaCheck

UCL tender – PREFORMA Design Phase Outcome

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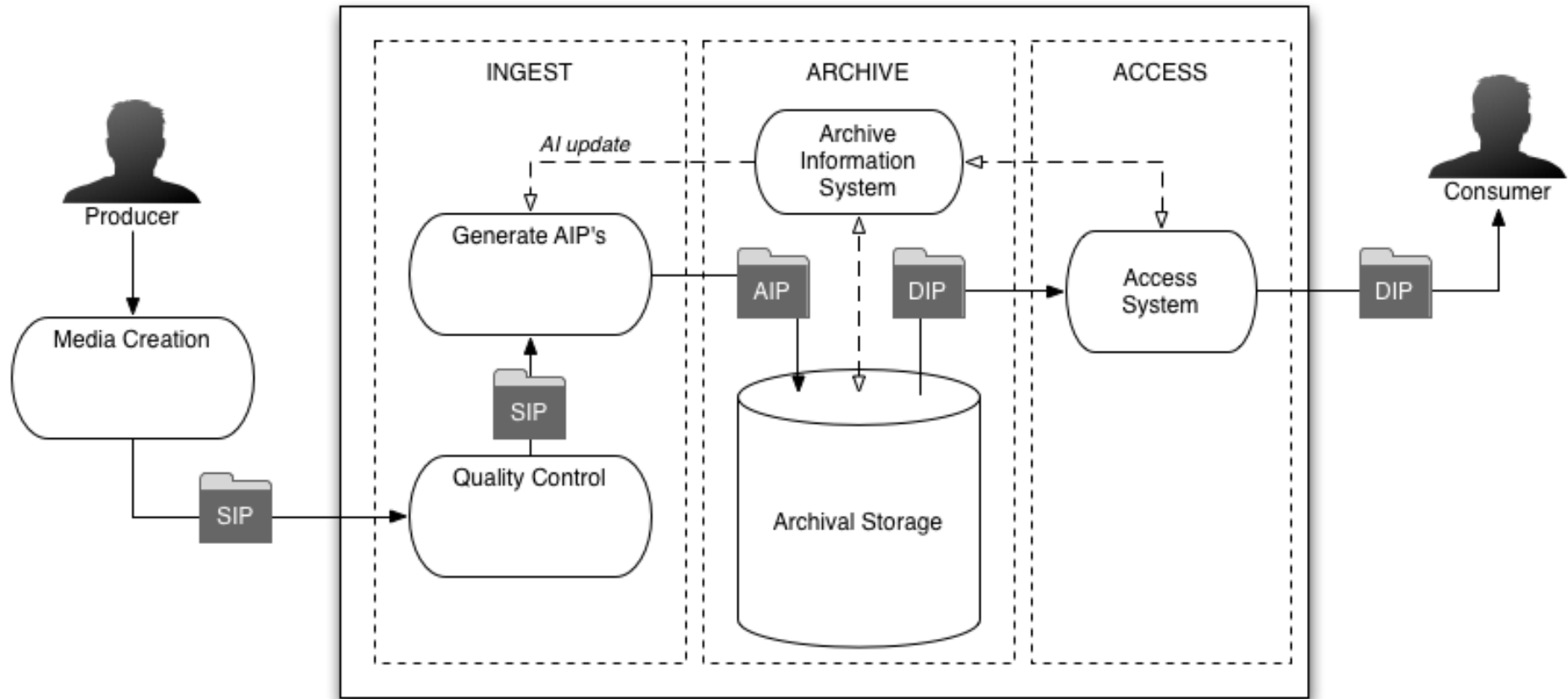


March 6th, 2015



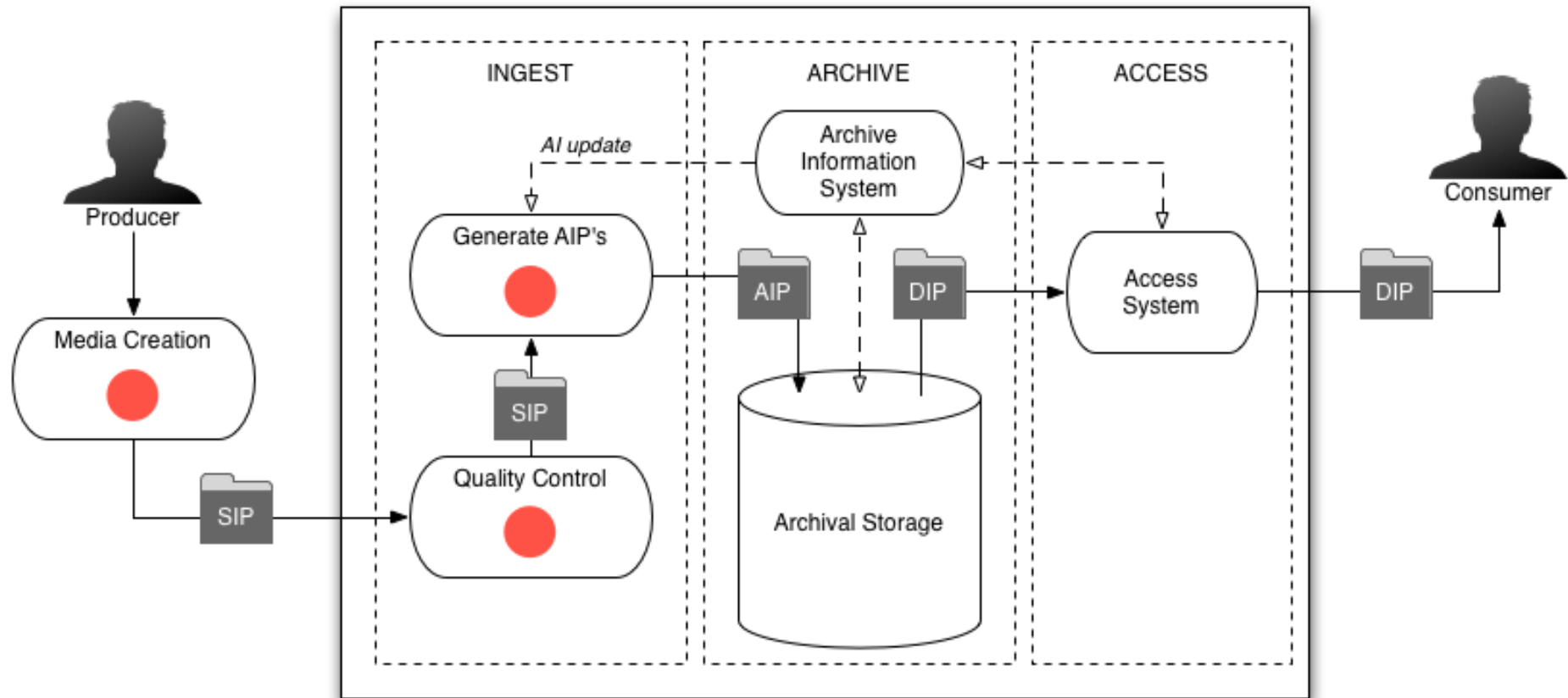
The challenge ... In a nutshell

OAIS simplified schema



The challenge ... In a nutshell

OAIS simplified schema



We need a tool enabling ...

1. Seamless integration in legacy systems
2. Collaboration of suppliers concurrently developing components for the same platform
3. Large open-source community aware of conformance checking importance.

OpenMediaCheck is ...

... an open-source component-oriented toolkit primarily dedicated to conformance checking of media files, suited for use within the OAIS Reference Framework.

- OMC is a component-oriented toolkit
 - Shell
 - Conformance Checker
- OMC is an open source project
 - Work practices
 - Standardization efforts
 - Business opportunities
- OMC supports JPEG 2000 as a preservation format

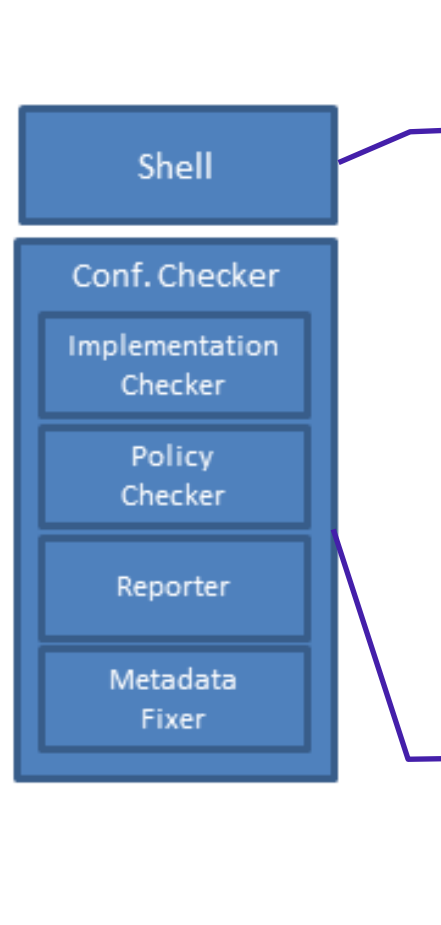
OpenMediaCheck

a component-oriented toolkit

Technical requirements

Software

- Cross-platform
- Modular
- Deployment
 - local
 - network
 - Legacy
- Interfaces via API's

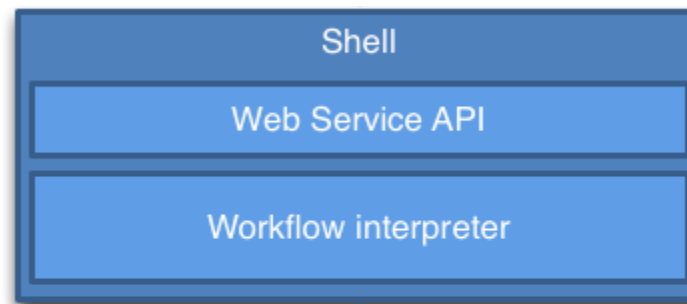


- Allow integration of other suppliers' components
- Facilitate conformance checking at 4 moments in doc life cycle
- Processing possibly
 - Automated
 - Periodical
 - In batch
- No internet required
- Usable by non-experts
- A Conformance Checker for MKV-JPEG 2000-LPCM with 4 functional components

OMC follows a layered architecture

Software

- Cross-platform
- Modular
- Deployment
 - local
 - network
 - Legacy
- Interfaces via API's

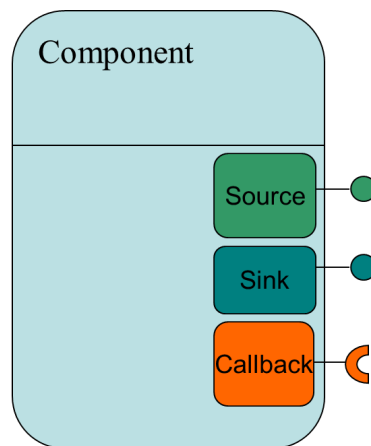


- Web Browser/HTML5
- Command Line

- NodeJS (Win, OSX, linux)
- Component-based
- Webservice + DLL API
- Data-flow programming
- File-based communication

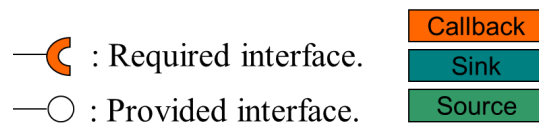
The Shell is a component-oriented platform

- Anything is a component:
“a reusable and independent software unit with exported and imported Input/Output interfaces.”

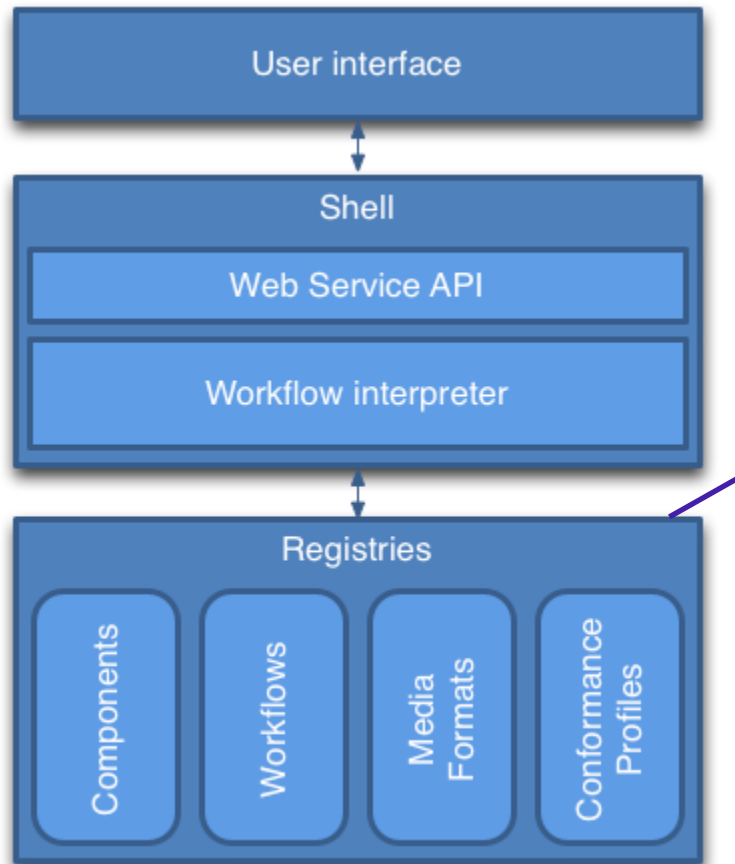


Media type
audio
document
image
video

File formats
AC3, AIFF, MP3, WAV, WMA
TXT, PDF, DOC, WPD, RTF, DOCX, PPTX, XLSX, PPT, XML
BMP, GIF, JPG, JP2, J2K, PCT, PNG, PSD, TIFF, TGA, 3FR, ARW, CR2, CRW, DCR, DNG, ERF, KDC, MRW, NEF, ORF, PEF, RAF, RAW, X3F, AI, EPS, SVG
AVI, FLV, MOV, MPEG-1, MPEG-2, MPEG-4, SWF, WMV



Component-based design allows reusability and extensibility



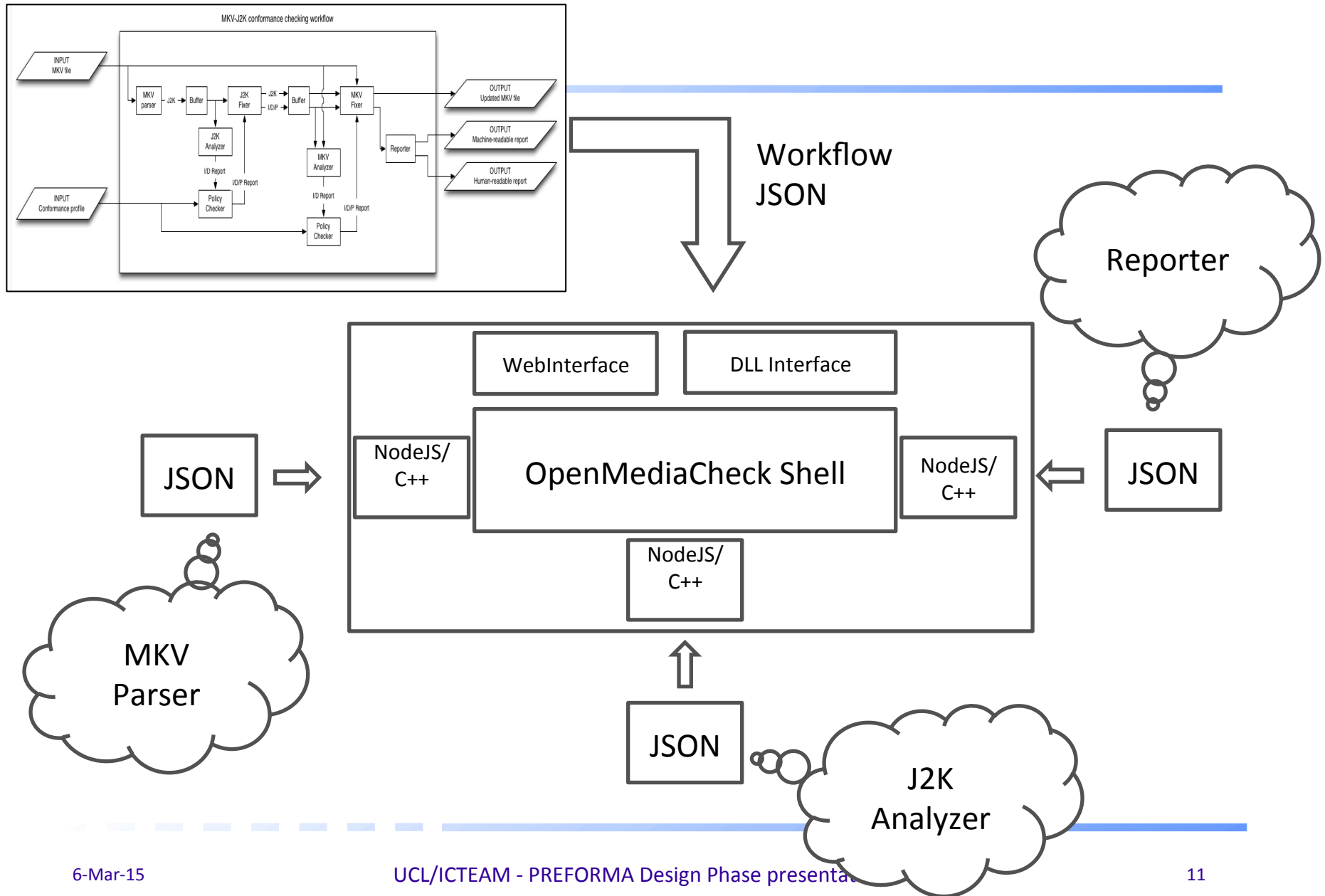
Components are autonomous processing units

- J2K Analyzer (J2K implementation checking)
- MKV Analyzer
- Policy Checker
- Other suppliers' conformance checkers
- *etc*

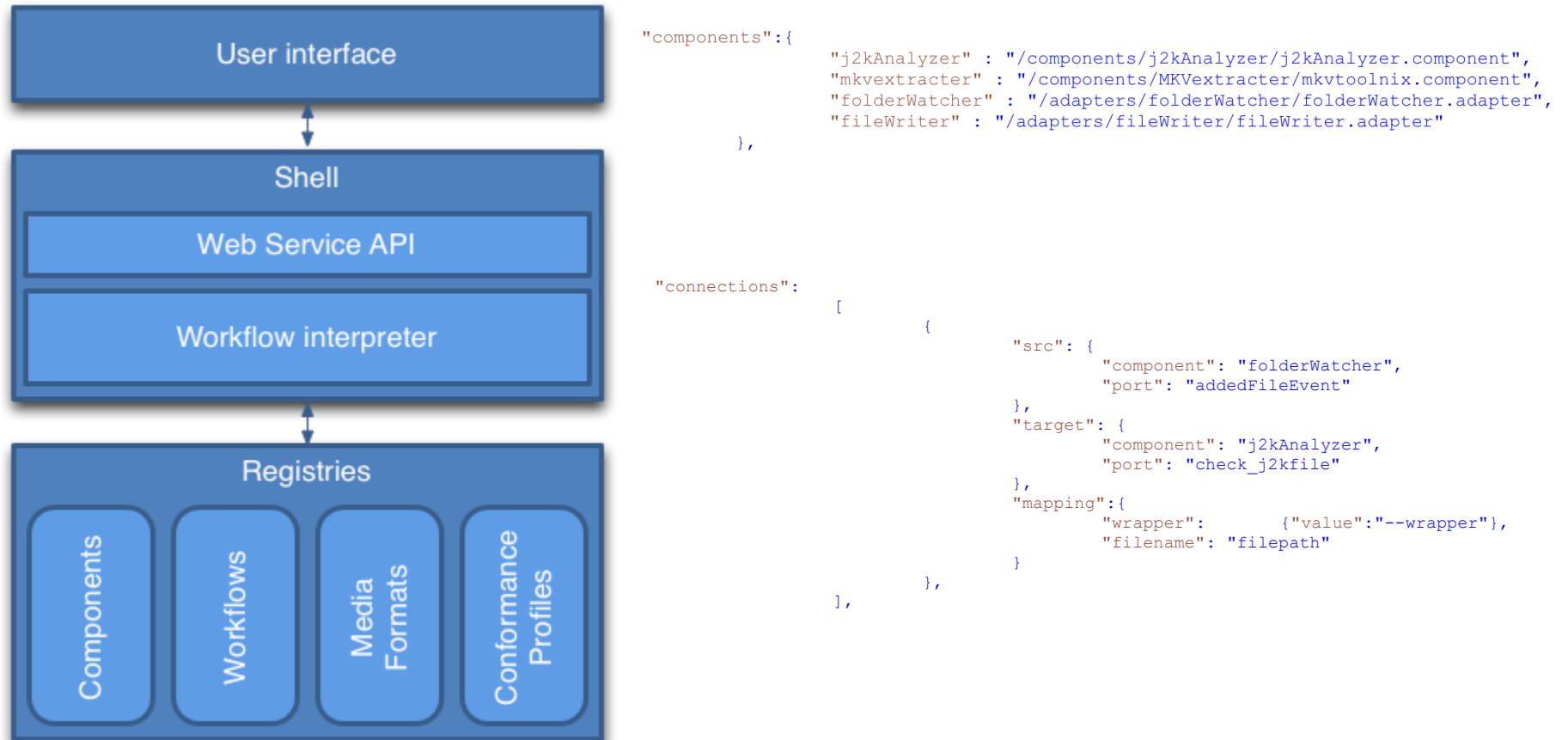
But also ...

- Scheduler → Periodical checks
- Directory Watcher → Batch processing
- *etc*

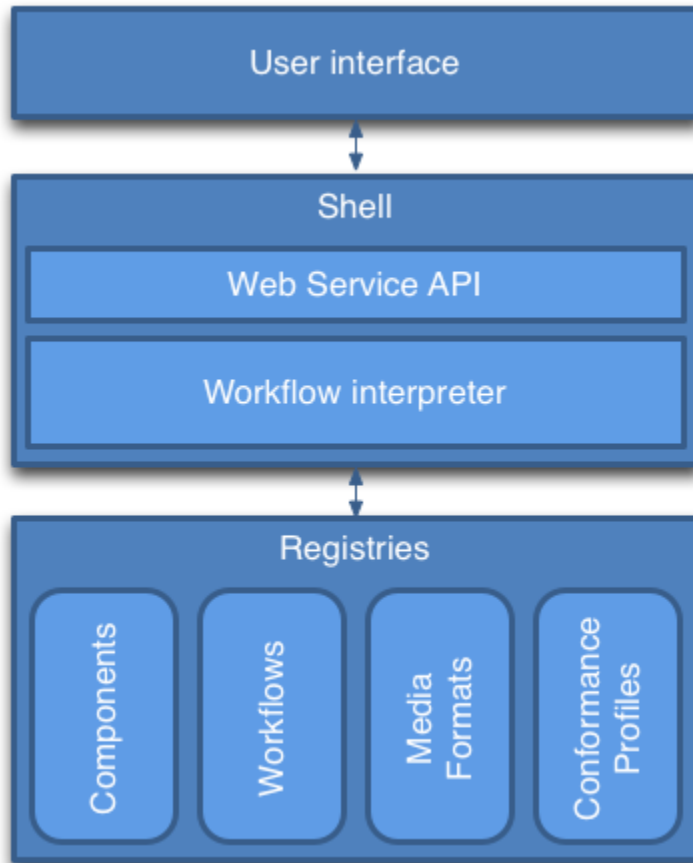
Shell Overview



Workflow is specified in JSON



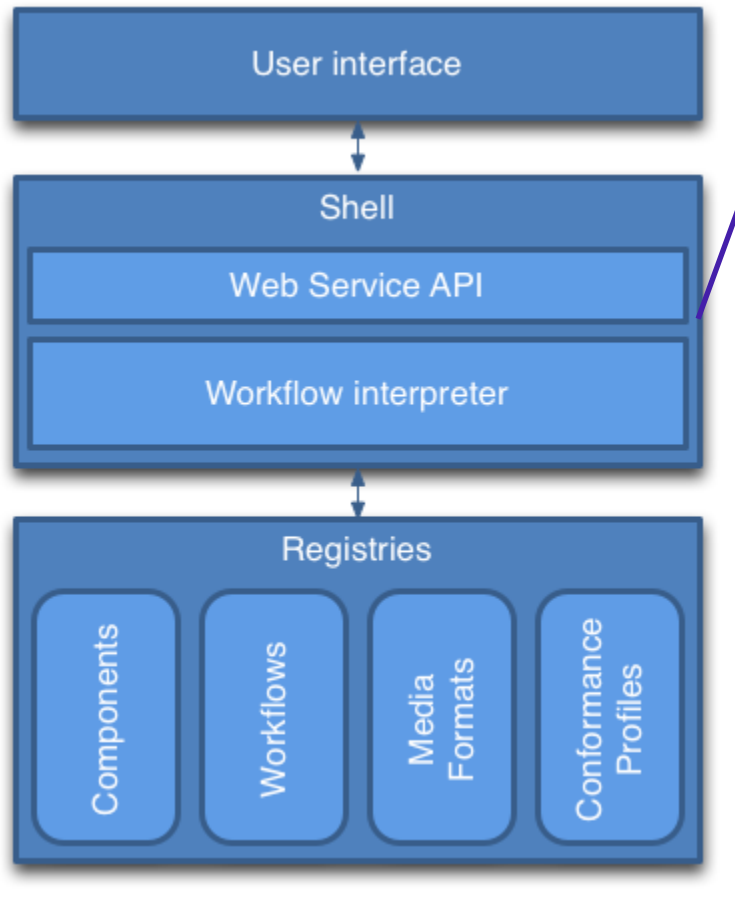
Component interface is specified in JSON



```

"runtime": {
  "win32":{
    "format": "exe",
    "cmd": "j2kAnalyzer.exe",
    "wd": "j2kAnalyzer_win32",
    "path": "j2kAnalyzer_win32",
    "start": "",
    "stop": ""
  },
  "osx":{
    "format": "exe",
    "cmd": "j2kAnalyzer.py",
    "wd": "j2kAnalyzer_osx",
    "path": "j2kAnalyzer_osx",
    "start": "",
    "stop": ""
  }
},
"inports": {
  "check_j2kfile":{
    "transport": {
      "type": "exe_args",
      "args":{
        "verbose": {"value": ["", "--verbose"]},
        "wrapper": {"value": ["", "--wrapper"]},
        "nullxml": {"value": ["", "--nullxml"]},
        "nopretty": {"value": ["", "--nopretty"]},
        "filename": {
          "type": "file",
          "media": "video",
          "format": ["j2k", "jp2"],
          "mandatory": "true"
        },
        "outfile": {
          "type": "file",
          "media": "video",
          "format": ["j2k", "jp2"],
          "mandatory": "false",
          "refID": "output_001"
        }
      }
    }
  }
},
"metadata":{
  "forward": "true"
}
}
  
```

The Shell's core features

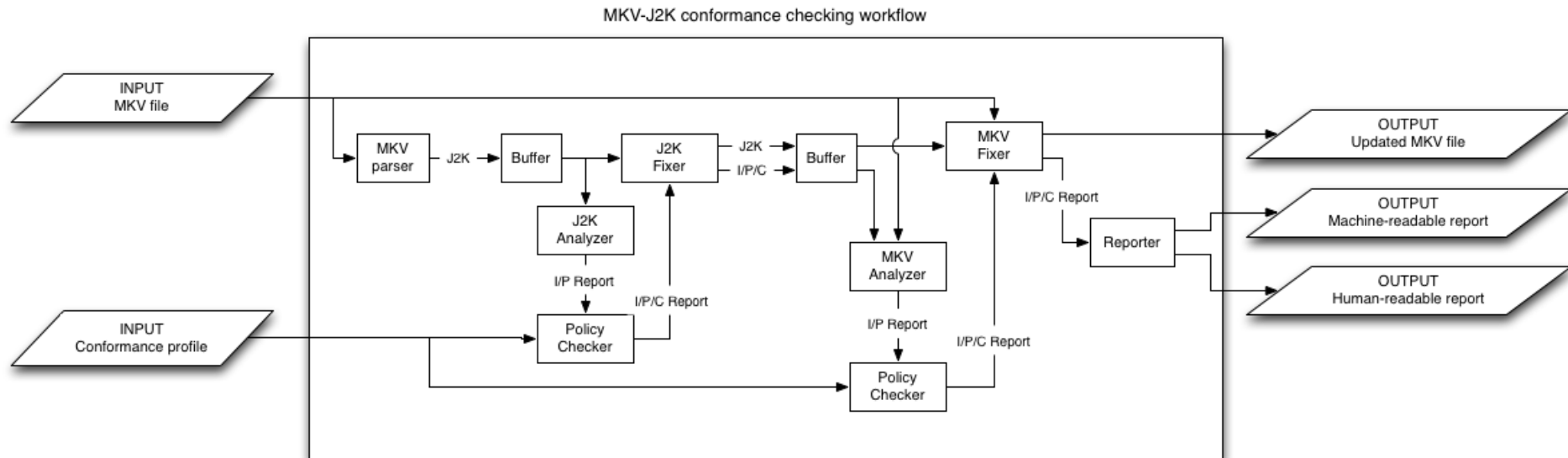


The Shell

a light and portable web service running complex workflows based on autonomous media processing units.

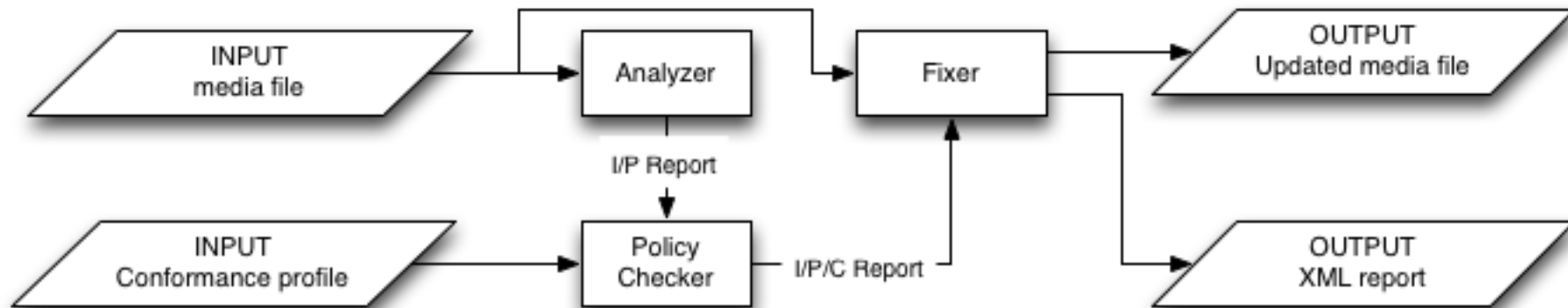
- ✓ Cross-platform (based on NodeJS)
- ✓ Deploys indifferently locally or remotely
- ✓ Minimizes components dependencies to facilitate suppliers collaboration
- ✓ Wraps easily third-party code into a functional component
- ✓ Allows integration in legacy systems as
 - a web service
 - an executable
 - a DLL

The Conformance Checker is a workflow



... Specified in the workflow syntax (JSON)

Conformance Checking mechanism: 3 steps

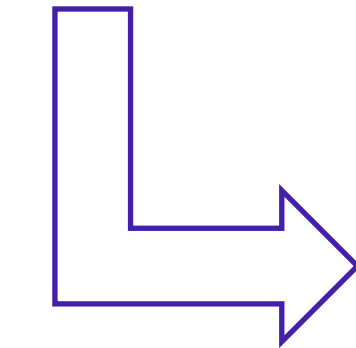


Based on mechanism used by *jpylyzer* team

1. Analyzer checks for conformance with the corresponding specification
→ Outputs a report with all media properties (following a *media XML schema*)
2. Policy Checker assesses the Analyzer report with the Conformance Profile
→ Xml validation process using *Schematron ISO Standard*
3. Fixer corrects metadata based on Policy Checker report

Conformance profile

```
<!-- check JPEG 2000 required properties -->
<s:rule context="/report/media/properties/contiguousCodestreamBox/siz">
  <s:assert test="xTsiz = '1920'">wrong X Tile size</s:assert>
  <s:assert test="yTsiz = '1080'">wrong Y Tile size</s:assert>
  <s:assert test="csiz = '3'">wrong number of components</s:assert>
</s:rule>
```



assesses

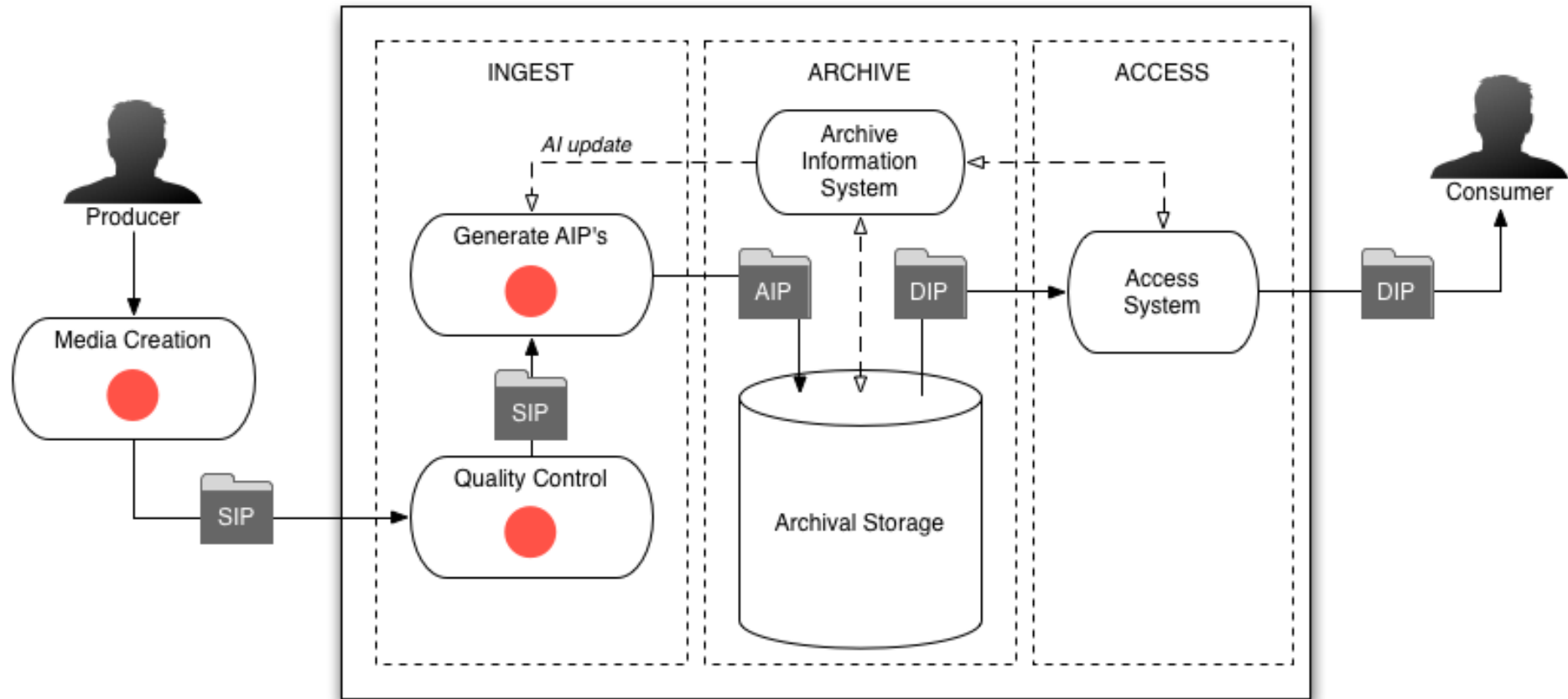
```
<contiguousCodestreamBox>
  <siz>
    <lsiz>47</lsiz>
    <rsiz>ISO/IEC 15444-1</rsiz>
    <xsiz>2717</xsiz>
    <ysiz>3701</ysiz>
    <xOsiz>0</xOsiz>
    <yOsiz>0</yOsiz>
    <xTsiz>1920</xTsiz>
    <yTsiz>1080</yTsiz>
    <xTOsiz>0</xTOsiz>
    <yTOsiz>0</yTOsiz>
    <numberOfTiles>12</numberOfTiles>
    <csiz>3</csiz>
  </siz>
<...>
</contiguousCodestreamBox>
```

OMC not specific to long-term preservation but suited for the OAIS Framework

- Easily integrates conformance checkers for other file formats
- Easily integrates additional functionalities to address other OAIS functions
 - Transcoding
 - Content quality control
 - ...

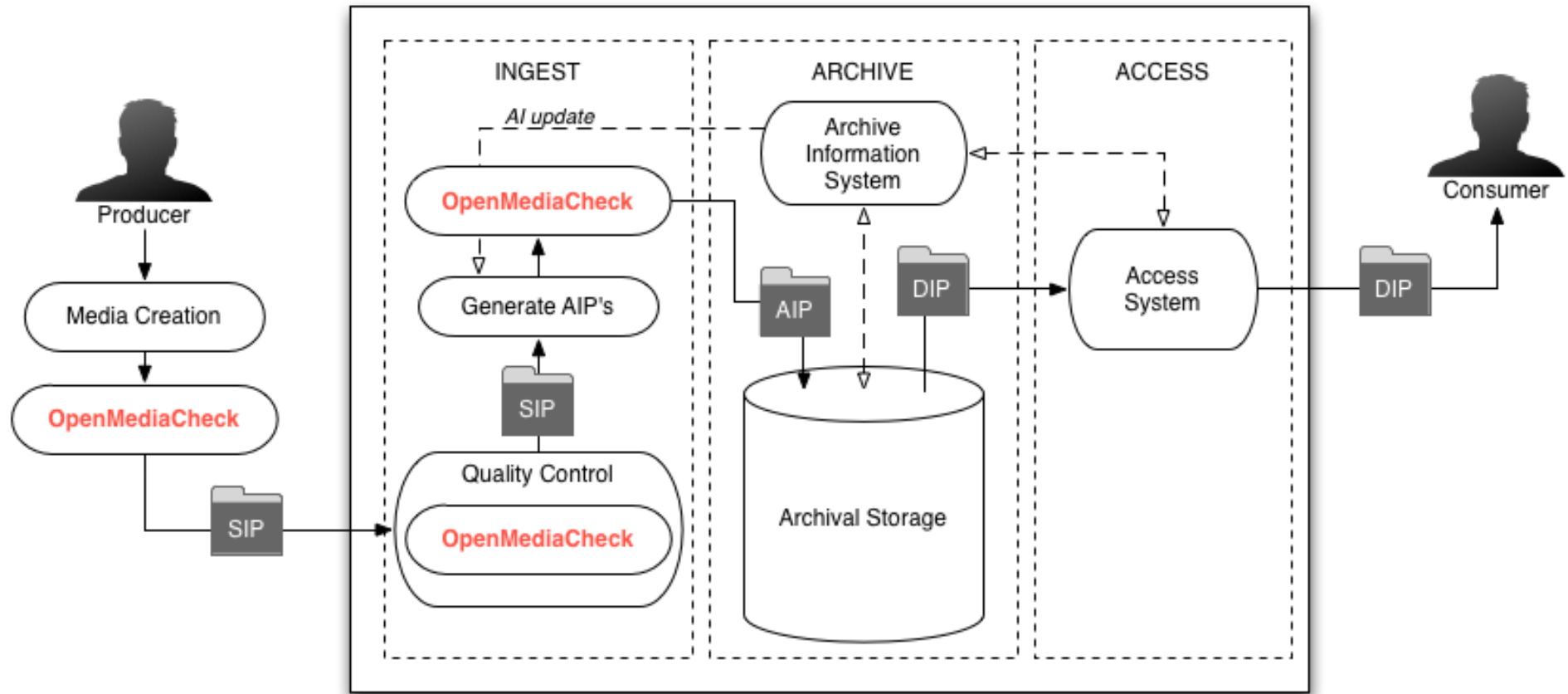
OMC fits in an OAIS Environment

OAIS simplified schema



OMC fits in an OAIS Environment

OAIS simplified schema



Open
Media
Check

Dashboard



Jacques Brel

[logout](#)

Dashboard

Workflows

Run

Edit

Create

Conformance Profiles

Edit

Create

Registries

Components

Workflows

Profiles

Completed workflows

Name	Description file	Inputs	Outputs	Completion date	Status	Actions
Conformance Checker	omc_ccheck.json	elanaveva.mkv	<multiple>	29/05/2015 09:15	✓	↻
Conformance Checker	omc_ccheck.json	<multiple>	<multiple>	03/06/2015 10:05	✓	↻
Quality Control	omc_qc.json	goodbadugly.aip	<multiple>	04/06/2015 11:38	⚠	↻

More ↕

Running workflows

Name	Description file	Inputs	Start date	Completion	Current status	Actions
Conformance Checker	omc_ccheck.json	bergman.mkv	04/06/2015 12:15	54%	✓	✕

Scheduled workflows

Name	Description file	Inputs	Scheduled date	Completion date	Actions
Quality Control	omc_qc.json	<multiple>	05/06/2015 11:00	29/05/2015 09:15	✕
Conformance Checker	omc_ccheck.json	receipt.pdf	06/06/2015 11:00	03/06/2015 10:05	✕



Dashboard

Workflows

Run

Edit

Create

Conformance Profiles

Edit

Create

Registries

Components

Workflows

Profiles

Please fill in the workflow's parameters

Input file or folder

watch directory

Output report path

Output archive path

Conformance profile

Scheduled start

Select a date

- daily
- weekly
- monthly

[Dashboard](#)

Workflows

[Run](#)[Edit](#)[Create](#)Conformance
Profiles[Edit](#)[Create](#)

Registries

[Components](#)[Workflows](#)[Profiles](#)

Summary

- Input file: "archive.mkv"



valid MKV file



not compliant with profile "ina_profile.sch" ([see failing tests](#))



[media properties](#)

- Input file: "archive2.mkv"



not valid MKV file ([see failing tests](#))



not compliant with profile "ina_profile.sch" ([see failing tests](#))



[media properties](#)

- Input file: "archive3.mkv"



not valid MKV file ([see failing tests](#))



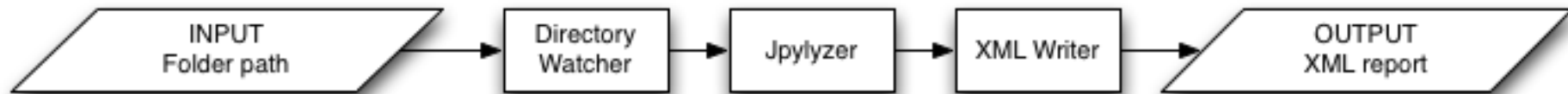
not compliant with profile "ina_profile.sch" ([see failing tests](#))

[Download full XML report](#)

[Download full PDF report](#)

Proof-of-Concept

- A minimalist POC has been developed
- Basic workflow:

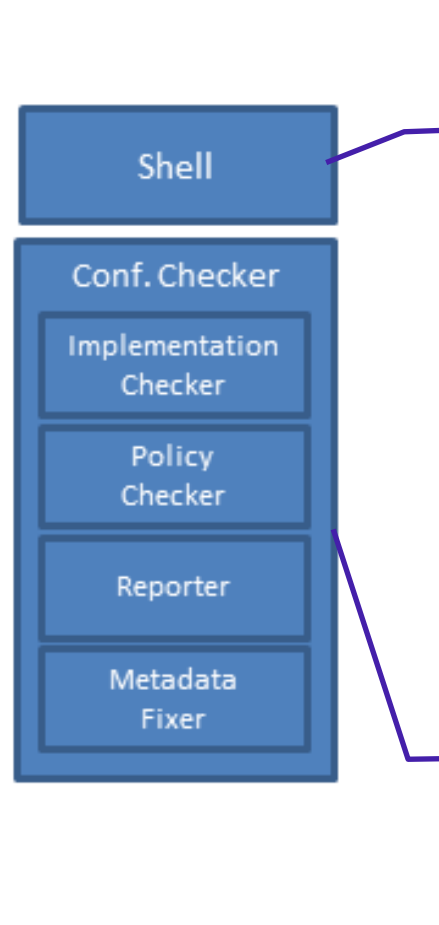


- Allows us to validate
 - ✓ File-based transport
 - ✓ Stream-based transport
 - ✓ Exe Component Integration
 - ✓ Workflow description completeness
 - ✓ Cross-platform deployment
 - ✓ Command-line interface
 - ✓ Easy deployment
 - ✓ Web service bindings

Back to requirements ...

Software

- ✓ Cross-platform/NodeJS
- ✓ Modular/Components
- ✓ Deployment/Webservice
 - local
 - network
 - Legacy
- ✓ Interfaces via API's/
Webservice & DLL



- ✓ Allow integration of other suppliers' components/Components
- ✓ Facilitate conformance checking at 4 moments in doc life cycle/API
- ✓ Processing possibly/Scheduling Components
 - Automated
 - Periodical
 - In batch
- ✓ No internet required/Local Webservice
- ✓ Usable by non-experts/GUI & High level data types
- ✓ A Conformance Checker for MKV-JPEG 2000-LPCM with 4 functional components/Components

OpenMediaCheck

an open source project

How do we manage OpenJPEG ?

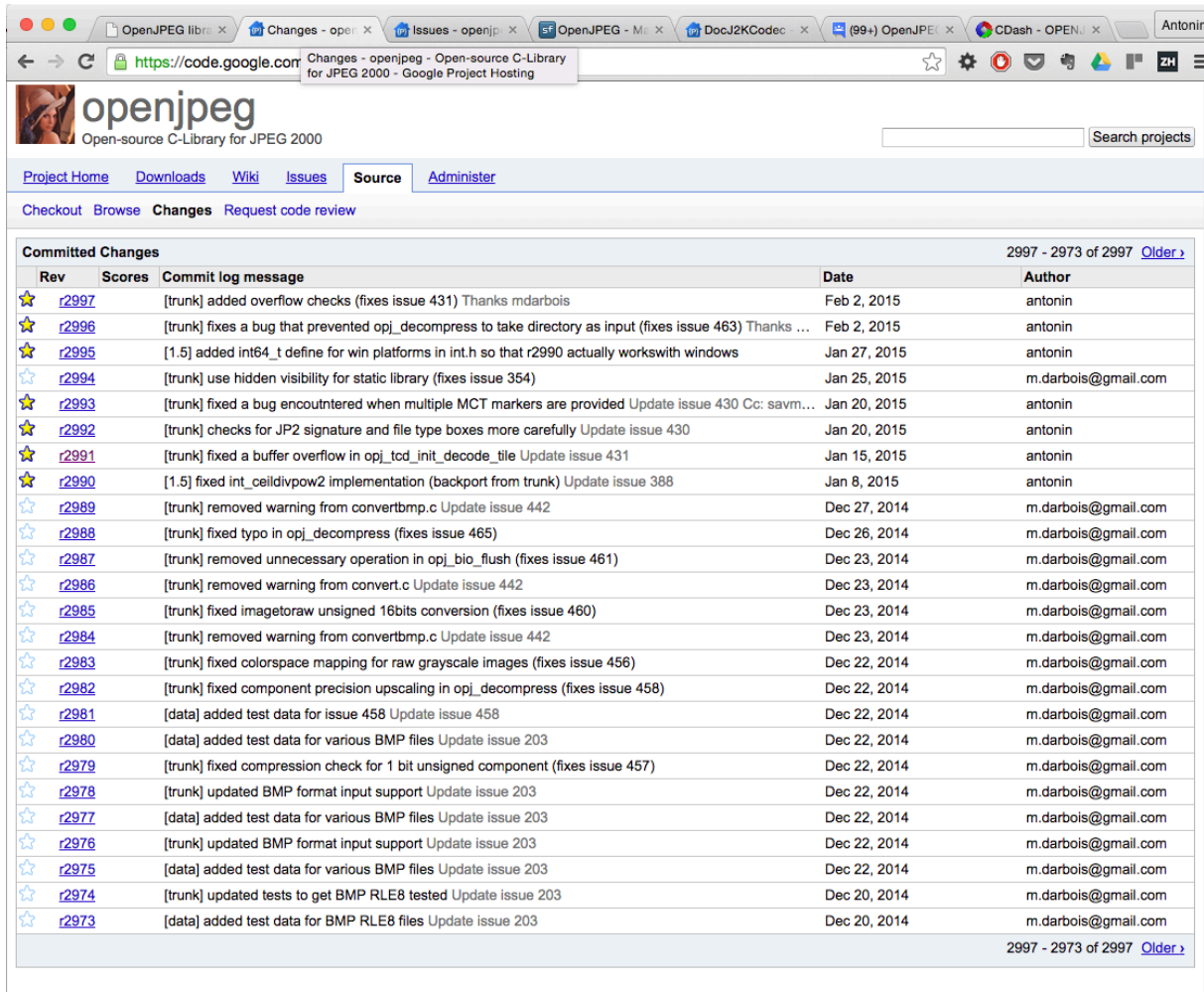


The screenshot shows the OpenJPEG homepage in a browser window. The page title is "Welcome to the OpenJPEG homepage". The left sidebar contains navigation links: Home, News, Downloads, Documentation, and Samples. Below the sidebar are logos for intoPIX, UCL, icteam, ES, cnes, and ED-CINE. The main content area includes a "Latest project revisions" section with three entries, a "What is OpenJPEG ?" section, a "Who can use the library ?" section, a "Who is developing the library ?" section, and a "For questions, comments or requests concerning the OpenJPEG project, please join the OpenJPEG group." section.

www.openjpeg.org

- ~ 8500 visitors/month
- 57% new visitors
- Knowns users
 - Chromium
 - Debian
 - ImageMagick
 - GhostScript
 - ...

Code repository



OpenJPEG - Open-source C-Library for JPEG 2000

Project Home Downloads Wiki Issues **Source** Administer

Checkout Browse **Changes** Request code review

Committed Changes 2997 - 2973 of 2997 Older >

Rev	Scores	Commit log message	Date	Author
r2997		[trunk] added overflow checks (fixes issue 431) Thanks mdarbois	Feb 2, 2015	antonin
r2996		[trunk] fixes a bug that prevented opj_decompress to take directory as input (fixes issue 463) Thanks ...	Feb 2, 2015	antonin
r2995		[1.5] added int64_t define for win platforms in int.h so that r2990 actually workswith windows	Jan 27, 2015	antonin
r2994		[trunk] use hidden visibility for static library (fixes issue 354)	Jan 25, 2015	m.darbois@gmail.com
r2993		[trunk] fixed a bug encountered when multiple MCT markers are provided Update issue 430 Cc: savm...	Jan 20, 2015	antonin
r2992		[trunk] checks for JP2 signature and file type boxes more carefully Update issue 430	Jan 20, 2015	antonin
r2991		[trunk] fixed a buffer overflow in opj_tcd_init_decode_tile Update issue 431	Jan 15, 2015	antonin
r2990		[1.5] fixed int_cceildivpow2 implementation (backport from trunk) Update issue 388	Jan 8, 2015	antonin
r2989		[trunk] removed warning from convertbmp.c Update issue 442	Dec 27, 2014	m.darbois@gmail.com
r2988		[trunk] fixed typo in opj_decompress (fixes issue 465)	Dec 26, 2014	m.darbois@gmail.com
r2987		[trunk] removed unnecessary operation in opj_bio_flush (fixes issue 461)	Dec 23, 2014	m.darbois@gmail.com
r2986		[trunk] removed warning from convert.c Update issue 442	Dec 23, 2014	m.darbois@gmail.com
r2985		[trunk] fixed imageraw unsigned 16bits conversion (fixes issue 460)	Dec 23, 2014	m.darbois@gmail.com
r2984		[trunk] removed warning from convertbmp.c Update issue 442	Dec 23, 2014	m.darbois@gmail.com
r2983		[trunk] fixed colorspace mapping for raw grayscale images (fixes issue 456)	Dec 22, 2014	m.darbois@gmail.com
r2982		[trunk] fixed component precision upscaling in opj_decompress (fixes issue 458)	Dec 22, 2014	m.darbois@gmail.com
r2981		[data] added test data for issue 458 Update issue 458	Dec 22, 2014	m.darbois@gmail.com
r2980		[data] added test data for various BMP files Update issue 203	Dec 22, 2014	m.darbois@gmail.com
r2979		[trunk] fixed compression check for 1 bit unsigned component (fixes issue 457)	Dec 22, 2014	m.darbois@gmail.com
r2978		[trunk] updated BMP format input support Update issue 203	Dec 22, 2014	m.darbois@gmail.com
r2977		[data] added test data for various BMP files Update issue 203	Dec 22, 2014	m.darbois@gmail.com
r2976		[trunk] updated BMP format input support Update issue 203	Dec 22, 2014	m.darbois@gmail.com
r2975		[data] added test data for various BMP files Update issue 203	Dec 22, 2014	m.darbois@gmail.com
r2974		[trunk] updated tests to get BMP RLE8 tested Update issue 203	Dec 20, 2014	m.darbois@gmail.com
r2973		[data] added test data for BMP RLE8 files Update issue 203	Dec 20, 2014	m.darbois@gmail.com

2997 - 2973 of 2997 Older >

Mailing-list

OpenJPEG Partagé en mode public
30 sur 1119 sujets (99+ non lus) ★ 8+1

Ce groupe ne comporte pas de message de bienvenue.
[Ajouter un message de bienvenue](#)

1 sujet mis à jour

<input type="checkbox"/>	★	📧	Topic	Messages	Date
<input type="checkbox"/>	★	📧	What is "quality layer" ? (1)	1 message	3 mars
<input type="checkbox"/>	★	📧	opj_get_decoded_tile question (1)	1	23 févr.
<input type="checkbox"/>	★	📧	JNI Issues (39)	41	20 févr.
<input type="checkbox"/>	★	📧	Re: [OpenJPEG] Using the Irreversible parameter (3)	3	19 févr.
<input type="checkbox"/>	★	📧	Using the Irreversible parameter (1)	2	19 févr.
<input type="checkbox"/>	★	📧	Enhancing JPEG 2000 decompression (thesis) (6)	6	17 févr.
<input type="checkbox"/>	★	📧	Is it possible to specify compression ratio to particular tile ?	6	17 févr.
<input type="checkbox"/>	★	📧	[OpenJPEG] set reduce factor may fail (1)	2	12 févr.
<input type="checkbox"/>	★	📧	Install instructions (1)	2	12 févr.
<input type="checkbox"/>	★	📧	opj_compress with jpip option is not working? (4)	4	11 févr.
<input type="checkbox"/>	★	📧	[OpenJPEG] JPEG 2000 viewer for Linux? (4)	4	9 févr.
<input type="checkbox"/>	★	📧	compiling ffmpeg with openjpeg2	7	4 févr.
<input type="checkbox"/>	★	📧	tier2 question (4)	6	22 janv.
<input type="checkbox"/>	★	📧	off by one bug maybe... (1)	2	20 janv.
<input type="checkbox"/>	★	📧	Re: [OpenJPEG] Enhancing JPEG 2000 decompression (thesis) (1)	1	5 janv.
<input type="checkbox"/>	★	📧	How to replace file_stream by byte_stream? (15)	15	30/12/2014

- 664 members
- ~ 5 additional members/month

Issue tracker

The screenshot shows the OpenJPEG issue tracker interface. At the top, there's a navigation bar with links for Project Home, Downloads, Wiki, Issues (selected), Source, and Administer. Below this is a search bar and a list of issues. The issues are displayed in a table with the following columns: ID, Type, Status, Priority, Milestone, Owner, Summary + Labels, OpSys, OpJVersion, and Modified. The table contains 17 rows of issue data.

ID	Type	Status	Priority	Milestone	Owner	Summary + Labels	OpSys	OpJVersion	Modified
3	Defect	Accepted	Low	---	mathieu.malaterre	Need public function to tell kernel type used (5x3 vs 9x7)	---	---	Mar 2014
9	Defect	New	Low	openjpeg3d	---	Maximum bit depth supported by the OpenJPEG implementation of JP3D	---	---	Feb 2014
39	Defect	Accepted	Low	---	---	Improve support for region of interest	---	---	Mar 2014
45	Defect	Started	Low	---	---	Access to raw ICC profile data	---	---	Feb 2014
53	Defect	Started	Low	---	antonin	› MJ2 files not using OPENJPEG API correctly	---	---	Feb 2014
61	Defect	Accepted	Low	openjpeg3d	antonin	› integer constant is too large for 'long' type	---	---	May 2012
64	Defect	Accepted	Low	---	antonin	› take into account dx and dy values when allocating the data field of opj_image_comp_t	---	---	Feb 2014
93	Defect	New	Low	---	---	error from mxr samma profile	---	---	Feb 2014
94	Defect	Accepted	Low	---	---	Large single-tile image and memory: need low level streaming implementation	---	---	Mar 2014
97	Enhancement	Accepted	Low	---	savmickael	Add a JPIP test suite	---	---	Feb 2014
98	Enhancement	New	Low	---	savmickael	Add a JPWL test suite	---	---	Feb 2014
102	Defect	Accepted	Low	---	---	OPJViewer suggested fixes for Win64 (and Win32)	---	---	Feb 2014
116	Defect	Accepted	Low	---	Kaori.Hagihara	openjpeg vs kdu_show	---	---	Feb 2014
117	Defect	Accepted	Low	---	Kaori.Hagihara	Support JPIP from kakadu website	---	---	Feb 2014
121	Enhancement	New	Low	---	---	Update 3rd Parties	---	---	Feb 2014
124	Defect	Accepted	Low	---	Kaori.Hagihara	JPIP requires OpenJDK	---	---	Feb 2014
128	Enhancement	Started	Medium	Release2.1	mathieu.malaterre	Uniformize code syntax	---	---	Sep 30
130	Defect	Accepted	Low	Release2.1	---	Information messages in the command prompt cannot be eliminated	---	---	Mar 2014
135	Defect	Started	High	Release2.1	mathieu.malaterre	Problem with second layer of a 2 layer coded LRCP (with precincts)	---	---	Apr 2014
136	Defect	Accepted	Low	---	---	Byte_t * fetch_bytes(int fd, long offset, int size)	---	---	Feb 2014
137	Defect	Accepted	Low	---	---	JPWL is broken in trunk	---	---	Feb 2014

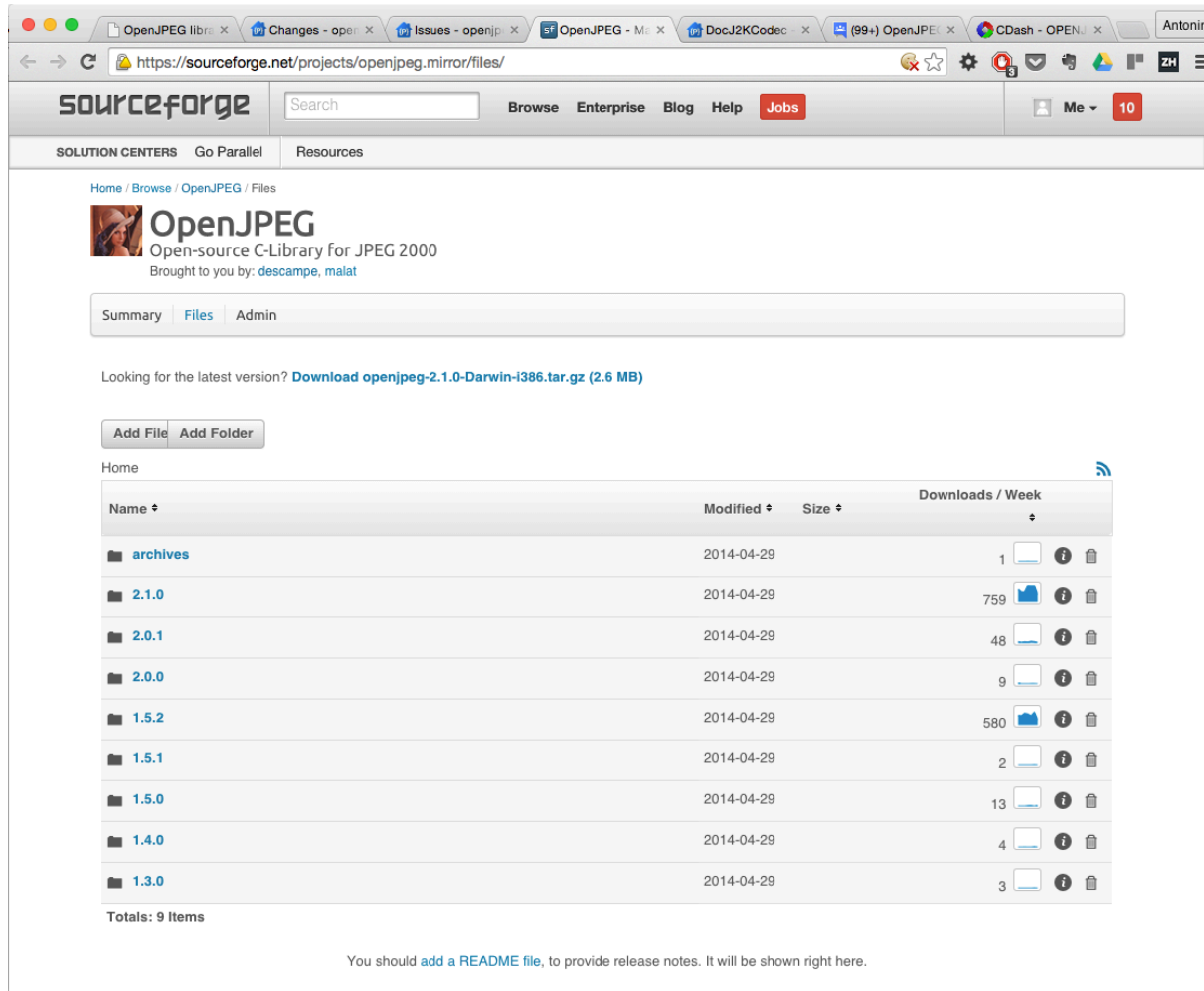
Documentation on wiki

The screenshot shows a web browser window displaying the OpenJPEG wiki page for the DocJ2KCodec. The browser's address bar shows the URL <https://code.google.com/p/openjpeg/wiki/DocJ2KCodec>. The page header includes the OpenJPEG logo and the text "Open-source C-Library for JPEG 2000". A navigation menu contains links for "Project Home", "Downloads", "Wiki", "Issues", "Source", and "Administer". Below the navigation menu is a search bar and a "New page" button. The main content area is titled "DocJ2KCodec" and includes the subtitle "Documentation for the JPEG 2000 codec" and a timestamp "Updated Mar 25, 2014 by antonin". A left sidebar contains a "What's New?" section with links to "Installation", "Downloads", "Documentation", "Tests", "Development Guidelines", "Roadmap", and "GSoc". The main content area features a bulleted list of links: "opj_compress" (with sub-links for "Description", "Usage", "Default options", and "JPWL options"), "opj_decompress" (with sub-links for "Description", "Usage", and "JPWL options"), and "Other implementations". Below the list is a "Note" paragraph explaining naming conventions for executables in different versions of OpenJPEG. The page also has sections for "opj_compress", "Description", and "Usage". The "Usage" section shows a code block:

```
opj_compress ...  
  
-i <file>
```

 followed by a detailed paragraph about input file requirements and options.

Binary releases



The screenshot shows the SourceForge project page for OpenJPEG. The page title is "OpenJPEG" and it is described as "Open-source C-Library for JPEG 2000". The page is divided into sections for "Summary", "Files", and "Admin". A link is provided for downloading the latest version: "Download openjpeg-2.1.0-Darwin-i386.tar.gz (2.6 MB)". Below this, there is a table of releases.

Name	Modified	Size	Downloads / Week
archives	2014-04-29		1
2.1.0	2014-04-29		759
2.0.1	2014-04-29		48
2.0.0	2014-04-29		9
1.5.2	2014-04-29		580
1.5.1	2014-04-29		2
1.5.0	2014-04-29		13
1.4.0	2014-04-29		4
1.3.0	2014-04-29		3

Totals: 9 Items

You should [add a README file](#), to provide release notes. It will be shown right here.

- Last releases:
1300 downloads/w

Continuous integration

my.cdash.org/index.php?project=OPENJPEG

Thursday, March 05 2015 09:52:48 EST

OPENJPEG

Dashboard Calendar Previous Current Project

No file changed as of **Wednesday, March 04 2015 - 22:00 EST**

8 hours ago: 24 tests failed on XUbuntu12.04-64bits-gcc463-Debug-3rdP
 8 hours ago: 31 tests failed on XUbuntu12.04-64bits-gcc463-Release
 8 hours ago: 3 warnings introduced on XUbuntu12.04-64bits-gcc463-Release
 8 hours ago: 31 tests failed on XUbuntu12.04-64bits-gcc463-Debug
 8 hours ago: 1 warning introduced on XUbuntu12.04-64bits-gcc463-Debug

See full feed

Nightly Expected

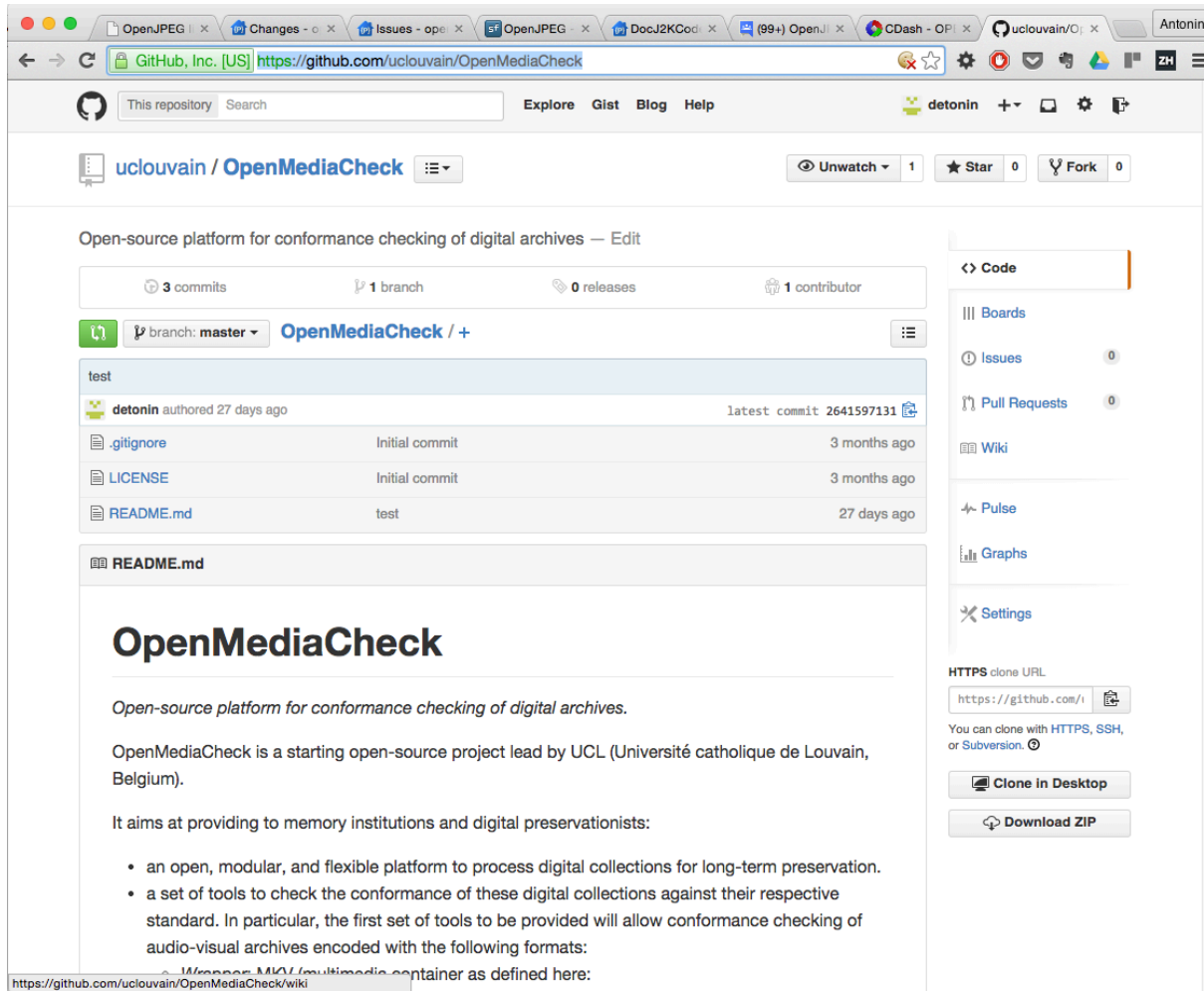
Site	Build Name	Update			Configure		Build		Test			Build Time
		Files	Error	Warn	Error	Warn	Not Run	Fail	Pass			
IPX1	Win7-VS2010-32bits-trunk-Debug-3rdP	0	0	0	0	20	0	66	915	10 hours ago		
IPX1	Win7-VS2010-32bits-trunk-Release-3rdP	0	0	0	0	20	0	66	915	10 hours ago		
IPX1	Win7-VS2010-64bits-trunk-Debug-3rdP	0	0	0	0	20	0	58	923	9 hours ago		
IPX1	Win7-VS2010-64bits-trunk-Release-3rdP	0	0	0	0	20	0	58	923	9 hours ago		
dora.c-s.fr	XUbuntu12.04-64bits-gcc463-Release	0	0	0	0	3	0	31	850	8 hours ago		
dora.c-s.fr	XUbuntu12.04-64bits-gcc463-Debug	0	0	0	0	1	0	31	850	8 hours ago		
leod.c-s.fr	MacOSX10.8-32bits-Debug-3rdP	0	0	0	0	0	0	24	857	8 hours ago		
dora.c-s.fr	XUbuntu12.04-64bits-gcc463-Debug-3rdP	0	0	0	0	0	0	24	857	8 hours ago		
leod.c-s.fr	MacOSX10.8-32bits-Debug	0	0	0	0	0	0	22	859	8 hours ago		
leod.c-s.fr	MacOSX10.8-32bits-Release	0	0	0	0	0	0	22	859	8 hours ago		

Nightly Release v1.5

Site	Build Name	Update			Configure		Build		Test			Build Time
		Files	Error	Warn	Error	Warn	Not Run	Fail	Pass			
ks200451	linux_clang-v1.5-debug										Expected build	
ks200451	linux_clang_analyzer-v1.5-debug										Expected build	

- Based on CDash & CTest
- Test suite in a specific repo
- Test data
 - Conformance tests
 - Corrupted images
 - Correct images
- Nightly build & test
- Platforms
 - Windows
 - Linux
 - MacOSX

OpenMediaCheck ... Idem !



- Website
→ openmediacheck.org
- Repo
- Mailing-list
- Tracker
- Releases
- Wiki
- Github

Continuous integration with Jenkins

The screenshot shows the Jenkins web interface for the 'OpenJPEG' project. The dashboard includes a sidebar with navigation options like 'New Item', 'People', 'Build History', and 'Build Queue'. The main content area is titled 'Dashboard OpenJPEG' and contains several data-rich sections:

- Test Statistics Grid:** A table showing success, failed, and skipped counts for various jobs.
- Test Statistics Chart:** A pie chart visualizing the distribution of build statuses.
- Latest builds:** A list of recent build runs with their job names, build numbers, and completion times.
- Job statistics:** A table detailing the health and failure rates of different job categories.
- Build statistics:** A summary table of overall build performance.
- Slaves statistics:** Information about the status of build agents (slaves).

Job	Success #	Success %	Failed #	Failed %	Skipped #	Skipped %	Total #
OpenJPEG-c6	947	97%	34	3%	0	0%	981
OpenJPEG-c7	0	0%	0	0%	0	0%	0
OpenJPEG-debian	0	0%	0	0%	0	0%	0
OpenJPEG-fedora	0	0%	0	0%	0	0%	0
OpenJPEG-ubuntu	956	97%	25	3%	0	0%	981
Total	1903	97%	59	3%	0	0%	1962

Status	Count	Percentage
Success	1,903	97%
Failed	59	3%
Skipped	0	0%

Job	Build #	Time
OpenJPEG-ubuntu	#1	Mar 5, 2015 7:27:46 F
OpenJPEG-c6	#8	Mar 5, 2015 6:51:10 F
OpenJPEG-c6	#7	Mar 5, 2015 6:33:53 F
OpenJPEG-c6	#6	Mar 5, 2015 6:25:35 F
OpenJPEG-c6	#5	Mar 5, 2015 6:13:47 F
OpenJPEG-c7	#1	Mar 5, 2015 5:53:51 F

Job health	Description	Number of jobs
☀️	No recent builds failed	0
☀️	20-40% of recent builds failed	0
☀️	40-60% of recent builds failed	0
☀️	60-80% of recent builds failed	0
☀️	All recent builds failed	3
☀️	Unknown status	2
Total jobs	All jobs	5

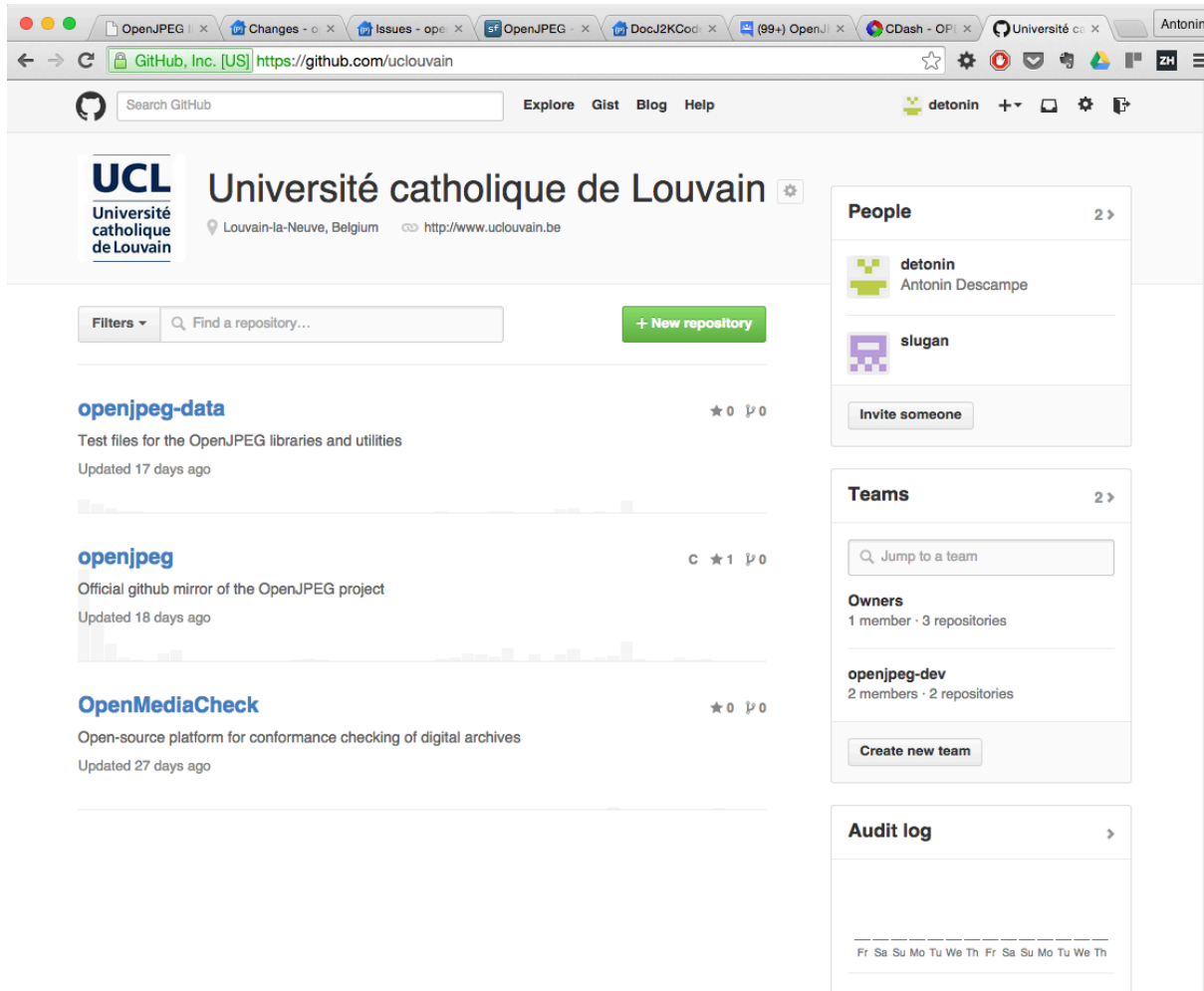
Status of the build	Description	Number of builds	Percentage of total builds
Total builds	All builds	0	

Slaves	Online slaves	Offline slaves	Disconnected slaves	Tasks in queue	Runn jobs

Jenkins server hosted @ UCL

ci.openmediacheck.org

Further enable OMC Community



- Create synergies between OMC and OpenJPEG (or other UCL projects)
→ OpenJPEG is being migrated to Github
- OMC not restricted to long-term preservation
→ Enlarges the potential community

OMC Community Manager

- Contributions follow-up
- Regular releases
- Communication around the project through
 - Website
 - Social networking (twitter, blog posts)
 - Participation in meetings & workshops
 - JPEG meetings (done !)
 - Digital Preservation Coalition (done !)
 - ...

OMC and standardization bodies

- ISO/IEC WG1, *aka* “JPEG Committee”
 - Implementation checker based on OpenJPEG
 - UCL & IntoPIX already involved in JPEG activities
 - Strong link between PREFORMA and ISO/IEC !
- MKV
 - Already in contact with Matroska people to add JPEG 2000 support in their specifications.

OMC Business opportunities

- To keep OMC sustainable after PREFORMA's end
→ keep an active Community Manager
- Similar to Archivemática business model
 - Paid support for installation or maintenance
 - On-demand development of (open-source) components
 - Sales of proprietary components

JPEG 2000 as a preservation format

Is JPEG 2000 an open standard ?

- ✓ Adopted and maintained by a not-for-profit organization
- ✓ Development through open decision-making procedure
- **ISO/IEC is a not-for-profit organization, open to all interested parties**
- ✓ Standard published and specification available freely or at a nominal charge.
- ✓ No constraints on the re-use of the standard
- **Available at ISO website for 198 CHF.**
- ? Intellectual property - i.e. patents possibly present - of (parts of) the standard irrevocably available on a royalty-free basis.

How did we investigate patent issues ?

- We gathered all signed patent statements for JPEG 2000 Part-1, each with their license option.
- We listed all patents with owner, expiration date, license.
- We investigated patents with non-free license options.
- We asked intoPIX General Counsel for his advice.
- We contracted a legal expert, specialized in patent issues.

ISO/IEC/ITU Patent Policy
=
best safeguard against patent issues

ISO/IEC/ITU Patent Policy

= best safeguard against patent issues

“Use of JPEG 2000 as a standard format is reasonably immune from the risk of patent claims”

- ISO/IEC/ITU Patent Policy gives for patents the same kind of guarantees that OS licenses give for copyright.
 - No “J2K patent issue” but “Image compression patent issue”
 - Video and image compression are heavily patented fields
 - JPEG Committee Policy is an even better safeguard

Safer than a specification developed outside any standardization body, where the patent risk is unknown .

- By the way, no risk at all in the context of PREFORMA
-

Is JPEG 2000 suited for preservation ?

Depends on the requirements for a preservation format ...

FFV1	JPEG 2000
Lossless compression Complexity --	Lossless compression Complexity ++ ISO Standard Seamless lossless to lossy Scalability Accessibility Robustness against errors Region-of-Interest

All JPEG 2000 needs is better open source support
... And JPEG 2000 in PREFORMA would contribute to this !



Conclusion

Take-home message: OMC is ...

- An innovative flexible shell, suited to
 - be integrated in OAIS Environment
 - integrate without effort other suppliers' contributions
- A JPEG 2000 with MKV/LPCM Conformance Checker
 - Based on OpenJPEG, ISO Reference Software
 - Fulfills the missing step to make of JPEG 2000 a good preservation format
- A sustainable open-source project based on our OpenJPEG expertise

Thanks !

Questions time ...