
NEXT GENERATION PRESERVATION MANAGEMENT

A DIGITAL REPOSITORY FOR MUSEUM COLLECTIONS

BEN FINO-RADIN | MoMA

DAN GILLEAN | ARTEFACTUAL SYSTEMS

KARA VAN MALSSSEN | AVPRESERVE

DIGITAL PRESERVATION 2014 | WASHINGTON, DC

SONY
VIDEOCASSETTE KCA 30
DESIGNED FOR STILL PICTURE REPRODUCTION

SONY
VIDEOCASSETTE
KCA 30

1973

ASSEMBLED IN U.S.A.



DIGITAL ART STORAGE



ARCHITECTURE

shapes

BEHAVIOR

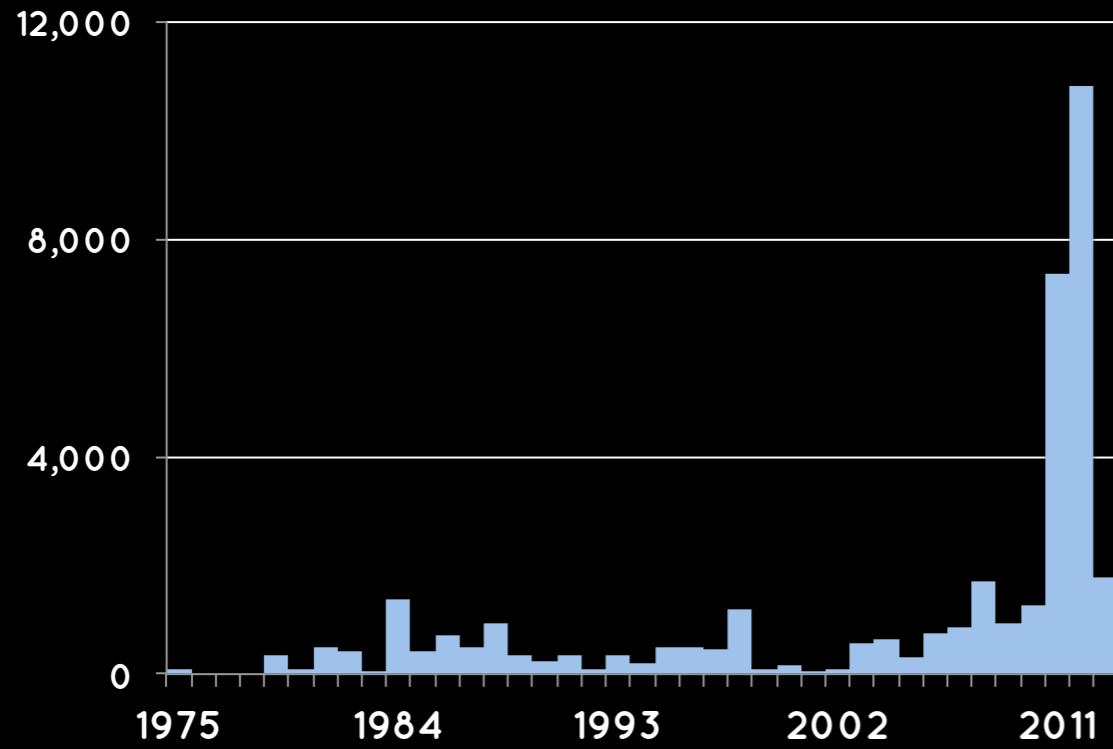


DEVELOP

the

BUSINESS CASE

TOTAL GB ACQUIRED ANNUALLY



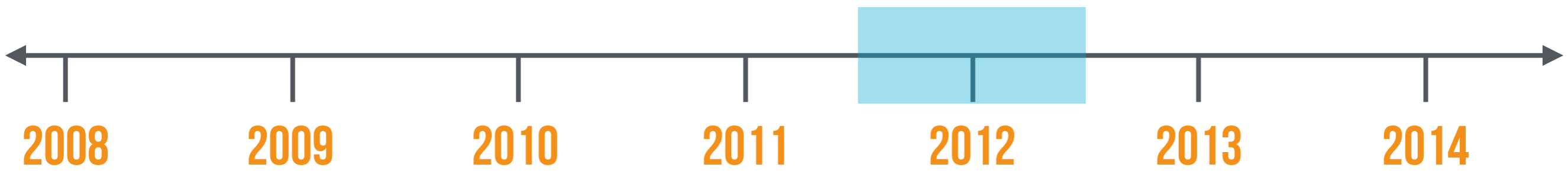
Jonathan Harris (American, born 1979) of
Number 27 (USA, est. 2002)

Sep Kamvar (American, born 1977)

I Want You To Want Me 2007–ongoing

C++ software
Music by Stars

Commissioned by The Museum of Modern Art on
the occasion of the exhibition Design and the
Elastic Mind



INVOLVE

all

STAKEHOLDERS

DEPARTMENTS

5 DEPARTMENTS

13 INTERVIEWEES

DEFINE

system

REQUIREMENTS

& **USE CASES**



FUNCTIONAL REQUIREMENTS



FUNCTIONAL REQUIREMENTS



USE CASES



FUNCTIONAL REQUIREMENTS



USE CASES

SIP CREATION AND INGEST
INTEGRITY CHECKING
DESCRIPTION
SEARCH & BROWSE
ADDING VERSIONS
REPORTING
RISK ASSESSMENT
SYSTEMS INTEGRATION
ADMINISTRATION

CONSULT

the

EXPERTS



EXTERNAL ADVISORS

EXTERNAL ADVISORS

HOWARD BESSER, NYU MIAP

HANNAH FROST, STANFORD UNIVERSITY

STEPHEN ABRAMS, CALIFORNIA DIGITAL LIBRARY

JEROME MACDONOUGH, UNIVERSITY OF ILLINOIS

DAVID MILLMAN, NYU DLTS

BEN FINO-RADIN, RHIZOME at the NEW MUSEUM

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BEN FINO-RADIN, RHIZOME at the NEW MUSEUM

DRMC SPECIFICATIONS
RELEASED INTERNALLY





TMS

STORAGE

SERVICES

DATABASE

APPLICATION

DAM

TMS

STORAGE

SERVICES

DATABASE

APPLICATION

DAM

TMS

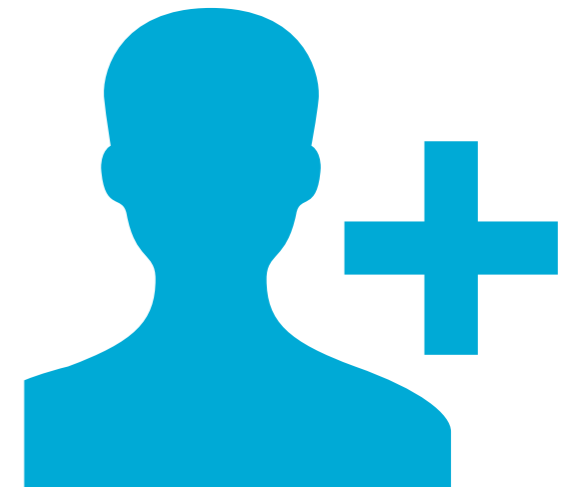
STORAGE

SERVICES

DATABASE

APPLICATION

DAM



TMS

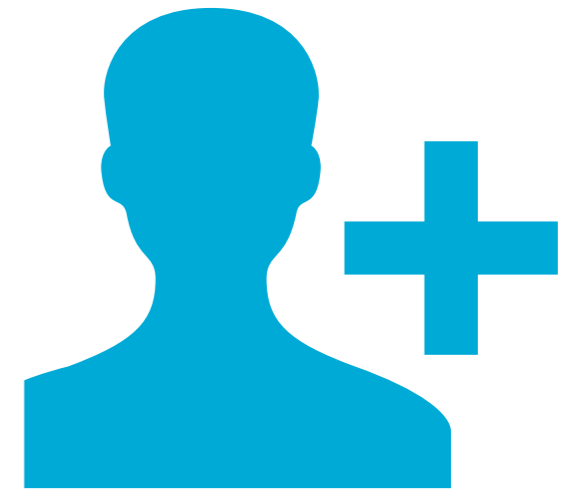
STORAGE

ARCHIVEMATICA

DATABASE

APPLICATION

DAM



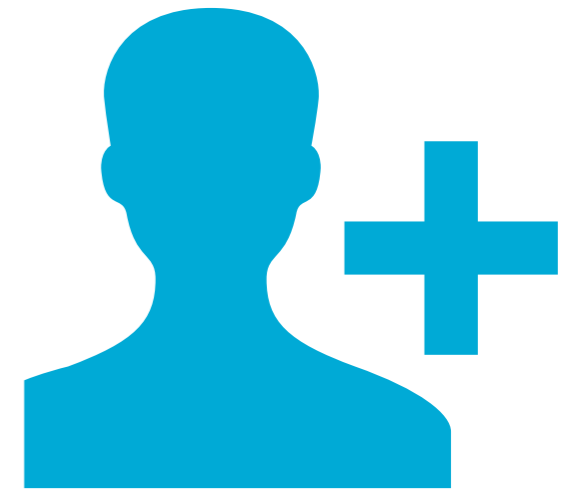
TMS

STORAGE

ARCHIVEMATICA

MANAGEMENT/
ACCESS LAYER

DAM





REQUEST

for

PROPOSALS



SCOPE



USERS - DIRECT, INDIRECT



ECOSYSTEM



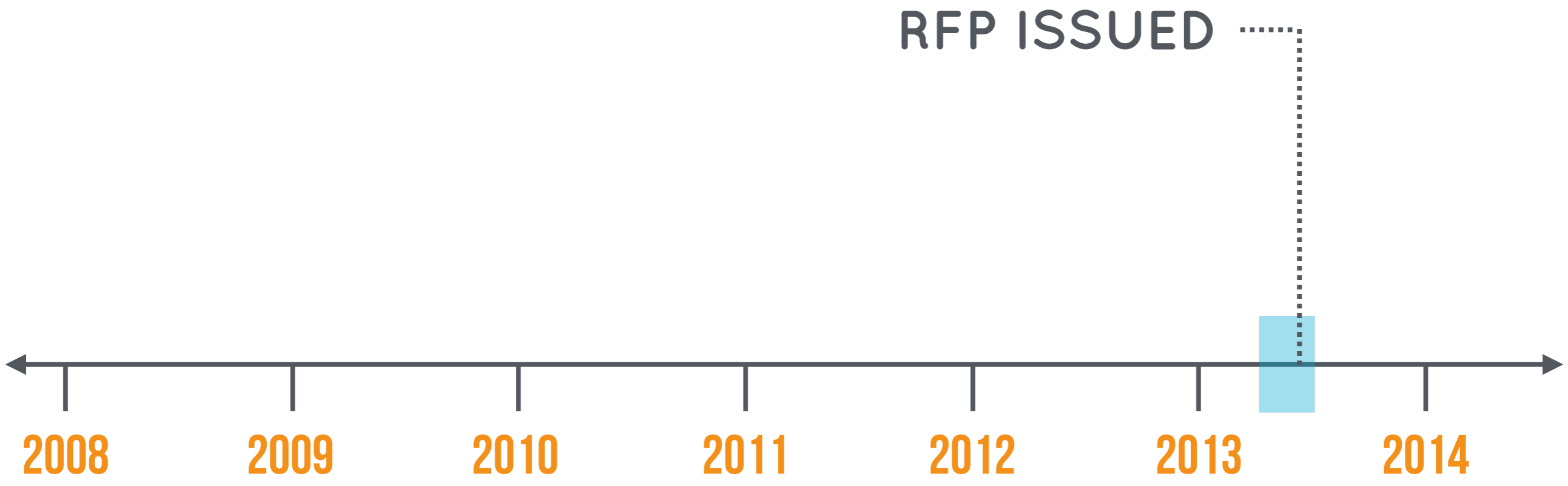
FUNCTIONAL REQUIREMENTS



USE CASES



TECHNICAL REQUIREMENTS



An aerial photograph of a modern building's courtyard. The courtyard features a central water feature with a stone-lined channel, surrounded by lush green trees and paved walkways. People are seen walking and sitting on the benches. The building has a glass facade and a white roof. In the background, there are older, multi-story brick buildings with many windows, typical of a city street scene.

DISTRIBUTION

of the

**REQUEST FOR
PROPOSALS**

VETTING

the

VENDORS



THE BIG INSTITUTION

and the

VERY SMALL VENDOR

DEVELOPMENT
BEGINS



KNOW

your

VENDOR

artefactual

DRMC TEAM



DAVID JUHASZ
Project Manager



**JESÚS GARCÍA
CRESPO**
System Architect



DAN GILLEAN
Domain Analysis,
Design



MIKE CANTELON
Developer



MISTY DE MEO
Developer



**JOSÉ RADDAOUI
MARÍN**
Developer



**HEATHER
ANDERSON**
Developer

[About](#)[Downloads](#)[Documentation](#)[Community](#)[Wiki](#)[Demo](#)

Providing access to memory since 2007

AtoM stands for Access to Memory. It is a web-based, open source application for standards-based archival description and access in a multilingual, multi-repository environment.



Web-based

Access your AtoM installation from anywhere you have an internet

Open source

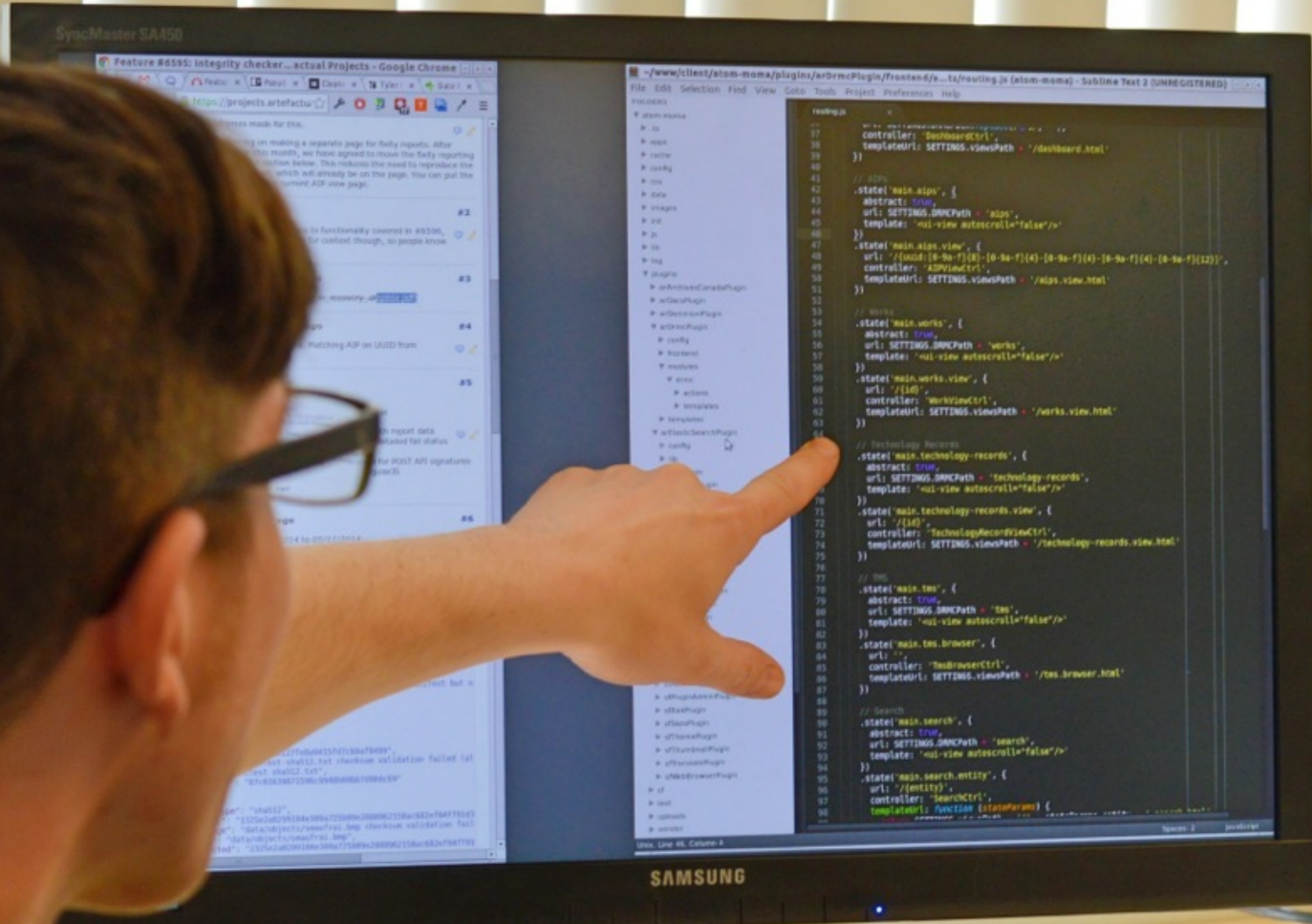
All AtoM code is released under a GNU Affero General Public License (A-GPL)

Standards-based

AtoM was originally built with support from the [International Council on](#)

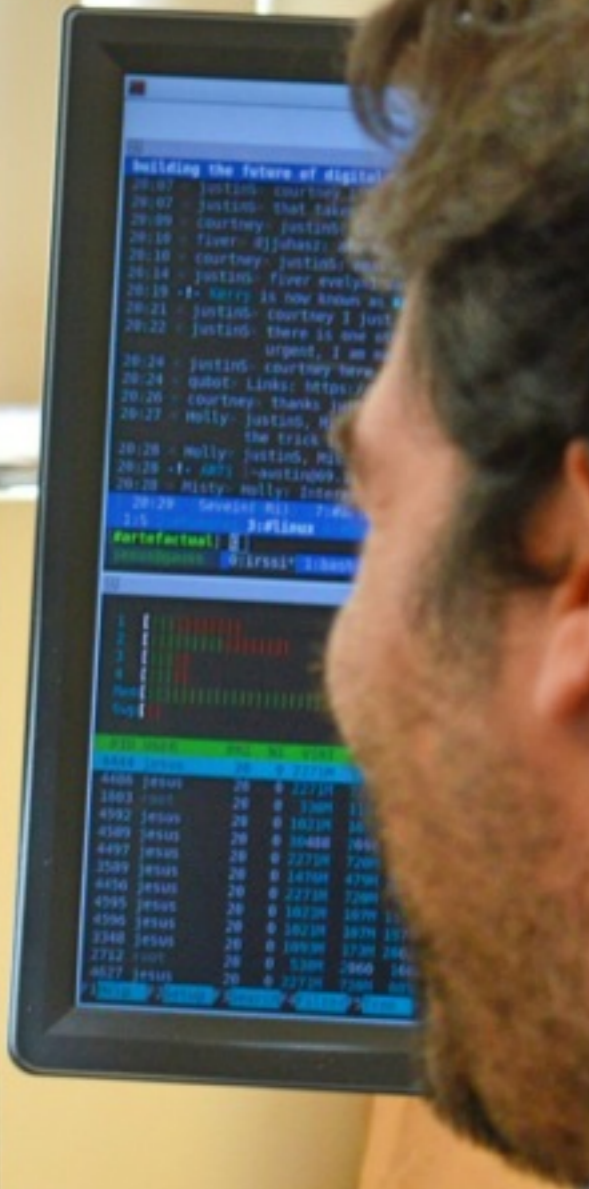
Import/export friendly

Your data will never be locked into AtoM - we implement a number of



```
routing.js
...
37 controller: 'DashboardCtrl',
38 templateUrl: SETTINGS.viewsPath + '/dashboard.html'
39 })
40
41 // apps
42 .state('main.apps', {
43   abstract: true,
44   url: SETTINGS.DMCPATH + 'apps',
45   template: 'ui-view autoscroll=false'
46 })
47 .state('main.apps.view', {
48   url: '/{uid:[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}}',
49   controller: 'AppViewCtrl',
50   templateUrl: SETTINGS.viewsPath + '/apps.view.html'
51 })
52
53 // works
54 .state('main.works', {
55   abstract: true,
56   url: SETTINGS.DMCPATH + 'works',
57   template: 'ui-view autoscroll=false'
58 })
59 .state('main.works.view', {
60   url: '/{id}',
61   controller: 'WorkViewCtrl',
62   templateUrl: SETTINGS.viewsPath + '/works.view.html'
63 })
64
65 // Technology Records
66 .state('main.technology-records', {
67   abstract: true,
68   url: SETTINGS.DMCPATH + 'technology-records',
69   template: 'ui-view autoscroll=false'
70 })
71 .state('main.technology-records.view', {
72   url: '/{id}',
73   controller: 'TechnologyRecordViewCtrl',
74   templateUrl: SETTINGS.viewsPath + '/technology-records.view.html'
75 })
76
77 // tas
78 .state('main.tas', {
79   abstract: true,
80   url: SETTINGS.DMCPATH + 'tas',
81   template: 'ui-view autoscroll=false'
82 })
83 .state('main.tas.browser', {
84   url: '',
85   controller: 'TasBrowserCtrl',
86   templateUrl: SETTINGS.viewsPath + '/tas.browser.html'
87 })
88
89 // Search
90 .state('main.search', {
91   abstract: true,
92   url: SETTINGS.DMCPATH + 'search',
93   template: 'ui-view autoscroll=false'
94 })
95 .state('main.search.entity', {
96   url: '/{entity}',
97   controller: 'SearchCtrl',
98   templateUrl: function (stateParams) {
99     return SETTINGS.viewsPath + '/search/entity/' + stateParams.entity + '.html'
100   }
101 })
...

```



📦 Phase 2: Code sprint #5

Due in 16 days (05/31/2014)



13 issues (1 closed — 12 open)

Related issues

Feature #6283: AIP record
Feature #6374: Context browser (relationships)
Feature #6377: Navigation
Feature #6428: Add multiple URI access points (slug, TMS access)
Feature #6429: Add breadcrumbs
Feature #6463: Archivematica user authentication
Feature #6588: Allow upload of DIPs to NetX
Feature #6589: Store AIPs uncompressed
Feature #6595: Integrity checker reporting
Feature #6596: Integrity checker integration
Feature #6597: Integrity checker app
Feature #6598: Reports
Feature #6622: Context browser (usability enhancements)



EXPECT

to be

INVOLVED

Updated by Ben Fino-Radin 6 days ago

#21

1. "Artwork storage by codec" is referencing MIME type for all files, not codec of AV files. We do want this for format, but we also need the codec widget with the same "count" and "size" tabs.
2. "total artworks in repository" as seen on slide 1 of the PPT - dashboard is missing the line graphs for year ingested and year collected.
3. Monthly ingest totals looks unfinished - reminder, we need this for codec and format - and we want to see the monthly totals, as well as running totals (slide 6)
4. Artwork sizes - median is missing
5. the widgets on slide 9 - the departmentally focused widgets - of the ppt are missing



Updated by David Juhasz 5 days ago

#22

- Status changed from QA/Review to Feedback
- Assignee changed from Ben Fino-Radin to Mike Cantelon

Updated by Mike Cantelon 5 days ago

#23

Ben Fino-Radin wrote:

1. "Artwork storage by codec" is referencing MIME type for all files, not codec of AV files. We do want this for format, but we also need the codec widget with the same "count" and "size" tabs.

We may not be parsing out the codec data during DIP processing, so this could be tricky. We can add that, but it could be best to do that, if possible, after we get all the other DRMC functionality ready for the end of month.

1. "total artworks in repository" as seen on slide 1 of the PPT - dashboard is missing the line graphs for year ingested and year collected.

Heather and I worked on this yesterday, fixing the underlying issues. For the year ingested, maybe year/month would be more suitable initially (until you're ran the DRMC for a few years)?

1. Artwork sizes - median is missing

I'm not sure if we can do median because of a limitation with Elasticsearch. The limitation is being worked on, though, so a future version of ES might make it easy to add this on.

1. the widgets on slide 9 - the departmentally focused widgets - of the ppt are missing

I'm not sure if we're parsing out department data yet during DIP processing. If we could wait to add this until we get everything else for the DRMC done for the end of the month (or when/if we get done before the end of the month), that would be ideal.

Updated by David Juhasz 5 days ago

#24

- Assignee changed from Mike Cantelon to Ben Fino-Radin

Updated by Ben Fino-Radin 5 days ago

#25

- Assignee changed from Ben Fino-Radin to Mike Cantelon

The widgets have nothing to do with DIP processing. For all of these widgets we want to be reporting the AIP not the DIP. This information is all available in the METS.

Yes - year-month is best for such cases.

If you can facet by department in search/browse, then why can't you leverage this metadata for the widget?

Not doing median is fine. All the other problems you listed seem moot given the above points.



Updated by David Juhasz 5 days ago

#26

Mike, it looks like "Department" is pulled from TMS here:

<https://github.com/artefactual/client-moma-atom/blob/qa/develop/plugins/qtSwordPlugin/lib/qtPackageExtractorMETSArchivematicaDIP.class.php#L933>

And is written to the ES index here:

<https://github.com/artefactual/client-moma-atom/blob/qa/develop/plugins/arElasticSearchPlugin/lib/model/arElasticSearchInformationObjectPdo.class.php#L1426>



Updated by David Juhasz 5 days ago

#27

I sent an email to Radda asking him to assist Mike with getting the AV Codec data.



Updated by Ben Fino-Radin 5 days ago

#28

Great - thanks David!



Updated by José Raddaoui Marin 2 days ago

#29

Hi Mike,



The MediaInfo data from the METS file is now included in the ES index. I did the import in dev/issue-6519-mediainfo-import, it's in one commit if you want to cherry-pick it to your branch, commit: 14769ed. You'll need to clear the cache and populate the search index.

I've grouped the tracks by type, so you can query over "generalTracks", "videoTracks" or "audioTracks". You can reach this information in:

```
Artworks/Components/Technology Records -> aips.digitalObjects.metsData.mediainfo
```

FROM USER STORIES...

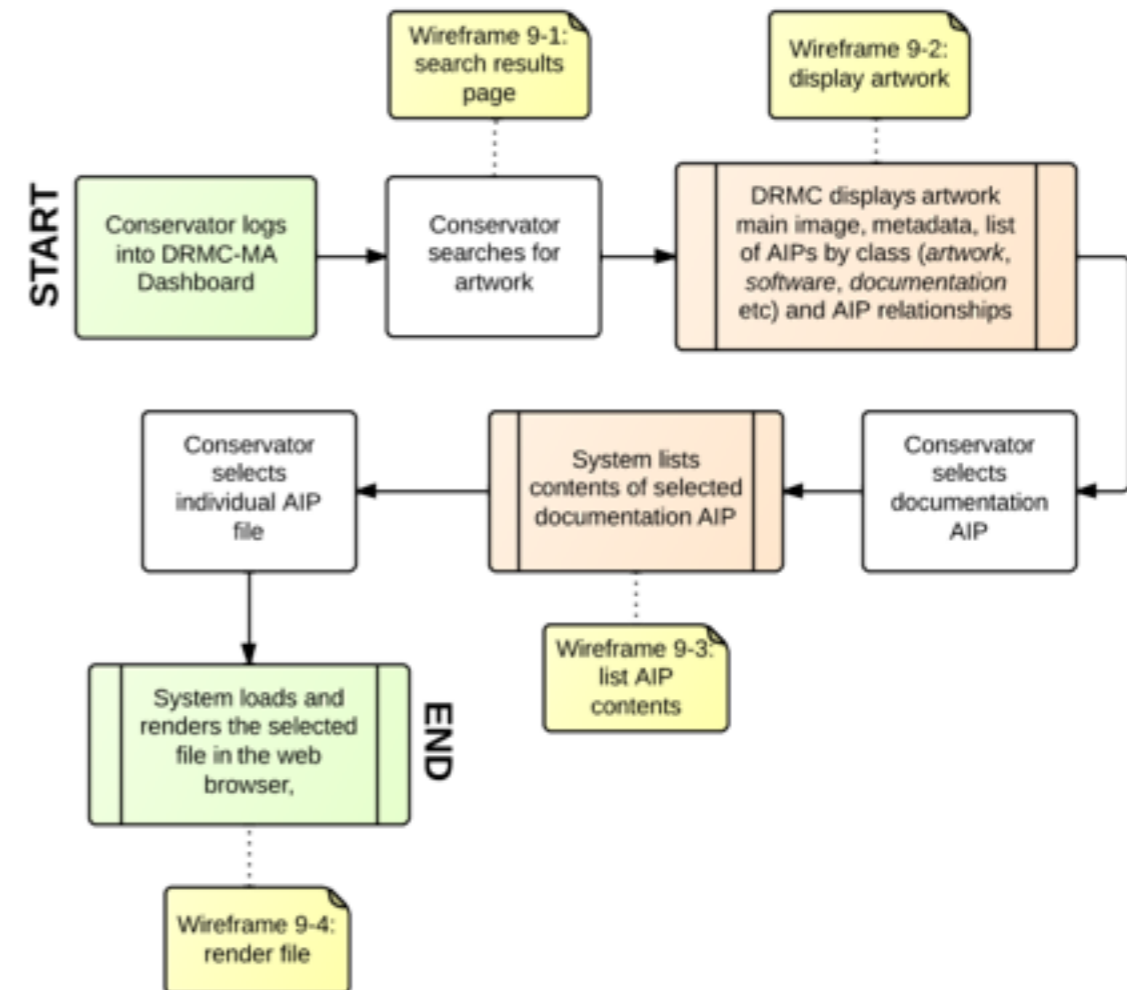
TO UX FLOWCHARTS

MA-UC-9: View artwork documentation

Step	User Action	System Response	UI elements needed
1	Conservator navigates to artwork record	System displays artwork's main image, core metadata from TMS, listing of Artwork AIP's and their relationship to the artwork (instantiation, version of instantiation, supplementary materials for instantiation), and documentation AIPs	
2	Conservator selects documentation AIP	System lists contents of selected documentation AIP	
3	Conservator clicks an individual file in the documentation AIP	System loads and renders the selected file in the web browser, eliminating the need to download and view locally.	
4	Conservator has gained knowledge to inform conservation treatment.		

MoMA DRMC-MA Workflow 9

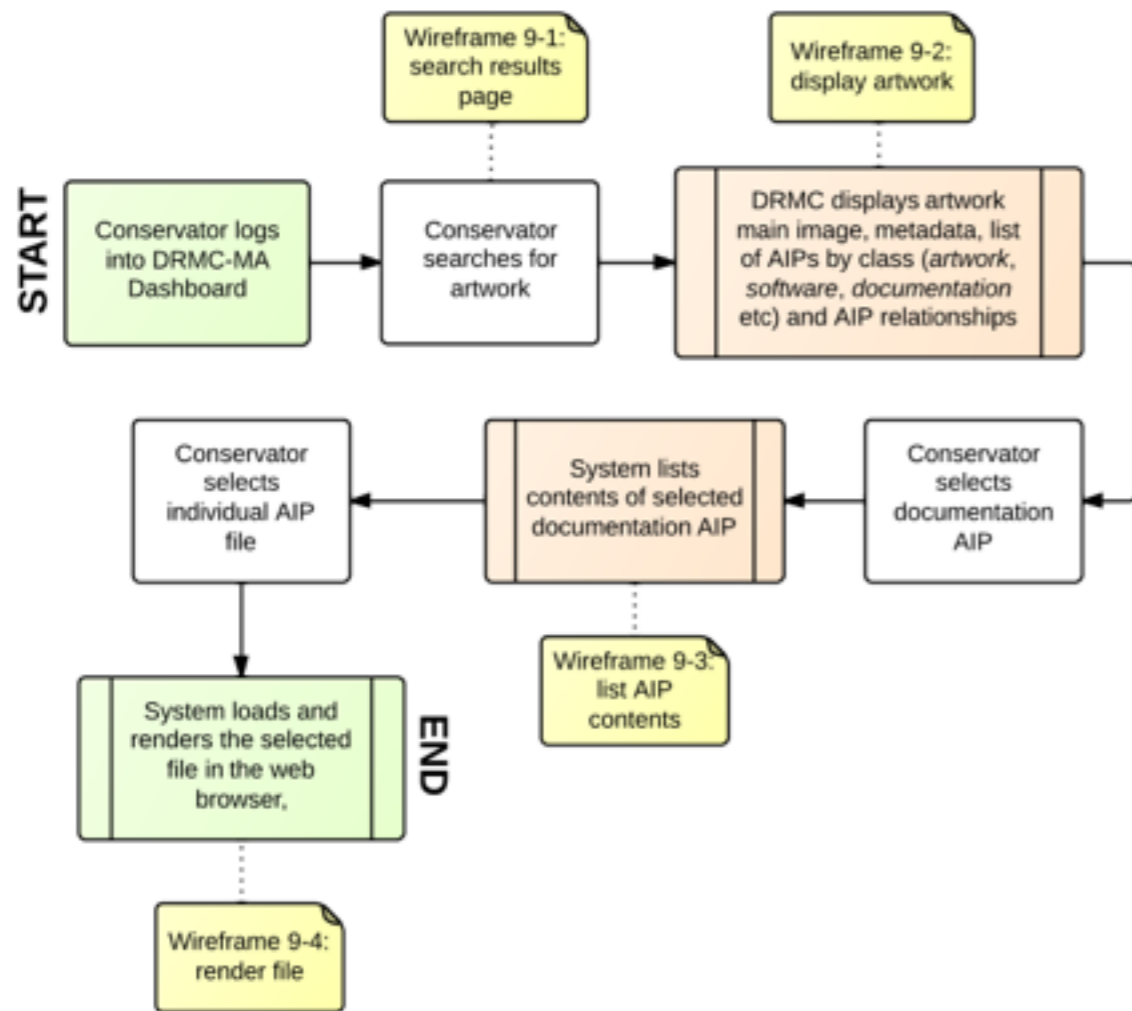
Depicted in 4 wireframes



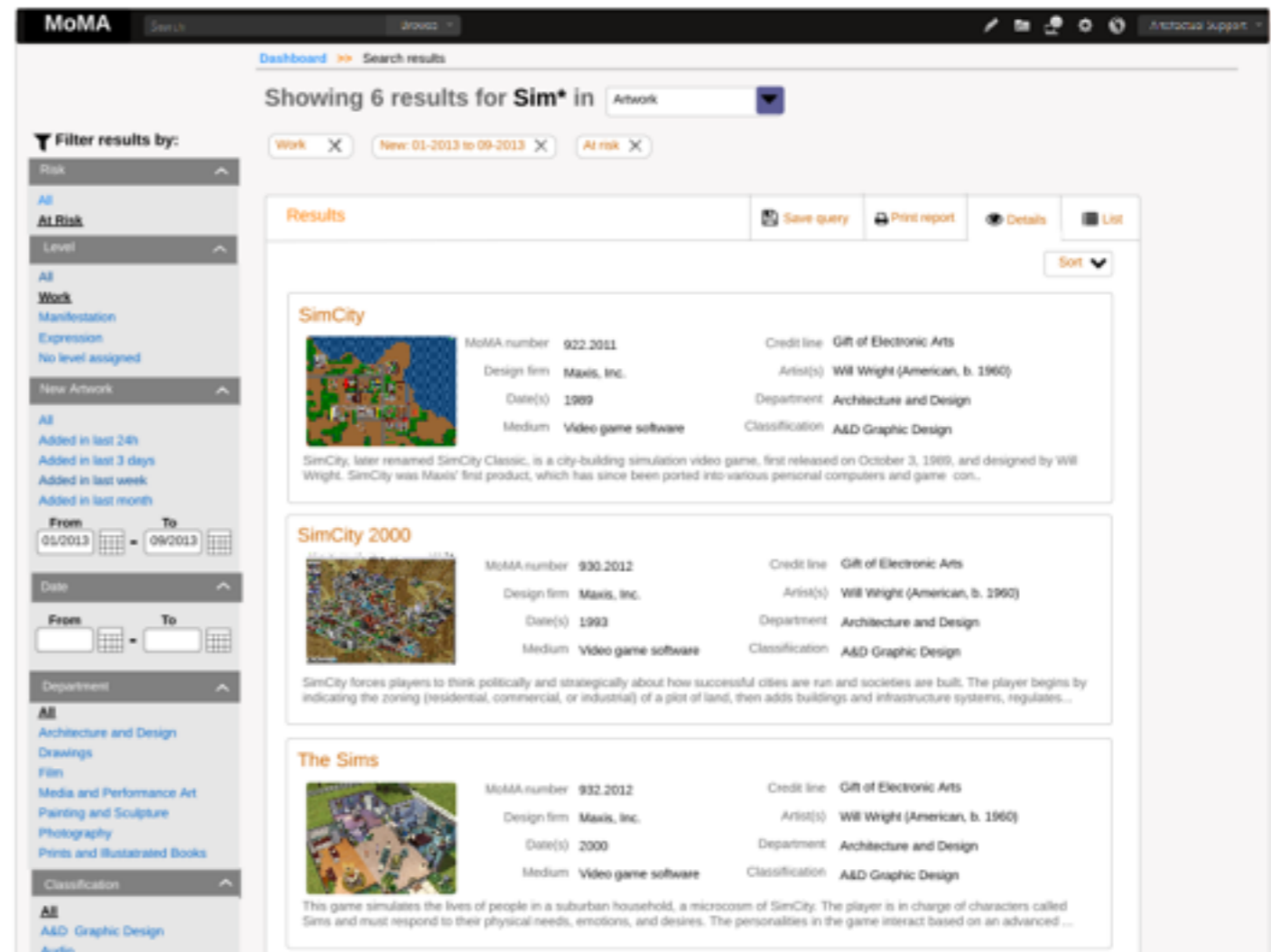
FROM UX FLOWCHARTS...

MoMA DRMC-MA Workflow 9

Depicted in 4 wireframes






TO WIREFRAMES



FROM WIREFRAMES...

TO PROTOTYPES

MoMA Search results for **Sim*** in Artwork. Showing 6 results. Filters: Work, New: 01-2013 to 09-2013, At risk.

Results	MoMA number	Credit line
SimCity  SimCity, later renamed SimCity Classic, is a city-building simulation video game, first released on October 3, 1989, and designed by Will Wright. SimCity was Maxis' first product, which has since been ported into various personal computers and game consoles.	922.2011	Gift of Electronic Arts
SimCity 2000  SimCity forces players to think politically and strategically about how successful cities are run and societies are built. The player begins by indicating the zoning (residential, commercial, or industrial) of a plot of land, then adds buildings and infrastructure systems, regulates...	930.2012	Gift of Electronic Arts
The Sims  This game simulates the lives of people in a suburban household, a microcosm of SimCity. The player is in charge of characters called Sims and must respond to their physical needs, emotions, and desires. The personalities in the game interact based on an advanced...	932.2012	Gift of Electronic Arts

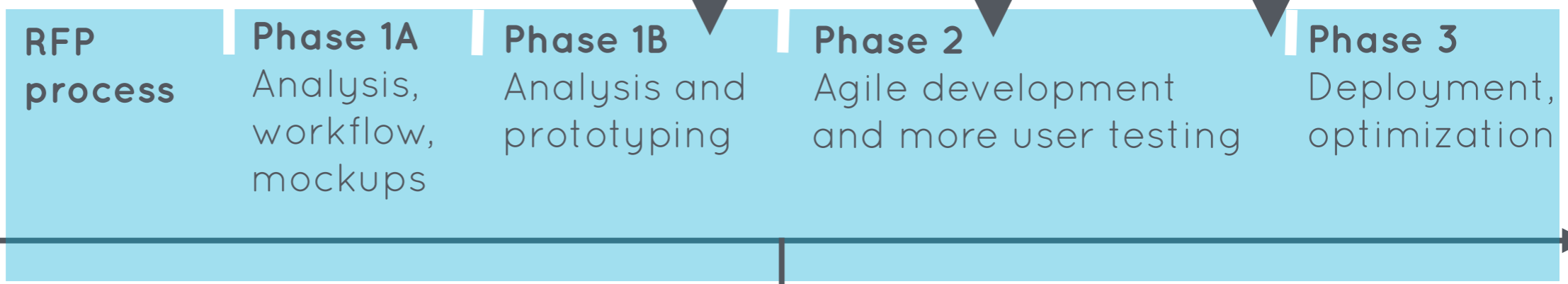
DRMC Search results for **Space Invaders**. Showing 6 results. Filters: AIPs, Artwork records, Components, Supporting technology records, Files, Saved searches.

Narrow your results by:	Showing 6 results
CLASSIFICATION	Space Invaders 189996 - 1938 - Tomohiro Nishikado (Japanese, born 1944) Video game software 201.2013 A&D Graphic Design Architecture & Design
DEPARTMENT	Official Welcome 143751 - 2001 - 2003 - Andrea Fraser (American, born 1965) Video (color, sound) 1.2011 Media and Performance Art
DATE OF ACQUISITION	Sher-e-Bangla Nagar, Capital of Bangladesh Dhaka, Bangladesh National Assembly B... 124 - 1963 - Louis I. Kahn (American, born Estonia, 1901-1974) Graphite on tracing paper 196.1964 A&D Architectural Drawing Architecture & Design
DATE CREATED	Acorde 12343 - 1979 - Vicente Rojo (Spanish, born 1932) Illustrated Book with 2 collagraphs with colored pencil additions and 9 collages 158.1992.1-12 Illustrated Book Prints & Illustrated Books
DATE MATERIALS INGESTED	As You See 147845 - 1985 - Harun Farocki (German, born 1944) 16mm film transferred to video (black and white, sound) 496.2011 Video Media and Performance Art
MATERIALS TOTAL SIZE	Manifestos 2 175258 - 2013 - Charles Gaines (American, born 1944) Four-channel video and four graphite drawings on Rising Barrier Paper 1206.2013.1 Installation Media and Performance Art

Seb Chan
Mike Giarlo
Martina Haidvogel
Anna Henry
Mark Hellar
Hanna Hölling
Agathe Jarczyk
Pip Laurenson
Jeff Martin
Mark Matienzo
Joanna Phillips
Dave Rice
Gwynne Ryan
Mike Smorul
Kara Van Malsen
Farris Wahbeh



ADVISORY MEETINGS



2013

2014

PREPARE

for

CHALLENGES



**BUMPS
AHEAD**

breadcrumb1 > breadcrumb2 > Self-Playing Violin



Self-Playing Violin

Archival Information Package #2

object:
_1922007ax1SAPM.wav-c3c5fcbc-d522-4ef0-bd72-...

manifestation:
Original



TMS Object ID: 11223344

Artwork Title: Self-Playing Violin

Artist: Laurie Anderson

Date(s): 1974

Accession Number: 1974-0093

Component Number: 192.2007

+ add Archival Information Package

▶ Archival Information Package #1

▼ Archival Information Package #2 + ×

AIP UUID: 87b30aab-2f54-4f82-b5f1-b9994f697dd1

AIP Class: Content

Version: 3

Ingest Date: 2013-02-27T04:35:16

▶ Archival Information Package #3

UUID: c3c5fcbc-d522-4ef0-bd72-0ae3928758ff
sha256: d763aa8e017998a1e39f2785c2ee212a03ddea43392bea2de08467df79a9ef8c
size: 191.90 MB
format: Waveform Audio
puid: fmt/6

numSamples: 268291200
sampleRate: 9600
audioDataEncoding: PCM
channels: 2
bitDepth: 24
offset: 12288

OIS Audio Information 0.1

status: Well-Formed and valid
mimeType: audio/x-wave

Jhove 1.5

Boomerang (1974), Richard Serra

Works > Boomerang

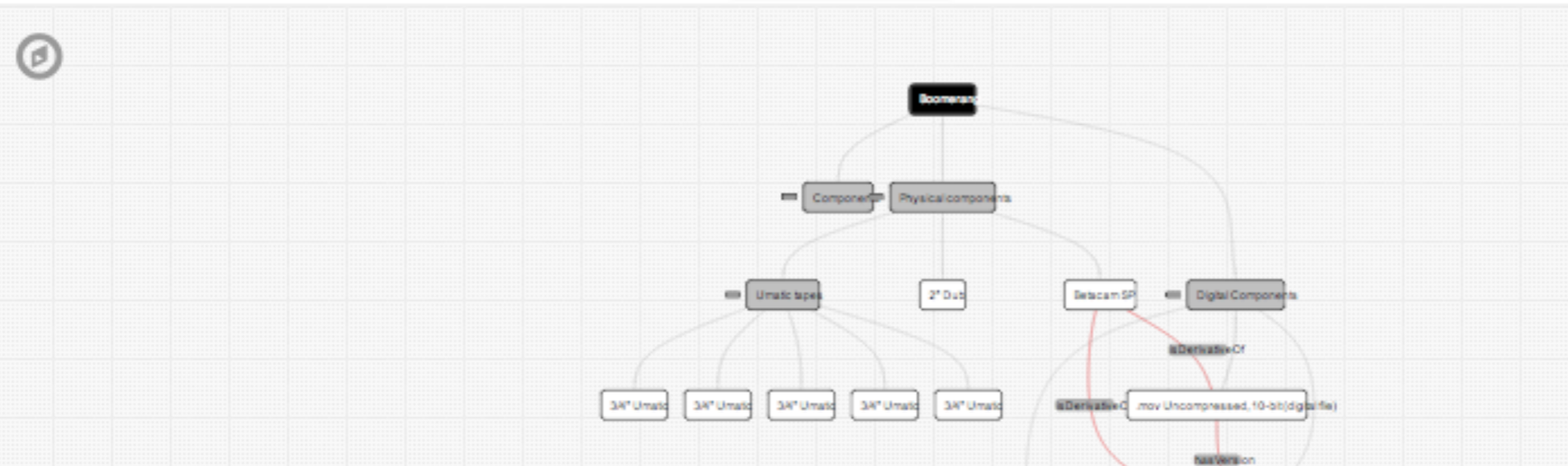


TMS metadata

Accession number	F2289
Object ID	143808
Title	Boomerang
Year	1974
Artist	Richard Serra
Classification	Video
Department	Film
Medium	Video (color, sound)
Dimensions	10 min.

Context browser

Relationships AIPs Fullscreen Maximize Ranking direction Collapse all Center



Boomerang

Dublin Core metadata ▾

Files (24 items) [list icon] [grid icon] [refresh icon]

Pass2_legaltitlecard-7a32904...	9.47 GB
tagmanifest-md5.txt	142 bytes
tagmanifest-md5.txt	142 bytes
manifest-sha256.txt	108 bytes

Demo time!

FY 14 ASSESSMENT RESULTS

it's not just about technology!

2009

2010

2011

2012

2013

2014





DRMC SPECIFICATIONS

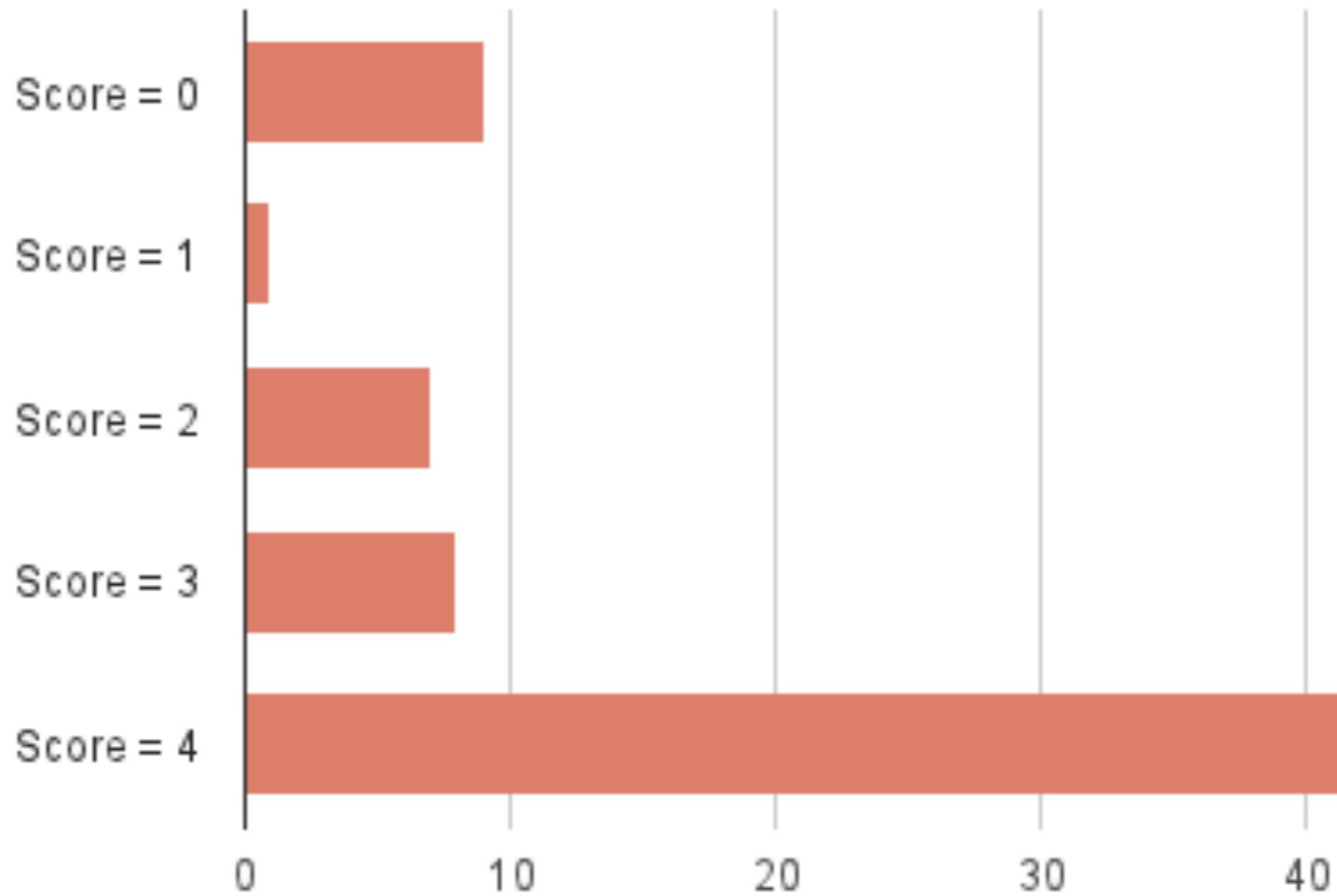


ISO 16363:2012

audit & certification of trustworthy
digital repositories



NDSA LEVELS OF PRESERVATION



DRMC SPECIFICATIONS

NDSA LEVELS OF PRESERVATION

Level 1:
Protect
your data

Level 2:
Know
your data

Level 3:
Monitor
your data

Level 4:
Repair
your data

STORAGE &
GEOGRAPHIC
LOCATION

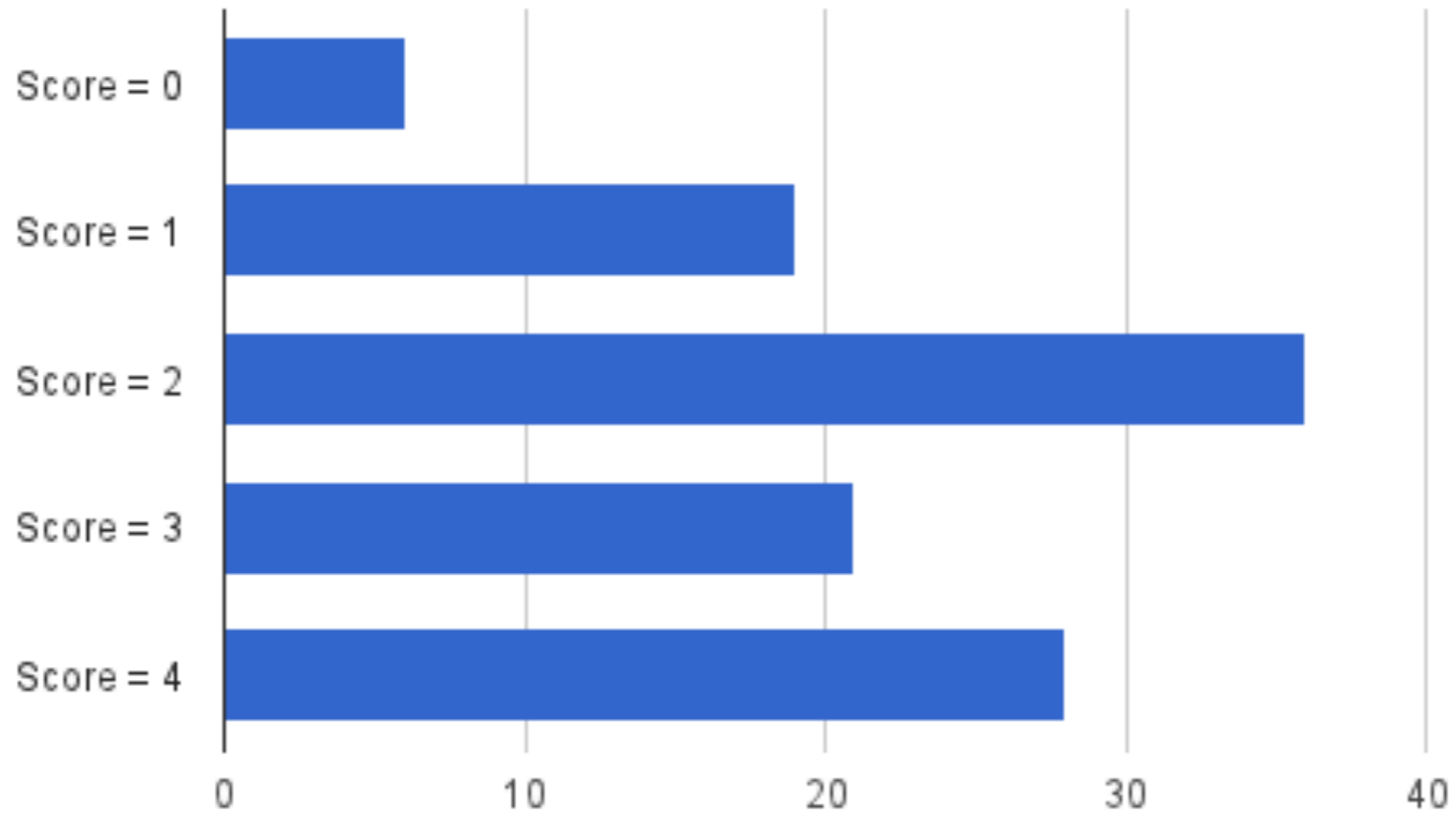
FILE FIXITY & DATA
INTEGRITY

INFORMATION
SECURITY

METADATA

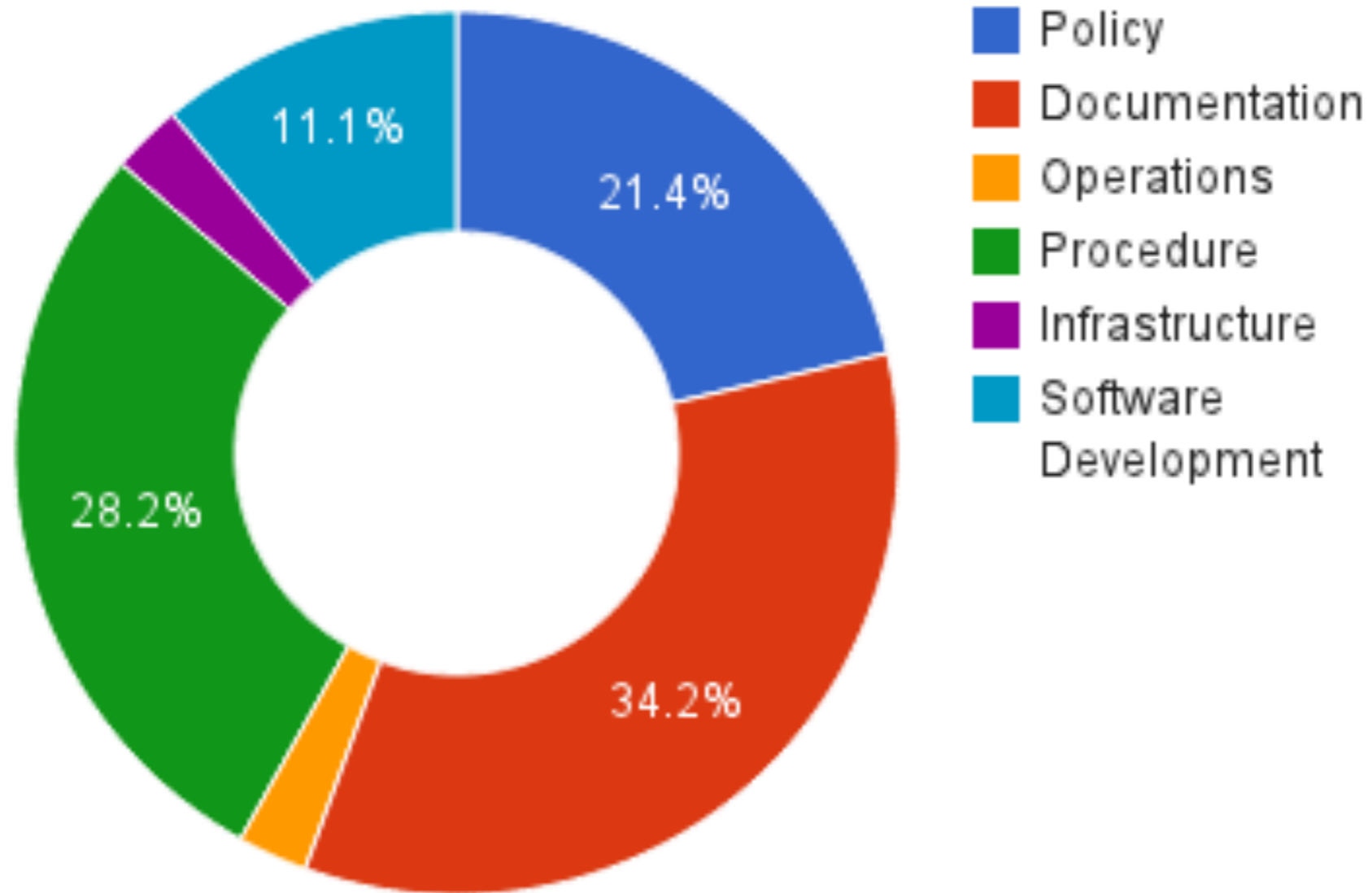
FILE FORMATS

STORAGE & GEOGRAPHIC LOCATION	Green	Yellow	Red	Red
FILE FIXITY & DATA INTEGRITY	Green	Green	Green	Yellow
INFORMATION SECURITY	Green	Red	Yellow	Red
METADATA	Green	Yellow	Green	Yellow
FILE FORMATS	Green	Green	Green	Green



ISO 16363

ISO 16363 short term priorities by type



ISO 16363

In conclusion