



# Harmonising model-based approaches of eArchiving

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# Contents

1. **The Archiving Capability Maturity Model (eACMM)**
2. The eArchiving Reference Architecture (RefArch)
3. Cleaning up the RefArch with Atlas
4. Aligning the RefArch and the eACMM
5. Future plans

# eArchiving Model-based Approaches

<http://kc.dlmforum.eu/eark-products>

The screenshot shows a web browser window with the URL [kc.dlmforum.eu/eark-products](http://kc.dlmforum.eu/eark-products). The navigation bar includes 'Knowledge Centre', 'HOME', 'APPS', and 'EARK PRODUCTS'. The main content area is titled 'E-ARK Products' and features two primary sections:

- eArchiving Reference Architecture v1.0**: Accompanied by a circular diagram with four quadrants: 'MOTIVATION' (Why should my organisation implement eArchiving?), 'BUSINESS' (What processes should be implemented for eArchiving?), 'STRATEGY' (What skills and capabilities are needed to implement eArchiving?), and 'APPLICATION' (What software components should be implemented for eArchiving?). A central circle asks 'For what?'. Below the diagram, text states: 'This reference model of digital archiving has been created by the CEF eArchiving Building Block in cooperation with the E-ARK Consortium.'
- eArchiving Capability and Maturity Model**: Accompanied by a graph showing 'Maturity Level' on the y-axis and 'Steps of Information Lifecycle Maturity' on the x-axis. The x-axis is divided into 'Initial', 'Managed', 'Controlled', 'Strategically Managed', and 'Optimising'. Below the graph is a table with columns for 'Information at Risk', 'Focus', and 'Result'. Below this section, text states: 'The eArchiving Capability and Maturity Model is an instrument for organisations to conduct a self-assessment and guide them regarding their capability on the core individual digital preservation process areas (namely, pre-ingest, ingest, preservation planning, data management, archival storage and access).'

The footer contains links for 'About | Development Team | Contact' and logos for 'Created by: IFT T3CNICO LISBOA', 'inescid LISBOA', 'E-ARK', 'DLM FORUM', and the European Union flag.

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- eArchiving Reference Architecture v1.0**: Described as a reference model of digital archiving created by the CEF eArchiving Building Block in cooperation with the E-ARK Consortium. It includes a diagram with four quadrants: MOTIVATION (Why?), BUSINESS (What do you do?), STRATEGY (What do you need?), and APPLICATION (How?).
- eArchiving Capability and Maturity Model**: Described as an instrument for self-assessment and guidance. It includes a graph showing 'Steps of Information Lifecycle Maturity' (Initial, Managed, Curated, Digitally Managed, Optimizing) and a table with columns for 'Information at Risk' and 'Result'.

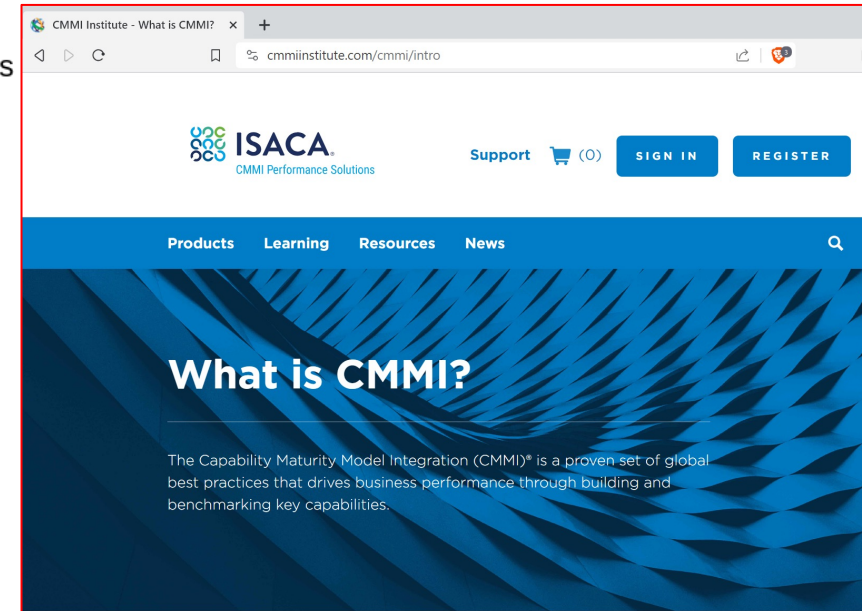
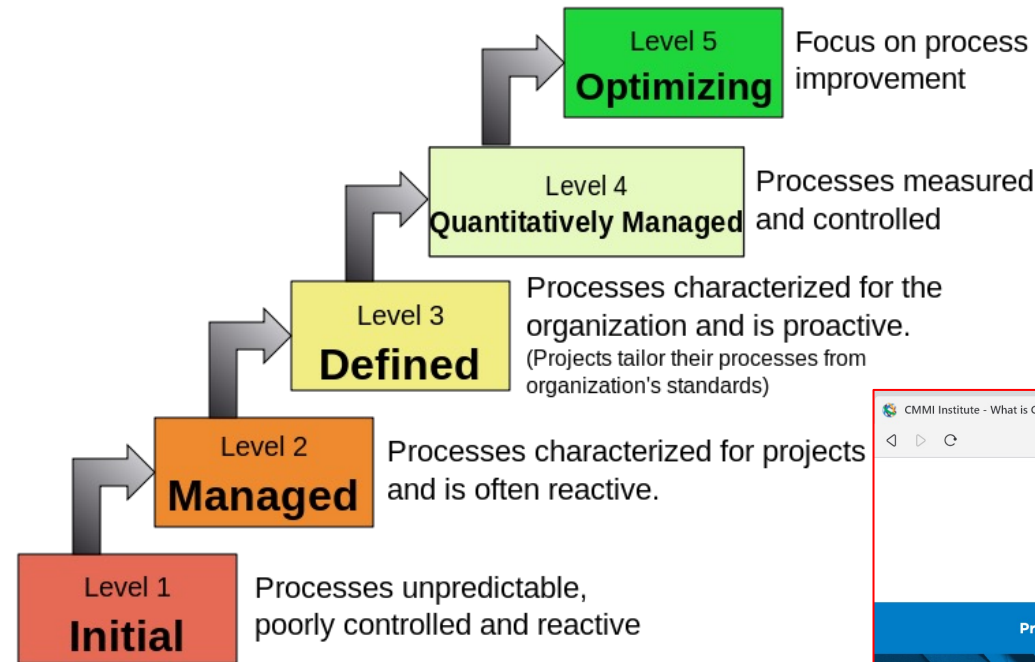
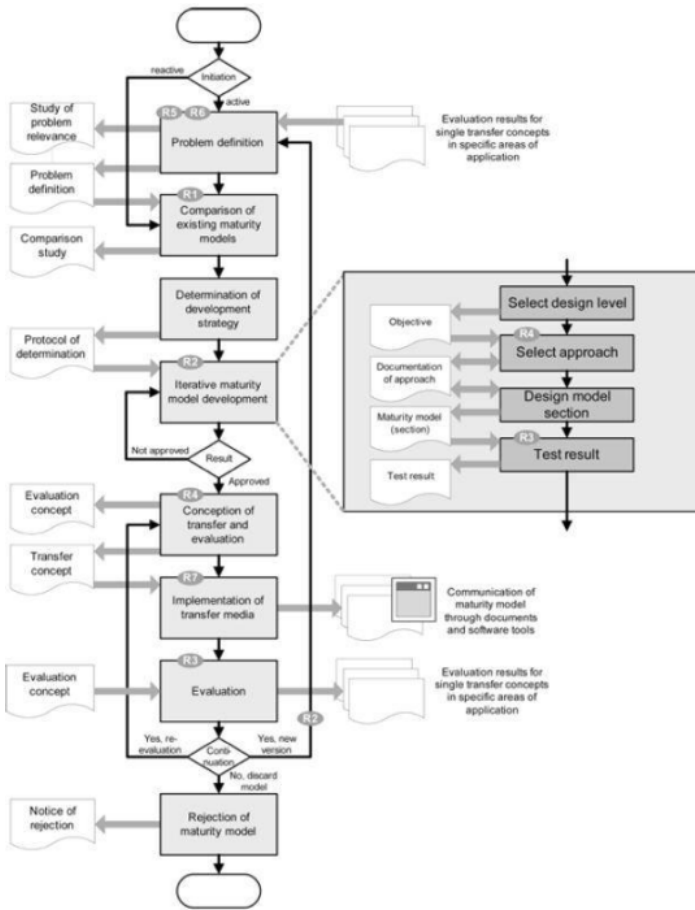
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## On the concept of “Maturity Model”...



### Characteristics of the Maturity levels





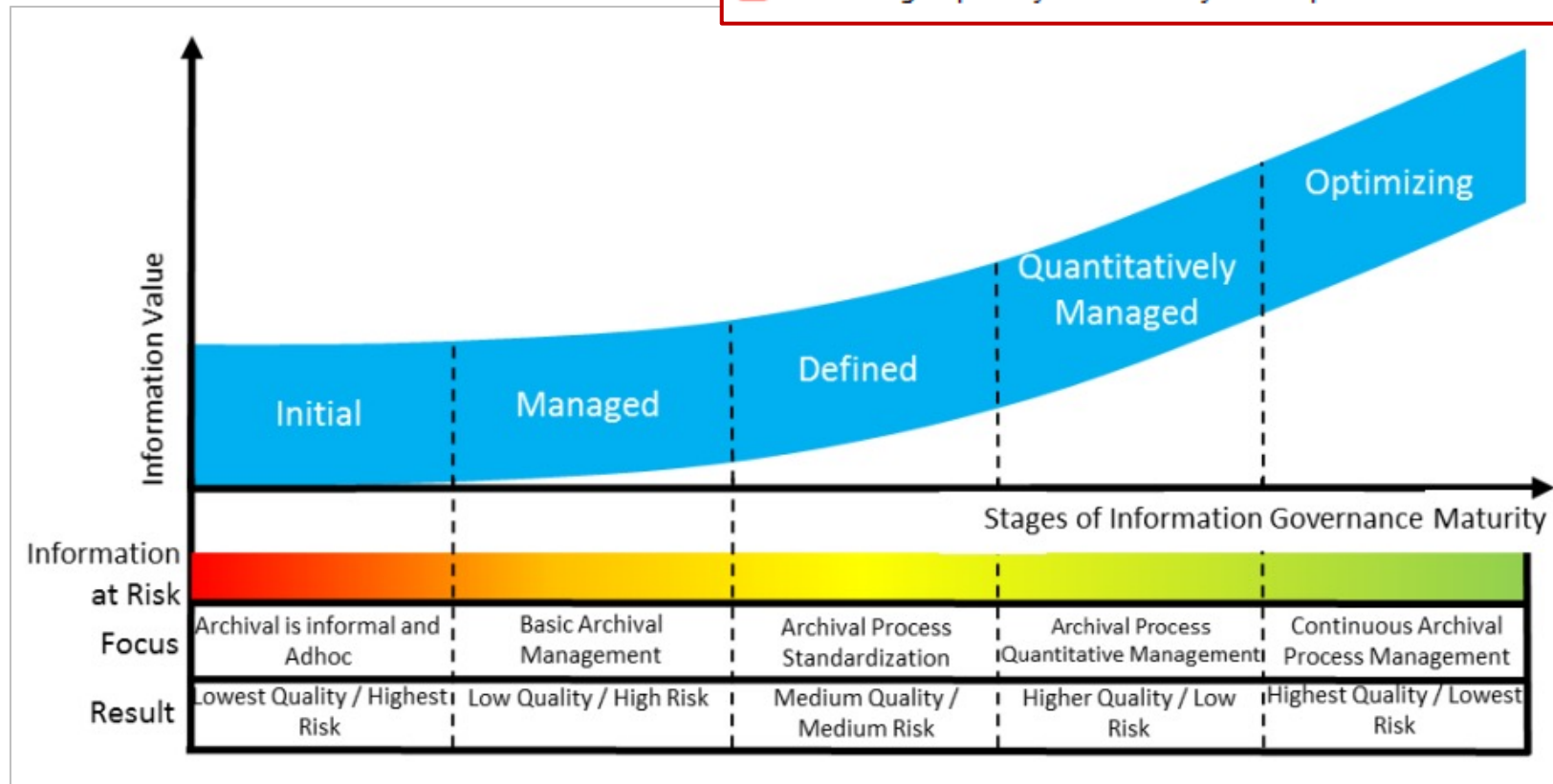
J. Becker, R. Knackstedt, J. Pöppelbuß., “Developing Maturity Models for IT Management – A Procedure Model and its Application,” In Business & Information Systems Engineering, vol.1, issue 3, pp. 212-222. 2009.

# eACMM

## eArchiving Capability Maturity Model



Name	Size	Type
 eArchiving Capability and Maturity Model Dashboard.xlsx	193 KB	Microsoft Excel Worksheet
 eArchiving Capability and Maturity Model.pdf	1 433 KB	Adobe Acrobat Document





# eACMM

Pre-Ingest >> Ingest >> [ Storage | Data Management | Preservation ] >> Access

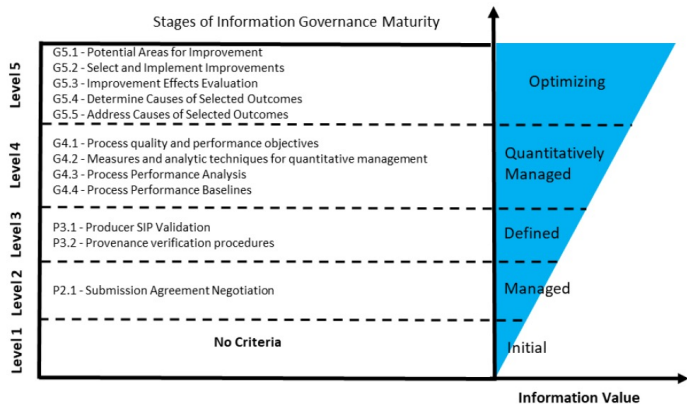


Figure 4: eACMM Pre-Ingest Capability Maturity Levels

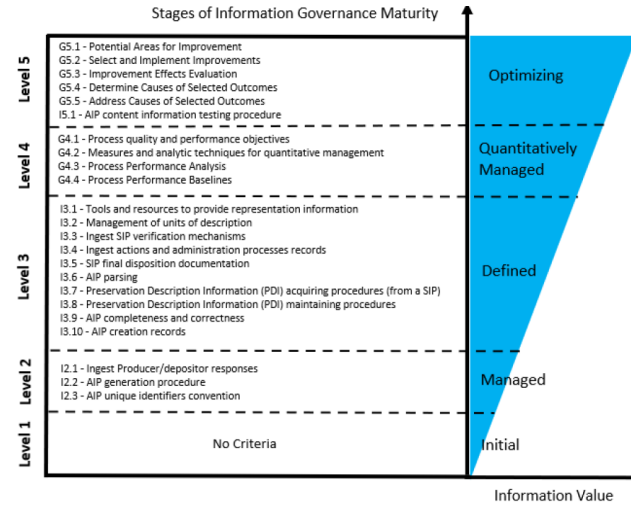


Figure 5: eACMM Ingest Capability Maturity Levels

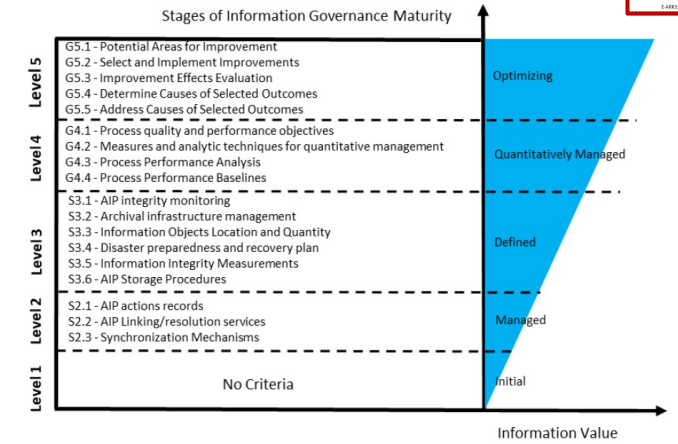


Figure 6: eACMM Archival Storage and Preservation Capability Maturity Levels

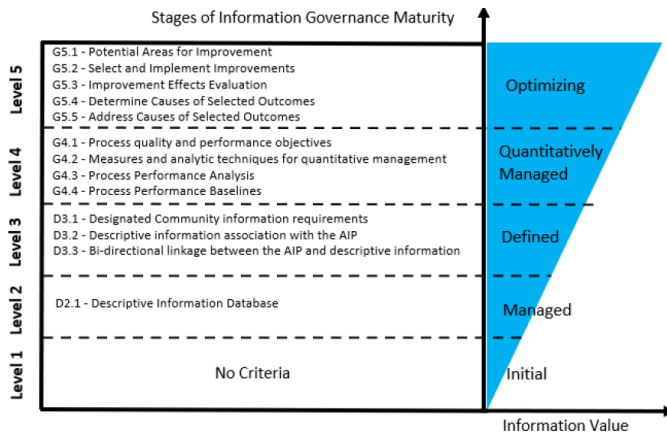


Figure 7: eACMM Data Management Capability Maturity Levels

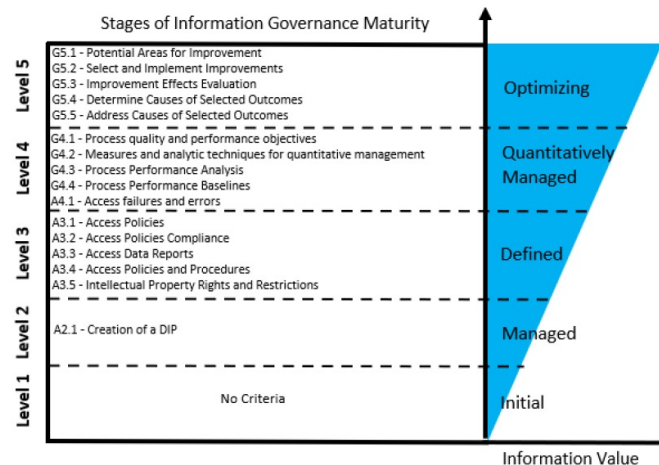


Figure 8: eACMM Access Capability Maturity Levels

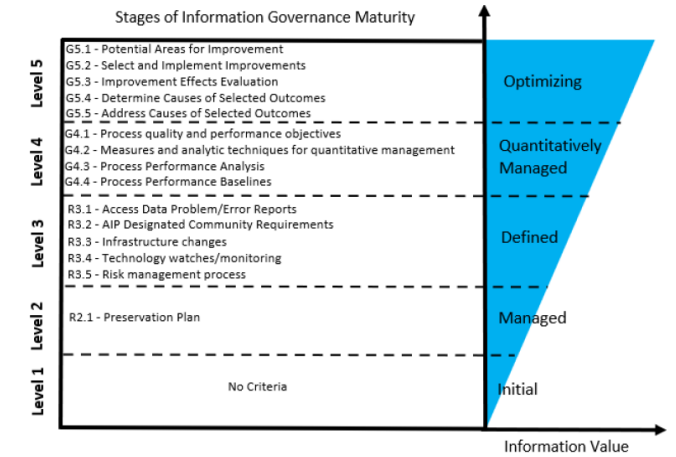


Figure 9: eACMM Preservation and Accessibility Capability Maturity Levels

# eACMM self-assessment...



Name	Size	Type
eArchiving Capability and Maturity Model Dashboard.xlsx	193 KB	Microsoft Excel Worksheet
eArchiving Capability and Maturity Model.pdf	1 433 KB	Adobe Acrobat Document

## P2.1 - Submission Agreement Negotiation

**Is there a procedure to negotiate the terms of the submission agreement the Producer and Archive?**

**Purpose:** The purpose is to identify if the Archive can negotiate the terms of the submission agreement with Producers. Terms of agreement might include the specification of the metadata that must be included at the time of submission, the schedule and method of submission, the responsibilities of the Producer and Archive regarding the information being ingested, among other examples.

**Notes:** An example of evidence to demonstrate is the documentation of the procedure to negotiate the terms of the submission agreement between the Producer and the Archive.

**eArchiving Reference Architecture Mapping:**

Views -> 03 Business Layer -> 01 Pre-Ingest -> Negotiate Submission Agreement

Answer **Y**  
("Y" for yes, "N" for no)

**Observations**

(in case there are some comments to your answer that you would like to share, please add them below)

## P3.1 - Producer SIP Validation

**Does the Archive validate if the Producer SIP complies with the defined format and structure specifications?**

**Purpose:** The purpose is to identify if the Archive validates the Producer SIP regarding format and structure. If the SIP has deviations the Archive might reject the SIP and request the Producer to deliver a corrected SIP.

**Notes:** Examples of evidence to demonstrate this can be the logs of the validation procedures; documentation of the validation procedures, among others.

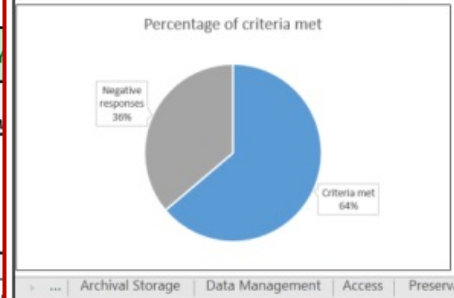
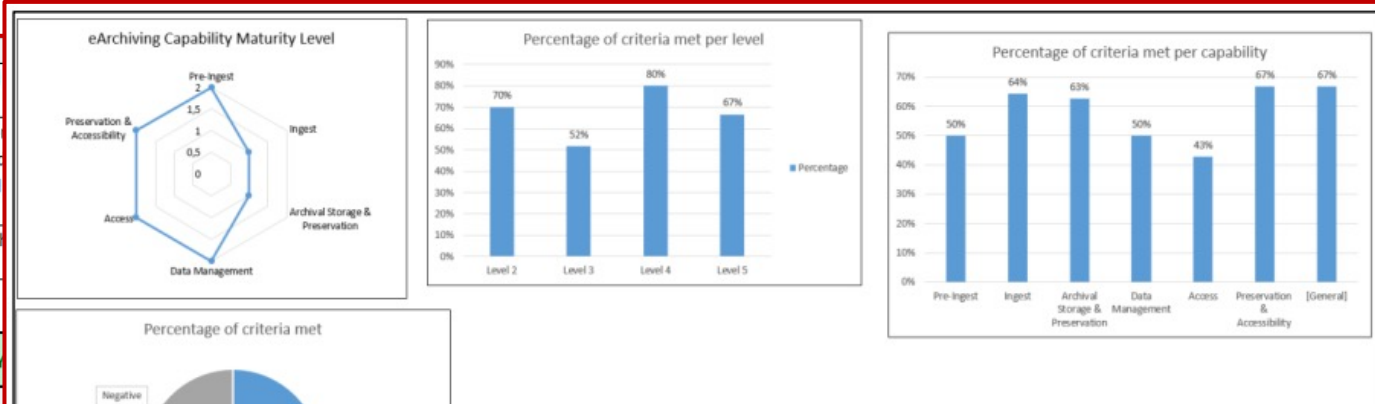
**eArchiving Reference Architecture Mapping:**

Views -> 03 Business Layer -> 01 Pre-Ingest -> Prepare submission

Answer **N**  
("Y" for yes, "N" for no)

**Observations**

(in case there are some comments to your answer that you would like to share, please add them below)



Capability / Aspect	Level	Question	Answer	Count	Criteria met?	Points
Pre-Ingest	2	P2.1	Y	1	YES	1
	3	P3.1	N	0	NO	0
Ingest	2	I2.1	O	0	NO	0
		I2.2	N	1		0
		I2.3	Y	1		1
		I3.1	Y	1		1
		I3.2	Y	1		1
		I3.3	N	0		0
		I3.4	N	0		0
		I3.5	Y	7		1
		I3.6	Y	1		1
		I3.7	Y	1		1
Archival Storage & Preservation	5	I5.1	Y	1	YES	1
		S2.1	Y	1	1	
	2	S2.2	Y	2	NO	1
		S2.3	O	0	0	
	3	S3.1	Y	1	1	
		S3.2	Y	1	1	
		S3.3	N	3	NO	0
		S3.4	O	0	0	
		S3.5	Y	1	1	
		S3.6	Y	1	1	
Data Management	2	D2.1	Y	1	YES	1
		D3.1	N	0	0	
	3	D3.2	N	1	NO	0
		D3.3	Y	1	1	
		A2.1	Y	1	YES	1

Capability	Level
Pre-Ingest	2
Ingest	1
Archival Storage & Preservation	1
Data Management	2
Access	2
Preservation & Accessibility	2

	Percentage	Count
Criteria met	60%	30
Negative responses	34%	17

Capability	Percentage	Count
Pre-Ingest	50%	1
Ingest	64%	9
Archival Storage & Preservation	63%	5
Data Management	50%	2
Access	43%	3
Preservation & Accessibility	67%	4
[General]	67%	6

Levels	Percentage	Count
Level 2	70%	7
Level 3	52%	15
Level 4	80%	4
Level 5	67%	4



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# eArchiving Reference Architecture

On the concept of “Enterprise Architecture” ...

Simply put, Enterprise Architecture is the mapping of the organization’s key concepts and their interdependencies.

## Enterprise Architecture

- Entities in Business Layer**
  - Goals
  - Capabilities
  - Products
  - Business Services
  - Business Processes
  - Business Objects
  - Requirements
  - Projects
  - Contracts
  - etc.
- Entities in Information System Layer**
  - Applications
  - Application Services
  - Data Objects
  - Data Base Schemas
  - Data Flows
  - etc.
- Entities in technologic Layer**
  - Platform
  - System Software
  - Devices
  - Nodes
  - Communication Links
  - etc.

The ArchiMate® Enterprise Architecture Modeling Language

### About the ArchiMate Modeling Language

The ArchiMate® Specification, a standard of The Open Group, is an open and independent modeling language for Enterprise Architecture that is supported by different tool vendors and consulting firms. The ArchiMate Specification provides instruments to enable Enterprise Architects to describe, analyze, and visualize the relationships among business domains in an unambiguous way. (Download a copy of the ArchiMate Specification)

Just as an architectural drawing in classical building architecture describes the various aspects of construction and use of a building, the ArchiMate Specification defines a common language for the construction and operation of business processes, organizational structures, information flow systems, and technical infrastructure. This insight helps stakeholders to design, assess, and control the consequences of decisions and changes within and between these business domains.

#### Resources

- ArchiMate Webinars
- Download a copy of the ArchiMate 3.1 Specification
- Read the ArchiMate 3.1 Specification online
- ArchiMate 3.1 Pocket Guide
- ArchiMate 3.1 Reference Cards

Archi  
archimate modelling

The Open Source modelling toolkit for creating ArchiMate models and sketches. Used by Enterprise Architects everywhere.

DOWNLOAD

Archi - J:\Users\Shared\Archi\ArchiMate

Business processes and internal actors / roles

External Application Services

Application Components and Services

Business Process

## The TOGAF® Standard, 10<sup>th</sup> Edition

The TOGAF® Standard, 10<sup>th</sup> Edition makes adoption of best practices easier. It will show you where to find enduring and universal concepts and proven best practice and it will also underscore where to look for new emerging ideas.

Together universal concepts, best practice guidance, and emerging ideas are how you adapt the TOGAF Standard for your configured Enterprise Architecture practice.

- The TOGAF Standard is used by small, medium, and large commercial businesses, as well as government departments, non-government public organizations, and defense agencies
- With greatly expanded guidance and how-to material, it enables organizations to operate in an efficient and effective way across a broad range of use-cases, including agile enterprises and Digital Transformation
- The TOGAF Standard is designed for the dichotomy of common universal concepts and variable detailed configuration
- The structure focuses on what most architects want – more, better, and topical guidance on how to deliver the best Enterprise Architecture that supports their stakeholders and their organization
- It is divided into the TOGAF Fundamental Content and the TOGAF Series Guides; the TOGAF Fundamental Content provides the core concepts and practices, and the TOGAF Series Guides advise on configuration of the Fundamental Content

Download now    Go to Digital Edition

# eArchiving Model-based Approaches

<http://kc.dlmforum.eu/eark-products>

The screenshot shows the website interface with a navigation bar containing 'Knowledge Centre', 'HOME', 'APPS', and 'EARK PRODUCTS'. The main heading is 'E-ARK Products'. Below this, there are two diagrams: a circular flow diagram on the left and a maturity model graph on the right. A large blue arrow points from the left diagram towards the right diagram.

## eArchiving Reference Architecture v1.0

This reference model of digital archiving has been created by the CEF eArchiving Building Block in cooperation with the E-ARK Consortium.

## eArchiving Capability and Maturity Model

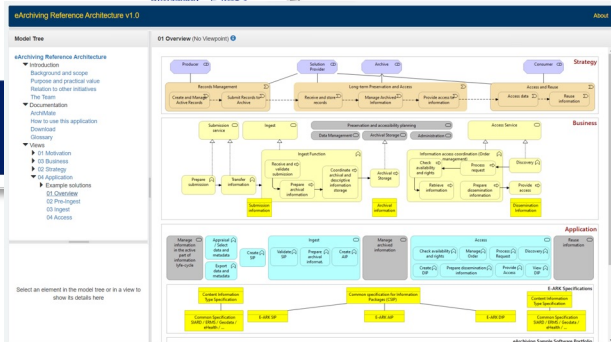
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Principles for long-term accessibility of information

eArchiving Reference Architecture

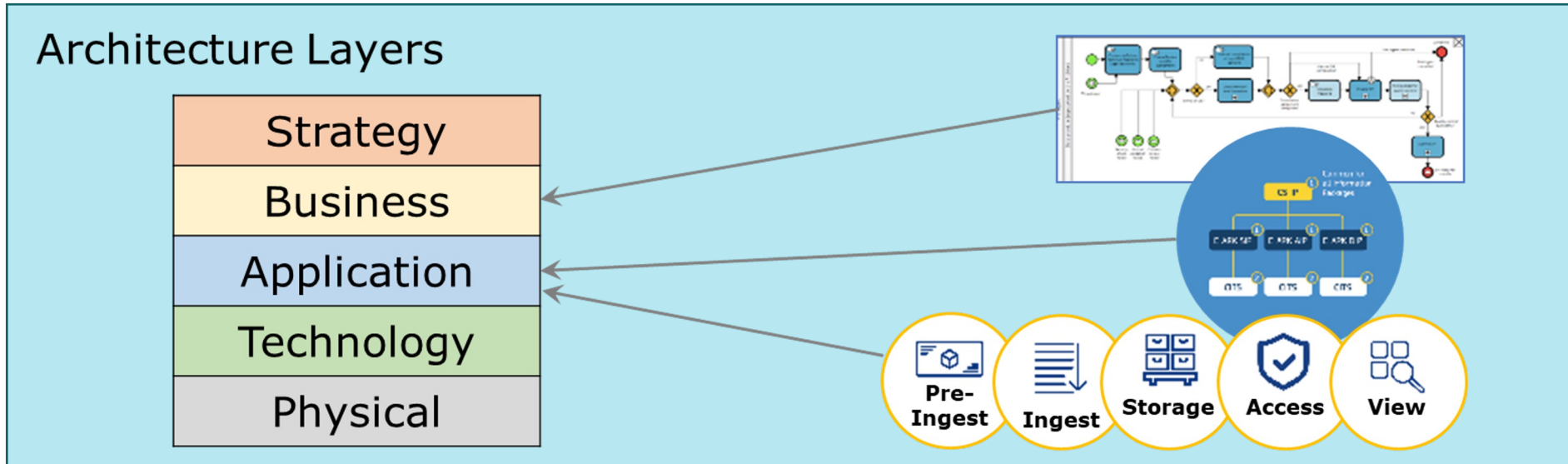
v1.0

Reference Architecture Workgroup  
Archives & Library Europe



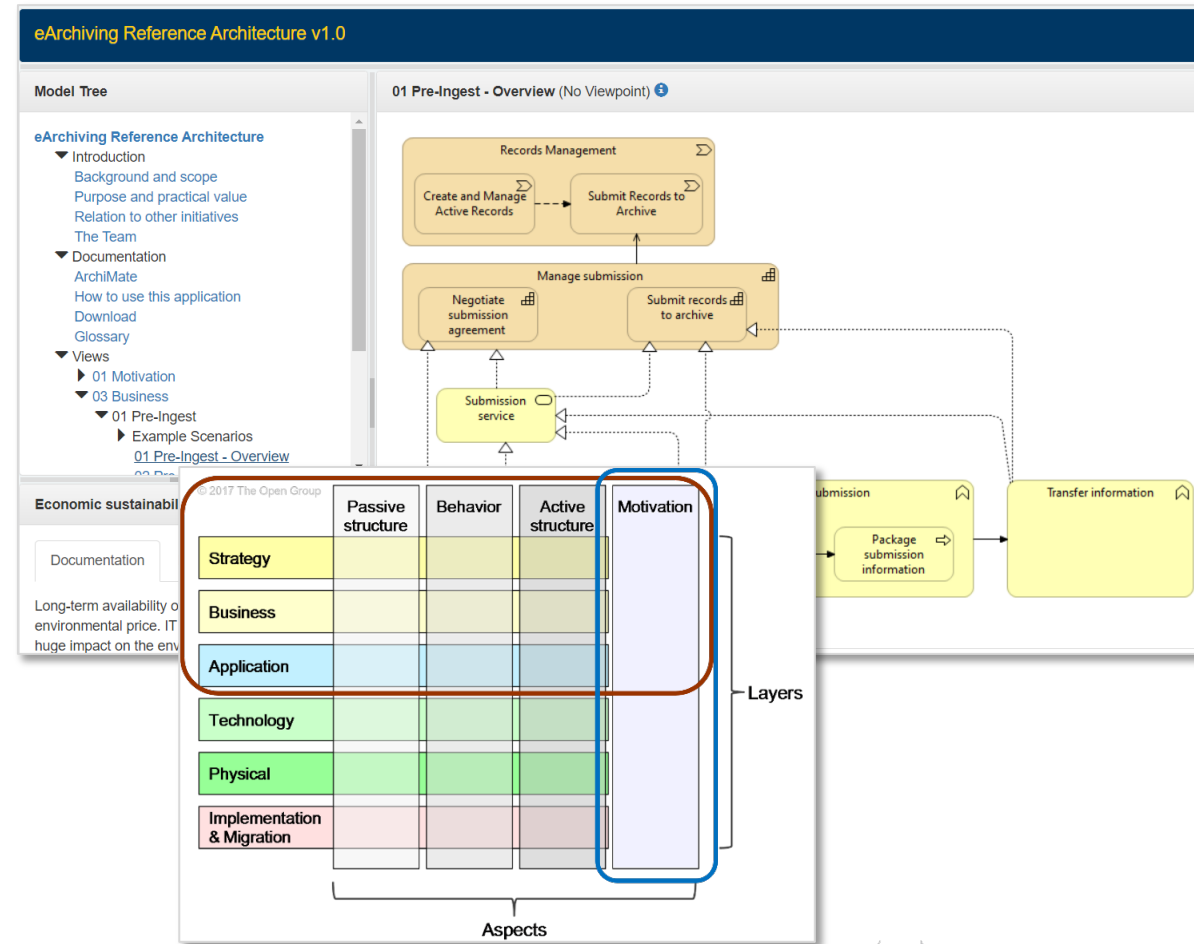
Created by:

# eArchiving Reference Architecture



# eArchiving Reference Architecture v1.0

- Version 1.0 published in 2021
- Online version available at the E-ARK Knowledge Centre
- ArchiMate model can be downloaded from the online version
- V1.0 is focusing on the motivation aspect, strategy and business layers

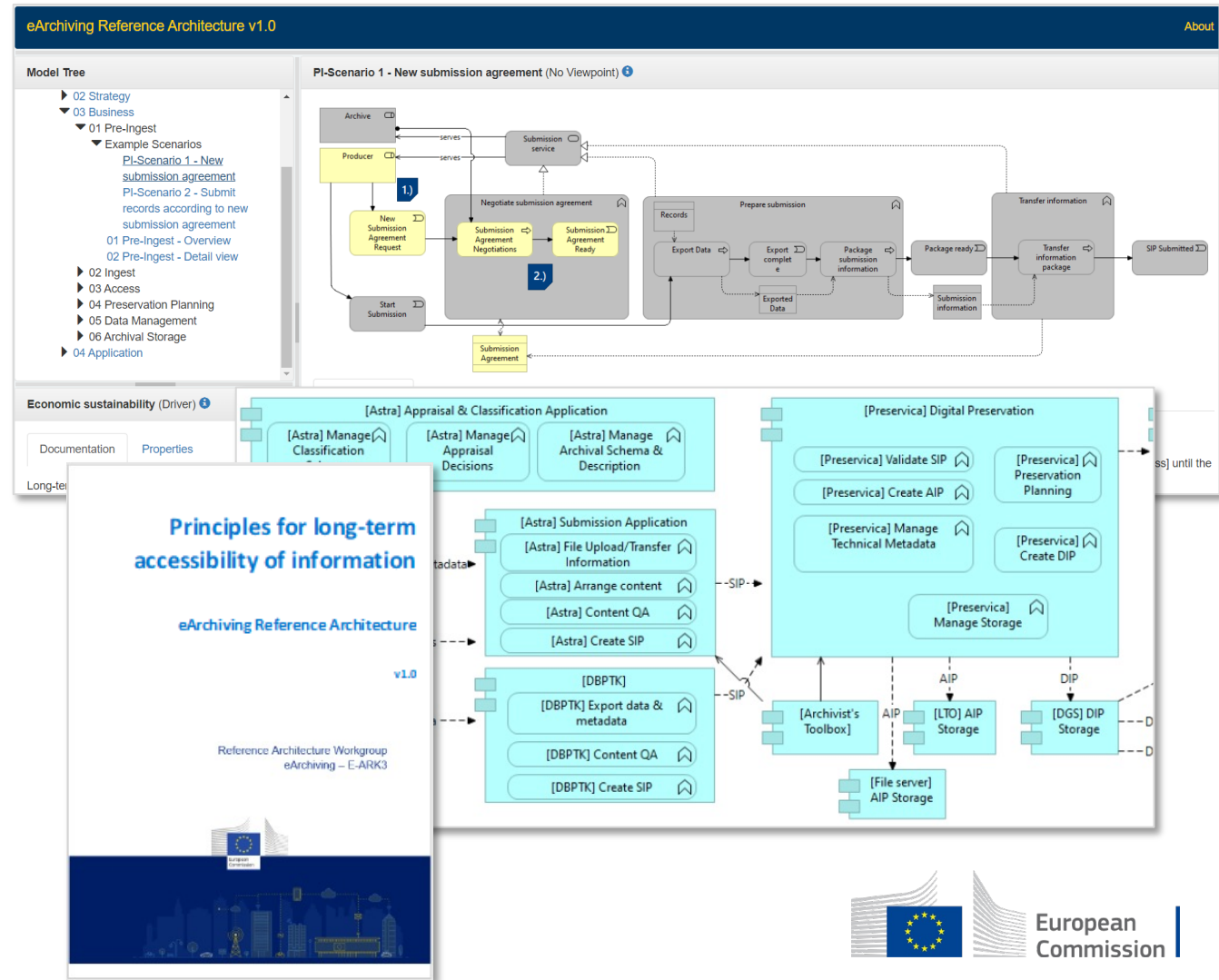




# eArchiving Reference Architecture v1.0

Extended with:

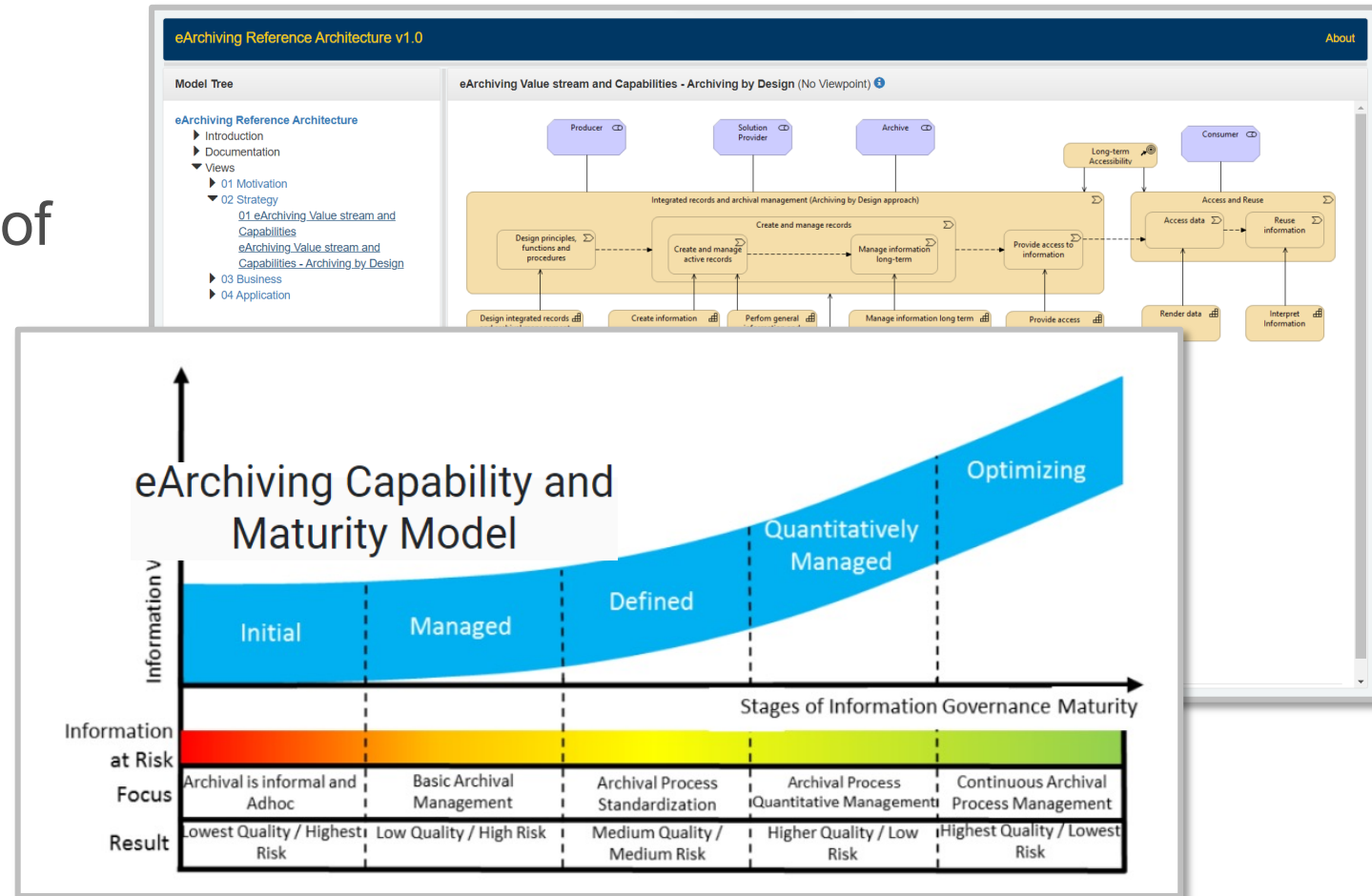
- Principles document
- Business scenarios
- Real world application layouts
- Introduction, documentation, and glossary sections



# Reference Architecture – 1st project year

Parallel activities:

- Aligning with the new version of the eArchiving Maturity Model
- Aligning with the Archiving by Design approach



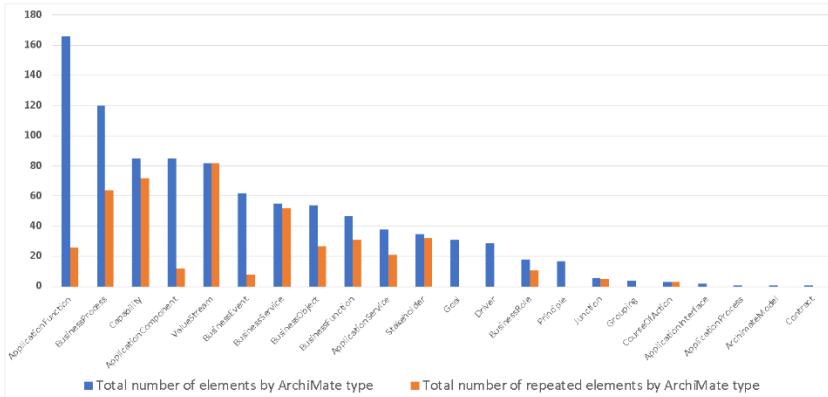
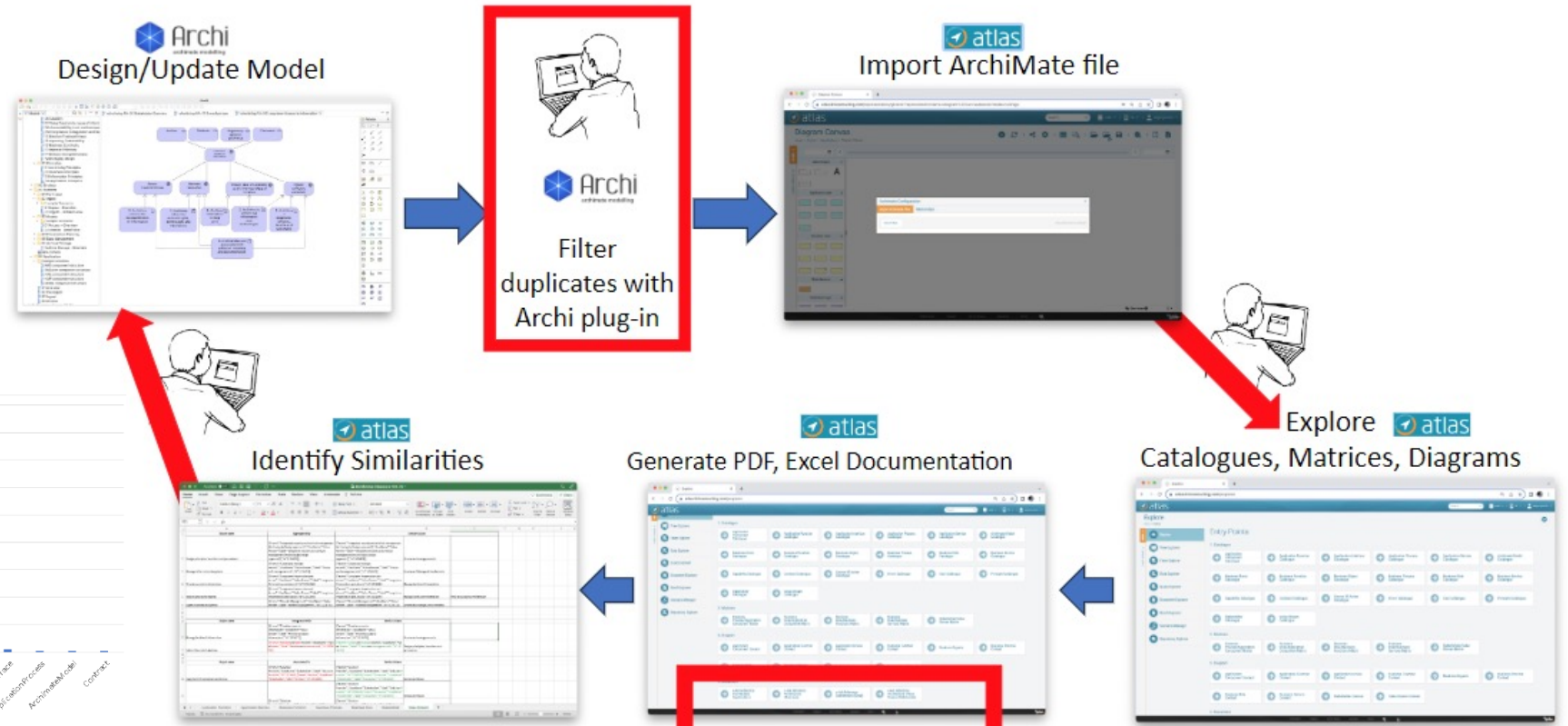
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# Cleaning up the RefArch ... ... with Atlas

## EA Automation cycle



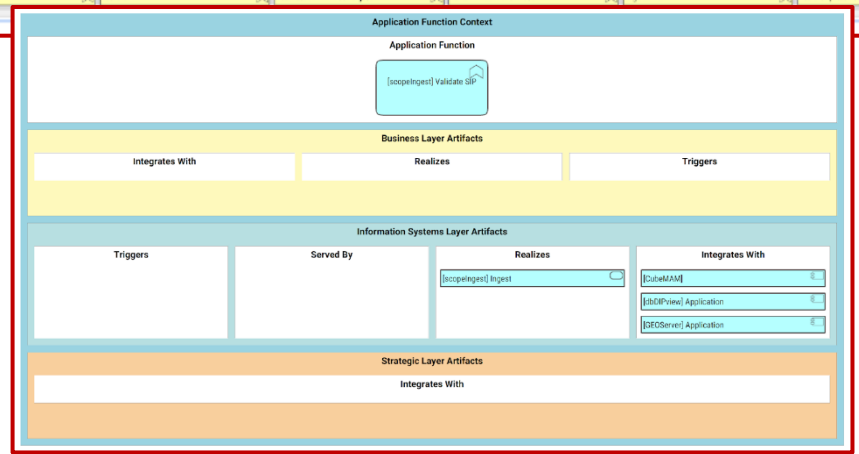
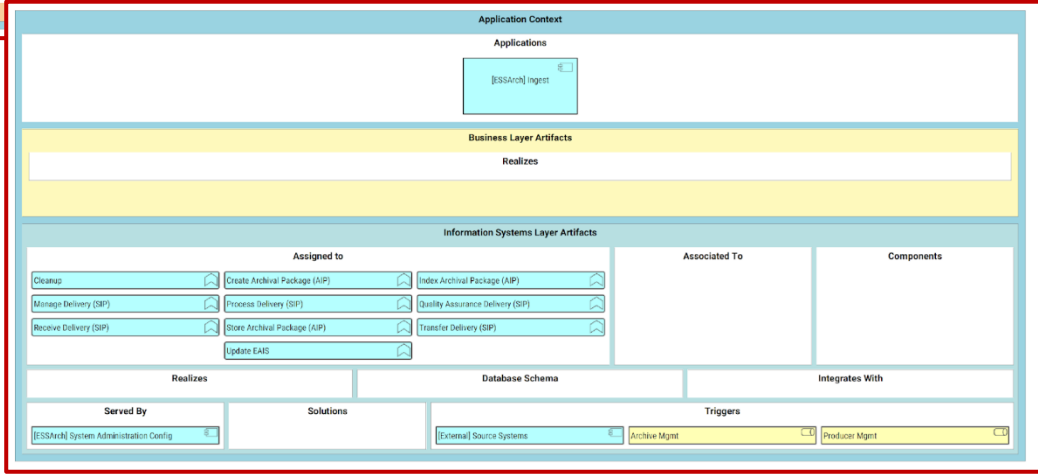
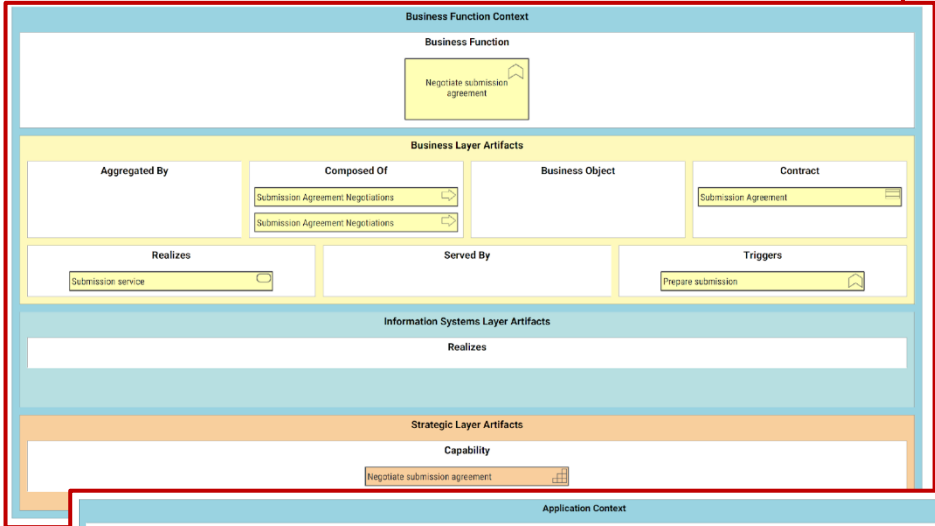


# Cleaning up the RefArch ... ... with Atlas

3. Diagram <https://atlas.linkconsulting.com/explorer>

Application Component Context   Application Function Context   Application Service Context   Business Function Context   **Business Organic**   Business Process Context

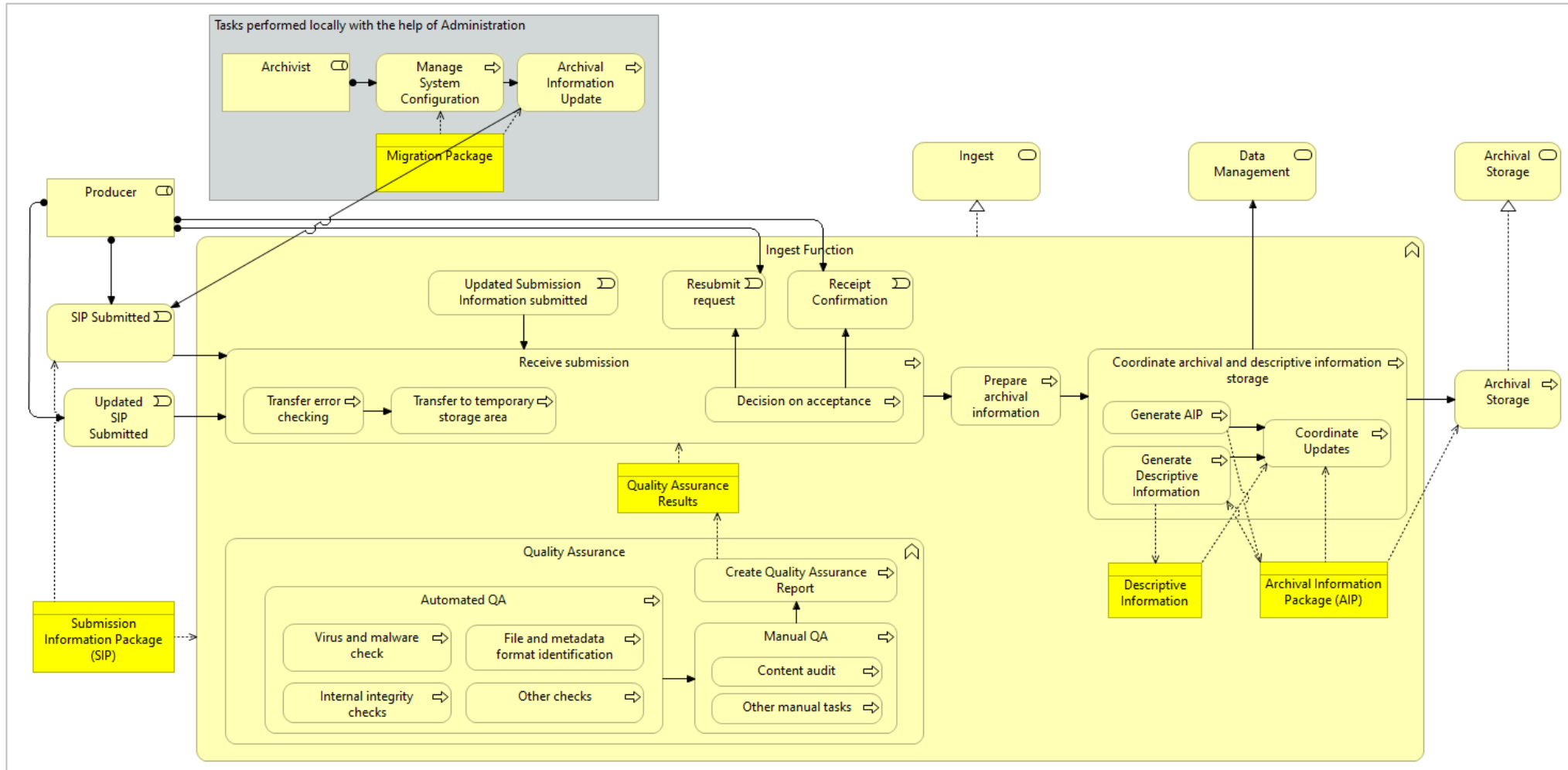
Business Role Context   Business Service Context   Stakeholder Context   Value Stream Context



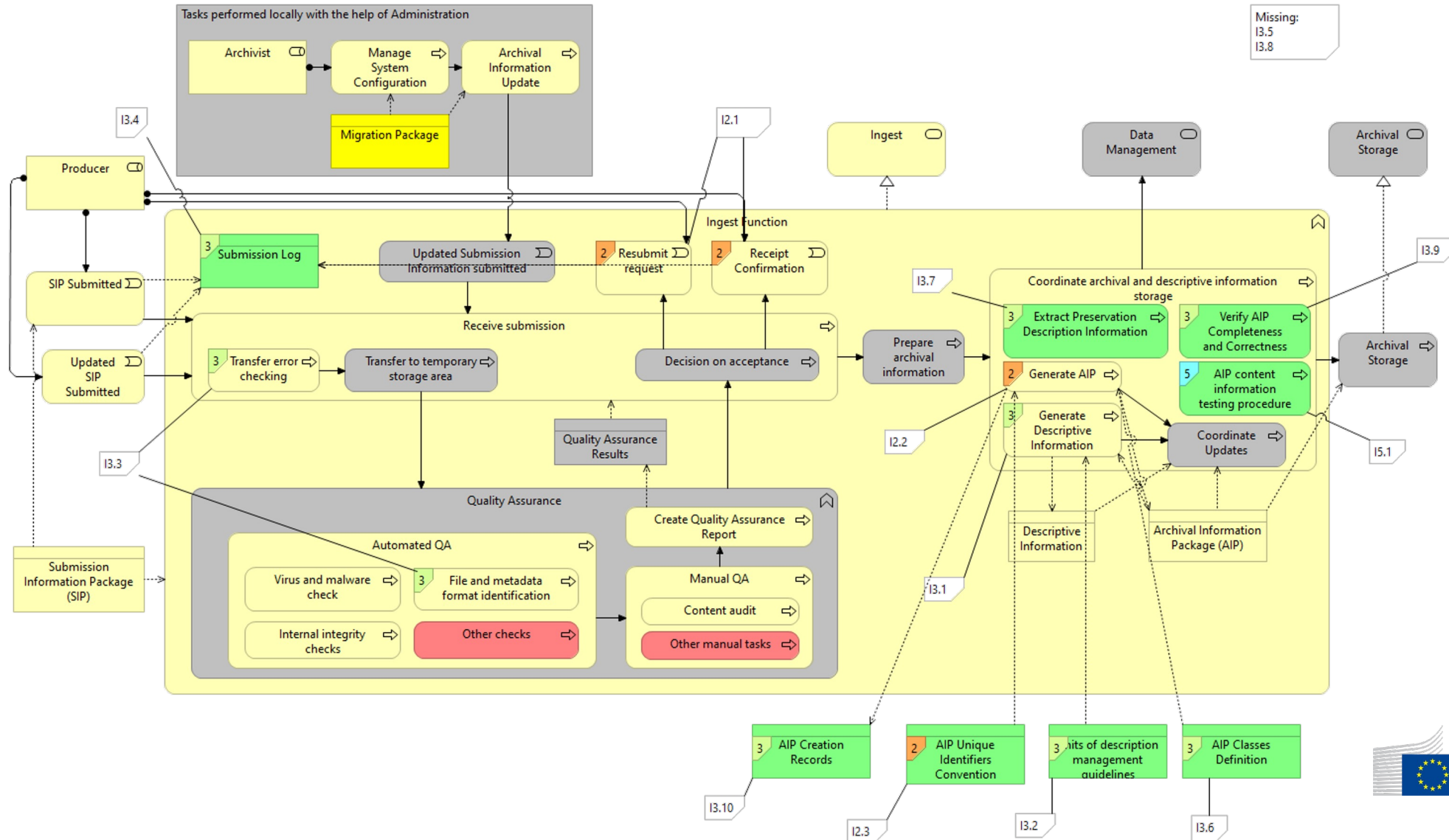
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# Alignment – Ingest – Original view



# Alignment – Ingest – Discussion

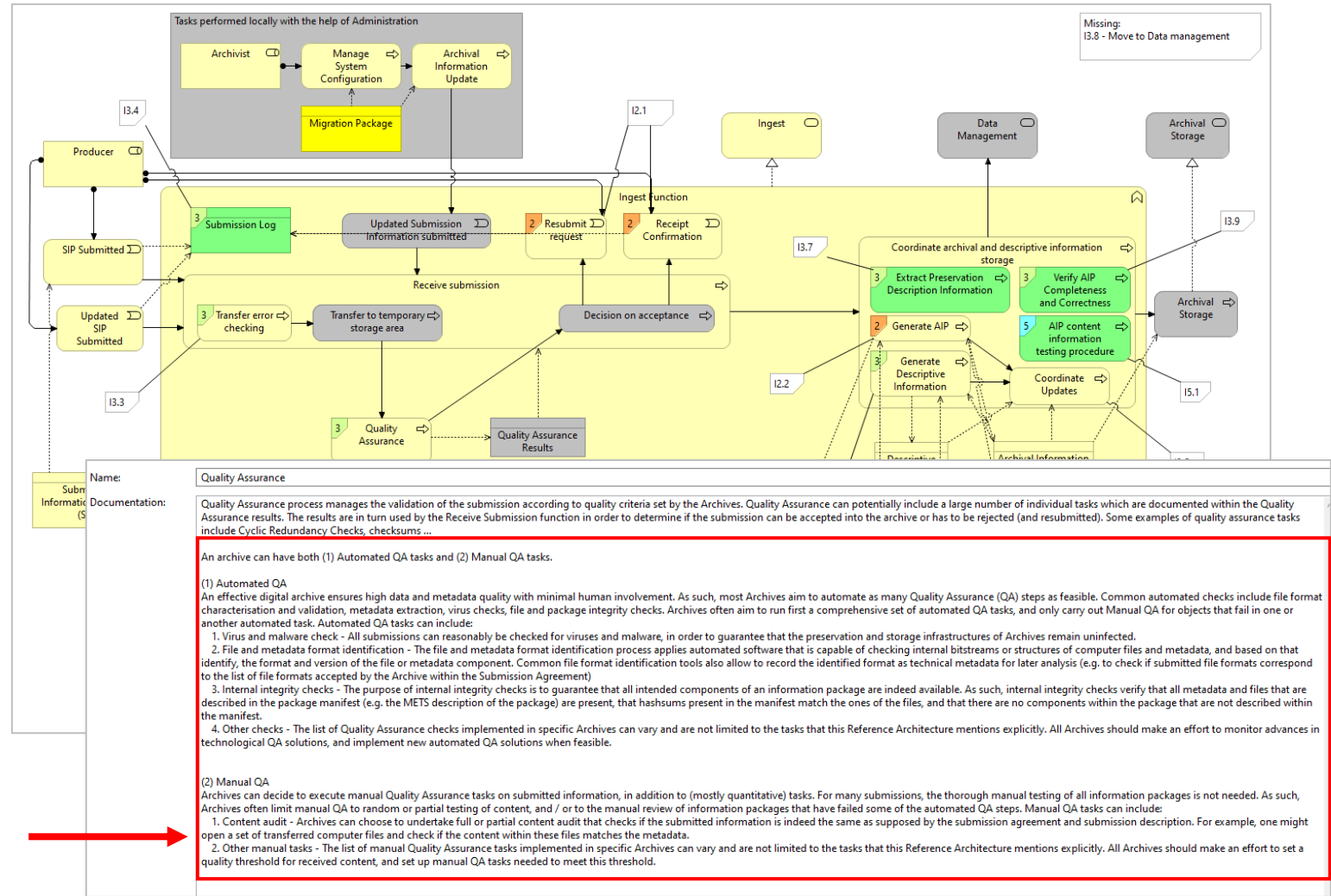


# Alignment – Ingest – Discussion

Simplification of quality assurance, leaving the inner details open to interpretation in a given scenario.

- 1 - All inner tasks are included as part of the documentation.
- 2 – Quality assurance changed from a business function to business process to be in line with the rest of the ingest model
- 3 – Maturity model criterion I3.11 created to assess the existence of quality assurance within ingest

Documentation added



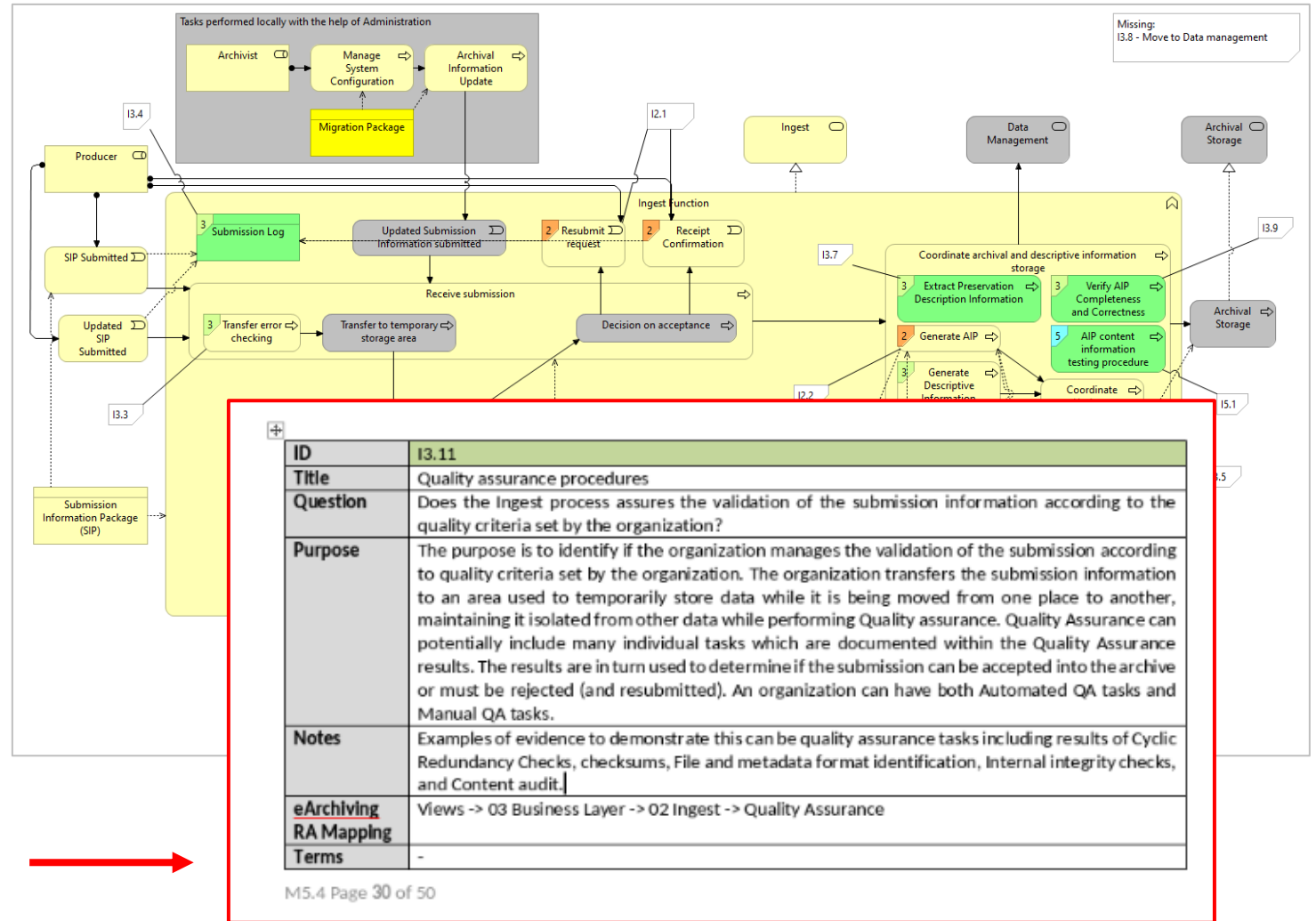


# Alignment – Ingest – Discussion

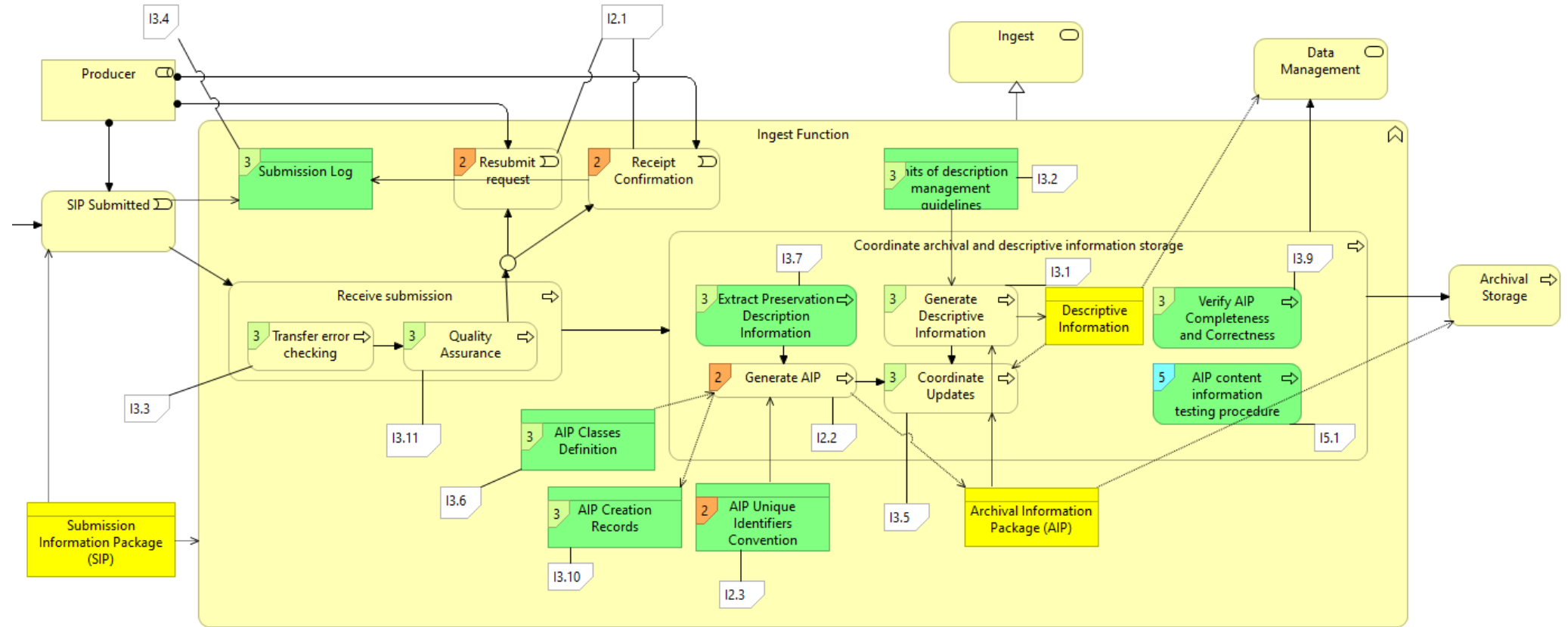
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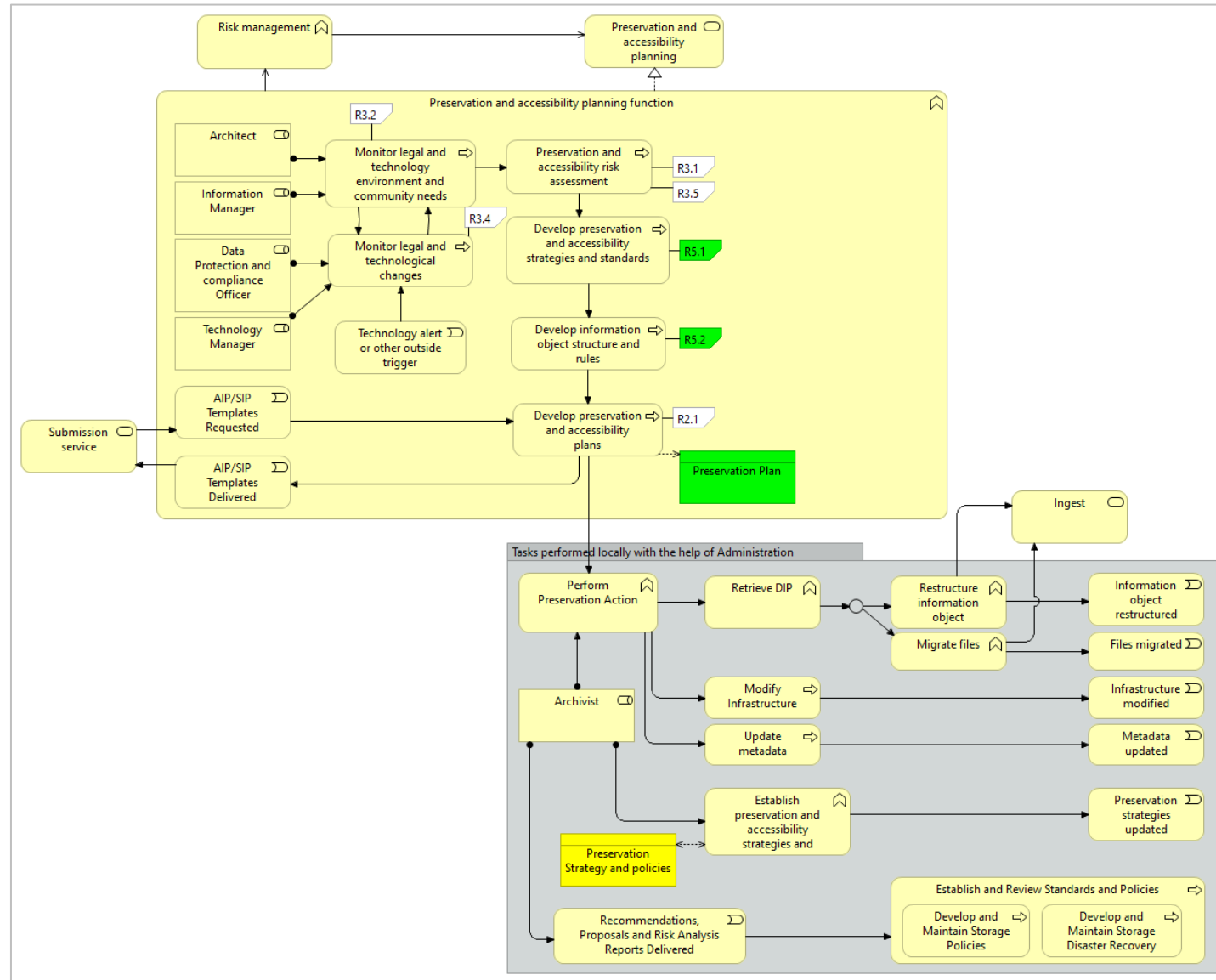
New criterion added →



# Alignment – Ingest – Final arrangement

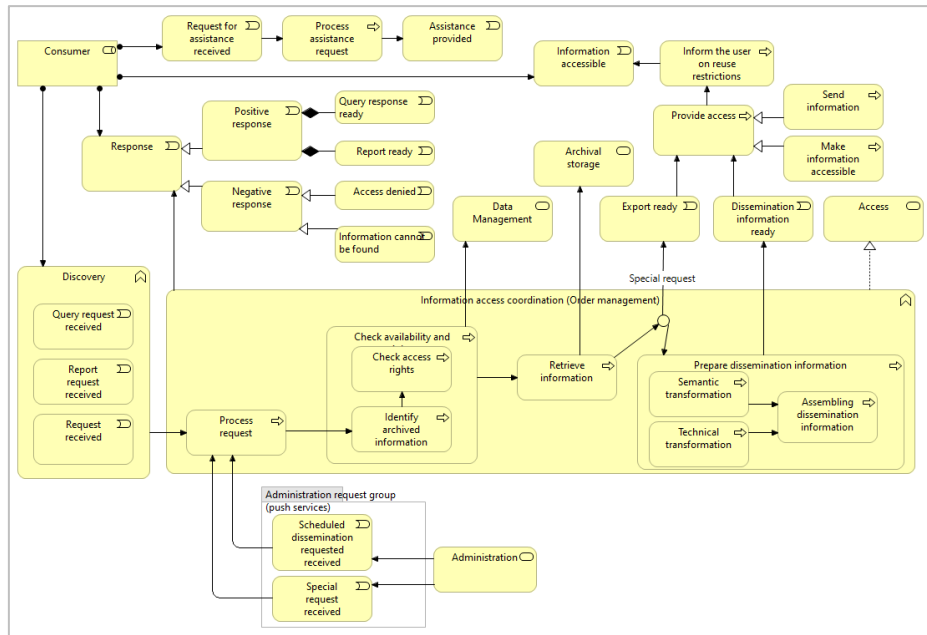


# Alignment – Preservation Planning

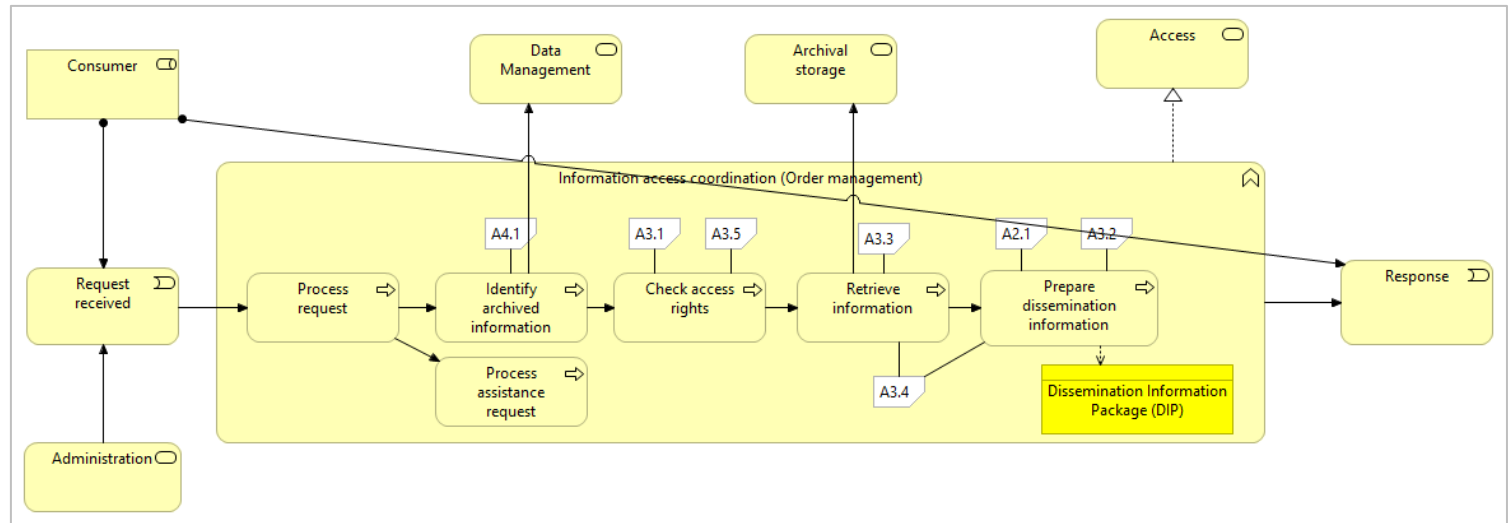


# Alignment – Access

Before



After



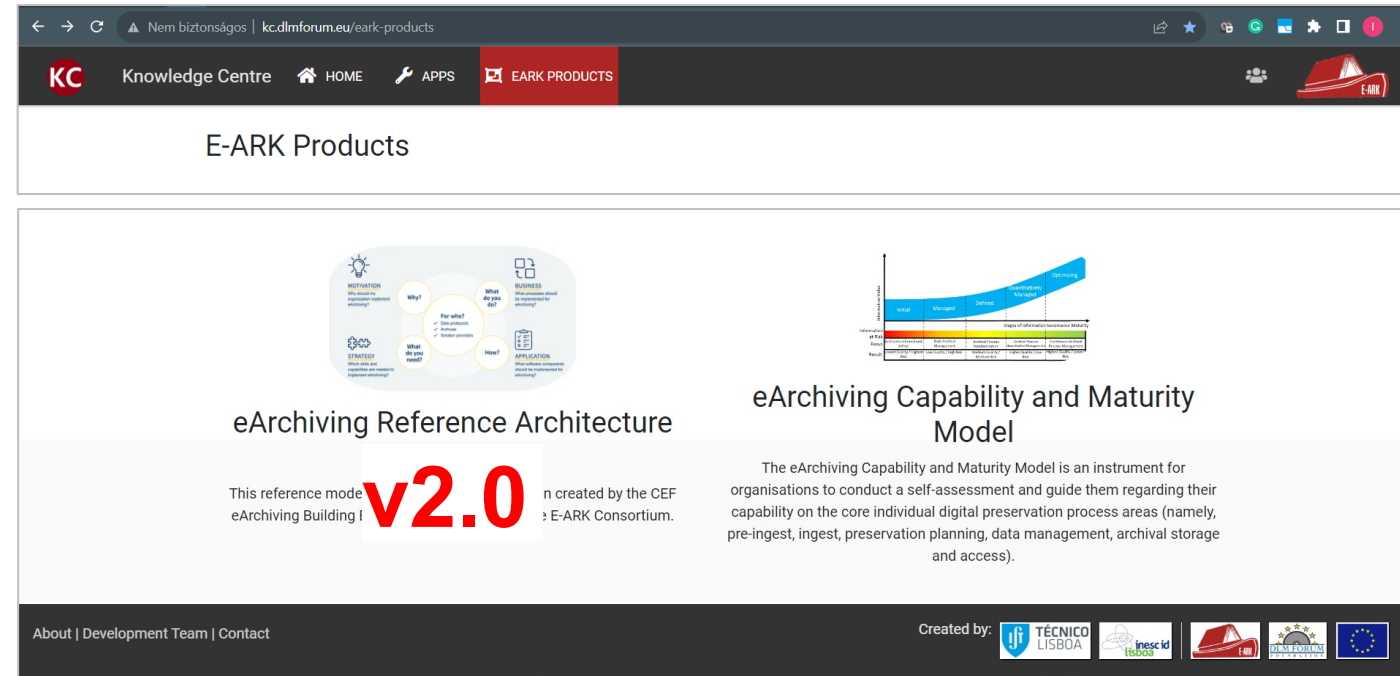
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# Future plans

- eArchiving Reference Architecture Version 2.0 (end of 2023)
- Simplified business views
- New views to be used with the eArchiving Capability Maturity Model
- and more ...



The screenshot shows the E-ARK Products page on the website [kcdmforum.eu/eark-products](http://kcdmforum.eu/eark-products). The page features two main sections:

- eArchiving Reference Architecture v2.0**: A diagram illustrating the architecture with components like MOTIVATION, STRATEGIES, BUSINESS, and APPLICATION. Below it, text states: "This reference model v2.0 is created by the CEF eArchiving Building Blocks E-ARK Consortium." The 'v2.0' is highlighted in large red font.
- eArchiving Capability and Maturity Model**: A graph showing a curve representing maturity levels across different stages (Design, Delivery, Operation, etc.). Below it, text explains: "The eArchiving Capability and Maturity Model is an instrument for organisations to conduct a self-assessment and guide them regarding their capability on the core individual digital preservation process areas (namely, pre-ingest, ingest, preservation planning, data management, archival storage and access)."

The footer includes navigation links (About | Development Team | Contact) and logos for the development partners: TÉCNICO LISBOA, Inescid LISBOA, E-ARK, and the European Commission.

# Thank you



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