Archaeology Data Service

ADS Case study: Where is our Data: Reaching for the clouds

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Disaster

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OAIS

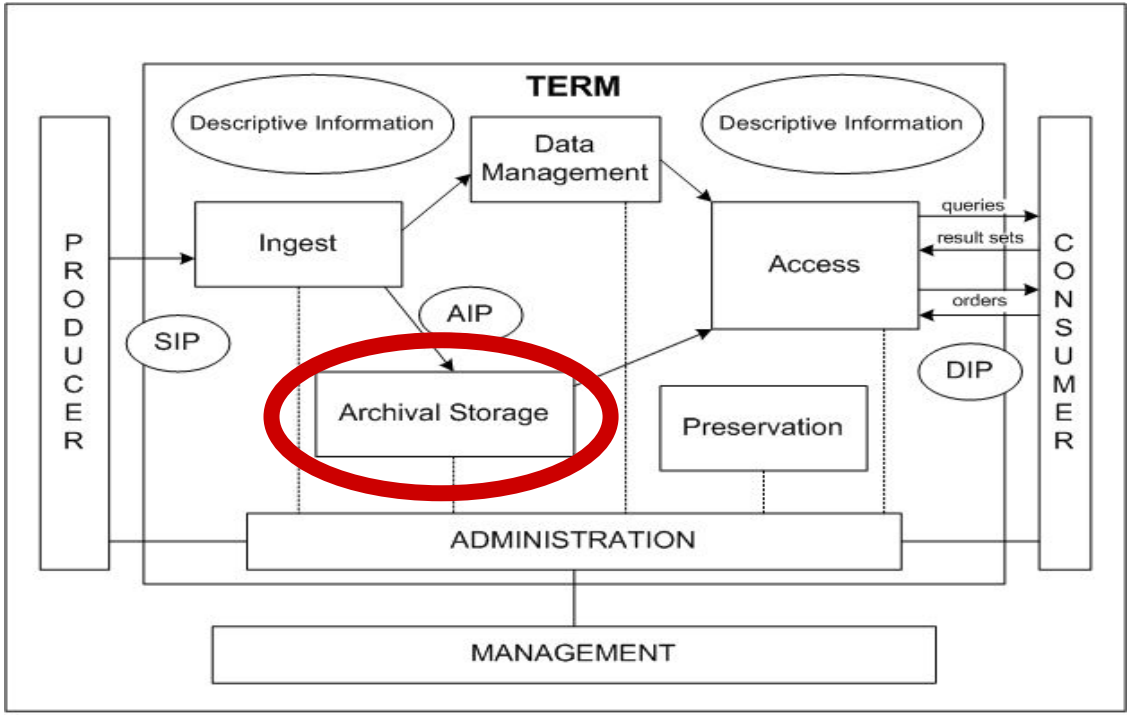

Fig. 1. Major functions of the OAIS Reference Model from Consultative Committee for Space Data Systems (CCSDS), CCSDS 650.0-W-1, Producer-Archive Interface Methodology Abstract Standard. (OAIS). White Book. Issue 1. Draft Recommendation for Space Data System Standards.

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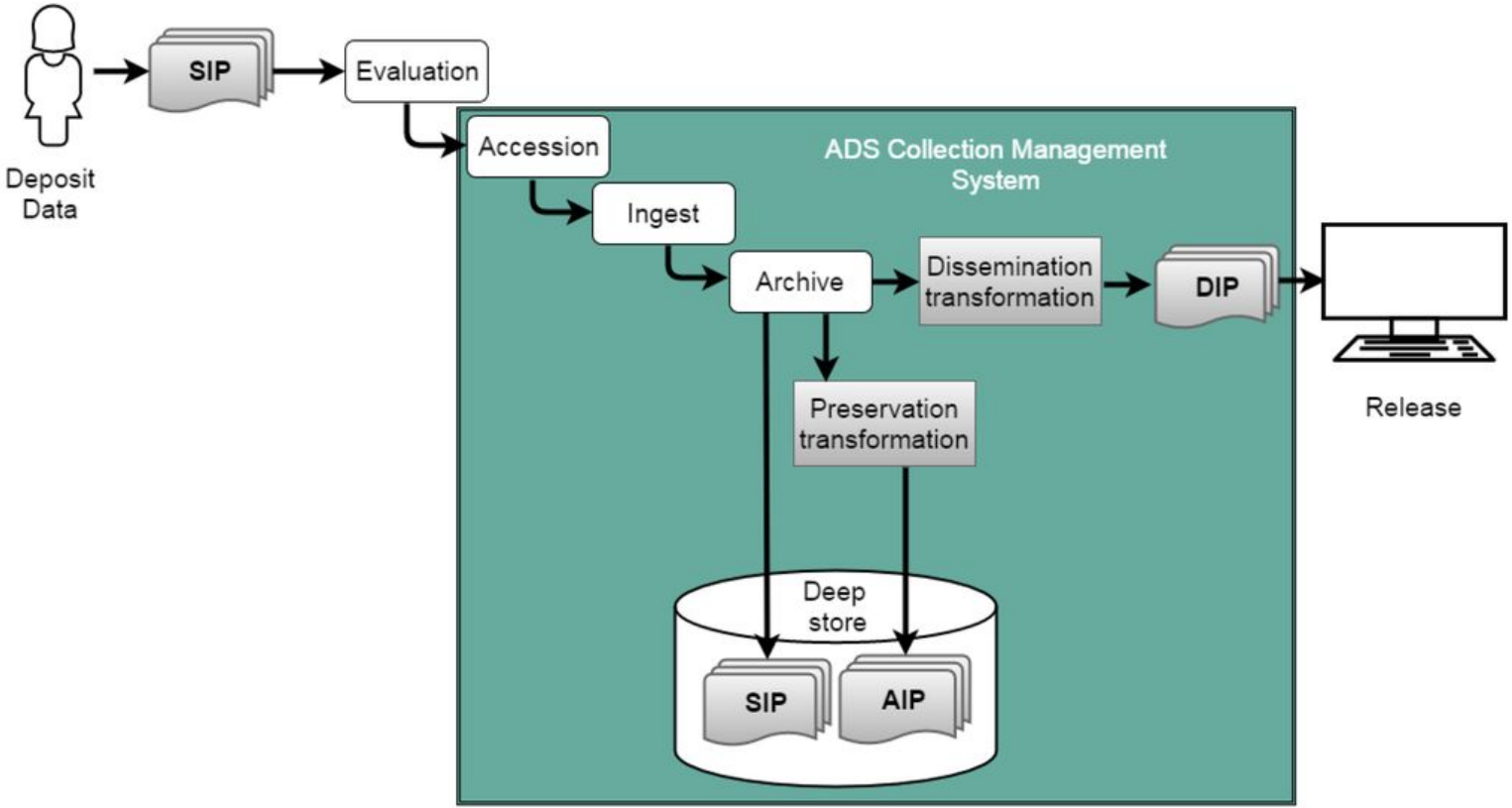
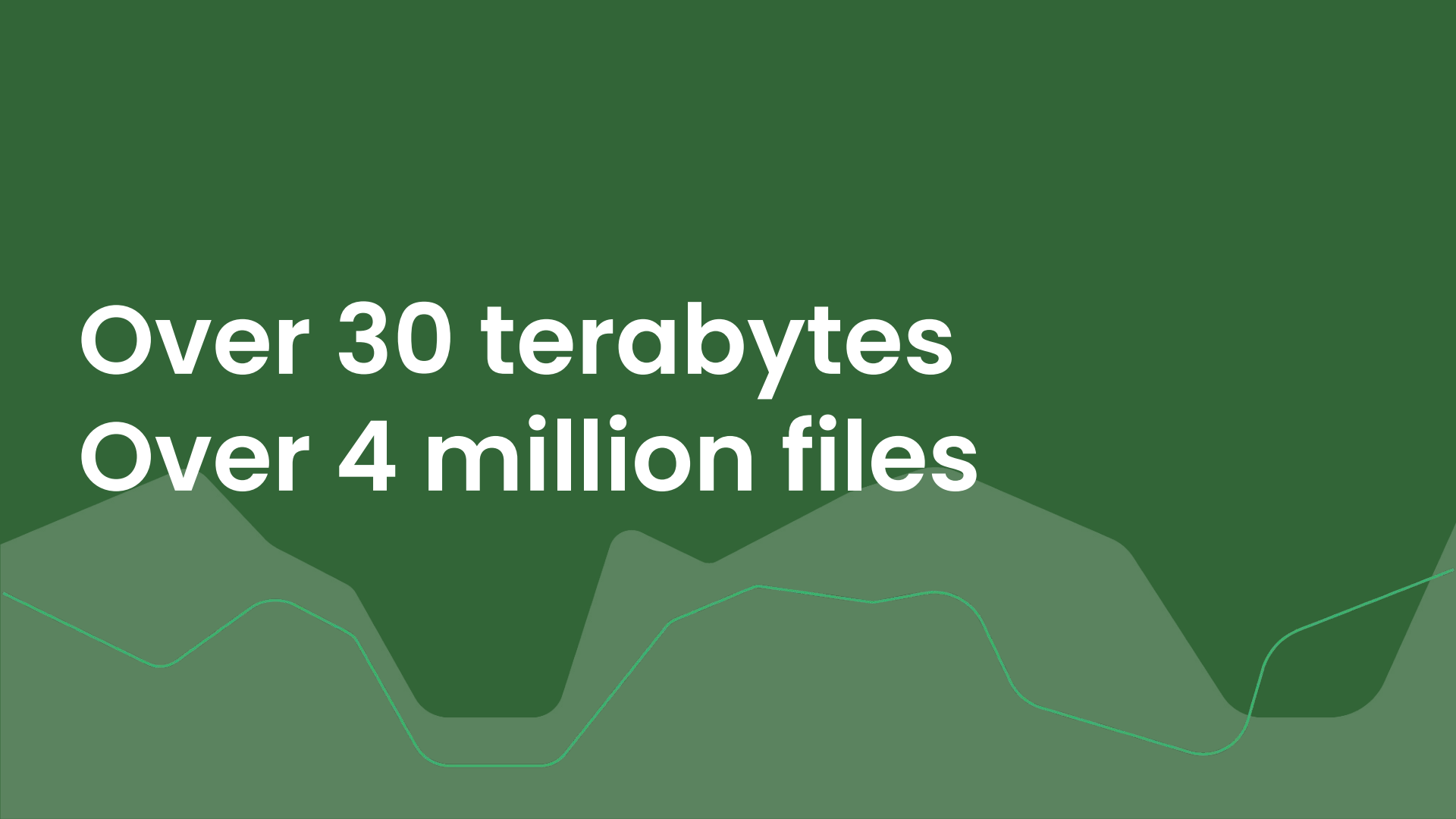


Over 30 terabytes
Over 4 million files



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Stage 1: on site backup

i) Who is responsible for the backup?

ii) How often does the backup take place?

iii) Where is the backup?

iv) What is the backup?

v) How long is the backup kept?

vi) How do we get the backup back?

vii) When do we know we need to get the backup!?

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Stage 1: on site backup

i) Who is responsible for the backup?

Named member of staff (Paul Young) and a named lead in ITS

ii) How often does the backup take place?

Every night

iii) Where is the backup?

In a secure UoY ITS store

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Stage 1: on site backup

iv) What is the backup?

Magnetic tape

v) How long is the backup kept?

90 days

vi) How do we get the backup back?

Email request to ITS

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Stage 1: on site backup

vii) When do we know we need to get the backup!?

Information Security Risk Assessment

Review all the ways in which we can lose data - threats but also internal mistakes and oversights.

Policy for data integrity (Kieron!)

Named responsibility for checksums and fixity values

How often? How is this run etc.

One backup is never enough.

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Off-site storage

This is, effectively, a third copy of the AIP

Has to be independent of our main File Store and Backup

Has to be reliable

Has to be affordable - costs have to be clearly understood

Have to be able to get data back quickly - no hidden barriers.

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Cloud storage - Amazon Web Services

ALWAYS A RISK!

Advantages

Quick

Cheap

Scaleable / different options for use of APIs

“Too big to fail”

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Cloud storage - Amazon Web Services

ALWAYS A RISK!

Disadvantages

Lack of clarity over exactly *where* data is

Lack of clarity over what data is stored on

Verifying local (AWS) integrity of files is in their hands…

“Too big to fail”

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Cloud storage - Amazon Web Services

ADS:

All data stored in Republic of Ireland

- Data subject to EU legislation (inc. GDPR)
- Not in the UK (disaster…)

Use of ‘deep glacier’ tier of storage: most economic for infrequent access

Use of non-public buckets (restrict access)

Cost modeller: allows me to understand what we’re spending and what we’re likely to spend

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Summary

There is no one-size-fits-all solution!

Key requirements are:

- You have a named responsibility!!!
- This person (or people) have time
- There's a clear schedule and workflow that everyone can follow
- There are always risks with using a cloud-based service, but it does work. Just check the details!

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Thankyou!

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