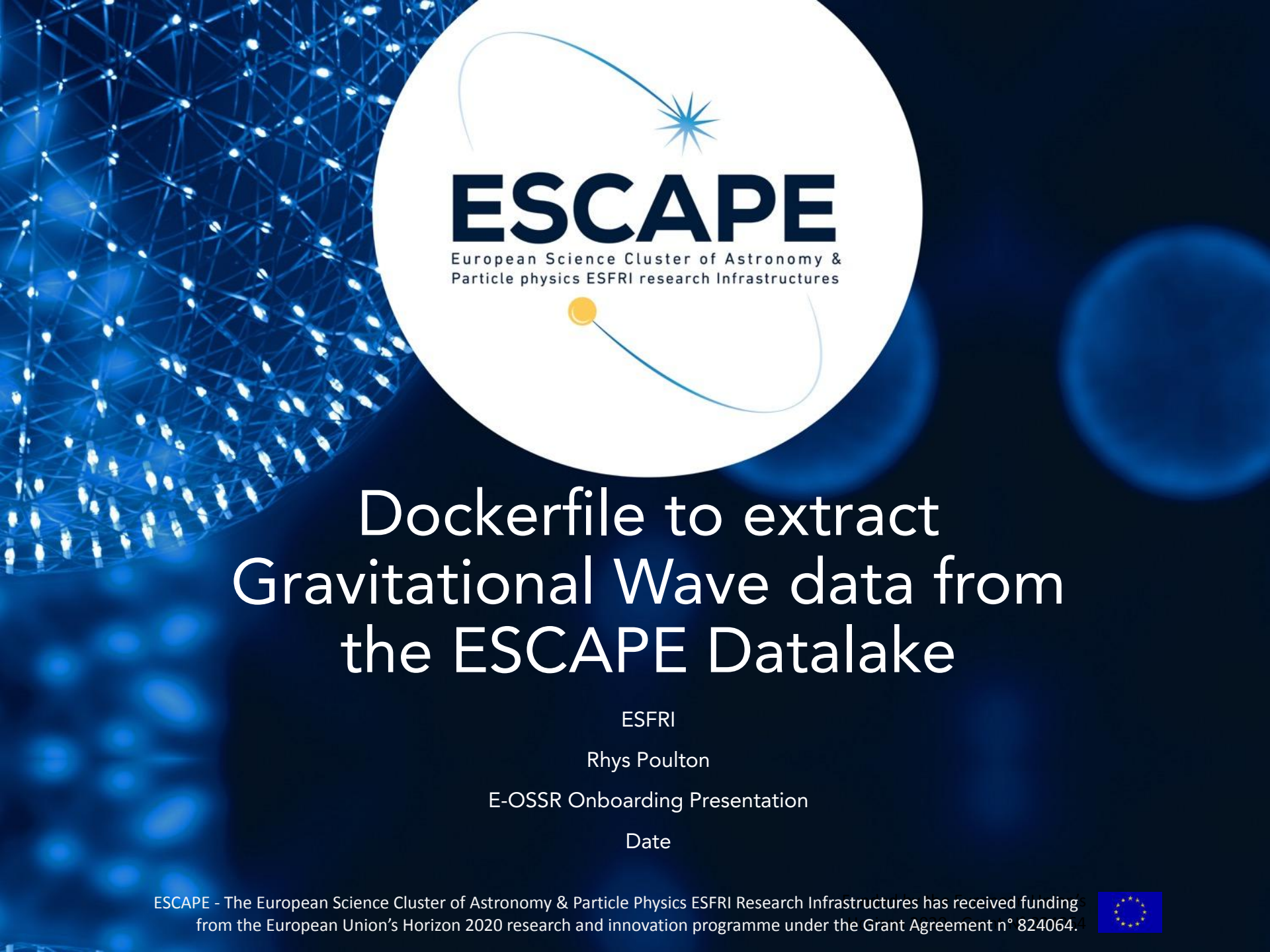


Dockerfile to extract Gravitational Wave data from the ESCAPE Datalake

ESFRI

Rhys Poulton

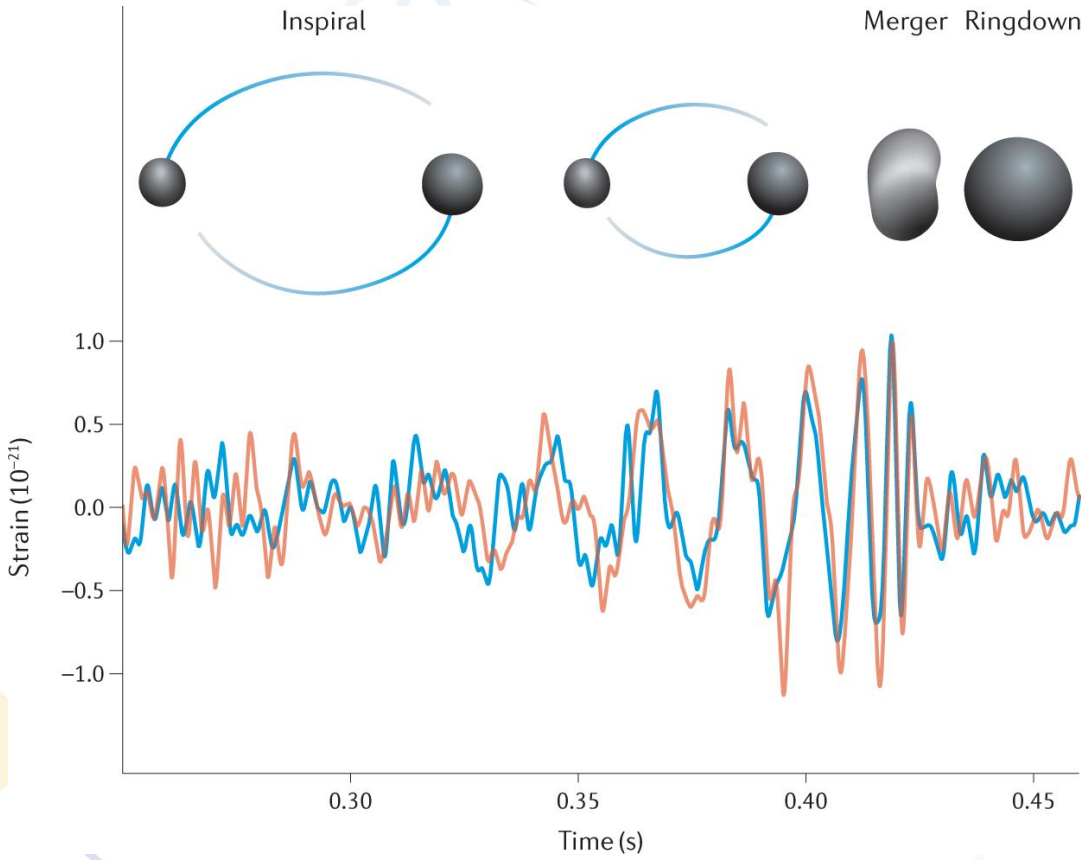
E-OSSR Onboarding Presentation

Date

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.

Introduction

- In Gravitational Waves (GW) we have data constantly streaming Low Latency pipelines from the detectors
  - Low Latency pipelines looking for a GW signal
  - Once a signal is detected an alert is sent out to other observatories



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Introduction

- To test these data it requires a constant stream of data from LIGO Hanford, LIGO Livingston and VIRGO
  - Data streams in 1 m/s
  - Requires a full observing run - 40 days
  - 3.3 TB worth of data

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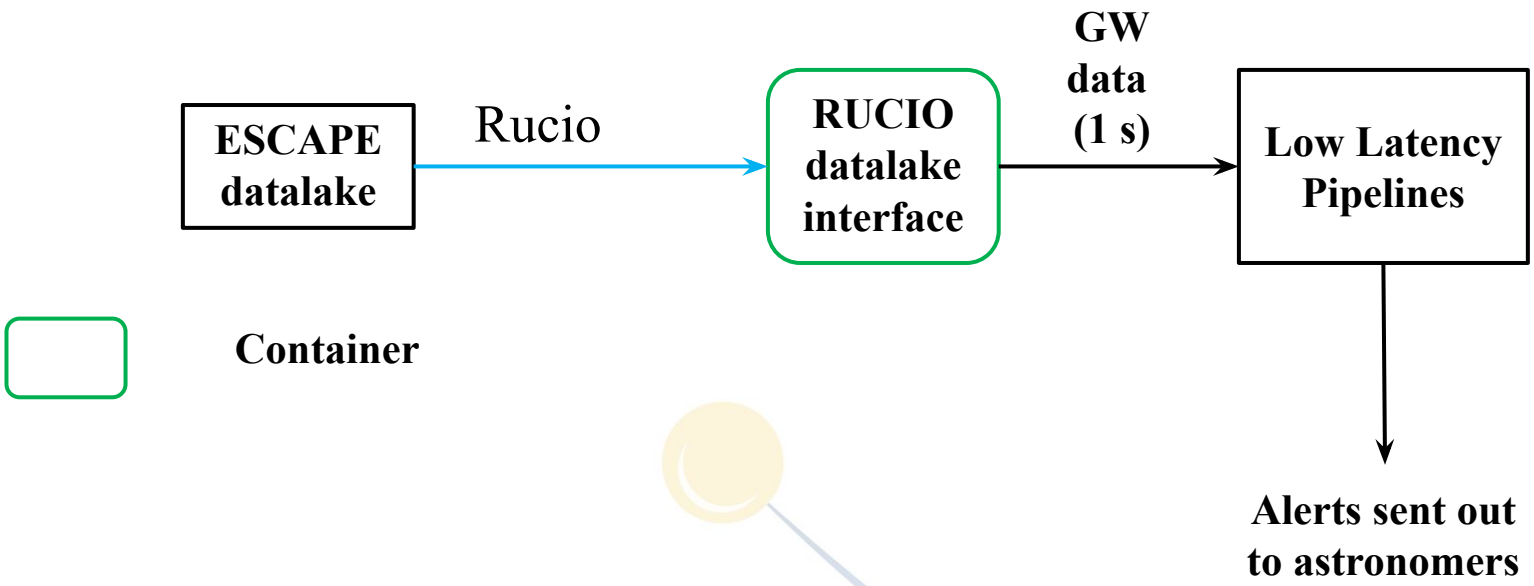
Introduction

- We would like to have this data available in the ESCAPE Datalake and being streamed to the low latency pipelines



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Software/Service Development – 2 slides

- Software Development Lifecycle Strategies
- Development: coding styles, versioning, maintenance, documentation, software quality standards
- Testing and efficiency optimization strategies
- platform integration and metadata (choices)
- software licenses
- General guidelines that are followed

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Software/Service Development

- Available on gitlab:
  - https://git.ligo.org/rhys.poulton/escape-datalake-shared-volume-writer

- GPL 3.0 License

- Standard software development procedure will be followed
  - User fork -> merge request into the master branch

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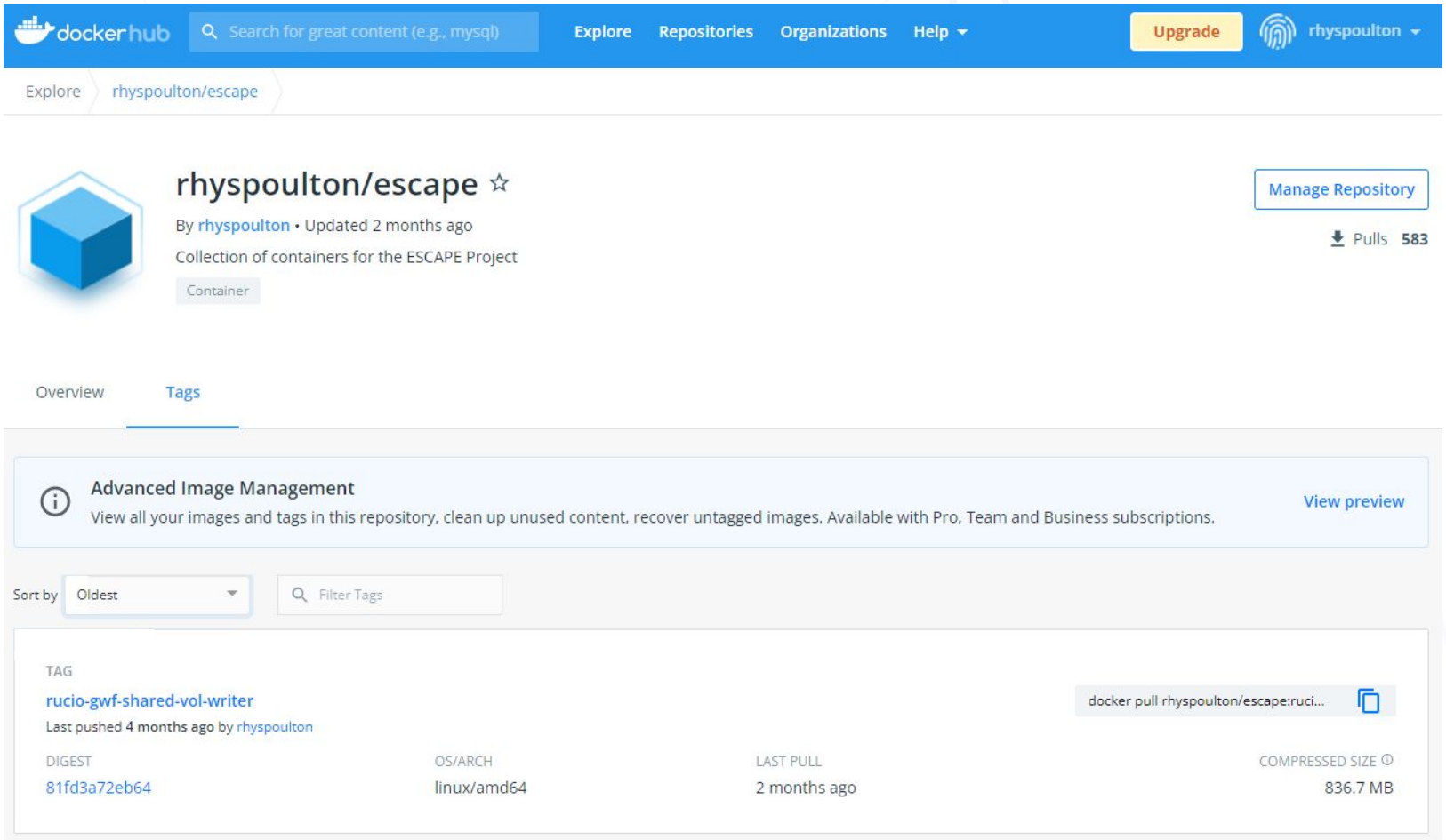
Software/Service Development

- Deployed on Dockerhub



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Software/Service Development

- Documentation available on the zenodo release:
  - https://zenodo.org/record/5742053

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Software/Service Requirements

- Requirements
  - Docker or Singularity instance
  - Ideally Kubernetes cluster

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OSSR Integration

- What is available?
  - Source code
  - Docker container
- What will be onboarded (source code, container, test workflow incl. data)?
  - Source code for container
  - Container image

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OSSR Integration

- What is the ”user story” of a EOSC user taking on the software/service?
  - This means any of the low latency pipelines can take this container and use it to stream data to test the pipeline
  - The user can decide where the data is located from the docker mount
  - It is planned to support the low latency pipelines in the OSSR
    * WAVEFIER - already in OSSR: https://doi.org/10.5281/zenodo.3356656
    * Coherent WaveBurst - in the process: https://doi.org/10.5281/zenodo.5798976

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Time for a short demo (~10 min)

- Show how the software is used and what is the outcome
- What should and can a EOSC user do with the software?

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Open Points and Discussion Time

- Which of your questions have not been covered so far?
- What do you want to discuss?

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TOC of Tech Report

- Introduction
  - ESFRI/RI and Partner, Science Case
  - Software and Service Name
- Software/Service Development Strategy
- Software/Service Requirements
- OSSR Integration
  - Status
  - Content
  - User Story

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