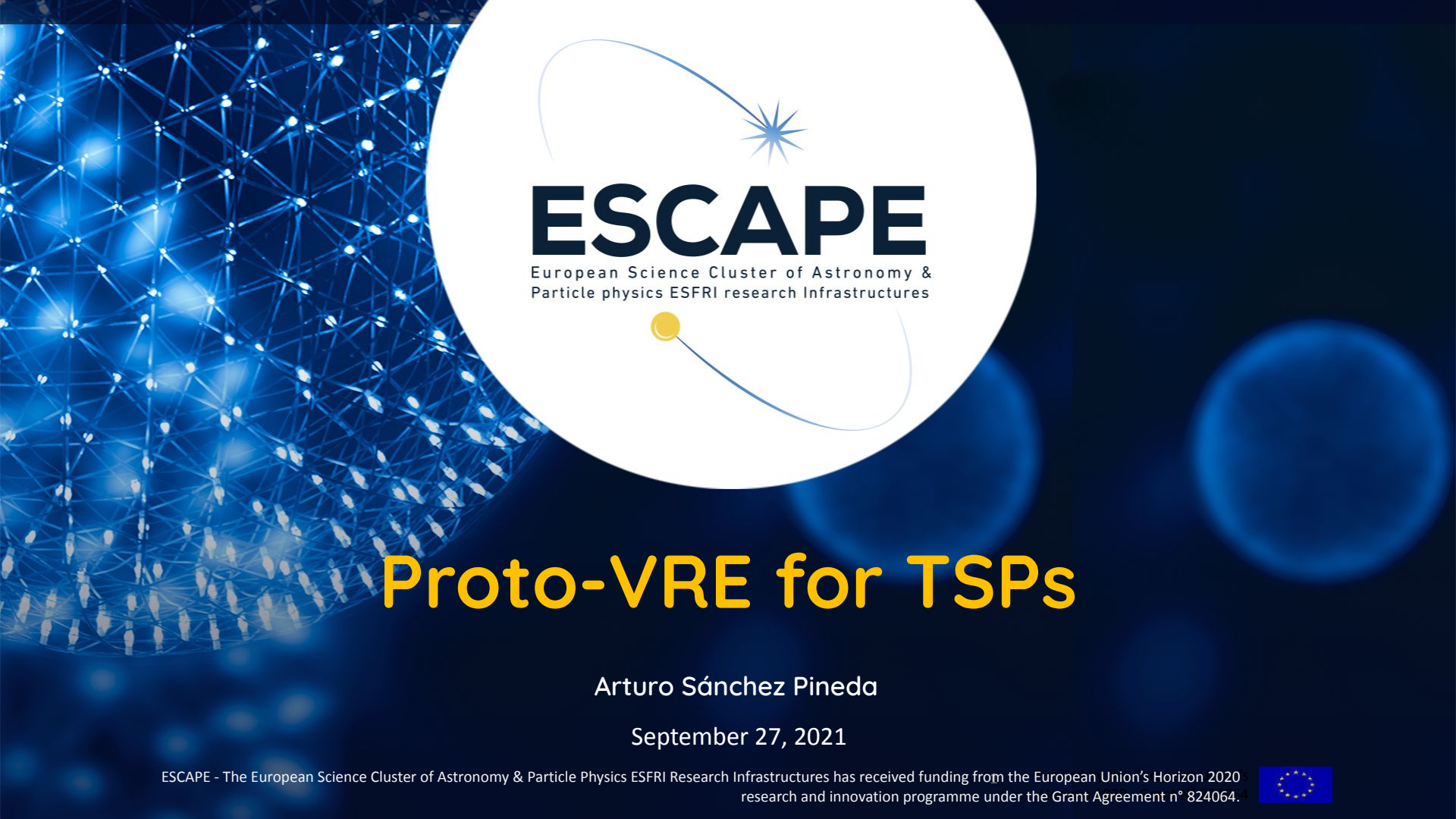


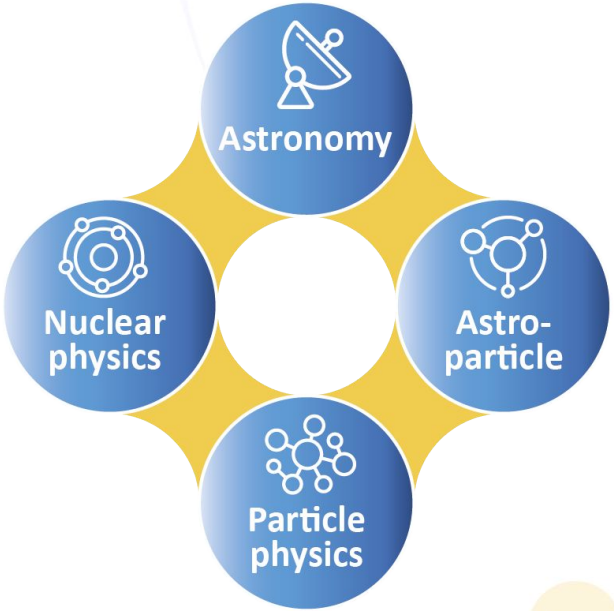
Proto-VRE for TSPs

Arturo Sánchez Pineda

September 27, 2021

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.

BRING TOGETHER COMMUNITIES



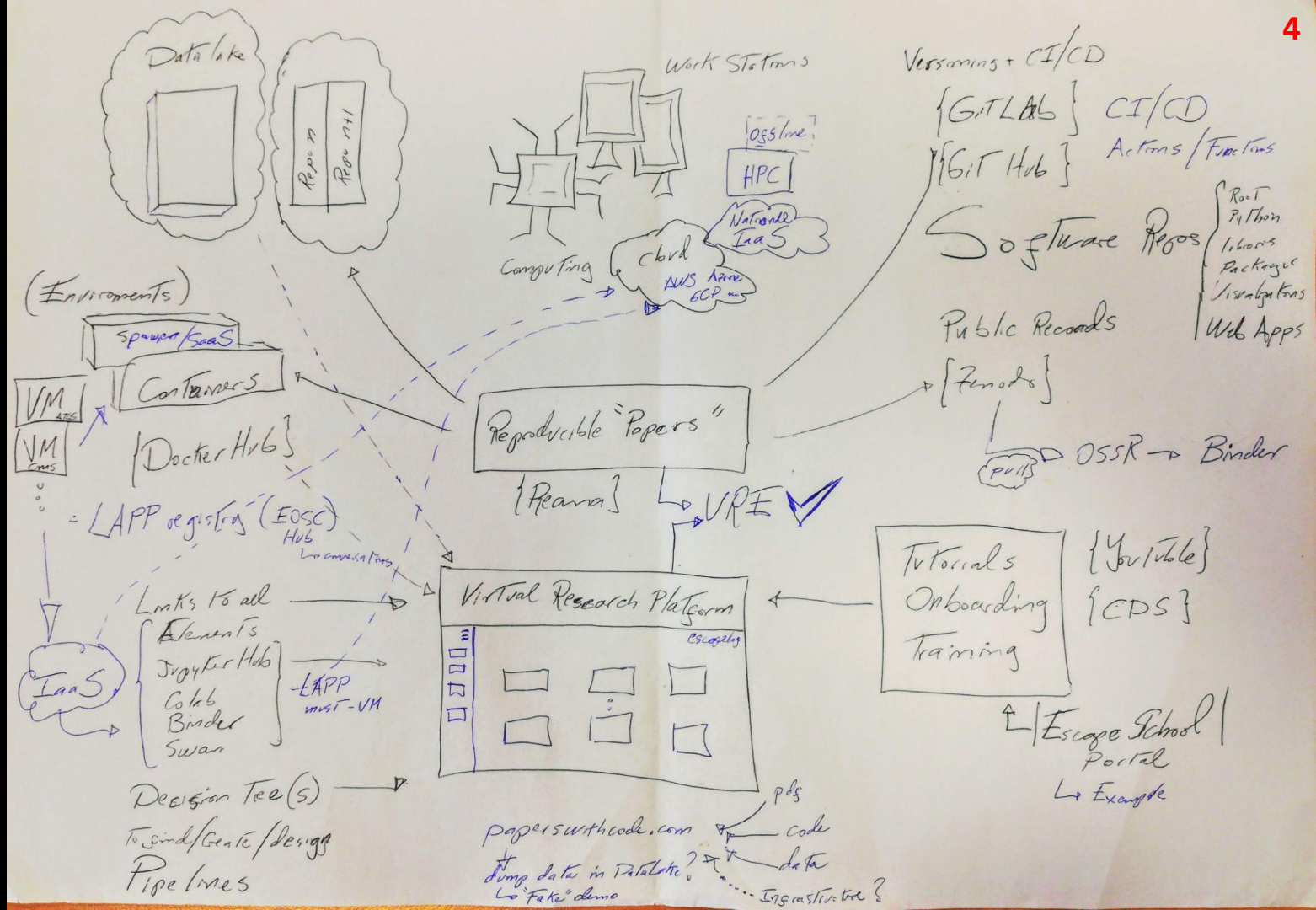
European
Science
Cluster of
Astronomy &
Particle physics
ESFRI research infrastructures

Funded by the European Union's Horizon 2020 - Grant N° 824064

ESCAPE
VRE

ESCAPE
VRE

An exercise to imagine how current resources can be aggregated so as to be reachable and use from a single entry point (e.g. a single portal). Unifying UI / UX as much as possible, that IMO is the crucial point of any future VRE: a *nice* User Interface



ESCAPE
VRE

An exercise to imagine how current resources can be aggregated so as to be reachable and use from a single entry point (e.g. a single portal). Unifying UI / UX as much as possible, that IMO is the crucial point of any future VRE: a *nice* User Interface

Reasons for today's conversation

- **Fail fast**
- **Feedback on**
  - **Short term objectives → from now to the DAC21 on November**
  - **Medium term → PostDocs onboarding 2021-2022**
- **Review of the advances and possible changes to do**
  - **Current status and what is coming into the next two (2) months**
  - **https://escape2020.pages.in2p3.fr/virtual-environment/home/**
- **Connection with the DAC21 in November**
  - **This is a simulation of a TSP development**
- **Next steps**
  - **Including possible interaction with external consultants**

ESCAPE
VRE

An exercise to imagine how current resources can be aggregated so as to be reachable and use from a single entry point (e.g. a single portal). Unifying UI / UX as much as possible, that IMO is the crucial point of any future VRE: a *nice* User Interface

Development principles

- **An aggregation site**
- **Simple User Onboarding**
- **Good UI/UX as an essential component**
  - **No complex menus nor multiple tabs**
- **Scalability**
  - **Several developers must be able to interact with the site at the same time**
  - **Content can be created by ESCAPE members and be approved in a few hours (on working hours)**
  - **External users can eventually join to dedicated areas**
- **CI/CD by default**
  - **This is the standard way scientists works anyways**
- **Portability**
  - **Ability to move the site to other/multiple hostings**
- **Even when this is not another "*documentation site*", it follows developing philosophies like the one for**
  - http://opendata.cern.ch/
  - https://hepsoftwarefoundation.org
  - https://reanahub.io
  - https://escape2020.github.io/school2021/
  - http://opendata.atlas.cern/

Phases of the project

Study ESCAPE &
Find the right tech

Design & Prototype

Setup first working version

Guide on how to contribute

getting continuous feedback

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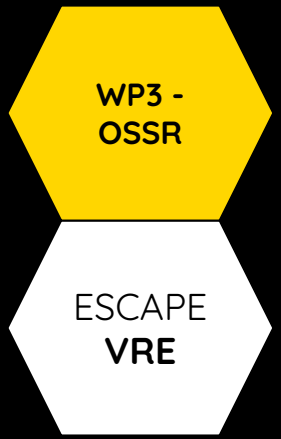
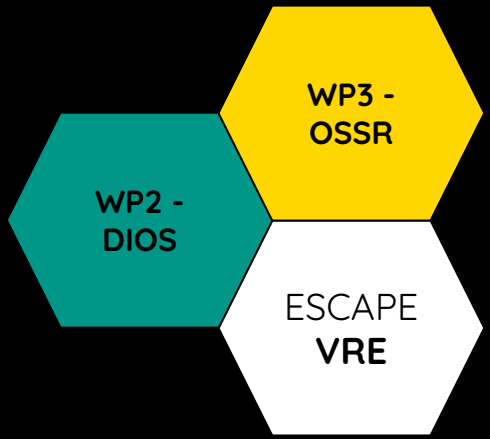
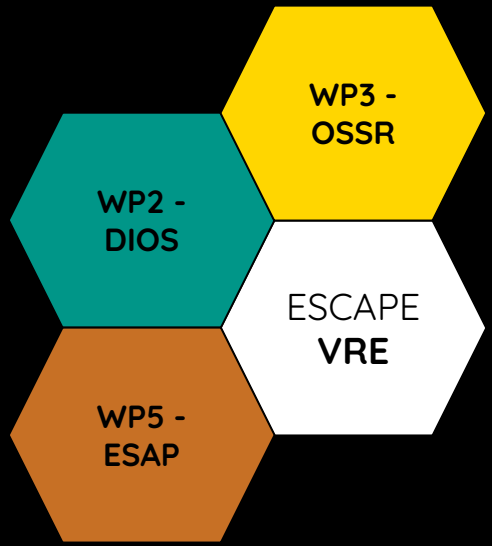
VRE


WP3 -
OSSR
ESCAPE
VRE


WP3 -
OSSR
WP2 -
DIOS
ESCAPE
VRE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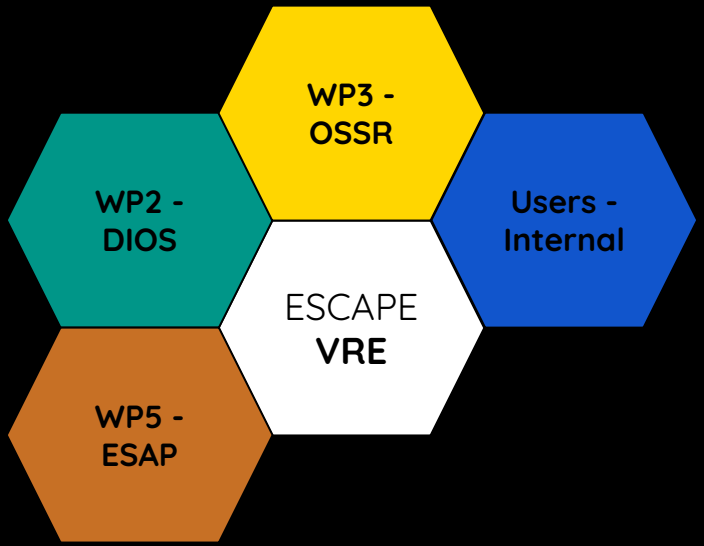
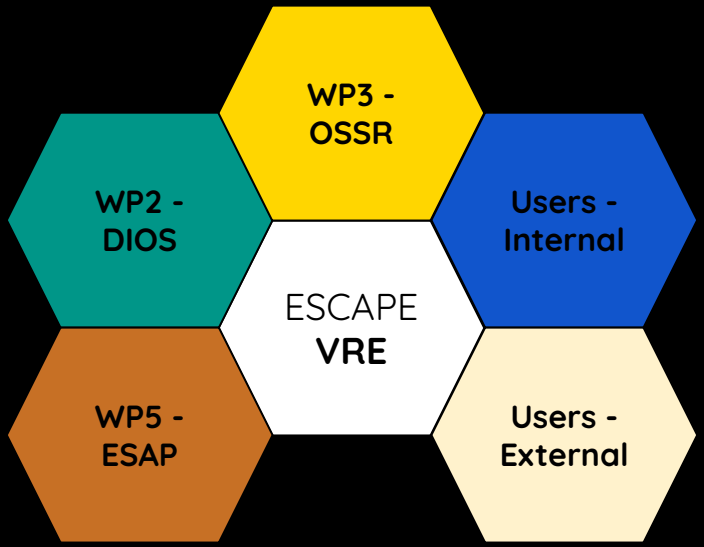
OSSR
WP2 -
DIOS
ESCAPE
VRE
WP5 -
ESAP


WP3 -
OSSR
WP2 -
DIOS
Users -
Internal
ESCAPE
VRE
WP5 -
ESAP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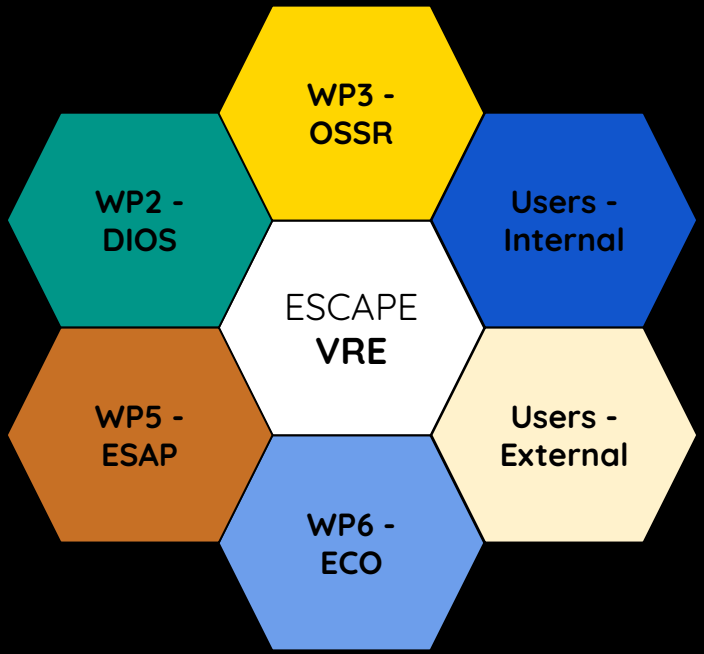
OSSR
WP2 -
DIOS
Users -
Internal
ESCAPE
VRE
WP5 -
ESAP
Users -
External

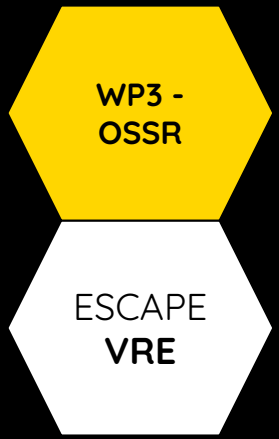

WP3 - OSSR
WP2 - DIOS
Users - Internal
ESCAPE
VRE
WP5 - ESAP
Users - External
WP6 - ECO

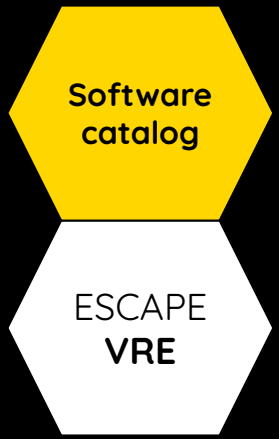
Existing components

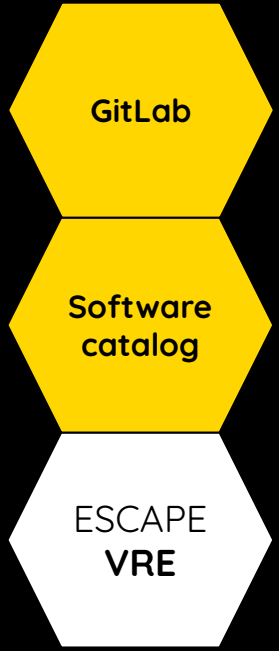
…but please, before we continue:
this is **an interpretation and decomposition** of the different ESCAPE projects and elements.
Not a canonical description of those…

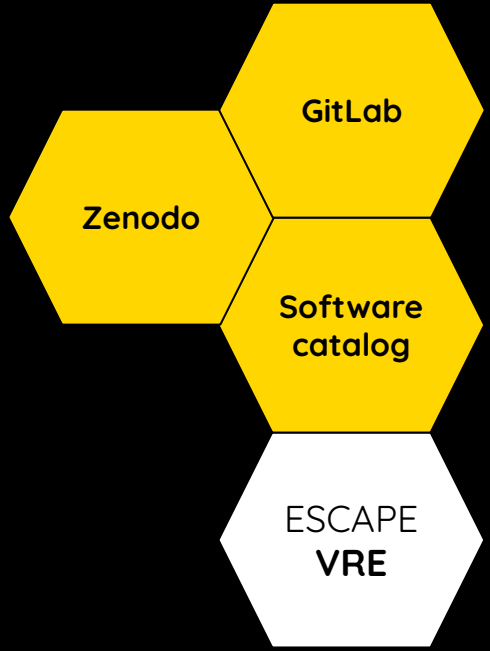
This exercise is done to imagining a UI/UX that looks to maximise the objectives of bring “things” together in an appealing and useful way

OSSR


WP3 -
OSSR
ESCAPE
VRE


Software catalog
ESCAPE
VRE


GitLab
Software catalog
ESCAPE
VRE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Software catalog
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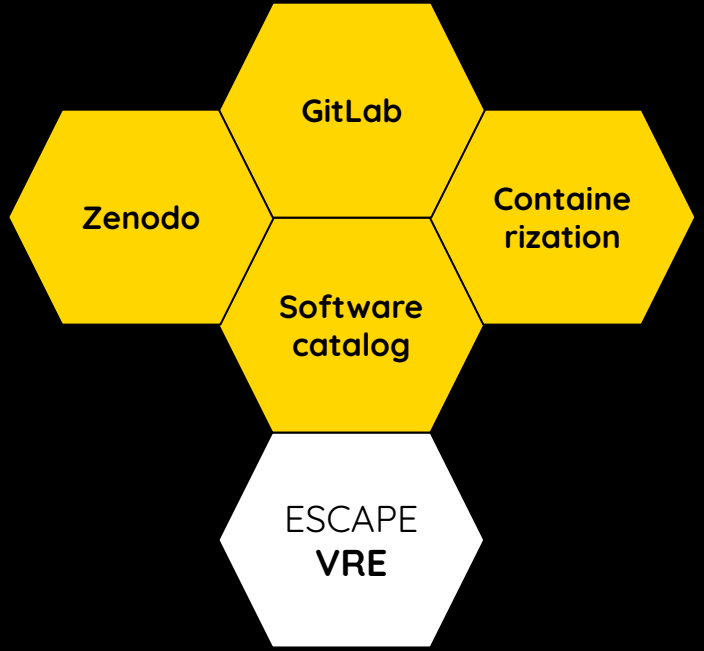
GitLab
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ESCAPE
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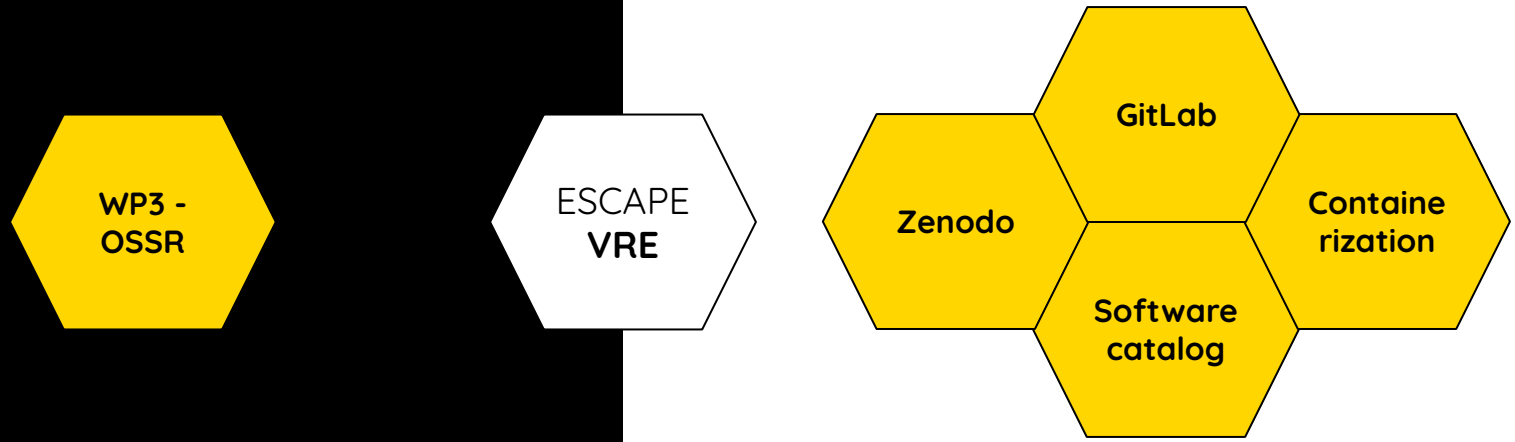
WP3 -
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GitLab
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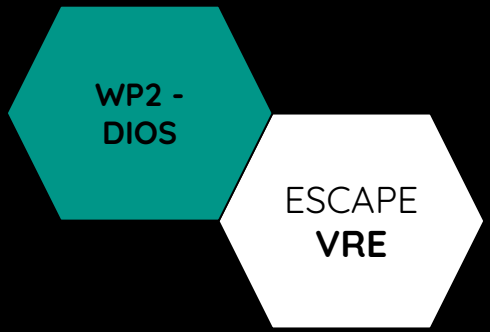
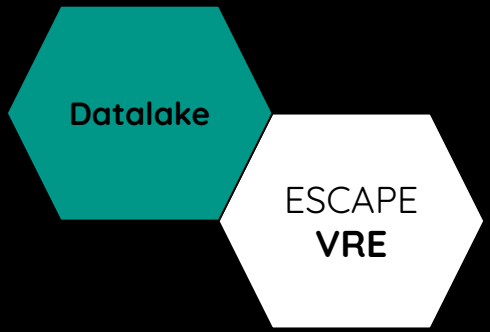
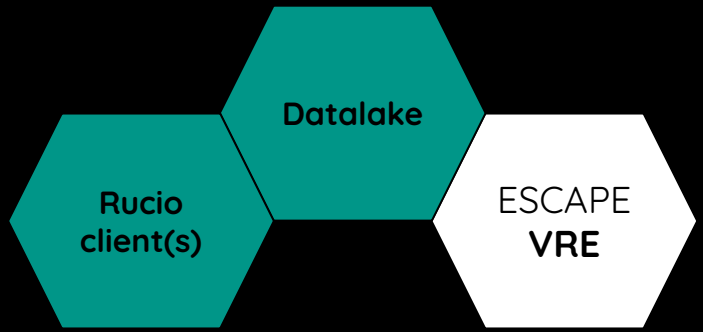
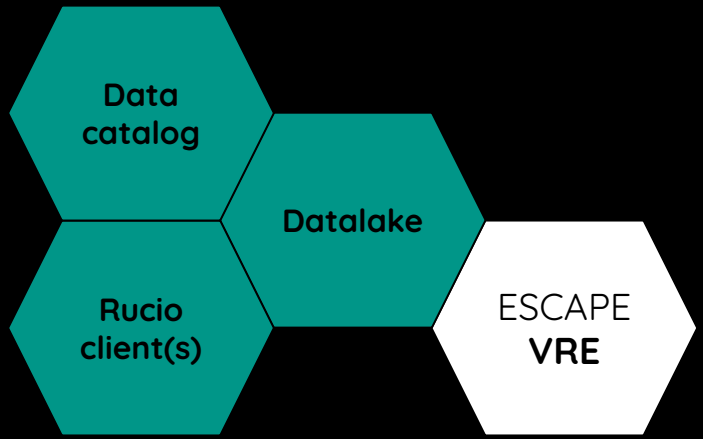
Software
catalog

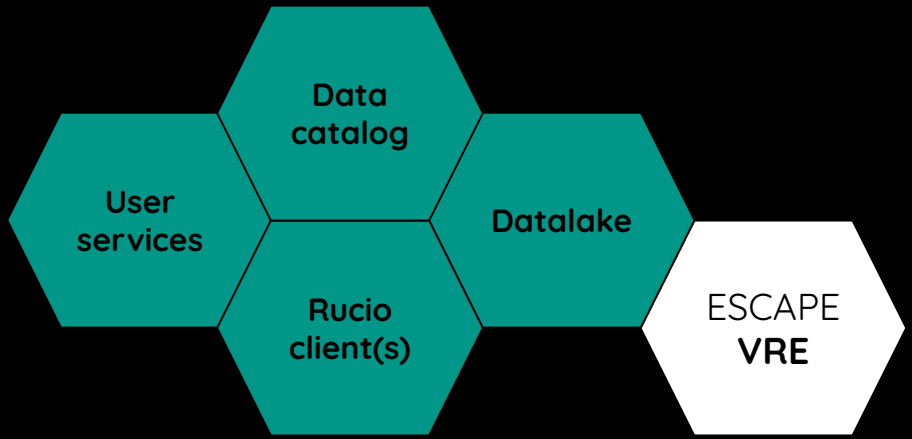
DIOS

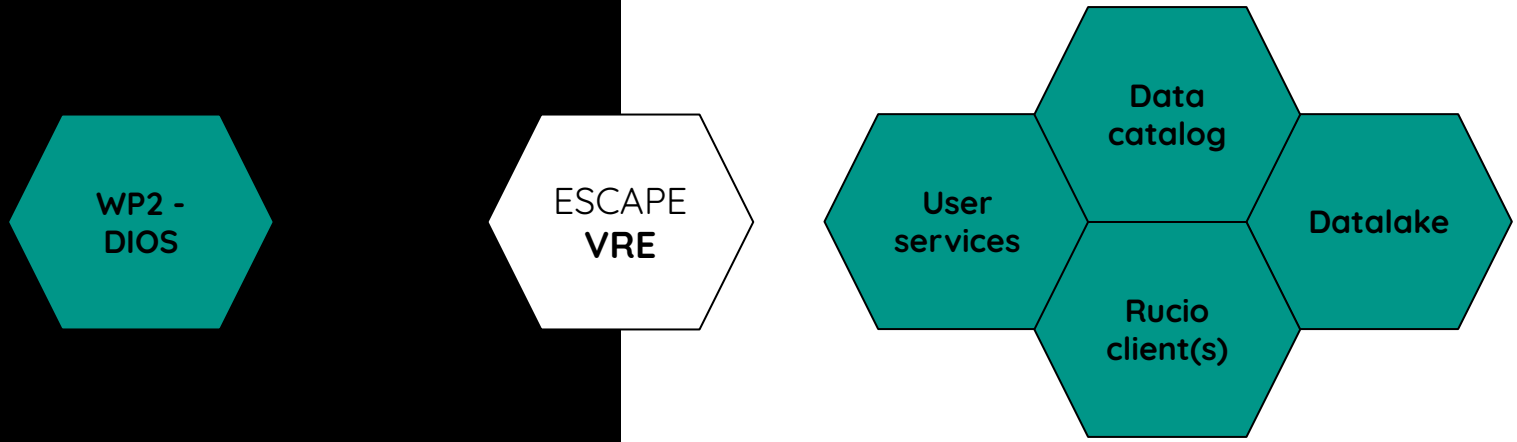

WP2 -
DIOS
ESCAPE
VRE


Datalake
ESCAPE
VRE

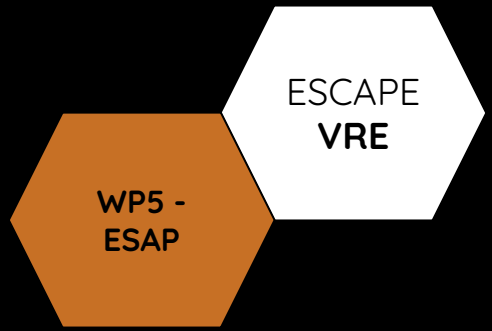

Datalake
Rucio
client(s)
ESCAPE
VRE

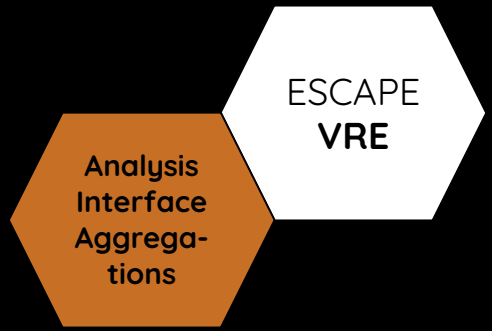

Data catalog
Datalake
Rucio client(s)
ESCAPE
VRE


Data catalog
User services
Datalake
Rucio client(s)
ESCAPE
VRE


WP2 -
DIOS
ESCAPE
VRE
Data
catalog
User
services
Datalake
Rucio
client(s)

ESAP


ESCAPE
VRE
WP5 -
ESAP


ESCAPE
VRE
Analysis
Interface
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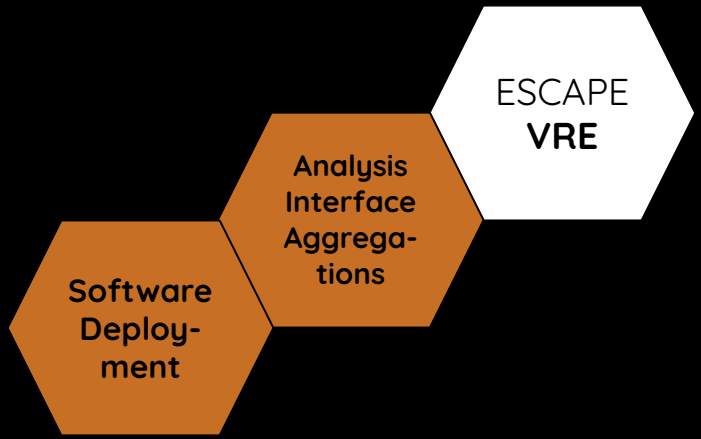
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Analysis
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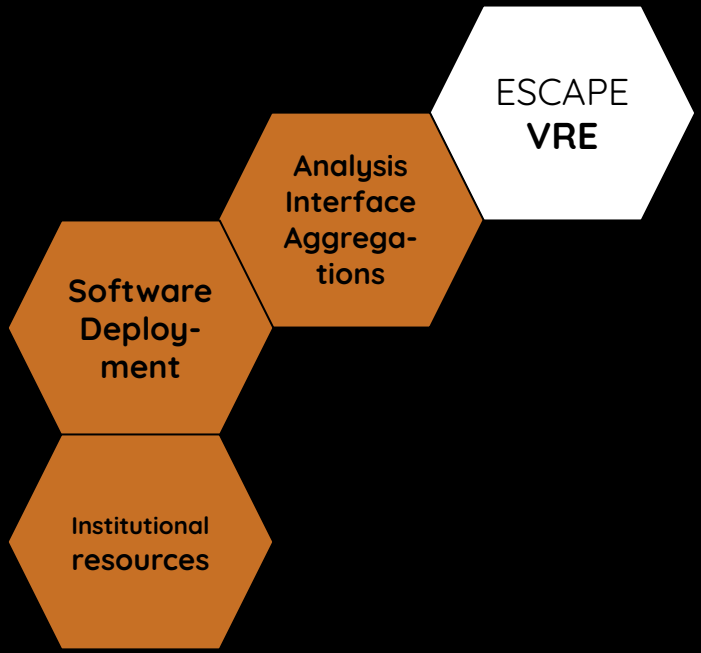
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VRE
Analysis
Interface
Aggrega-
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Software
Deploy-
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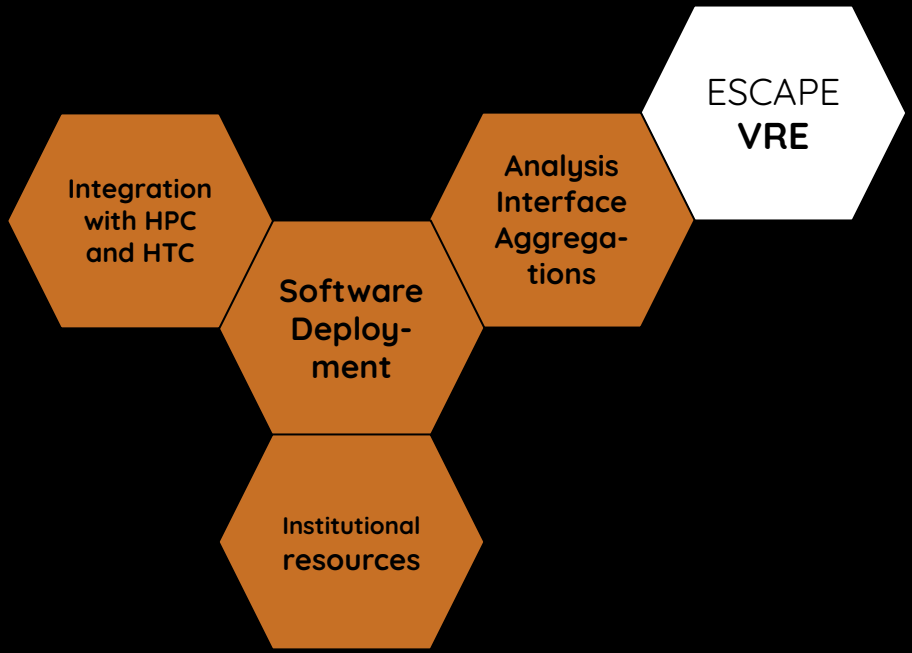
Institutional
resources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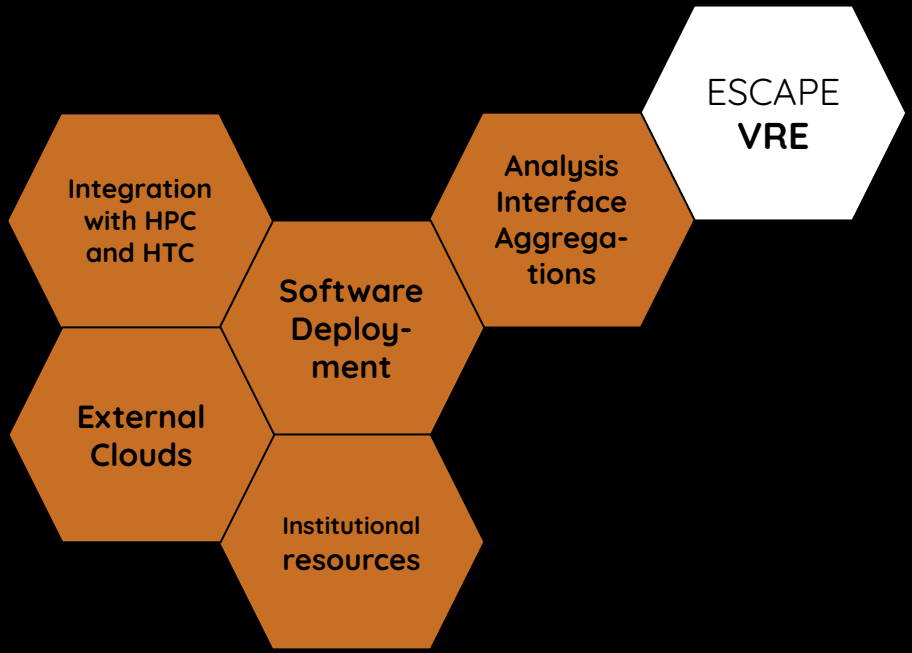
VRE
Integration with HPC and HTC
Analysis Interface Aggrega-tions
Software Deploy-ment
Institutional resources


ESCAPE
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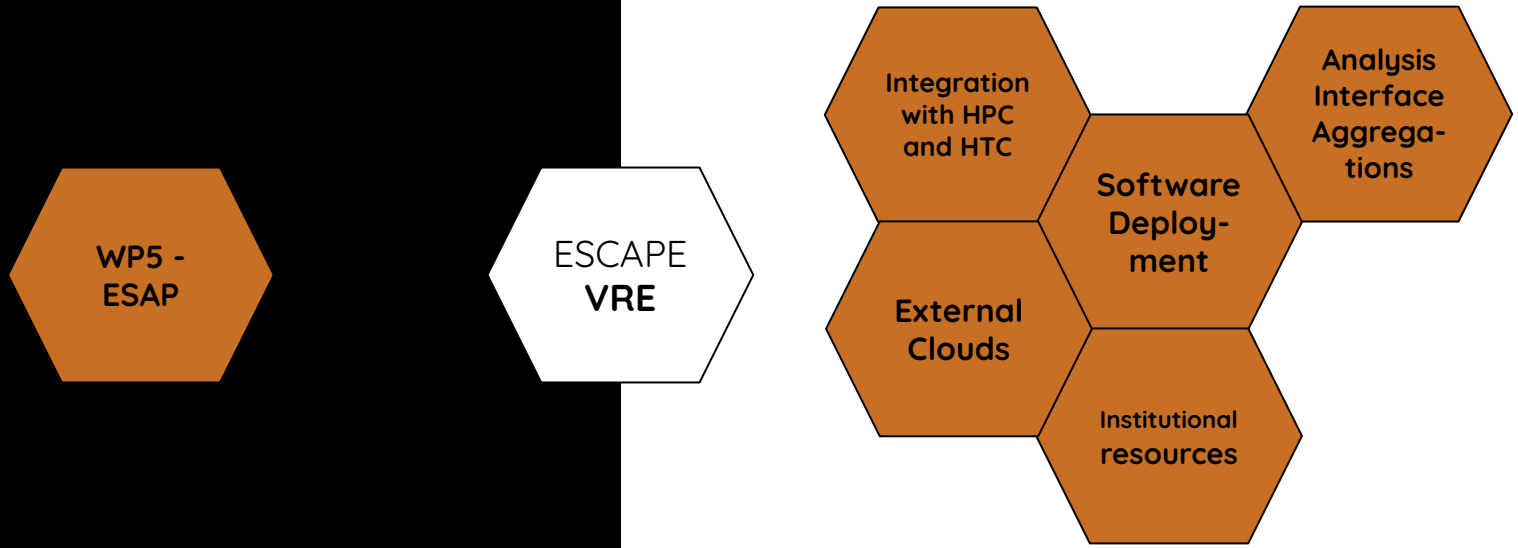
Integration with HPC and HTC
Analysis Interface Aggrega-tions
Software Deploy-ment
External Clouds
Institutional resources


WP5 -
ESAP
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VRE
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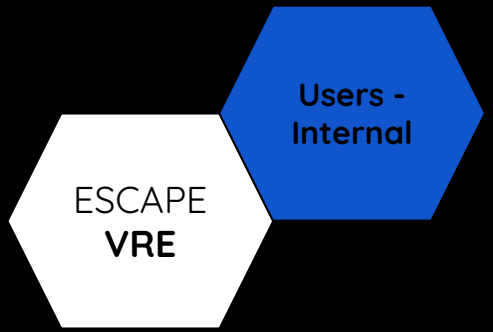
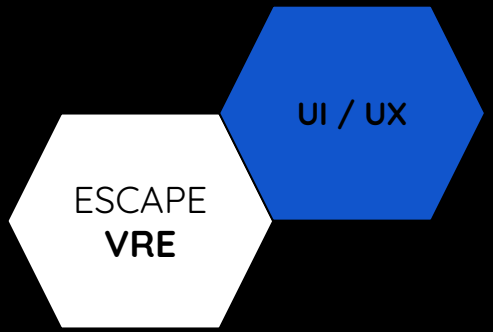
Analysis Interface Aggrega-tions
Software Deploy-ment
External Clouds
Institutional resources

Internal users


Users -
Internal
ESCAPE
VRE


UI / UX
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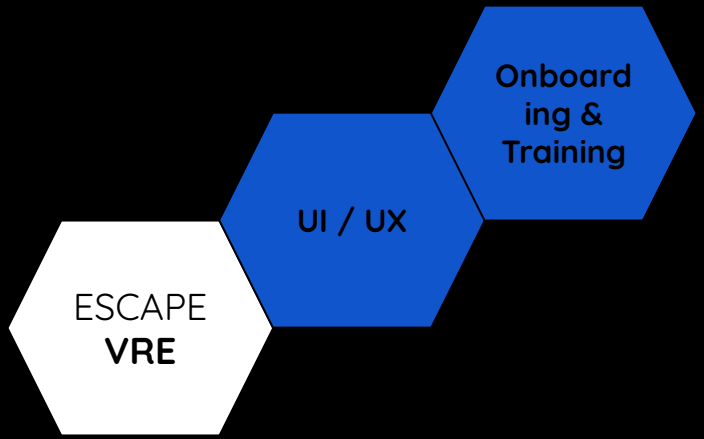
VRE


Onboard
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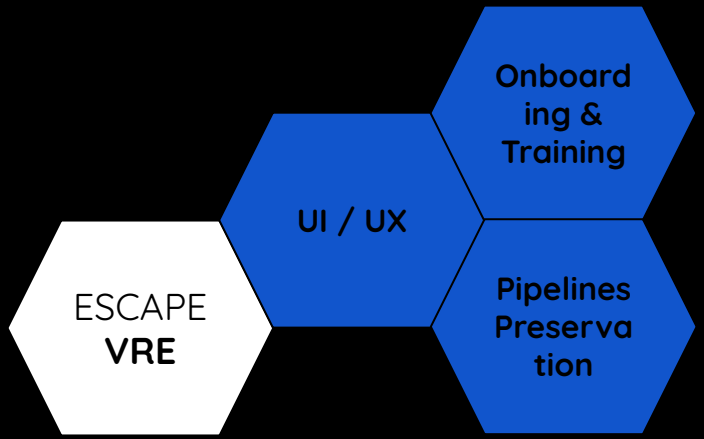
Training
UI / UX
ESCAPE
VRE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VRE
UI / UX
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Training
Pipelines
Preserva
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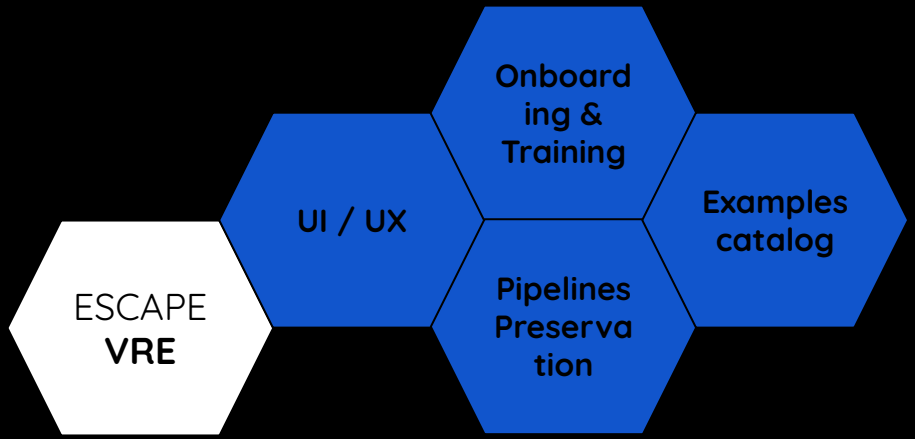
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UI / UX
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Pipelines
Preserva
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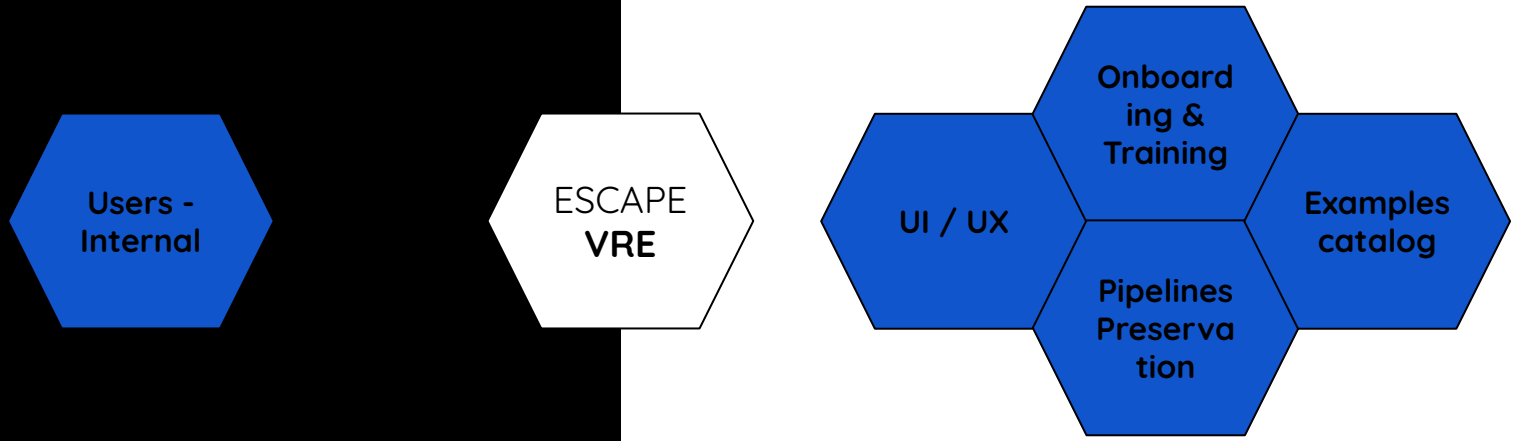
Examples
catalog


Users - Internal
ESCAPE
VRE
Onboarding & Training
UI / UX
Examples catalog
Pipelines Preservation

ROCKET.CHAT | indico | ownCloud | OpenProject

CHAT SERVER | EVENT ORGANISER TOOL | DOCUMENT REPOSITORY | PROJECT MANAGEMENT

https://projectescape.eu/internal

A UI/UX as proof-of-concept

UI / UX

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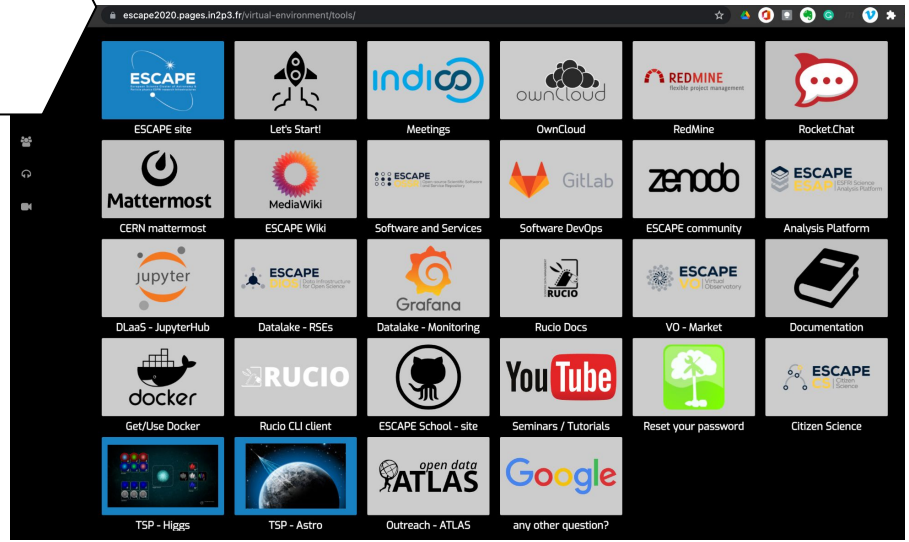
https://escape2020.pages.in2p3.fr/virtual-environment/home/member/researcher/



Contribute to the OSSR

Guidelines and Rules of Participation

https://escape2020.pages.in2p3.fr/wp3/ossr-pages/page/contribute/guidelines_ossr/

Onboarding & Training

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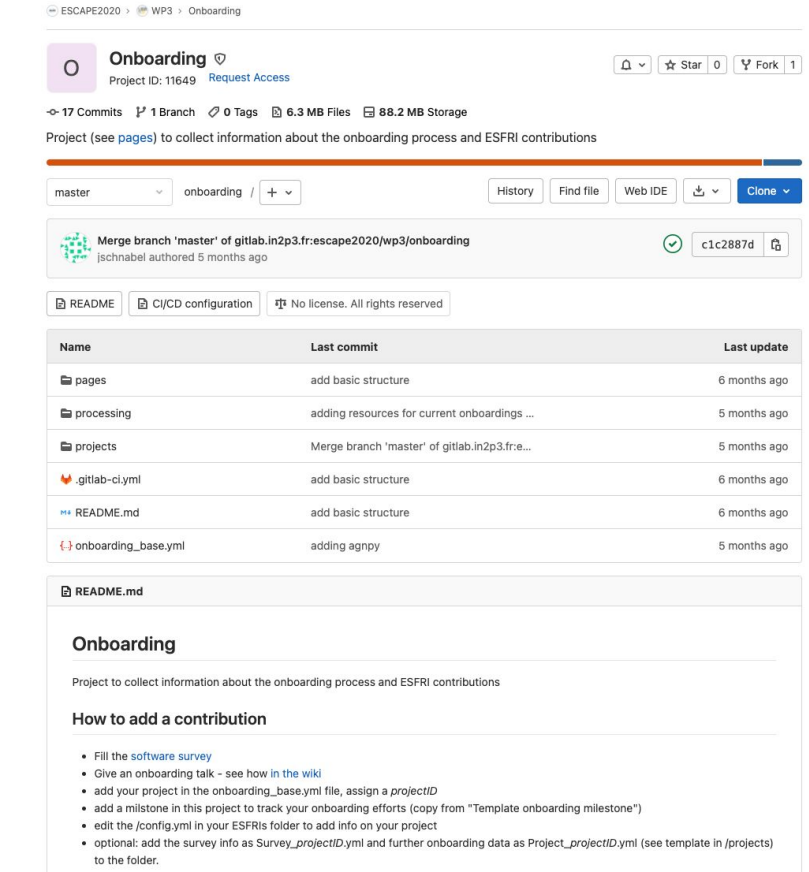
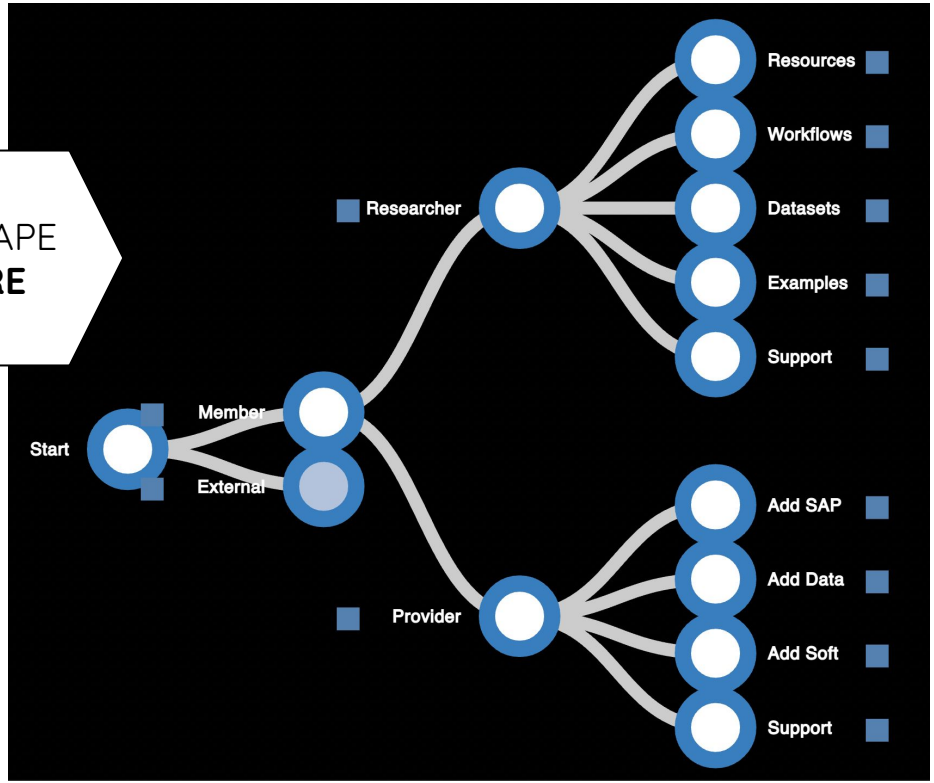


Take/guide the users to a specific tool or resource. And, avoid as much as possible having an excess of information/boxes/tabs/... Decision trees can be an option in some onboarding cases

Onboarding & Training

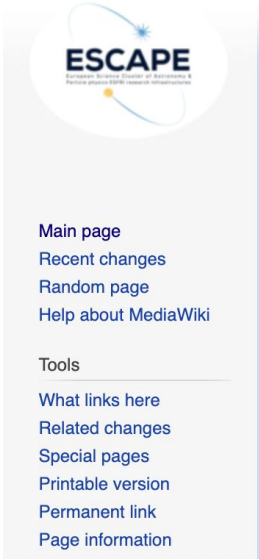
ESCAPE VRE



Onboard ing & Training

ESCAPE **VRE**

https://wiki.escape2020.de/



https://project.escape2020.de/

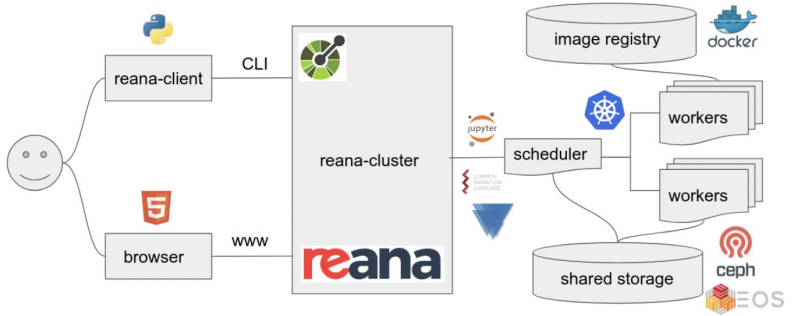
Pipelines Preservation

ESCAPE **VRE**

https://docs.reana.io/

What is REANA?

REANA is a **re**producible **ana**lysis platform allowing scientists to run containerised data analysis pipelines on remote compute clouds.



https://danikam.github.io/2019-08-19-usatlas-recast-tutorial

Home Code of Conduct License Improve this page Search...

ATLAS RECAST Tutorial: Main Page

Welcome to the US ATLAS/First-HEP computing bootcamp's tutorial on ATLAS analysis preservation with RECAST! Now that you've seen how docker can reproducibly provide the exact computing environment you want and start up customized applications at a moment's notice, we're going to look at an application of docker being used in ATLAS called RECAST. RECAST combines docker and gitlab to fully preserve your ATLAS search analysis so that it can be trivially re-interpreted with a new signal model.

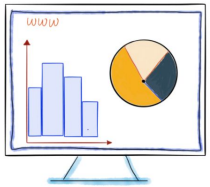
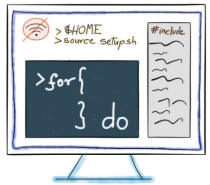
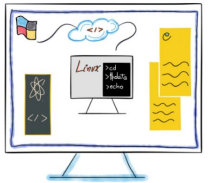
Prerequisites

- A personal repo containing a working version of your VHbb analysis code and gitlab-ci files from the ATLAS CI/CD tutorial. If you have fallen a bit behind on this, don't worry, as a tutor and we will help you come up to speed lickety split.
- Knowledge gained from the bootcamp so far, especially this morning's docker tutorial!

http://opendata.atlas.cern/software

Tags

Home About Apps Data News/Blog Software EN

Jupyter Notebooks	C++/Python frameworks	Virtual Machine(s)
		
Let's run some real code and visualisations on your browser	Perform real HEP analysis as the ATLAS Physicists	Slow Internet? run the analyses with minimal installation

Examples catalog

ESCAPE **VRE**

Go and execute the notebooks now!

Pick one of the two cloud computing services

Visit the gallery and interact with the notebooks & plots

Visualisation	Code and Run
jupyter	
Take a look at the notebooks in NBviewer	Check, clone and run the code from GitHub

SWAN

Please read more about it here

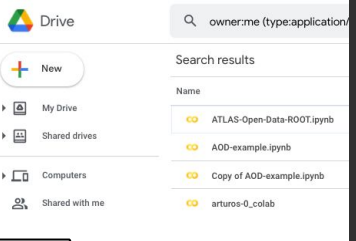
Binder

To know more, check the docs here

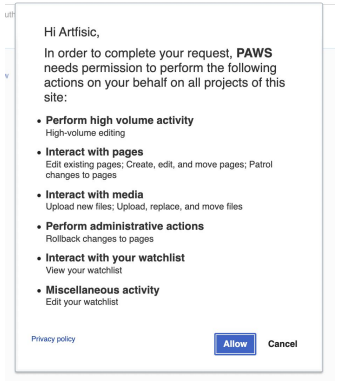
Examples catalog

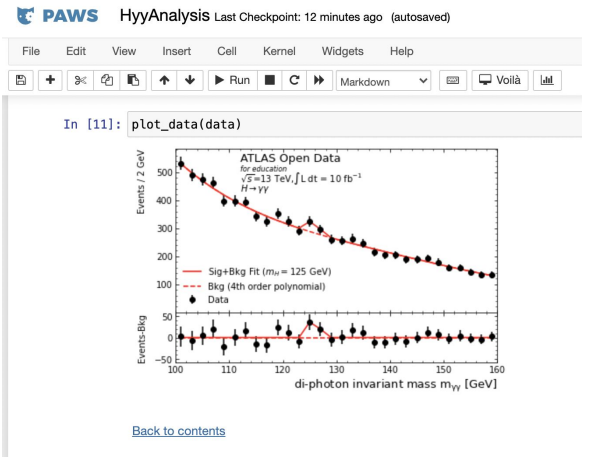
ESCAPE **VRE**

https://colab.research.google.com

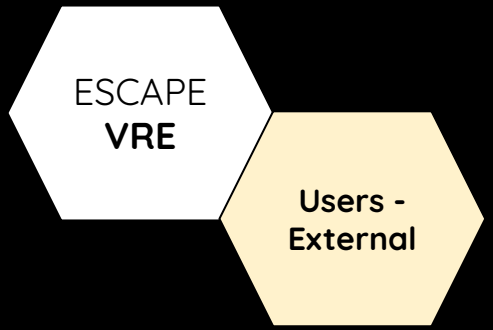


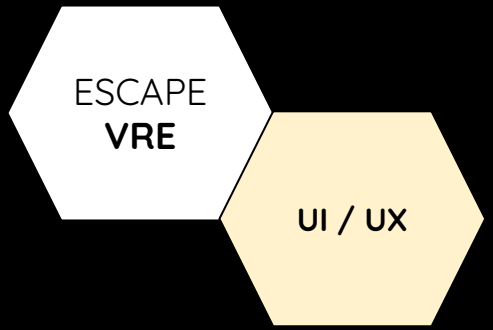
https://hub.paws.wmcloud.org





External users


ESCAPE
VRE
Users -
External


ESCAPE
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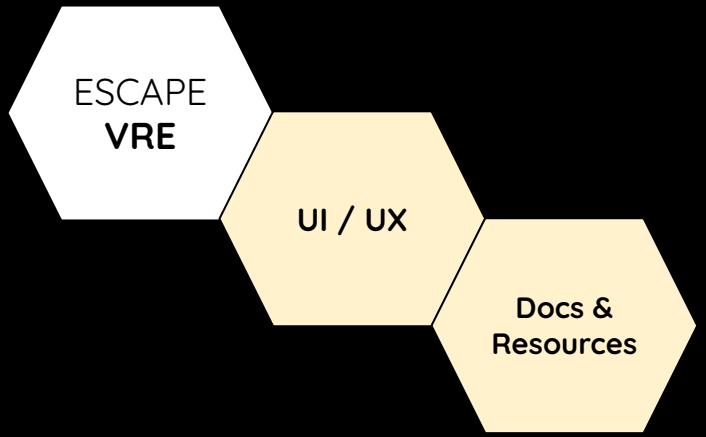
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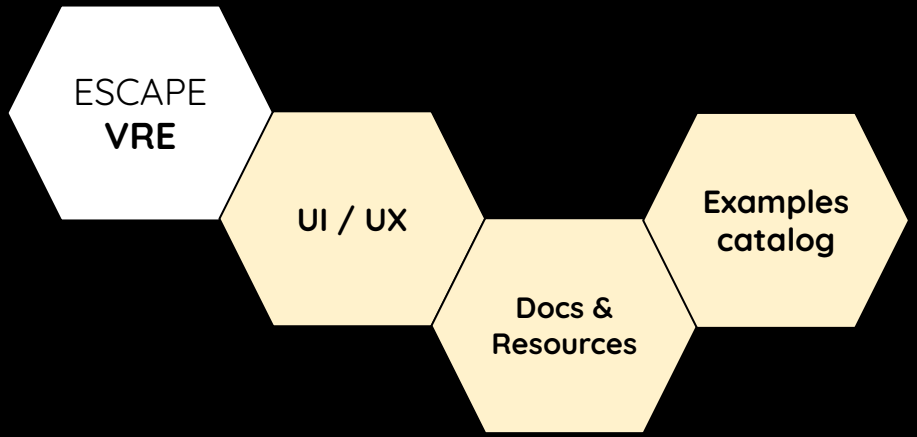
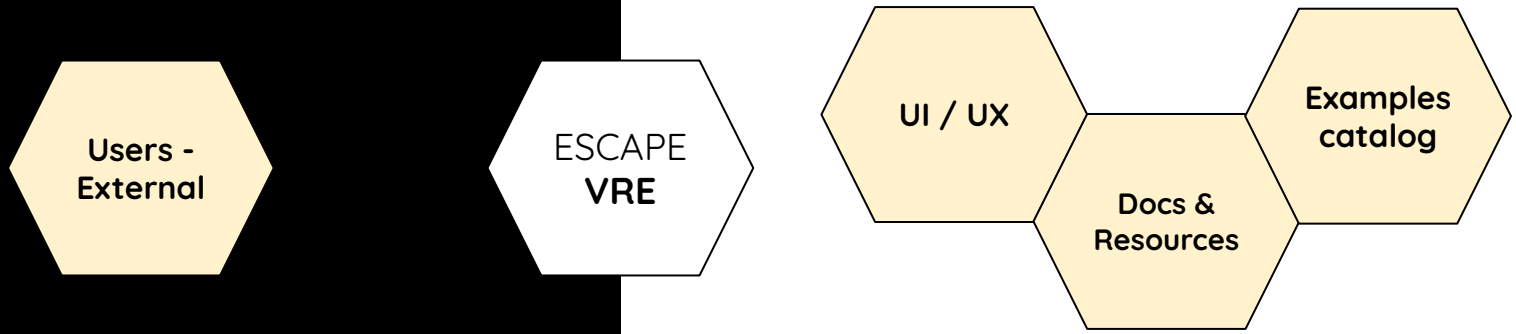
UI / UX
Docs &
Resources


ESCAPE
VRE
UI / UX
Examples catalog
Docs & Resources


Users - External
ESCAPE
VRE
UI / UX
Docs & Resources
Examples catalog

https://escape2020.github.io/school2021/

Docs & Resources

ESCAPE **VRE**

ESCAPE School
2021

Coding | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Julia | Jupyter | ML | Python | README | Spark

https://hepsoftwarefoundation.org/

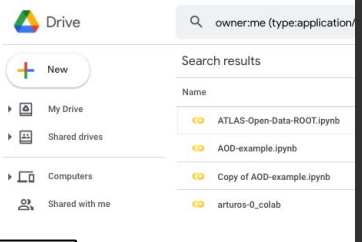
HSF | Working Groups | Activities | Meetings | Communication | Projects & Support | About

The HEP Software Foundation facilitates cooperation and common efforts in High Energy Physics software and computing internationally.

Examples catalog

ESCAPE **VRE**

https://colab.research.google.com



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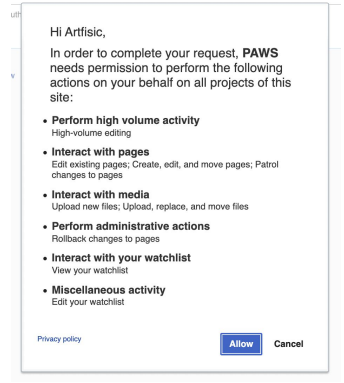
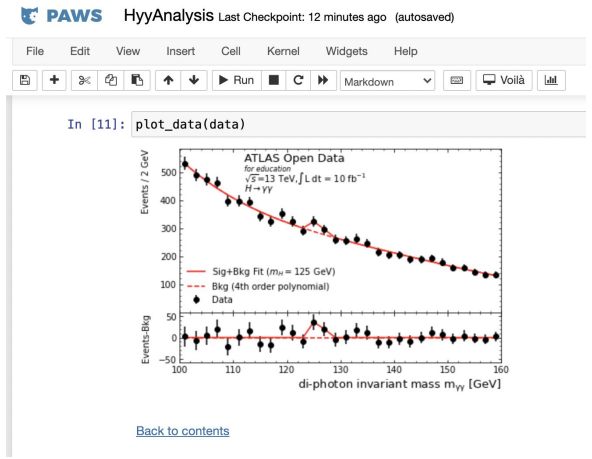




Recreating a VRE

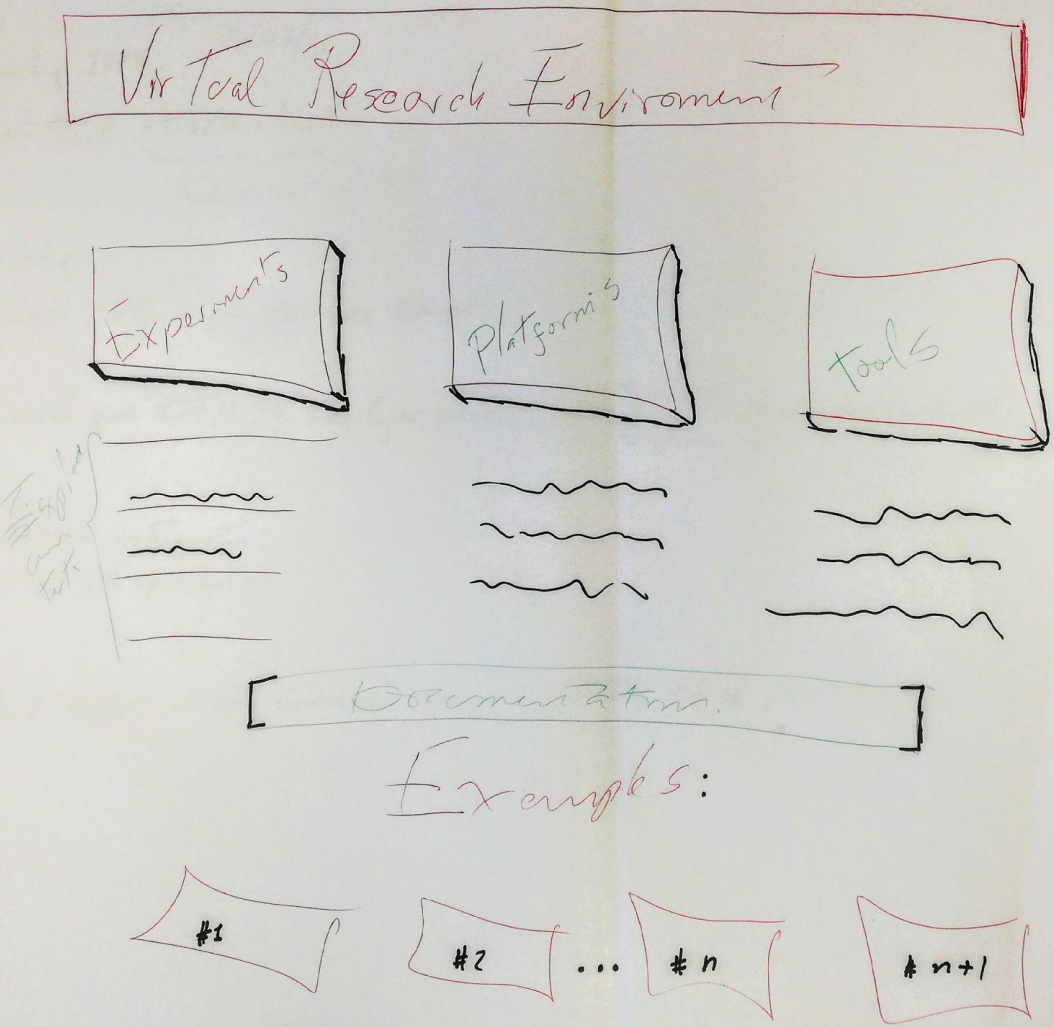
ESFRI Science Analysis Platform

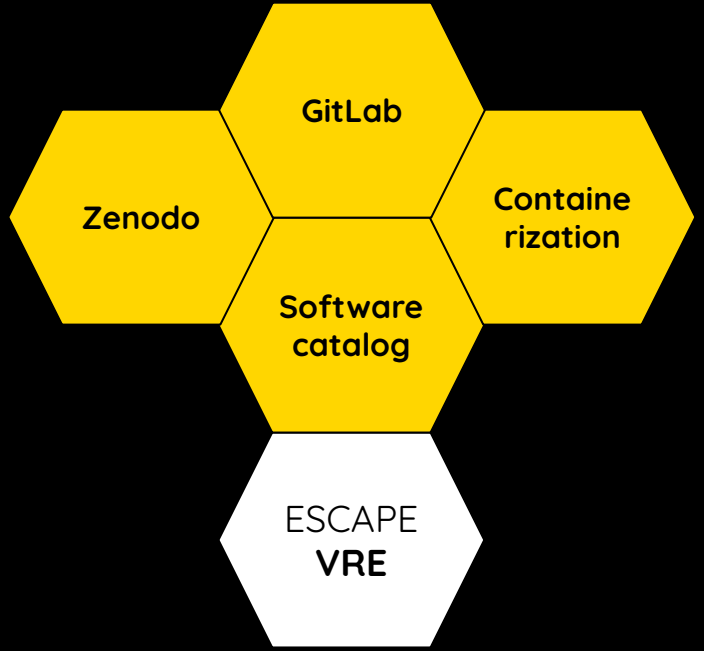
Open-source scientific Software and Service Repository

Data Infrastructure for Open Science

ESCAPE
VRE

An exercise to imagine how current resources can be aggregated so as to be reachable and use from a single entry point (e.g. a single portal). Unifying UI / UX as much as possible, that IMO is the crucial point of any future VRE: a *nice* User Interface




GitLab
Zenodo
Containe
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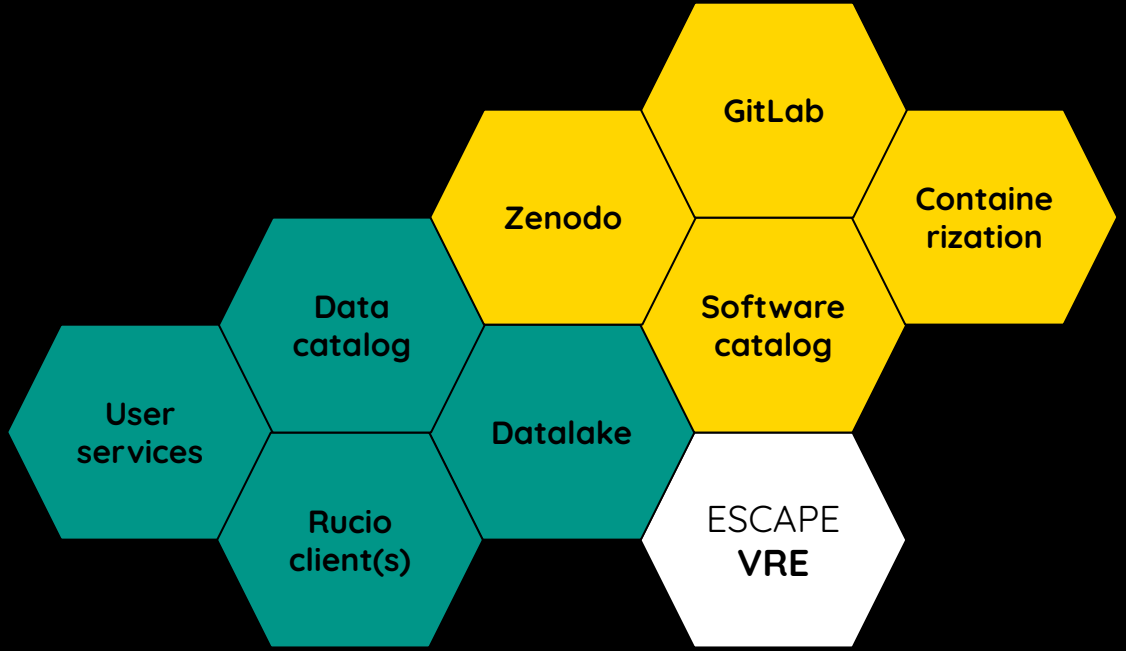
Software
catalog
ESCAPE
VRE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User
services
Datalake
Rucio
client(s)
ESCAPE
VRE


GitLab
Zenodo
Containe
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Data
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Software
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User
services
Datalake
Rucio
client(s)
ESCAPE
VRE
Integration
with HPC
and HTC
Analysis
Interface
Aggrega-
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Software
Deploy-
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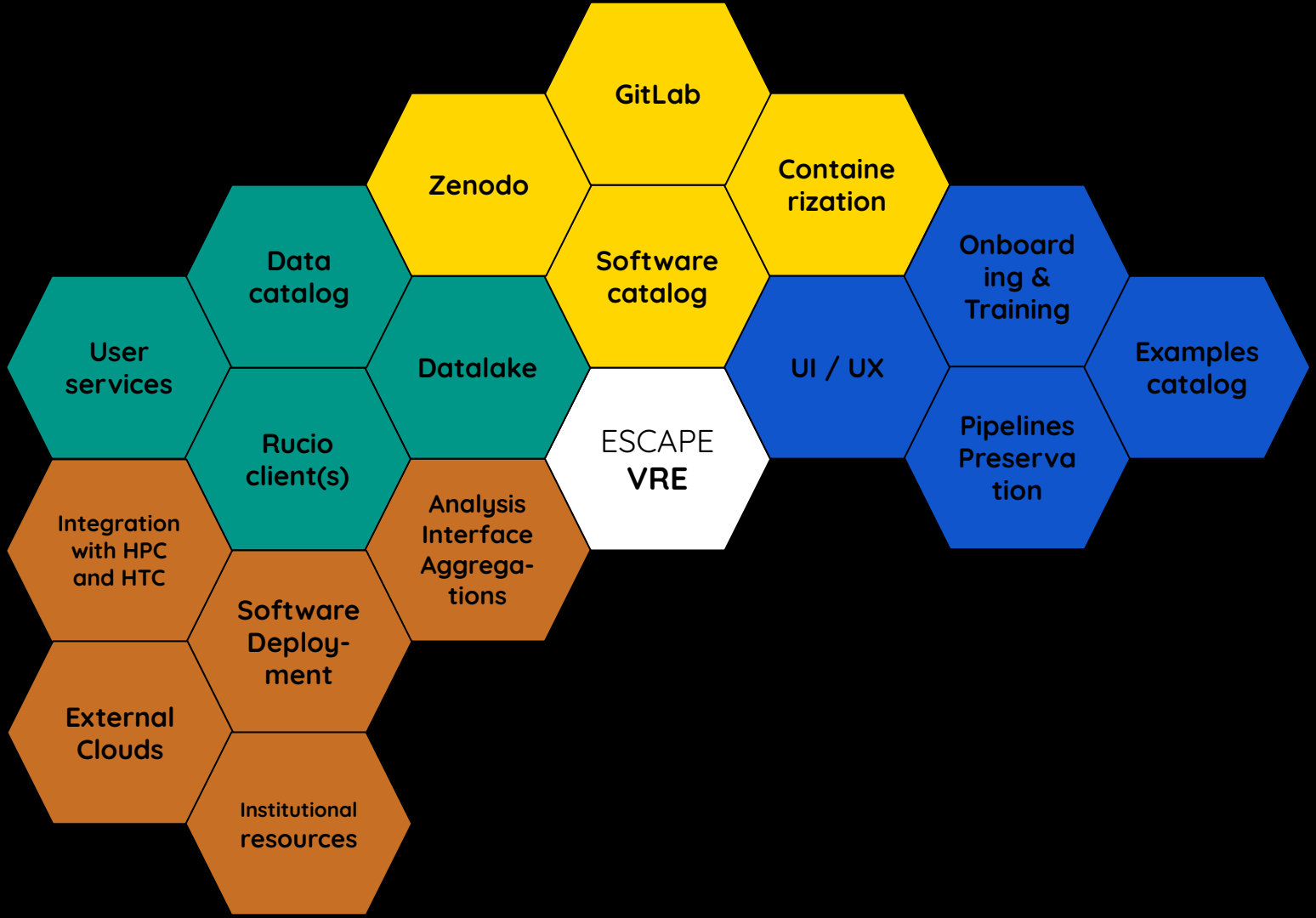
External
Clouds
Institutional
resources


GitLab
Zenodo
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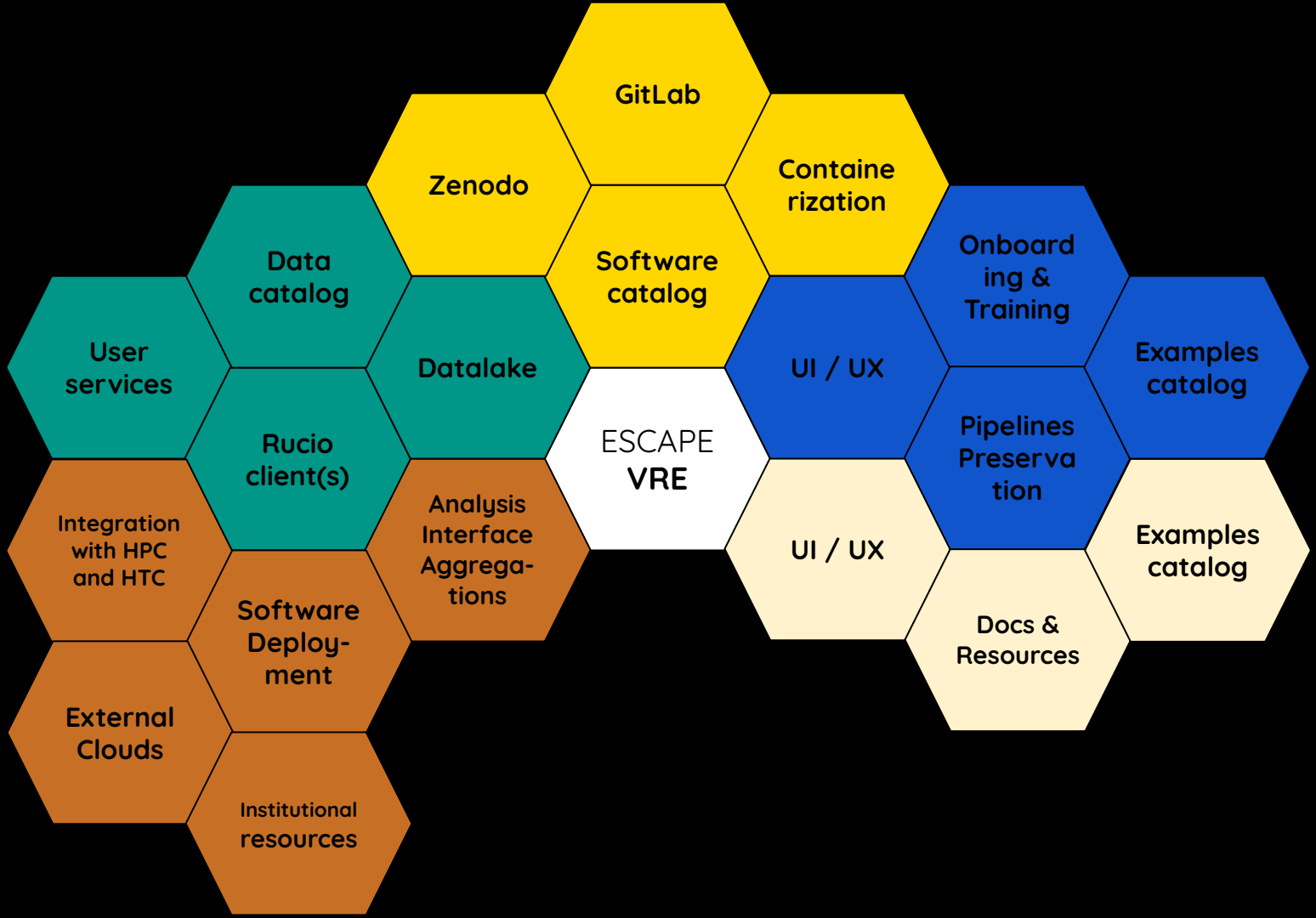
Data catalog
Software catalog
Onboard ing & Training
User services
Datalake
UI / UX
Examples catalog
Rucio client(s)
ESCAPE VRE
Pipelines Preserva tion
Integration with HPC and HTC
Analysis Interface Aggrega-tions
Software Deploy-ment
External Clouds
Institutional resources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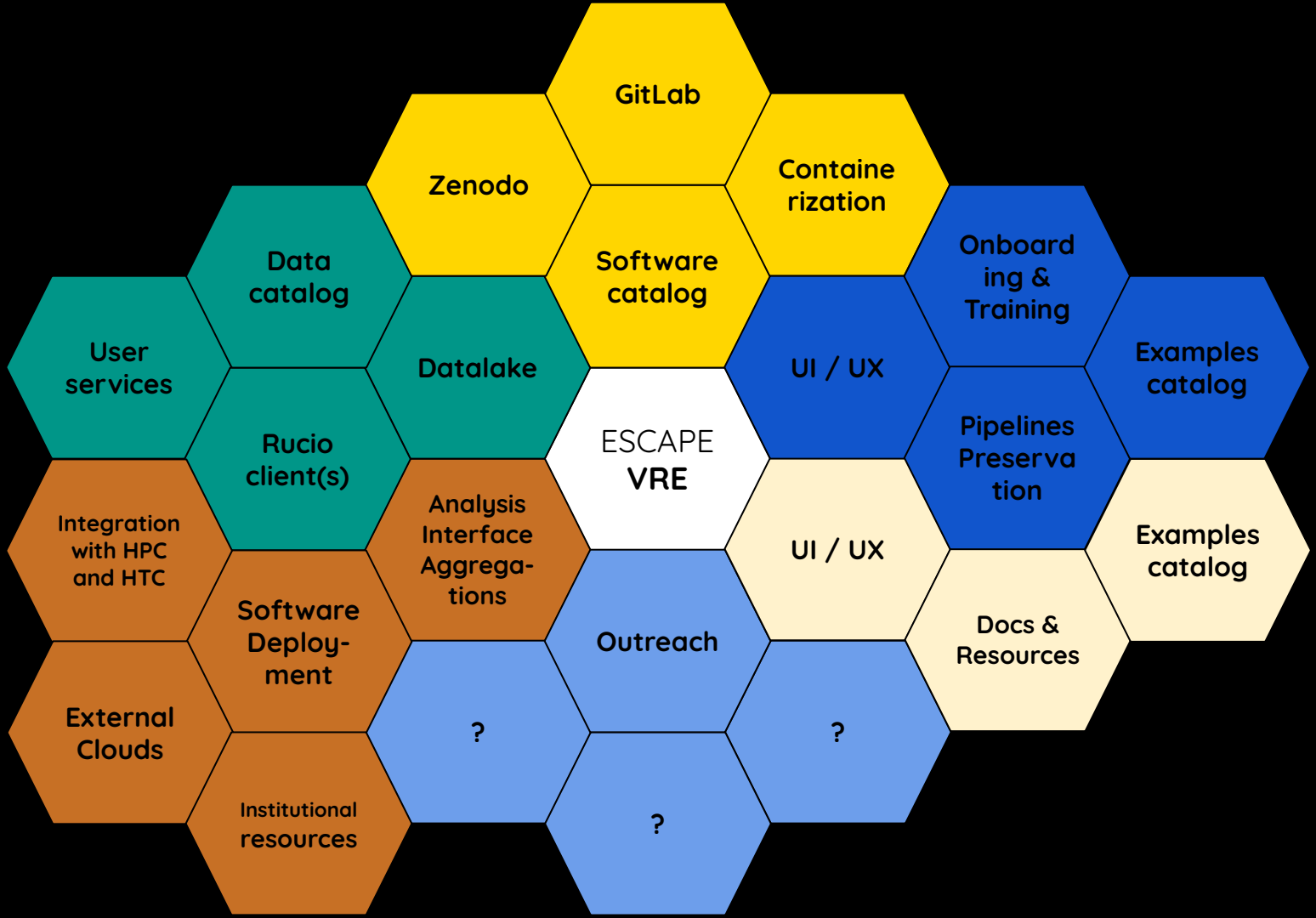
User services
Datalake
UI / UX
Examples catalog
Rucio client(s)
ESCAPE VRE
Pipelines Preserva tion
Integration with HPC and HTC
Analysis Interface Aggrega-tions
UI / UX
Examples catalog
Software Deploy-ment
Docs & Resources
External Clouds
Institutional resources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Integration with HPC and HTC
Analysis Interface Aggrega-tions
UI / UX
Examples catalog
Software Deploy-ment
Outreach
Docs & Resources
External Clouds
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Institutional resources
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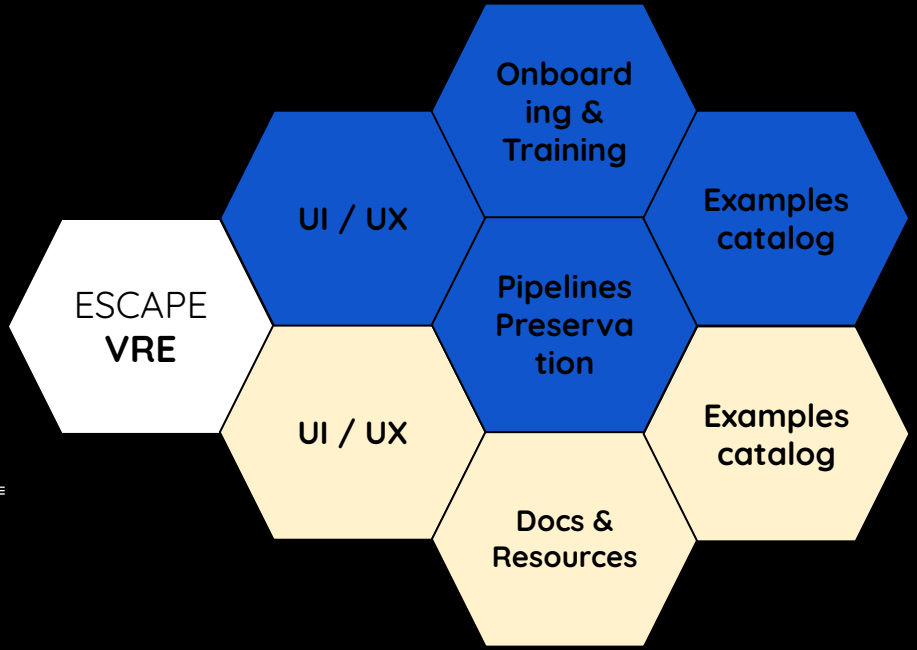
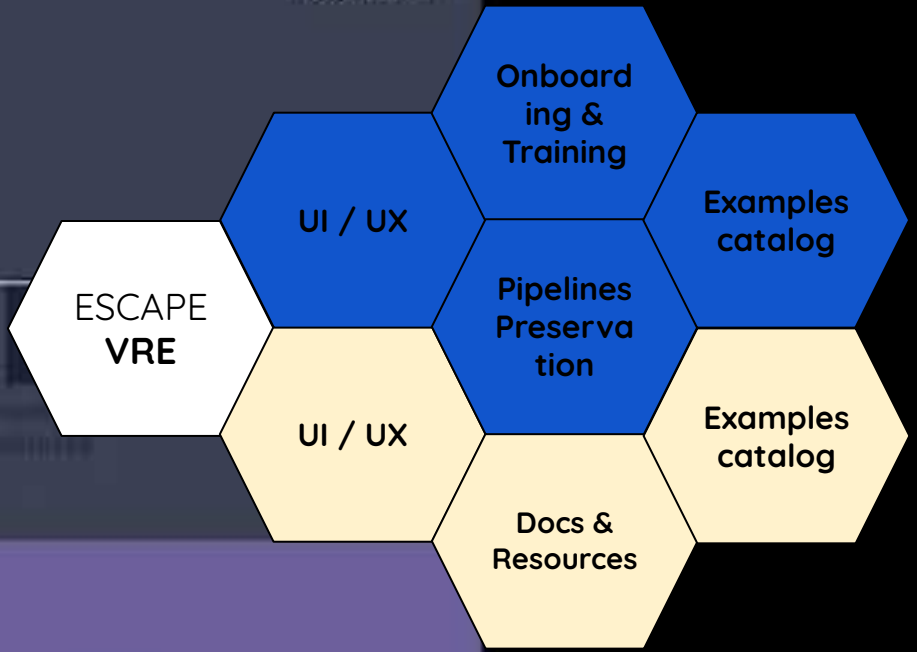
VRE:
A web-based UI



Onboarding decision tree

Scroll down, click the **Start** circle and **look for the case that best fits you**. Once you arrive at an interesting topic, **click the little square** to go to the desired resource. If you don't understand what to do, it means we didn't create an intuitive UI/UX yet. Please, click ***here*** and report it.


ESCAPE VRE
RESOURCES
Virtual Research Enviroment
AN AGGREGATION PORTAL PROPOSAL
GET STARTED
the VRE idea
ESCAPE Users


ESCAPE
VRE
UI / UX
Onboard
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Pipelines
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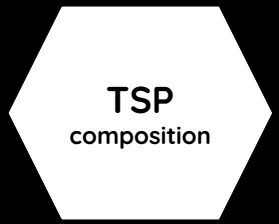
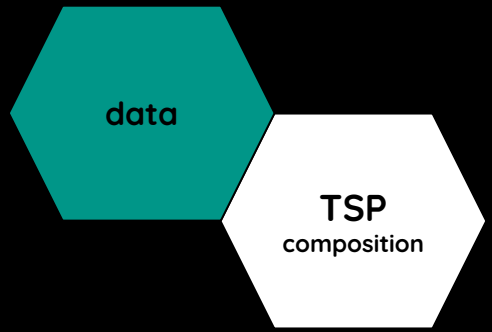
UI / UX
Examples
catalog
Docs &
Resources

proto - TSP


TSP
composition


data
TSP
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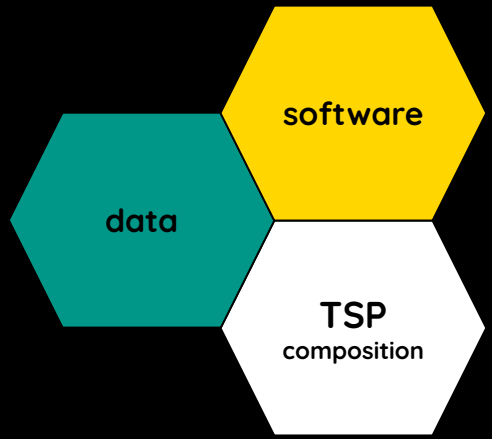
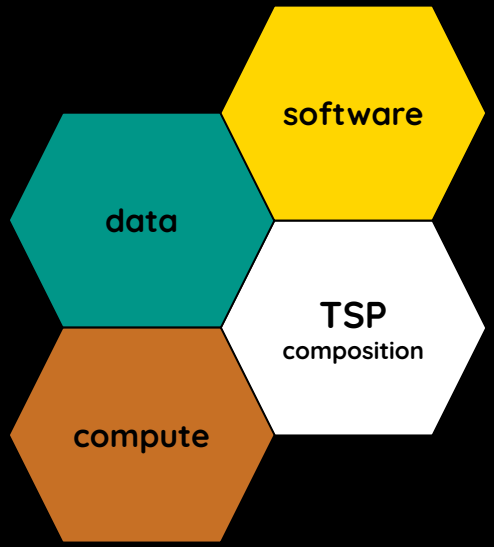

software
data
TSP
composition


software
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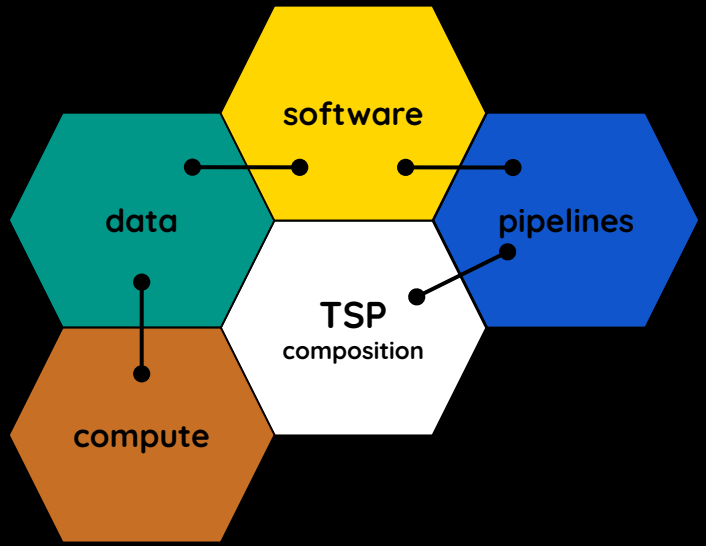
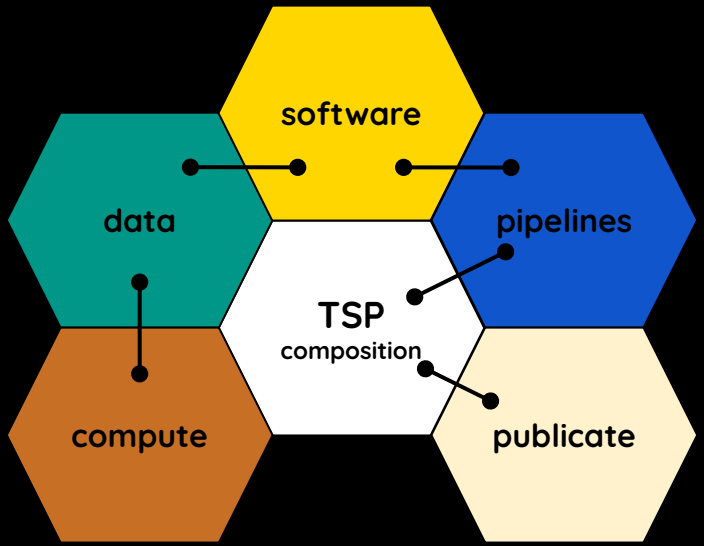
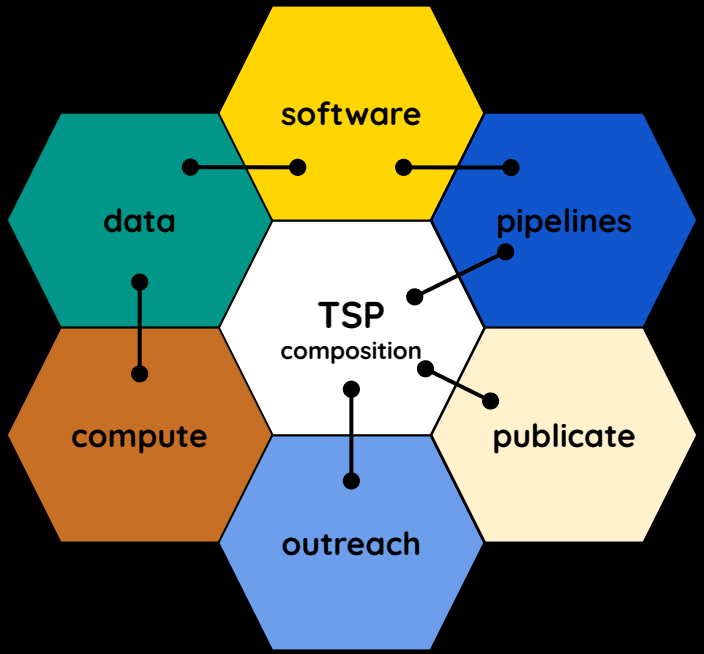
compute


software
data
pipelines
TSP
composition
compute


software
data
pipelines
TSP
composition
compute
publicate

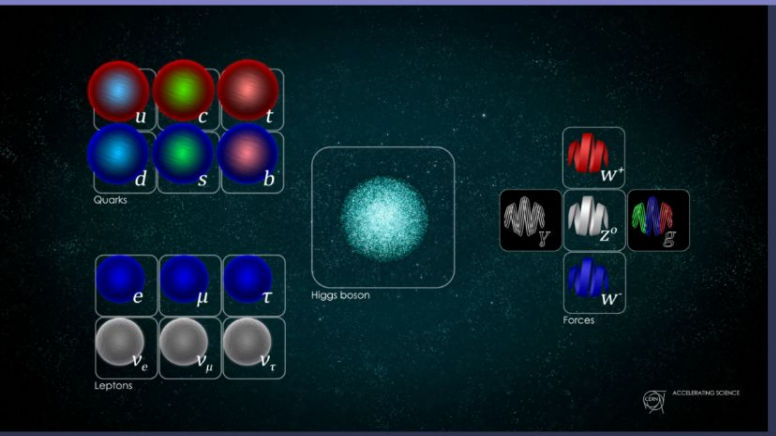

software
data
pipelines
TSP
composition
compute
publicate
outreach

proto - TSP

Searches as examples

Test Science Project: the Higgs @ATLAS

AN EXERCISE OF HOW A PARTICLE PHYSICS TSP CAN LOOK LIKE



The Physics

Take a look at the fundamental physics that support and guide the experimental data analysis searches -and discoveries- relative to Higgs candidates, predicted by the Standard Model of Particle Physics.

LEARN MORE

Test Science Project: Astronomy @CTA

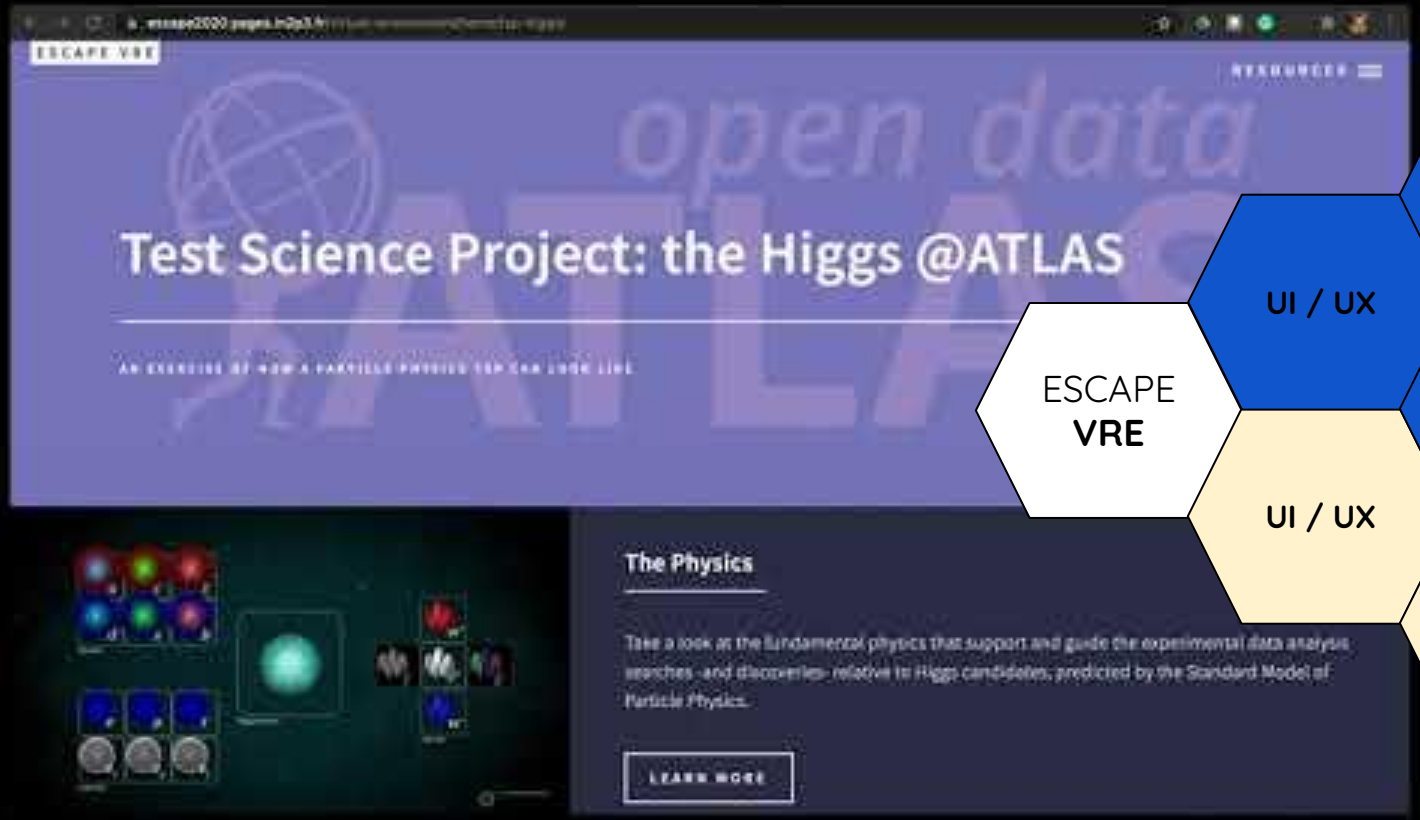
cherenkov telescope array

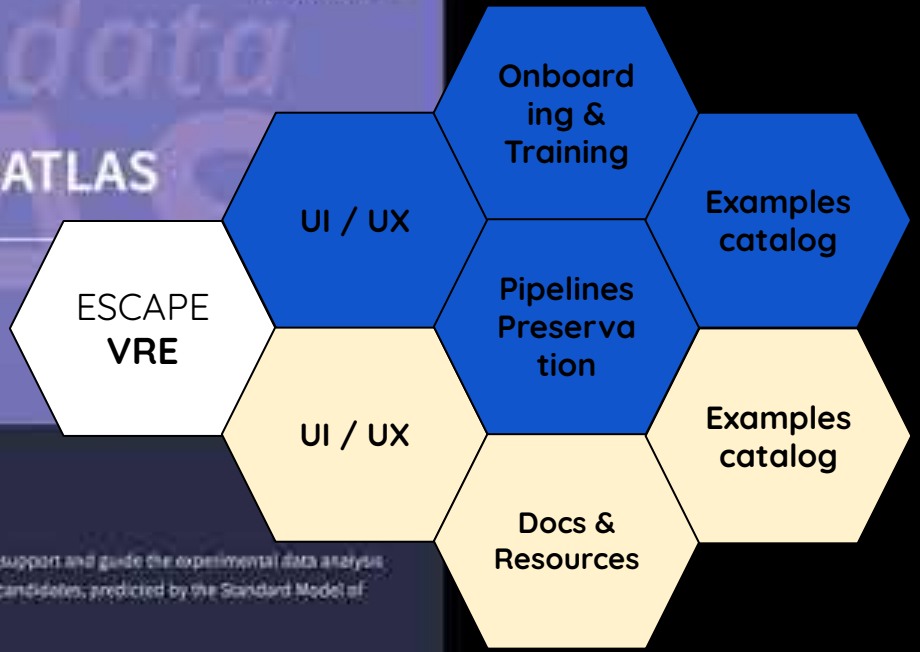
AN EXERCISE OF HOW A TSP CAN LOOK LIKE

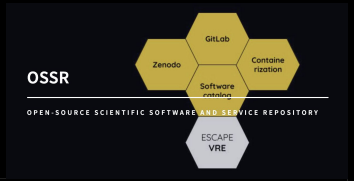
The Physics

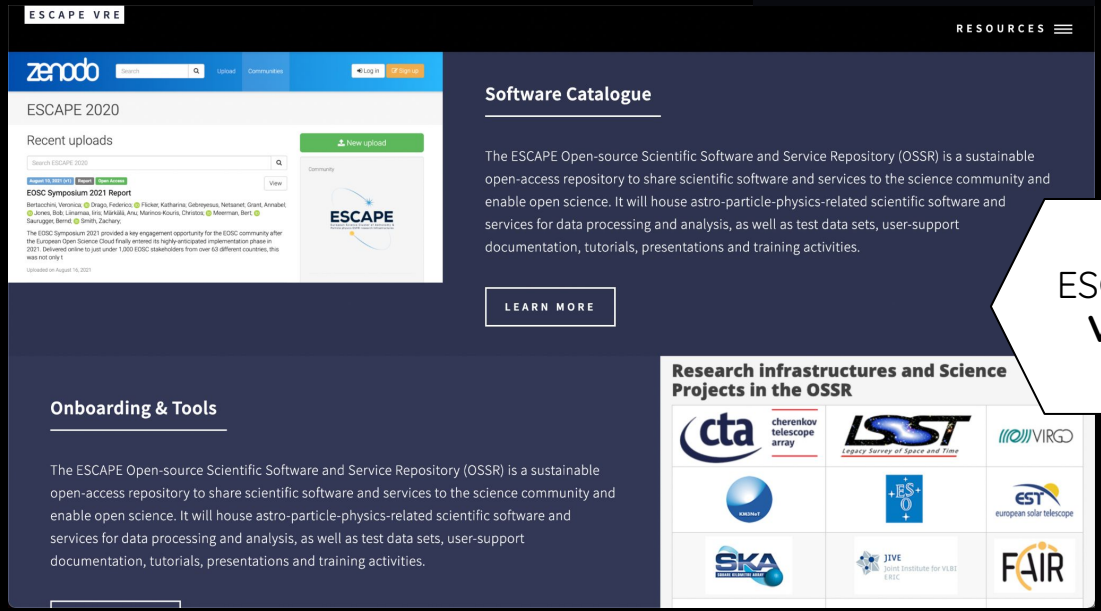
Take a look at the fundamental physics that support and guide the experimental data analysis searches -and discoveries- relative to Higgs candidates, predicted by the Standard Model of Particle Physics.

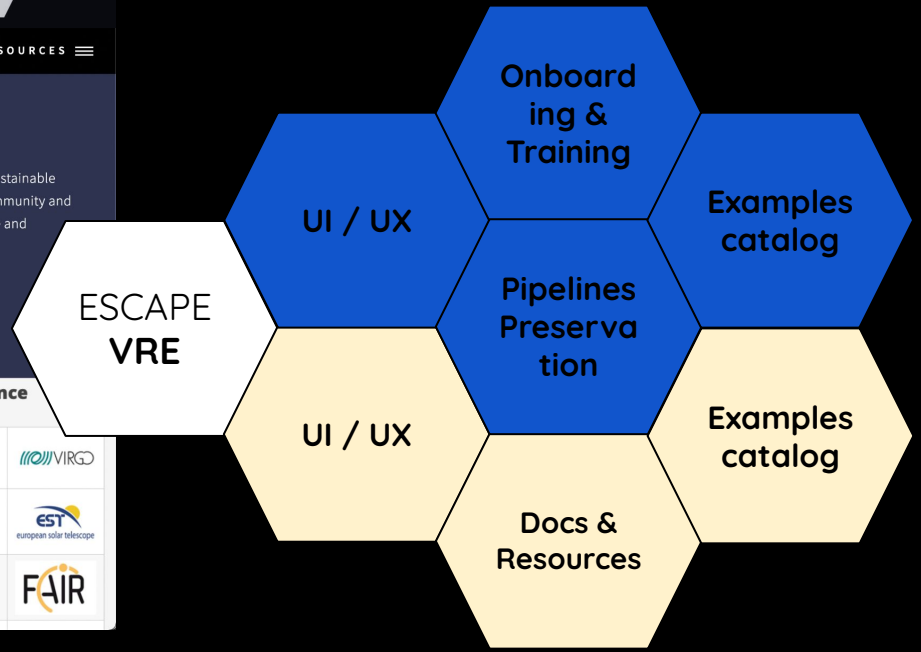
LEARN MORE

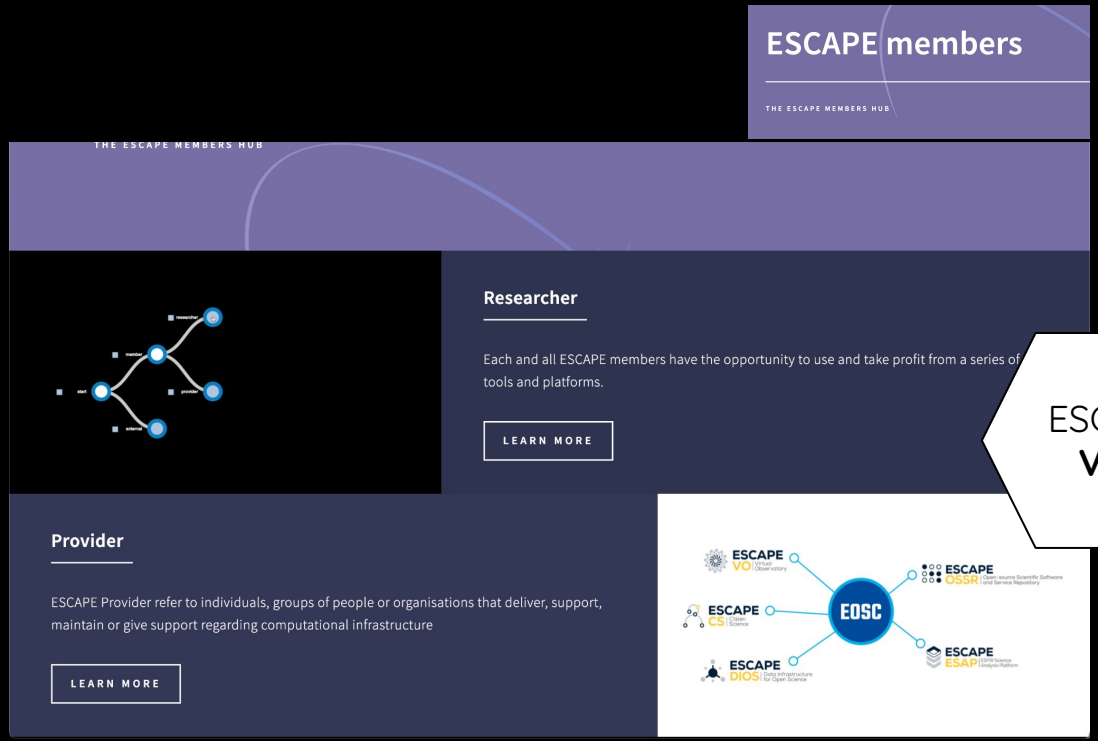

ESCAPE VRE
RESOURCES
open data
ATLAS
Test Science Project: the Higgs @ATLAS
The Physics
Take a look at the fundamental physics that support and guide the experimental data analysis searches -and discoveries- relative to Higgs candidates, predicted by the Standard Model of Particle Physics.
LEARN MORE

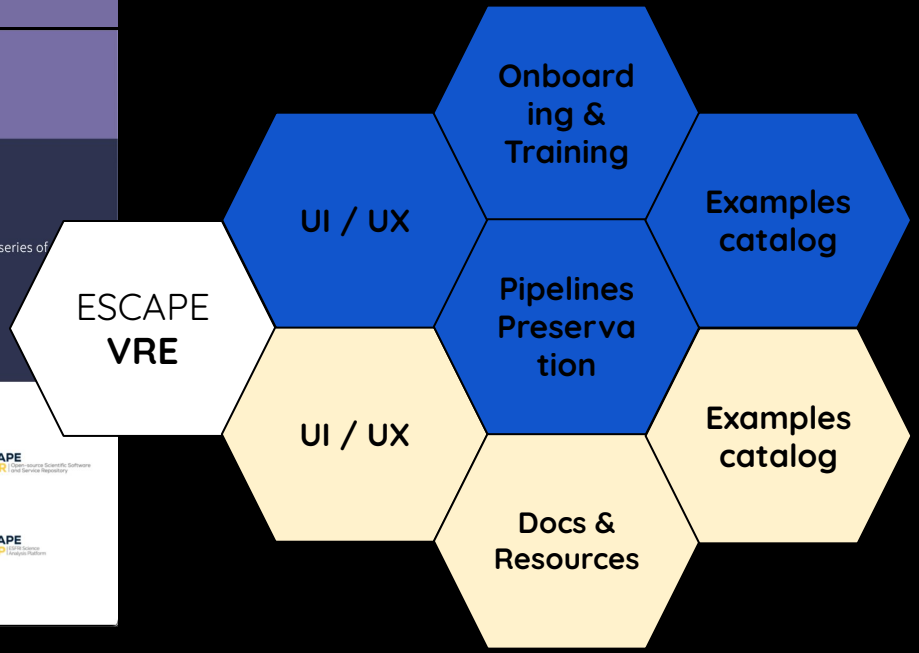

ESCAPE
VRE
Onboarding & Training
UI / UX
Examples catalog
Pipelines Preservation
UI / UX
Examples catalog
Docs & Resources


OSSR
GitLab
Zenodo
Containerization
Software catalog
ESCAPE VRE
OPEN-SOURCE SCIENTIFIC SOFTWARE AND SERVICE REPOSITORY


ESCAPE VRE
RESOURCES
zenodo
ESCAPE 2020
Recent uploads
New upload
EOSC Symposium 2021 Report
Software Catalogue
The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a sustainable open-access repository to share scientific software and services to the science community and enable open science. It will house astro-particle-physics-related scientific software and services for data processing and analysis, as well as test data sets, user-support documentation, tutorials, presentations and training activities.
LEARN MORE
Onboarding & Tools
The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a sustainable open-access repository to share scientific software and services to the science community and enable open science. It will house astro-particle-physics-related scientific software and services for data processing and analysis, as well as test data sets, user-support documentation, tutorials, presentations and training activities.
Research infrastructures and Science Projects in the OSSR
cherenkov telescope array
LSST
VIRGO
EST
european solar telescope
SKA
JIVE
FAIR


ESCAPE VRE
Onboarding & Training
UI / UX
Examples catalog
Pipelines Preservation
UI / UX
Examples catalog
Docs & Resources


ESCAPE members
THE ESCAPE MEMBERS HUB
THE ESCAPE MEMBERS HUB
Researcher
Each and all ESCAPE members have the opportunity to use and take profit from a series of
tools and platforms.
LEARN MORE
Provider
ESCAPE Provider refer to individuals, groups of people or organisations that deliver, support, maintain or give support regarding computational infrastructure
LEARN MORE
EOSC
ESCAPE VO
ESCAPE OSSR
ESCAPE CS
ESCAPE ESAP
ESCAPE DIOS


ESCAPE
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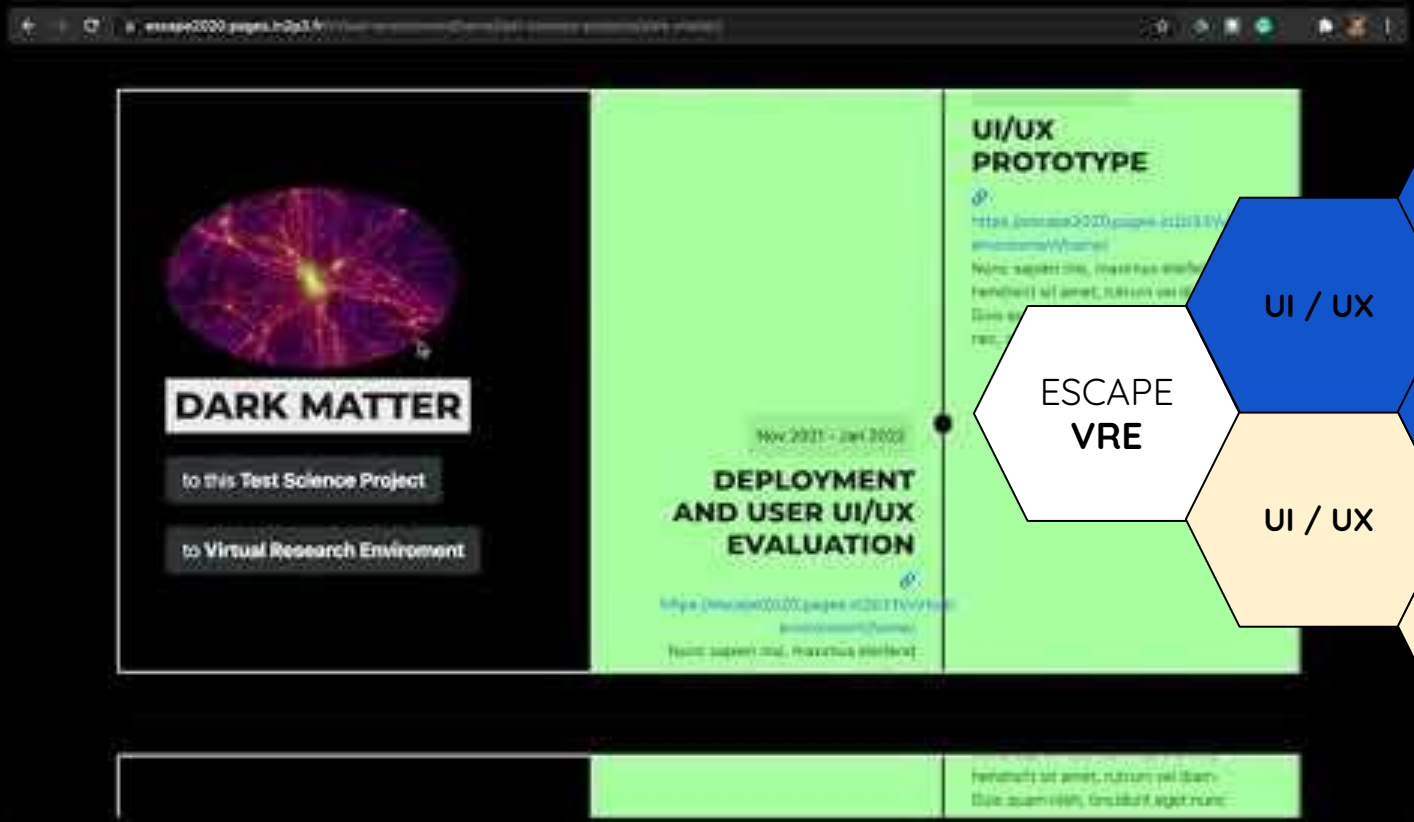
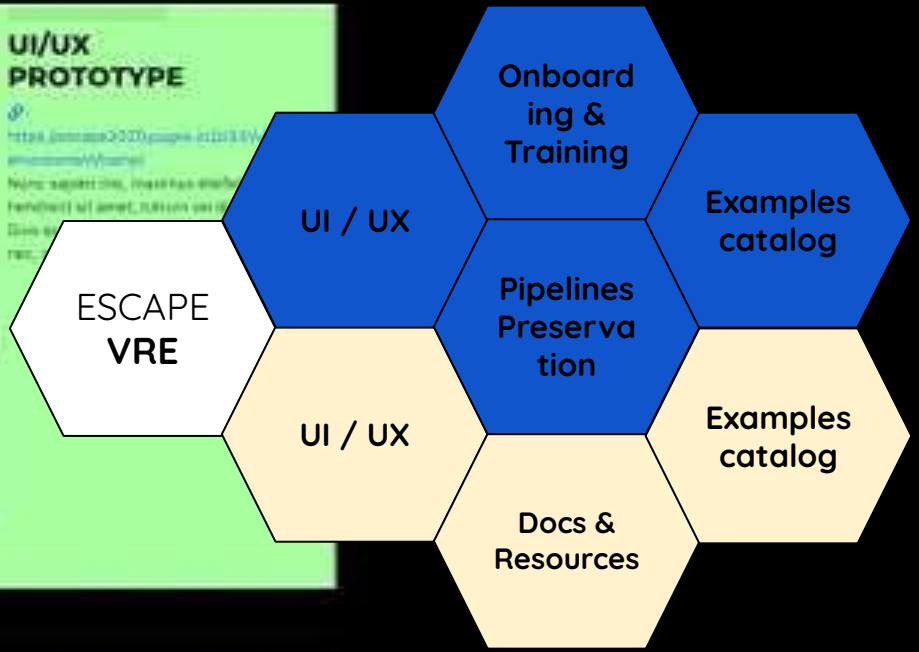
Onboarding & Training
UI / UX
Examples catalog
Pipelines Preservation
UI / UX
Examples catalog
Docs & Resources


DARK MATTER
to this Test Science Project
to Virtual Research Environment
UI/UX PROTOTYPE
Nov 2021 - Jan 2022
DEPLOYMENT AND USER UI/UX EVALUATION


ESCAPE VRE
UI / UX
Onboarding & Training
Examples catalog
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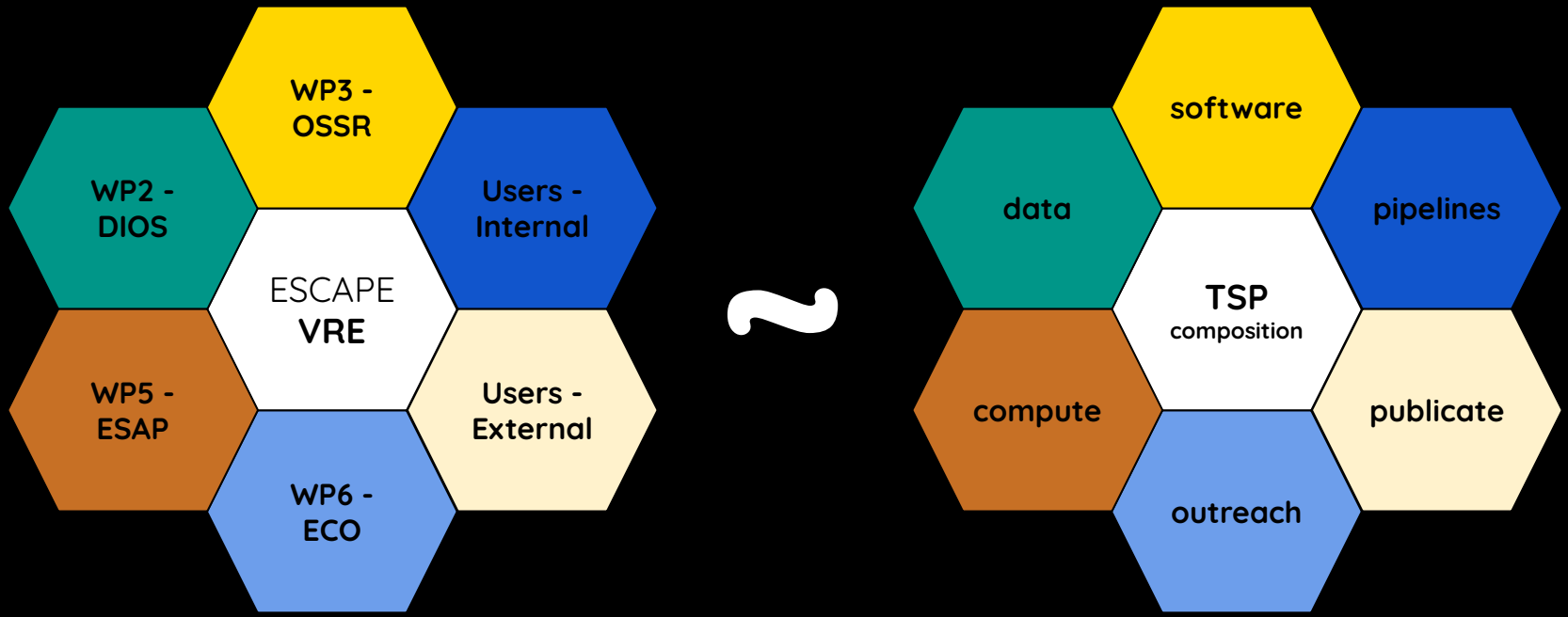
Docs & Resources


WP3 - OSSR
WP2 - DIOS
Users - Internal
ESCAPE VRE
WP5 - ESAP
Users - External
WP6 - ECO
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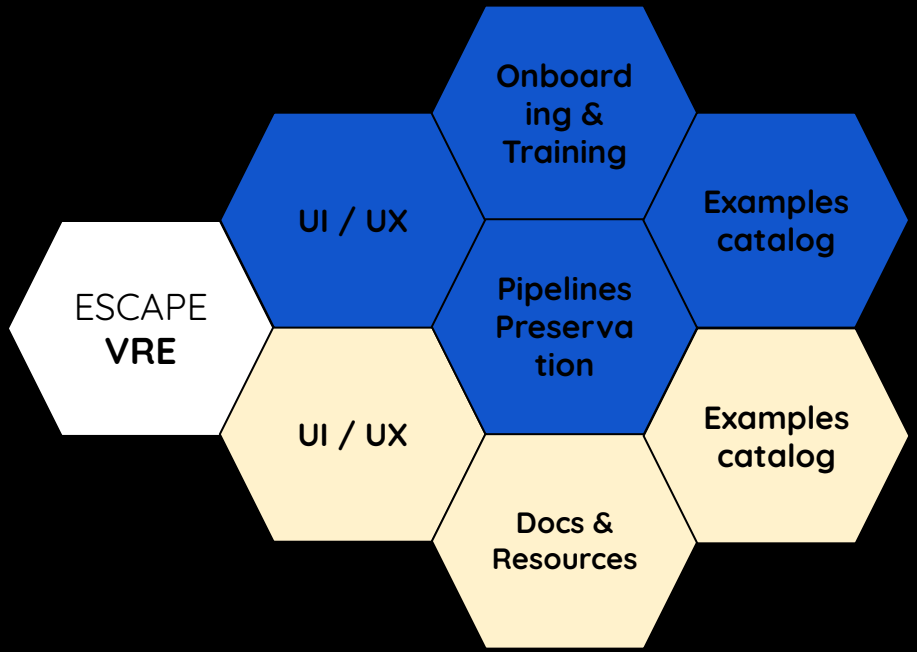
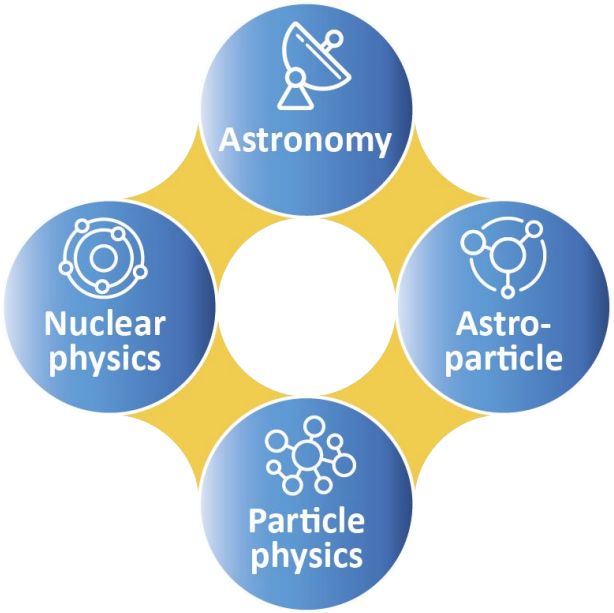
software
data
pipelines
TSP composition
compute
publicate
outreach


ESCAPE VRE
Virtual Research
Enviroment
ESCAPE
AN AGGREGATION PORTAL PROPOSAL
GET STARTED
the VRE idea


ESCAPE
VRE
UI / UX
Onboarding & Training
Examples catalog
Pipelines Preservation
UI / UX
Examples catalog
Docs & Resources

ESCAPE
European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures

SUMMARY



A concrete exercise regarding the development of a VRE as a demonstrator for tools, resources and TSP aggregation is ongoing
https://escape2020.pages.in2p3.fr/virtual-environment/home/

Warning: many links and pages yet under construction…

Feedback, ideas and help are very much welcome!

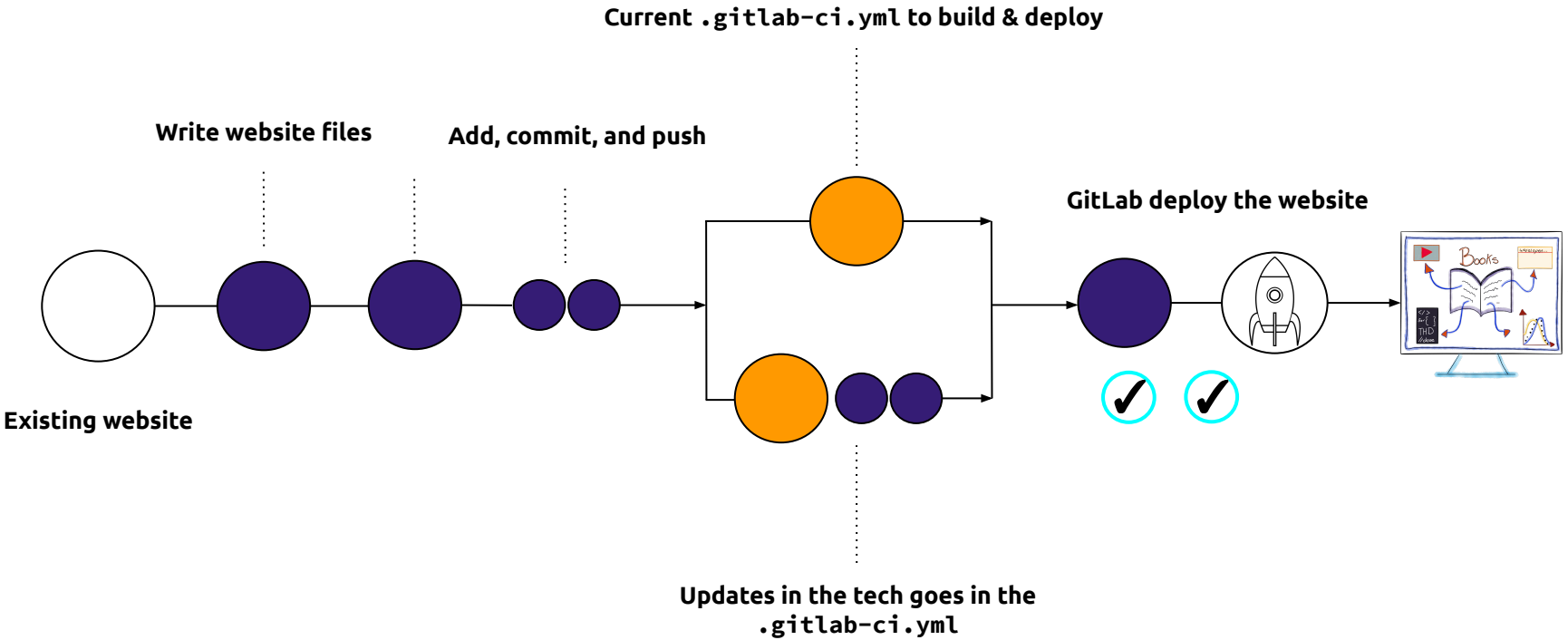
You are very much invited to be part of the current content and experience creation

Funded by the European Union's Horizon 2020 - Grant N° 824064

thanks

Backup

CI / CD


Current .gitlab-ci.yml to build & deploy
Write website files
Add, commit, and push
GitLab deploy the website
Existing website
Updates in the tech goes in the
.gitlab-ci.yml

ESCAPE OSSR | Open-source Scientific Software and Service Repository

https://escape2020.pages.in2p3.fr/wp3/ossr-pages/

Software catalog

ESCAPE VRE

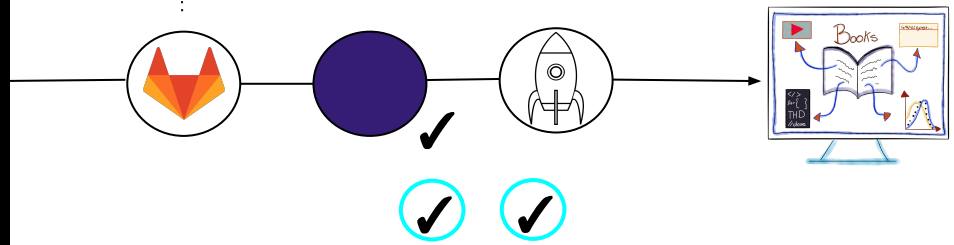
Research infrastructures and Science Projects in the OSSR

https://gitlab.in2p3.fr/

GitLab

ESCAPE
VRE

Trigger GitLab CI/CD



GitLab deploys your website

Zenodo

ESCAPE
VRE

https://zenodo.org/communities/escape2020/

Containe
rization

ESCAPE
VRE

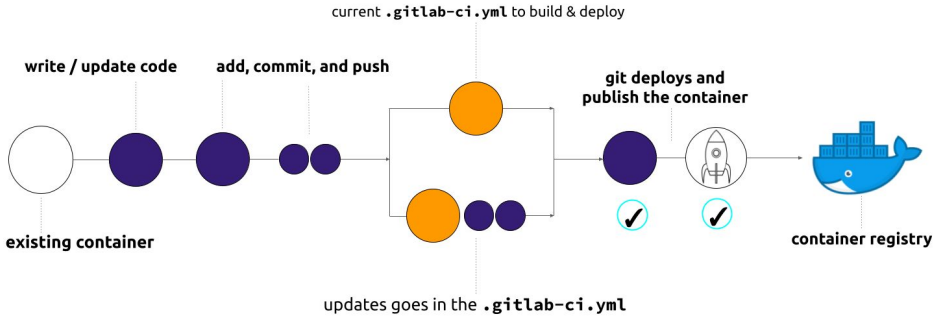
ZenodoCI

DOI 10.5281/zenodo.4786641 | pipeline passed | License MIT | coverage 33.00%

Library to manage an upload to Zenodo through its REST API.

https://gitlab.in2p3.fr/escape2020/wp3/zenodoci/

zenodo



ESCAPE DIOS | Data Infrastructure for Open Science

https://wiki.escape2020.de/index.php/WP2_-_DIOS#Datalake_Status

Datalake

ESCAPE VRE

The collection of sites (or RSE) that store replicas of the experiments (simulated and real) datasets

Institute	STORAGE Technology	Version	Quota (inode limit)	Min Free Space	XROOT	HTTPS	GSIFTP	ESCAPE VO (X509)	Token Based Auth/Z	perfSONAR Hosts (bandwidth & latency)	perfSONAR PoC	Storage PoC
CERN	EOS	v4.8.20	300 TB	30 TB	YES	YES	YES	YES	NO	psb01-gva.cern.ch psl01-gva.cern.ch	Rizart Dona	Rizart Dona Riccardo Di Maria Xavier Espinal
LAPP	Federated DPM (ALPAMED)	1.14.2	100 TB	10 TB	YES	YES	YES	YES	YES	lapp-ps01.in2p3.fr lapp-ps02.in2p3.fr	P.Seraphin, F.Chollet via support-grid	Stephane Jezequel Frederique Chollet
LAPP	dCache	5.2	20 TB	1 TB	NO	YES	NO	YES	WIP	lapp-ps01.in2p3.fr lapp-ps02.in2p3.fr	P.Seraphin, F.Chollet via support-grid	Frederic Gillardo
LAPP	webdav		200 GB	150 GB	NO	YES	NO	YES	NO	lapp-ps01.in2p3.fr lapp-ps02.in2p3.fr	P.Seraphin, F.Chollet via support-grid	Berkay Turk
LAPP	aws		200 GB	100 GB	NO	YES	NO	YES	NO	Not Applicable	Not Applicable	Frederic Gillardo
SURFsara	dCache	6.0.9	98 TB	140 GB	YES	YES	YES	YES	YES	perfsonar-bandwidth.grid.surfsara.nl perfsonar-latency.grid.surfsara.nl	Alexander Verkooijen	Alexander Verkooijen

RUCIO Client API REST API

Getting Started

- Welcome!
- Before You Get Started
- What is Rucio?
- Main Components of Rucio
- Additional Layers and Resources

Welcome to Rucio's documentation!

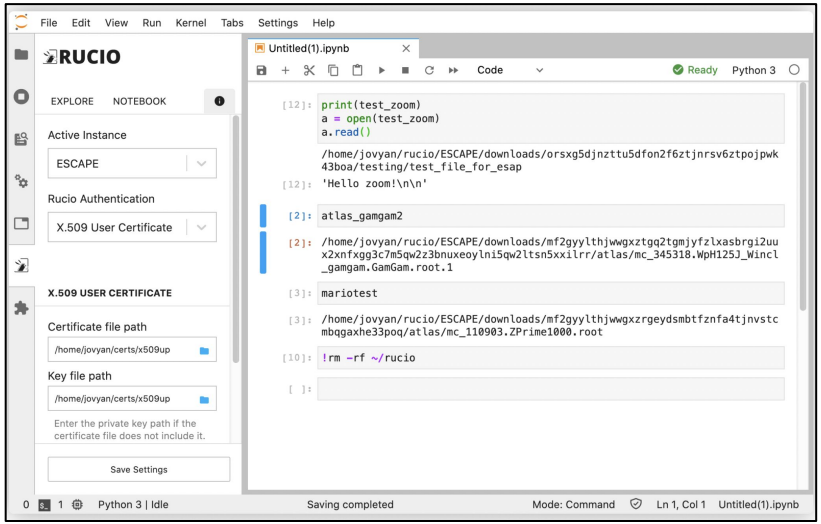
Rucio is a project that provides services and associated libraries for allowing scientific collaborations to manage large volumes of data spread across facilities at multiple institutions and organisations. Rucio has been developed by the ATLAS experiment

The RUCIO CLI and RUCIO Jupyter Extension
https://rucio.cern.ch/documentation/

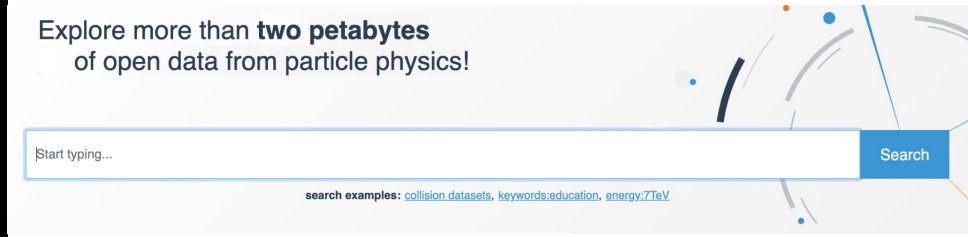
The RUCIO slack
https://join.slack.com/t/rucio/shared_invite/zt-nj61ch5u-XLamDDrnJFCiPglHcNnS8Q

Rucio client(s)

ESCAPE **VRE**



http://opendata.cern.ch/



Filter by experiment

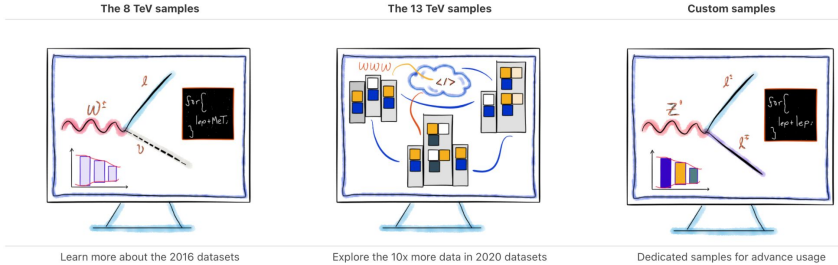
ALICE	26
ATLAS	127
CMS	3994
LHCb	12
OPERA	910
PHENIX	1

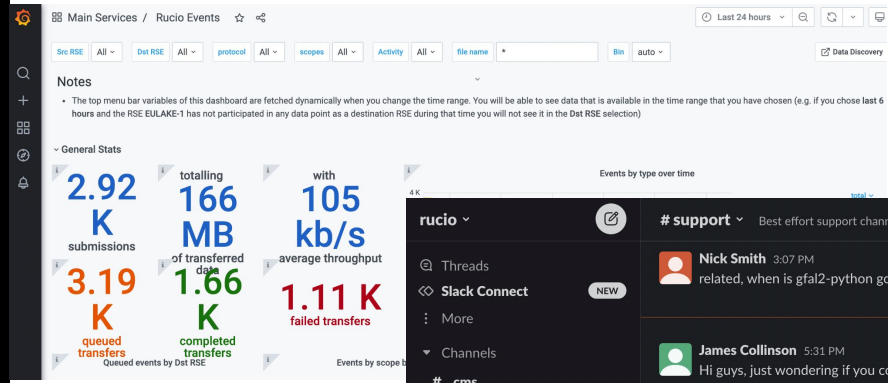
Data catalog

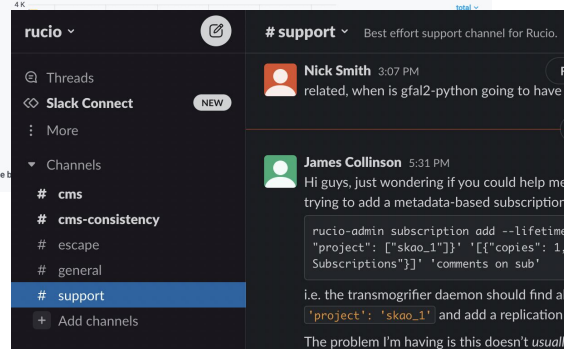
ESCAPE **VRE**

ATLAS OD example
http://opendata.atlas.cern/data

Select the data you want to access and explore its specific resources



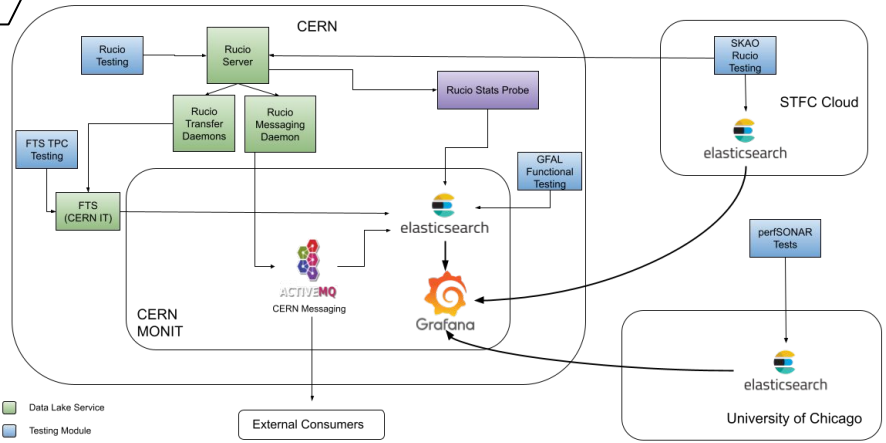




User services

ESCAPE **VRE**

https://monit-grafana.cern.ch



Monitoring

https://monit-grafana.cern.ch/d/4rmQfGYMz/rucio-events?orgId=51
https://monit-grafana.cern.ch/d/a74yXDN2Gk/rucio-stats-interconnection?orgId=51

Analysis Interface Aggrega-tions

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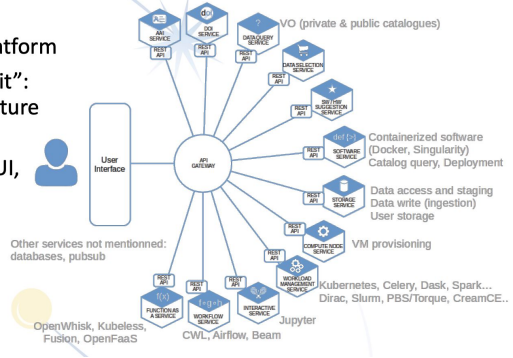
ESAP: The hub in ESCAPE's wheel

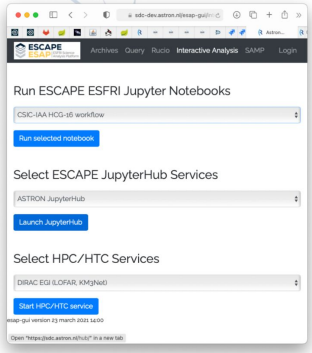
- ESFRI Science Analysis Platform
- A "science platform toolkit": bring your own infrastructure and service capabilities.
- Two part structure: web UI, and API gateway
- Focal point of a range of pluggable, independent microservices
- Designed to be robust & extensible



https://indico.in2p3.fr/event/23869/contributions/94010/attachments/63501/87434/2021-04-06%20%E2%80%94%20ESCAPE%20WP2-WP5%20Workshop%20%E2%80%94%20WP5%20Status.pdf

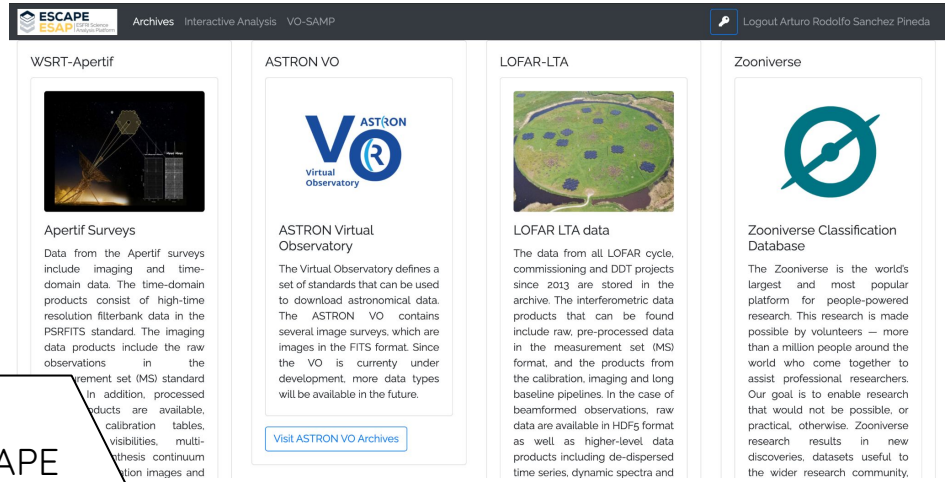
ESAP: Interactive Data Analysis & HPC/HTC Services

- *Currently*, ESAP acts as a "hub", which effectively links out to JupyterHub & H[TP]C facilities.
- Notebooks running on e.g. Binder can access data made available through the VO and other standard interfaces.

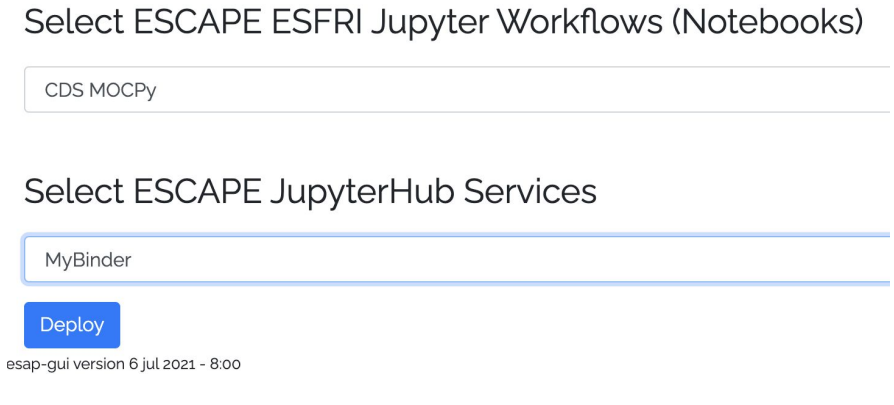


Analysis Interface Aggrega-tions

ESCAPE **VRE**



https://sdc-dev.astron.nl/esap-gui/

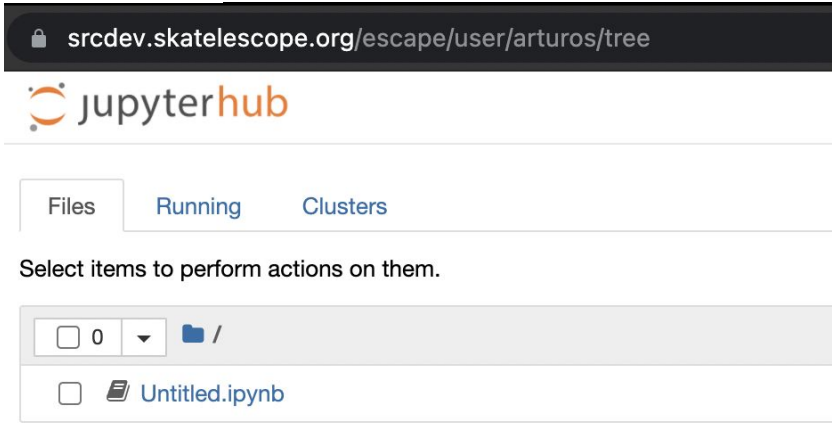



Software Deploy-ment
ESCAPE VRE
Software catalog

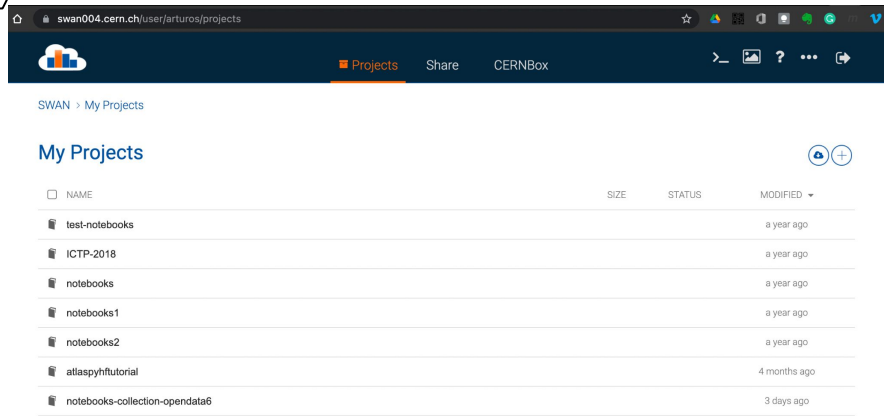
Sign in with ESCAPE IAM

Institutional resources

ESCAPE **VRE**



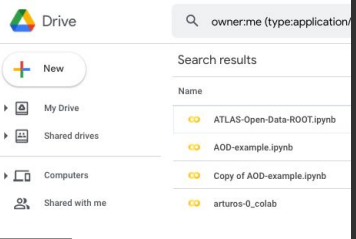
https://sdc-dev.astron.nl/esap-gui/interactive

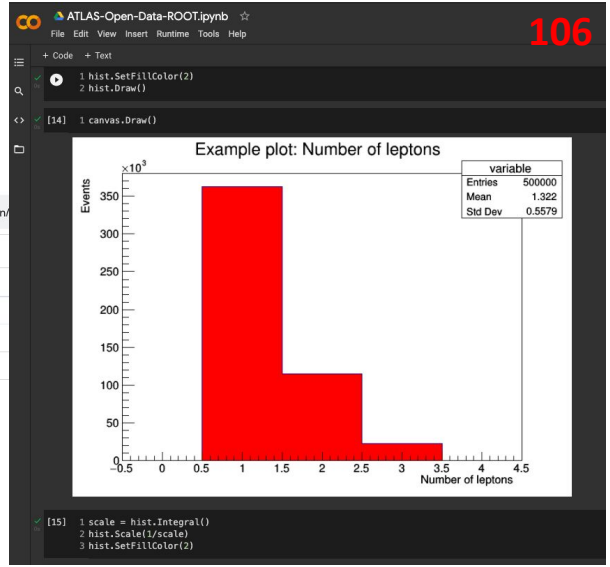


External Clouds

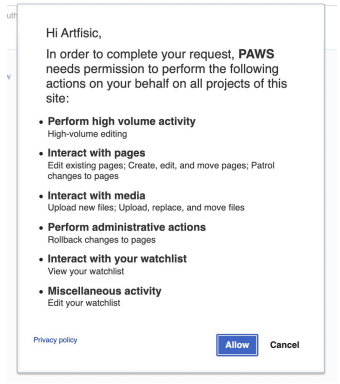
ESCAPE **VRE**

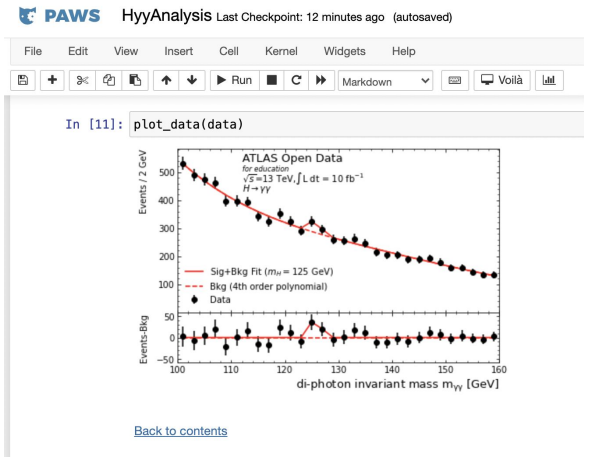
https://colab.research.google.com



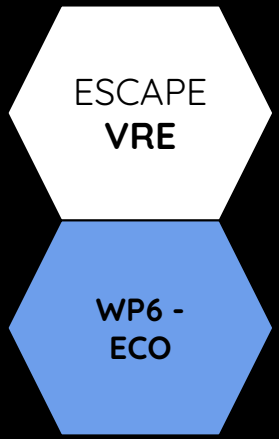


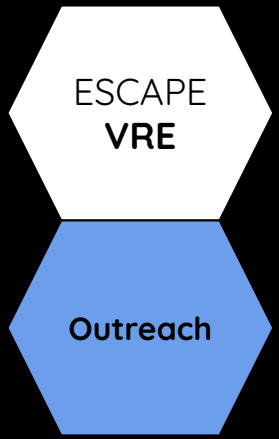
https://hub.paws.wmcloud.org

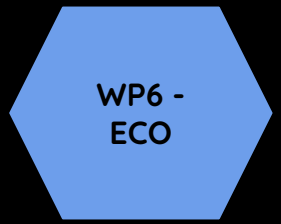




ECO


ESCAPE
VRE
WP6 -
ECO


ESCAPE
VRE
Outreach



Out of the scope of this presentation

ESCAPE site

Let's Start!

Meetings

OwnCloud

RedMine

Rocket.Chat

CERN mattermost

ESCAPE Wiki

Software and Services

Software DevOps

ESCAPE community

Analysis Platform

DLaaS - JupyterHub

Datalake - RSEs

Datalake - Monitoring

Rucio Docs

VO - Market

Documentation

Get/Use Docker

Rucio CLI client

ESCAPE School - site

Seminars / Tutorials

Reset your password

Citizen Science

TSP - Higgs

TSP - Astro

Outreach - ATLAS

any other question?

https://escape2020.pages.in2p3.fr/virtual-environment/home/member/researcher/

Examples catalog

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Online *free* Analysis Platforms:

- https://colab.research.google.com/
- https://mybinder.org/
- https://worksheets.codalab.org/
- https://www.kaggle.com/

Others

- https://notebooks.azure.com/
- https://developer.ibm.com/components/jupyter/