The User Interface Topic Group

Your Portal To Interdisciplinary Scientific Discovery

Tim Ruhe and Pierre Schnizer, DIGUM Annual Meeting 2023

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First Gathering of the Communities in 2023

Credit: Angela Warkentin, ERUM Data Hub

Next Generation Environment for Interoperable Data Analyis – Expert Workshop

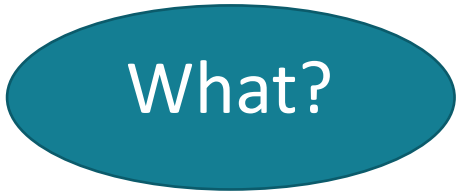
May 3-4 2023, HZB Berlin

Presentations by:

- Nicolas Eich
- Verana Kain
- Mohammad Al-Turany
- Kai Polsterer

The User Interface Topic Group in DIG-UM

What should be stored?

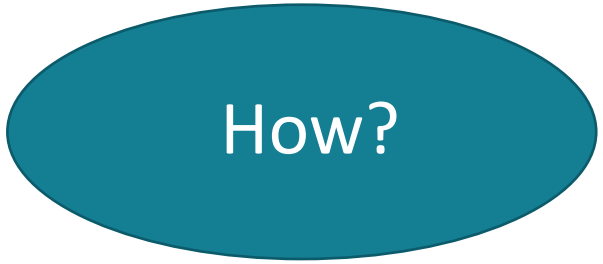


Research Data Management

Where should it be stored?

Federated Infrastructures

How should the data be accessed?



User Interface

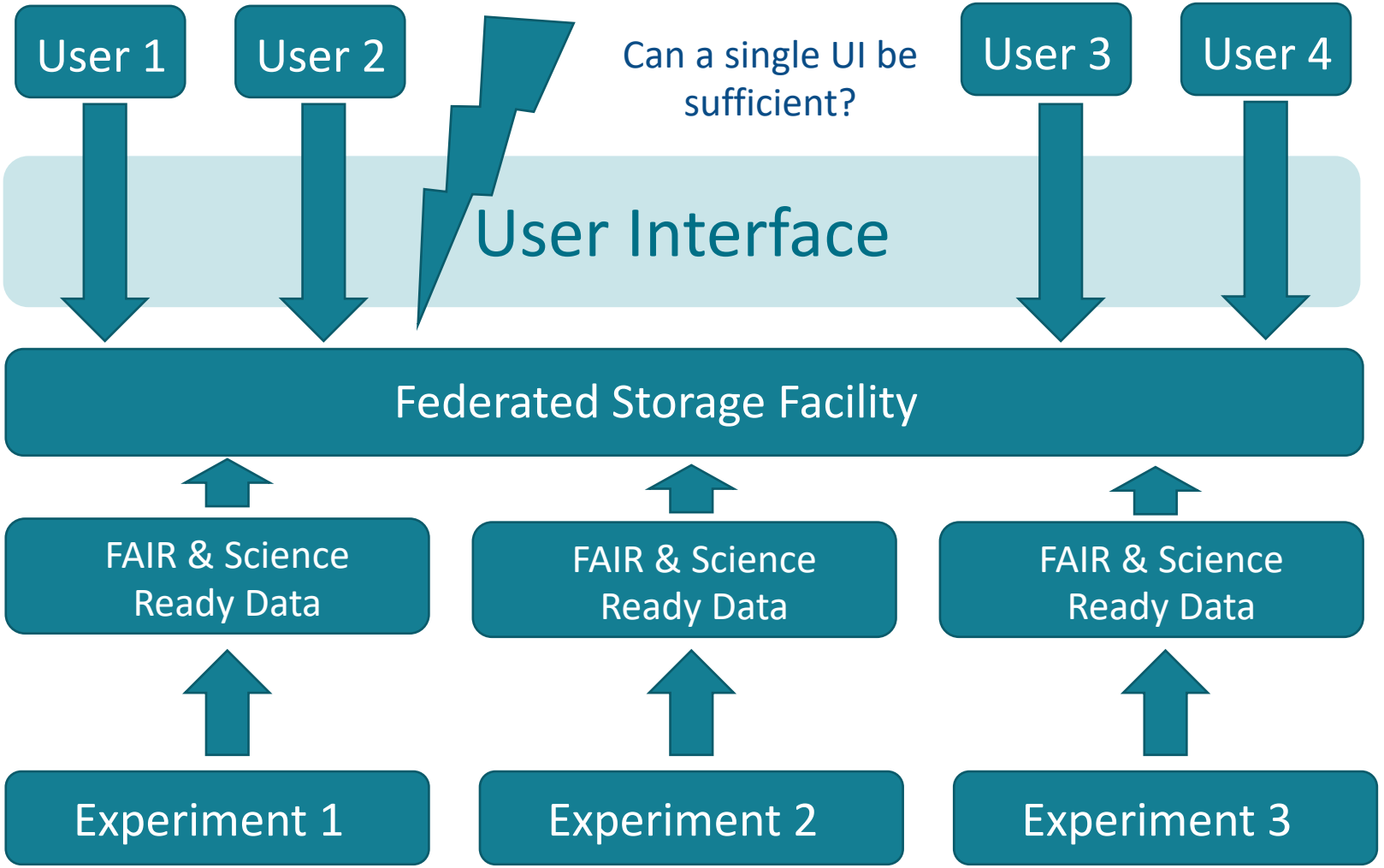
Big Data Analytics

Which algorithms should be used?

Knowledge Distribution

Who needs to know about this?

Enabling Interdisciplinary Discoveries



The best user interface is probably the one you don‘t notice.

Comfortable look and feel.

Data processing and data curation remains with the experiments.

Experiments should be encouraged to publish their data in a timely manner.

Interdisciplinary analyses require cross-community standards.

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Accessing Data Is Not Enough

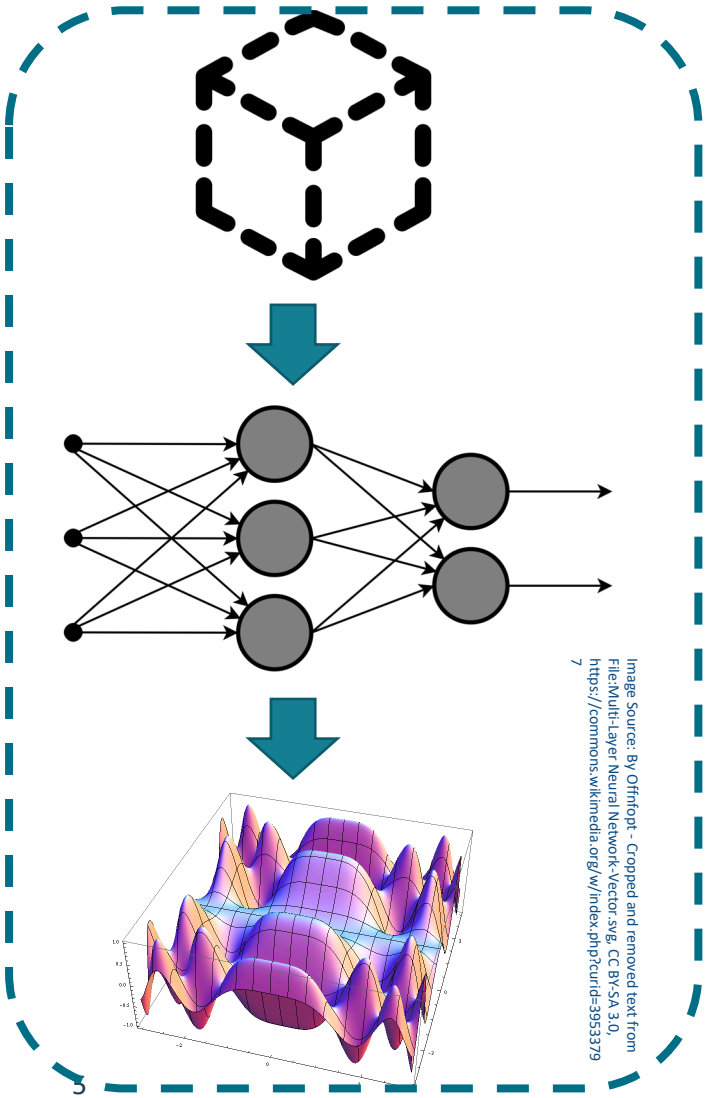

Image Source: By Offnfopt - Cropped and removed text from File:Multi-Layer Neural Network-Vector.svg, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=39533797

Capturing and archiving workflows is equally important!

- Verfifiable and reproducible workflows
- Language agnostic
- Suffienctly documented
- Examples from the workshop: Vispa, Alpha
- Success Story: Reana (Transfer from HEP to Astro)
- Graphical Programming?
- Low Code?

Finding, using and combining existing solutions needs to be simplified!

Beyond Workflows and Data

Who knows what?

Version 0.1

Knowledge needs to be decoupled from individual persons!

- Peer Programming/Co-Pilot
- Utilize existing code and existing workflows
- Organize existing code
- Suggestions for re-usable code
- Pattern recognition
- Semi-automatic generation of code

~~Chat~~GPT

Physics

A Possible Timeline

2022/2023

- First input from the communities
- Identidying stakeholders and participants
- First rough identification of community needs
- First workshop

2024/2025/2026

- More detailed identification of common needs and goals
- Definition of data and metadata standards (together with RDM)
- Exploit possibilities on given infrastructures (together with Federated Infrastructures)
- Identification of Best Practices
- First prototypes (?)

2027/2028/2029

- Construction of actual User Interface(s)
- Successive implementation of additional features

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

PUNCH 4NFDI

Defining The Main Tasks

- Foster exchange across different communities possibly through annual workshops
- Actively define standards for data and metadata
- Explore possibilities (technically and time-wise)
- Foster best practices in workflow management
- Consider sustainability issues
- Allow for hands-on experiences

Next Generation Environment for Interoperable Data Analyis – Second Annual Expert Workshop

Dortmund Q2/2024

Anything missing? Want to join the effort?

Tall to Pierre or me!