

Synergies, Outreach, Education

Task Area 6: Synergies and Services (S.W. & Kilian Schwarz, GSI)

Aim: Exploit synergies in the development of data management solutions, facilitate access to data management solutions for the community, advance prototypical efforts in ,cross-cutting topics‘

Task Area 7: Education, Training, and Outreach (Frank Bertoldi & Kevin Kroeninger, Dortmund)

Data-science elements in curricula

Training of professionals (e.g. GAVO)

Data-science in (astronomy) outreach ([Einstein@home](#), GalaxyZoo, ...)

TA6 Synergies & Services

WP 6.1: Marketplace

- Interfaces to NFDI-consortia

- TA (community) - overarching use-cases

WP 6.2: Authentication and authorisation infrastructure

WP 6.3: FAIRnes

- Metadata extensions for cross-disciplinary data-reuse

- Open Data: making data publicly accessible

- Publishing data and links to archives/libraries/publishers

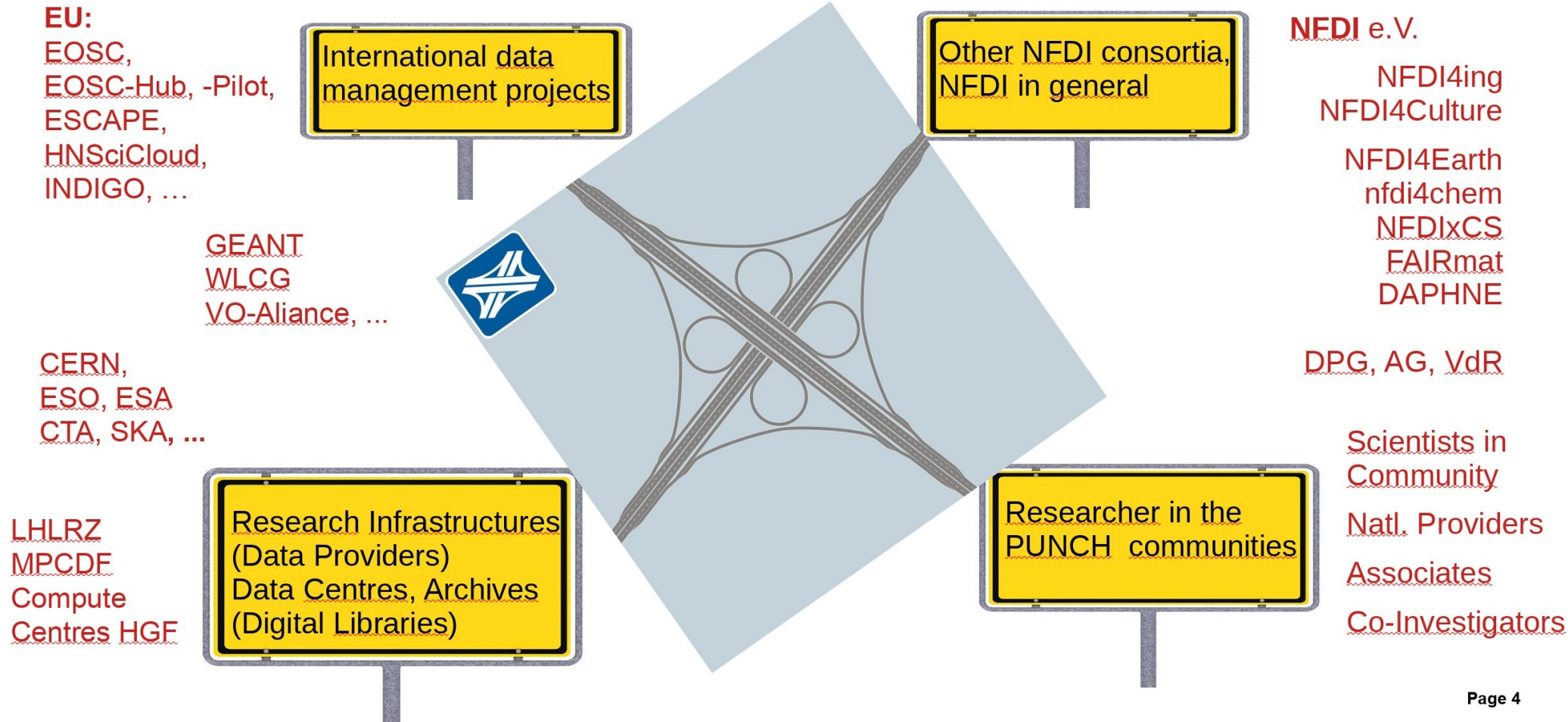
WP 6.4: Open Source data analysis tools

WP 6.5: Services in big data management

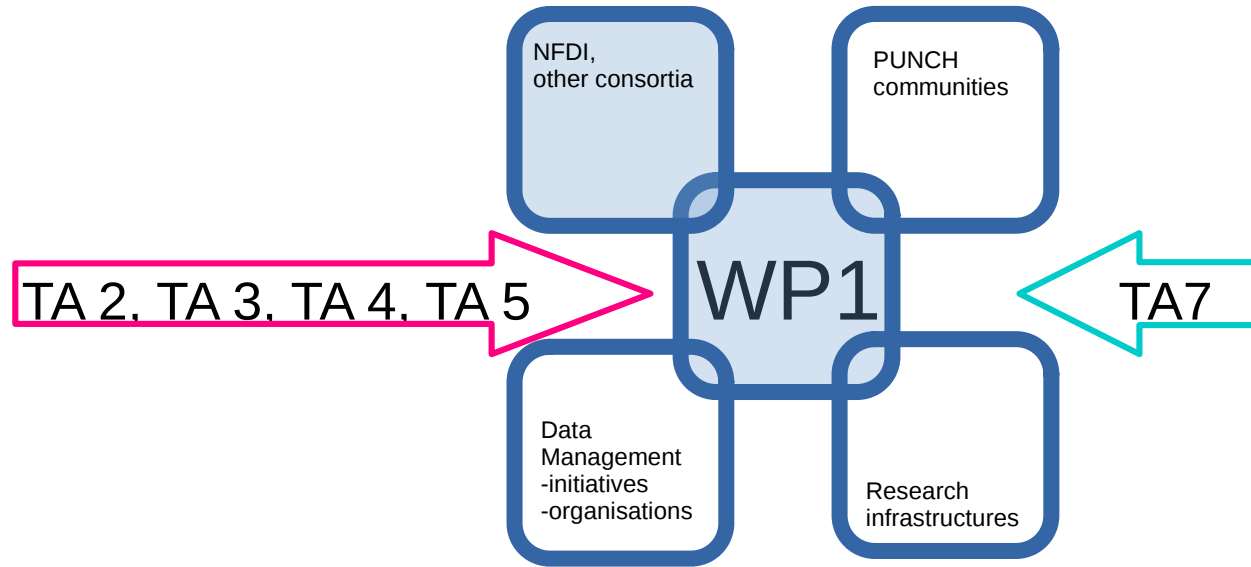
- Large-scale distributed computing & storage

- Multi-archival cross matches

TA6 prepares for an efficient exchange of data management -solutions, -methods, -services, -protocols, -standards



TA6 - WP1



Exchange of

- Contacts
- Activities
- Solutions
- Services

Joint work, e.g.

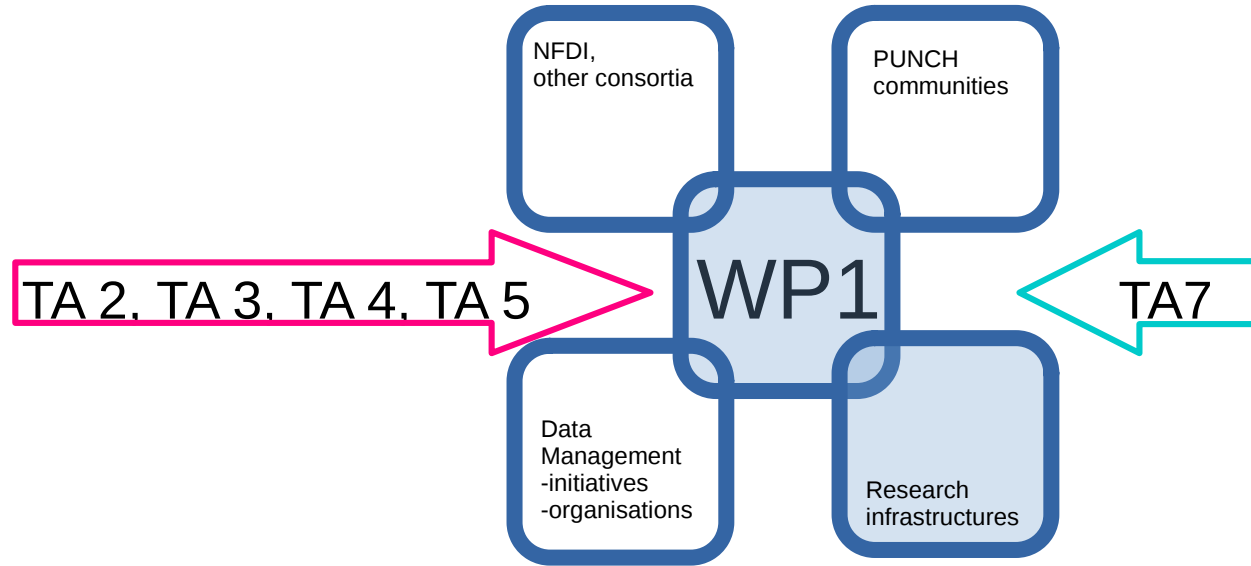
NFDI4Culture

- **tor on DRP**
- **AAI**
- **services**
- **tools**
- citizen science

NFDI4Ing

- ...

TA6 WP1



Exchange of concepts on

- data archiving
- open access
- services
- analysis tools

ESO
CERN
ESA
SKA

(FAIR,
CTA)

More communication and exchange workshops & PUNCH Lunch

PUNCH4NFDI Open Data Workshop

📅 Thursday 11 Feb 2021, 14:15 → 17:45 Europe/Berlin

👤 Matthias Steinmetz (Leibniz Institute for Astrophysics Potsdam) , Thomas Schoerner-Sadenius (DESY)

Description PUNCH4NFDI aims at developing concepts and tools for the efficient management of digital research products in basic physics research. At the heart of the research products are scientific data sets that we want to make available to a broad public for a sustainable usage ("open data").

The first PUNCH4NFDI "open data workshop" will give the opportunity for a first survey of existing and planned open data initiatives within the PUNCH science field. It will address conceptual differences and commonalities between different approaches, inform the PUNCH community about existing open data sets, and enquire about the community's requirements for a better use of open data.

The workshop results will serve as a basis and starting point for PUNCH4NFDI open data activities. Since the workshop is openly accessible, the presentations will be kept in a style understandable to a broad scientific audience.

ZOOM connection:

[Direkt link](#)

Meeting ID: 996 9288 7645

NOTE: The access code previously displayed here has been changed and will be distributed via mail to all registered participants in the morning of the event!

One tap mobile

+16699009128,,99692887645#,,*366360# US (San Jose)

+12532158782,,99692887645#,,*366360# US (Tacoma)

Note: Only registered participants will receive the ZOOM access code.

Registration

🔗 Participants

👤 108

📝 Register

14:15 → 14:20 **Welcome and introduction** ⌚ 5m

Speaker: Thomas Schoerner-Sadenius (DESY)

📎 20210211_OpenDat...

14:20 → 14:35 **The NFDI and open data** ⌚ 15m

Speaker: Hendrik Seitz-Moskaliuk (NFDI)

📎 2021-02-11-OpenDa...

14:35 → 14:50 **CERN Open Data, and HEP experiments in general** ⌚ 15m

Speaker: Achim Geiser (CMS CMS Fachgruppe QCD)

📎 HEPOpenData2021...

14:50 → 15:05 **Astronomy and ESO open data approaches** ⌚ 15m

Speaker: Michael Sterzik (ESO)

PUNCH-Lunch: an online jour fixe around PUNCH4NFDI topics biweekly Thursdays 12:30-13:30

22 Apr 2021: Quo vadis, PUNCHLunch seminar?

📎 [\(PDF\)](#)

08 Apr 2021: PUNCH4NFDI and ESCAPE - Analysis Platforms in the PUNCH sciences 📎 [\(PDF\)](#)

25 Mar 2021: Data irreversibility in the PUNCH world 📎 [\(PDF\)](#)

11 Mar 2021: PUNCH4NFDI and machine learning for fundamental science 📎 [\(PDF\)](#)

25 Feb 2021: PUNCH Curriculum Workshop 📎 [\(PDF\)](#)

11 Feb 2021: PUNCH4NFDI and ESCAPE - towards data lakes 📎 [\(PDF\)](#)

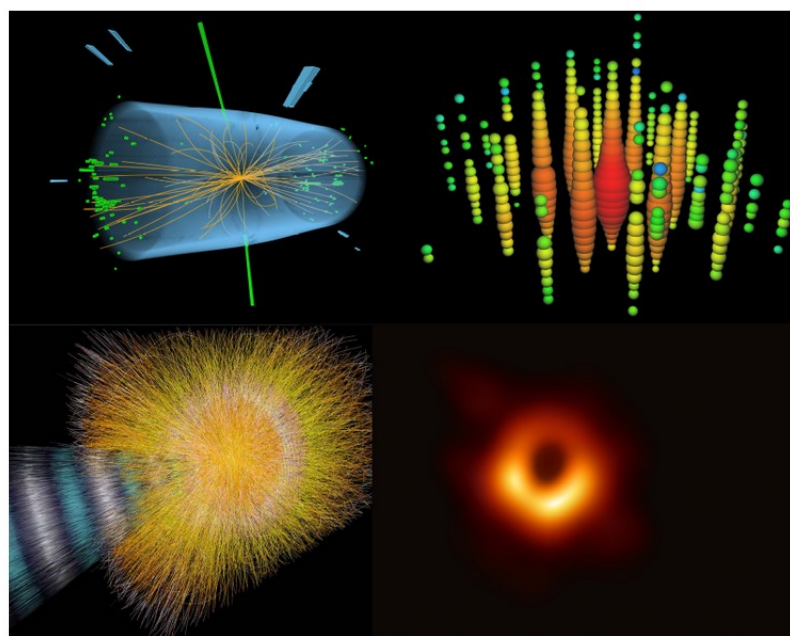
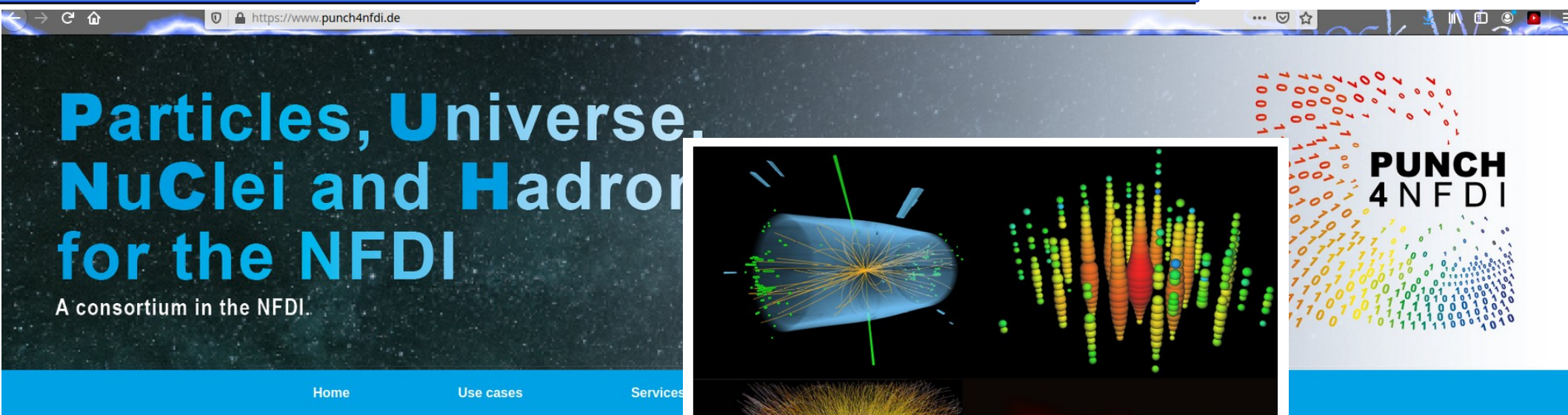
28 Jan 2021: PUNCH4NFDI and NFDI4Culture - natural sciences and humanities in the NFDI 📎 [\(PDF\)](#)

14 Jan 2021: The PUNCH science data platform 📎 [\(PDF\)](#) 📎 [PDF of Slides](#)

3 Dec 2020 Topic: PUNCH4NFDI and ESCAPE 📎 [\(PDF\)](#) 📎 [\(PDF\)](#)

19 Nov 2020 Topic: Intro to PUNCH4NFDI and the NFDI 📎 [\(PDF\)](#)

And the PUNCH4NFDI web page



The prime goal of PUNCH4NFDI is the setup of a federated and "FAIR" science data platform, offering the infrastructures and interfaces necessary for the access to and use of data and computing resources of the involved communities and beyond.

TA6 - WP2:

transparent access to resources needs a common AAI

State of the Art:

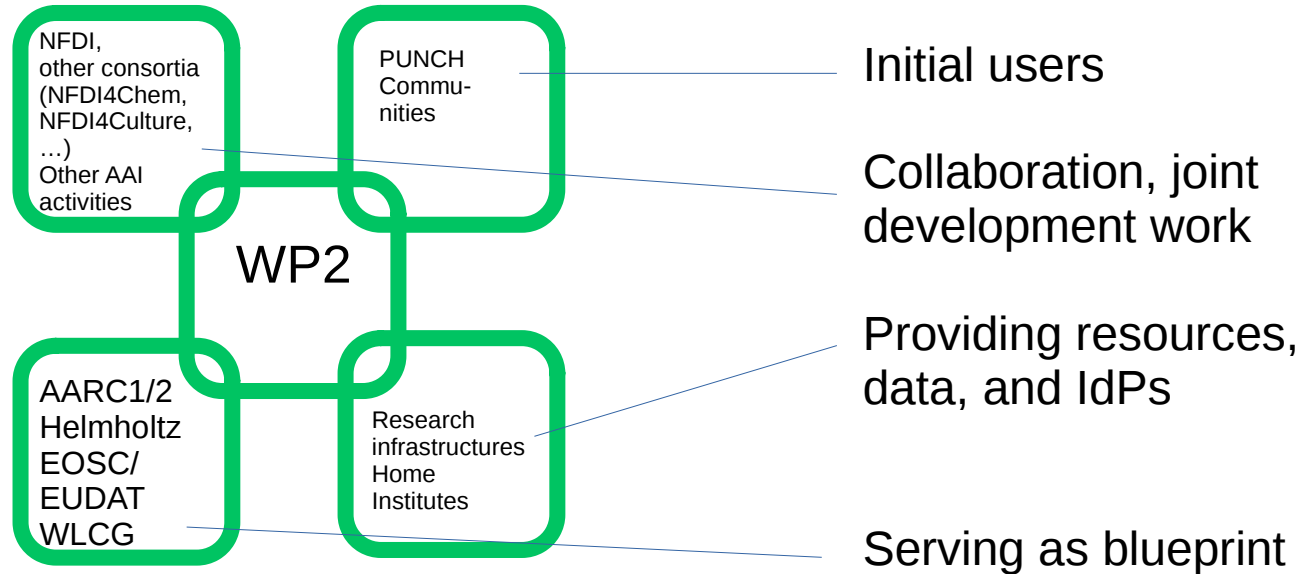
X509 certificates in WLCG

Measures:

Build PUNCH4NFDI AAI with Helmholtz AAI and EOSC/EUDAT B2ACCESS serving as blueprint. Software base: Unity, IdPs should offer OAuth and SAML endpoints

Goals:

Contribute to one NFDI-wide AAI solution



TA6 – WP3

Cross-community efforts towards FAIR data

State of the Art

... → see application

Measures

... → see application

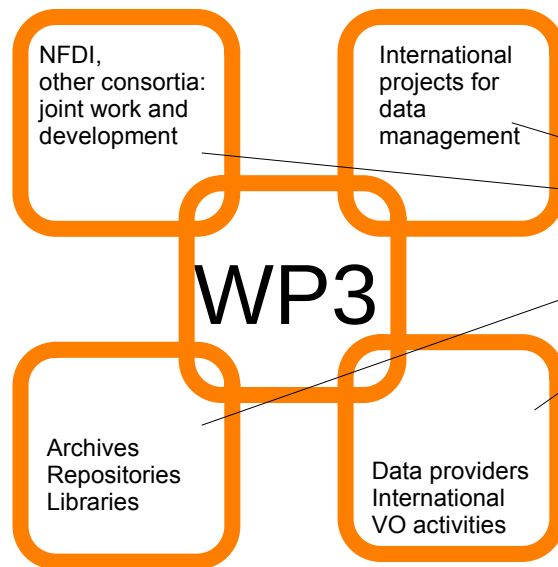
Goals

... → see application

Support for making data accessible
(workflows, curation, documentation)

Marker/pointer systems for
extensive metadata extensions

... → see application



Actions:

1 Publishing Data

2 Metadata extensions

3 Open data access

Preparation of
Metadata pointers

Preparation of open
access retrieval for
large data sets

TA6 – WP4 Open Source Data Management Tools

Very recent example
of using open source
data analysis tools:



For older news see our [News Archive](#)

Gammapy selected as open-source software of choice for analysis of H.E.S.S. data *May 10, 2021*

Data obtained with the H.E.S.S. telescopes are recorded and stored in "root" format, which is widely used in the particle physics community. From the early phases the collaboration developed several proprietary analysis methods. Processed data are stored in proprietary file structures. In order to facilitate exchange and common treatment of data obtained with other facilities and to allow efficient adaptation of open-source software, the H.E.S.S. collaboration explored data analysis with different open-source tools using the open FITS data format for some time.



Based on extensive tests and development and adaptation, the collaboration now chose Gammapy as its open-source analysis framework. Gammapy v1.0rc **Gammapy** will be released in the next weeks.

Gammapy-based studies will complement the well-established proprietary analysis methods used by the H.E.S.S. collaboration and facilitate further development of the tools by challenges posed in exploring real observations obtained with H.E.S.S..

Why would you care?

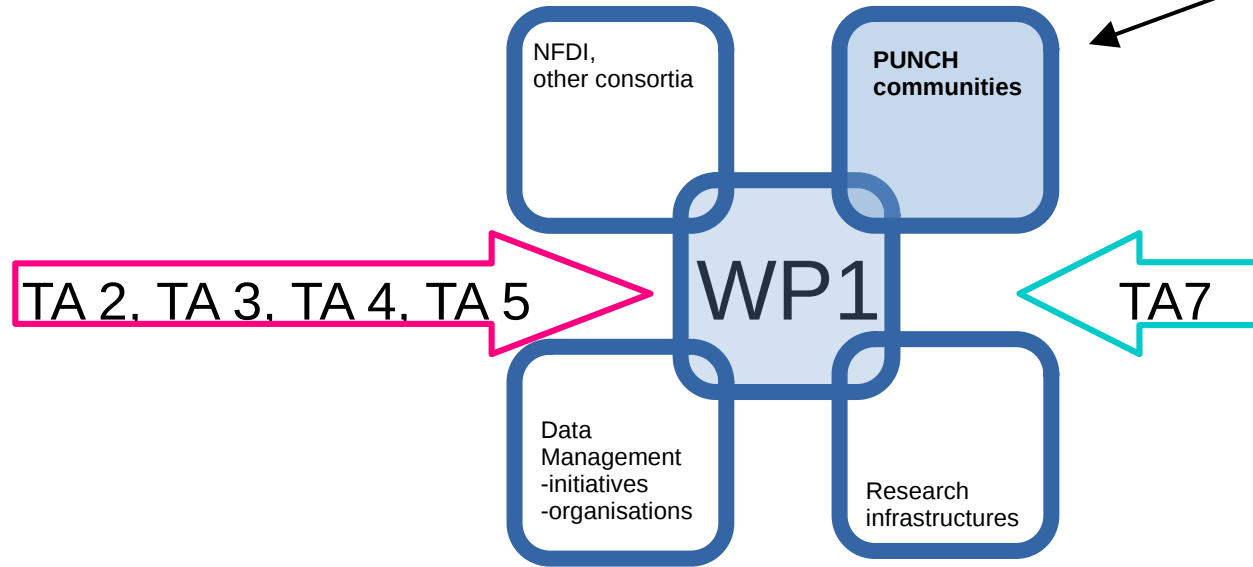
Astronomy is data-science
(archiving, validating, disseminating, simulating, ...)

data are distributed, heterogeneous but interconnected,

...

Much of our work involves data management and we need to find the balance between researching solutions and own development (reinventions of wheels)

TA6 WP1



This is you!

Exchange of concepts on

- data archiving
- open access
- services
- analysis tools
- ...

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EU:

EOSC,
EOSC-Hub, -Pilot,
ESCAPE,
HNSciCloud,
INDIGO, ...

GEANT
WLCG
VO-Aliance, ...

CERN,
ESO, ESA
CTA, SKA, ...

LHLRZ
MPCDF
Compute
Centres HGF

Research Infrastructures
(Data Providers)
Data Centres, Archives
(Digital Libraries)

International data
management projects



Other NFDI consortia,
NFDI in general

NFDI e.V.

NFDI4ing
NFDI4Culture

NFDI4Earth
nfdi4chem

NFDIxCs

FAIRmat
DAPHNE

DPG, AG, VdR

Scientists in
Community

Natl. Providers

Associates

Co-Investigators

2022

Researcher in the
PUNCH communities

What will happen now?

After October 1st

Stay tuned,
get involved,
talk to us,
join us (watch out for job advertisements)

→ <https://www.punch4nfdi.de>