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Umbrella Bridging

Almudena Montiel / Björn Abt

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Contents „Umbrella Bridging“ presentation

Part 1: Umbrella Introduction

Part 2: Why to bridge?

Part 3: What to bridge?

Part 4: How to bridge?

Part 5: Use Cases at GSI-FAIR

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Umbrella is the Pan-European Federated Identity System for Users of the Photon / Neutron Facilities

Goal:

- **Optimization of experimental data handling from data acquisition to publication:**
  - **data acquisition**
  - **data analysis**
  - **data transfer**
  - **trans-facility experiments**
  - **remote data access**
  - **remote experiment access**

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Umbrella:

- Provides an EU-wide, unique, persistent user identification
- Respects fully confidentiality
- Is dedicated to the photon / neutron user community
- Is a slim solution on top of the local user office systems
- Users manage own entries, supervised by local user offices
- Bridging to similar identification systems (EduGain, Grid) under development
- Common development of the major European facilities through several EU projects (EuroFEL ESFRI, PaNData ODI, PaNData Europe, CRISP), lead by PSI.
- Start of implementation spring 2013

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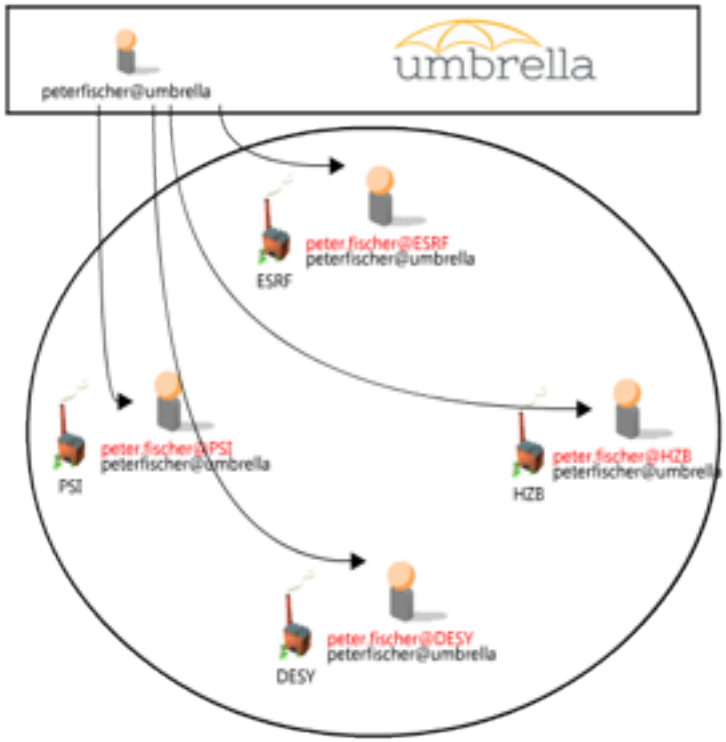

Umbrella is the basis for various user services under development

a. **Info & service portal**
b. **European proposal support (NMI3 &CALIPSO)**
c. **Remote experiment access**
d. **Remote file access (ICAT)**

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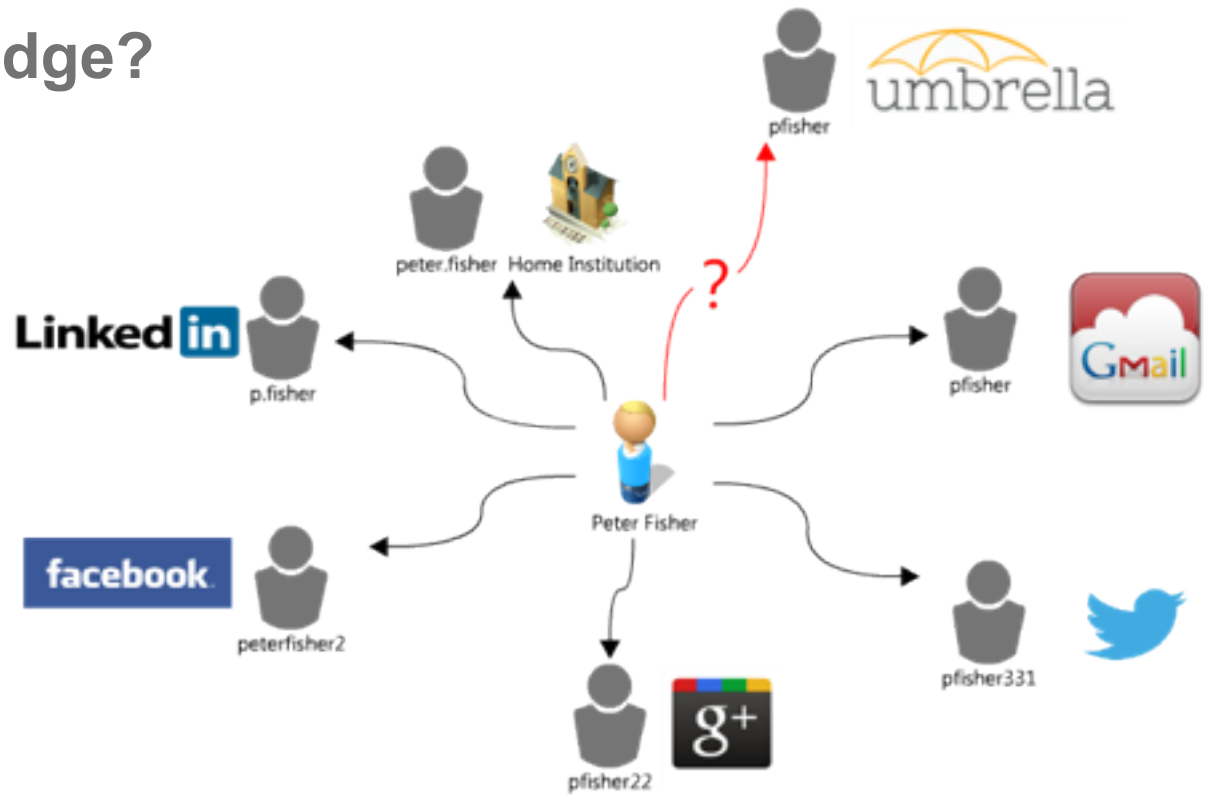
Why to bridge?



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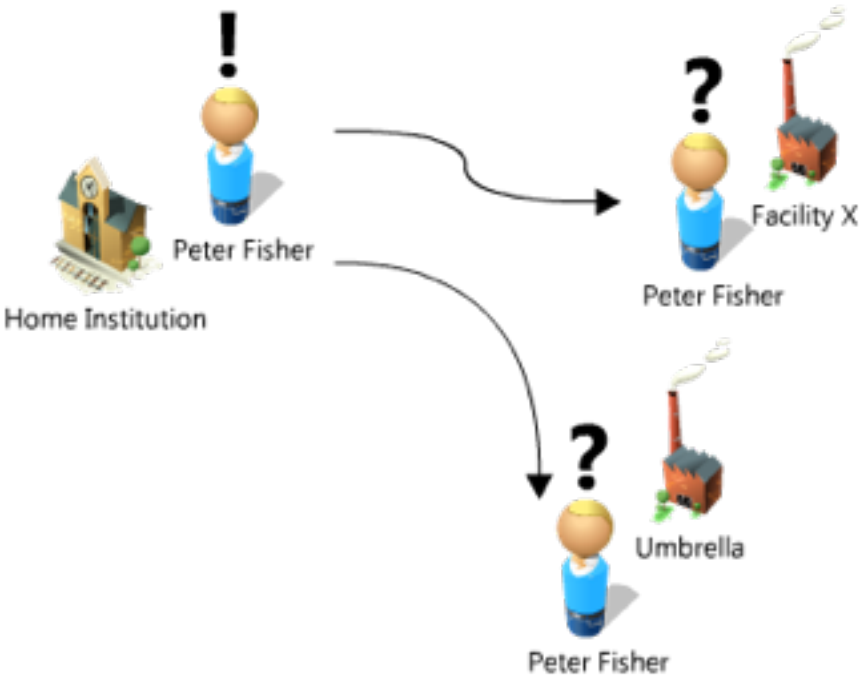

User already know their home institution credentials

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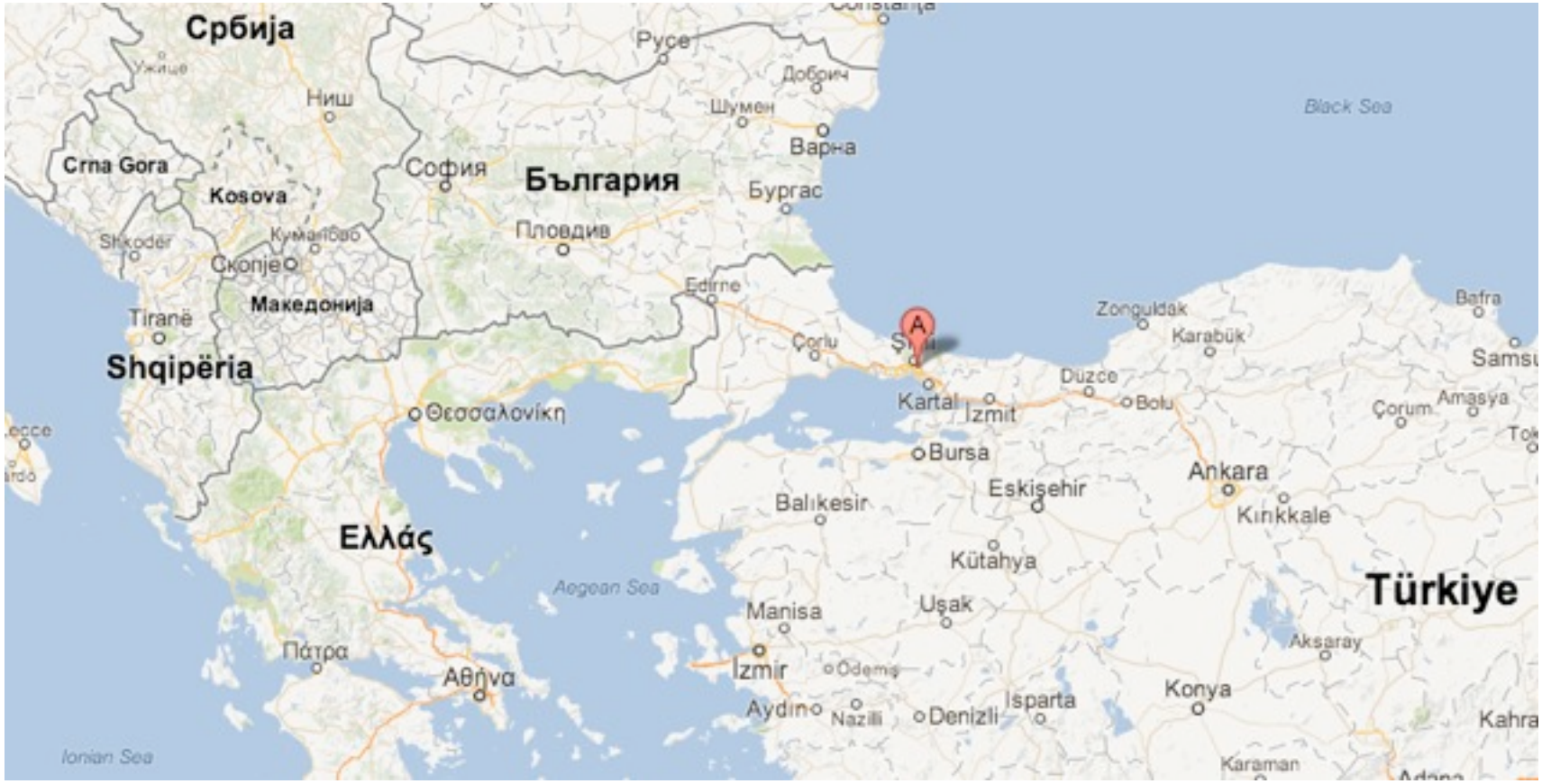

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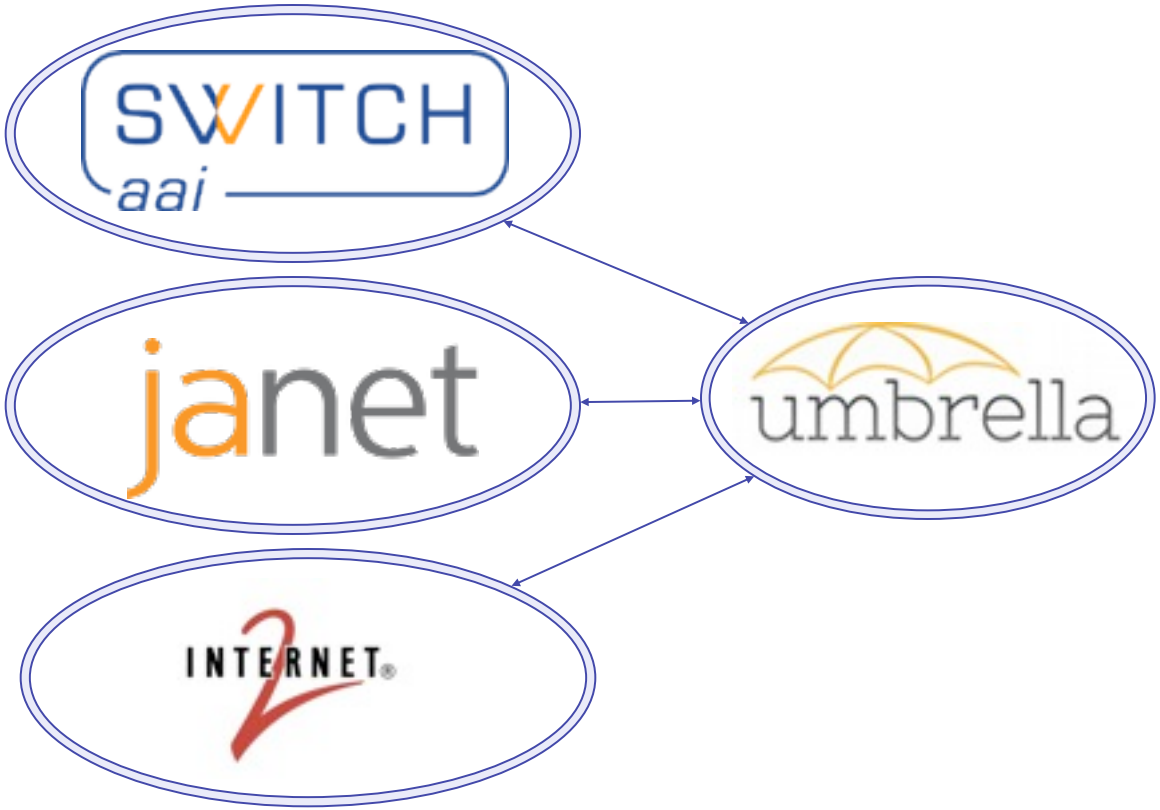
Why to bridge?

- Bring people together from different federations (cultures)
- Not yet another account
- People already know their home institution account

What to bridge?

What to bridge?



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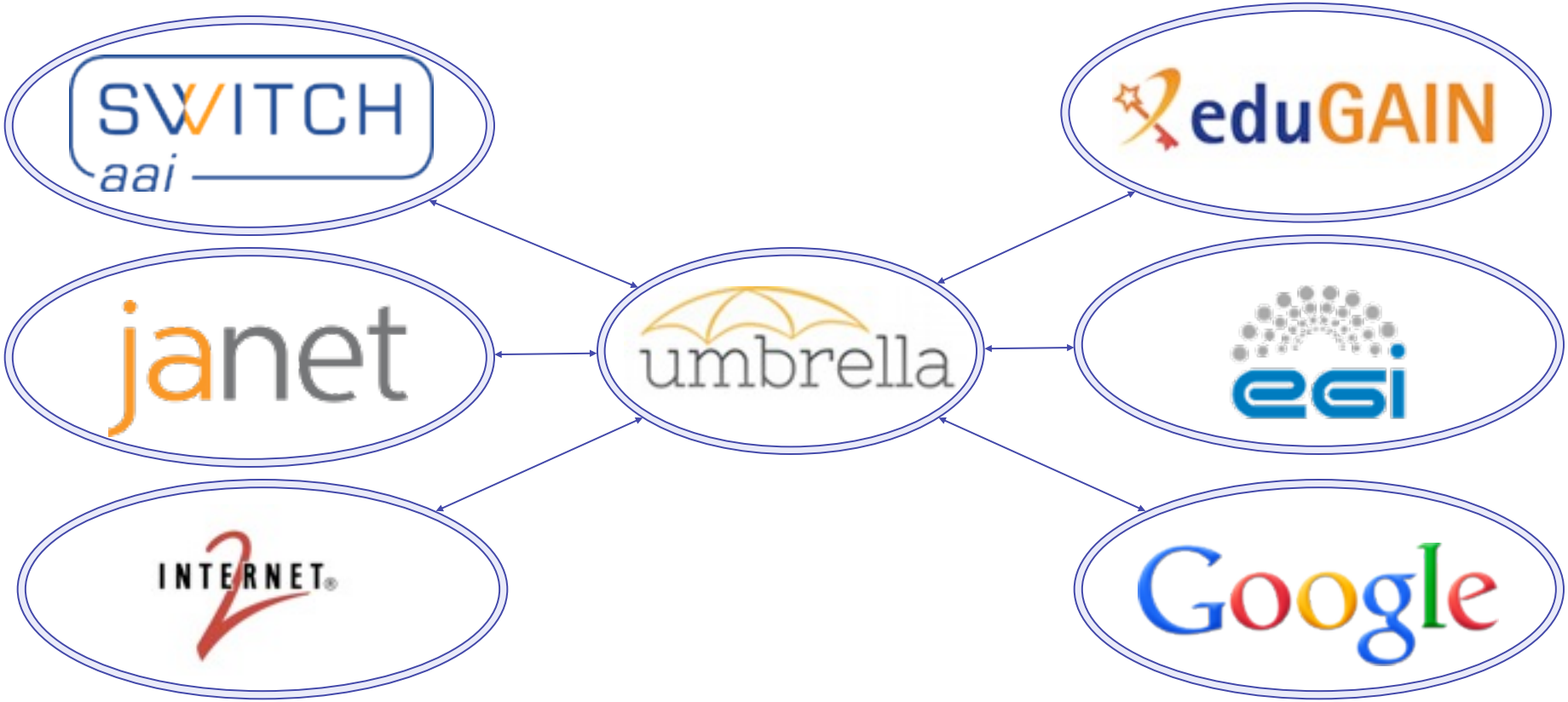
What to bridge?



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What to bridge?

Keep the Umbrella philosophy:

- **User initiated inter-federation mapping of accounts**
- **No automatic cross exchange of information**

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How to bridge?

•Peter Fisher

•peterfischer@ethz.ch

eduGAIN

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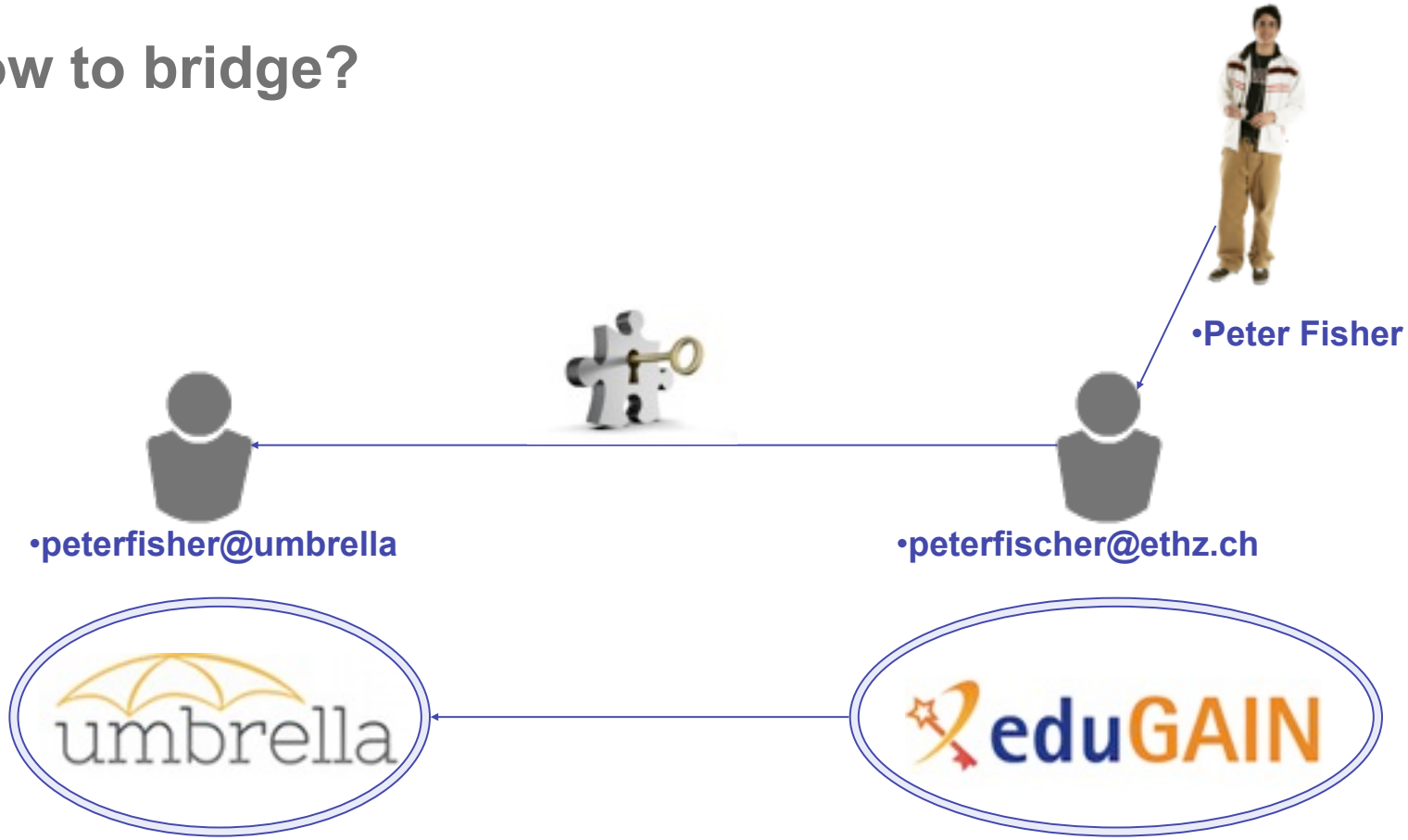
How to bridge?



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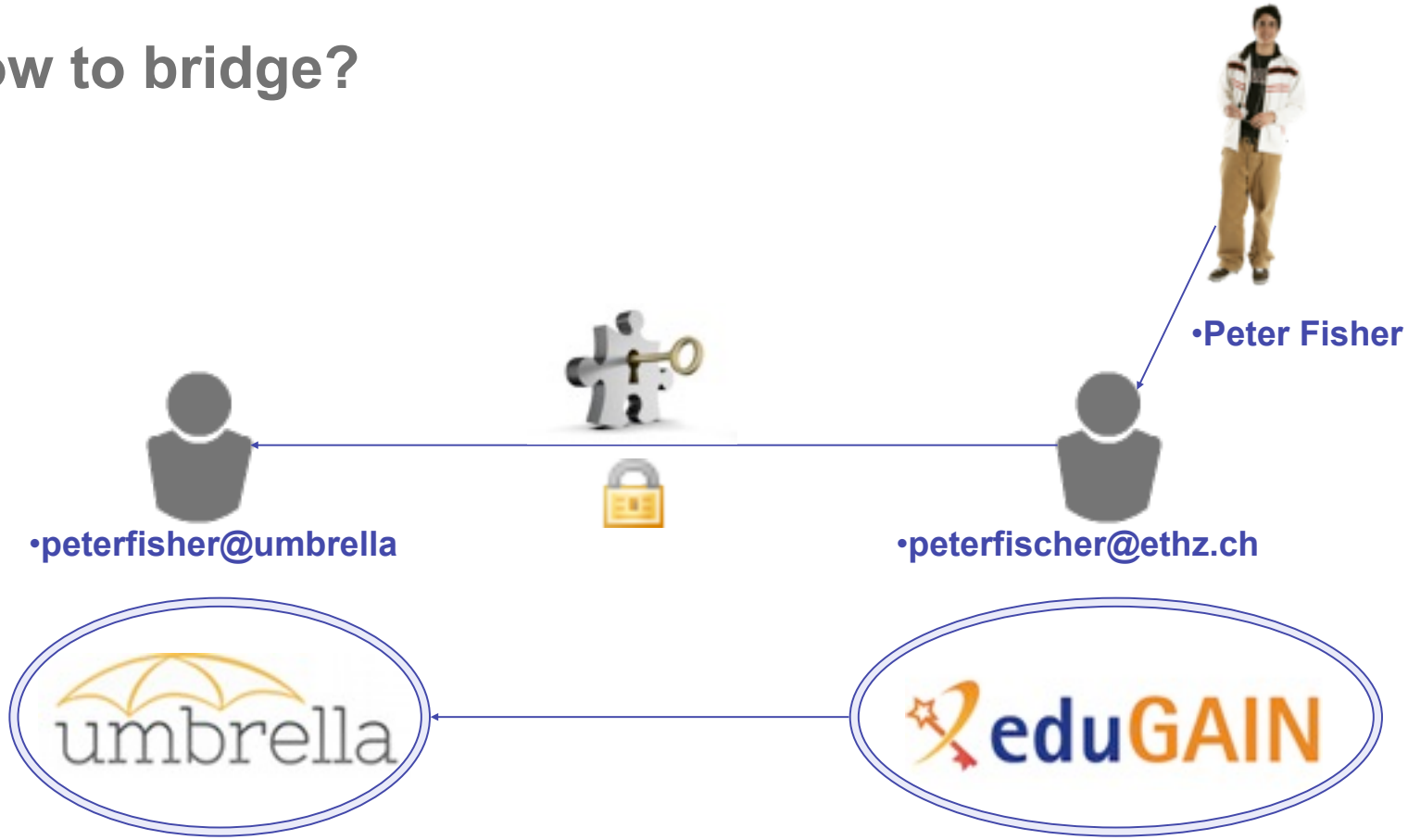

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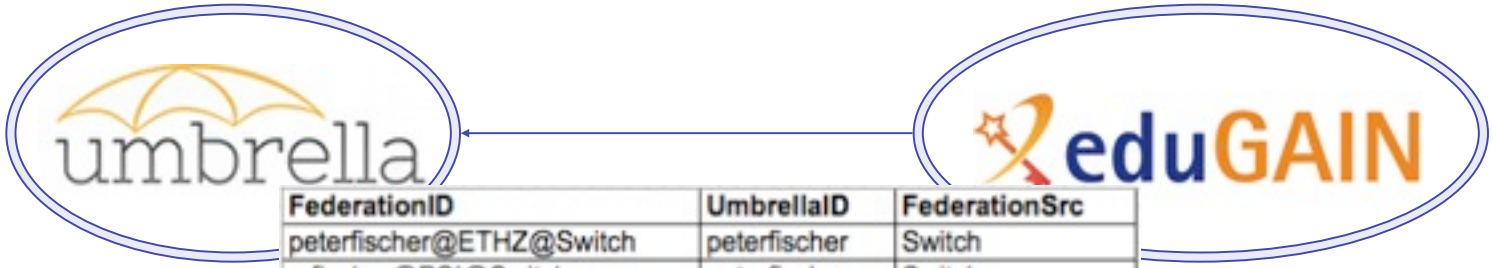
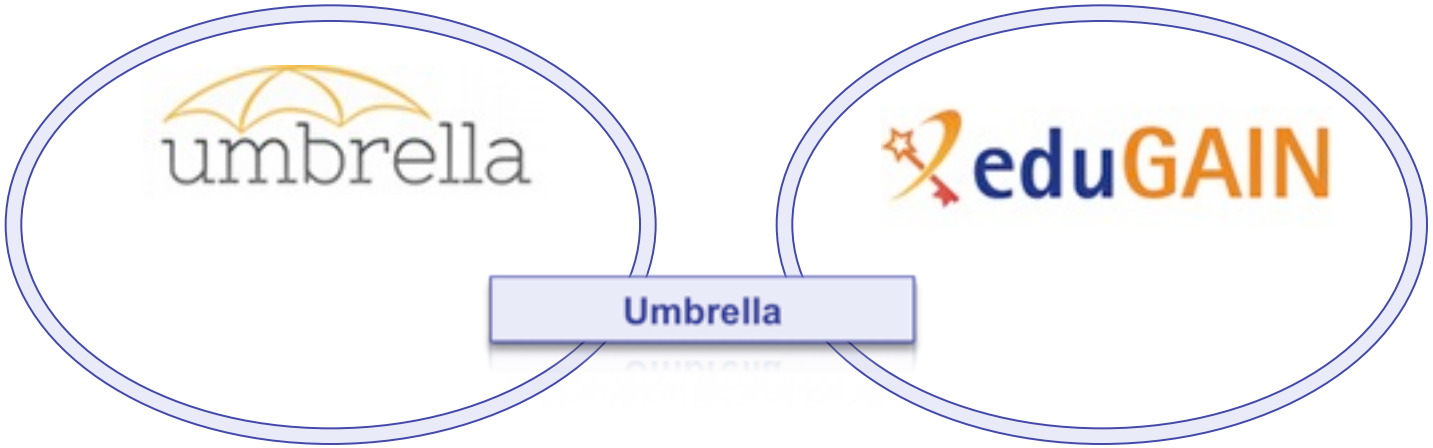


FederationID	UmbrellaID	FederationSrc
peterfischer@ETHZ@Switch	peterfischer	Switch
p.fischer@PSI@Switch	peterfischer	Switch
dr.p.fischer@DIAMOND@Janet	peterfischer	Janet

How to bridge?

To get user information from a federation one has to be a service provider in it.



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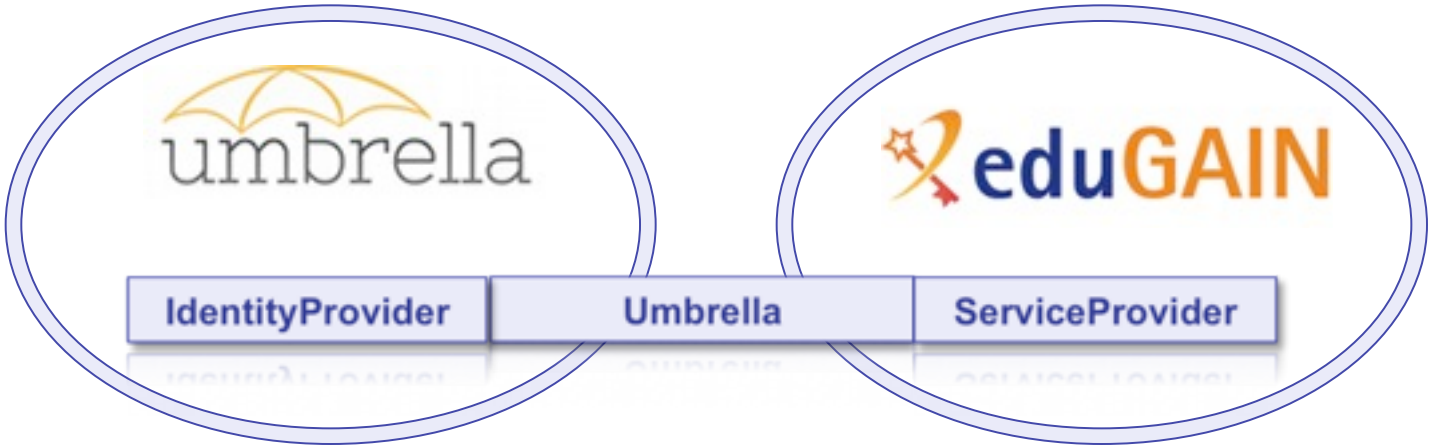
To get user information from a federation one has to be a service provider in it.



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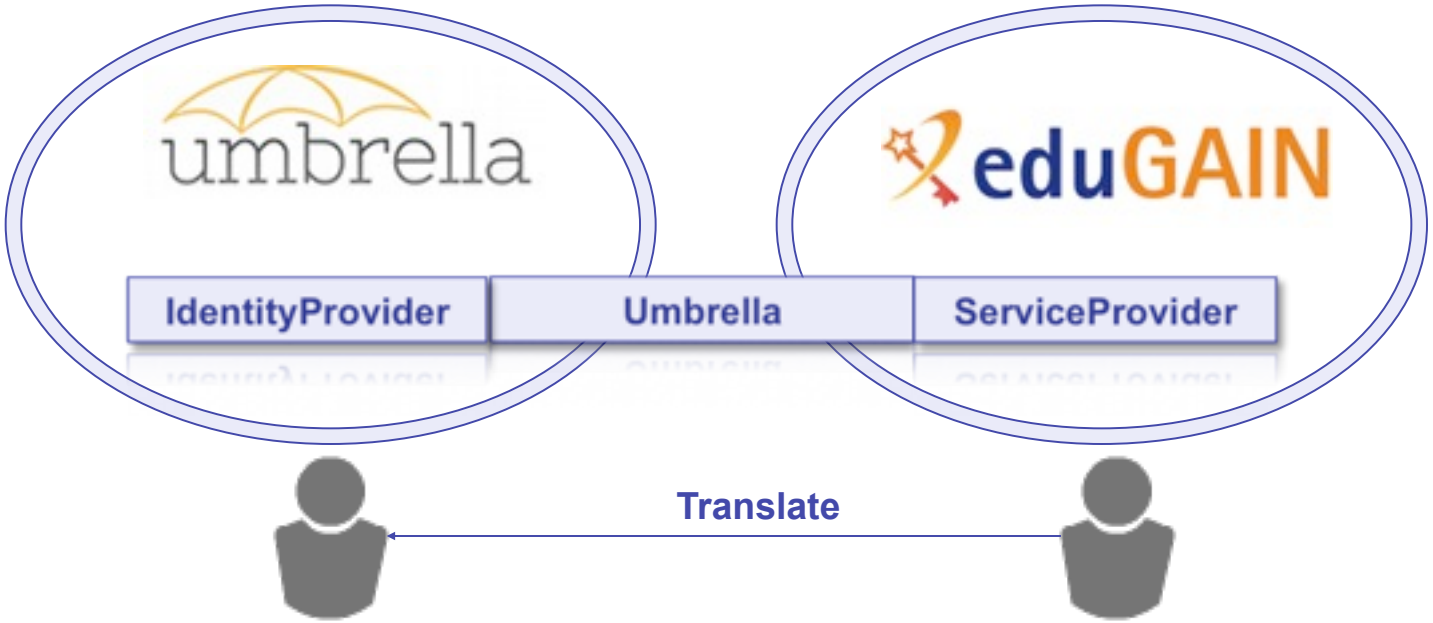

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How to bridge?

An AccountLinking Table on the Umbrella keeps track of linked accounts:

FederationID
- A cross federation unique identifier of an account
- E.g. peter.fisher@ethz.ch@eduGain

UmbrellaID
- A unique Umbrella identifier
- E.g. peterfisher

FederationSrc
- The name of the federation of the source account
- E.g. eduGain

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How to bridge?

An AttributeMapping table translates attributes from one federation to another federation.

sourceAttribute

- An exact attribute name from an incoming federation
- E.g. mail

destinationAttribute

- The attribute name for an outgoing attribute name
- E.g. email

How to bridge?

Attributes released to Service Providers

sourceFederation

- The name of the federation where the Authentication happened
- E.g. eduGain

authenticationMethod

- The type of method of authentication
- E.g. Two-Phase Kerberos / OATH

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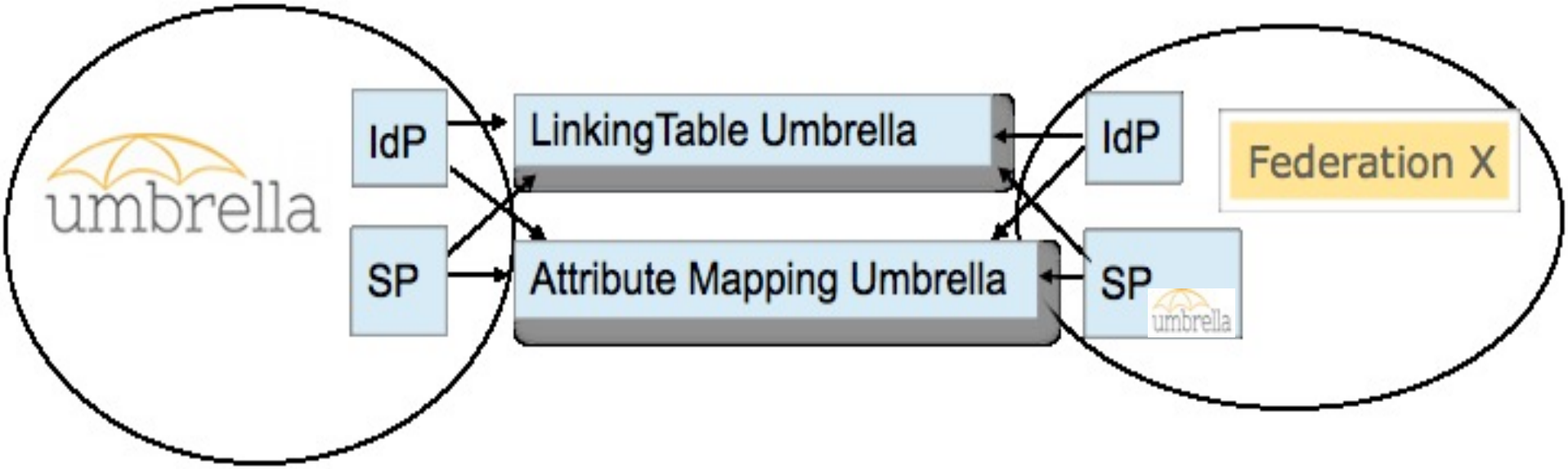
How to bridge?



Use Cases at GSI-FAIR

(Almudena Montiel)

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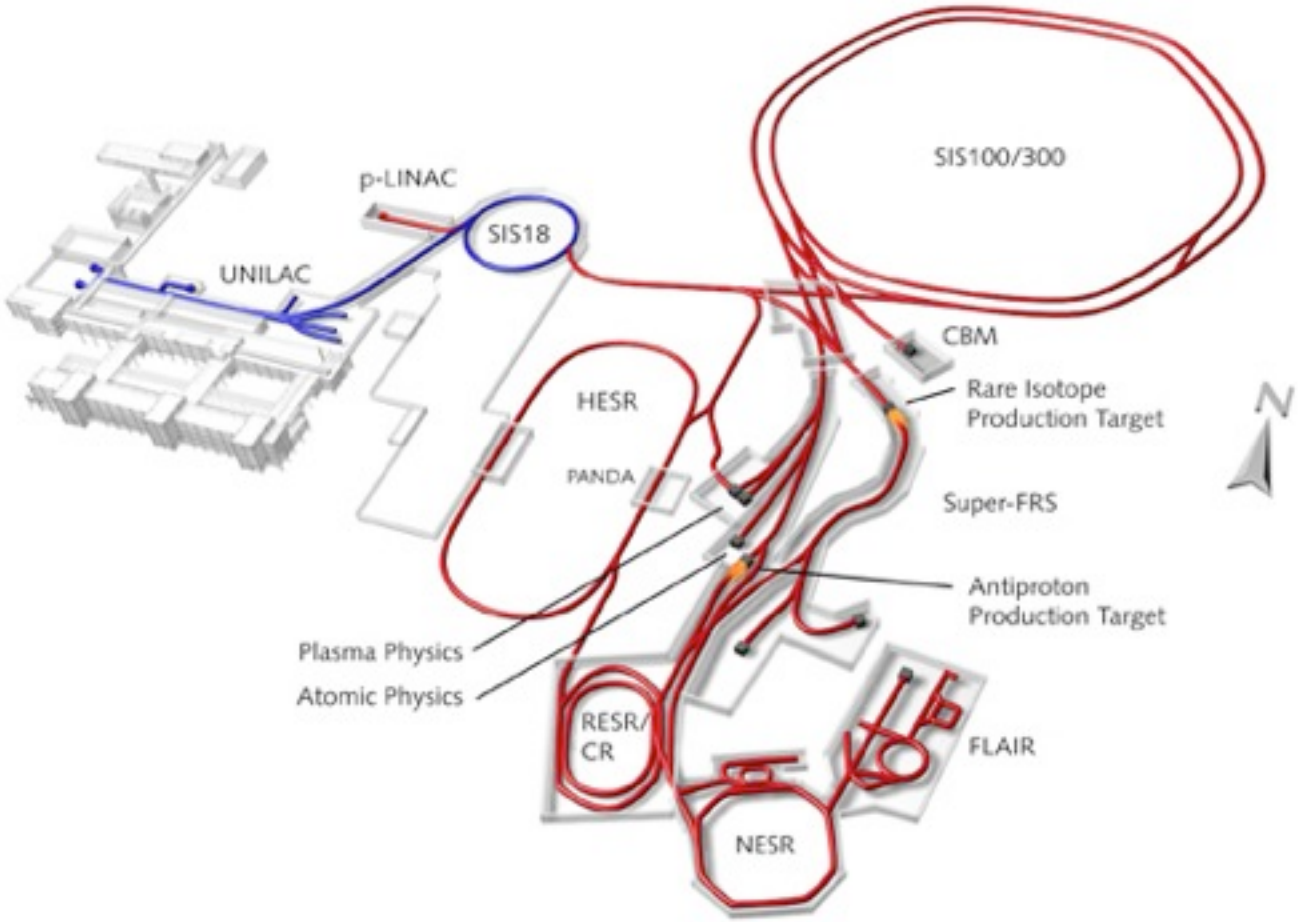

GSI

FAIR

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User community at GSI/FAIR

- GSI Computing **today**:
  - ALICE T2/T3
  - HADES
  - 14000 cores, 5.5 PB Lustre, 9 PB archive
- FAIR Computing in **2018**:
  - CBM, PANDA, NuSTAR, APPA, LQCD
  - 300000 cores, 40 PB Lustre, 40 PB archive

FAIR community

- APPA - Atomic, Plasma Physics and Applications
  - BIOMAT – BIOlogy and MATerial science
  - FLAIR – Facility for Low-energy Antiproton and Heavy Ion Research
  - HEDgeHOB/WDM – Plasma physics experimental stations
  - SPARC – Stored Particle Atomic Research Collaboration
- CBM/HADES – Compressed Baryonic Matter
- NuSTAR – Nuclear Structure Astrophysics and Reactions
  - R3B – Reactions with Relativistic Radioactive Beams
  - DESPEC – Decay SPECtroscopy
  - HISPEC – High resolution SPECtroscopy
  - MATS – Precision Measurements of very short-lived nuclei with Advanced Trapping System
  - LASPEC – LAser SPECtroscopy of short-lived nuclei
  - ILIMA – Isomeric beams LIfetimes and Masses
- PANDA – AntiProton Annihilation in Darmstadt

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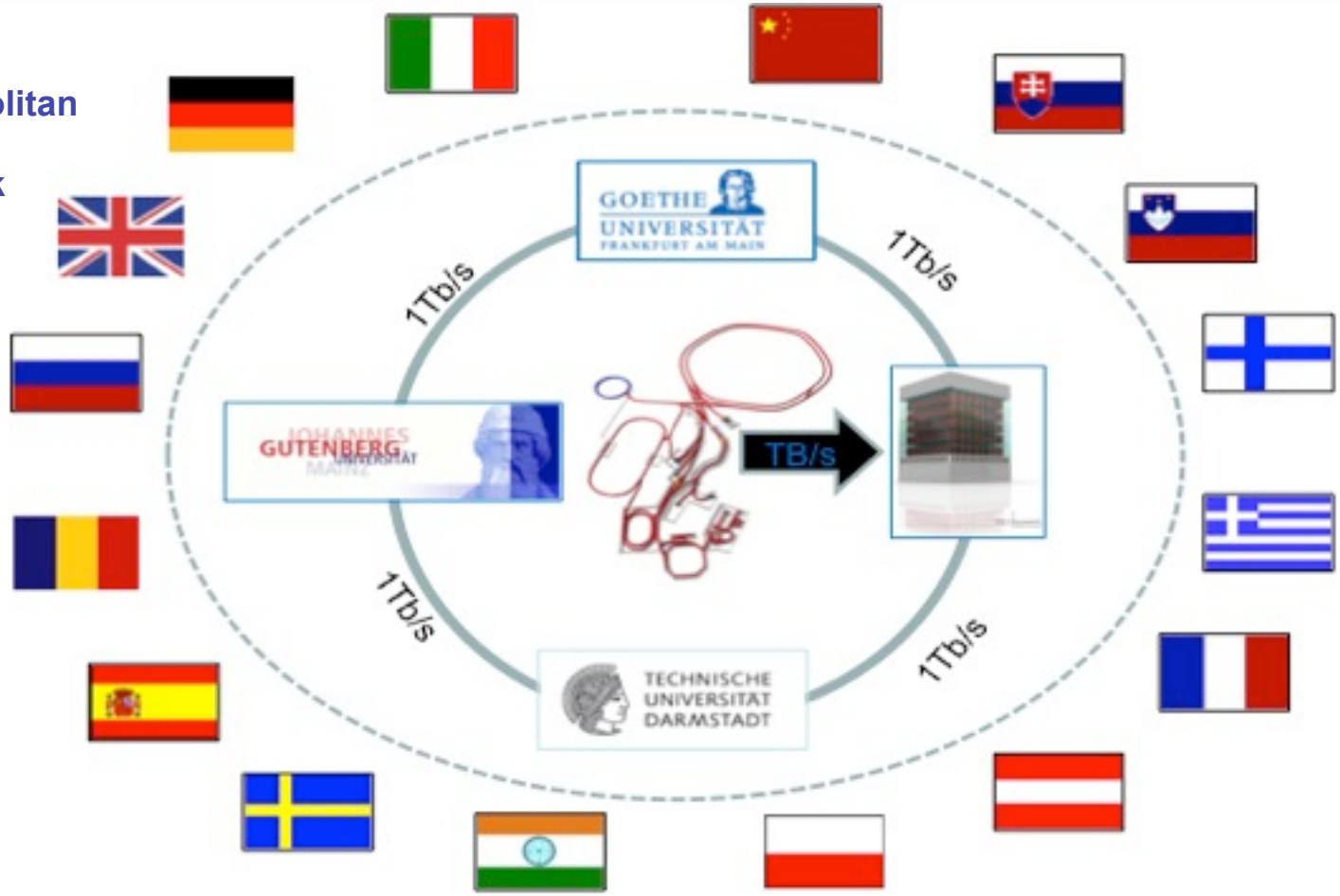
Metropolitan Area Network



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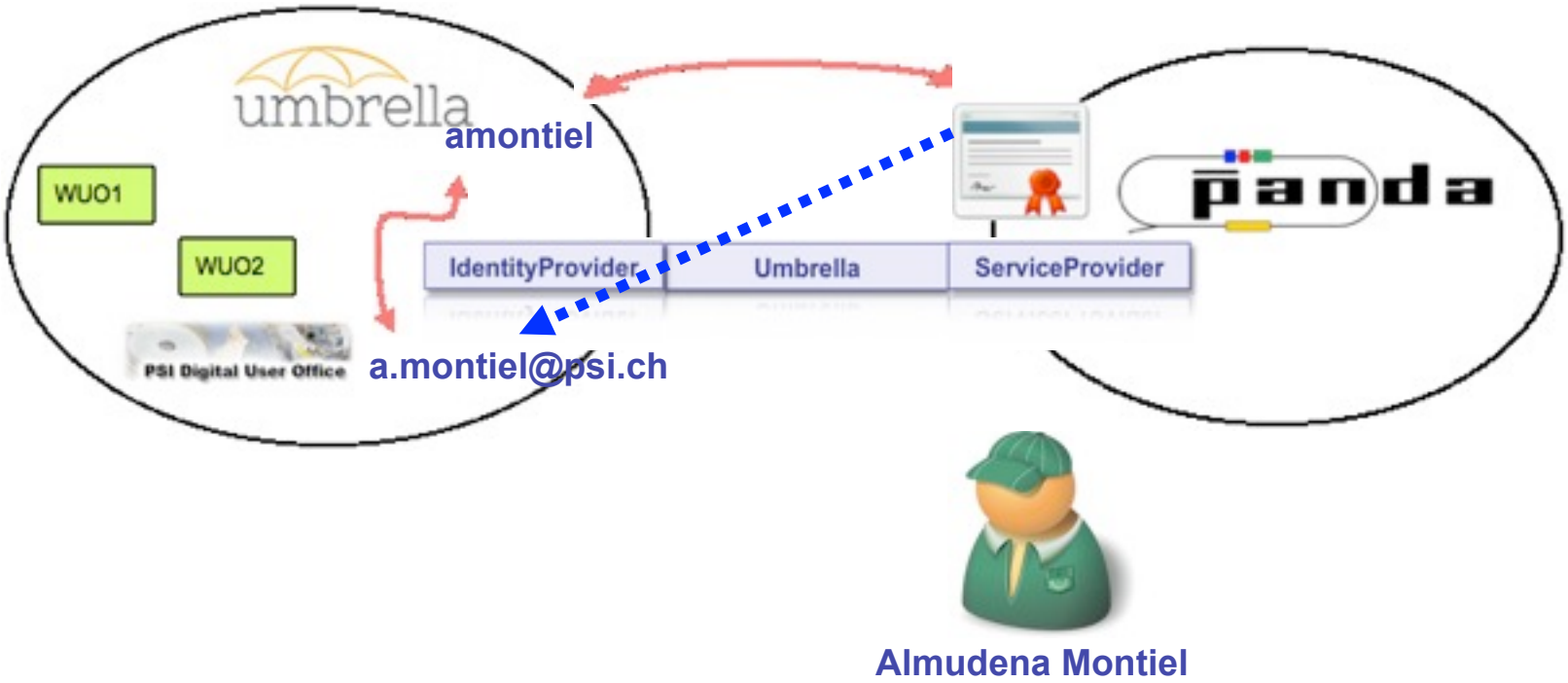
Use Case: GRID

- Middleware used: AliEn.
- Lightweight Open Source Grid framework initially developed by the ALICE Collaboration.
- Heavily exploited for simulation, reconstruction and distributed analysis of physics data.
- Authentication: PKI.
- Authorization: Central LDAP managed by AliEn.

Proof of concept of Bridging

- GSI-FAIR has presumably is a big HEP like community.
- Most of the users hold a personal x.509 certificate.
- Demonstration:
  - The user holds a x.509 installed in the browser.
  - The user has got a DUO account.
  - The user has got an Umbrella ID.
  - Link existing between Umbrella and DUO.
  - Bridge created behind the scenes, between Umbrella and x509 certificate.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amontiel
WUO1
WUO2
PSI Digital User Office
a.montiel@psi.ch
IdentityProvider
Umbrella
ServiceProvider
panda
Almudena Montiel

Thank you for your attention!