



Helmholtz Digital Services for Science - Collaboration made easy.

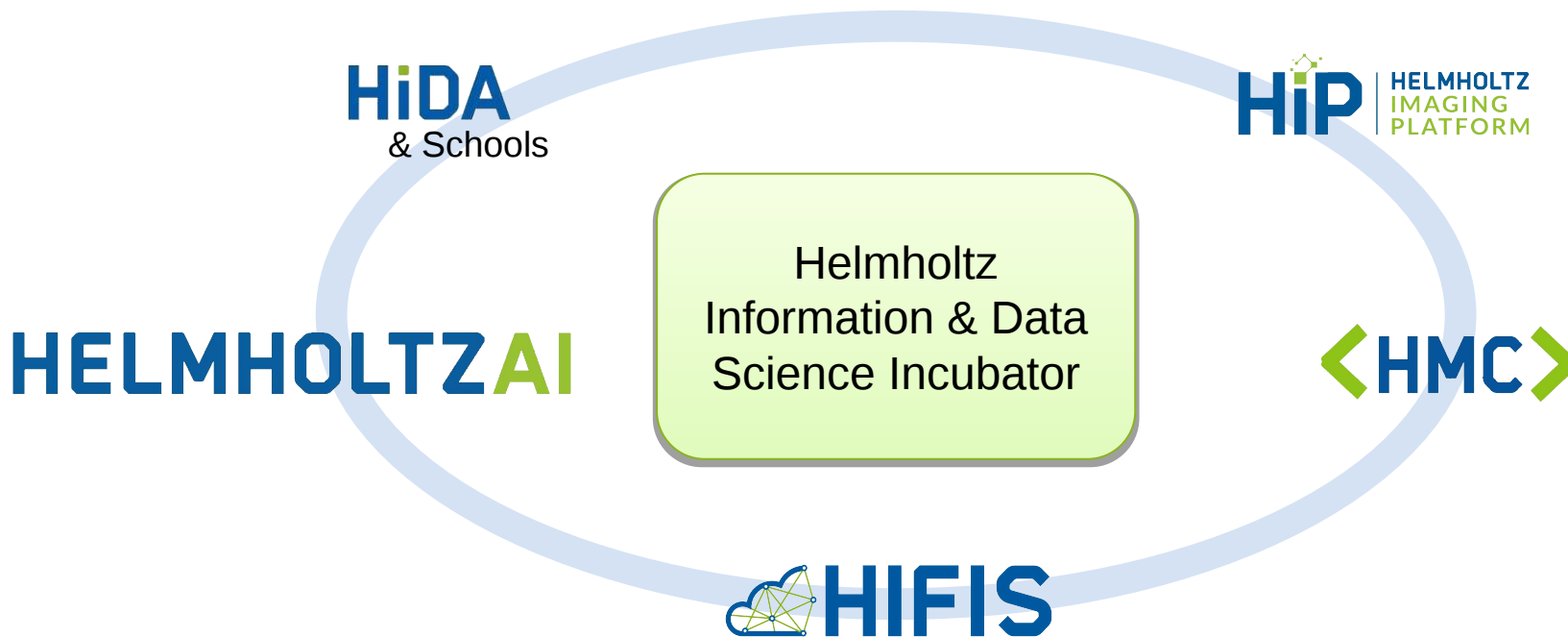
HIFIS at PUNCHLunch, 2022-03-24

<https://indico.desy.de/event/33357>

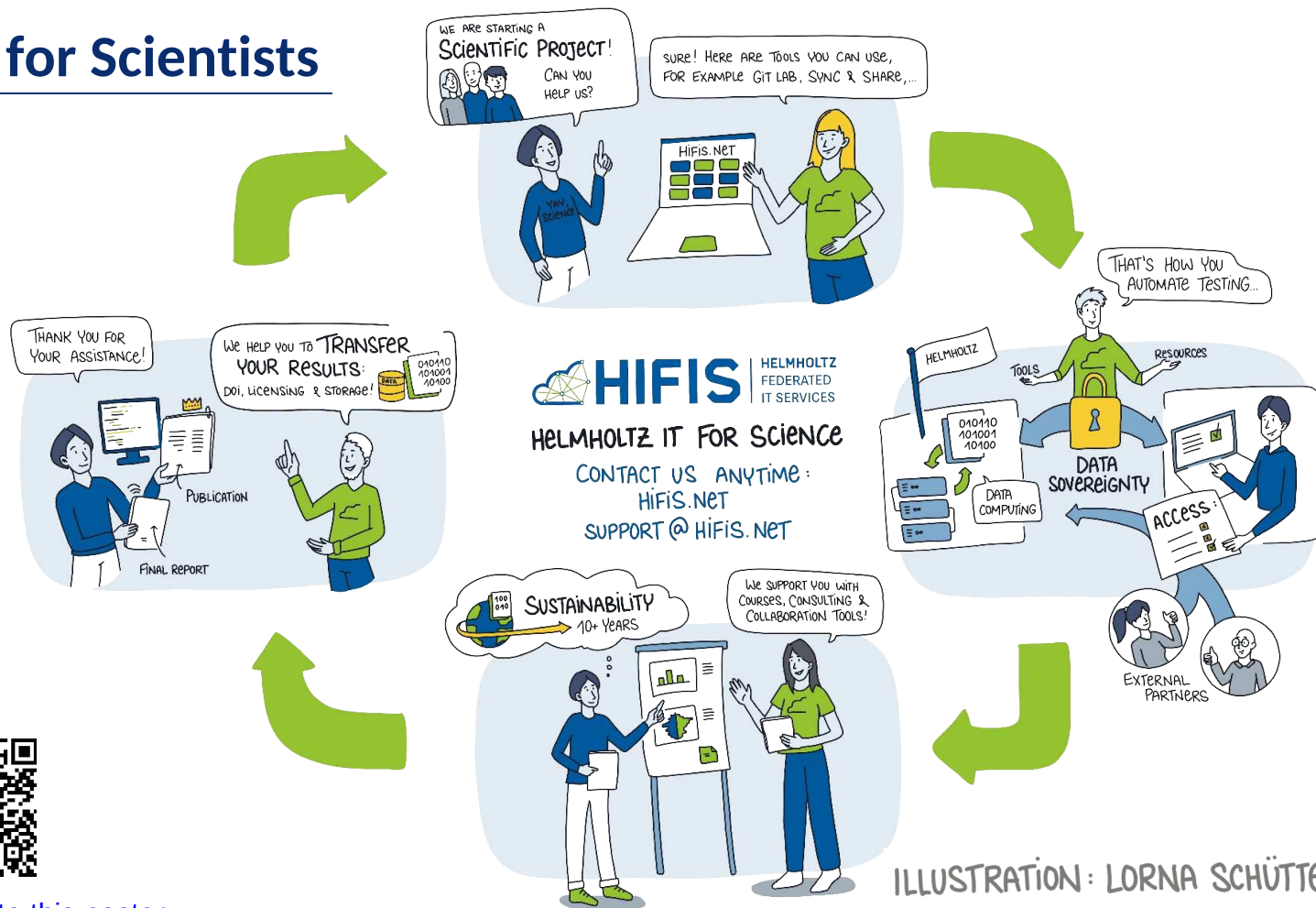
Uwe Jandt

Helmholtz aims for **joint research & information environment** for all Research Fields:

- Cross-centre platforms for Education, interdisciplinary science and IT infrastructure.



HIFIS for Scientists



➤ [Link to this poster](#)

ILLUSTRATION: LORNA SCHÜTTE

I. Helmholtz Cloud + Backbone

- Provide high performance **collaboration and community services**
- **Connect all centres** and their world-wide collaboration partners!
- **Secure, simple access** and **easy-to-use**

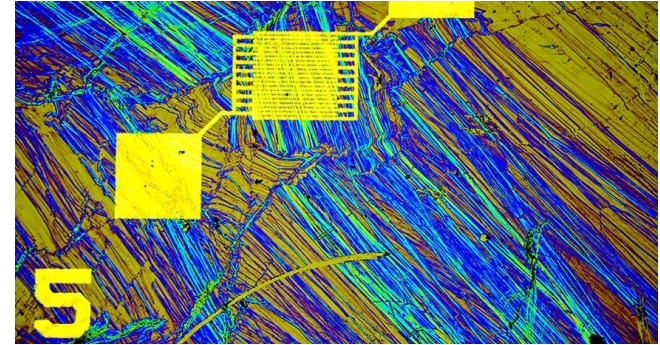


Bild 1: Strukturen aus organischen Halbleiter-Polymeren/ Himani Arora/HZDR

Bild 2: Mosaic Expedition/Stefan Hendricks/AWI

I. Helmholtz Cloud + Backbone

- Provide high performance **collaboration and community services**
- **Connect all centres** and their world-wide collaboration partners!
- **Secure, simple access** and **easy-to-use**

II. Establish **best-practices** for **Research Software Engineering**:

- High level of knowledge, quality, visibility and sustainability
- State-of the-art SW development infrastructures

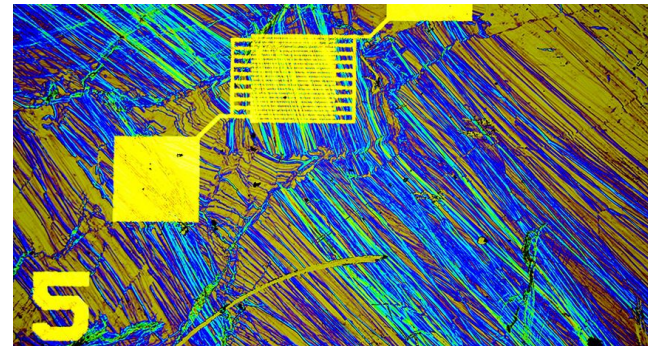


Bild 1: Strukturen aus organischen Halbleiter-Polymeren/ Himani Arora/HZDR
Bild 2: Mosaic Expedition/Stefan Hendricks/AWI

Free of charge!
(in Helmholtz)

I. Helmholtz Cloud + Backbone

- Provide high performance **collaboration and community services**
- **Connect all centres** and their world-wide collaboration partners!
- **Secure, simple access** and **easy-to-use**

II. Establish **best-practices** for **Research Software Engineering**:

- High level of knowledge, quality, visibility and sustainability
- State-of the-art SW development infrastructures

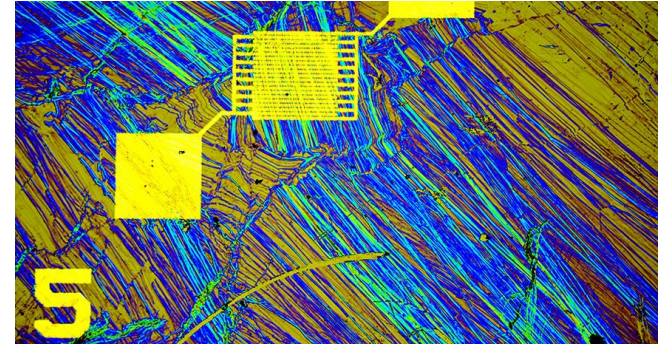
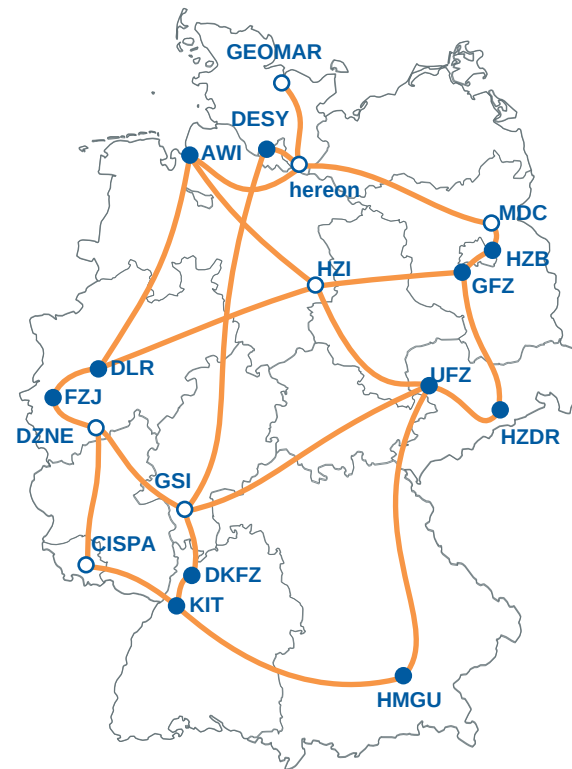



Bild 1: Strukturen aus organischen Halbleiter-Polymeren/ Himani Arora/HZDR
Bild 2: Mosaic Expedition/Stefan Hendricks/AWI

Who is HIFIS?

- **Team: 11 (out of 18) Helmholtz centres**
- Main Coordination: DESY
- Three Clusters:
 - **Backbone Cluster** (head: DESY)
Core Services for Authentication, Authorisation, Large Data Transfer, etc.
 - **Cloud Cluster** (head: HZB)
Helmholtz Cloud Platform
 - **Software Cluster** (head: HZDR)
Platform, Training, Support for high quality, sustainable Research Software Engineering





I. Cloud Services + Portal


HELMHOLTZ CLOUD


TeamNewsHelpdeskAboutSign in


Search Services: Provider: -- select an option -- Sort by: Service Software Reset all filters


**B2Share**
B2Share
Research Data (+ corresponding Metadata)
Publishing service.


by:  [Go to service](#)


**Compute Projects**
Applications for Computing Time
Apply for Computing Time at Jülich Supercomputing Centre (JSC).


by:  [Go to service](#)


**GitLab**
GitLab
A web-based DevOps lifecycle tool that provides a Git-repository manager.


by:  [Go to service](#)


**HAICORE**
Haicore
Dedicated Computing Resources for the Helmholtz AI community.


by:  [Go to service](#)


**HAICORE**
Haicore
Dedicated Computing Resources for the Helmholtz AI community.


by:  [Go to service](#)


**Notes**
HedgeDoc
A collaborative platform to write and share markdown based documents.


by:  [Go to service](#)


**HIFIS Events**
Indico
An Events Management service for everyone within Helmholtz and their partners, based on Indico.


by:  [Go to service](#)


**Jupyter**
Jupyter
Open-source software and service for interactive computing.


by:  [Go to service](#)


**Jupyter**
JupyterHub
Interactive supercomputing in a browser.


by:  [Go to service](#)


**Jupyter on HAICORE**
JupyterHub
Jupyter enables interactive supercomputing on HPC resources.


by:  [Go to service](#)


**LimeSurvey**
LimeSurvey Community Edition
An online survey tool offered by DKFZ to everyone within Helmholtz group.


by:  [Go to service](#)


**LimeSurvey**
LimeSurvey Community Edition
An Open source on-line statistical survey web application.


by:  [Go to service](#)


**Mattermost**
Mattermost
A hosted chat service for everyone within Helmholtz based on Mattermost.


by:  [Go to service](#)


**bwSync&Share**
Nextcloud
File Sync and Share, Groupware-Functionalities: Files, Fotos, Calendar, etc.


by:  [Go to service](#)


**nubes**
Nextcloud
Sync&Share based on Nextcloud with OnlyOffice and Calendar function.


by:  [Go to service](#)


**Sync & Share**
Nextcloud, dCache
File Sync and Share, Collaborative Editing using OnlyOffice.


by:  [Go to service](#)


**OpenStack (HDF Cloud)**
OpenStack
The Service allows provisioning of user-controlled VMs with Linux OS


by:  [Go to service](#)


**Singularity**
SingularityCE
Container runtime environment on HPC systems at FZJ / Jülich Supercomputing Centre (JSC).

by:  [Go to service](#)

**Data Projects (HDF)**
Storage Resources
Apply for data projects at FZJ / Jülich Supercomputing Centre (JSC).

by:  [Go to service](#)


**HIFIS Helpdesk**
Zammad
HIFIS Helpdesk Ticketing System based on Zammad.


by:  [Go to service](#)


I. Cloud Services + Portal


HELMHOLTZ CLOUD


Search Services: Provider: -- select an option -- Sort by: Service Software Reset all filters


**B2Share**
B2Share
Research Data (+ corresponding Metadata)
Publishing service.


by  → Go to service


**Compute Projects**
Applications for Computing Time
Apply for Computing Time at Jülich Supercomputing Centre (JSC).


by  → Go to service


**GitLab**
GitLab
A web-based DevOps lifecycle tool that provides a Git-repository manager.


by  → Go to service


**HAICOF**
Ha
Dedicated CO
AI community.


by  → Go to service


**Notes**
HedgeDoc
A collaborative platform to write and share
markdown based documents.


by  → Go to service


**HIFIS Events**
Indico
An Events Management service for everyone within
Helmholtz and their partners, based on Indico.


by  → Go to service


**Jupyter**
Jupyter
Open-source software and service for interactive
computing.


by  → Go to service


**Jupyter**
JSC
Interactive sup


by  → Go to service


**LimeSurvey**
LimeSurvey Community Edition
An online survey tool offered by DKFZ to everyone
within Helmholtz group.


by  → Go to service


**LimeSurvey**
LimeSurvey Community Edition
An Open source on-line statistical survey web
application.


by  → Go to service


**Mattermost**
Mattermost
A hosted chat service for everyone within Helmholtz
based on Mattermost.


by  → Go to service


**bwSync**
File Sync and S
Fotos, Calend


by  → Go to service


**Sync & Share**
Nextcloud, dCache
File Sync and Share, Collaborative Editing using
OnlyOffice.


by  → Go to service


**OpenStack (HDF Cloud)**
OpenStack
The Service allows provisioning of user-controlled
VMs with Linux OS.

by  → Go to service

**Singularity**
SingularityCE
Container runtime environment on HPC systems at
FZJ / Jülich Supercomputing Centre (JSC).

by  → Go to service

**Data Pro**
Sto
Apply for data
Supercomput

by  → Go to service

need help with GitLab ?

GitLab

Description

GitLab is a complete DevOps platform supporting Development, Security, and Ops teams to collaborate and build software. This GitLab service is running the Open Source version of GitLab. It allows you to:

- Host code in repositories with Git version control
- Implement project management with an Issue Tracker, Merge Requests or Issue Boards
- Use the provided shared runners for built-in Continuous Integration
- Host your Docker images using the Container Registry
- Share your documentation or static websites with Pages
- Share private or public software packages for a variety of common package managers, e.g. Conan (C++) or PyPI (Python).

HIFIS helps you to efficiently use Gitlab:


HIFIS provides multiple level of assistance on efficient usage of the mighty functionality of Gitlab. Please have a look at:


- [Tutorials](#),
- [Courses & Trainings](#),
- [Consulting](#) on complex questions.

I. Cloud Services + Portal


HELMHOLTZ CLOUD


Search Services: Provider: Sort by:

**B2Share**
B2Share
Research Data (+ corresponding Metadata)
Publishing service.


by 


→ Go to service

**Compute Projects**
Applications for Computing Time
Apply for Computing Time at Jülich Supercomputing Centre (JSC).


by 


→ Go to service

**GitLab**
GitLab
A web-based DevOps lifecycle tool that provides a Git-repository manager.


by 


→ Go to service

**HAICOF**
Ha
Dedicated CO
AI community.


by 


→ Go to service

**Notes**
HedgeDoc
A collaborative platform to write and share
markdown based documents.


by 


→ Go to service

**HIFIS Events**
Indico
An Events Management service for everyone within
Helmholtz and their partners, based on Indico.


by 


→ Go to service

**Jupyter**
Jupyter
Open-source software and service for interactive
computing.


by 


→ Go to service

**Jupyter**
JSC
Interactive sup


by 


→ Go to service

**LimeSurvey**
LimeSurvey Community Edition
An online survey tool offered by DKFZ to everyone
within Helmholtz group.


by 


→ Go to service

**LimeSurvey**
LimeSurvey Community Edition
An Open source on-line statistical survey web
application.


by 


→ Go to service

**Mattermost**
Mattermost
A hosted chat service for everyone within Helmholtz
based on Mattermost.


by 


→ Go to service

**bwSync**
File Sync and S
Fotos, Calend


by 


→ Go to service

**Sync & Share**
Nextcloud, dCache
File Sync and Share, Collaborative Editing using
OnlyOffice.


by 


→ Go to service

**OpenStack (HDF Cloud)**
OpenStack
The Service allows provisioning of user-controlled
VMs with Linux OS.


by 


→ Go to service

**Singularity**
SingularityCE
Container runtime environment on HPC systems at
FZJ / Jülich Supercomputing Centre (JSC).

by 

→ Go to service

**Data Pro**
Sto
Apply for data
Supercomput

by 

→ Go to service

need help with GitLab ?

GitLab

Description

GitLab is a complete DevOps platform supporting Development, Security, and Ops teams to collaborate and build software. This GitLab service is running the Open Source version of GitLab. It allows you to:

- Host code in repositories with Git version control
- Implement project management with an Issue Tracker, Merge Requests or Issue Boards
- Use the provided shared runners for built-in Continuous Integration
- Host your Docker images using the Container Registry
- Share your documentation or static websites with Pages
- Share private or public software packages for a variety of common package managers, e.g. Conan (C++) or PyPI (Python).

HIFIS helps you to efficiently use Gitlab:

HIFIS provides multiple level of assistance on efficient usage of the mighty functionality of Gitlab. Please have a look at:

- [Tutorials](#),
- [Courses & Trainings](#),
- [Consulting](#) on complex questions.

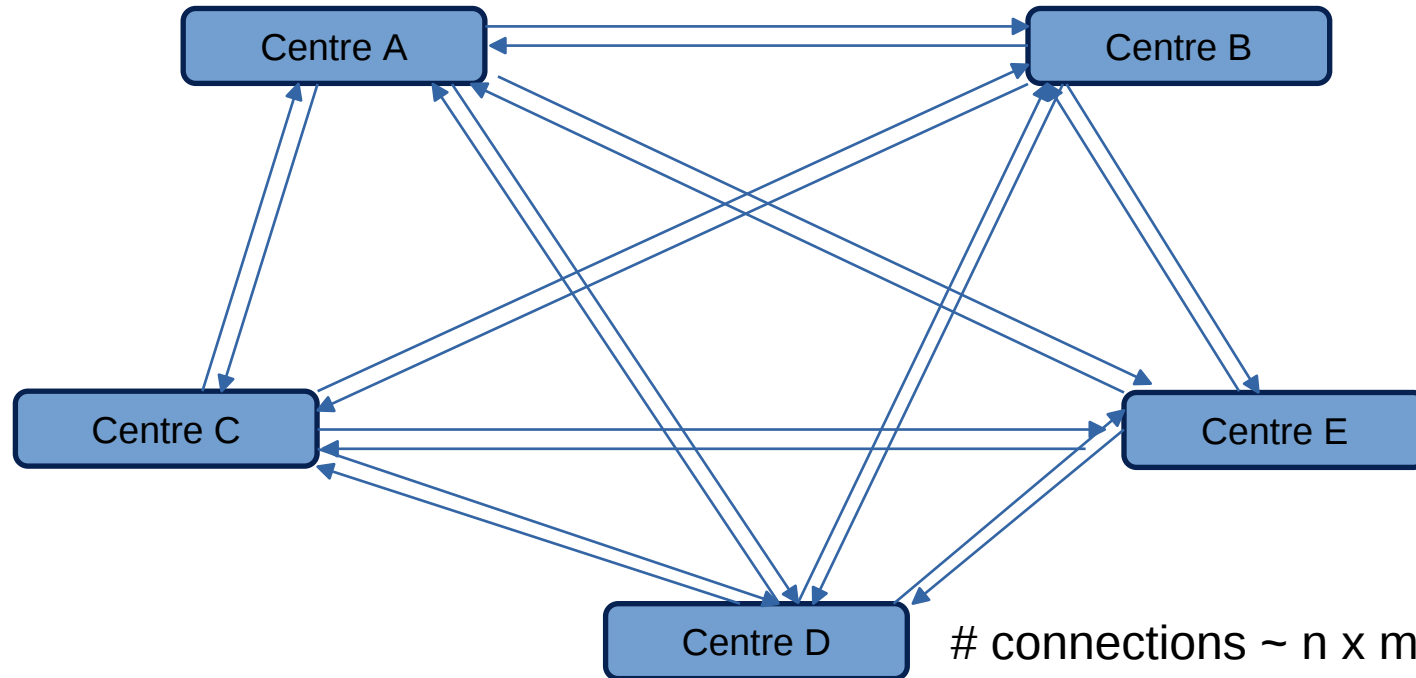
Helmholtz Federated IT 10



Conventional approach - 1:1 connection

- 2 partners (1 service provider, 1 service user):
- separate contract for each service

I. IAM&AAI - Access to distributed resources



connections ~ $n \times m \times s$

n: number of service providing centres

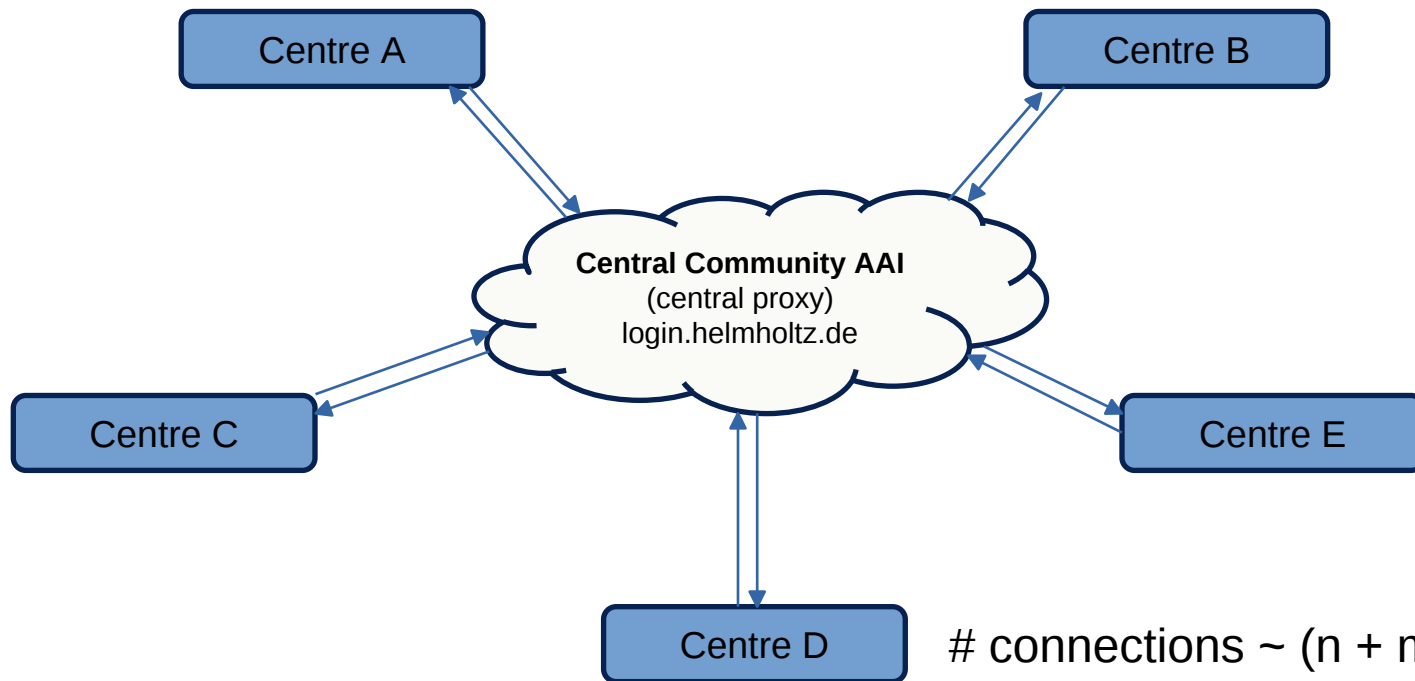
(>10)

m: numbers of using centres (19)

s: number of services

- <https://aai.helmholtz.de/howto>
- <https://aai.helmholtz.de/concept>

I. IAM&AAI - Solution, following AARC Blueprint

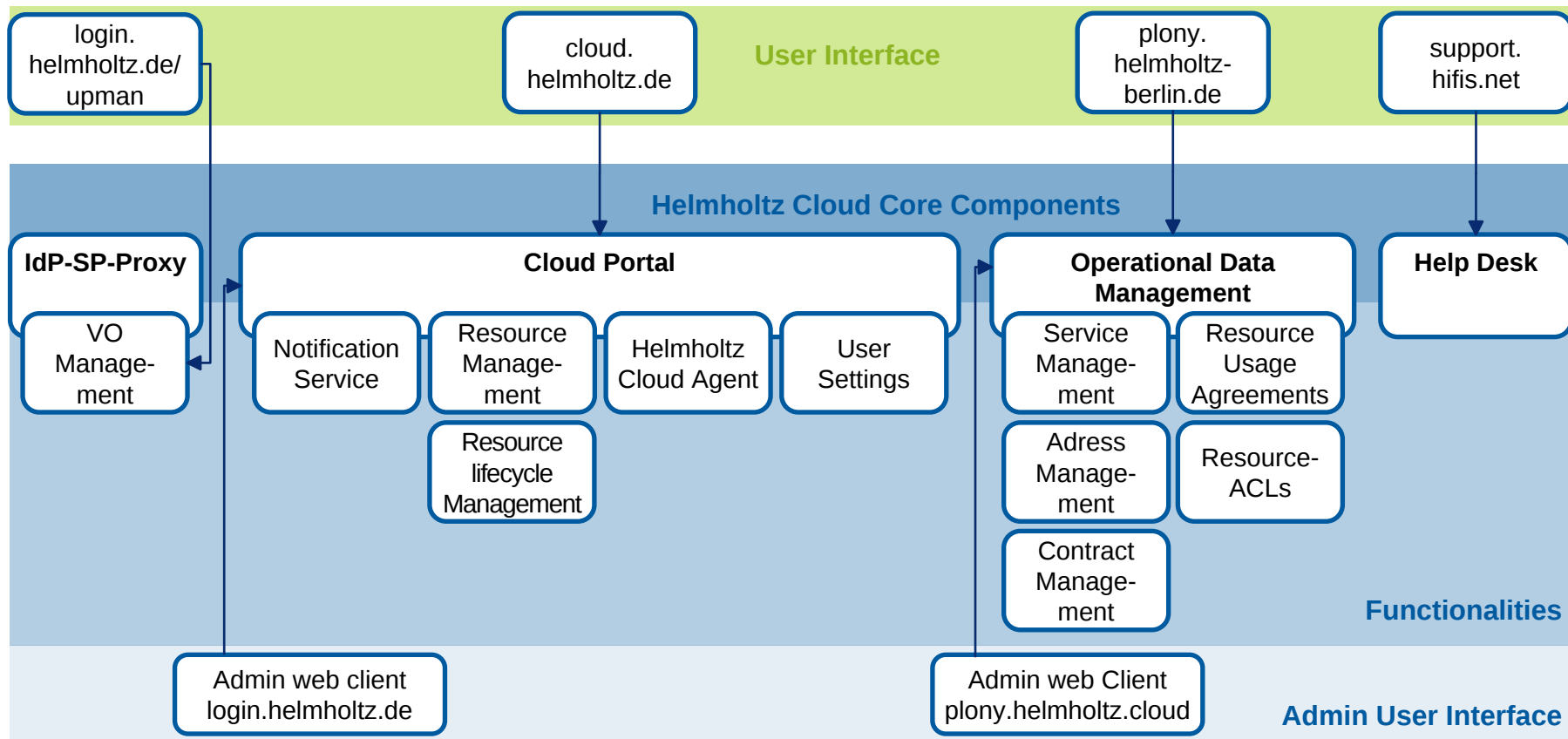


- <https://aarc-project.eu/architecture/>
- <https://aai.helmholtz.de/howto>
- <https://aai.helmholtz.de/concept>

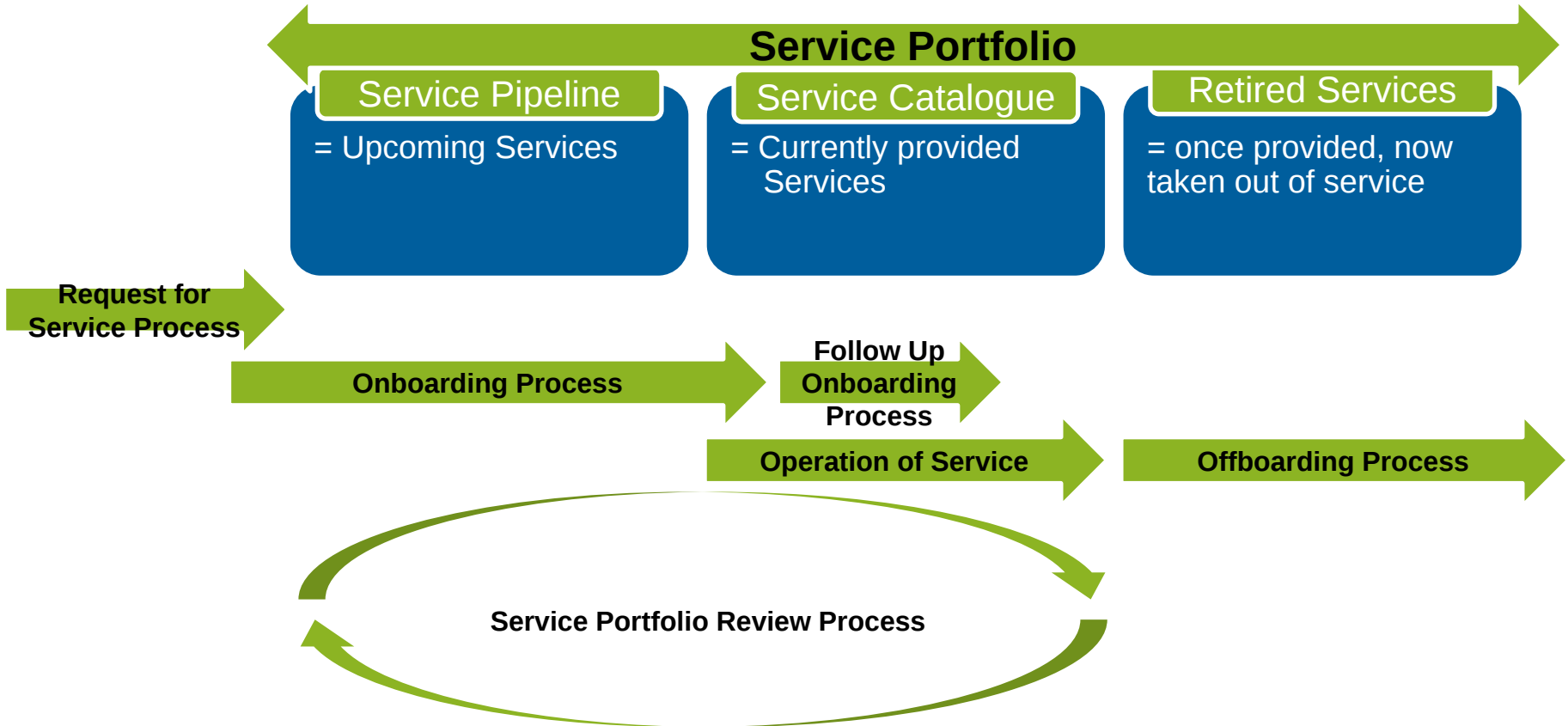
connections $\sim (n + m)$

n: number of service providing centres
(>10)
m: numbers of using centres (19)
s: number of services

I. Cloud: Architecture



I. Cloud: Process Framework for Helmholtz Cloud Service Portfolio



I. Cloud: Onboarding Process – Online Application

Welcome

NEW SERVICE APPLICATION

To save your application it is only required to fill out the **Service Name** field.
To send in the application later on it is necessary to fill out the **remaining fields** and **pass the validation**.

Service name

Please indicate the name of the service you would like to offer in Helmholtz Cloud. Feel free to also indicate the software behind the service, if your service name does not imply that (e.g. Service name = nubes, Software behind the service = Nextcloud)

Description

Please describe the main functionalities and benefits of the service you would like to offer in Helmholtz Cloud. Please note the maximum length of your description must not exceed 250 characters.

Contact Person - Lastname

Please name a contact person (name + mail address) we can get back to in case of questions about this application.

Contact Person - Firstname

Contact Person - Email

Contact Person

Select ...

Please name a contact person (name + mail address) we can get back to in case of questions about this application.

Service Provider

Select ...

Provision Level in Helmholtz Cloud

Select ...

Please indicate whether you want to provide your service in Helmholtz Cloud on a pilot or Fully integrated basis. [Read more](#)

Planned Provision time

Select ...

Please indicate for how long you are planning to provide the service in Helmholtz Cloud.

Helmholtz AAI Capability

Select ...

Please state to which extent your service is capable to use Helmholtz AAI. [Read more](#)

User Deprovisioning

Select ...

Please state to which extent your service supports user deprovisioning.

Backup Strategy

Please state whether you have a backup strategy for the service established. If yes, please give us a brief overview of what your backup strategy covers.

Save

Validate Input

Cancel

- **Reform des Gemeinnützigkeitsrechts vom 29.12.2020**

- § 57 Abs. 3 Satz 1 AO: “Eine Körperschaft verfolgt ihre steuerbegünstigten Zwecke auch dann unmittelbar im Sinne des Absatzes 1 Satz 1, wenn sie satzungsgemäß durch planmäßiges Zusammenwirken mit mindestens einer weiteren Körperschaft, die im Übrigen die Voraussetzungen der §§ 51 bis 68 erfüllt, einen steuerbegünstigten Zweck verwirklicht. Die §§ 14 sowie 65 bis 68 sind mit der Maßgabe anzuwenden, dass für das Vorliegen der Eigenschaft als Zweckbetrieb bei der jeweiligen Körperschaft die Tätigkeiten der nach Satz 1 zusammenwirkenden Körperschaften zusammenzufassen sind.”

- The Cloud Regulation consequently emphasizes:

- All Helmholtz centres have the **same funding purpose**.
- **All members contribute** to HIFIS and the Helmholtz Cloud.
- All **resources** are **offers**.
- No member may make any claim to the use of the resources.
- Resources replaces the term service to avoid the impression of a trade.

- **Roles in the Helmholtz Cloud according to data protection law**
- **Helmholtz Cloud Core Components:**
 - The entities of the Helmholtz Association participating in the operation of the Helmholtz Cloud via HIFIS are jointly responsible. (i.e. all Helmholtz Centres because HIFIS is funded and steered by all members of the Helmholtz Association, regardless if they are providing or using a Cloud Service.)

- **Roles in the Helmholtz Cloud according to data protection law**
- **Helmholtz Cloud Core Components:**
 - The entities of the Helmholtz Association participating in the operation of the Helmholtz Cloud via HIFIS are jointly responsible. (i.e. all Helmholtz Centres because HIFIS is funded and steered by all members of the Helmholtz Association, regardless if they are providing or using a Cloud Service.)
- **Next Step:**
 - Define a Joint Controller Agreement for Helmholtz Cloud Core Components
 - In close Cooperation with Helmholtz AK Datenschutz
 - And with consultancy from KPMG

II. Software Services

Best-practices for sustainable Research Software Engineering on multiple levels:

II. Software Services

Best-practices for sustainable Research Software Engineering on multiple levels:

Education & Training

- **Courses, material and workshops** for getting you started or boosting your software engineering practice.

Community

- Build and foster communities to support the necessary **cultural change** when dealing with research software.

Consulting

- **Contact points** for researchers for questions and problems in the context of RSE.

Technology

- Provide a sustainable, well integrated and easy to use **technology infrastructure** for research software development.

Education & Training

Basic

- First Steps in Python-Programming
- Project Management with GitLab
- Version Control using Git

Intermediate

- GitLab for Software Development in Teams
- Let us Make Your Script Ready for Publication
- OOP Programming with Python (available in 2022)
- Continuous Integration (CI) using GitLab CI (available in 2022)

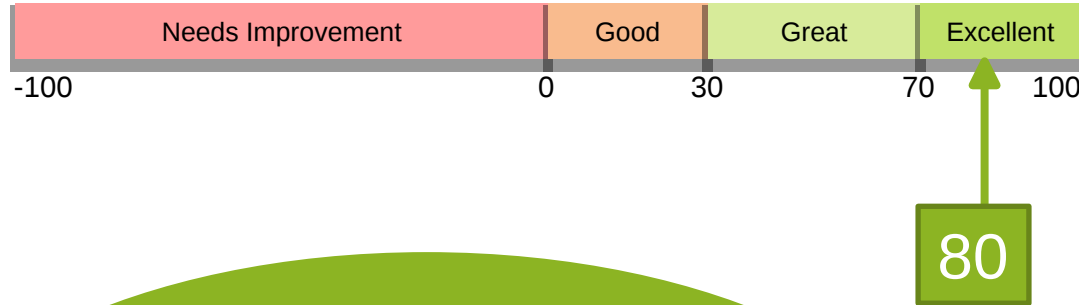
Advanced

- Using Containers in Science
- Test Automation with Python

II. Software Services

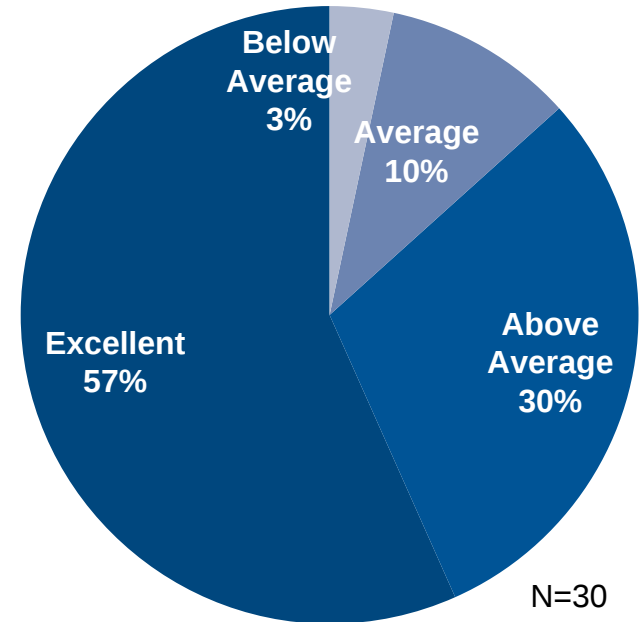
Consulting

Net Promoter Score



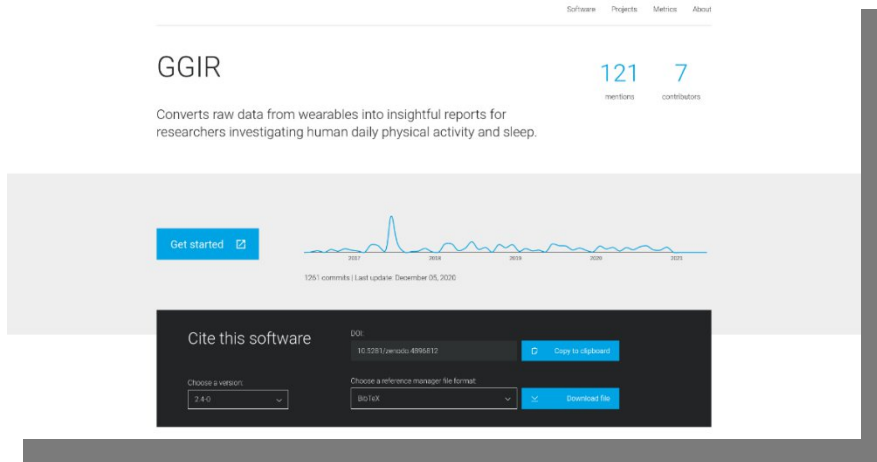
This was a great experience. Having worked at a Helmholtz institution for many years, it is a bit difficult for senior staff to understand that this is really a free and open service meant to support research groups in different fields. This is quite uncommon in “old Helmholtz” and it may take a while before HIFIS becomes widely known and accepted...

Impact of the consultation on your project or work

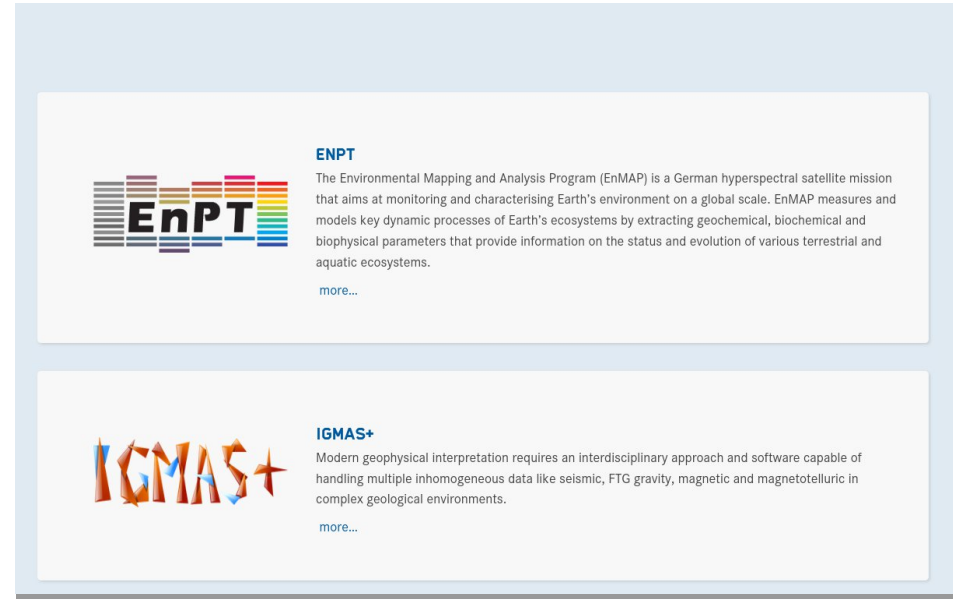


II. Software Services

Community



- Started development of a Research Software Directory for Helmholtz
- To be built on top of and in cooperation with the Netherlands eScience center [solution](#)

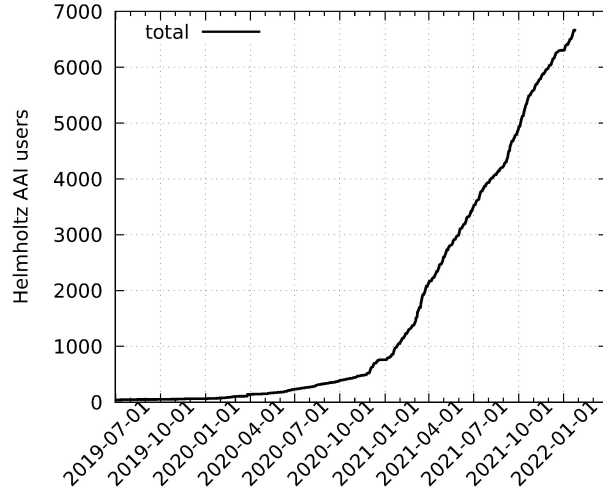


The spotlight cards feature two software projects. The first card is for "ENPT" (The Environmental Mapping and Analysis Program (EnMAP) is a German hyperspectral satellite mission that aims at monitoring and characterising Earth's environment on a global scale. EnMAP measures and models key dynamic processes of Earth's ecosystems by extracting geochemical, biochemical and biophysical parameters that provide information on the status and evolution of various terrestrial and aquatic ecosystems. [more...](#)). The second card is for "IGMAS+" (Modern geophysical interpretation requires an interdisciplinary approach and software capable of handling multiple inhomogeneous data like seismic, FTG gravity, magnetic and magnetotelluric in complex geological environments. [more...](#)).

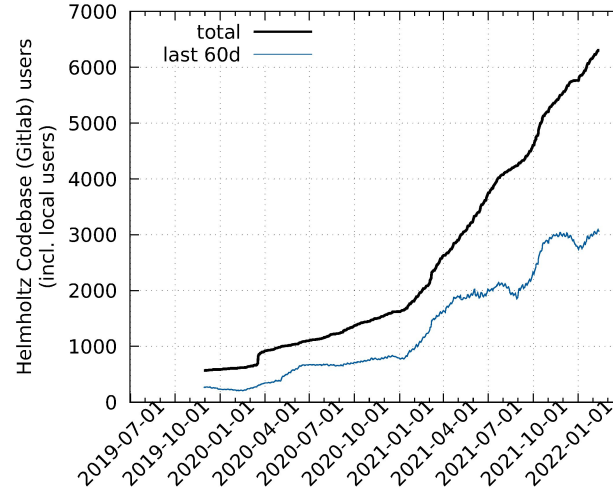
- Present & Promote top success stories of Research Software Engineering in Helmholtz
- approx. **90 Proposals** so far, to be presented in: hifis.net/spotlights

HIFIS Usage: AAI, Cloud, Software Services

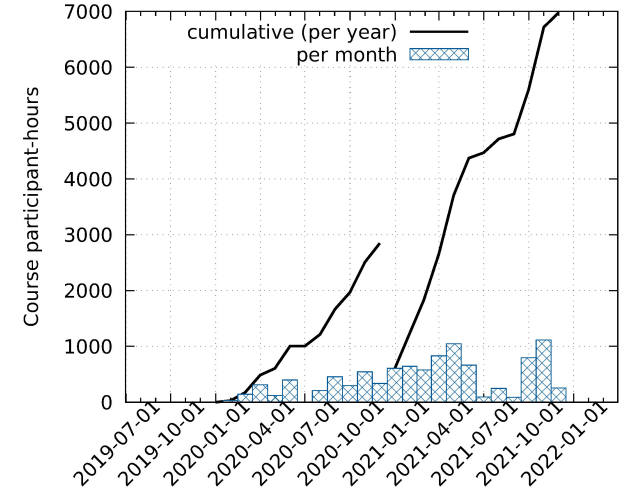
Temporal development of selected KPI



AAI
--> Cloud Services



Gitlab HZDR



Course participant hours

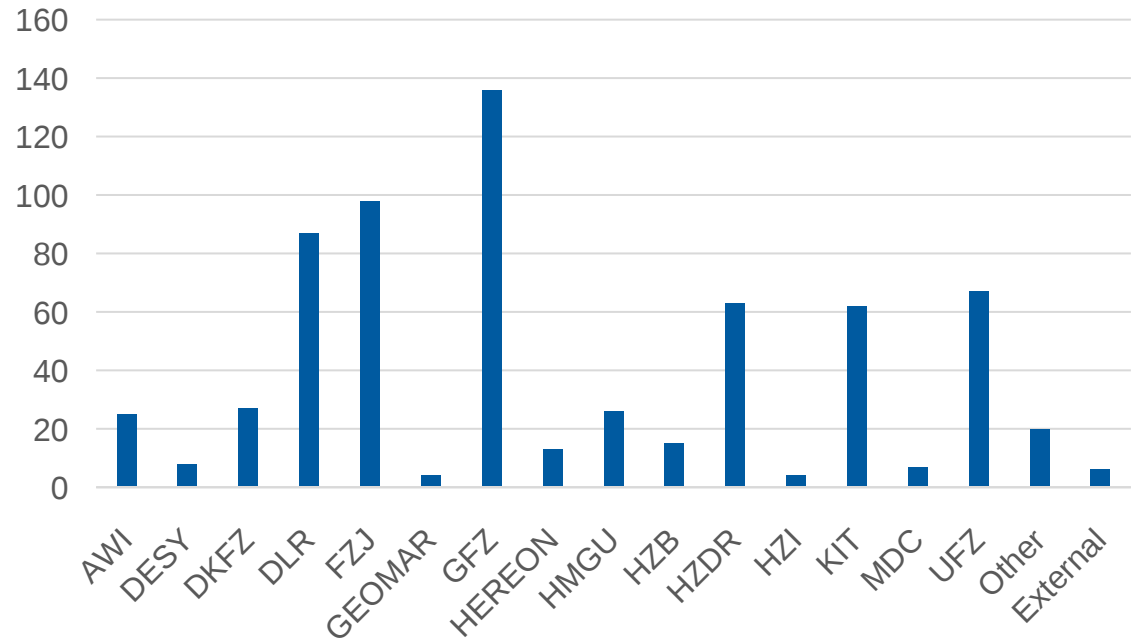
Education & Training

- **36** online workshops in 2021
- About **668** attendees from **16**

Helmholtz centers



Number of Attendees per Centre



HELMHOLTZ IT FOR SCIENCE

▶ HIFIS builds and sustains an excellent IT infrastructure connecting all Helmholtz research fields and centres.


Helmholtz Cloud
Helmholtz AAI
Consulting
Education & Training



NEWS

 14. Jan. 22  News

Mattermost Major
Release 6 available

 20. Dec. 21  News

HIFIS Survey 2021
Report

 16. Dec. 21  News

20 Helmholtz Cloud
Services

 29. Nov. 21  Milestone

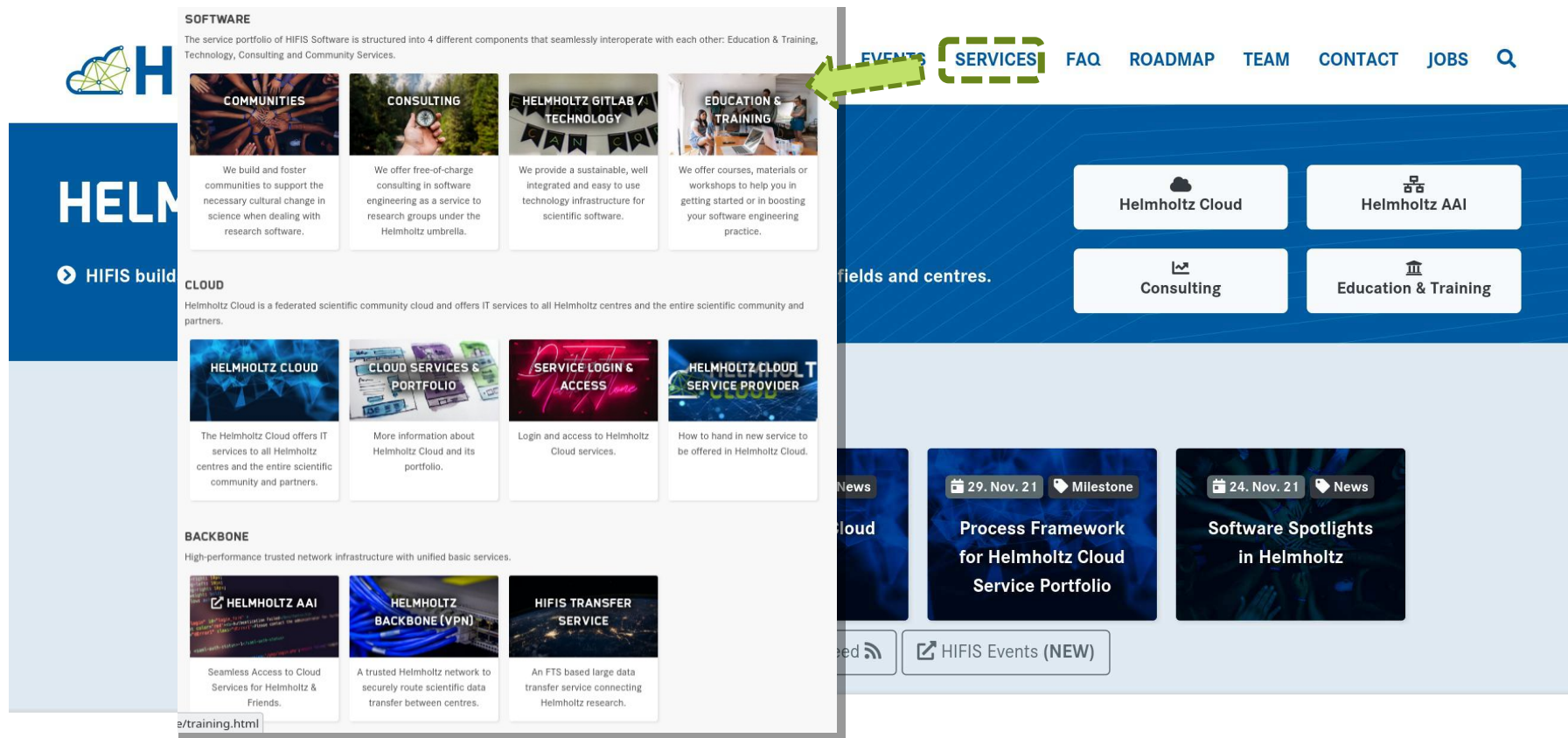
Process Framework
for Helmholtz Cloud
Service Portfolio

 24. Nov. 21  News

Software Spotlights
in Helmholtz

[All HIFIS News](#)[Subscribe !\[\]\(1ed10657a19f9137278430c48fd18626_img.jpg\)](#)[News Feed !\[\]\(4c9516d2c24d0d513bc9f84c2e013d65_img.jpg\)](#)[HIFIS Events \(NEW\)](#)

HIFIS Services in a nutshell

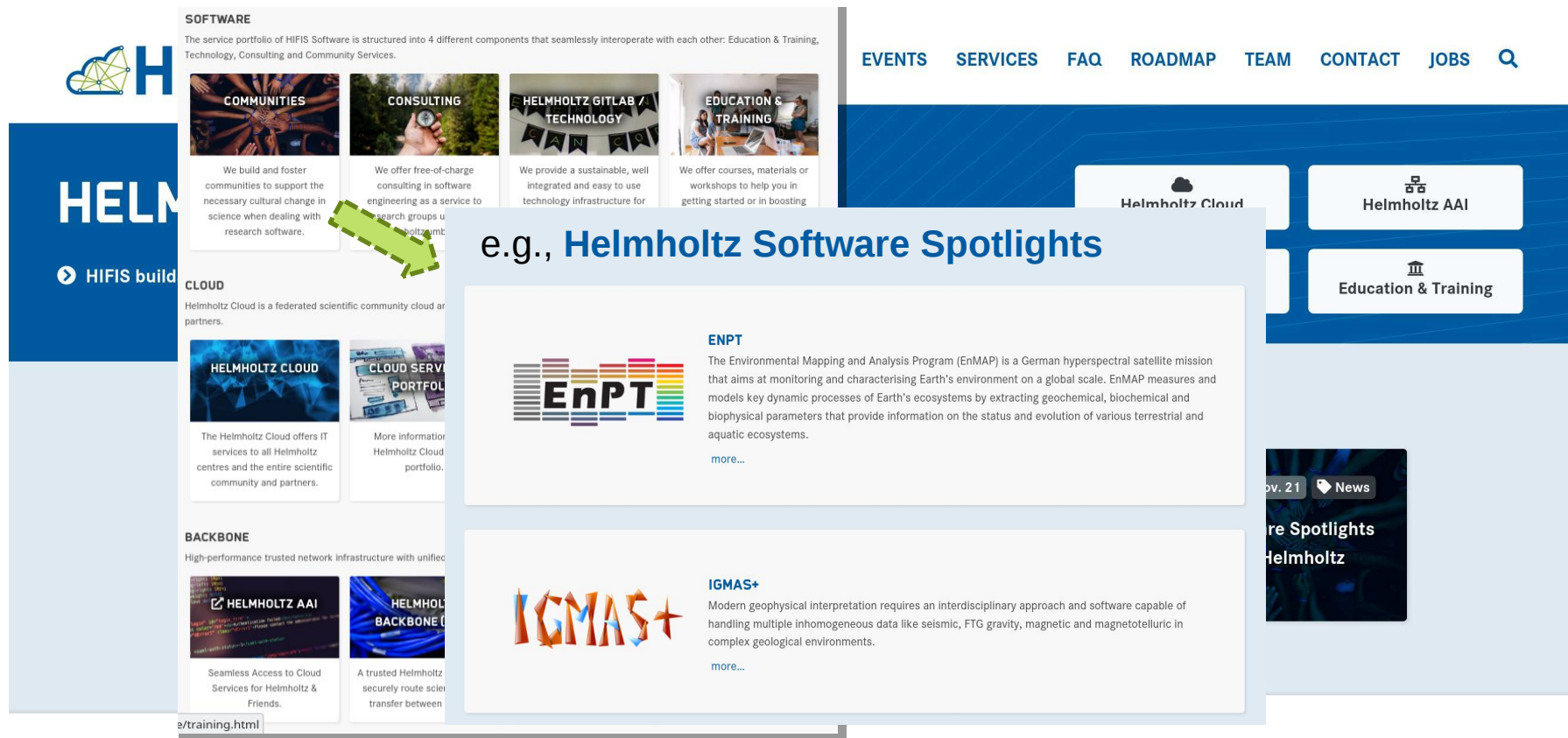


The screenshot displays the HIFIS Services website. A green arrow points to the 'SERVICES' menu item in the top navigation bar. The main content area is divided into several sections:

- SOFTWARE**: The service portfolio of HIFIS Software is structured into 4 different components that seamlessly interoperate with each other: Education & Training, Technology, Consulting and Community Services.
 - COMMUNITIES**: We build and foster communities to support the necessary cultural change in science when dealing with research software.
 - CONSULTING**: We offer free-of-charge consulting in software engineering as a service to research groups under the Helmholtz umbrella.
 - HELMHOLTZ GITLAB / TECHNOLOGY**: We provide a sustainable, well integrated and easy to use technology infrastructure for scientific software.
 - EDUCATION & TRAINING**: We offer courses, materials or workshops to help you in getting started or in boosting your software engineering practice.
- CLOUD**: Helmholtz Cloud is a federated scientific community cloud and offers IT services to all Helmholtz centres and the entire scientific community and partners.
 - HELMHOLTZ CLOUD**: The Helmholtz Cloud offers IT services to all Helmholtz centres and the entire scientific community and partners.
 - CLOUD SERVICES & PORTFOLIO**: More information about Helmholtz Cloud and its portfolio.
 - SERVICE LOGIN & ACCESS**: Login and access to Helmholtz Cloud services.
 - HELMHOLTZ CLOUD SERVICE PROVIDER**: How to hand in new service to be offered in Helmholtz Cloud.
- BACKBONE**: High-performance trusted network infrastructure with unified basic services.
 - HELMHOLTZ AAI**: Seamless Access to Cloud Services for Helmholtz & Friends.
 - HELMHOLTZ BACKBONE (VPN)**: A trusted Helmholtz network to securely route scientific data transfer between centres.
 - HIFIS TRANSFER SERVICE**: An FTS based large data transfer service connecting Helmholtz research.

The right sidebar features a grid of service tiles: Helmholtz Cloud, Helmholtz AAI, Consulting, and Education & Training. Below this, there are news items: 'Process Framework for Helmholtz Cloud Service Portfolio' (dated 29. Nov. 21) and 'Software Spotlights in Helmholtz' (dated 24. Nov. 21). At the bottom, there is a link to 'HIFIS Events (NEW)'.

HIFIS Services in a nutshell



The screenshot shows the HIFIS Services website. The top navigation bar includes links for EVENTS, SERVICES, FAQ, ROADMAP, TEAM, CONTACT, JOBS, and a search icon. The main content area is divided into several sections: SOFTWARE, COMMUNITIES, CONSULTING, HELMHOLTZ GITLAB / TECHNOLOGY, and EDUCATION & TRAINING. A large blue sidebar on the left contains the HELMHOLTZ logo and a link to HIFIS build. A green dashed arrow points from the COMMUNITIES section to a spotlight overlay. The spotlight overlay features the text 'e.g., Helmholtz Software Spotlights' and displays two featured projects: ENPT (Environmental Mapping and Analysis Program) and IGMAS+ (Interdisciplinary Geomorphological Modelling and Analysis). The ENPT section includes a description of the mission and a 'more...' link. The IGMAS+ section includes a description of the interdisciplinary approach and a 'more...' link. The right sidebar contains three white boxes with icons and labels: Helmholtz Cloud, Helmholtz AAI, and Education & Training. At the bottom right, there is a 'News' section with a '21' icon and a 'More Spotlights Helmholtz' link.

SOFTWARE
The service portfolio of HIFIS Software is structured into 4 different components that seamlessly interoperate with each other: Education & Training, Technology, Consulting and Community Services.

COMMUNITIES
We build and foster communities to support the necessary cultural change in science when dealing with research software.

CONSULTING
We offer free-of-charge consulting in software engineering as a service to research groups and institutions.

HELMHOLTZ GITLAB / TECHNOLOGY
We provide a sustainable, well integrated and easy to use technology infrastructure for research groups and institutions.

EDUCATION & TRAINING
We offer courses, materials or workshops to help you in getting started or in boosting your skills.

HELMHOLTZ CLOUD
Helmholtz Cloud is a federated scientific community cloud and a central platform for all partners.

HELMHOLTZ CLOUD
The Helmholtz Cloud offers IT services to all Helmholtz centres and the entire scientific community and partners.

CLOUD SERVICES PORTFOLIO
More information Helmholtz Cloud portfolio.

BACKBONE
High-performance trusted network infrastructure with unified access to all services.

HELMHOLTZ AAI
Seamless Access to Cloud Services for Helmholtz & Friends.

HELMHOLTZ BACKBONE
A trusted Helmholtz network securely route scientific data transfer between research groups and institutions.

e.g., Helmholtz Software Spotlights

ENPT
The Environmental Mapping and Analysis Program (EnMAP) is a German hyperspectral satellite mission that aims at monitoring and characterising Earth's environment on a global scale. EnMAP measures and models key dynamic processes of Earth's ecosystems by extracting geochemical, biochemical and biophysical parameters that provide information on the status and evolution of various terrestrial and aquatic ecosystems.
[more...](#)

IGMAS+
Modern geophysical interpretation requires an interdisciplinary approach and software capable of handling multiple inhomogeneous data like seismic, FTG gravity, magnetic and magnetotelluric in complex geological environments.
[more...](#)

News
21
[More Spotlights Helmholtz](#)

I. Helmholtz Digital Services for Science - Collaboration made easy.

- Try it! Most Software and Cloud Services readily available for Helmholtz + Partners.

I. Helmholtz Digital Services for Science - Collaboration made easy.

- Try it! Most Software and Cloud Services readily available for Helmholtz + Partners.

II. Next: Deepening integration, improving user experience

- Cloud + Software Services Review
- Cloud Service Regulation will be proceeded and submitted to MV
- Further improve outreach esp. to still underrepresented centres

I. Helmholtz Digital Services for Science - Collaboration made easy.

- Try it! Most Software and Cloud Services readily available for Helmholtz + Partners.

II. Next: Deepening integration, improving user experience

- Cloud + Software Services Review
- Cloud Service Regulation will be proceeded and submitted to MV
- Further improve outreach esp. to still underrepresented centres

III. Further possible Collaboration & Blueprint

- Blueprint for Community based **AAI** + Federated / distributed “basis” **cloud services**
- Helmholtz Cloud (Portal) as potential **broker** for external services
- Consulting on RSE for facilitated transfer

IV. Consult us:

- <https://hifis.net>
- support@hifis.net
- [Resonator Podcast](#)



[Podcast](#)



[Poster](#)

QUESTIONS?



Katerina Limpitsouni via undraw.co

SPARE SLIDES


I. Cloud Services + Portal

HELMHOLTZ CLOUD

Team News Helpdesk About Sign in


Search Services: Provider: Sort by:


- Collaboration Services
- Infrastructure Services
- Scientific / Community specific Services (ramp-up)
- De-centrally provided by multiple centres for all-Helmholtz
- User self-enablement, Group Management
- Usage Details / Service Descriptions / Further Links
- Communication between HC components: Helmholtz Cloud Agent (HCA)
- Orchestrated Services to come!



GitLab


A web-based DevOps lifecycle tool that provides a Git-repository manager.


by  [Go to service](#)



HAICORE


Dedicated Computing Resources for the Helmholtz AI community.


by  [Go to service](#)



HAICORE


Dedicated Computing Resources for the Helmholtz AI community.


by  [Go to service](#)



Jupyter


Open-source software and service for interactive computing.


by  [Go to service](#)



Jupyter


Interactive supercomputing in a browser.


by  [Go to service](#)



Jupyter on HAICORE


Jupyter enables interactive supercomputing on HPC resources.


by  [Go to service](#)



Mattermost


A hosted chat service for everyone within Helmholtz based on Mattermost.


by  [Go to service](#)



bwSync&Share


File Sync and Share, Groupware-Functionalities: Files, Fotos, Calendar, etc.


by  [Go to service](#)



nubes


Sync&Share based on Nextcloud with OnlyOffice and Calendar function.


by  [Go to service](#)



Singularity


Container runtime environment on HPC systems at FZJ / Jülich Supercomputing Centre (JSC).


by  [Go to service](#)



Data Projects (HDF)


Apply for data projects at FZJ / Jülich Supercomputing Centre (JSC).

by  [Go to service](#)



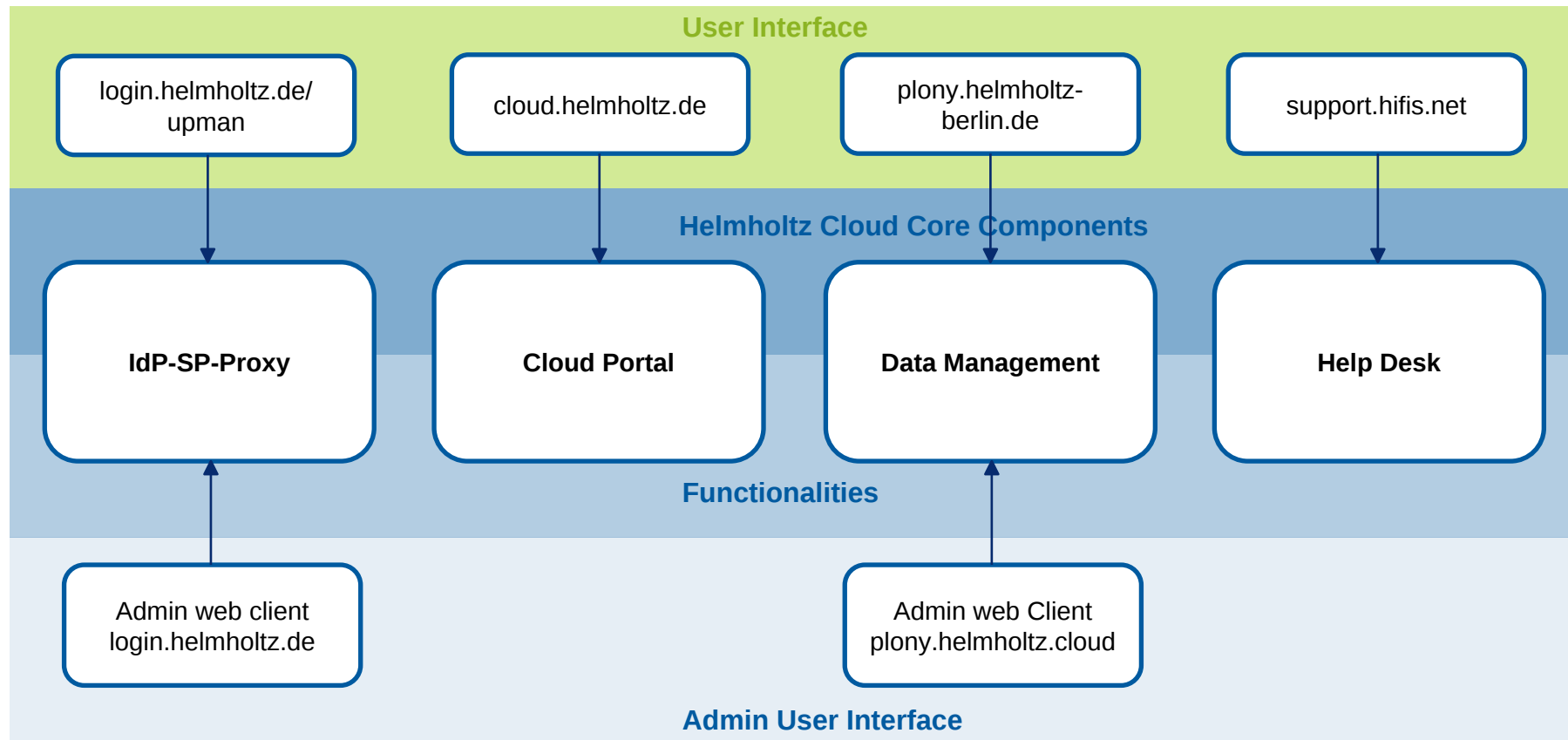
HIFIS Helpdesk

HIFIS Helpdesk Ticketing System based on Zammad.

by  [Go to service](#)

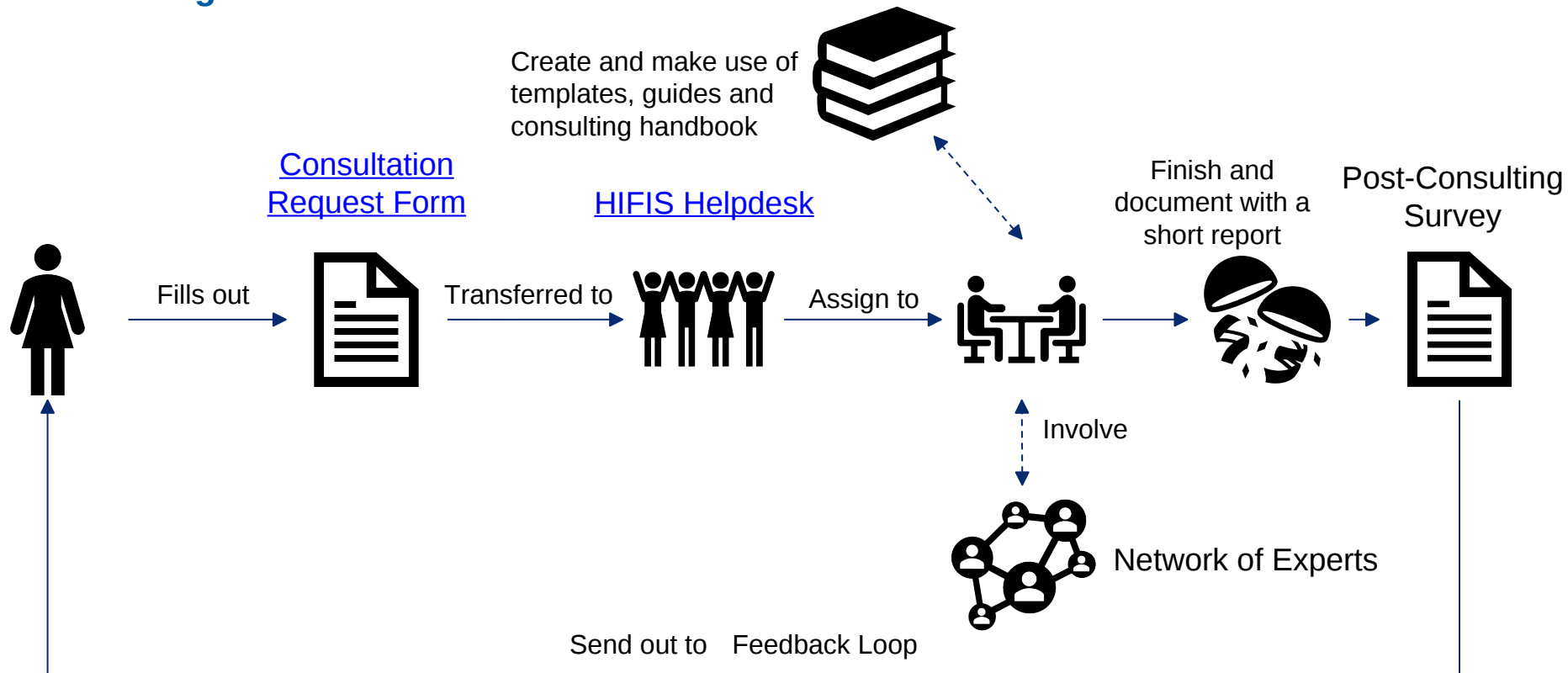
Helmholtz Federated IT 35

I. Cloud Core Components

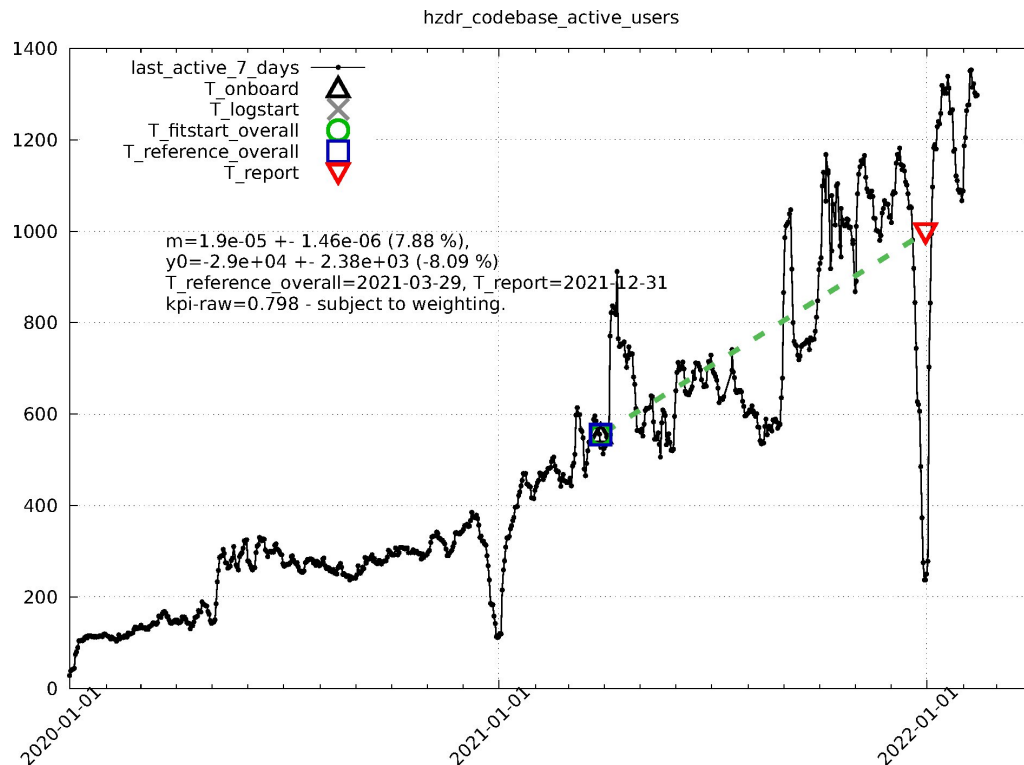


II. Software Services

Consulting

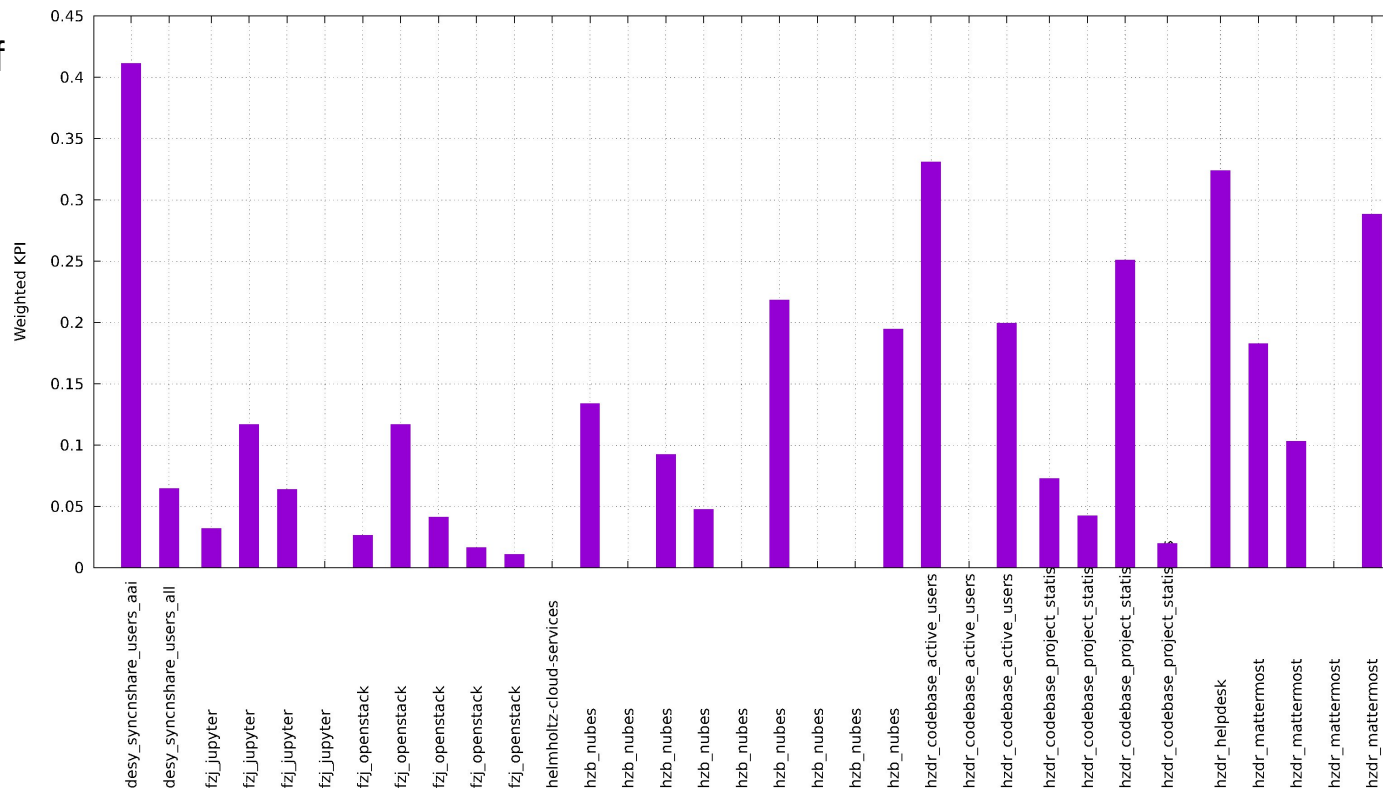


- Measuring users and usage KPI per service; overall weight per service is defined as 1
- Increase of service users/usage w.r.t reference time point results in >0 ; reduction in <0
- Total 7 services included so far; others onboarded later than Oct 01
- Deal with data heterogeneity
- All data and doc public
- E.g. HZDR Codebase/Gitlab (active users in 7 days)



HIFIS Usage: Cloud Service Operation KPI

- This year's overall KPI=3.39 (for 7 services measured)
- Contributions of services:



	KPI	2019	2020	2021
P1a	Number of individual users (Sect A2.2)	65	769	6303
P1b	Number of collaborating projects (VOs) (Sect 7.1)	3	26	49
P1c	Active Cloud Services Usage ²⁶	-	-	3.39
P2a	Number of IT services (all AAI registered) (Sect A2.2)	14	85	106
P2b	Number of IT services in Cloud Service Portfolio	0	38	39
P2c	Number of IT services in fully operation modus	0	0	19
P3	Number of courses and events organised ²⁷	-	24	38
P4	Number of published resources ²⁸	7	31	19
P5	Number of Milestones achieved (Sect 7.3)	1	7	14

Consulting


- Free-of-charge software consulting for research groups within the Helmholtz umbrella
- Possible topics include, but are not limited to Licensing and Open Source, setting up new projects, code migrations etc.
- **Initial References:**
 - Making a project HPC ready
 - Setting up and introducing Continuous Integration
 - Frequent requests about licensing and Open Source



Katerina Limpitsouni via
undraw.co

- **Roles in the Helmholtz Cloud according to data protection law**
- **Helmholtz Cloud Core Components:**
 - The entities of the Helmholtz Association participating in the operation of the Helmholtz Cloud via HIFIS are jointly responsible. (i.e. all Helmholtz Centres because HIFIS is funded and steered by all members of the Helmholtz Association, regardless if they are providing or using a Cloud Service.)
- **Helmholtz Cloud Services (Fully integrated and Pilot):**
 - The entities of the Helmholtz Association that share data collections and services act as joint controllers.
 - The entities that provides another unit of the Helmholtz Association with an IT service in the Helmholtz Cloud for its own use acts as a processor.
 - The entities that grants external third parties access to the data collections and services in the Helmholtz Cloud is the responsible party.

...It's even easier than one, two ...

UPCOMING EVENTS 

PROJECT MANAGEMENT WITH GITLAB

This workshop will focus on project management with the GitLab platform. A primer for the prerequisite version control system Git will be offered to those not yet familiar with it.

more...


TIME:

Fri, 15. Oct. 2021 –
Mon, 18. Oct. 2021


LOCATION:

Online

ORGANIZERS:

 ERXLEBEN, FREDO

LECTURERS:

 ERXLEBEN, FREDO

TEST AUTOMATION WITH PYTHON

Learn to test your Python code effectively.

more...


TIME:

Tue, 09. Nov. 2021, 09:00 –
Wed, 10. Nov. 2021, 13:00

LOCATION:

Online

ORGANIZERS:

 SCHLAUCH, TOBIAS

➤ <https://hifis.net/events>

II. Software Services

...It's even easier than one, two, three!

UPCOMING EVENTS

PROJECT MANAGEMENT WITH GITLAB

This workshop will focus on project management with the GitLab platform. A primer for the prerequisite version control system Git will be offered to those not yet familiar with it.
more...

TIME:
Fri, 15. Oct. 2021 –
Mon, 18. Oct. 2021

LOCATION:
Online

ORGANIZERS:
ERXLEBEN, FREDO

LECTURERS:
ERXLEBEN, FREDO

TEST AUTOMATION WITH PYTHON

Learn to test your Python code effectively.
more...

TIME:
Tue, 09. Nov. 2021, 09:00 –
Wed, 10. Nov. 2021, 13:00

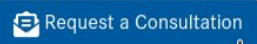
LOCATION:
Online

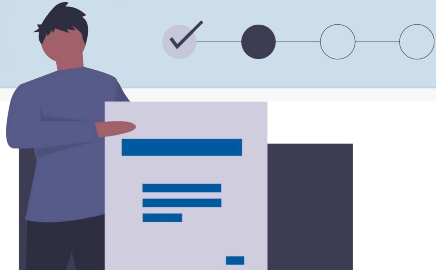
ORGANIZERS:
SCHLAUCH, TOBIAS

CONSULTING

TL;DR: ANSWER A FEW QUESTIONS TO REQUEST A CONSULTATION

In order to reduce the amount of emails we need to send forth and back, we kindly ask you to fill out a few questions to request a consultation.

 Request a Consultation



Katerina Limpitsouni via
undraw.co

- <https://hifis.net/events>
- <https://hifis.net/consulting>

Community

- Investigated multiple formats of community building
- **Example:** Hacky Hours
 - HackyHourHandbook:
<https://github.com/amandamiotto/HackyHourHandbook>
 - Informal regularly scheduled catchup
 - Discuss software engineering related topics for accelerating their research
 - In average **9.5** participants. 10 different centers joined.
(Goal not met)
- Format discontinued and reorientation of the work package



Technology

Provide a sustainable, well integrated and easy to use technology infrastructure for research software development.

Transparency

Accessibility

Reliability

Reusability

- Everything we implement is shared as Open Source software
 - <https://gitlab.com/hifis/ansible>
- Infrastructure as code Remove manual components, Transparently visible for Helmholtz employees
 - <https://gitlab.hzdr.de/hifis-software-deployment/>

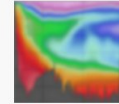
II. Helmholtz Software Spotlights



ENPT

The Environmental Mapping and Analysis Program (EnMAP) is a German hyperspectral satellite mission that aims at monitoring and characterising Earth's environment on a global scale. EnMAP measures and models key dynamic processes of Earth's ecosystems by extracting geochemical, biochemical and biophysical parameters that provide information on the status and evolution of various terrestrial and aquatic ecosystems.

[more...](#)



ODV

Ocean Data View (ODV) is a software package for the interactive exploration, analysis and visualization of oceanographic and other geo-referenced environmental data. ODV runs on Windows, MacOS, and Linux. ODV data and view files are platform-independent and can be exchanged between different systems.

[more...](#)



IGMAS+

Modern geophysical interpretation requires an interdisciplinary approach and software capable of handling multiple inhomogeneous data like seismic, FTG gravity, magnetic and magnetotelluric in complex geological environments.

[more...](#)



RCE

RCE is a distributed integration environment for scientists and engineers to analyze, optimize, and design complex systems like aircraft, ships, or satellites.

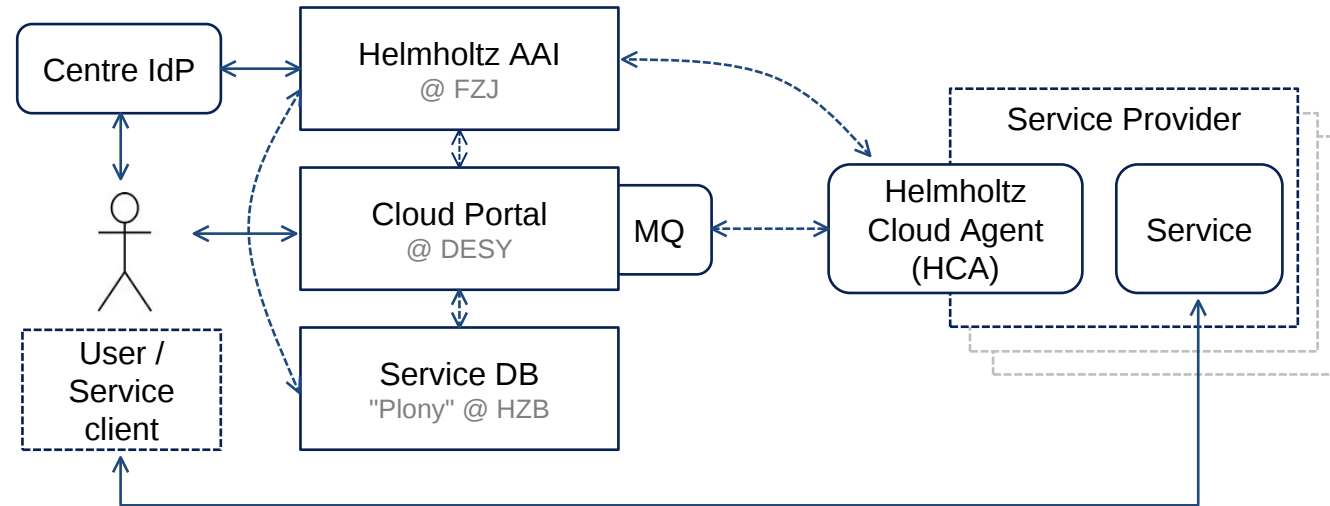
[more...](#)

- Present & Promote top success stories of Research Software Engineering in Helmholtz
- from all Helmholtz Research Communities
- approx. **90 Proposals** so far, to be presented in: <https://hifis.net/spotlights>
- ... more to come. Stay tuned!

Ib. Architecture (under development)

- hifis.net/doc/service-integration/
- hifis.net/doc/service-integration/hca/

- Modularity / Flexibility
- Different levels of integration possible
- Open



I. Cloud: Architecture

