

IoT Infrastruktur im Projekt Mitwelten

thomas.amberg@fhnw.ch

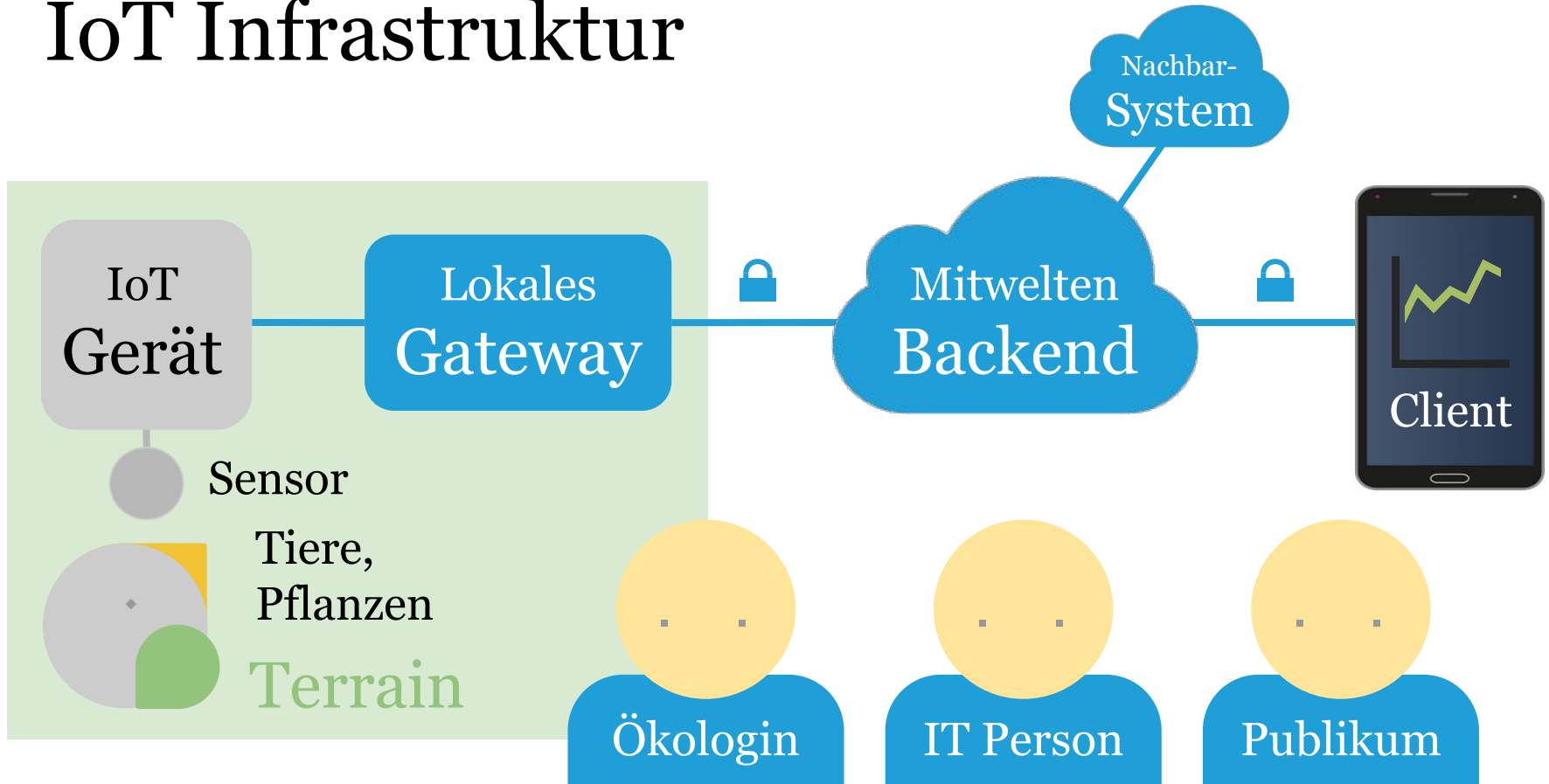
Institut für Mobile und
Verteilte Systeme

SNF Projekt Mitwelten

"Wie können mediale Designinterventionen auf Grundlage des Internets der Dinge ökologisch und kulturell zur Förderung von Biodiversität in lokalen Ökosystemen beitragen?"

"Mit Sensoren wird die lokale Lebenswelt erfasst [und] ihre Topologie in einem interaktiven, multi-medialen Atlas verdichtet. " — SNF Grant 197845

IoT Infrastruktur



Bestäuber Kameras

PoE, 4G Uplink



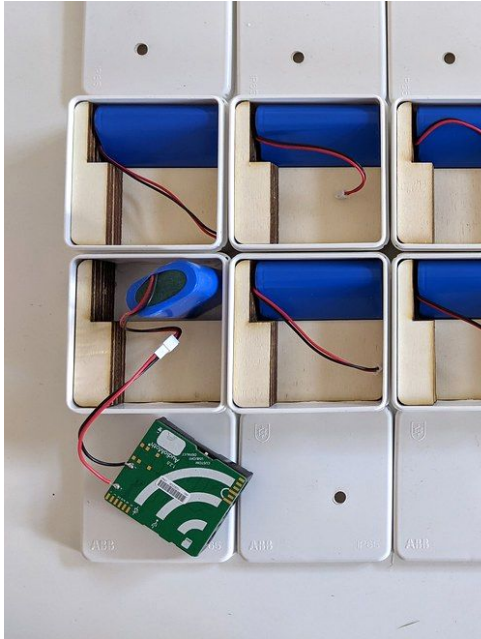
Mitwelten
Backend



Ökologin

Audio Logger

Akku, SD Card Upload



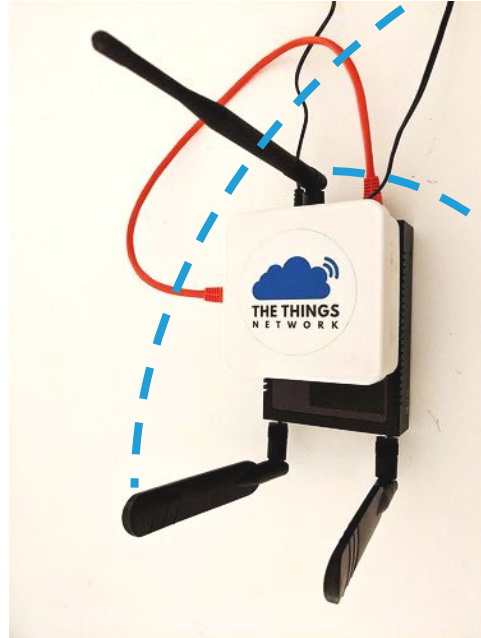
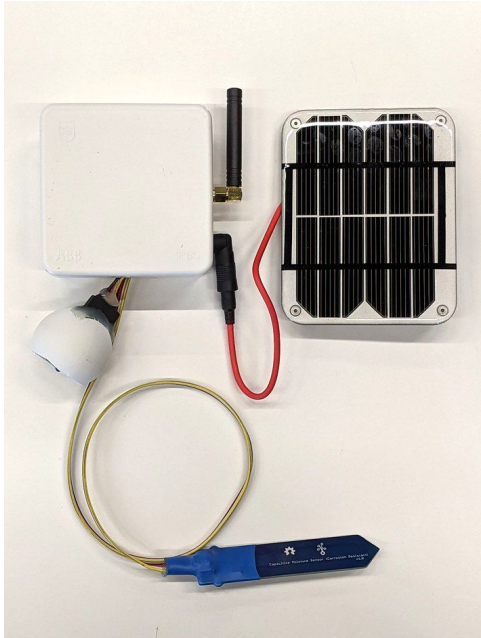
Mitwelten
Backend



Ökologin

Umwelt Sensor

Solar, LoRaWAN Uplink



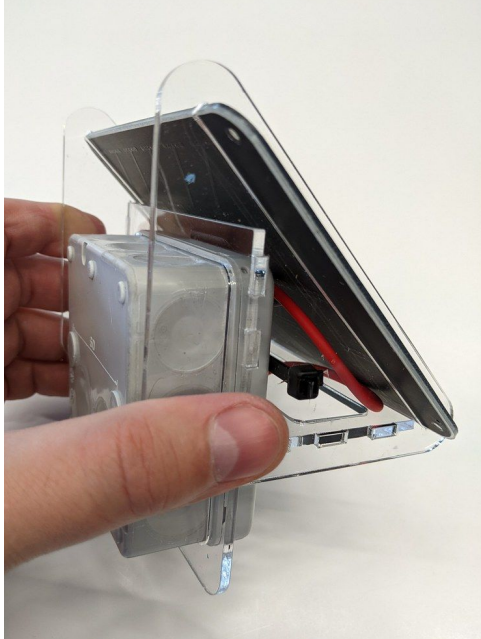
Mitwelten
Backend



Ökologin

Pax Counter

Solar, LoRaWAN Uplink



Mitwelten
Backend



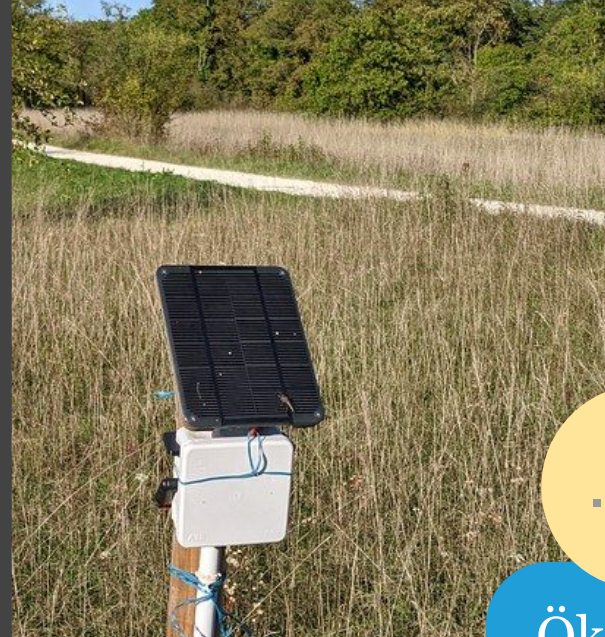
Ökologin

Deploy App

Mitwelten
Backend



Ökologin



Menu

Deployments

Nodes

Tags

Environments

Log Out

Signed in as Thoma...

Version 2.1.4

Mitwelten Deployments Manager

Add Deployment

Node*
3816-0674 (Pax Counter, Esp32)

Select a node to deploy

⚠ The selected node and period overlap with an existing deployment!

Deployment Period

DD.MM.YYYY - DD.MM.YYYY (leave a date empty for unbounded range)



Latitude (WSG48) 47.49948152826968 Longitude (WSG48) 7.60513787266683

Tags Add/remove tags for this deployment

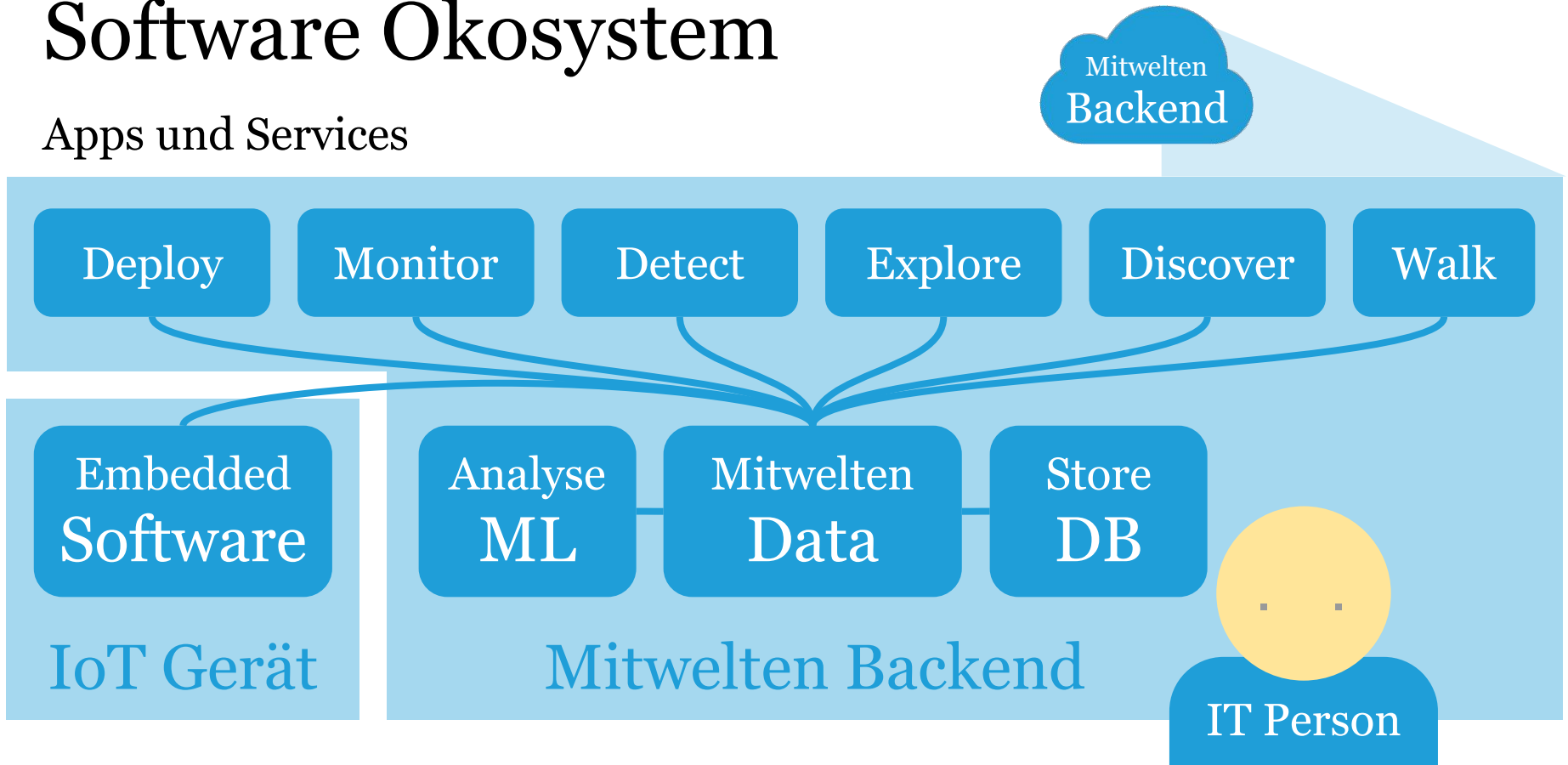
Description (Location)

Describe the deployment, ideally by specific information on the location.

Submit Cancel

Software Ökosystem

Apps und Services



Mitwelten Data API 3.0.0 OAS3

/api/v3/openapi.json

This service provides REST endpoints to exchange data from [Mitwelten](#)

[Contact the developer](#)

Servers

https://data.mitwelten.org/api/v3 - Production environment

Authorize

authentication Handle authentication

GET /login Login

GET /auth/storage Get Storage Auth

deployments Node deployments management

GET /deployments Read Deployments

PUT /deployments Upsert Deployment

POST /deployments Upsert Deployment

GET /deployment/{id} Read Deployment

IT Person

Mitwelten Discover

Data Source

Search for Deployments

- All
- Access Point
- Audio Logger
- Env Sensor
- Pax Counter
- Pollinator Cam
- Wild Cam
- Environment Data Point
- Note

Tags

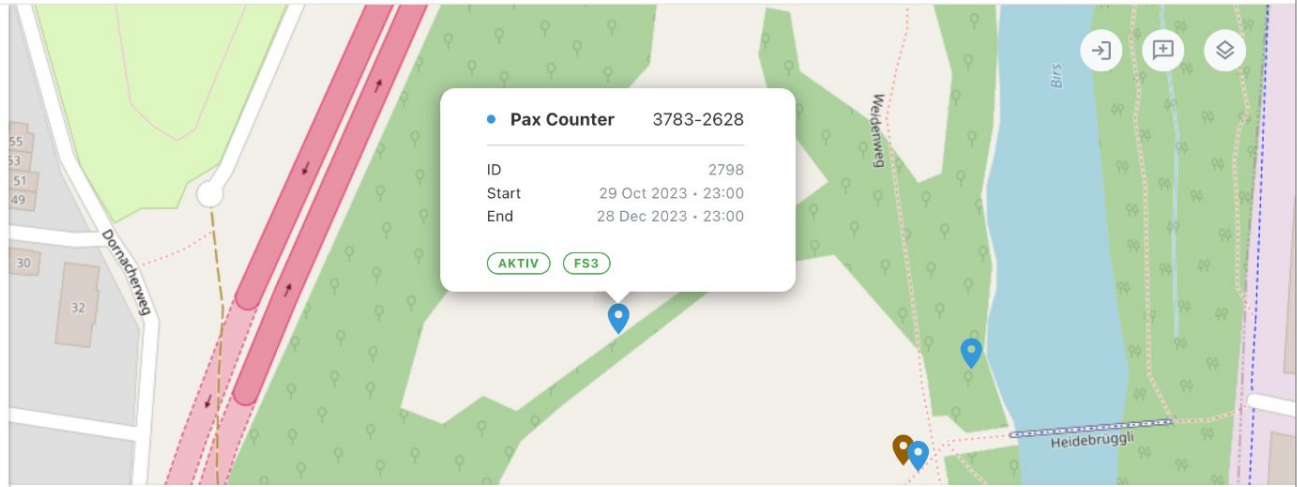
Field Study

FS1 FS2 FS3

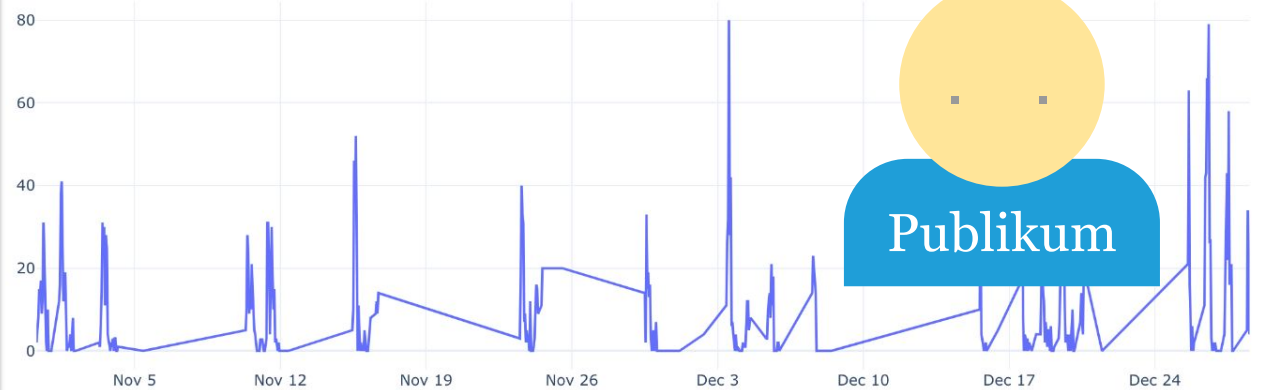
Additional Tags

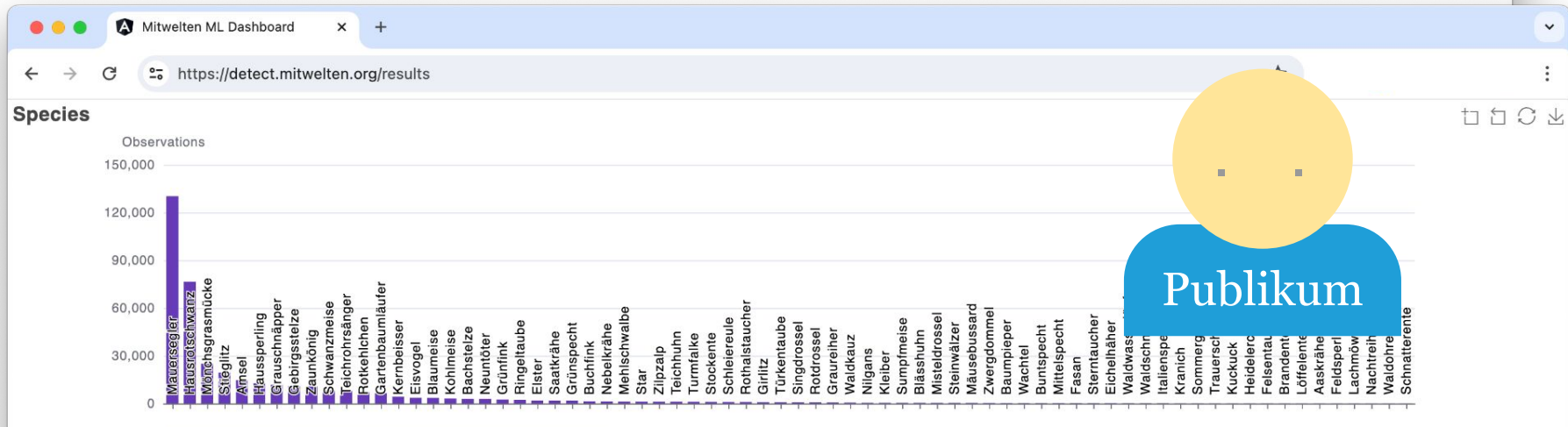
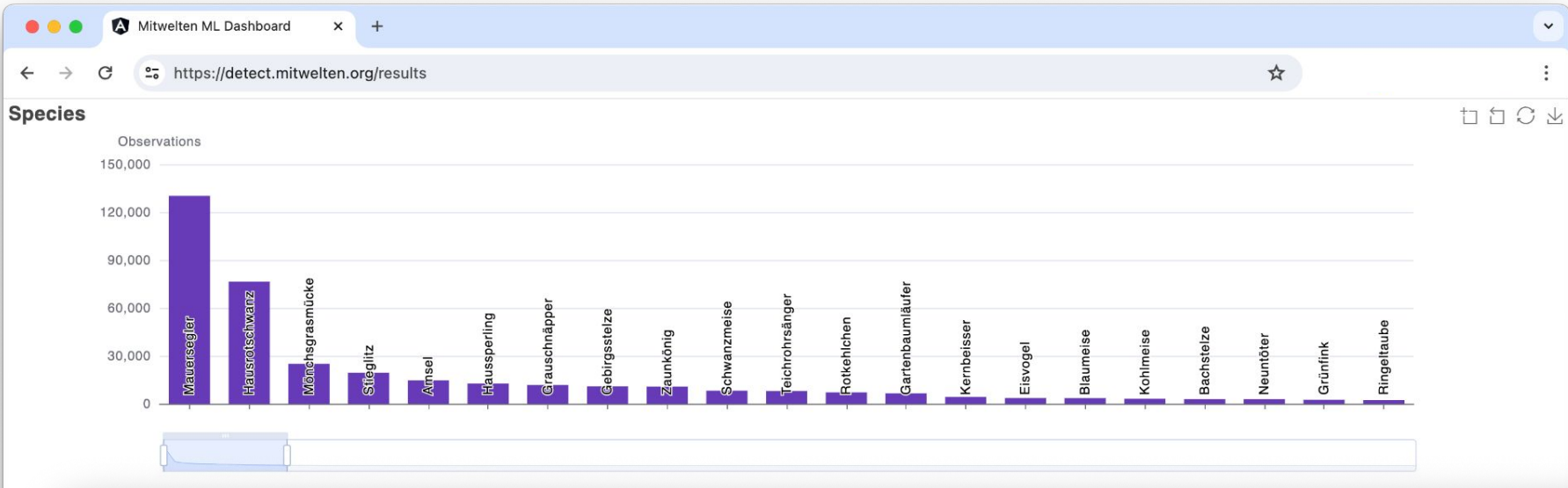
+ Clear

Settings



Pax Counter - 3783-2628

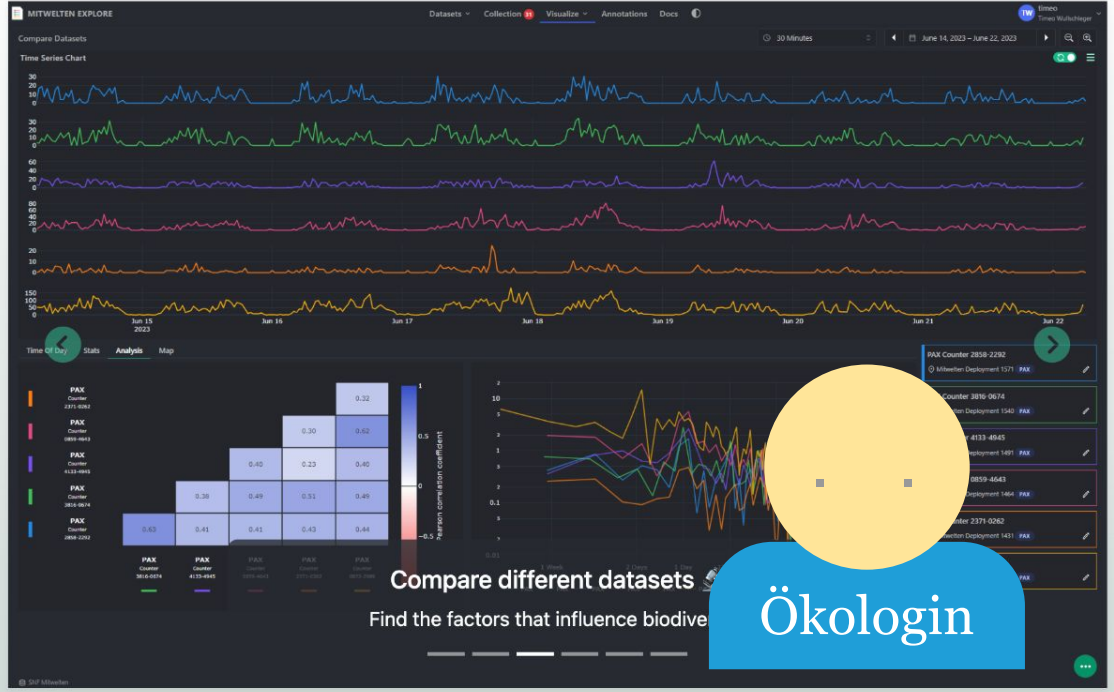


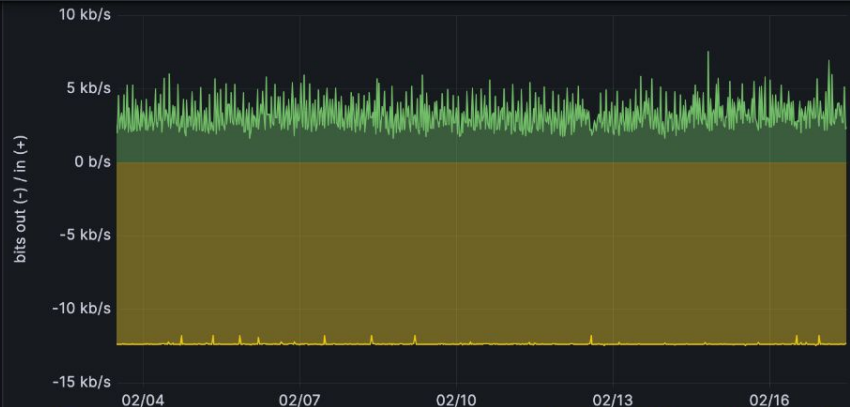


Welcome to MITWELTEN EXPLORE

Explore the Biodiversity
in and around **Basel**

[Sign in](#) or [Register](#) to Analyze Our Findings



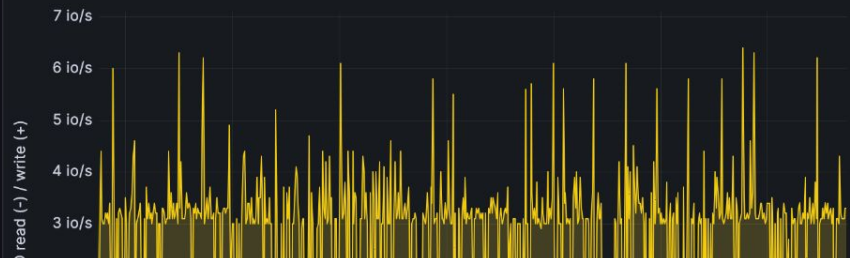


Name	Mean	Last *	Max	Min
ens192 - Receive	3.21 kb/s	2.38 kb/s	7.51 kb/s	1.64 kb/s
ens192 - Transmit	12.4 kb/s	12.3 kb/s	12.5 kb/s	11.8 kb/s

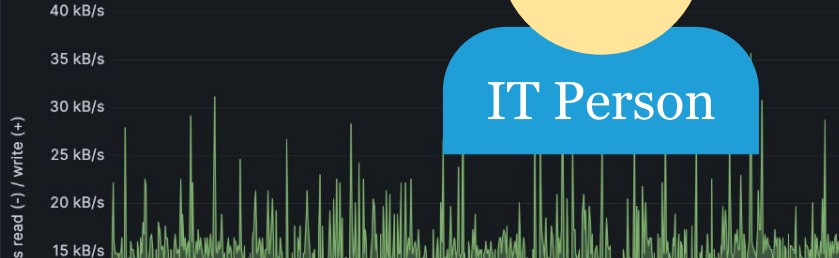


Name	Mean	Last *	Max	Min
/boot/efi	4.39 MiB	4.39 MiB	4.39 MiB	4.39 MiB
/	68.7 GiB	68.7 GiB	68.7 GiB	68.0 GiB
/hkgstore	16.5 TiB	16.5 TiB	16.4 TiB	16.4 TiB

Disk IOps

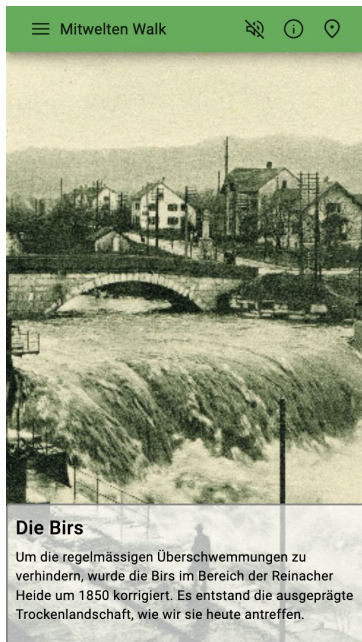


I/O Usage Read / Write



Walk App

GPS, ortsabhängige Inhalte



Mitwelten
Backend



Publikum



Danke

Cedric Spindler, Andri Wild, Timeo Wullschlegler für Entwicklung und Betrieb des Software Ökosystems.

Mitwelten Team für Anforderungen und Feedback, sowie Produktion und Deployment der IoT Geräte.

Studierende der Hochschule für Technik für Prototyping im Rahmen von Studierendenprojekten.