

# Welcome to Demo Day!

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**AMOS I01**

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# The Professorship for Open Source Software



# Industry Partners and Teaching Projects



Audi  
Vorsprung durch Technik



BOSCH

Continental



methodpark

NEWSTORE



SOLYP

SENACOR

SIEMENS

sivantos  
the hearing company

software AG



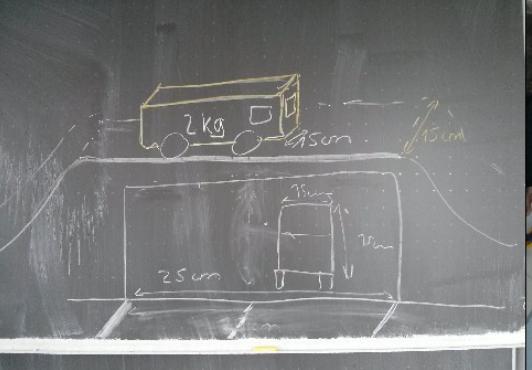
Volkswagen

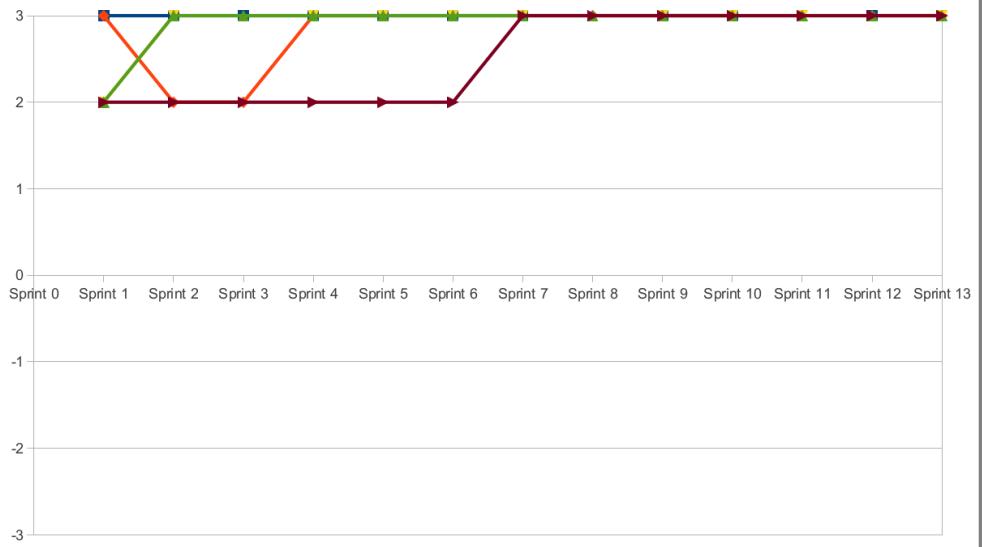
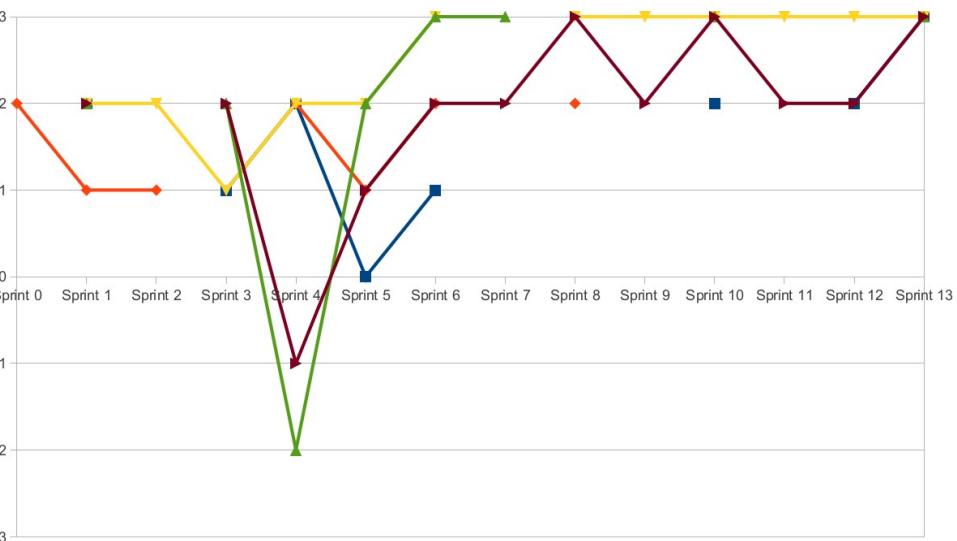
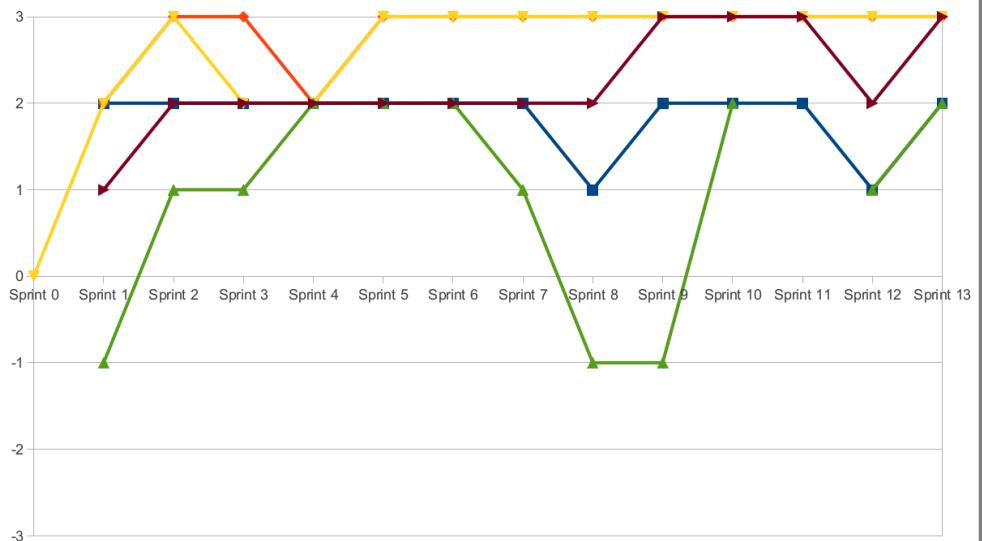
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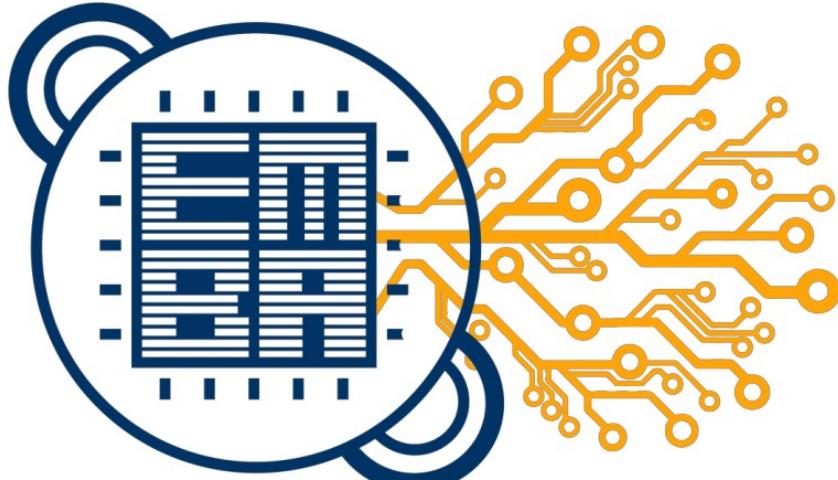
The AMOS Project  
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# The 2021 AMOS Projects

1. EMBA Service (with Siemens Energy)
2. Context Map for Corporate Data (with CPU 24x7)
3. Synthetic File System (with GRAU DATA)
4. Inner Source Project Linter (with DATEV)
5. 3D Viewer (with Büren & Partner)
6. Neural Network Enablement (with Huawei)
7. Bike Nest (with Markus Stipp, entrepreneur)
8. Carbon Footprint Visualization (with Siemens Energy)



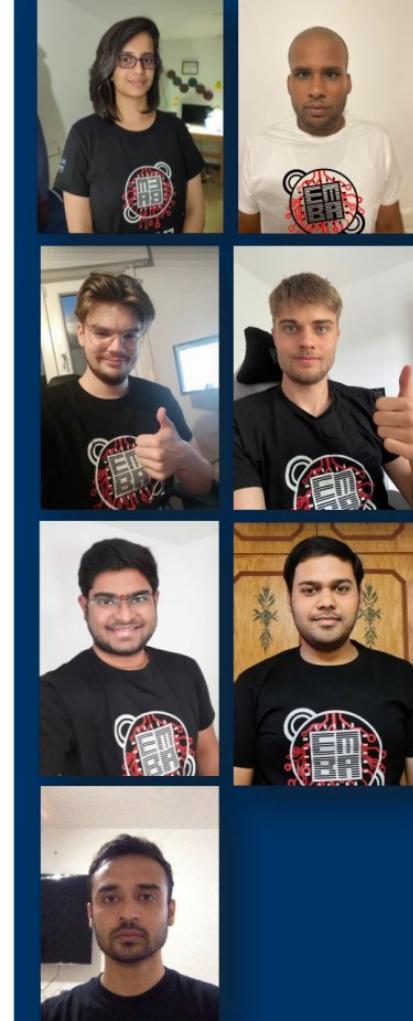




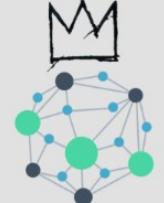
# EMBARK

A containerized service for  
analyzing embedded firmware

-  Multi-user upload
-  Analyse embedded  
firmware
-  Track emba  
processes
-  Aggregating  
vulnerabilites
-  Downloading reports

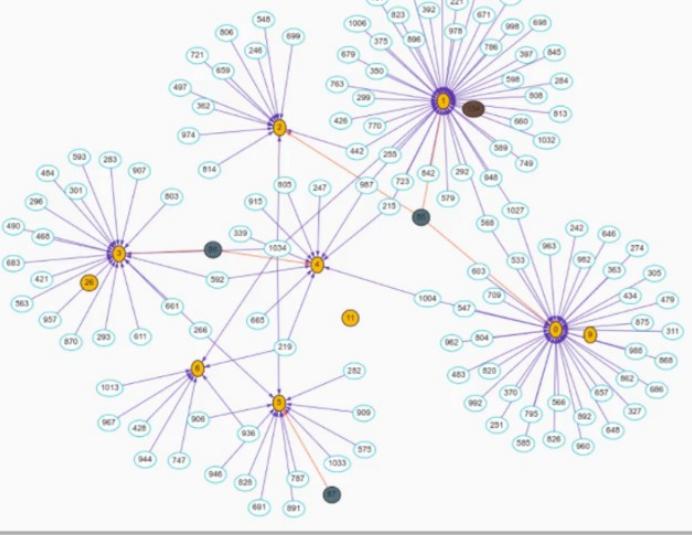


# Welcome to [KMAP]



Knowledge is King

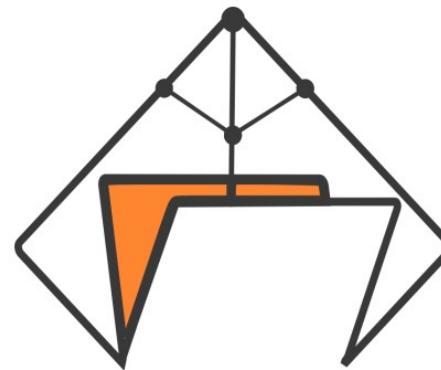
# A CONTEXT MAP PROVIDING STEP-BY-STEP EXPLORATION.



- Turning company data into **valuable insights**
  - **Codeless** querying
  - Step-by-step **exploration**
  - Improve **communication** and **transparency** across companies and along the value chain



# SYNTHETIC FILE SYSTEM



## What is a virtual file system?

- A virtual file system, is a filesystem, where all the normal filesystem calls, are overwritten and user defined. This can be used to adapt the behaviour of the system when accessing a folder, manipulating its content.



## So what do we do with that?

- Our Synthetic File System (SFS) makes use of this virtual file system, to merge the contents of different data sources (like the Metadatabus, some databases, ...) and to display them in one unified view on a filesystem level. It also allows for all the



## And why would you want that?

- Metadata can reveal patterns that are often difficult to understand through normal data collection. These patterns are the fuel for artificial intelligence. Good AI needs qualified data which are the result of good metadata management.



**Find and unlock the true value of unstructured data**



**Transform data into VALUE**



**Reduce search times**

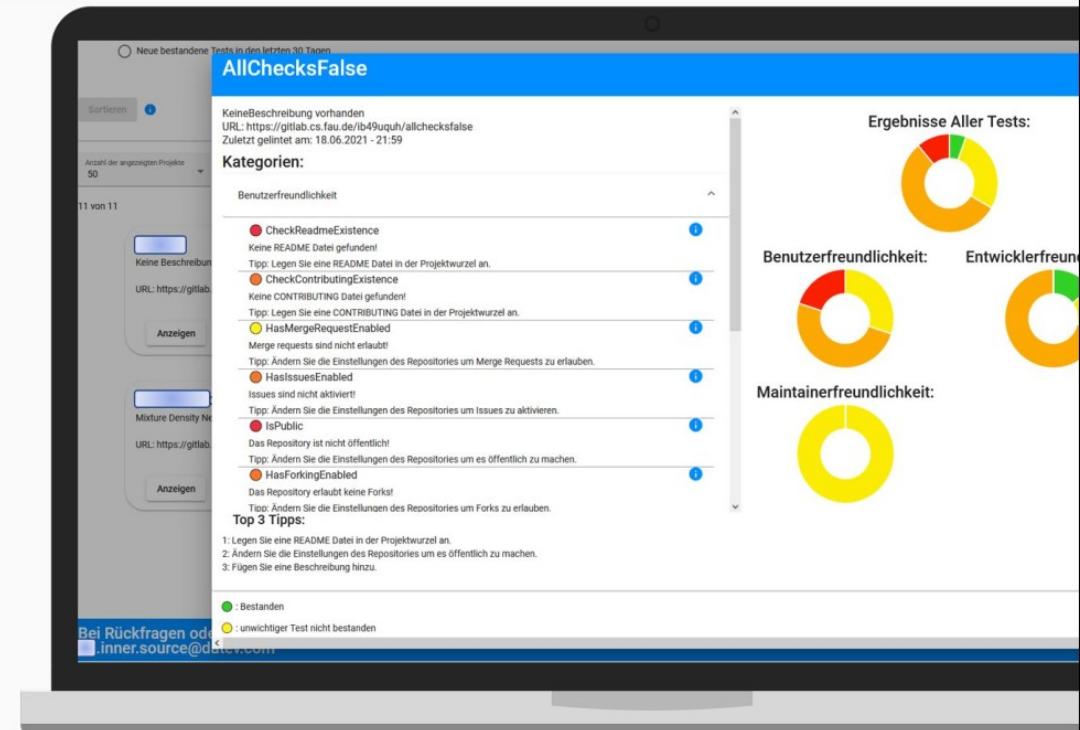


**Get a bird's - eye view about your data**

# Inner Source Linter

an AMOS project in collaboration with DATEV

We help inner-source initiatives improve their projects and raise awareness of great projects.



The screenshot shows a web-based application interface for the Inner Source Linter. At the top, there's a header with a blue background and white text. Below the header, the main content area has a light gray background. On the left, there's a sidebar with a dark header and a list of repositories. The main content area has a title "AllChecksFalse" and a section for "Kategorien". It lists several repository issues with descriptions and tips. To the right, there are three donut charts under the heading "Ergebnisse Aller Tests:" showing results for "Benutzerfreundlichkeit", "Entwicklerfreundlichkeit", and "Maintainerfreundlichkeit". At the bottom, there's a footer with contact information.

Neue bestandene Tests in den letzten 30 Tagen

## AllChecksFalse

Anzahl der angezeigten Projekte: 50  
11 von 11

KeineBeschreibung vorhanden  
URL: <https://gitlab.cs.fau.de/b49uquh/allchecksfalse>  
Zuletzt gelintet am: 18.06.2021 - 21:59

Kategorien:

Benutzerfreundlichkeit

- CheckReadmeExistence  
Keine README Datei gefunden!  
Tipp: Legen Sie eine README Datei in der Projektwurzel an.
- CheckContributingExistence  
Keine CONTRIBUTING Datei gefunden!  
Tipp: Legen Sie eine CONTRIBUTING Datei in der Projektwurzel an.
- HasMergeRequestEnabled  
Merge requests sind nicht erlaubt.  
Tipp: Ändern Sie die Einstellungen des Repositories um Merge Requests zu erlauben.
- HasIssuesEnabled  
Issues sind nicht aktiviert!  
Tipp: Ändern Sie die Einstellungen des Repositories um Issues zu aktivieren.
- IsPublic  
Das Repository ist nicht öffentlich!  
Tipp: Ändern Sie die Einstellungen des Repositories um es öffentlich zu machen.
- HasForkingEnabled  
Das Repository erlaubt keine Forks!  
Tipp: Ändern Sie die Einstellungen des Repositories um Forks zu erlauben.

Top 3 Tipps:

- Legen Sie eine README Datei in der Projektwurzel an.
- Ändern Sie die Einstellungen des Repositories um es öffentlich zu machen.
- Fügen Sie eine Beschreibung hinzu.

Bei Rückfragen oder Anfragen:  
[inner.source@datev.com](mailto:inner.source@datev.com)

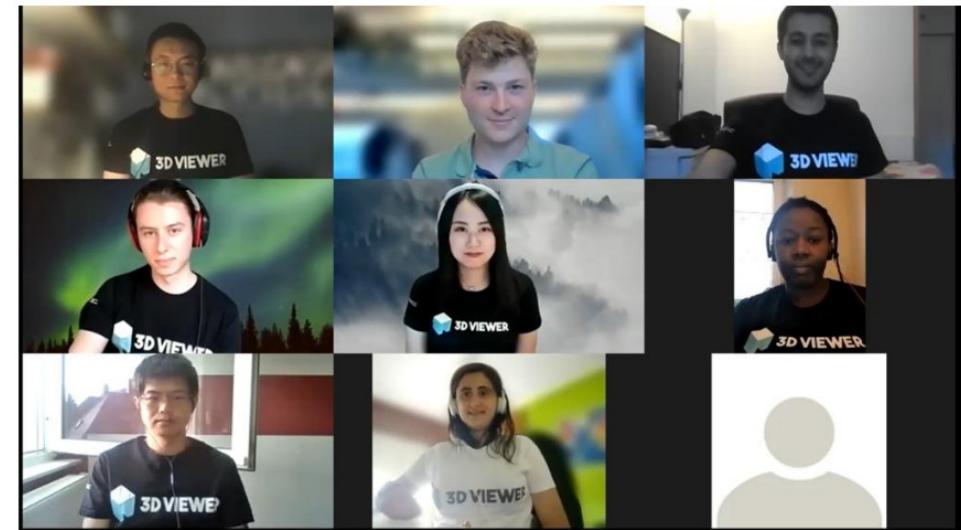
Ergebnisse Aller Tests:

Benutzerfreundlichkeit: Entwicklerfreundlichkeit: Maintainerfreundlichkeit:



# 3D VIEWER

Büren & Partner has a project from the computer science department, which is to display its **50 years** of computer science department exhibition on the web.



# NEURAL NETWORK ENABLEMENT

NETELLA x HUAWEI x FAU

## Objective

- Implementation of a frontend and backend for coloring images and videos using a pre-trained neural network.
- Implementation on an ATLAS 200DK board provided by Huawei.

## Approach

- Development of a web service to manage the files and all user functions as well as to present the results.
- Development of a pipeline for coloring the images and videos.

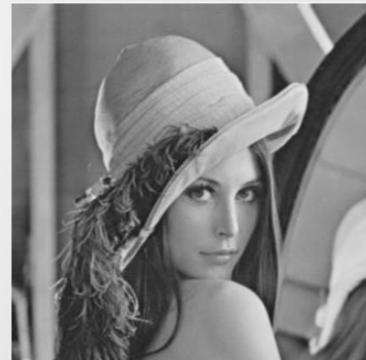
## Result

- Implementation of all functions for coloring the images and videos as well as showing the results side by side.
- Adding a function to preserve the sound for videos.

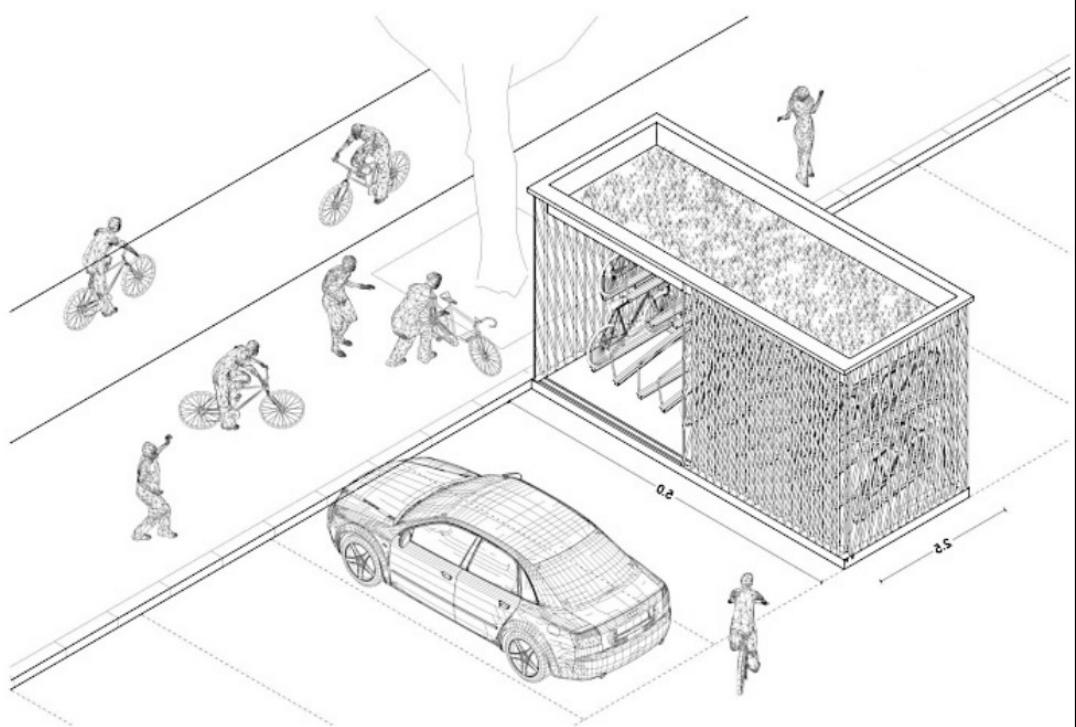
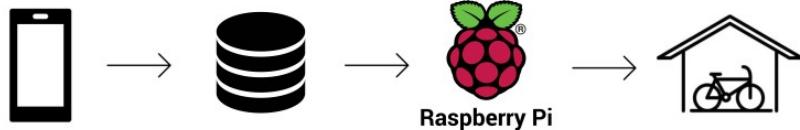


**NETELLA**

Neural Network Enablement



# BikeNest is a mobile bike storage service, that can be accessed through an application developed by the AMOS Team





# CARBON FOOTPRINT VISUALIZATION

A carbon footprint is the total amount of greenhouse gases that are generated by the actions of human beings such as deforestation or consumption of fossil fuels. For instance, burning fossil fuels while driving our cars and the use of other kinds of energies in our daily lives adversely affect our ecological life which induces climate change and warming of the Earth.

Its overwhelming adverse effects on our world has become even more challenging in the past couple of years. Therefore, the purpose of this project is to furnish support to our customers by providing a comprehensive architectural overview of the Carbon Footprint Visualization tool for them to visualize their solutions themselves to help them to speed up their business while meeting global challenges such as urbanization, demographic change, climate change, and resource scarcity.



## Vision

- Calculate the carbon footprint and help our customers to understand the impacts and risks associated with it and offer alternatives.

## Mission

- Continually reduce the environmental impact of our activities in order to protect the environment for future generations.

# AMOS Demo Day Schedule at <https://oss.cs.fau.de>

DEMO DAY SCHEDULE				
Registration	<a href="https://forms.gle/DuZcSX6CAKJaVHKF9">https://forms.gle/DuZcSX6CAKJaVHKF9</a>			
Time	Duration	Responsible	Title	Room
10:15	10 min	Riehle	Introduction	Main room
10:25	10 min	Teams	One slide summ	Main room
10:35	20 min	Teams	Demo	Demo rooms
10:55	20 min	Teams	Demo	Demo rooms
11:15	20 min	Teams	Demo	Demo rooms
11:35	20 min	Teams	Demo	Demo rooms
11:55	20 min	Teams	Demo	Demo rooms
12:15	5 min	Riehle	Conclusions	Main room
Demo room 1	Siemens Energy	EMBA Service	<a href="https://fau.zoom.us/j/64700134419?pwd=MmpQbFYzY3pORjHSFhC">https://fau.zoom.us/j/64700134419?pwd=MmpQbFYzY3pORjHSFhC</a>	
Demo room 2	CPU 24x7	Context Map	<a href="https://fau.zoom.us/j/69582957638">https://fau.zoom.us/j/69582957638</a>	
Demo room 3	GRAU DATA	Synthetic File System	<a href="https://fau.zoom.us/j/61254825119">https://fau.zoom.us/j/61254825119</a>	
Demo room 4	DATEV	Inner Source Project Linter	<a href="https://fau.zoom.us/j/69975191992">https://fau.zoom.us/j/69975191992</a>	
Demo room 5	Büren & Partner	3D Viewer	<a href="https://fau.zoom.us/j/66869909859?pwd=VlkvRGQrM2dOY21sdGtQ">https://fau.zoom.us/j/66869909859?pwd=VlkvRGQrM2dOY21sdGtQ</a>	
Demo room 6	Huawei	Neural Network Enablement	<a href="https://fau.zoom.us/j/7153384413">https://fau.zoom.us/j/7153384413</a>	
Demo room 7	Startup	Bike Nest	<a href="https://fau.zoom.us/j/7658200455?pwd=ZE4xak9xWkZ4eTFTGTGtZV">https://fau.zoom.us/j/7658200455?pwd=ZE4xak9xWkZ4eTFTGTGtZV</a>	
Demo room 8	Siemens Energy	Carbon Footprint Visualization	<a href="https://fau.zoom.us/j/64835513630">https://fau.zoom.us/j/64835513630</a>	



# Thank you! Questions?

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[dirk@riehle.org](mailto:dirk@riehle.org) – <https://dirkriehle.com> – [@dirkriehle](https://twitter.com/@dirkriehle)