AMOS P4 - Planning Document Project Data

| Project Name                      | Building Information Extractor                                                          |
|-----------------------------------|-----------------------------------------------------------------------------------------|
|                                   |                                                                                         |
| Online team meeting               | https://tu-berlin.zoom.us/j/67365570181?pwd=RXpnY2xleEYvU3JpR3JzSDZFMk01dz09            |
| Online Team Meeting (Backup)      | https://discord.gg/X4QMDpgtUR                                                           |
| Production system (if any)        | http://prod.amos.b-ci.de/                                                               |
| Test system (if any)              | http://test.amos.b-ci.de/                                                               |
| GitHub repository                 | GitHub - amosproj/amos2024ss04-building-information-enhancer                            |
| GitHub feature board              | https://github.com/orgs/amosproj/projects/42                                            |
| GitHub impediments backlog        | https://github.com/orgs/amosproj/projects/50                                            |
| Team T-shirt (white)              | https://www.shirtinator.de/s/Qc61I_GoQwObnqsmHY2MpA                                     |
| Team T-shirt (black)              | https://www.shirtinator.de/s/AHGxY1zzT2m-AUhx2lc7Lw                                     |
| Team T-shirt (black) (women)      | https://www.shirtinator.de/s/sjwwt0GtTzGzfjSxn424ig                                     |
| Additional materials              |                                                                                         |
| Google Drive (notes, files, etc.) | https://drive.google.com/drive/folders/1DAyzaqwj5ID_YVzNBUgNE0JOCAuorzO_?usp=drive_link |
| Team maling list                  | oss-amos-proj4@lists.fau.de                                                             |
| Quick links                       |                                                                                         |
| Happiness Index Tool              | Happiness Index Tool Link (Project specific)                                            |
| Capabilities Timeline             | Capabilities Timeline (by Week)                                                         |
| Capabilities Timeline Explained   | Capabilities Timeline Explained                                                         |
| Main AMOS Document                | AMOS #22 - Organisation [Public]                                                        |

AMOS P4 - Planning Document Project Team

| Last Name   | First Name     | GitHub User Name | Email Address                         |
|-------------|----------------|------------------|---------------------------------------|
| Balitzki    | Emil           | Corgam           | emil.balitzki@gmail.com               |
| Bandel      | Nicolas        | nicolasbandel    | nicolas.bandel@fau.de                 |
| Fischer     | Erik           | battlemech       | erik.fischer@campus.tu-berlin.de      |
| Holtmeier   | Leon           | Superschnizel    | I.holtmeier@campus.tu-berlin.de       |
| Nandico     | Lucas          | Lucas-Nan        | lucas.nandico@fau.de                  |
| Pfeil       | Oliver         | op-hub           | oli.pfeil@fau.de                      |
| Pöhl        | Celine         | CelineMP         | celine.poehl@fau.de                   |
| Yakovenko   | Tetiana        | dancingsushii    | tetiana.yakovenko@campus.tu-berlin.de |
| Khan        | Muhammad Ahsan | Ahsankkhan       | ahsan.m.khan@fau.de                   |
| Dropped Out |                |                  |                                       |
| Sivaci      | Bartu          | -                | -                                     |
|             |                |                  |                                       |
|             |                |                  |                                       |
|             |                |                  |                                       |
|             |                |                  |                                       |
|             |                |                  |                                       |

AMOS P4 - Planning Document

Role Assignments

| #  | Meeting Day | Product Owners                                       | Software Developer                                  | Release Manager | Scrum Master | Comment       |
|----|-------------|------------------------------------------------------|-----------------------------------------------------|-----------------|--------------|---------------|
| 1  | 2024-04-17  | Pfeil, Oliver & Yakovenko, Tetiana                   | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 2  | 2024-04-24  | Pfeil, Oliver & Yakovenko, Tetiana                   | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 3  | 2024-05-01  | Pfeil, Oliver & Yakovenko, Tetiana                   | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 4  | 2024-05-08  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 5  | 2024-05-15  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 6  | 2024-05-22  | Pfeil, Oliver [Orga] & Yakovenko,<br>Tetiana [Notes] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 7  | 2024-05-29  | Pfeil, Oliver [Orga] & Yakovenko,<br>Tetiana [Notes] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer | Mid-term due  |
| 8  | 2024-06-05  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 9  | 2024-06-12  | Pfeil, Oliver [Orga] & Yakovenko,<br>Tetiana [Notes] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 10 | 2024-06-19  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 11 | 2024-06-26  | Pfeil, Oliver [Orga] & Yakovenko,<br>Tetiana [Notes] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 12 | 2024-07-03  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 13 | 2024-07-10  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer |               |
| 14 | 2024-07-17  | Pfeil, Oliver [Orga] & Yakovenko,<br>Tetiana [Notes] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer | Demo day!     |
| 15 | 2024-07-24  | Pfeil, Oliver [Notes] & Yakovenko,<br>Tetiana [Orga] | Emil, Nicolas, Leon, Muhammad Ahsan, Lucas & Celine | Emil Balitzki   | Erik Fischer | Retrospective |

AMOS P4 - Planning Document Team Contract

|                         | - Collect relevant experiences!                                                                                                          |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul><li>Meet core requirements of the industry partner!</li><li>Produce something viable und usable we can be proud of!</li></ul>        |
| Goals                   | - Have fun!                                                                                                                              |
|                         |                                                                                                                                          |
|                         | - Be on time.                                                                                                                            |
|                         | <ul><li>Notify early if it's not possible to join.</li><li>Camera on and feedback will be given "loud" (no quiet "lecture").</li></ul>   |
|                         | - All questions are okay (there are no stupid questions).                                                                                |
|                         | - Communicate clearly, try to avoid ambiguities.                                                                                         |
|                         | - Don't be rude.                                                                                                                         |
| Meeting norms           | - Weekly team meetings are mandatory for each team member.                                                                               |
|                         | - Stick to your (your co-coder) task, do not interfere with others tasks.                                                                |
|                         | - Tell as early as possible when encountering problems.                                                                                  |
|                         | - No late night work expected, focus on consistency.                                                                                     |
|                         | - Asking for help is fine.                                                                                                               |
| M/a włażna w na a wona  | - Code should be readable and clear.                                                                                                     |
| Working norms           | - Code style should be uniform.                                                                                                          |
|                         | - Roles in the Team Structure should be fixed and only change if really necessary (not randomly).                                        |
|                         | - All team meetings should follow agreed meeting structure and timing.                                                                   |
| Coordination norms      | - Task Responsibilities should be assigned clearly for every week with feedback when it is done.                                         |
|                         | - Communication attempts should be answered within 2 days (eg. "Let's schedule a meeting on x").                                         |
|                         | - General, weekly comunication via Discord, Critical Communication via Phone (WhatsApp, SMS).                                            |
|                         | - First name basis is default.                                                                                                           |
| Communication norms     | - When ill, notify as early as possible, other team members should replace missing's person roles for a specific meeting.                |
|                         | - General approach with problems is to talk directly, then in more general team meetings. If they are still not solvable, they will be   |
|                         | escalated to the professor.                                                                                                              |
|                         | - Side-conversations are appropriate if they are not necessary for others. General information should be communicated via Discord and/or |
|                         | in the general team meetings.                                                                                                            |
| Consideration norms     | - Disagreements which are not solvable by discussions will be decided by majority vote.                                                  |
|                         | - Pull requests require review from another person. Keep the main branch clean.                                                          |
|                         | - Tracking individual and team progress via boards and weekly sprints,                                                                   |
| Cont. improvement norms | - Feedback should be considered necessary, relevant and as a way to improve for everyone - not as an insult.                             |
|                         | Team party at the and of the project                                                                                                     |
| Rewards                 | <ul><li>- Team party at the end of the project.</li><li>- Small celebrations during online meetings.</li></ul>                           |
| INGWAINS                | - Omaii Gelebrations duffing offiline frieetings.                                                                                        |

AMOS P4 - Planning Document Team Contract

| Sanctions          | - No in-team sanctions, but persistent problems may be escalated to the professor if not solvable. |
|--------------------|----------------------------------------------------------------------------------------------------|
| Signatures         |                                                                                                    |
| Scrum Master       | Erik Fischer                                                                                       |
| Product owner      | Tetiana Yakovenko                                                                                  |
| Product owner      | Oliver Pfeil                                                                                       |
| Software developer | Lucas Nandico                                                                                      |
| Software developer | Emil Balitzki                                                                                      |
| Software developer | Muhammad Ahsan Khan                                                                                |
| Software developer | Nicolas Bandel                                                                                     |
| Software developer | Celine Pöhl                                                                                        |
| Software developer | Leon Holtmeier                                                                                     |

AMOS P4 - Planning Document Product Goal

| owners or professionals to access information about a specific address (or region). This information can be used for a variety of applications, from sustainability certifications for buildings over calculating the solar power potential up to aiding in district planning. The BCI building information enhancer offers significant benefits for various stakeholders in the property | Product Vision                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Project Mission                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                           | The BCI Building Information Enhancer is a platform for personal building owners or professionals to access information about a specific address (or region). This information can be used for a variety of applications, from sustainability certifications for buildings over calculating the solar power potential up to aiding in district planning. The BCI building information enhancer offers significant benefits for various stakeholders in the property market. | The team agreed to create an MVP for the BCI Building Information Enhancer, the core functionality will be displaying data from a fixed number of sources, including satellite images, charging stations and data needed for sustainability certification. Our goal is to build a practical tool that can grow with our users' |

AMOS P4 - Planning Document Product Glossary

| Term       | Definition                                                                                                                                                                                                                |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Lake  | A centralized repository/database that allows you to store and query all of your structured and unstructured data at any scale. Therefore, the data lake supports a common interface for accessing the heterogenous data. |
| COPERNICUS | Earth Observation component of the European Union's space programme, looking at our planet and its environment for the benefit of Europe's citizens.                                                                      |
| ESPON      | An EU funded programme that delivers quality expertise to public authorities responsible for designing territorial policies.                                                                                              |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |
|            |                                                                                                                                                                                                                           |

AMOS P4 - Planning Document Sprint Goals

| Sprint # | Sprint goal                                                                               |
|----------|-------------------------------------------------------------------------------------------|
| 1        | Getting familiar with the requirements                                                    |
| 2        | Setting up the infrastructure and first steps                                             |
| 3        | Agreed upon backend infrastructure and ingest one dataset for one UI view                 |
| 4        | Finalising the PoC defined in the previous sprint                                         |
| 5        | Getting closer to specific cases: ecological calculator and solar potential of a building |
| 6        | Fixing bugs and polishing before mid-project release                                      |
| 7        | Getting feasible backend and develop further API endpoints                                |
| 8        | Redesign data lake                                                                        |
| 9        | Improve database performance                                                              |
| 10       | Mitigation of performace issues and LOD2 data                                             |
| 11       | Implement functional use-cases and polish frontend                                        |
| 12       | Four datasets are ingested                                                                |
| 13       | Last dataset and final outro                                                              |
| 14       |                                                                                           |
| 15       |                                                                                           |
|          |                                                                                           |
|          |                                                                                           |
|          |                                                                                           |

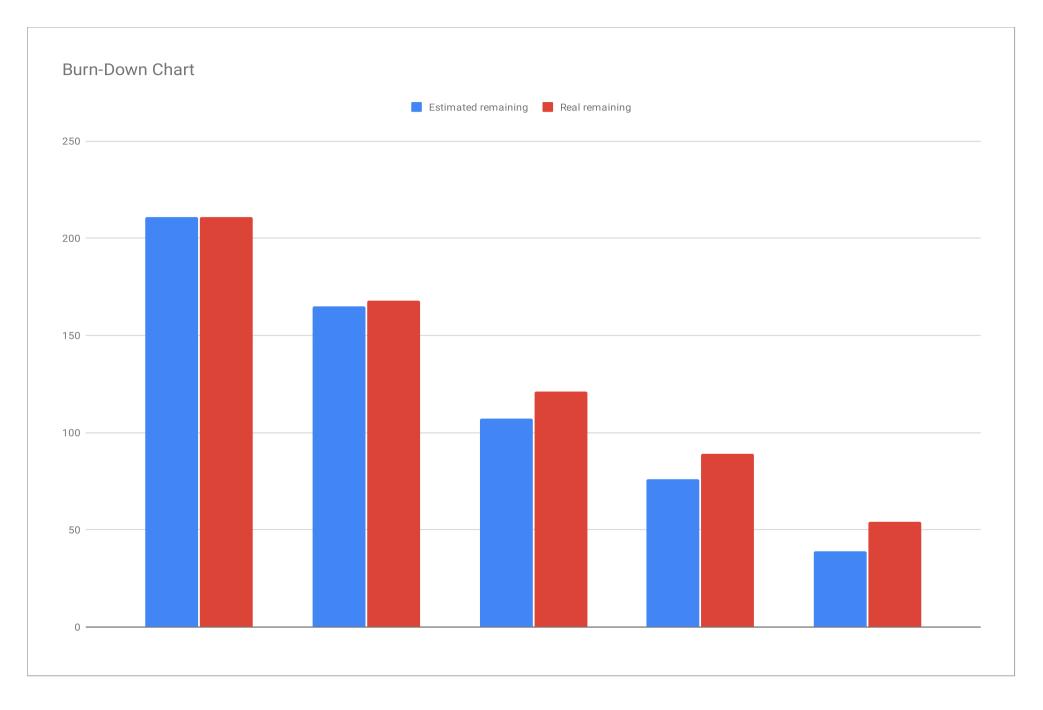
| Sprint  | Goal                                                                                      | Feature Name                              | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |
|---------|-------------------------------------------------------------------------------------------|-------------------------------------------|-----------|-------------------|-----------|-------------------|
| Release |                                                                                           |                                           |           |                   |           |                   |
|         |                                                                                           |                                           |           |                   |           |                   |
| Total   |                                                                                           |                                           | 211       | 211               | 189       | 189               |
| Sprints |                                                                                           |                                           |           |                   |           |                   |
| 1       | Getting familiar with the requirements                                                    |                                           | 0         | 211               | 0         | 211               |
| 2       | Setting up the infrastructure and first steps                                             |                                           | 46        |                   | 43        | 211               |
| 3       | Agree upon backend infrastructure and ingest one dataset for one UI view                  |                                           | 58        |                   | 47        | 168               |
| 4       | Finalising the PoC defined in the previous sprint                                         |                                           | 31        |                   | 32        |                   |
| 5       | Getting closer to specific cases: ecological calculator and solar potential of a building |                                           | 37        |                   | 35        |                   |
| 6       | Fixing bugs and polishing before mid-project release                                      |                                           | 39        |                   | 32        |                   |
| 7       | Getting feasible backend and develop further API endpoints                                |                                           | - 00      | 00                |           | 0.                |
| 8       | Redesign data lake                                                                        |                                           |           |                   |           |                   |
| 9       | Troublight data land                                                                      |                                           |           |                   |           |                   |
| 10      |                                                                                           |                                           |           |                   |           |                   |
| 11      |                                                                                           |                                           |           |                   |           |                   |
| 12      |                                                                                           |                                           |           |                   |           |                   |
| 13      |                                                                                           |                                           |           |                   |           |                   |
| Feature | S S                                                                                       |                                           |           |                   |           |                   |
| 1       | Getting familiar with the requirements                                                    | No features/commits                       | 0         |                   | 0         |                   |
| 2       | Setting up the infrastructure and first steps                                             | Request Deutsche Bahn dataset             | 1         |                   | 1         |                   |
|         | g up are amazer and a second                                                              | Ingest Data [1]                           | 3         |                   | 2         |                   |
|         |                                                                                           | Ingest Data [2]                           | 3         |                   | 3         |                   |
|         |                                                                                           | Ingest data [3]                           | 3         |                   | 3         |                   |
|         |                                                                                           | Documentation - BE technology             | 1         |                   | 1         |                   |
|         |                                                                                           | Research on how should data pipeline work | 1         |                   | 1         |                   |
|         |                                                                                           | Create FE Concept                         | 3         |                   | 5         |                   |
|         |                                                                                           | Documentation - CI/CD technology          | 1         |                   | 1         |                   |
|         |                                                                                           | Get Backend container running             | 2         |                   | 2         |                   |
|         |                                                                                           | Get FE container running                  | 2         |                   | 2         |                   |
|         |                                                                                           | Initialize Github Wiki                    | 1         |                   | 1         |                   |
|         |                                                                                           | Setup deployment pipeline/branches        | 3         |                   | 3         |                   |
|         |                                                                                           | Research on FE RestAPI requirements       | 3         |                   | 2         |                   |
|         |                                                                                           | Documentation - FE technology             | 1         |                   | 1         |                   |
|         |                                                                                           | Research Github Actions constraints       | 2         |                   | 2         |                   |
|         |                                                                                           | Setup basic React + NodeJS frontend       | 2         |                   | 1         |                   |
|         |                                                                                           | Automate workflow with github action      | 3         |                   | 3         |                   |
|         |                                                                                           | Technology Research (Map APIs)            | 3         |                   | 3         |                   |

| Sprint | Goal                                                                                      | Feature Name                                                 | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |
|--------|-------------------------------------------------------------------------------------------|--------------------------------------------------------------|-----------|-------------------|-----------|-------------------|
|        |                                                                                           | API project docker file                                      | 3         |                   | 3         |                   |
|        |                                                                                           | Create boilerplate API project                               | 5         |                   | 3         |                   |
| 3      | Agree upon backend infrastructure and ingest one dataset for one UI view                  | Create multimap view component                               | 3         |                   | 3         |                   |
|        |                                                                                           | Create basic layout for main UI interface                    | 2         |                   | 1         |                   |
|        |                                                                                           | Create basic data view component                             | 3         |                   | 3         |                   |
|        |                                                                                           | Tag sprint candidate                                         | 2         |                   | 2         |                   |
|        |                                                                                           | Simplify .env file                                           | 1         |                   | 0         |                   |
|        |                                                                                           | Create video recording and documentation about build process | 2         |                   | 1         |                   |
|        |                                                                                           | Automate workflow with GitHub Actions                        | 3         |                   | 3         |                   |
|        |                                                                                           | Design Data Pipeline CLI Application                         | 3         |                   | 3         |                   |
|        |                                                                                           | Develop YAML Parser                                          | 5         |                   | 2         |                   |
|        |                                                                                           | Develop CSV parser                                           | 5         |                   | 5         |                   |
|        |                                                                                           | Dockefile for data pipeline                                  | 3         |                   | 3         |                   |
|        |                                                                                           | Configure database connection                                | 3         |                   | 3         |                   |
|        |                                                                                           | Dockerfile for database                                      | 3         |                   | 5         |                   |
|        |                                                                                           | Create generic pop-up container                              | 1         |                   | 1         |                   |
|        |                                                                                           | Technology Research (Map APIs)                               | 3         |                   | 1         |                   |
|        |                                                                                           | Create pop-up with favourites                                | 2         |                   | 2         |                   |
|        |                                                                                           | Create map component from OSM                                | 3         |                   | 3         |                   |
|        |                                                                                           | Create 3d view component                                     | 5         |                   |           |                   |
|        |                                                                                           | Row mapping/filtering                                        | 3         |                   | 3         |                   |
|        |                                                                                           | Design Data Pipeline CLI Application                         | 3         |                   | 3         |                   |
| 4      | Finalising the PoC defined in the previous sprint                                         | Row mapping/filtering                                        | 3         |                   | 3         |                   |
|        |                                                                                           | Create 3d view component                                     | 5         |                   |           |                   |
|        |                                                                                           | Implement search by coordinate                               | 3         |                   | 3         |                   |
|        |                                                                                           | FE filtering changes data entries                            | 1         |                   | 1         |                   |
|        |                                                                                           | Compose and finish the UI of the FE                          | 3         |                   | 5         |                   |
|        |                                                                                           | Fix pinning of the tabs going crazy after deleting some tabs | 1         |                   | 1         |                   |
|        |                                                                                           | Decide on API endpoints - to have one hour meeting           | 5         |                   | 5         |                   |
|        |                                                                                           | Add discard_if_empty attribute to yaml.                      | 2         |                   | 2         |                   |
|        |                                                                                           | Crash on special character                                   | 1         |                   | 1         |                   |
|        |                                                                                           | Allow building of BE projects with command line              | 2         |                   | 3         |                   |
|        |                                                                                           | Create endpoint to request datapoints for am area            | 5         |                   | 8         |                   |
| 5      | Getting closer to specific cases: ecological calculator and solar potential of a building | Research and protoypr on Geospatial Database                 | 5         |                   | 5         |                   |
|        |                                                                                           | Implement shapefile data importer for database integration   | 5         |                   | 5         |                   |
|        |                                                                                           | Implementation of a unified search interface                 | 2         |                   | 3         |                   |

| Sprint | Goal                                                 | Feature Name                                                     | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |
|--------|------------------------------------------------------|------------------------------------------------------------------|-----------|-------------------|-----------|-------------------|
|        |                                                      | Irrelevant search results for query "1" in DataView              | 2         |                   | 1         |                   |
|        |                                                      | Make padding displaying correctly                                | 1         |                   | 1         |                   |
|        |                                                      | Reset input fields when switching search modes                   | 1         |                   | 1         |                   |
|        |                                                      | Persistent input in search popup                                 | 1         |                   | 1         |                   |
|        |                                                      | Enhance search suggestion relevancy                              | 2         |                   | 1         |                   |
|        |                                                      | Rework the datasets tab, add metadata for datasets and main menu | 2         |                   | 2         |                   |
|        |                                                      | Fix connection between FE and BE                                 | 5         |                   | 5         |                   |
|        |                                                      | Create build proces video and upload to<br>Deliverables folder   | 2         |                   | 2         |                   |
|        |                                                      | Add support for satellite image in map                           | 2         |                   | 2         |                   |
|        |                                                      | Allow default values in data description yaml                    | 2         |                   | 1         |                   |
|        |                                                      | Data pipelin crashes while used in docker container              | 5         |                   | 5         |                   |
| 6      | Fixing bugs and polishing before mid-project release | Extend API Endpoints for Hausumringe                             | 3         |                   | 3         |                   |
|        |                                                      | Create 3d view component                                         | 5         |                   |           |                   |
|        |                                                      | Map interaction from search                                      | 2         |                   | 2         |                   |
|        |                                                      | Change map controll button visibility                            | 1         |                   | 1         |                   |
|        |                                                      | Clean Up data view                                               | 3         |                   | 5         |                   |
|        |                                                      | Trigger Data view only on button press                           | 1         |                   | 1         |                   |
|        |                                                      | Display Hausumringe in FE                                        | 3         |                   |           |                   |
|        |                                                      | FE boundary for Germany                                          | 2         |                   |           |                   |
|        |                                                      | FE centering map on Germany                                      | 1         |                   | 1         |                   |
|        |                                                      | Improve display of markers for zoomed out maps                   | 3         |                   | 3         |                   |
|        |                                                      | Improve Satellite view perfomance and visualization              | 2         |                   | 2         |                   |
|        |                                                      | Add linting and testing to backend                               | 5         |                   | 5         |                   |
|        |                                                      | Add option to drop existing table in data pipeline               | 2         |                   | 2         |                   |
|        |                                                      | Extend data pipeline to handle zip files                         | 3         |                   | 5         |                   |
|        |                                                      | Extend YAML handling to shapefiles                               | 3         |                   | 2         |                   |

AMOS P4 - Planning Document

Burn-down chart



| Spr<br>int | Goal                                                              | Feature Name                              | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |  |
|------------|-------------------------------------------------------------------|-------------------------------------------|-----------|-------------------|-----------|-------------------|--|
| Rel        | ease                                                              |                                           |           |                   |           |                   |  |
| Tot        | al                                                                |                                           | 211       | 211               | 308       | 308               |  |
|            |                                                                   |                                           |           |                   |           |                   |  |
| Spr        | rints                                                             |                                           |           |                   |           |                   |  |
| _          | Outline for the work                                              |                                           |           | 044               | 0         | 044               |  |
| 1          | Getting familiar with the requirements                            |                                           | 0         |                   | 0         | 211               |  |
| 2          | Setting up the infrastructure and first steps                     |                                           | 46        |                   | 308       | 211               |  |
| 3          | Agree upon backend infrastructure and ingest one dataset for or   | ne UI view                                | 58        |                   | 0         | -97               |  |
| 4          | Finalising the PoC defined in the previous sprint                 |                                           | 31        |                   | 0         | -97               |  |
| 5          | Getting closer to specific cases: ecological calculator and solar | potential of a building                   | 37        |                   | 0         | -97               |  |
| 6          | Fixing bugs and polishing before mid-project release              |                                           | 39        | 39                | 0         | -97               |  |
| 7          | Getting feasible backend and develop further API endpoints        |                                           |           |                   |           |                   |  |
| 8          | Redesign data lake                                                |                                           |           |                   |           |                   |  |
| 9          | Ingesting further dataset: natural hazards                        |                                           |           |                   |           |                   |  |
| 10         | Energy consumption is displayed in the platform                   |                                           |           |                   |           |                   |  |
| 11         | Polishing big picture                                             |                                           |           |                   |           |                   |  |
| 12         | Four datasets are ingested                                        |                                           |           |                   |           |                   |  |
| 13         | Last dataset and final outro                                      |                                           |           |                   |           |                   |  |
| Fea        | atures                                                            |                                           |           |                   |           |                   |  |
| 1          | Getting familiar with the requirements                            | No features/commits                       | 0         |                   | 0         |                   |  |
| 2          | Setting up the infrastructure and first steps                     | Request Deutsche Bahn dataset             | 1         |                   | 1         |                   |  |
|            |                                                                   | Ingest Data [1]                           | 3         |                   | 2         |                   |  |
|            |                                                                   | Ingest Data [2]                           | 3         |                   | 3         |                   |  |
|            |                                                                   | Ingest data [3]                           | 3         |                   | 3         |                   |  |
|            |                                                                   | Documentation - BE technology             | 1         |                   | 1         |                   |  |
|            |                                                                   | Research on how should data pipeline work | 1         |                   | 1         |                   |  |
|            |                                                                   | Create FE Concept                         | 3         |                   | 5         |                   |  |
|            |                                                                   | Documentation - CI/CD technology          | 1         |                   | 1         |                   |  |
|            |                                                                   | Get Backend container running             | 2         |                   | 2         |                   |  |
|            |                                                                   | Get FE container running                  | 2         |                   | 2         |                   |  |
|            |                                                                   | Initialize Github Wiki                    | 1         |                   | 1         |                   |  |
|            |                                                                   | Setup deployment pipeline/branches        | 3         |                   | 3         |                   |  |
|            |                                                                   | Research on FE RestAPI requirements       | 3         |                   | 2         |                   |  |
|            |                                                                   | Documentation - FE technology             | 1         |                   | 1         |                   |  |
|            |                                                                   | Research Github Actions constraints       | 2         |                   | 2         |                   |  |
|            |                                                                   | Setup basic React + NodeJS frontend       | 2         |                   | 1         |                   |  |
|            |                                                                   | Automate workflow with github action      | 3         |                   | 3         |                   |  |
|            |                                                                   | Technology Research (Map APIs)            | 3         |                   | 3         |                   |  |

| Spi |                                                             | Factoria Name                                                | F-4 0:    | Est.      | D10:      | Real      |  |
|-----|-------------------------------------------------------------|--------------------------------------------------------------|-----------|-----------|-----------|-----------|--|
| int | Goal                                                        | Feature Name API project docker file                         | Est. Size | Remaining | Real Size | Remaining |  |
|     |                                                             |                                                              | 5         |           | 3         |           |  |
|     | Agree upon backend infrastructure and ingest one dataset    | Create boilerplate API project                               | 5         |           | 3         |           |  |
| 3   | for one UI view                                             | Create multimap view component                               | 3         |           | 3         |           |  |
|     |                                                             | Create basic layout for main UI interface                    | 2         |           | 1         |           |  |
|     |                                                             | Create basic data view component                             | 3         |           | 3         |           |  |
|     |                                                             | Tag sprint candidate                                         | 2         |           | 2         |           |  |
|     |                                                             | Simplify .env file                                           | 1         |           | 0         |           |  |
|     |                                                             | Create video recording and documentation about build         |           |           |           |           |  |
|     |                                                             | process                                                      | 2         |           | 1         |           |  |
|     |                                                             | Automate workflow with GitHub Actions                        | 3         |           | 3         |           |  |
|     |                                                             | Design Data Pipeline CLI Application                         | 3         |           | 3         |           |  |
|     |                                                             | Develop YAML Parser                                          | 5         |           | 2         |           |  |
|     |                                                             | Develop CSV parser                                           | 5         |           | 5         |           |  |
|     |                                                             | Dockefile for data pipeline                                  | 3         |           | 3         |           |  |
|     |                                                             | Configure database connection                                | 3         |           | 3         |           |  |
|     |                                                             | Dockerfile for database                                      | 3         |           | 5         |           |  |
|     |                                                             | Create generic pop-up container                              | 1         |           | 1         |           |  |
|     |                                                             | Technology Research (Map APIs)                               | 3         |           | 1         |           |  |
|     |                                                             | Create pop-up with favourites                                | 2         |           | 2         |           |  |
|     |                                                             | Create map component from OSM                                | 3         |           | 3         |           |  |
|     |                                                             | Create 3d view component                                     | 5         |           |           |           |  |
|     |                                                             | Row mapping/filtering                                        | 3         |           | 3         |           |  |
|     |                                                             | Design Data Pipeline CLI Application                         | 3         |           | 3         |           |  |
| 4   | Finalising the PoC defined in the previous sprint           | Row mapping/filtering                                        | 3         |           | 3         |           |  |
|     |                                                             | Create 3d view component                                     | 5         |           |           |           |  |
|     |                                                             | Implement search by coordinate                               | 3         |           | 3         |           |  |
|     |                                                             | FE filtering changes data entries                            | 1         |           | 1         |           |  |
|     |                                                             | Compose and finish the UI of the FE                          | 3         |           | 5         |           |  |
|     |                                                             | Fix pinning of the tabs going crazy after deleting some tabs | 1         |           | 1         |           |  |
|     |                                                             | Decide on API endpoints - to have one hour meeting           | 5         |           | 5         |           |  |
|     |                                                             | Add discard_if_empty attribute to yaml.                      | 2         |           | 2         |           |  |
|     |                                                             | Crash on special character                                   | 1         |           | 1         |           |  |
|     |                                                             | Allow building of BE projects with command line              | 2         |           | 3         |           |  |
|     |                                                             | Create endpoint to request datapoints for am area            | 5         |           | 8         |           |  |
| 5   | Getting closer to specific cases: ecological calculator and |                                                              | _         |           | _         |           |  |
|     | solar potential of a building                               | Research and protoypr on Geospatial Database                 | 5         |           | 5         |           |  |
|     |                                                             | Implement shapefile data importer for database integration   | 5         |           | 5         |           |  |
|     |                                                             | Implementation of a unified search interface                 | 2         |           | 3         |           |  |
|     |                                                             | Irrelevant search results for query "1" in DataView          | 2         |           | 1         |           |  |
|     |                                                             | Make padding displaying correctly                            | 1         |           | 1         |           |  |
|     |                                                             | Reset input fields when switching search modes               | 1         |           | 1         |           |  |

| Spr<br>int | Goal                                                            | Feature Name                                                          | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |
|------------|-----------------------------------------------------------------|-----------------------------------------------------------------------|-----------|-------------------|-----------|-------------------|
|            |                                                                 | Persistent input in search popup                                      | 1         |                   | 1         |                   |
|            |                                                                 | Enhance search suggestion relevancy                                   | 2         |                   | 1         |                   |
|            |                                                                 | Rework the datasets tab, add metadata for datasets and main menu      | 2         |                   | 2         |                   |
|            |                                                                 | Fix connection between FE and BE                                      | 5         |                   | 5         |                   |
|            |                                                                 | Create build proces video and upload to Deliverables folder           | 2         |                   | 2         |                   |
|            |                                                                 | Add support for satellite image in map                                | 2         |                   | 2         |                   |
|            |                                                                 | Allow default values in data description yaml                         | 2         |                   | 1         |                   |
|            |                                                                 | Data pipelin crashes while used in docker container                   | 5         |                   | 5         |                   |
| ;          | Fixing bugs and polishing before mid-project release            | Extend API Endpoints for Hausumringe                                  | 3         |                   | 3         |                   |
|            | <u> </u>                                                        | Create 3d view component                                              | 5         |                   |           |                   |
|            |                                                                 | Map interaction from search                                           | 2         |                   | 2         |                   |
|            |                                                                 | Change map controll button visibility                                 | 1         |                   | 1         |                   |
|            |                                                                 | Clean Up data view                                                    | 3         |                   | 5         |                   |
|            |                                                                 | Trigger Data view only on button press                                | 1         |                   | 1         |                   |
|            |                                                                 | Display Hausumringe in FE                                             | 3         |                   |           |                   |
|            |                                                                 | FE boundary for Germany                                               | 2         |                   |           |                   |
|            |                                                                 | FE centering map on Germany                                           | 1         |                   | 1         |                   |
|            |                                                                 | Improve display of markers for zoomed out maps                        | 3         |                   | 3         |                   |
|            |                                                                 | Improve Satellite view perfomance and visualization                   | 2         |                   | 2         |                   |
|            |                                                                 | Add linting and testing to backend                                    | 5         |                   | 5         |                   |
|            |                                                                 | Add option to drop existing table in data pipeline                    | 2         |                   | 2         |                   |
|            |                                                                 | Extend data pipeline to handle zip files                              | 3         |                   | 5         |                   |
|            |                                                                 | Extend YAML handling to shapefiles                                    | 3         |                   | 2         |                   |
|            | Getting feasible backend and develop further API endpoints      | Implement clustering mechanism and define endpoint for clustered data | 5         |                   | 5         |                   |
|            | Colling Toucisto Sucheria and acticlop farther 7th Fortapolitic | Add argument to data pipeline to overwrite if_table_exists opti       |           |                   | 2         |                   |
|            |                                                                 | Data loading by location                                              | 2         |                   | 1         |                   |
|            |                                                                 | Refactor FE for new API endpoints                                     | 2         |                   | 2         |                   |
|            |                                                                 | Extend layer select control                                           | _         |                   | _         |                   |
|            |                                                                 | Create 3d view component                                              |           |                   |           |                   |
|            |                                                                 | Implement clustering mechanism and define endpoint for clustered data | 5         |                   | 5         |                   |
|            |                                                                 | Code documentation                                                    |           |                   |           |                   |
|            |                                                                 | Code cleanup data pipeline                                            | 2         |                   | 2         |                   |
|            |                                                                 | Fetch Hausumringe API                                                 | 2         |                   | 2         |                   |
|            |                                                                 | Storing additional docker images for local deployment                 | 2         |                   | 0         |                   |
|            |                                                                 | Create script to run datapipeline for each dataset upon deployment    |           |                   | 2         |                   |
|            |                                                                 | Clean up data pipeline                                                | 2         |                   | _         |                   |
|            |                                                                 | Display Hausumringe in FE                                             | 3         |                   | 2         |                   |
|            |                                                                 | FE boundary for Germany                                               | 2         |                   | _         |                   |

| Spi | r<br>Goal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Feature Name                                                                                                       | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------|-------------------|-----------|-------------------|
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Polishing Frontend                                                                                                 | 5         |                   |           |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Extend API Endpoints for Tatsächliche Nutzung (actual use)                                                         | 3         |                   |           |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Fix the error while building data pipeline                                                                         | 3         |                   | 1         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Refactor FE for new API endpoints                                                                                  | 2         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Add argument to data pipeline to overwrite if_table_exists option                                                  | 1         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ensure pin doesn't switch tabs                                                                                     | 1         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | FE search and display polygon for specific region                                                                  | 3         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Functionality to hide data view panel                                                                              | 2         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The titles in the data view sections should be bold text                                                           | 1         |                   | 1         |                   |
| 8   | Redesign data lake                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Extend API Endpoints for Tatsaechliche Nutzung (actual use)                                                        | 3         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Create indexes for location column in SQL server                                                                   | 2         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Utilize metadata DB to store metadata                                                                              | 2         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Test environment connection bugs from mid-project review                                                           | 3         |                   | 5         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Implement MongoDB metadata DB                                                                                      | 3         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Discussion about: API Composer: merge the viewportData endpoints into a single endpoint, using the datasetID field | 2         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Extend the APIs                                                                                                    | 2         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Extend the BE docker architecture and CI/CD pipeline                                                               | 5         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Create missing descriptions for the actual use dataset                                                             | 1         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ingest all Hausumringe datasets for whole of bavaria                                                               | 1         |                   | 1         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Decide on a storage strategy for split datasets                                                                    | 2         |                   | 1         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Check and update architecture documentation                                                                        | 1         |                   | 1         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Different icons in dataset selection dialog                                                                        | 2         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Integrate charging stations as geospatial data                                                                     | 3         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Execute data pipeline on test environment via SSH                                                                  |           |                   |           |                   |
| 9   | Improve database performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Open as map functionality                                                                                          | 3         |                   |           |                   |
|     | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Research for performance enhancement                                                                               | 3         |                   | 5         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Discussion about limiting of ingested data                                                                         | 2         |                   |           |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Insert data about amount of entries in dataset to metadata db                                                      | 3         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Create API endpoint for single location                                                                            | 3         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Metadata Improvements and small fixes                                                                              | 2         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Yaml files split + DB health checks                                                                                | 3         |                   | 2         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Csv importer bug                                                                                                   | 2         |                   | 1         |                   |
| 10  | Mitigation of performace issues and LOD2 data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Combine meta data objects into class library                                                                       | 2         |                   | 3         |                   |
|     | and a position and a court and | Create CityGML importer                                                                                            | 5         |                   | 5         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Extracting additional data from the CityGML file                                                                   | 2         |                   | 3         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Comprehensive map marker enhancements                                                                              | 3         |                   | J         |                   |
|     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Create 3d view component                                                                                           | 5         |                   |           |                   |

| Spi | r<br>Goal                                          | Feature Name                                                                      | Est. Size | Est.<br>Remaining | Real Size | Real<br>Remaining |  |
|-----|----------------------------------------------------|-----------------------------------------------------------------------------------|-----------|-------------------|-----------|-------------------|--|
|     |                                                    | Implement the getLocationData endpoint on the FE                                  | 2         |                   |           |                   |  |
|     |                                                    | Improve database indexing logic                                                   | 3         |                   |           |                   |  |
|     |                                                    | Extend API loadLocationData endpoints for LoD2 data in getting volume             | 5         |                   |           |                   |  |
|     |                                                    | Discussion needed - Implement area calculation for dataset 'House Footprints'     | 3         |                   |           |                   |  |
|     |                                                    | Ingest air pollution data set                                                     | 2         |                   |           |                   |  |
|     |                                                    | Search bar improvements                                                           | 2         |                   | 3         |                   |  |
|     |                                                    | Extend layer select control                                                       | 2         |                   | 3         |                   |  |
|     |                                                    | Display ALKIS-Parzellarkarte                                                      | 2         |                   |           |                   |  |
|     |                                                    | Implement an ability to hover on the map icon to get info about a specific marker | 2         |                   |           |                   |  |
|     |                                                    | FE boundary for Germany                                                           | 2         |                   |           |                   |  |
|     |                                                    | Change API endpoint to not require a district name                                | 3         |                   | 5         |                   |  |
|     |                                                    | Fix data download issue in production envrironment                                | 1         |                   |           |                   |  |
|     |                                                    | BE problems when retrieving Hausumringe from database                             | 3         |                   | 3         |                   |  |
|     |                                                    | FE displaying metadata for map in second tab                                      | 2         |                   | 3         |                   |  |
|     |                                                    | Storing zoom and marker threshold values for specific datasets as metadata        | 2         |                   | 2         |                   |  |
|     |                                                    | Integrate peformance research results                                             | 5         |                   | 3         |                   |  |
|     |                                                    | Calculate distance to nearest EV charging station                                 | 1         |                   |           |                   |  |
|     |                                                    | Fix GeoJSON formatting for 'House Footprints'                                     | 2         |                   |           |                   |  |
|     |                                                    | Correct latitude and longitude order in 'House Footprints'                        | 2         |                   |           |                   |  |
| 11  | Implement functional use-cases and polish frontend | Documentation: Metadata pipeline interactions                                     | 1         |                   |           |                   |  |
|     |                                                    | Improve database indexing logic                                                   | 3         |                   |           |                   |  |
|     |                                                    | Extend API loadLocationData endpoints for LoD2 data in getting volume             | 5         |                   |           |                   |  |
|     |                                                    | Discussion needed - Implement area calculation for dataset 'House Footprints'     | 3         |                   |           |                   |  |
|     |                                                    | Calculation of building volume for each dataset                                   | 3         |                   |           |                   |  |
|     |                                                    | Ingest air pollution data set                                                     | 2         |                   |           |                   |  |
|     |                                                    | Automate CityGML import process for each data set in the meta4 file               | 2         |                   |           |                   |  |
|     |                                                    | Further extraction of GML data and saving to DB                                   | 5         |                   |           |                   |  |
|     |                                                    | FE Borders for searched region dont dissappear                                    | 1         |                   |           |                   |  |
|     |                                                    | FE display address next to Coordinates                                            | 1         |                   |           |                   |  |
| 12  | Four datasets are ingested                         | Verify integrity and accuracy of all ingested data                                |           |                   |           |                   |  |
|     | _                                                  | Enhance data export and reporting features                                        |           |                   |           |                   |  |
|     |                                                    | Optimize data storage and retrieval mechanisms                                    |           |                   |           |                   |  |
| 13  | Last dataset and final outro                       | Ingest final dataset and ensure compatibility                                     |           |                   |           |                   |  |
|     |                                                    | Finalize all API integrations and endpoint documentations                         |           |                   |           |                   |  |
|     |                                                    | Conduct final performance tuning across the platform                              |           |                   |           |                   |  |
|     |                                                    | Release the final version of the platform                                         |           |                   |           |                   |  |

AMOS P4 - Planning Document Definition of Done

| # | Feature Definition of Done                  | Sprint Release Definition of Done               | Project Release Definition of Done                |
|---|---------------------------------------------|-------------------------------------------------|---------------------------------------------------|
|   | Component tests have been written and pass  | Project builds, deploys, and tests successfully | User interaction tests pass on all major browsers |
|   |                                             | Database update scripts succeed, consistency    |                                                   |
|   | All CI tests passed for the pull request    | tests pass                                      | Component test coverage is above 70%              |
|   | Code review has been completed and code has |                                                 |                                                   |
|   | been merged into sprint-release branch      | Sprint release notes have been written          | Design documentation has been updated             |
|   | All feature branches have been merged and   |                                                 |                                                   |
|   | closed                                      | Change log has been updated                     | User documentation has been updated               |
|   | New feature code has been documented        | The value of the product has been improved      |                                                   |
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AMOS P4 - Planning Document Documentation

| Туре         | Link / reference                                                                           | Description                                                    |
|--------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| GitHub Wiki  | https://github.com/amosproj/amos2024ss04-building-information-enhancer/wiki                | System Architecture, Meeting Notes, Software decisions         |
| README .md   | https://github.com/amosproj/amos2024ss04-building-information-enhancer/blob/main/README.md | Main redme of the repository, setup and deployment explanation |
| Google Drive | https://drive.google.com/drive/folders/1DAyzaqwj5ID_YVzNBUgNE0JOCAuorzO_?usp=drive_link    | Shared team files associated with the project                  |
|              |                                                                                            |                                                                |
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AMOS P4 - Planning Document

Bill of Materials

| #                 | Context                                | Name                                      | Version             | License          | Comment                                                                                                                                                                        |
|-------------------|----------------------------------------|-------------------------------------------|---------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                                        |                                           |                     |                  | Docker framework and tools used to build and                                                                                                                                   |
| 1                 | CI/CD                                  | Docker - build scripts                    | 26.0.0              | MIT              | publish container images                                                                                                                                                       |
| 2                 | CI/CD                                  | Node.js                                   | >= 20.12.2          | MIT              | Free, open-source, cross-platform JavaScript runtime environment, here used for the npm tool.                                                                                  |
| 3                 | CI/CD                                  | Noue.js                                   | >= 20.12.2          | IVII I           | TypeScript is a superset of JavaScript that                                                                                                                                    |
| 2                 | Frontend                               | npm:typescript                            | 5.4.5               | Apache-2.0       | compiles to clean JavaScript output.                                                                                                                                           |
| 3                 | Frontend                               | npm:react                                 | 18.3.0              | MIT              | The library for web and native user interfaces.                                                                                                                                |
| 4                 | Frontend                               | npm:eslint                                | 8.57.0              | MIT              | Find and fix problems in your JavaScript code.                                                                                                                                 |
| 5                 | Frontend                               | npm:react-dom                             | 18.3.0              | MIT              | The library for web and native user interfaces.                                                                                                                                |
| 7                 | Frontend                               | npm:vite                                  | 5.2.10              | MIT              | Frontend tooling for easier frontend developement                                                                                                                              |
| 8                 | Frontend                               | npm:acorn                                 | 8.11.3              | MIT              | JavaScript-based JavaScript parser                                                                                                                                             |
| 9                 | Backend                                | dotnet-docker                             | 6.0                 | MIT              | .NET is a general purpose development platform maintained by Microsoft and the .NET community on GitHub. This also includes all dotnet docker containers used for the Backend. |
| 10                | Backend                                | nuget:MySql.Data                          | 8.0.23              | -                | Connector/NET is a fully-managed ADO.NET driver for MySQL.                                                                                                                     |
| 11                | Backend                                | nuget:Swashbuckle.AspNetCore              | 5.6.3               | MIT              | Swagger tools for documenting API's built on ASP. NET Core                                                                                                                     |
| 12                | Data processing                        | nuget:Microsoft.Data.SqlClient            | 3.0.1               | MIT              | Microsoft.Data.SqlClient provides database connectivity to SQL Server for .NET applications.                                                                                   |
|                   |                                        |                                           |                     |                  |                                                                                                                                                                                |
| Softwar<br>from G | re bill of materials(generated ithub): | https://drive.google.com/file/d/1CPA89OGH | H_Cr0poRdWhUKLSSHIU | uKb8Fm/view?usp= | sharing.                                                                                                                                                                       |
|                   |                                        |                                           |                     |                  |                                                                                                                                                                                |
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AMOS P4 - Planning Document Planning Poker

| Last Name                         | First Name                                  | Value |              |                  |  |
|-----------------------------------|---------------------------------------------|-------|--------------|------------------|--|
| Balitzki                          | Emil                                        |       | #DIV/        | #DIV/            |  |
| Bandel                            | Nicolas                                     |       |              |                  |  |
| Fischer                           | Erik                                        |       | O!           | 0!               |  |
| Holtmeier                         | Leon                                        |       | _ <u>-</u> _ |                  |  |
| Nandico                           | Lucas                                       |       | 0            | No size          |  |
| Pfeil                             | Oliver                                      |       | 1            | Trivial size     |  |
| Pöhl                              | Celine                                      |       | 2            | Small size       |  |
| Khan                              | Muhammad Ahsan                              |       | 3            | Medium size      |  |
| Yakovenko                         | Tetiana                                     |       | 5            | Large size       |  |
|                                   |                                             |       | 8            | Very large size  |  |
|                                   |                                             |       | 13           | Too large (size) |  |
| How to play planning poker        |                                             |       |              |                  |  |
| Everyone type their number in     | nto their value field, don't hit return yet |       |              |                  |  |
| 2. Someone, perhaps a product     | owner, count down 3 2 1                     |       |              |                  |  |
| 3. Then, everyone hit return to s | ubmit their value                           |       |              |                  |  |
| •                                 |                                             |       |              |                  |  |