Integration of TAILOR Assets with AI4EU v.2 Progress Report

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Short description	This report describes the progress and the status of integrating TAILOR assets with the AI on Demand (AIoD) platform up until June 2024. The integration aims to make TAILOR resources accessible through the AIoD interfaces. The assets are being preserved on the AIoD platform to ensure their availability for current and future use, serving as a legacy of the contributions made by TAILOR's members.

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Summary of the Report

Task 11.1 was designed to coordinate the synchronisation between the TAILOR Network of Excellence centres and AI4Europe in several key areas. Since the start of the AI4Europe project, TAILOR project activities and members have continued to use the AIoD platform for disseminating activities, news, and AI assets.

As described in the D11.1 v1 Report published in May 2022, TAILOR has been actively enhancing the platform, with engagement from all task leaders. A major achievement has been the joint creation of a new architecture and API for AI service deployment. Furthermore, VISION, the CSA supporting all Networks of Excellence centres, including TAILOR, initiated an effort to encourage the adoption of the AIoD platform across networks, with TAILOR network members participating.

This D11.2 v2 Progress Report highlights the accomplishments of the collaborative efforts, the current situation of the TAILOR and AIoD teams through to June 2024, and the future directions for TAILOR assets on the AIoD platform.

The efforts include the migration, presentation, and accessibility of TAILOR assets on the ai4europe.eu community portal. Additionally, there are plans to make these assets available in the key services offered by the AIoD platform version, released in late December 2023/early January 2024, and upcoming. Examples of impact from TAILOR's assets demonstrate how they can become more impactful as the AIoD platform matures and is promoted for widespread use within the European AI research and innovation communities in the coming months.

The report also outlines the challenges faced by the AIoD platform teams in integrating TAILOR's assets into the new service-oriented functions of the platform.

In short, the research outcomes (e.g., published papers, data sets, models), networking, and connectivity activities of the TAILOR network produce valuable assets for current and prospective users of the AIoD platform. These assets are essential for continuously enriching the platform's knowledge base and preserving the network's legacy.

1. Introduction

Task 11.1 aimed to ensure synchronisation between the Network of Excellence TAILOR and the AIoD Platform, which the AI4Europe consortium built, managed, and coordinated, across several crucial domains. Since the initiation of the AI4EU project (the first attempt in 2019 for three years and inherited by the AI4Europe project), activities and members of the TAILOR project have utilised the AIoD platform to disseminate information about their activities, share news, and distribute AI-related resources.

Before the AI4Europe project started in July 2022, it was clear that the assets generated by TAILOR's members must be integrated with and built upon the AIoD platform. The first version of the "Integration of TAILOR Assets with AI4EU v.1 Progress Report," completed in May 2022, described how TAILOR initiatives and activities would be coordinated and integrated with the platform.

The v.1 Progress Report provided guidelines for the TAILOR Network of Excellence to facilitate uploading content to the AIoD platform, the interim version inherited from the AI4EU. It highlighted several key activities, including collecting requirements from various work packages, incorporating the TAILOR project into the AI4EU project list, organising agreements between TAILOR WP8 and AI4Europe pilots, and supporting a repository of assets through collaboration between WP5 and AI4Europe projects.

Due to delays and a limited number of active developers on the AI4EU platform, the integration of AI assets was postponed at the beginning of AI4Europe in the second half of 2022 and the first half of 2023. The HumanE AI Net was selected for testing AI assets due to its superior resources. Recently, it has become feasible to incorporate AI assets into the platform.

The v.1 Progress Report focused on defining efficient integration of TAILOR assets with the AIoD platform, facilitated through the platform's Collaboration page. It included guidelines on accessing and integrating various assets, such as news, events, AI assets, research bundles, open calls, and courses.

This "Integration of TAILOR Assets with AI4EU v.2 Progress Report" (aka D11.2) describes the progress and status of integrating TAILOR assets with the AIoD platform at the beginning of the AI4Europe project in July 2022, with some delays, up until the end of June 2024.

The v.2 Progress Report describes the efforts encompassing the migration, presentation, and accessibility of TAILOR assets on the ai4europe.eu community portal. Moreover, these assets were planned to be incorporated into the key services of the current AIoD platform version, which was released in late December 2023. The impact examples from TAILOR's assets illustrate their potential to become more influential as the AIoD platform matures and is promoted for widespread use within the European AI research and innovation communities in the coming months.

The report also outlines the challenges faced by the AIoD platform teams in integrating TAILOR's assets into the new service-oriented functions of the platform.

Overall, the integration aims to make TAILOR resources accessible through the AIoD interfaces. The assets are being preserved on the AIoD platform to ensure their availability for current and future use, serving as a legacy of the contributions made by TAILOR's members.

2. Relevance of the Report to Overall Objectives

The EU aims to integrate TAILOR assets with the AI-on-demand platform to unify AI-related knowledge, assets, and tools. This effort will make AI resources more accessible and reduce the fragmentation of AI in Europe. By doing so, it will enhance the understanding and awareness of various AI aspects across the continent.

The Report aligned with the following Objectives and KPIs of the TAILOR project:

- ◊ OB6: Increase Knowledge and Awareness of the Foundations of Trustworthy AI across Europe
- ◊ KPI #6.1 Contributions to AI-on-demand platform

3. Integration Progress and Status until June 2024

The interim or transition period of the platform from AI4EU (2019-2021) to the AI4Europe project (starting July 2022) that built AIoD, was captured with insights into the possibilities of the integration of TAILOR's assets in the v.1 Progress Report, completed in May 2022. The AI4Europe project started in July 2022, when the AIoD officially commenced its assessment, direction, and selection of the relevant architecture approaches of the platform.

Some guidance and anticipation of the v.1 Progress Report were still relevant, however, the new ai4europe.eu website (since 2023) and the new AIoD (first release in Dec 2023) platform are under development with initial services becoming available for the wider research and innovation communities.

The AIoD development teams have their priorities and focus to get the platform to where it should be with its roadmap agreed upon by the technical partners of the AI4Europ. Inquiries and integrations from the "old" platform to the new one took time to get on the development and implementation roadmap. This is expected in any project, and it takes time for the involved parties to agree on their priorities, commitments, and deliverables.
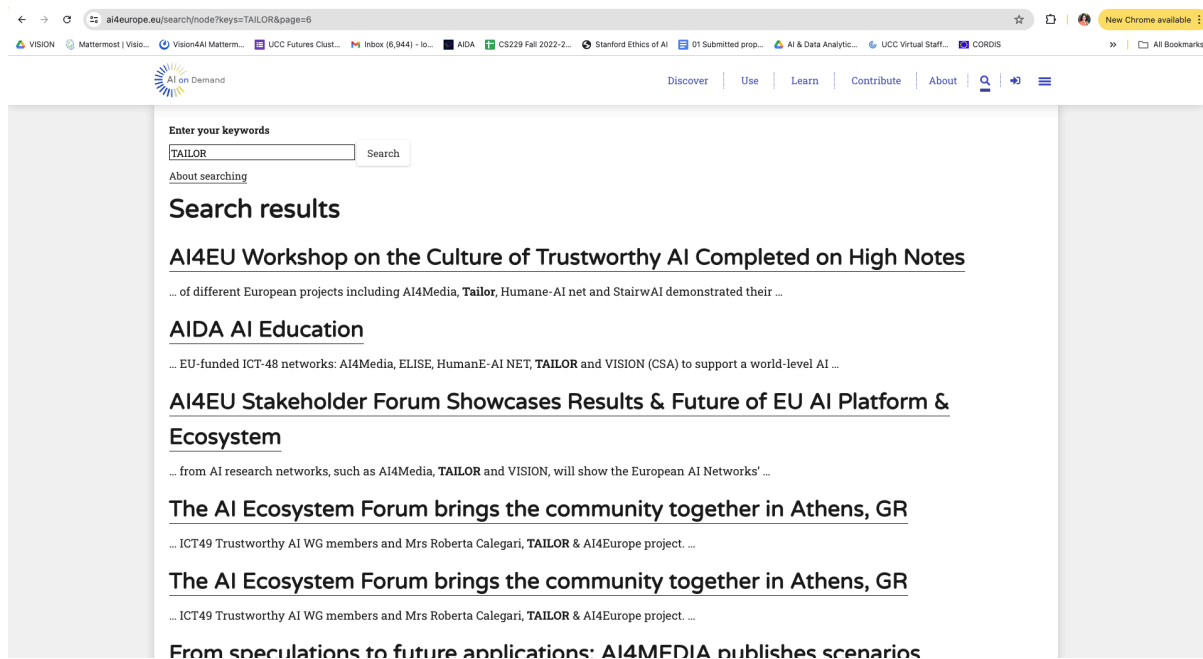
TAILOR Assets Status

By the end of June 2024, 57 TAILOR assets are be accessible on the community portal of the AI4Europe website at: https://www.ai4europe.eu/search/node?keys=TAILOR

Regular users can go on the website, use the search icon on the right side of the menu bar to type "TAILOR," and click the "Search" button Then, the total assets belonging to or tagged with the name "TAILOR" would appear.

Platform users do not need to log in to the community portal to get the results for viewing and reading. This is the way the AIoD Platform upholds its principles of openness and easy access for the AI research and innovation communities across the EU.

Picture 1 below shows the address, the icon used and the look of the interface with the user via the community portal.
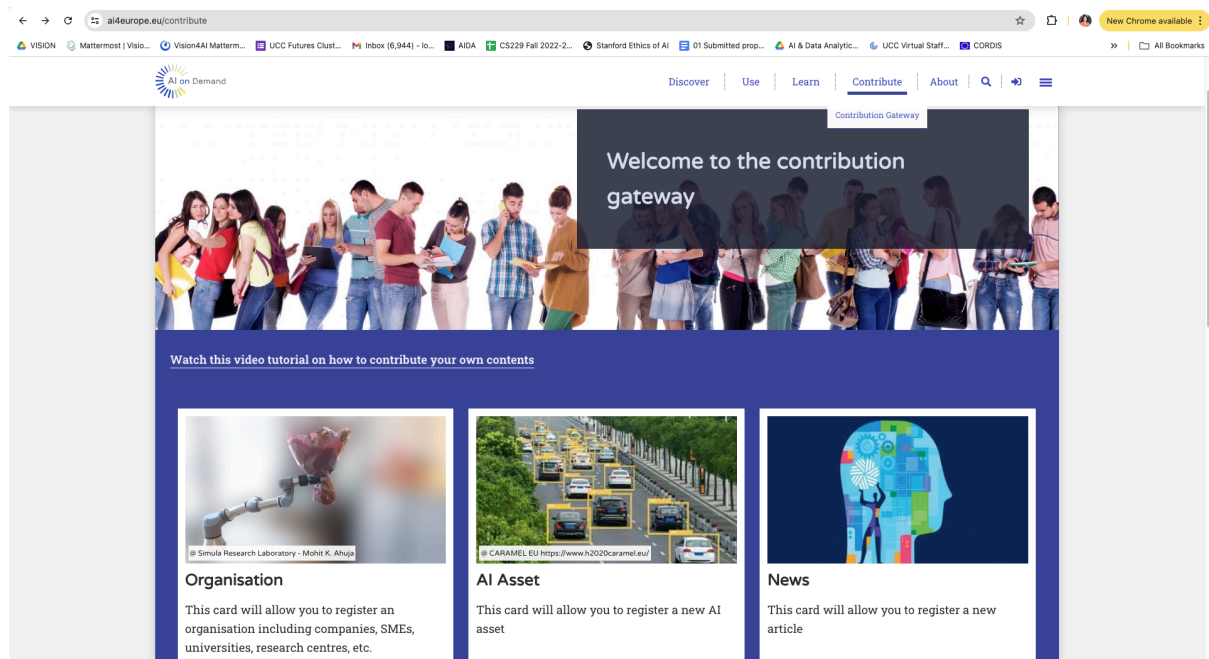

Picture 1: a screenshot of the community portal where users can use the search symbol on the menu bar to start finding the assets, in this case, belonging to the TAILOR that they are interested in.

Log-in will be required when users want to add, contribute, or edit to the nine sections available for users of the EU AI ecosystems to utilise. The required log-in, which was detailed in the v.1 Progress Report, ensures that the users are verified, in many cases via their organisation's credentials (emails), and legit to upload, edit, download, and delete the content that they interact with.

The current sections for registered users are Organisation, AI Asset, News, Events, Project, Case Study, Open Call, Education Content, and Research Bundle. TAILOR users, for instance, can go to the "Contribute" tab on the menu bar of the ai4europe.eu website, which has a welcome message "Welcome to the contribution gateway" and a tutorial video right there for them to learn how to use the nine sections so they can start contributing.

Step-by-step instructions for registered users who want to add/contribute to the AIoD were described with high levels of detail in the v.1 Progress Report. The names of the sections are slightly different, but the concepts and the steps are still valid.

Picture 2 shows sections/areas of the contribution that the user(s) wants to interact with. The welcome message and the 21-minute tutorial video provide first-time users at the contribution gateway with step-by-step instructions for ease of use and building confidence for the users.
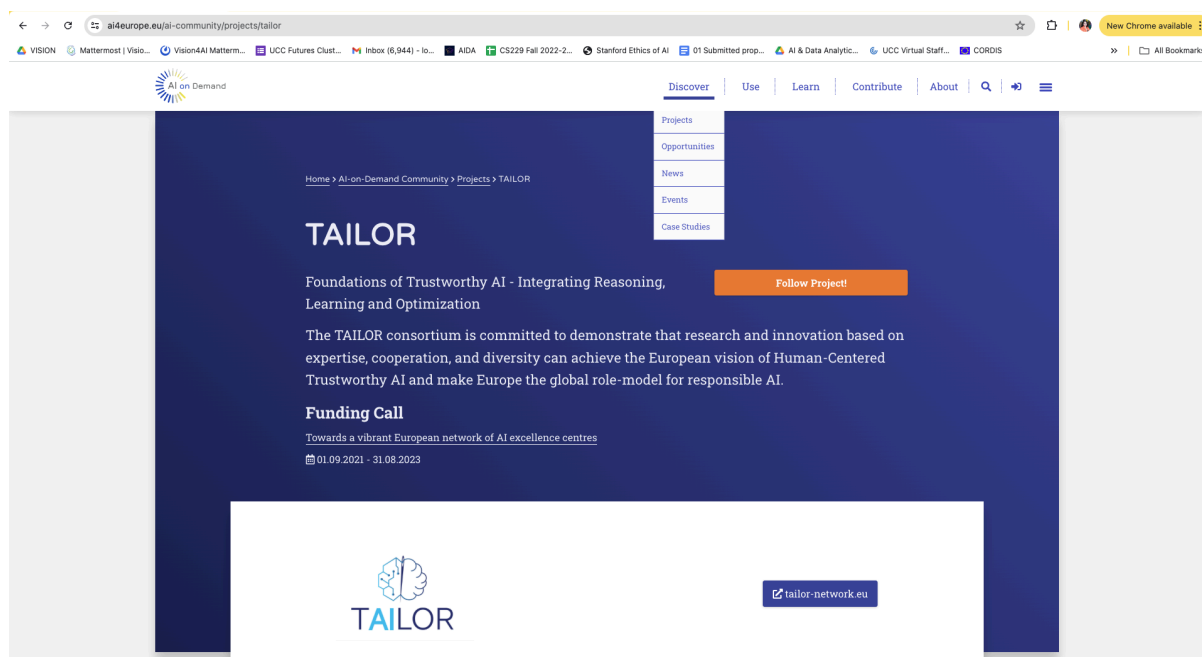

Picture 2: the screenshot of the contribution gateway that only registered users can use to upload, add, edit, download, or delete their content or the content they own or have the right to alter.

TAILOR as a project is also accessible via the community portal/website ai4europe.eu. Different from the AI4EU (2019–21 version), the newer interface groups projects under the "Discover" tab on the menu bar. Discover has a drop-down menu with "Projects" on top of the drop-down menu. This is where users can find the EU projects in alphabetical order.

Users can access the key information about the project and follow the project so that when the project has an update, they will receive notifications. There's also a direct link to the project's website for users who want to have direct interactions. "Assets related to TAILOR" are presented in seven out of the nine sections on the Contribution Gateway, where users can easily access those via the heading buttons of AI Assets, Case Study. Education, Event, News, Open Calls, Organisation.

Picture 3 shows how TAILOR as a project appeared in the interface of the website/ portal, and that page also displays all the assets associated with TAILOR. This part is open to all users without login required, demonstrating the aspiration of openness and ease of access for platform users.

Picture 3: A screenshot of where to find TAILOR as a project on the ai4europe.eu community portal/website.

Publication Process

As detailed in the v.1 Progress Report, UCC is leading the coordination and integration of TAILOR initiatives and activities with the AIoD platform, and it remains the editorial coordinator in ensuring the contributions of TAILOR members are reviewed, published, and migrated into the Metadata Catalogue. Many protocols and steps in the publication of an asset by TAILOR members are still valid and described in actionable items of the v.1 Progress Report.

While effort has been made and a collaboration mechanism has been set up, it is important for TAILOR's members to proactively reach out to the technical and development teams of the AIoD platform before the project ends with their inquiries.

UCC, as the leader of WP 11 and Task 11.1, can facilitate the processes; however, it is the responsibility of all TAILOR Partners to upload relevant assets, including publications, datasets, models, and other research outputs, onto the platform and to inform UCC when they have done so so that the content can then be assigned to the TAILOR project

Integration of Services on AIoD

By the end of Dec 2023, AI4Europe launched the first version of the AIoD platform, offering three services: 1. MyLibrary; 2. AI Builder; and 3. RAIL. The services were built upon a metadata catalogue, bringing together resources and assets from Europe and beyond.

As one of the largest repositories in Europe, it enables access to over 500,000 resources, including datasets, machine learning models, and experiments, among others, via the MyLibrary service, which not only enables users to browse through these contents from across multiple platforms but also aggregate and create their own customised libraries.
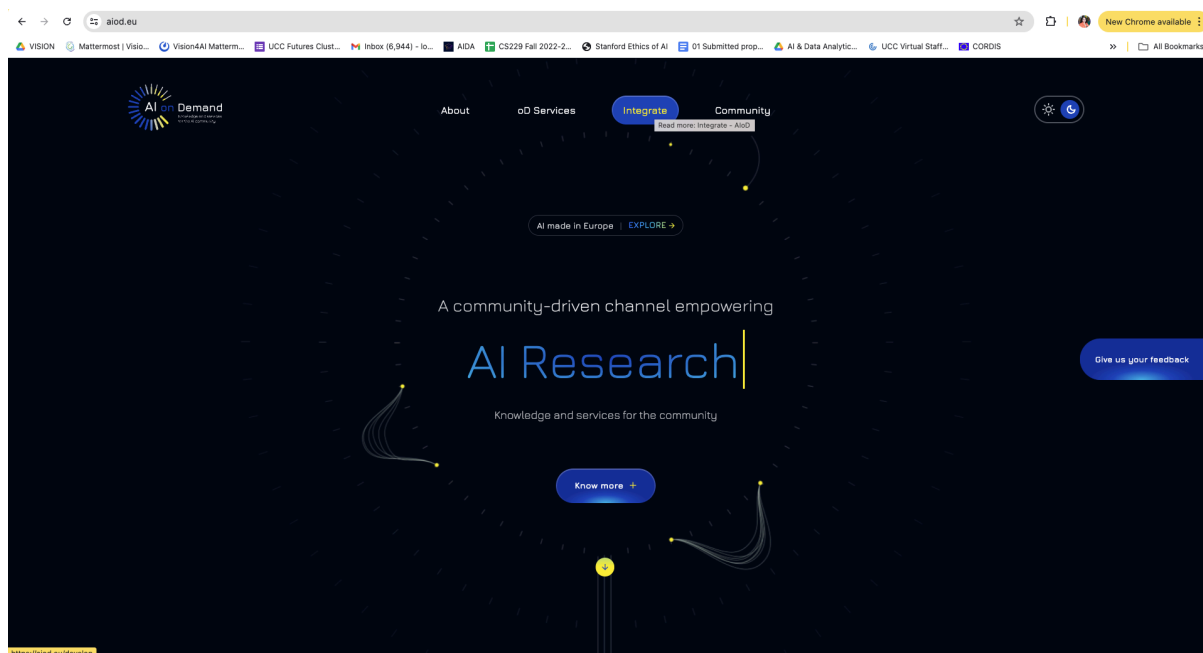
AI Builder is an open-source platform for the development, training, sharing, & deployment of AI models. Currently, with ~400 models, the service empowers data scientists to move to an AI-centric process for producing software.

RAIL is a tool that allows AI practitioners to explore & use AI assets directly on the platform. It enables the development of experiments that are repeatable, recyclable, and directly executable on the AIoD platform that its infrastructure supports.

While the 57 TAILOR assets are in the pipeline to be integrated by the AIoD technical teams, it is necessary to know that there are mechanisms available for other TAILOR assets and/or services that were not in the batch available on the AI4Europe community portal to get integrated into the AIoD in the coming months by TAILOR members beyond the project's lifetime.
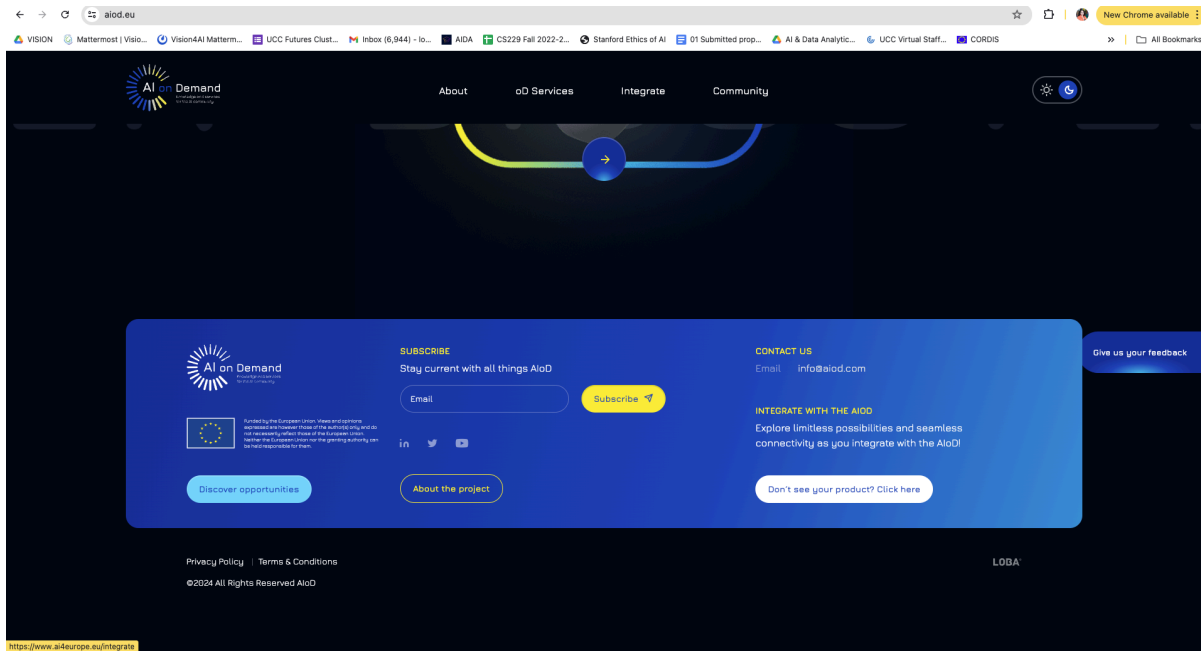
In the new AIoD (aiod.eu) platform, under the "Integrate" bar on the main/home page menu, users can find requirements and steps required to have their assets integrated on the AIoD platform, mostly into the Metadata Catalogue for the usage of multiple services, like AI Builder and RAIL.

Picture 4 shows where a registered user (non-registered users can't request to integrate their assets into the AIoD platform) can find ways to request their assets to be integrated.

Picture 4: a screenshot of the "Integrate" bar on the menu of the AIoD, where users can find ways to submit their inquiries to the technical team.
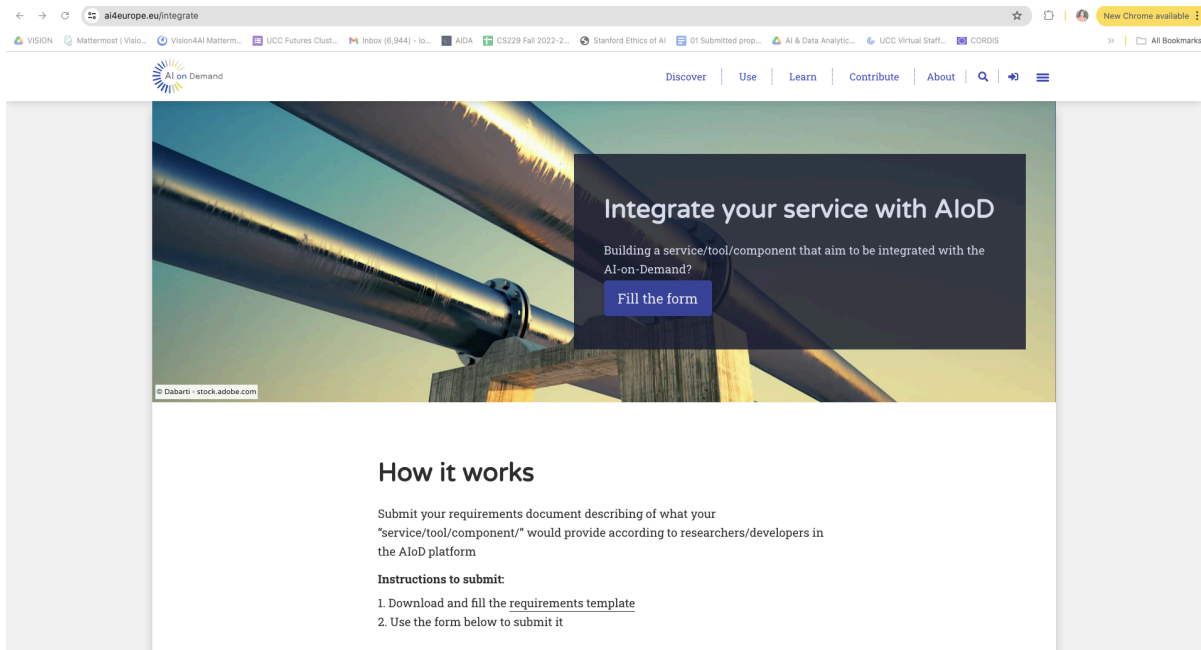
If the user who wants to integrate their assets into the AIoD has trouble finding the assets, s/he can scroll down to the bottom of the main/home page of the AIoD.eu to click the bar "Don't see your product? Click here". Picture 5 shows where the user can find his/her way to interact with the technical teams of the platform to solve any technical issues.
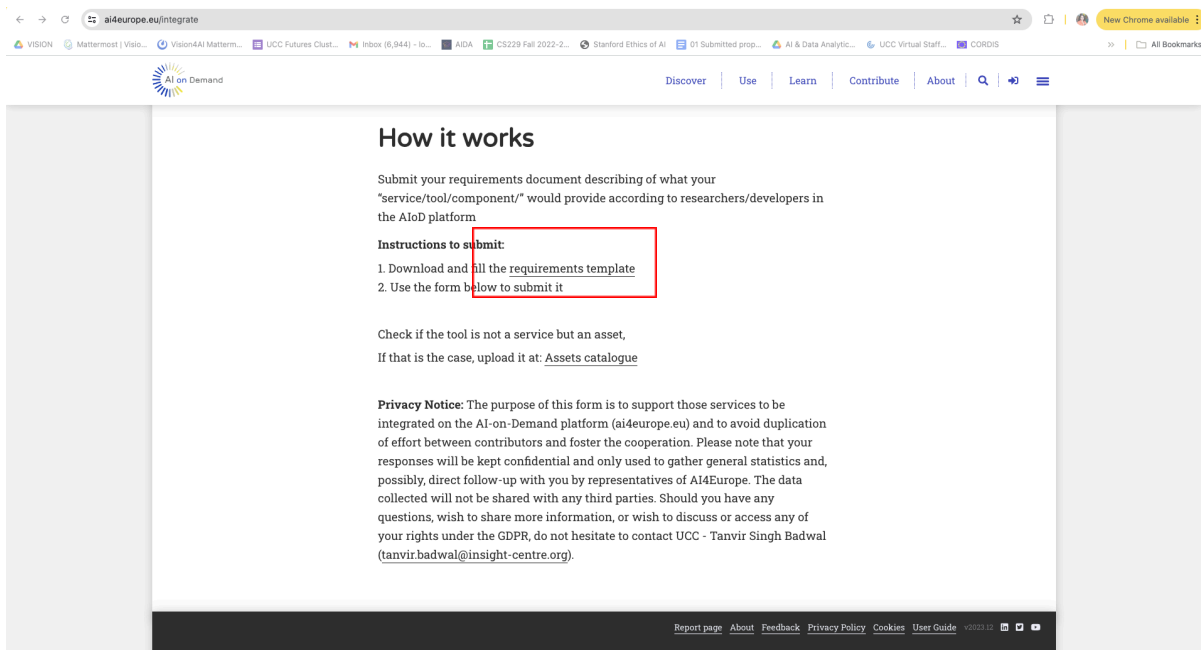

Picture 5: a screenshot indicating the web link and the interface at the bottom of the page for inquiries to integrate products or services.

Once the user clicks the link, he or she will be directed to the ai4europe.eu community portal. This is a work in progress for improvement by the AIoD, where two web addresses are used for several services. The community portal is where users can log in with their credentials for services that require the authentication of credible users (registered users via their organisations' emails).

Pictures 6 and 7 show the interface with detailed instructions for how the provided data and information will be used by the AIoD development teams.
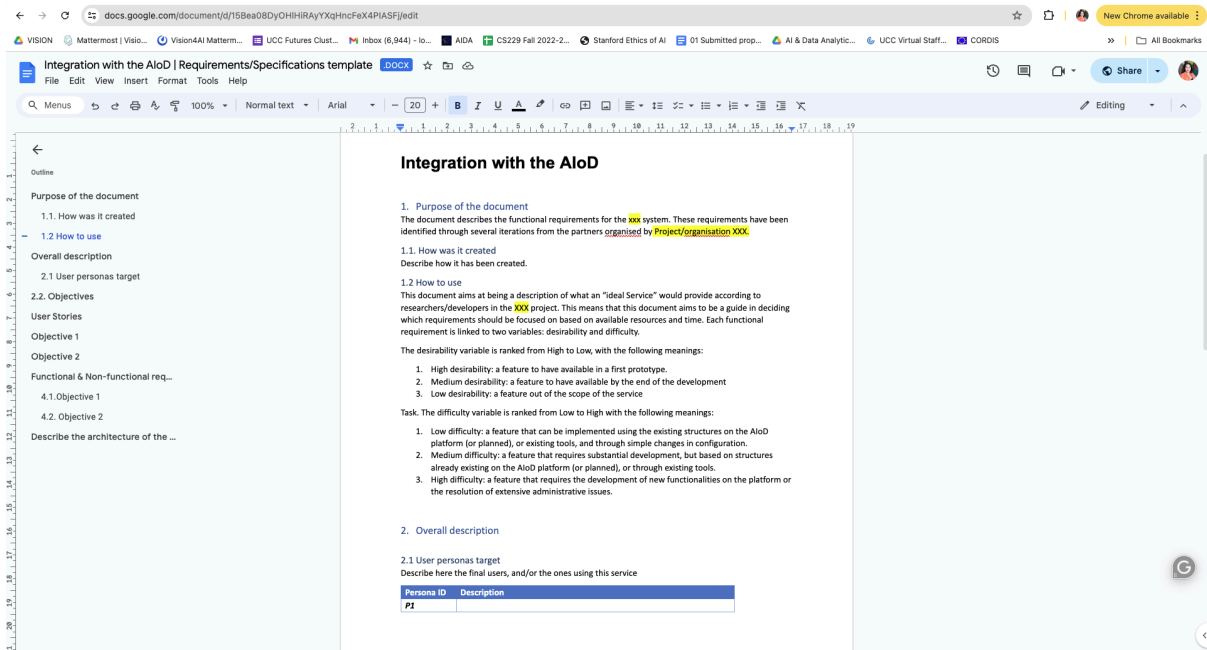
Picture 6: A screenshot of the interface with the form and introduction for service integration.
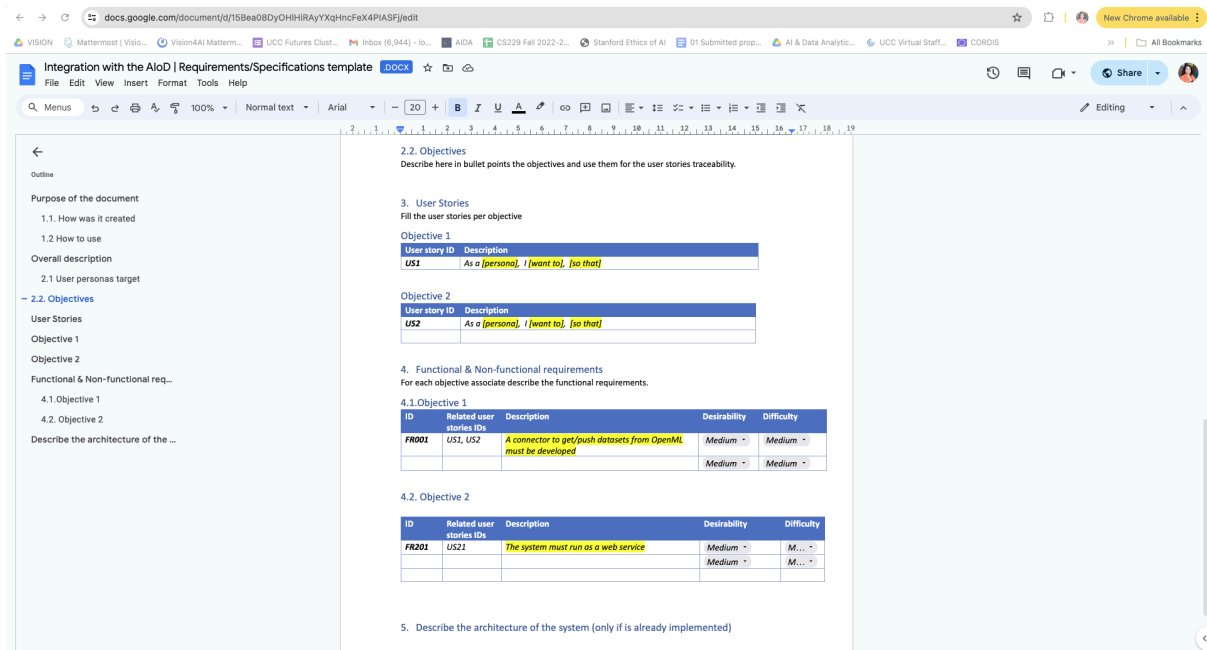

Picture 7: A screenshot explains how the requirements with data and details will be handled, including privacy issues.

The link "requirements template" is where users can download the template to fill out in their own time and capacity. Pictures 8 and 9 show the requirements needed via the template.

Picture 8: a screenshot of the requirements template for users who want their services, tools, and components to be integrated into the AIoD.

Picture 9: a screenshot of the requirements template with key headings that are needed for the AIoD developers to understand the technical constraints for resource planning and priorities. The document was acc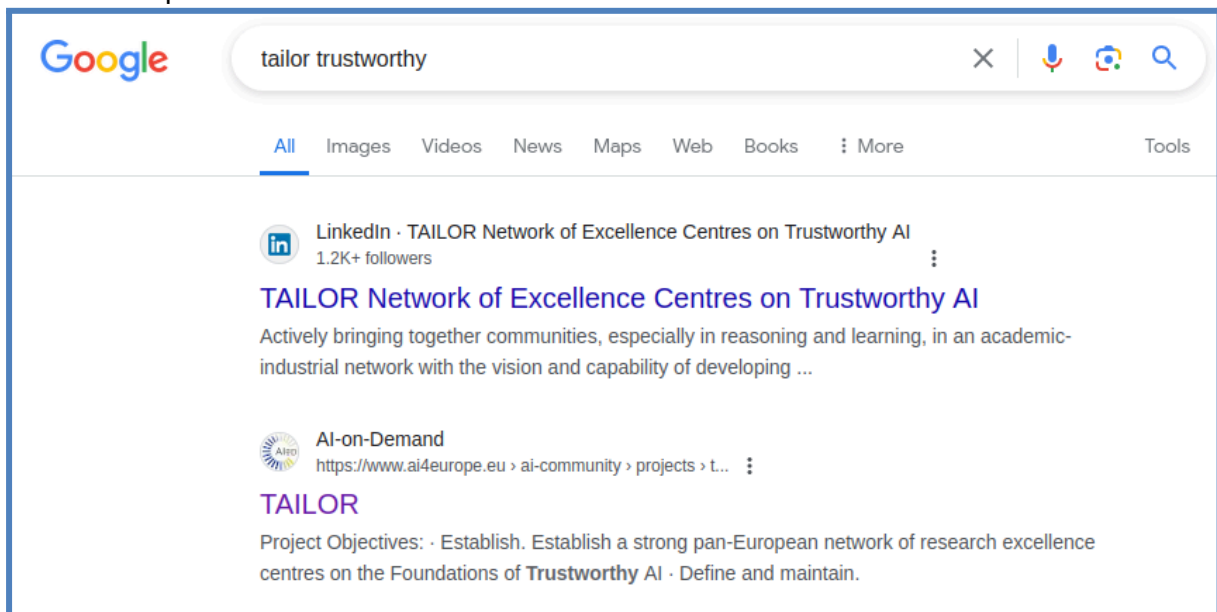essed on 4 July 4, 2024, via the link: https://docs.google.com/document/d/15Bea08DyOHlHiRAyYXqHncFeX4PIASFj/edi

Plans for TAILOR Assets on the AIoD Platform

As described, the 57 assets are in the community portal of the AIoD platform, and they must be migrated to the metadata catalogue for the assets to have a wider impact and be accessed, used, and reused by more users of the platform. The AIoD technical teams have a plan to ensure those resources, including those of TAILOR, that can be categorised in the Metadata service of the AIoD Platform would be there in the next version of the Platform.

Impact of Migration on Assets of TAILOR

Before the Migration:

Currently, 57 assets are accessible to individuals through the AI4Europe website/portal. Users can easily find these articles by searching directly on the AI4Europe platform or using search engines like Google. For example, conducting a search for "Tailor Trustworthy" on Google results in the retrieval of an article from AI4Europe (Picture 10 below). This indicates that the articles are well-indexed and can be efficiently located by users seeking information on related topics.

Picture 10: A screenshot of an example of how the TAILOR assets are found via a search engine (Google).

After the Planned Migration

After the planned move to the new AIoD architecture, the main goal of the content migration is to make assets, including those related to the TAILOR project, easier to find and more useful.

Upon completion of the migration process, expected to be done in the next release of the AIoD platform in the last quarter of 2024, the discoverability of over fifty assets is expected to be significantly improved. This enhanced accessibility will benefit both human users and programmatic access via the AIoD API. The migration involves a systematic transfer of all publicly available assets to the AIoD API.

While transferring these assets to the AIoD API is a crucial first step, it does not immediately add additional value. However, the platform developers foresee the creation of innovative applications leveraging the AIoD API. For example, an application within the AIoD platform could enable users to search for and retrieve assets related to artificial intelligence (AI) developments within the EU. This application could further analyse these assets, categorising them into various topics to provide a comprehensive overview of AI trends and issues in the EU.

By utilising the AIoD API, such an application could discover and display relevant assets from the TAILOR project. This capability highlights the potential to enhance the informational value of the AI4Europe content repository through advanced technological integration.

As discussed in the recent AI4Europe consortium meeting, the implementation of these advanced functionalities requires obtaining consent from the AIoD users, specifically the content owners of the TAILOR project. Consent acquisition can be executed through various strategies. For the ai4europe.eu website, emails will be disseminated, and pertinent messages will be displayed on the website to inform users and seek their consent.
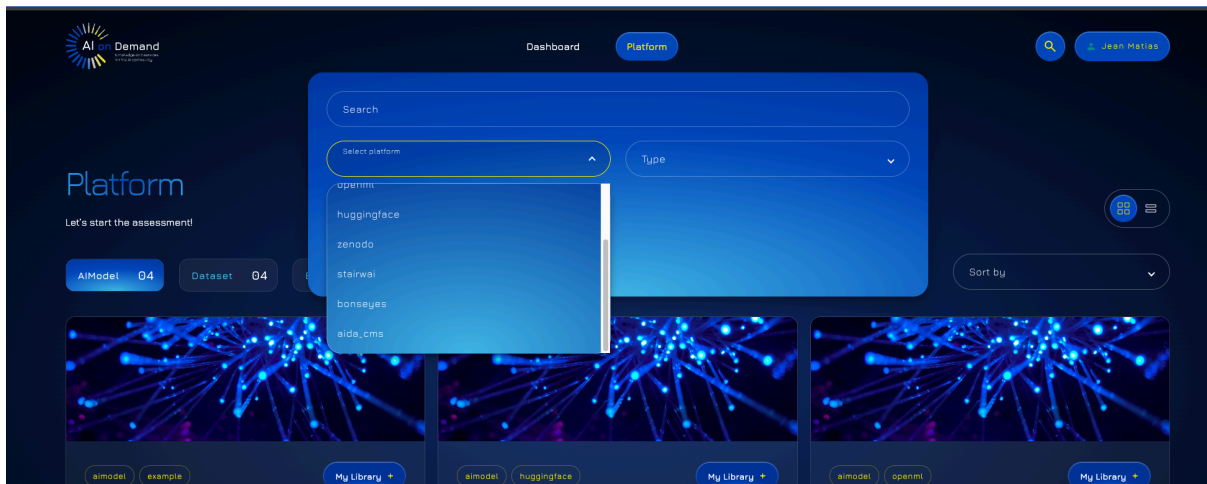
Moreover, a new application built on top of the AIoD API could incorporate a feature such as "Click here to transfer your content from AI4Europe," prompting users to authorise the data transfer. This approach assumes that users will recognise the benefits of facilitating their work within the new application environment, thereby encouraging consent for the data migration.

Upcoming Interface and Presentation of Assets on AIoD

The AIoD is a work in progress that poses both advantages and challenges for the assets in the pipeline for migration and upcoming assets that TAILOR members would want to retain as their legacy under the project's lifetime, as well as the knowledge that needs to be reused and verified by other researchers and innovators. Therefore, it's key to understand the direction in which the AIoD is moving forward to maximise the opportunities to ensure TAILOR's assets are in good use on the platform by its users.

Regarding uploading content to the platform, the AIoD currently utilises a REST API, a software architecture enabling the programmatic upload of assets in large batches. The documentation of the API, available at https://api.aiod.eu/docs, is implemented using industry standard technologies like OpenAPI & Swagger and serves as a testing ground for users to interact with endpoints (or URLs) for CRUD (Create, Read, Update, and Delete) operations. This allows users to download, upload, modify, or delete assets efficiently. Additionally, Swagger functions as a comprehensive documentation tool for developers, detailing the available endpoints and their usage. For a more aesthetically pleasing version of the documentation, users can refer to API Documentation. However, it is important to note that this version does not support end-point testing.

Picture 11 below shows an example of how an asset will be searched and filtered by the platform in the next stage of development. Users can expect to find and access TAILOR assets with ease.
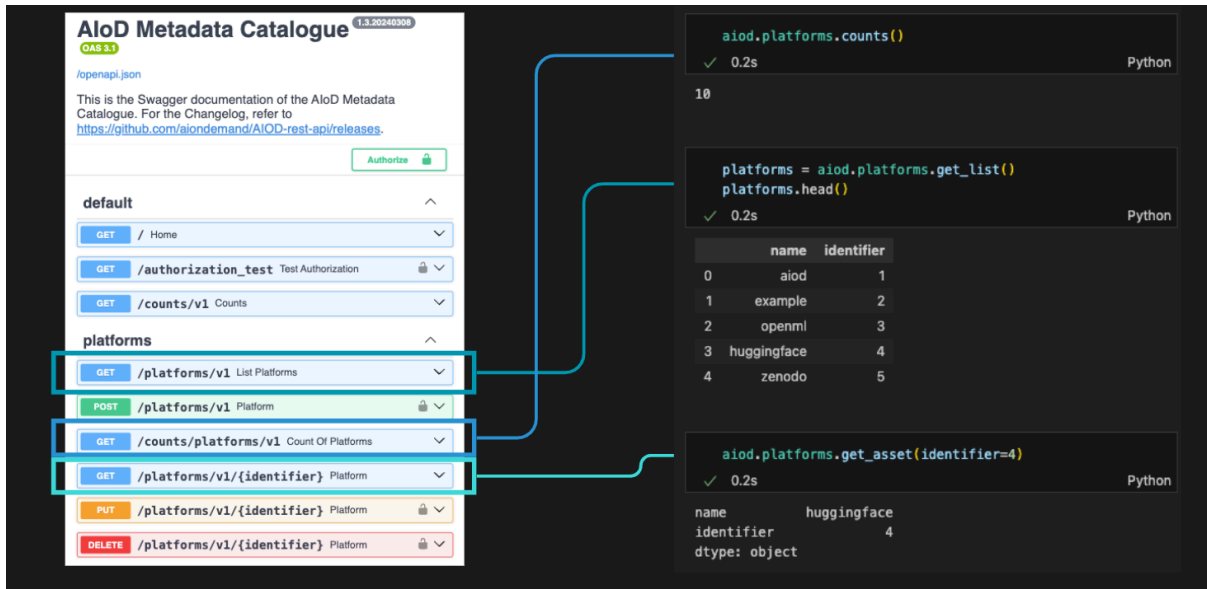

Picture 11: A screenshot of the interface that TAILOR assets would find in the newer release of the AIoD platform, which is planned to be released in the last quarter of 2024.

The AIoD will introduce a Python library named "AIoD" (the Python SDK, short for Software Development Kit), designed to facilitate seamless and efficient interaction with the **Picture 11** illustrates how the platform will search and filter an asset in the following stage of development.

Picture 12 below illustrates the soon-to-be operational scenario on the left side is the Swagger interface, and on the right side is a Jupyter notebook demonstrating practical examples of using the Python SDK to interact with the platform. The wiring diagram (in Picture 12 below) visually represents the connections between the Python commands using the AIoD Python SDK and the endpoints in the Swagger interface, clarifying how the two components integrate.

By providing these tools, the AIoD platform aims to streamline the process of managing digital assets, making them accessible for both developers and non-technical users. The combination of the REST API, Swagger interface, and forthcoming Python SDK ensures that users have multiple options for interacting with the platform, catering to a range of technical proficiencies.

Picture 12: a screenshot displaying how a large upload by the platform users can be done via the provided software development kit. As the technical team is already developing this layer of complexity, this enables single and large batch uploads programmatically with minimal coding.

Impact of TAILOR Assets: Leveraging AIoD Analytics

As described above, TAILOR's assets in the AIoD are the knowledge, methodologies, datasets, models, and experiences created by members and partners of the project to be transferred, enhanced, and retained among European AI research and innovation communities. Therefore, it's crucial to understand the levels of impact that those assets are making and will make.
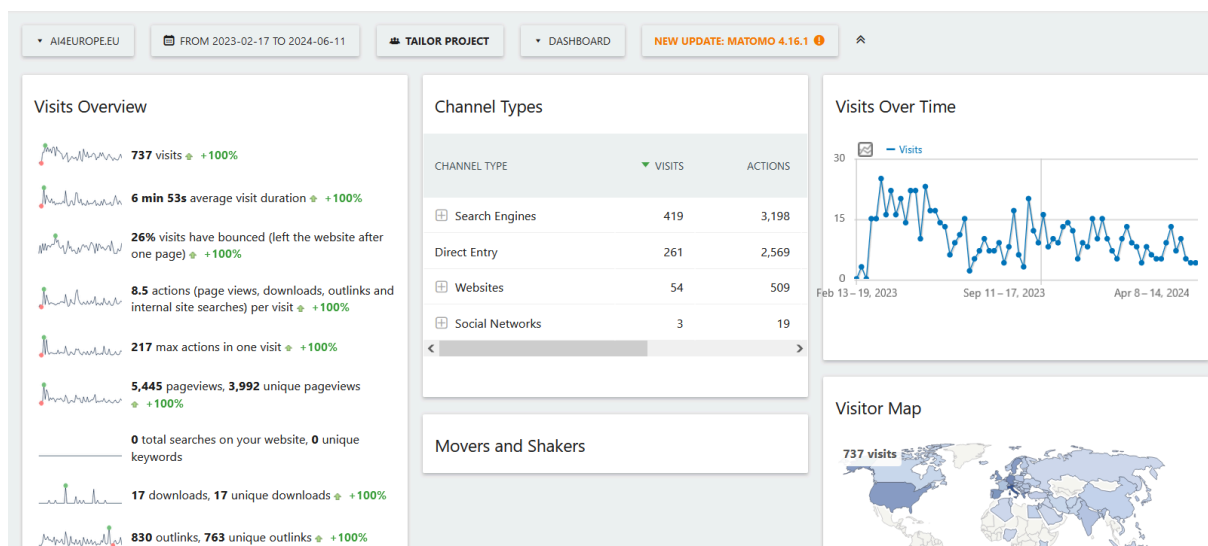
Understanding the impact of TAILOR assets is necessary for evaluating the success and reach of the TAILOR project. By utilising the AIoD analytics platform (https://analytics.aiod.eu), a GDPR-compliant alternative to Google Analytics, TAILOR users can request support from AIoD teams to access, specifically segment, and track visits to the TAILOR project pages on the AI4Europe website (ai4europe.eu).

Designated users and/or moderators from TAILOR can take the following actions to gain insights into the project's impact:

Change the date range: Set the date range from February 2023 (when the AIoD started using Matomo) to the current date. This allows us to capture comprehensive data since the implementation of the analytics tool.

Select the user segment. Choose the "TAILOR project" user segment. This filter tracks only the URLs or pages that contain the keyword "tailor," ensuring that we focus on the relevant data.

From February 17 to June 2024, a total of 734 visits were recorded. These are the number of visits to TAILOR's assets by users of the platform. Most of the visits (419) were directed via search engines, while 261 were direct entries by those who already knew about ai4europe.eu. The visitor map gave an overview of the countries and regions of the users who accessed TAILOR's assets during the measured timeframe. Most of the visits came from Europe and the US, while none came from Southern America. **Picture 13** shows the details of available analytics available for TAILOR's designated user(s) or moderator(s), who can request access or have the analyses available for insights and impacts.

Picture 13: a screenshot showing the total visits by users to TAILOR's assets from Feb 2023 to June 2024. The details are presented in visualised outputs for ease of interpretation and planning purposes, aiming to increase the impacts via activities.

The AIoD platform provides a detailed view of user engagement with the TAILOR project. By analysing this data, TAILOR users and moderators can identify patterns and trends in user behaviour, such as the most visited pages, the geographical distribution of visitors, and the duration of visits. This information is essential for making informed decisions about content strategy and outreach efforts.

As the AIoD platform matures and gains wider adoption in the AI and innovation communities, its capabilities will expand, providing even more granular insights and advanced analytics features. Enhanced data visualisation tools, predictive analytics, and integration with other data sources will offer a deeper understanding of how TAILOR assets are performing and their impact on the AI research and development landscape.

Promoting the use of AIoD analytics across the AI and innovation communities will foster a culture of data-driven decision-making. It will enable project stakeholders to continually improve and refine their strategies, ensuring that the TAILOR project and similar initiatives achieve their goals and maximise their impact.

Leveraging AIoD analytics to monitor the TAILOR project's reach and engagement is a vital step in understanding its influence. As the platform evolves, it will provide even more powerful tools for analysing and enhancing the effectiveness of AI and innovation projects.

4. The Way Forward

The AIoD is a work in progress, while TAILOR is coming to an end in Aug 2024. It is challenging to ensure the assets and knowledge-based outcomes of TAILOR are retained at some levels for enrichment, usage, and sustainment. It is required by the European Commission, but it is also hugely beneficial for the AI research and innovation communities that TAILOR assets are retained, reused, and made available for the next generation of EU AI researchers and innovators.

The AIoD development teams face challenges like GDPR compliance with the owners of the uploaded content already on the AIoD; the changes in the platform architecture; the relevance of the types of assets; the computing resources for operation and storage; and others. These are known encounters, and the involved parties are working collaboratively to address them.

TAILOR assets and members are important parts of the AIoD, not only because of the mandate by the EU but also because they matter to the EU AI research and innovation communities. Therefore, the TAILOR project may end, but the effort of its members and the assets created by those members should continue to be added to the platform. Once the TAILOR's generated knowledge can be transferred, the effort, contributions, and breaking research outcomes of the members can be multiplied, enriched, and become a source of wealth, metaphorically and truthfully, for the next generations of Europeans.