

PLATFORM In Pilot Operation: Towards the Beta Release

July 2026

Over the past four editions, we have introduced the AI-DAPT vision, presented its research agenda and demonstrators, described the reference architecture, and explored the project's reusable services. This fifth edition of the Newsletter focuses on the AI-DAPT Platform, which is now being used and evaluated by the project demonstrators while development advances towards the Beta version.

The AI-DAPT Platform is in Use

After two years of architectural design, component development, and technical integration, the AI-DAPT consortium has made the **AI-DAPT Platform available** for pilot operation.

The project has successfully moved from architectural design and independently developed data and AI services towards a common operational environment. The platform brings together the project's core software components, allowing them to be combined to support the design, execution, and monitoring of adaptive data and AI pipelines. Rather than operating only as standalone tools, AI-DAPT technologies can now be accessed individually or connected as reusable steps within broader workflows. Through the platform, users can:

- **Design** AI workflows using graphical pipeline composition.
- **Integrate** data preparation and transformation services.
- **Execute** hybrid AI models that combine machine learning with scientific knowledge.
- **Monitor** AI pipelines during execution.
- **Incorporate** human input and validation where required.

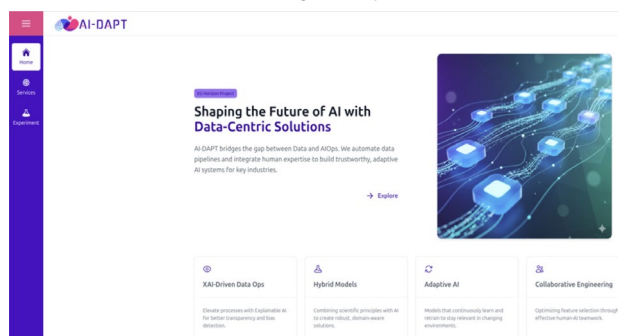


Fig.1 AI-DAPT Platform landing page

The platform is currently **being used and evaluated** by the project's demonstrators in **healthcare, manufacturing, robotics, and energy**. Each demonstrator is testing the combination of services that best fits its specific needs, providing practical feedback on functionality, integration, and usability. These pilot activities are an important step in validating and refining the platform. They allow the consortium to assess how individual services perform when combined into realistic workflows and to identify improvements before the next release.

At the same time, the demonstrators represent validation environments rather than the boundaries of the platform: AI-DAPT is designed as a reusable framework capable of supporting adaptive AI workflows beyond the project's pilot use cases.

Building on the experience gained during the pilot operation, the consortium is now progressing towards the **next major milestone**: the **beta release**. This upcoming version will incorporate feedback from demonstrators, expand functionality, improve usability, and further strengthen the platform's capabilities.

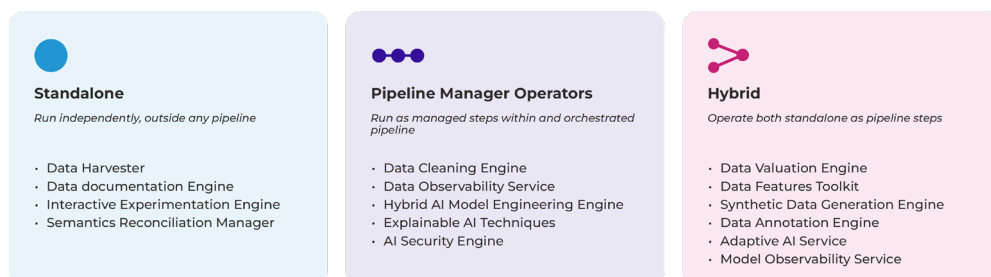


Fig.2 AI-DAPT Platform Main Features

Inside the Platform

The AI-DAPT Platform is designed primarily for **data scientists and AI practitioners** who need to build, test, and refine data and AI workflows without managing the full complexity of the underlying infrastructure. Its strength lies in bringing together complementary technologies across the AI engineering lifecycle within a common operational environment.

At the centre of the platform is DAVE, the graphical Pipeline Manager through which users can compose, configure, execute, and monitor data and AI workflows using reusable operators. DAVE simplifies the orchestration of complex processes and provides a low-code interface for accessing different **data and AI model operators**, while technologies such as Apache Airflow and MLflow support workflow execution and model lifecycle management behind the scenes.

As shown in the figure 2, platform services can be used in three ways:

- **Standalone**, with services run independently outside any pipeline.
- **Pipeline**, with services executed as managed as steps within a workflow.
- **Hybrid**, with services operating either independently or as part of a wider pipeline.

This flexible structure allows data scientists to select only the capabilities required for a particular task and combine them as needs evolve. At the same time, domain experts from the different pilot demonstrators remain essential for interpreting data and results, validating outputs, and supporting application-specific decisions that require human judgement.

Human Oversight Across the AI Lifecycle

Human oversight in AI-DAPT is embedded throughout the data and AI lifecycle, rather than being limited to a final approval step. As the platform moves through pilot operation, these mechanisms allow data scientists and domain experts to inspect, validate, and intervene whenever human judgement is required.

From raw data to curated datasets, users can review data quality and bias, validate annotations, define cleaning rules, and assess whether datasets are suitable for their intended purpose. Automated services support these activities, while domain expertise remains important whenever quality or meaning depends on the application context.

Pipelines you can see and control are designed and executed through DAVE. Users can configure operators, parameters, thresholds, and validation points without directly managing the underlying orchestration infrastructure.

Human judgement stays in the loop through Human-on-the-Loop (HOTL) and Human-in-the-Loop (HITL) pipeline mechanisms. Within DAVE, internal operators represent automated processing steps, while external operators, allow parts of the workflow to be carried out outside DAVE, including steps that require human input, validation, or approval before execution can continue. The expertise required depends on the intervention, ranging from simple confirmation to domain-specific interpretation and decision-making.

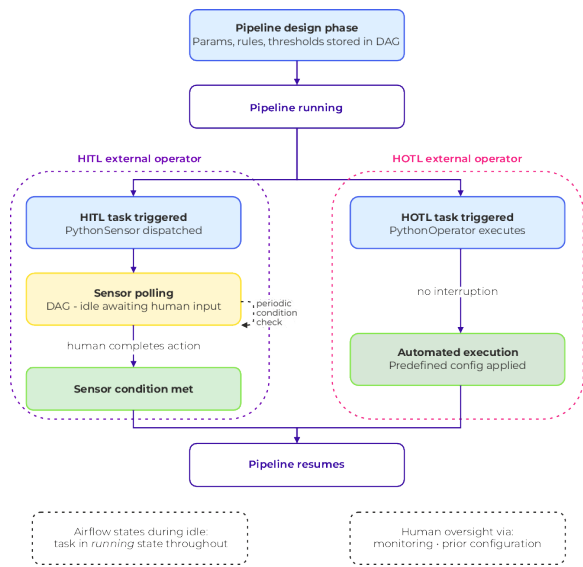


Fig.3 Execution lifecycle of HITL (left) and HOTL (right)

Transparency at every step allows users to inspect intermediate results, understand how data and models are transformed, and identify unexpected behaviour early. This visibility supports debugging, validation, and informed intervention throughout the workflow.

Hybrid AI models combine domain knowledge, such as physical equations, conservation laws, and expert rules, with data-driven machine learning. This helps produce predictions that respect known constraints, perform better in data-scarce or noisy settings, and remain more interpretable than purely black-box approaches.

Together, these mechanisms make human expertise an active part of how AI-DAPT pipelines are designed, executed, monitored, and evaluated, while pilot feedback will help refine how these interactions are supported in the Beta release.

Community & Event Highlights

While advancing the Platform, AI-DAPT continued to engage actively with the European AI community through conferences, workshops, and collaborative initiatives, strengthening exchanges with stakeholders, sister projects, and related research communities. The **project's fifth plenary meeting** was hosted by Fraunhofer FOKUS, in Berlin. Over two days, partners discussed integration issues, reviewed progress across all work packages, and gathered feedback from the demonstrators in preparation of the project's second review meeting. AI-DAPT also participated in **Data Week 2026**, contributing to the session "When Data Pipelines Decide AI Trust and Efficiency: Theory and Practice." Together with other Horizon Europe projects, the discussion explored how trustworthy data pipelines can support scalable, reliable, and efficient AI deployment.



Fig.4 Plenary Meeting, organised by Fraunhofer FOKUS



Fig.5 Data Week 2026

Visit our stand at the upcoming BDVA's EBDVF 2026

Meet the AI-DAPT team at the European Big Data Value Forum, taking place in **Galway, Ireland, from 30 September to 1 October 2026**. Visit our stand to explore the AI-DAPT Platform, see how its data and AI services can be combined into adaptive pipelines, and discuss its application across healthcare, manufacturing, robotics, and energy. AI-DAPT will also host the session "AI-Ready Data and Trustworthy Pipelines for Europe's Next Wave of Industrial AI."

Scientific dissemination also continued to grow over the past months. Several consortium members contributed three chapters to the ADRA Open Access Book (ISBN 978-3-032-10561-5), and the consortium successfully organized the Special Session "**Advancing Adaptive and Trustworthy AI Pipelines: From Data Foundations to Lifecycle Orchestration and Analytics**" at **ICE 2026** – International Conference on Engineering, Technology and Innovation, held in Porto, Portugal. The related preprints are available through the project's Zenodo community: <https://zenodo.org/communities/ai-adapt/>



Fig.4 ICE Conference 2026

<https://www.ai-dapt.eu/>

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