The platform development is a joint effort between 30 partners. The development of European Factory Platform is partly funded by the European Commission in the Horizon 2020 framework programme under the Grant Agreement No. 825075.

The Anomaly Detection Service is web-based machine-learning-powered application that assist managers and software developers in the creation, training, operational management, and control of unsupervised algorithms that can detect anomalies based on the analysis of data gathered from industrial environments. The service provides a dashboard that providing historic and real-time information about identified and predicted anomalies.

For application developers, the anomaly detection service provides an encapsulated service easy to embed on their own apps using MQTT and AMQP protocols.

The anomaly detection service support unsupervised learning algorithms such as auto-encoders and k-means clustering algorithms that are tailored to detect anomalies in the behaviour of manufacturing assets. The service allows the adaptation of the machine learning models to the enterprise specific data. Once trained, the models can be initiated, and real-time stream data can be ingested through the EFPF message broker. A rich chart-based dashboard is provided for each model to show the evolution and other statistics that drive to actionable decisions.
The cloud-ready Anomaly Detection Service is embedded in the EFPF ecosystem as it uses the EFPF Data Spine functionality for data exchange. New data sources (e.g. PLCs, IoT devices etc) can be linked with the Anomaly Detection service through the EFPF Data Spine that offers the capability to handle/Process real-time data. Once data is ingested into the EFPF Data Spine, the Anomaly Detection Service provides the necessary interfaces to create, train, and instantiate learning models. The trained models can be linked with the EFPF Data Spine to process real-time data. The results of the real-time data analysis (anomalies) are shown through various visualisations on the intuitive dashboard of the Anomaly Detection service.

**WHAT ARE THE COSTS FOR USING THE EFPF ANOMALY DETECTION SERVICE**

The Anomaly Detection service is offered to EFPF platform users free of cost. The service can be tailored to client needs and custom installation is subject to discussions with the service provider. Otherwise, the service is available under open-source licence, allowing software and application developers to configure and enhance existing functionalities for various needs.

**HOW TO CONNECT TO EFPF ANOMALY DETECTION SERVICE**

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- Real-time data analytics
- Anomaly detection and predictions
- Decision support

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