

FRONTMATEC

**SPEND LESS TIME FIGURING OUT YOUR DATA
AND UNLEASH YOUR BUSINESS POTENTIALS**



FRONTMATEC BIS - DATA CULTURE AND DIGITAL TRANSFORMATION

With Frontmtec Business Intelligence Service (Frontmtec BIS) we offer a modern data infrastructure and data management system for complex analytical needs.

Frontmtec BIS helps customers with Business Intelligence (BI) tools and services as well as domain specific knowledge within the field of automation.

With a good BI-setup, you can spend less time figuring out your data and unleash your business potentials by:

- Faster decision-making for operation and management
- Better understanding of what creates value
- Better understanding of operational problems – where should our focus be?
- Better control of operation and central corporate and business functions
- Reduced technology focus – the technical platform is managed by Frontmtec

Frontmtec develops, manages and operates a turnkey Business Intelligence service on top of latest Microsoft cloud technology. We use open standards and industry leading technologies, methodologies, and well proven principles.

As a production company, you can now already begin to roll out a data culture and digital transformation, and open the way for insights which, so far, have been out of reach.

Begin harvesting the values of your data today with Frontmtec BIS.





IMPROVED DATA QUALITY

Sufficient data quality is a vital prerequisite when making informed decisions, based on data analysis. Having exceptional data quality will both ensure the credibility and reliability of the analysis.

To ensure a sufficient data quality, Frontmtec BIS uses the latest machine learning algorithms, technical know-how and statistical measures to process data in multiple steps, preparing the data for analysis. These processing steps involves, a technical validation of data, anomaly detection and missing data imputation.

The data processing is aimed at being transparent and modular, by setting a distinct flag on the data based on its quality or origin, making it possible to select the appropriate module of data quality.

This provides different levels of quality to support multiple stages of data analysis (raw, treated, and enriched), giving customers data quality version control in the “self-service BI” and insight in processing procedure.

Frontmtec BIS is developed on latest Microsoft Azure technologies, utilizing the Apache Spark engine for processing big data.

This allows for petabytes of data to be processed, which largely reduces the limitations on data scale and processing speed and the possibility to process data in real-time.

Adopting the Frontmtec BIS data quality package provides:

- A detailed review of the current data quality.
- Data measurements which are technical validated against the technical specifications of the facility or instrument.
- Comprehensive anomaly and outlier detection.
- Reduction in the negative effects of missing values and outliers, with machine learning generated values.
- Data quality control in the “self-service BI”.

ENERGY, CLIMATE AND HEALTH - IT IS ALSO A DATA-DRIVEN JOURNEY

Your organization has CO2 neutrality on the agenda. It is a driver to a better climate and it also minimizes energy expenses.

A firm understanding of energy consuming and producing activities and processes can be an important first step before you begin to carry out interventions that helps reduce CO2 emissions and reduce costs.

Carbon accounting

Frontmatec BIS collects emission data from within the organization own control – direct emission. These emission data are bound to industry specific activities and processes, and directly applicable for carbon accounting.

With a deep insight into your company data, you are now able to reduce your carbon footprint.

Create good energy habits

In order to minimize consumption and make better use of resources, it is important to measure all energy sources and

possess historical development. With Frontmatec BIS, you get the ability to collect data from any data source and benchmark across all production areas, assets and sites.

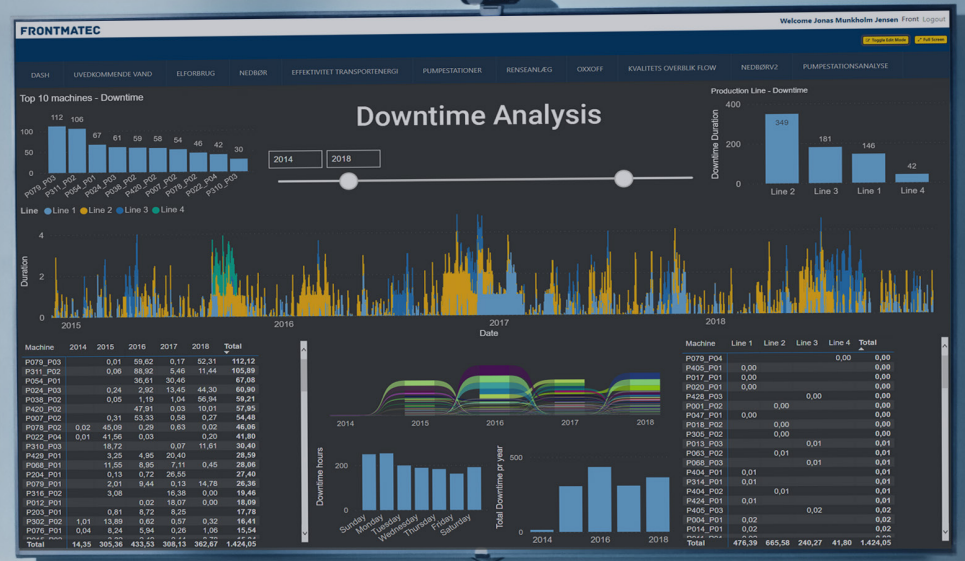
Impact assessments can be made so that good efforts on one parameter do not create bad results for another parameter.

There must be a constant focus on the entire value chain.

It is also important to communicate the resource consumption to all employees on a daily basis, as their behavior has a great impact on your company's climate footprint. In order to engage employees, it is important that it is natural and easy for them to see that their efforts matter.



OPTIMIZE AND STREAMLINE YOUR OPERATION WITH FRONTMATEC BIS



Alarm analysis

An intelligent alarm analysis does not only describe alarms as primitive alarm counters, but it also measures and splits the alarm period into segments in the desired groupings. The benefit is a visual overview of unwanted events that indicates conditions in the system which require operational measures. Tendency- or trend lines for a e.g. unit during a selected period can be compared with other units and make benchmarking possible.

Locate deviations

A Frontmtec BIS deviation report investigates fluctuations from the norm. By the use of intelligent algorithms, the operation is supported by decoding of data, and filtering and localization of anormal fluctuations which can be a result of unwanted events.

A deviation report hereby provides an opportunity for a deeper explanation supported by the algorithms.

Observation statistics

As a part of our service, we also offer integration of data from maintenance, assessments of state/condition, planning, and operational registrations.

In this way, a Frontmtec BIS analysis can also categorize and rank challenges based on visual observations with input from staff and citizens.

Maintenance

Statistics regarding the lifetime of components can be checked against prognoses for operational hours and start counters, and thereby creates the possibility of a timely action to anticipate breakdown and damage.

Investment guidance

With a traversing statistical analysis, the lifetime of components and facilities can be checked against, for example, operating hours which makes it possible to compare the quality of components and facilities from different manufacturers, and thereby guide the decision process regarding choice of product.

FRONTMATEC BIS - INFRASTRUCTURE

Frontmatec BIS is using industry standards and open formats. It utilizes a 'data lakehouse'-architecture that consist of cloud storage, delta lakes and parquet formatted files.

The delta lakes are easily accessible for authenticated users. This way our customers can share data with external consultancies, institutions etc.

It is easy for organizations to integrate data onto the platform with a secure integrated runtime environment. The technical infrastructure of Frontmatec BIS has been developed with a view to give organizations the best opportunities for data insight, analytical base, and the application of data for innovative purposes.

In the latter, we also support the possibility of analysis according to the 'Self-service BI' principle.

Frontmatec BIS and data quality

Data integrity: Once data has been through the Frontmatec BIS infrastructure, data is cleaned, normalized and enriched.

The processing of data brings with it an important quality - data integrity. An analytical data base where this quality has not been taken into account will not be applicable in a business context.

Data validity: Frontmatec BIS strives as much as possible to maintain important metadata that describes and explains data. Metadata is instrumental in the interpretation of the analyzes in the end.

Data Conformity and Innovation: Predefined models and schemas are used to uniformize data. It offers a wide range of benefits.

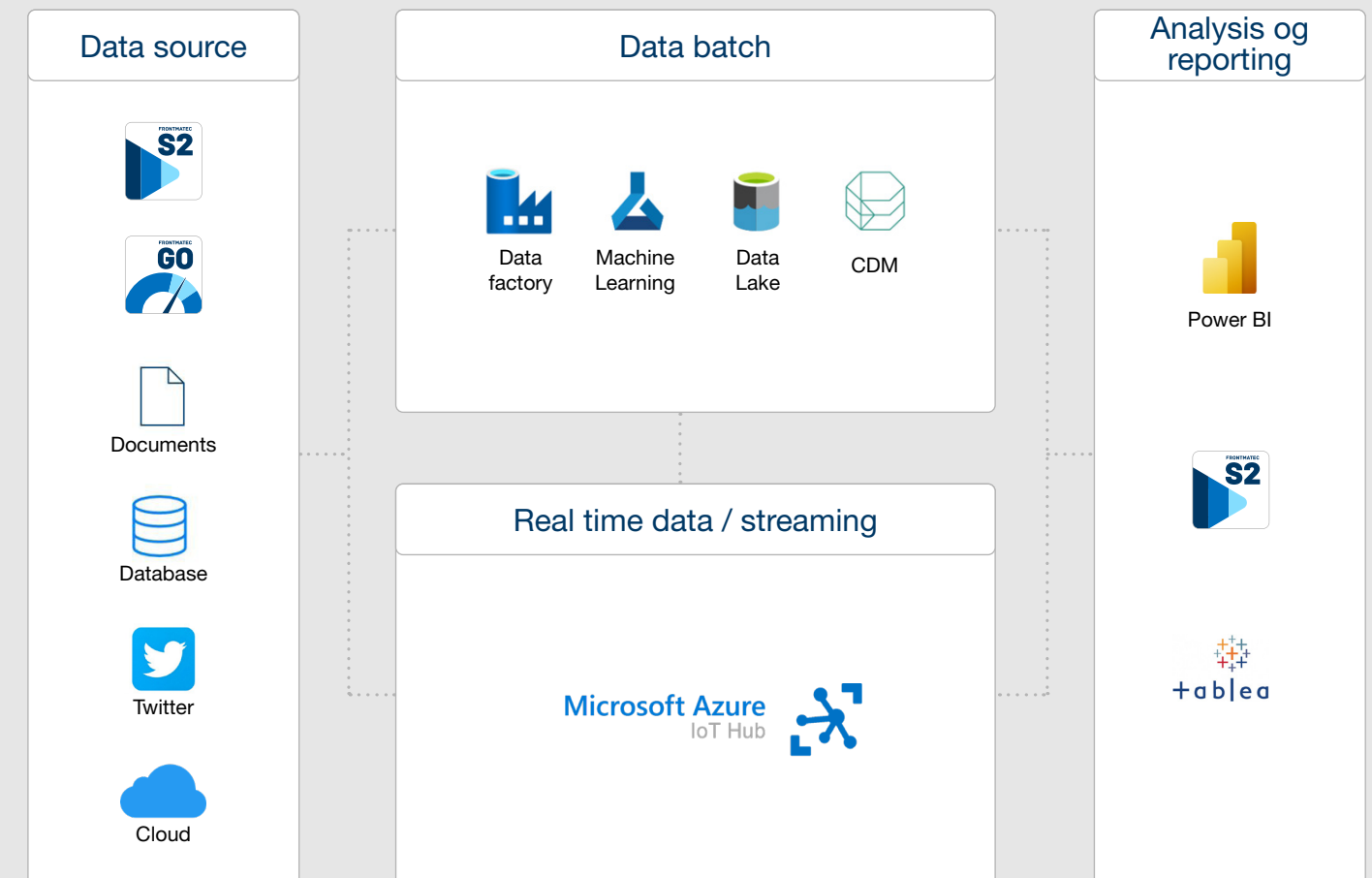
Data security

Frontmatec BIS handles data for many customers, and when it comes to security, we use best-in-class and well-known industry standards.



Based on Azure Cloud technologies

Frontmatec BIS is 100% cloud based. This means that we do not purchase and maintain a data center. We rent technologies and space at Microsoft data centers but use our own algorithms to solve domain-specific tasks for utility- and wastewater companies.



FRONTMATEC

Frontmatec Control Systems covers the group's solutions within MES, industrial IT, SCADA and automation solutions.

Frontmatec develops the world's leading tailor-made solutions for automation in food industry, other hygiene-sensitive industries and the supply industry. Our story stretches back to 1931, which today makes us market leader with over 20 offices on worldwide and thousands of plants sold globally.

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