



ESENKO.

MAKING THE DATA PROCESS **WORKABLE** AGAIN



We empower data consumers by
accelerating data integration.
Our solutions bring back the
essence of ICT.



BATCH DATA
PROCESSING

HOTSTREAM
DATA
PROCESSING

AZURE DEVOPS
CI/CD

Industrialize your Azure Data Platform

Everything should be automated at the
push of a button.

We're offering (data) solutions that
completely match your needs with a
generic deployment mindset.



Esenko accelerates your hybrid Azure cloud **data** platform
with **meta data driven frameworks** and related **Azure Services**



Business Case: Inagro IOT data platform





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Business case explanation:

Our customer has a lot of **IOT devices** in the **field**. And you can take that literally. They grow agricultural crops and are always looking to optimize their products and the affecting conditions.

So, the IOT devices measure (amongst others):

- Air temperature
- Soil temperature
- Humidity
- Soil moisture

They also receive tons of similar data from **Flemish partners** (universities, research centers,...) which need to be combined with their own findings. Enter Esenko!



Business Case: Inagro IOT data platform

Implementation Approach:

- We started this track with **an analysis** of what was asked
 - What is the business context
 - What are the business requirements
 - What are technical and IT requirements
- After providing the customer our **analysis document**
- We proposed to build a **Minimal Viable Product** being the V1 the customer could use



Business Case: Inagro IOT data platform

Main goals for Esenko in this business case:

- Centralize **all** IOT data sources
- IOT devices
- **pushing** API's
- **polling** API's
- If new devices are added: **automate** this process end to end
- If existing devices deliver new data – the devices provide new columns – **enable schema drift** automatically
- Make everything CI/CD ready in Microsoft **BICEP**
- Make the data available for **archiving**
- Make the data asap available for **descriptive** analytics and for **real time** (under 5 seconds) visualization in PowerBI
- Set up **alerting** if devices go offline in Microsoft Teams

As we are a **Microsoft only** company, no other technologies were used.
Python code for the Azure functions, **T-SQL** code in the Azure SQL DB.



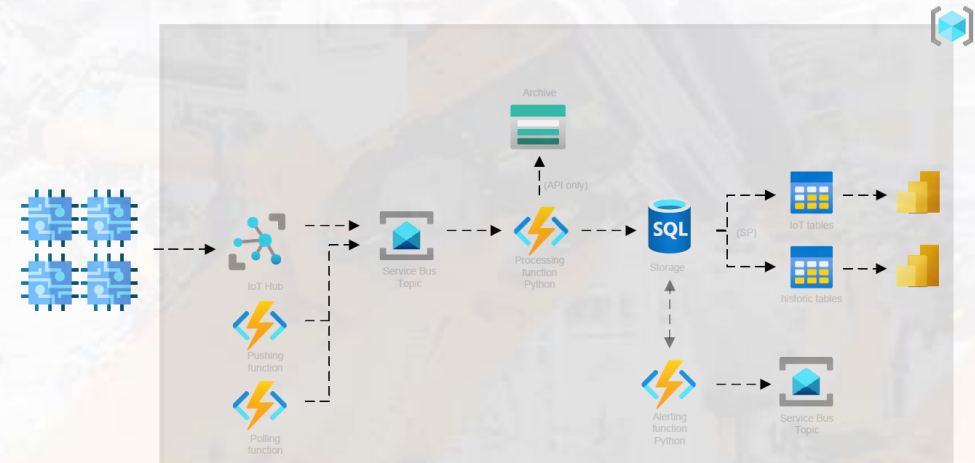
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Technical explanation:

We capture the separate devices and their data through an **IOT Hub**. We combine this data with pushing and polling **functions** which deliver us the already processed data from the Flemish universities.

All data is queued and time stamped asap in the **Service Bus** where it gets picked up by the processing **Azure Function** (using Python) for archiving (**Azure Blob Storage**) or to be stored in an **Azure SQL data base** for descriptive analytics and for real time visualization in **PowerBI**.

Alerting is setup through an **Azure function** (using Python) which communicates with a **Service Bus** where eventually Microsoft Teams picks up the alerting data and is showing it to the end customer. All logging data is send to **Application Insights** for monitoring purposes.





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Results:

All goals were achieved by Esenko.

This is why we love Microsoft. They offer us a set of **building blocks**, we analyze precisely what the business case is and what components are available in the Microsoft toolbox.

We always keep the balance between **thinking in frameworks** so we can reuse stuff for new business cases or **building something specific** to match the separate client goals.

Stress tests for this data platform were done up to 600 devices pushing data per second.



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