



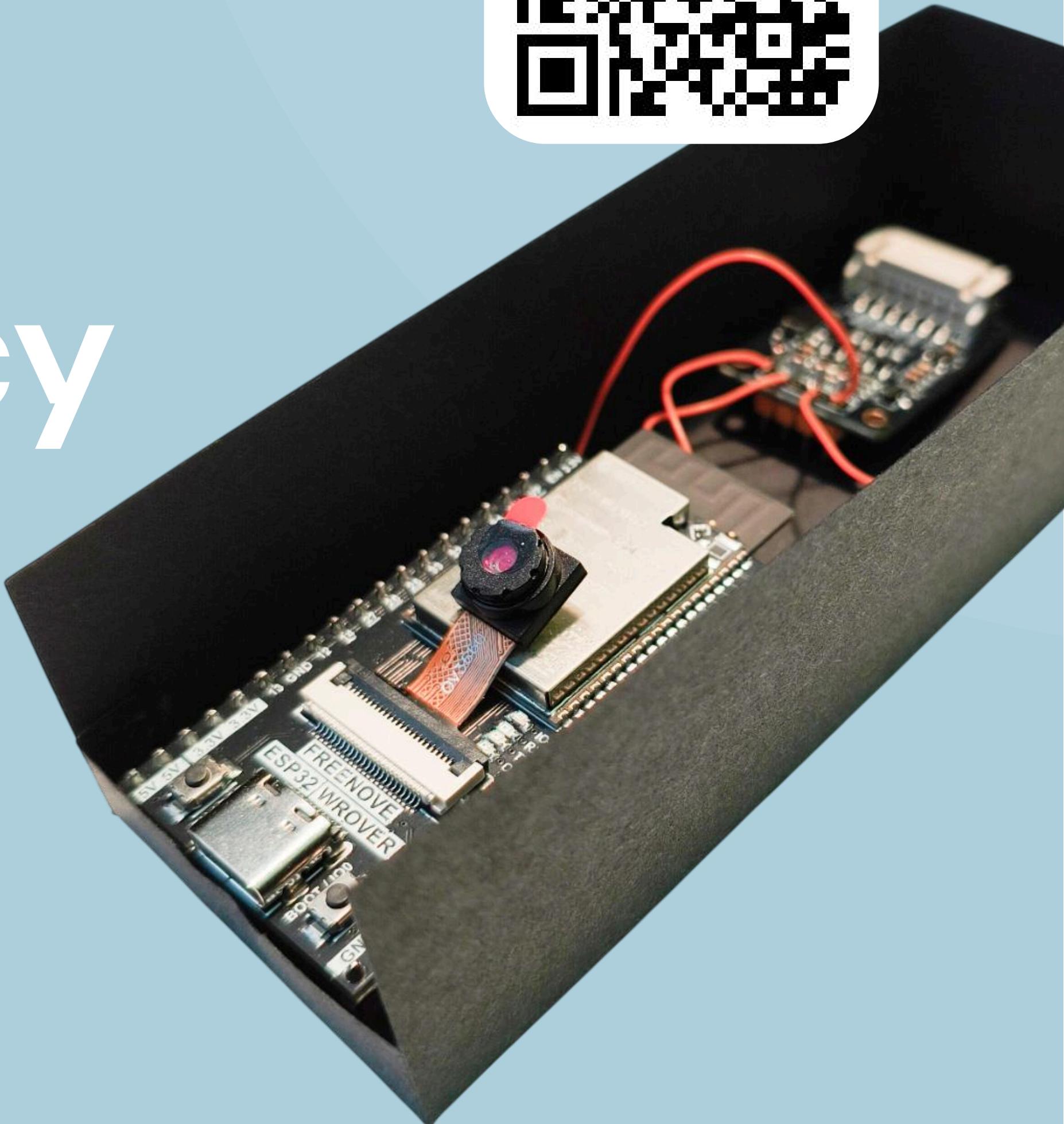
TruSense

Sense. Verify. Trust.

www.trusense.africa

Hello Future 🖐

Our mission is to add
trust and transparency
to sensor data



Many industries can benefit



Supply Chain

Immutable sensor data ensures the authenticity of environmental conditions during transport, helping verify that goods like coffee, cacao or electronics were stored within safe temperature and humidity ranges.



Data Centers

Decentralized monitoring of temperature and air pressure prevents data manipulation and ensures accurate reporting of cooling efficiency, reducing downtime and energy waste.



Agriculture & Food Security



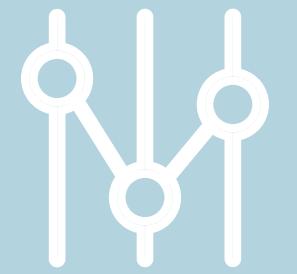
Immutable sensor data provides verifiable records of environmental conditions, enabling fair and transparent crop insurance claims and helping farmers access compensation and credit based on trusted environmental evidence.

Healthcare

Transparent, tamper-proof records of temperature and humidity protect medicine integrity by proving they were stored and transported under strict regulatory conditions.



Features



Immutability

TruSense stores all measurements on Hedera's immutable ledger, ensuring complete transparency and verifiability, no Hedera wallet required!



Realtime Data

Live charts and dashboards provide real-time monitoring of temperature, humidity, and air pressure, delivering instant insights.



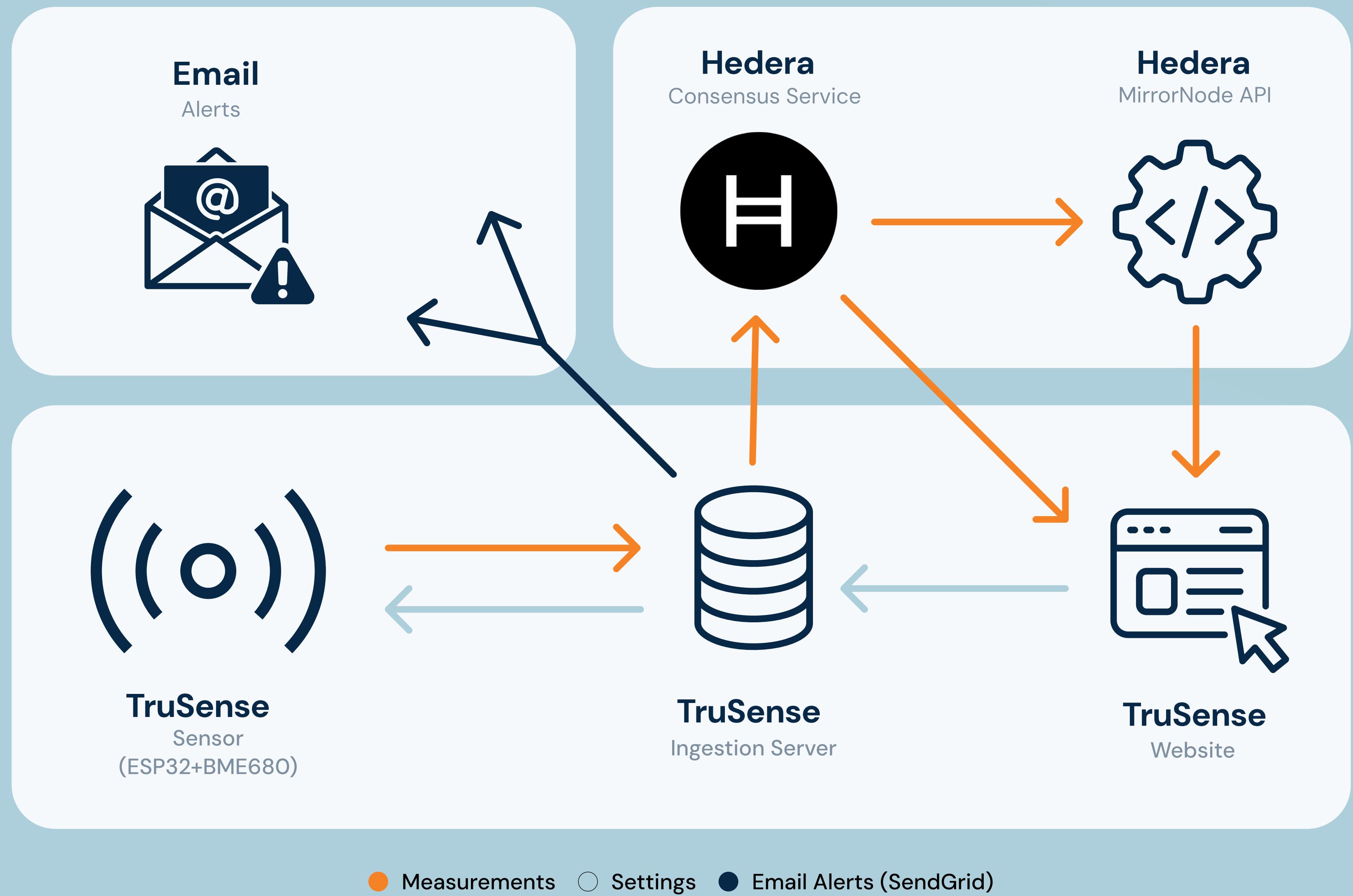
Smart Alerts

Smart email alerts notify whenever a measurement exceeds preset limits, enabling timely action before issues arise.



How it works

The sensor sends measurements to the ingestion server, which forwards them to the Hedera Consensus Service and propagates to the MirrorNode. The TruSense website subscribes to HCS for real-time data and retrieves historical data from the MirrorNode API. It also sends settings like measurement intervals and email alerts back to the server, which updates the sensor and sends email alerts using SendGrid.



Pricing

Thanks to Hedera's low and predictable fees, running a single sensor with a frequent measurement interval **costs less than \$1/month!**

A single medium-scale use case involving 60 sensors measuring at a higher frequency will steadily **increase the mainnet tps with 1 transaction per second!**

Hardware Pricing

The purchase cost of the hardware is **less than \$10!***

- **ESP32: \$0.16 on AliExpress**
- **BME680: \$9.40 on AliExpress**

* bulk price for 100 sensors

\$0.88 /month*

- 1 high precision sensor (BME680)
 - Temperature
 - Humidity
 - Air Pressure
- 10 minute measurement interval
- Decentralized storage
- Realtime charts
- Email alerts

* Including TruSense fee (\$0.0001 /message).
Excluding the initial one-time cost for the device and shipping.

+1 tps

\$527.04 /month*

- 60 high precision sensors (BME680)
 - Temperature
 - Humidity
 - Air Pressure
- 1 minute measurement interval
- Decentralized storage
- Realtime charts
- Email alerts

* Including TruSense fee (\$0.0001 /message).
Excluding the initial one-time cost for the devices and shipping.

Hashgraph Developer

Hello, I'm Anneloes



I'm a front-end focused full-stack developer from The Netherlands and a Hedera enthusiast since 2021. Building my first IoT project and exploring the Hedera Consensus Service was an amazing experience. Seeing how it operates seamlessly in the background really highlighted its potential. It's made me truly optimistic about what's ahead for Hedera!



Next steps



Software

- Implement user registration
- Perform thorough software testing



Hardware

- Design and create a custom waterproof enclosure for the sensor hardware
- Explore measuring VOCs (Volatile Organic Compounds) using the BME680
- Consider hardware extensions (e.g. add a battery or GPS tracking)



Product Launch

- Get in touch with potential clients
- Move transactions to mainnet
- Build and ship sensors worldwide



— Timeline



trusense.africa

Hackathon

Hedera Africa Hackathon

Track

DLT for Operations

Project Name

TruSense