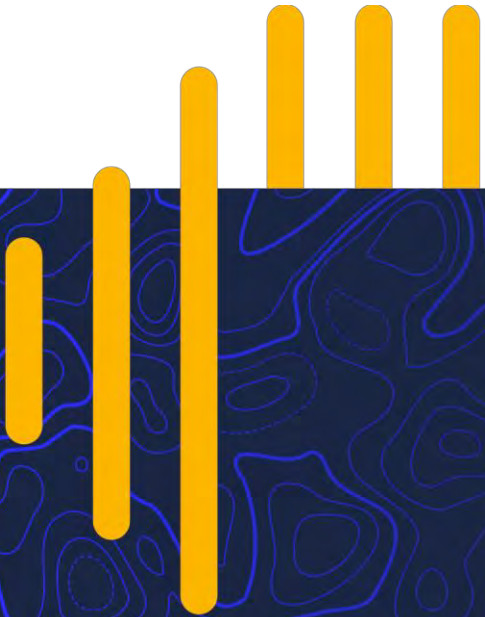
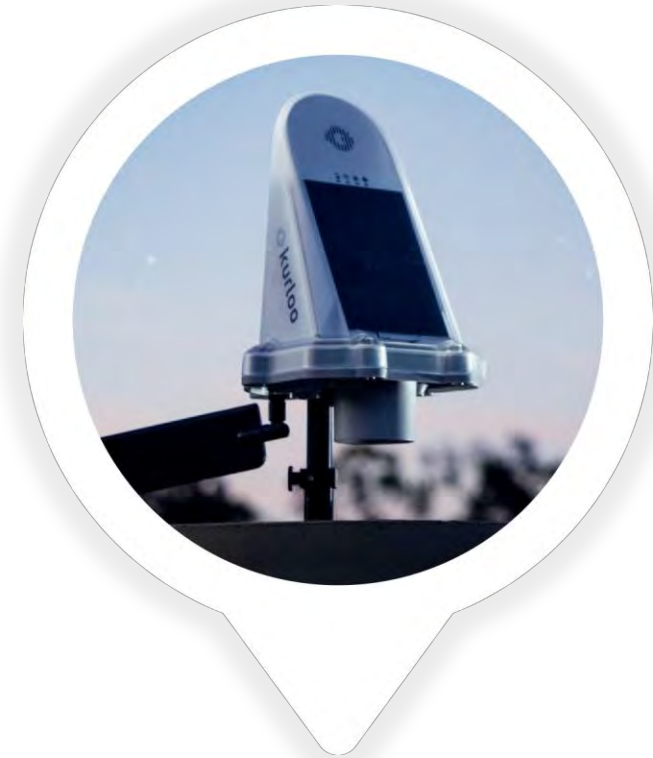


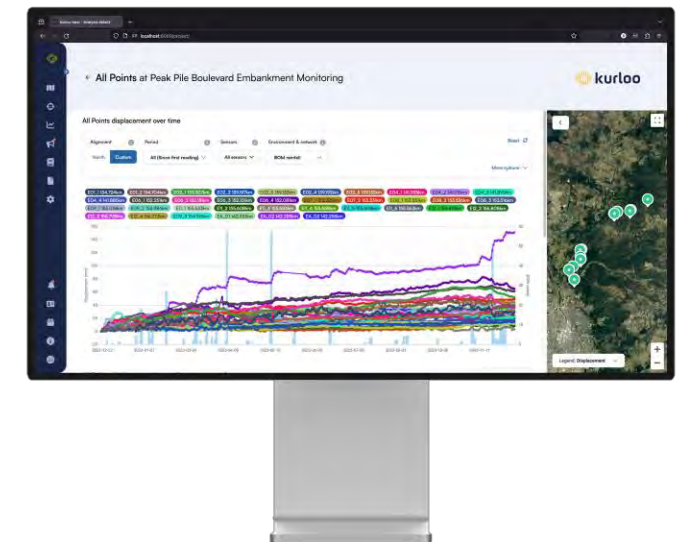
# Brilliantly Simple Displacement monitoring



kurloo

# Overview

- What is Kurloo?** ➤ Kurloo is a simple and reliable autonomous displacement and settlement monitoring technology.
- Why is it needed?** ➤ Millimetre XYZ monitoring is needed often by engineers during construction and to manage risk of failure or collapse of unstable slopes and structures.
- How it Works?** ➤ The patented kurloo devices transmit data remotely to the kurloo nest cloud that processes satellite (GNSS) data into precise millimeter displacements over time.
- Where is it used?** ➤ Monitoring of critical road and rail infrastructure, embankments, settlement, dams and reservoirs, mining waste piles and tailings, pipelines, industrial plant and many other varied industrial and scientific applications.
- What does it cost?** ➤ Kurloo is affordable for many applications, starting from \$20 NZD per day / device.



# The problem kurloo solves.

Until now, monitoring millimetre XYZ is difficult to perform at scale.



## Cost and time intensive

Frequent site visits for accurate monitoring are costly and time intensive.



## Difficult to scale

Alternative autonomous solutions are complex and don't scale easily.



## Delayed or outdated results

Delayed data may be outdated and not be a true reflection of what is happening now.



## Availability of personnel

Skilled personnel are often in limited supply and instead focused on higher value activities.

But now... Kurloo enables you to more simply expand your business or project with reliable and frequent XYZ monitoring services.



## Autonomous and cost effective

Simple to install, Kurloo works autonomously to eliminate the need for frequent visits.



## Affordable and flexible

Low daily unit cost makes Kurloo more affordable to scale up and down as required.



## Frequent and online

Allows frequent readings at a rate of your choosing with near real time results.

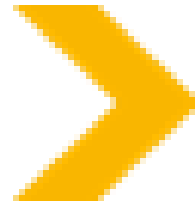


## Easy to understand

Provides consistent results which reduce the reliance on skilled personnel.

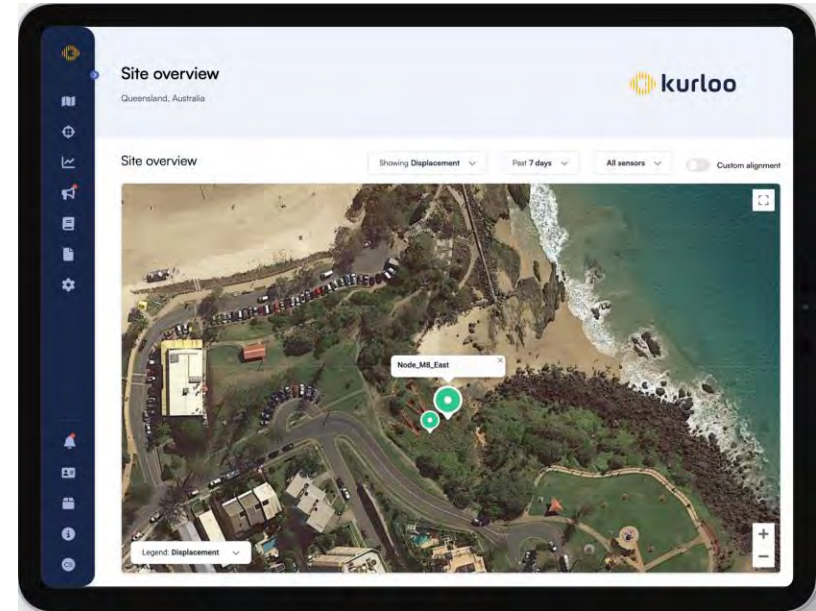


# How kurloo works.



## ➤ The Kurloo device

Simply install one kurloo device to each pre-determined monitoring location on site and let kurloo do the rest; **100% autonomously!**



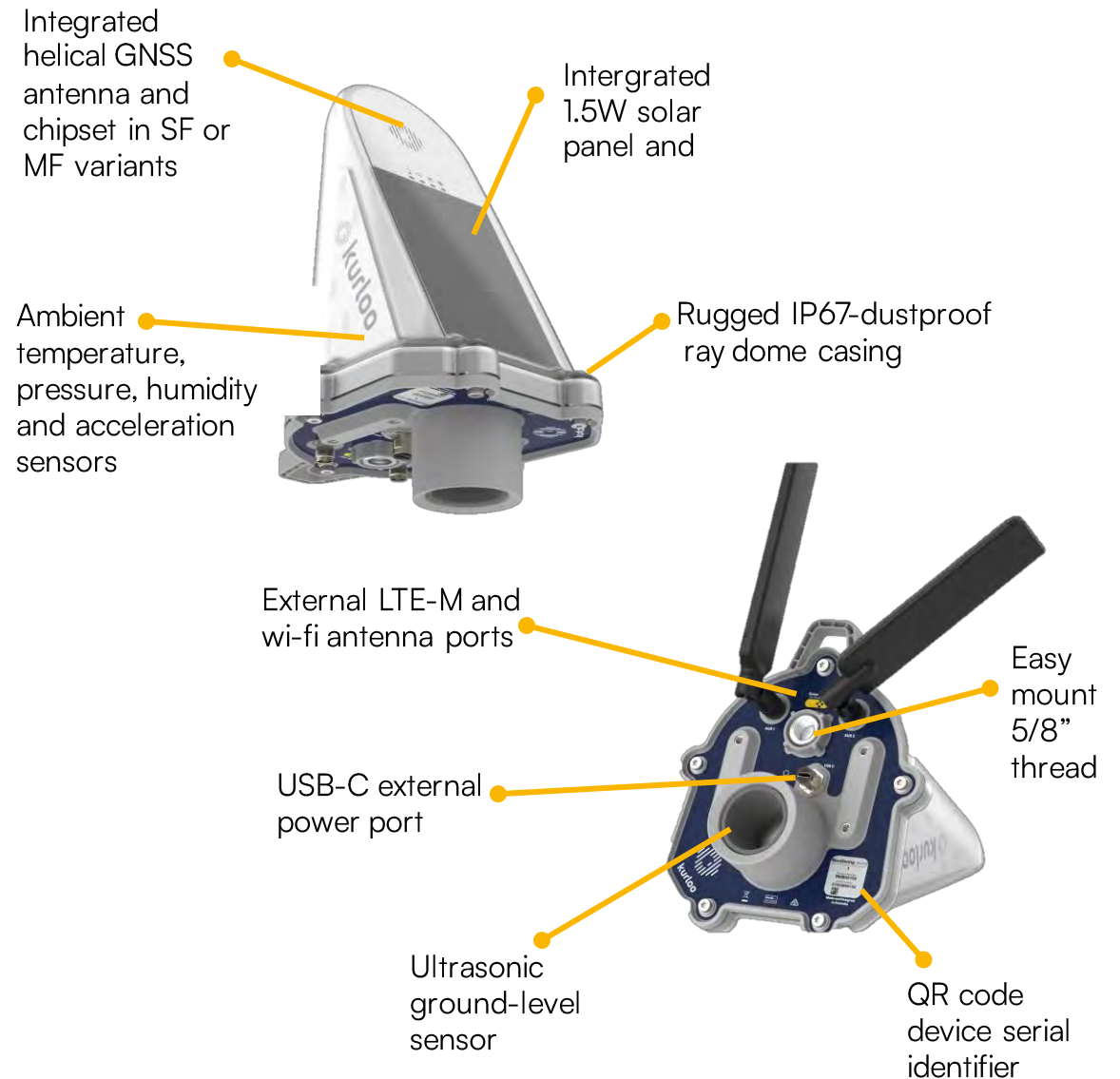
## ➤ The Kurloo Nest

Login to the simple to use kurloo nest cloud for **live results**, presenting it clearly and conveniently as a point of truth for you and your project team.

# Kurloo device features.

Kurloo's patented device is compact and packed with intelligent sensors that autonomously collects data from the field.

- Fully integrated compact design (169mm x 207mm x 272 mm and weighing just 1325g.)
- Intergrated 1.5W solar panel with rechargeable 46Ah lithium iron battery ( up to 21 days without charge)
- Ideally suited to open environments with a clear sky view.
- Choose either single-frequency (SF) or multi-frequency (MF) multi constellation GNSS.
- LTE-M or wi-fi\* communications (\*additional gateway required for wi-fi).
- Multiple integrated sensors that quickly alert to any device or environmental changes.





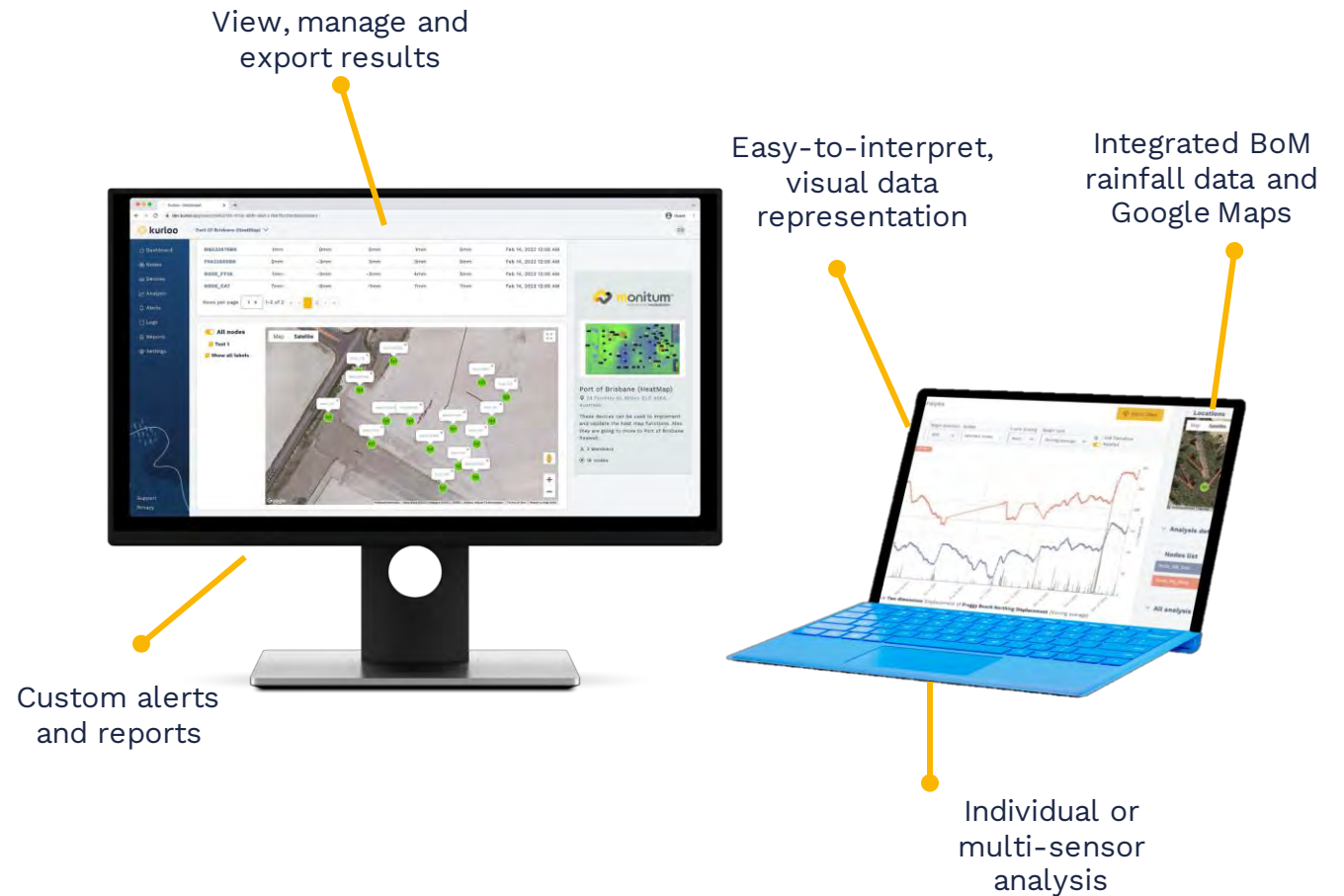




# Kurloo nest features.

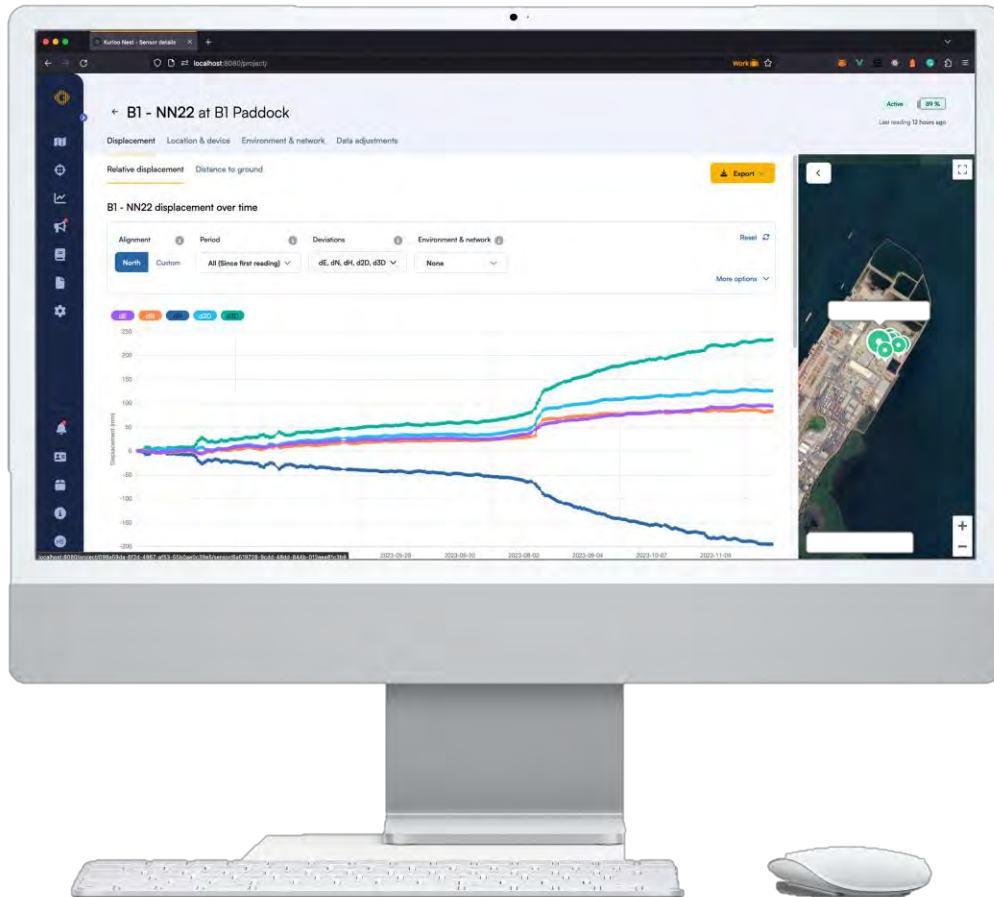
The Kurloo Nest cloud processing platform turns GNSS signals into precise location and 3D displacement data — doing the hard work for you!

- Live web-based data processing and reporting.
- Accessibility on any device — available 24/7.
- Alerting and notification when things change.
- Validated insights, correlations and trends over time including rainfall, ground level and accelerometers.
- Secure and reliable cloud based ,2FA and accredited AWS data centres for optimal data security and sovereignty.

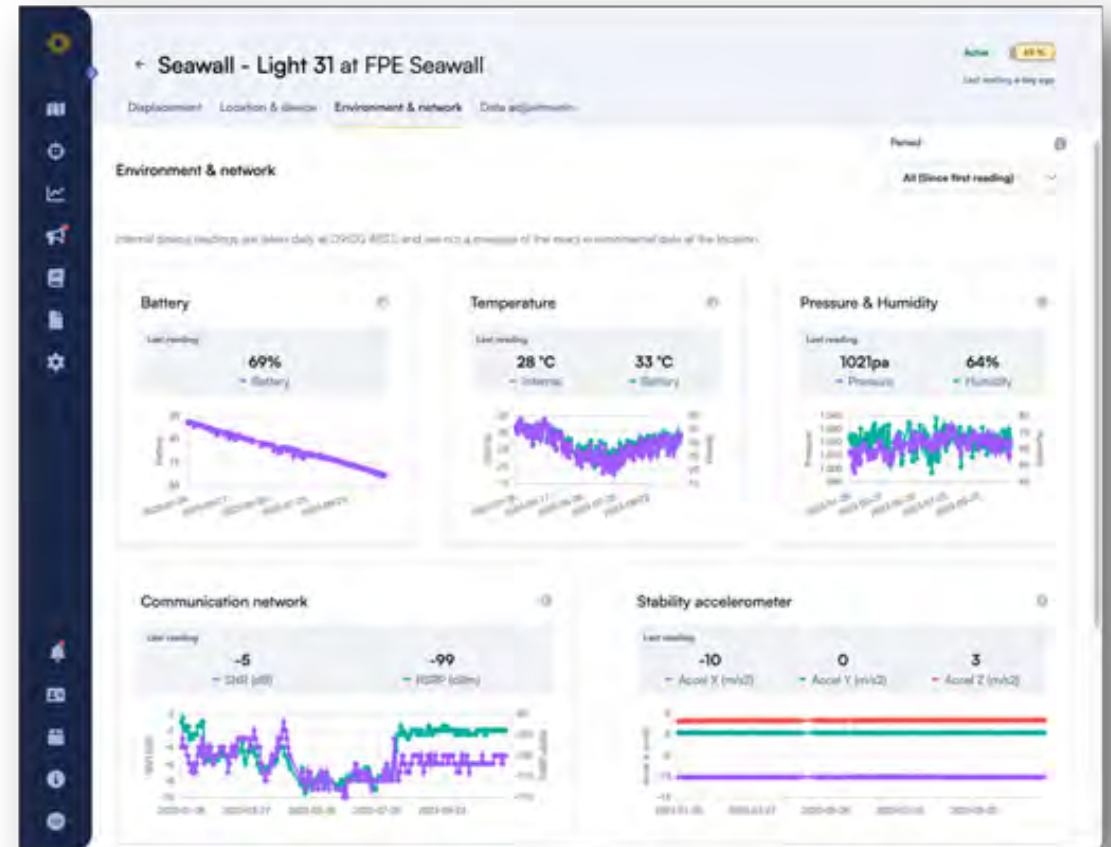


# Kurloo nest - data insights.

## Displacement and settlement over time



## Combined with kurloo IoT dashboard





# Kurloo IoT GNSS — PPK processing accuracy analysis

Variable A —  
Baseline length  
( <2 km optimal)

Variable B —  
Observation  
Duration and  
Multipath Level  
( 3hrs optimal )

Fig 1: Relative Baseline Length Accuracy  
(Horiz)

\* Based on 6hr Duration / Low & Medium Multipath

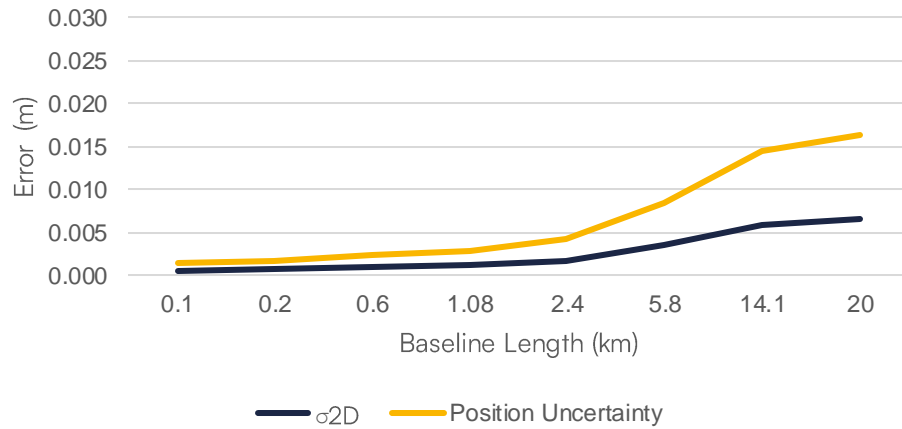


Fig. 2: Relative Baseline Length Accuracy  
(Vert)

\* Based on 6hr Duration / Low & Medium Multipath

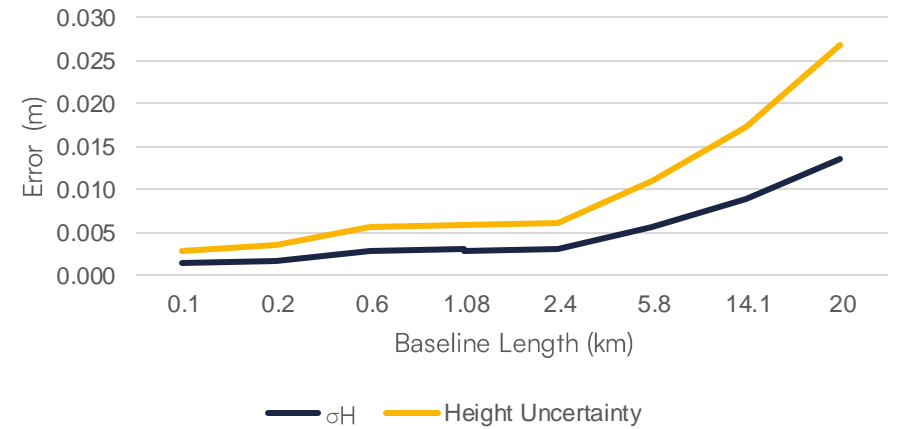


Fig. 3: Observation Duration Accuracy (Horiz)

\* Based on Baseline <1km at  $\sigma_{2D}$

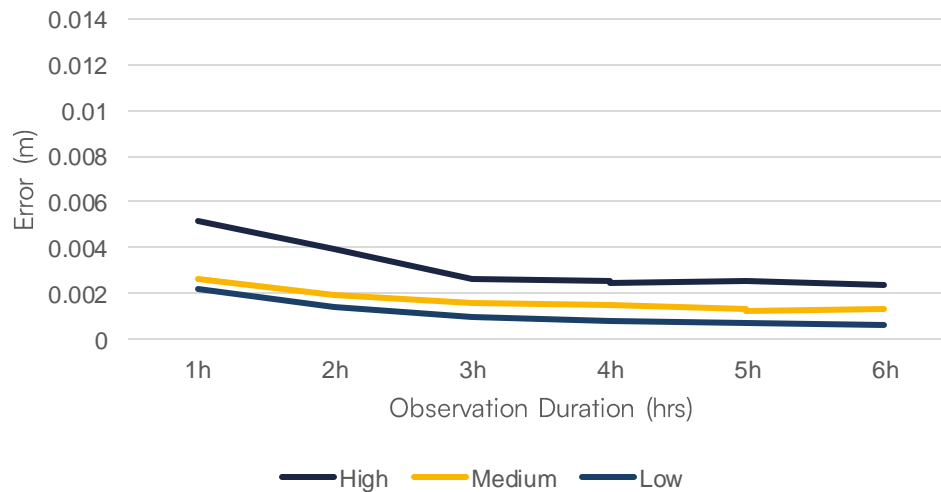
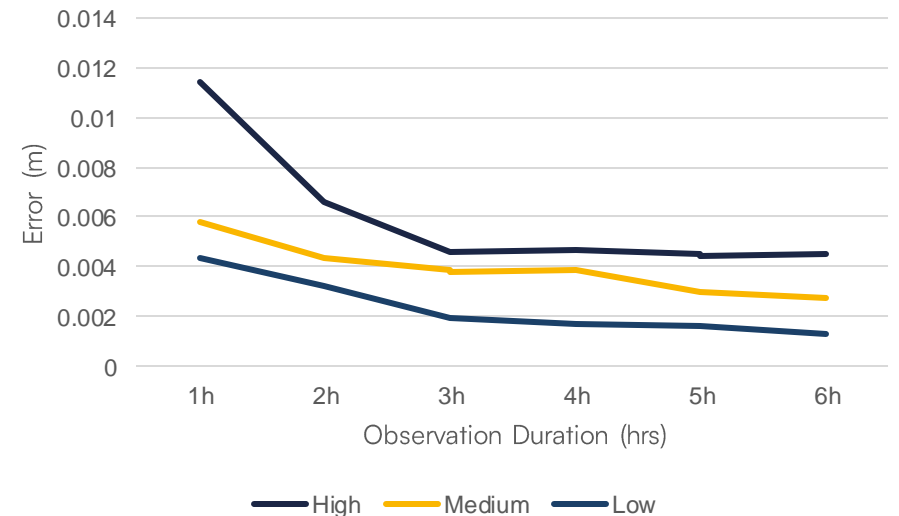


Fig. 4: Observation Duration Accuracy (Vert)

\* Based on Baseline <1km at  $\sigma_H$



# Benefits for multiple industries.



Dams and water



Reclaimed land,  
ports and airports



Mining stability, waste  
piles and tailings



Transport corridors,  
bridges and embankments



Housing / Local govt.,  
erosion and stability



Heavy industry,  
storage and pipelines



Coastal erosion



Civil infrastructure and  
construction



# Dam use case - Googong, ACT | Australia.

- Extreme Rated Dam Monitoring
- High precision < 3mm XYZ daily readings
- Integration with dam level reading
- Install time under 2 hours

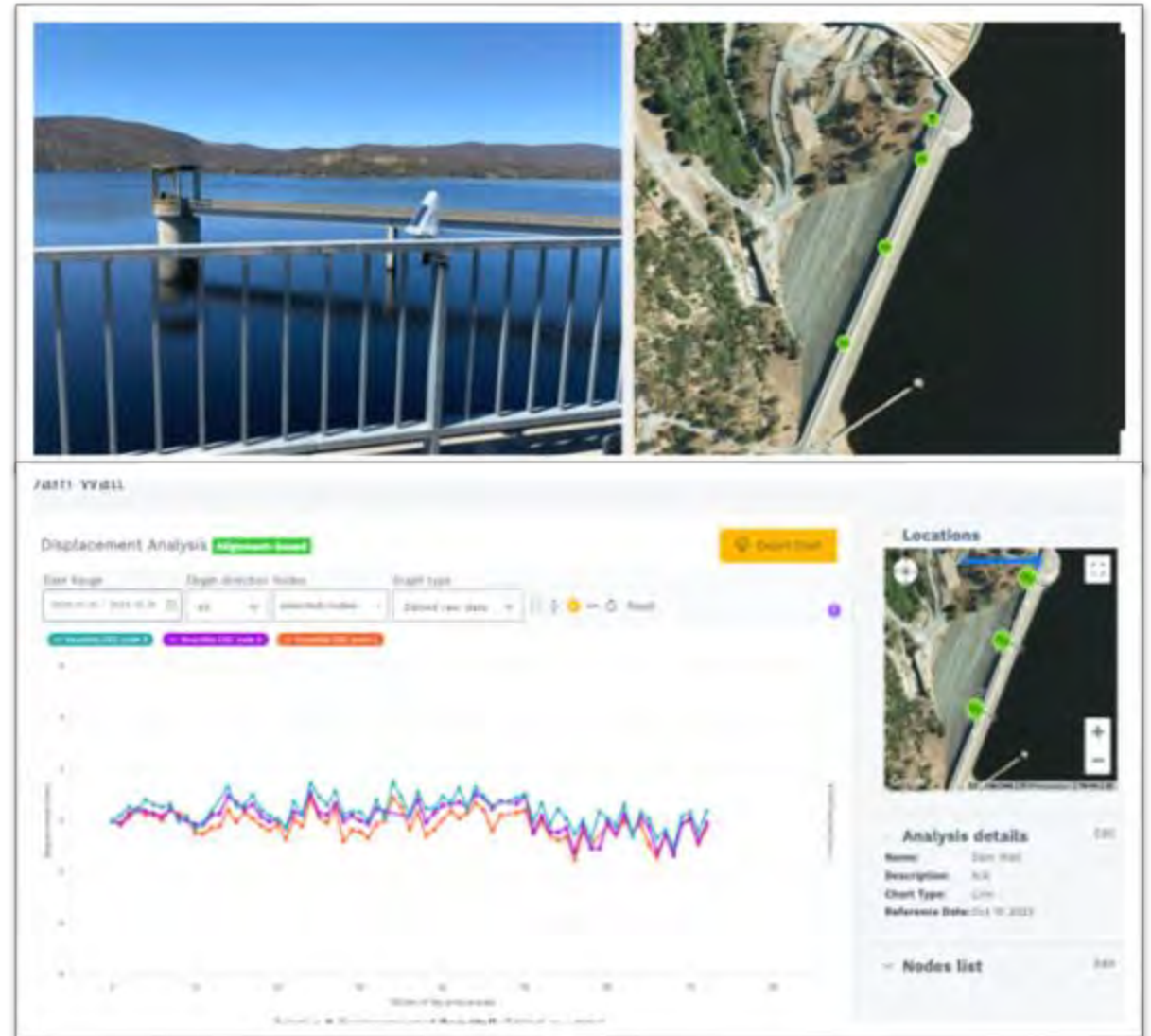


## Problem:

Better understanding of displacement and dam resilience during seasonal variation and extreme inflow events.

## Solution and benefits

- Enabled **simple and affordable daily** reading frequency,
- Live dam monitoring capability
- Better analysis of seasonal and dam level impacts on structure



# Slope Failure use case - Poatina, Tas | Australia.

- Pipeline slope stability / failure.
- Remote location.
- Heavily vegetated slope.
- Frequent daily cm positioning XYZ.

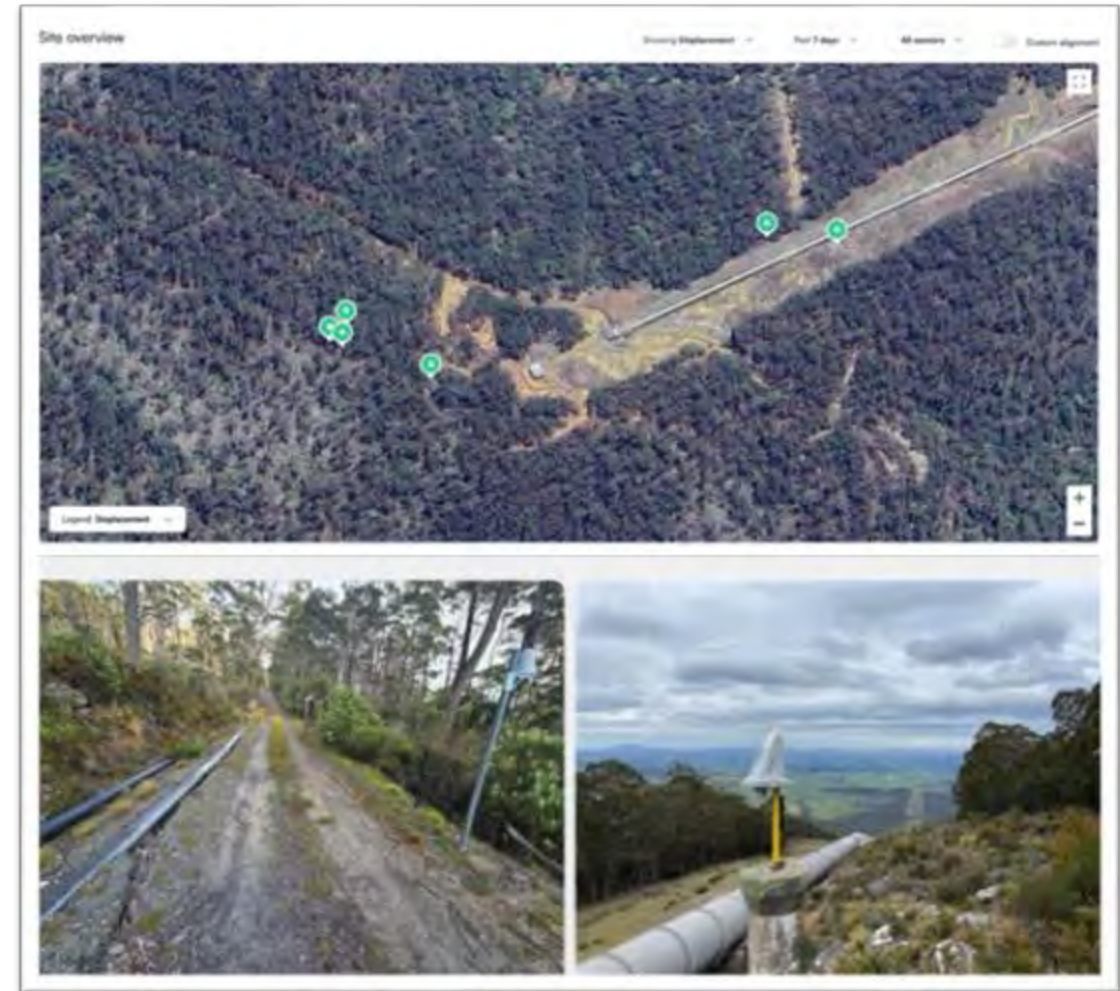


## Problem:

Live reporting of ground movement of unstable slope on remote location near high value asset.

## Solution and benefits

- Simply installed in conjunction with Geotech advice in a few hours.
- Frequent daily cm positioning in high vegetation.
- Improved understanding impact of rainfall and season variation and justification to act on site remediation.





# Transport Use Case — Toowoomba , QLD | Australia.

- Legacy critical transport asset.
- 35 devices . 10km length.
- Live reporting daily of 10 sites.
- Better informing inspections and maintenance.

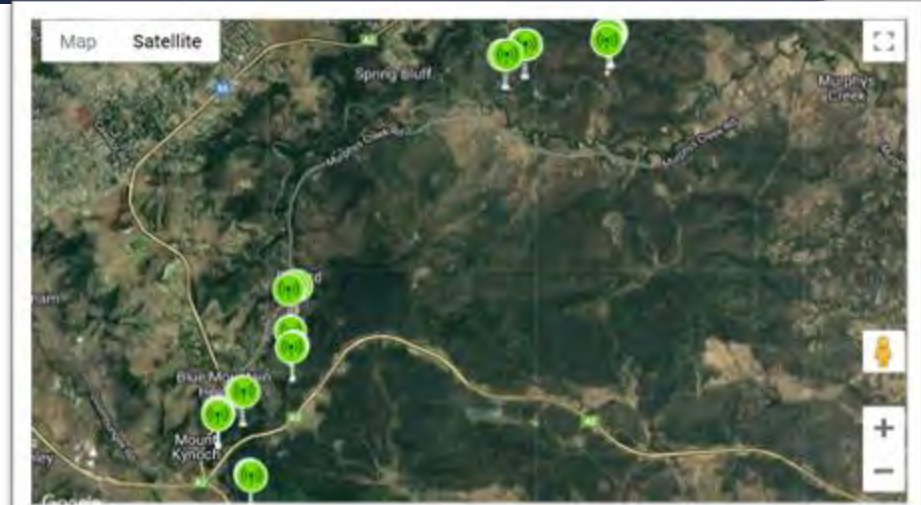


## Problem:

Reliance on frequent visual inspection during and after high rainfall to ensure stability and safety of line operations.

## Solution and benefits

- Simply installed with Geotech Engineers in 1.5 days in busy rail corridor.
- Delivers frequent quantitative measurement that support operators and Geotech on priority for inspection and maintenance.
- Better informs of impact of rainfall on displacement of embankments.



# Settlement Use Case — Port of Brisbane , QLD | Australia.

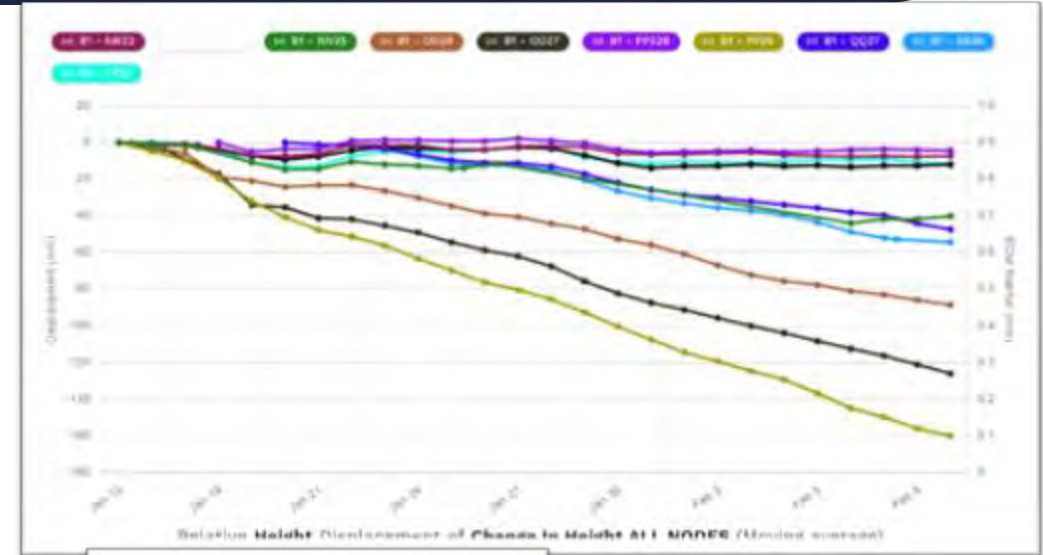
- Improves data consistency and reliability
- Remote Autonomous measurement
- Improves site safety
- Productivity gain for developer and contractor

## Problem:

Frequent settlement readings are often inconsistent and restricted due to civil works and dredging operations

## Solution and benefits

- Kurloo autonomously monitors settlement and displacement of rock bund walls.
- Improved safety and reduces risk of environmental damage for developer and contractor
- More consistent reading means decision can be made sooner improving productivity on the project.





# Pricing.

## Hardware, software and support as a service.

**Minimum service term:** 3 months

**Minimum quantity:** 2 - ( 1x monitoring & 1x reference)

**Choose payment terms :** per month > per year



\$ 20 NZD + gst per unit/day

### Pricing includes:

- Includes kurloo M1/F1 device hardware and warranty.
- Mobile data and cloud hosting charges
- 24/7 access to the kurloo nest software and Install app.
- Unlimited users / alerts / analysis / export.
- Product support.



### Pricing exclusions

- Device installation.
- Optional mounting hardware accessories.
- Taxes , freight and handling.



Curios about Kurloo?

**Book a call**



[www.kurloo.io](http://www.kurloo.io)

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