



# Digital Innovation

Opportunities - LoRaWAN & IoT  
& New Cyber Threats

## Cyber for Good

Dec 2019



**Geoff Connell**



# Agenda:

- How threats are evolving
- How we are operating now and into the future.
- IoT Networks in particular.
- How we can stay cyber secure

# Evolution of the Cyber Threat Landscape

## When I started:

Mainframe & LAN, remote connectivity via physical media (paper & mag tapes), enemies were few and unsophisticated. Simple days.

## Now:

Hybrid cloud environments, mobile & remote access, BYOD, partnership working, C2B, C2C, lots of threat actors, some very sophisticated. Not so simple.

## Next:

Fully joined up multi-agency working & data sharing, access from any device anywhere, AI decision making, IoT... Ever more complex!





# So lets start with the changes in technology enabled care

**£6.5M savings target, while improving  
care related outcomes**

# Innovation in Adult Social Care

## Productive workforce

Social Care System

LLAMA

Microsoft Teams and One-note

Reduction in printing

BYOD

RPA

Shared Care Record

Govroam Improved connectivity

Time to Connect

## Effective Providers

Provider Portal

E-brokerage with Care Homes

## Empowered citizens

Payment Cards

New Assistive Technology Offer, 9,000+ (IoT)

Client Portal

Norfolk Directory

We spend £1m a day on Adult Social Care

We are working to make Norfolk  
the **best connected** rural county in the UK  
& to exploit the tech with **digital skills**



**Fibre**  
**Mobile**  
**LoRaWAN**  
**Mobile**  
**5G**

# LoRaWAN

**Long Range Wide Area Network**



**Sensor**



**Gateway**



**Actionable  
Intelligence**



**HOT TOPICS:** [MENTAL HEALTH INSPECTION REPORT](#) | [NORFOLK CHRISTMAS OFFERS](#) | [CHRISTMAS](#) | [BOOKS FOR SCHOOLS](#)



**TICKETS ON SALE NOW!**



**BOOK HERE**



## Temperature sensors to be installed on Norfolk roads in trial to see if grit runs can be cut

Dan Grimmer [dan.grimmer@archant.co.uk](mailto:dan.grimmer@archant.co.uk) [@dangrimmer24](#)

**PUBLISHED:** 10:58 14 November 2018 | **UPDATED:** 10:58 14 November 2018



**Fly Norwich**  
⇄  
**Jersey**

**BOOK TODAY**



# Our First IoT Story



**£3.4m**

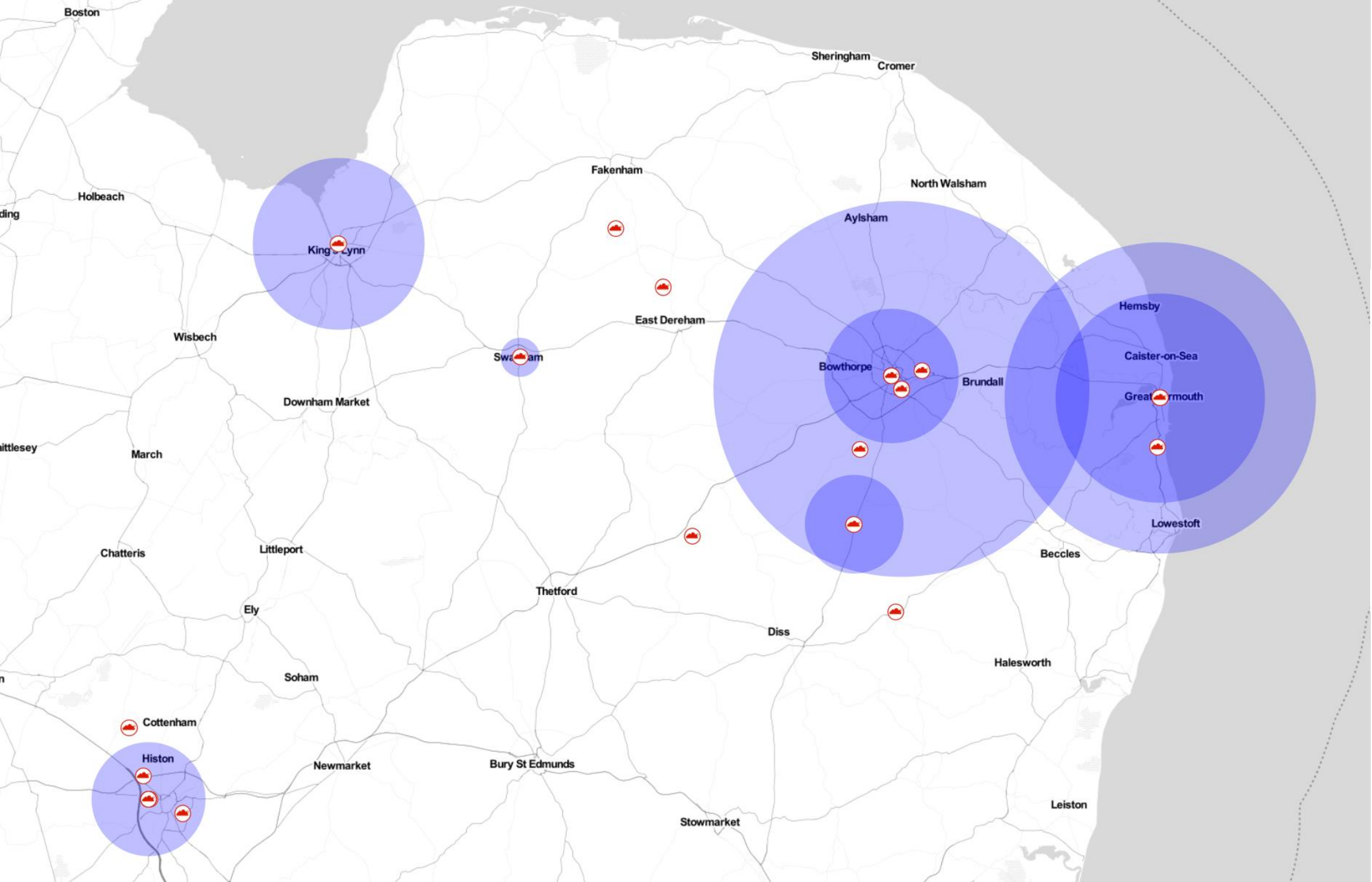
**£25k per run**



# Norfolk's Leader launching Hackathon in July 2018



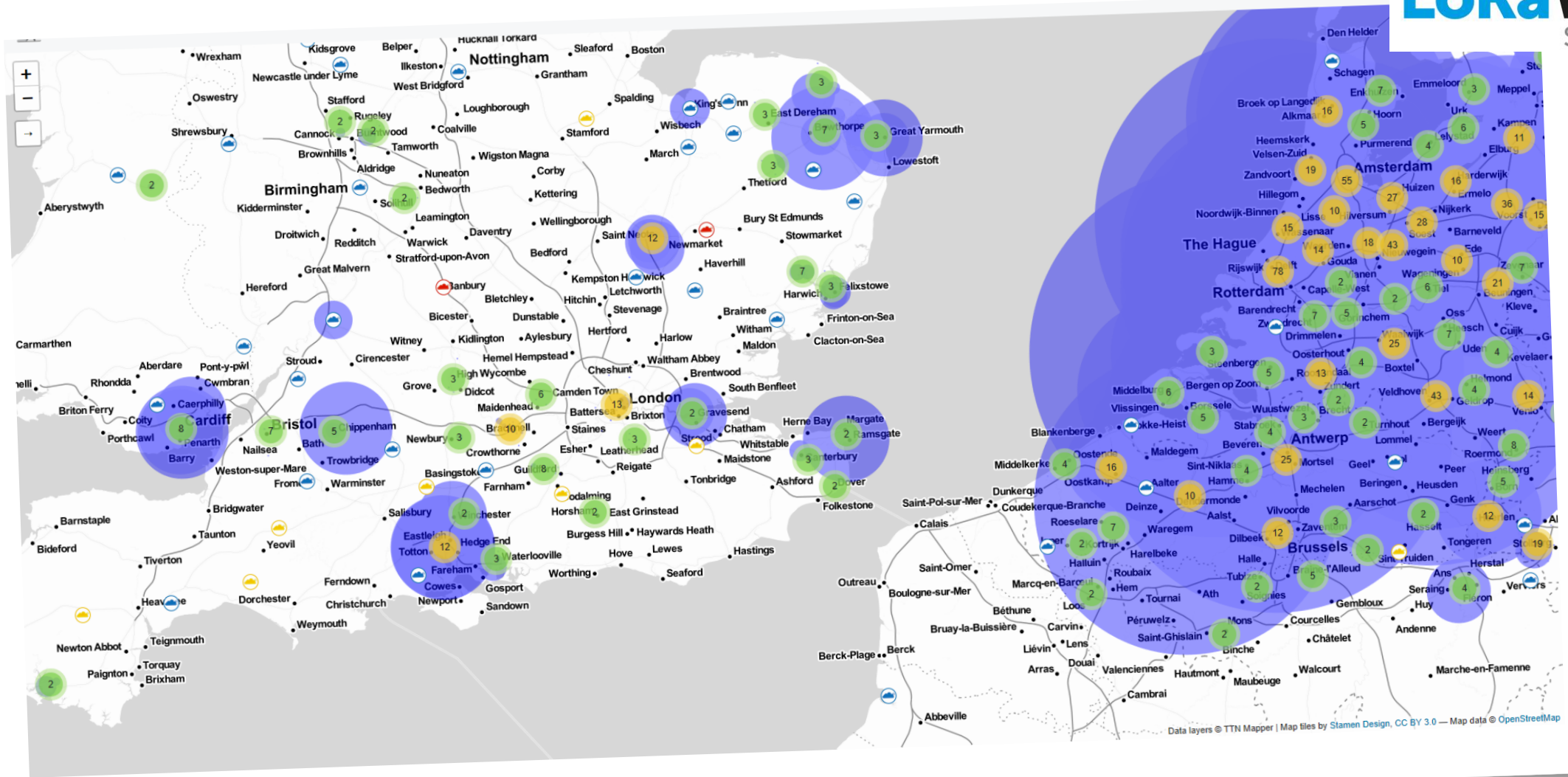
**Three months  
later...**



**The largest free public  
sector LoRaWAN  
“innovation network”  
deployment in the UK**

**NEWANGLIA**

Local Enterprise Partnership  
for Norfolk and Suffolk



**More Use Cases**

[USED MACHINERY](#)[NEW MACHINERY](#) [HIRE MACHINERY](#) [SERVICES AND SUPPORT](#) [USED MACHINERY](#)[ONLINE SHOP](#)[CONTACT US](#)

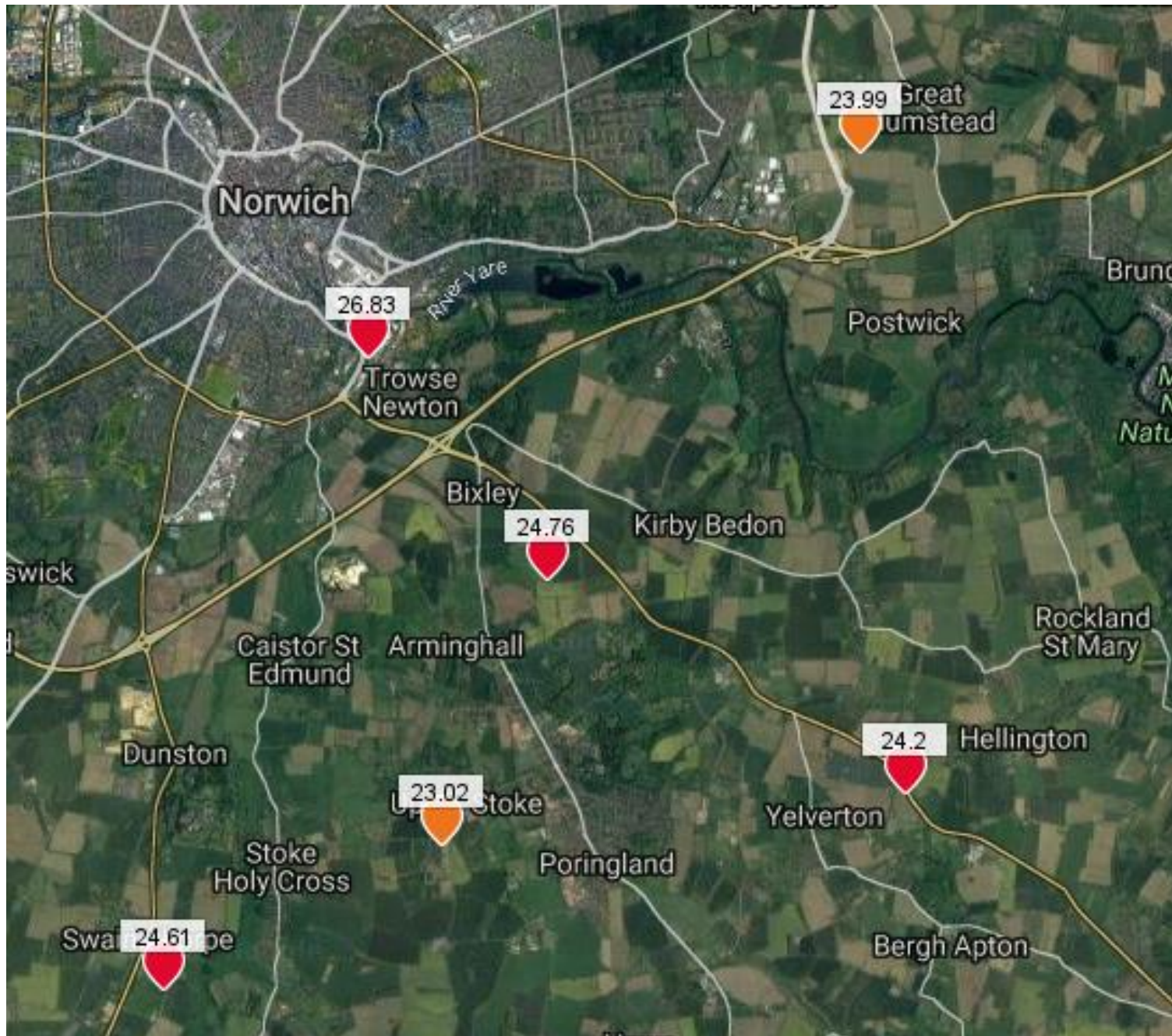
8 REASONS TO BUY

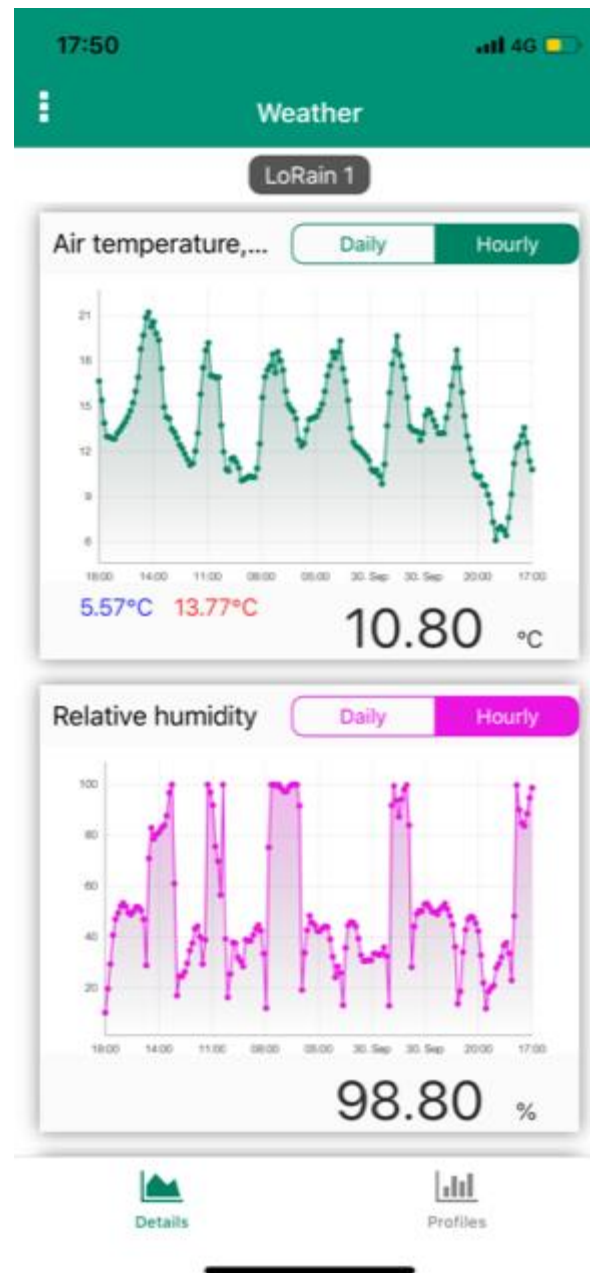
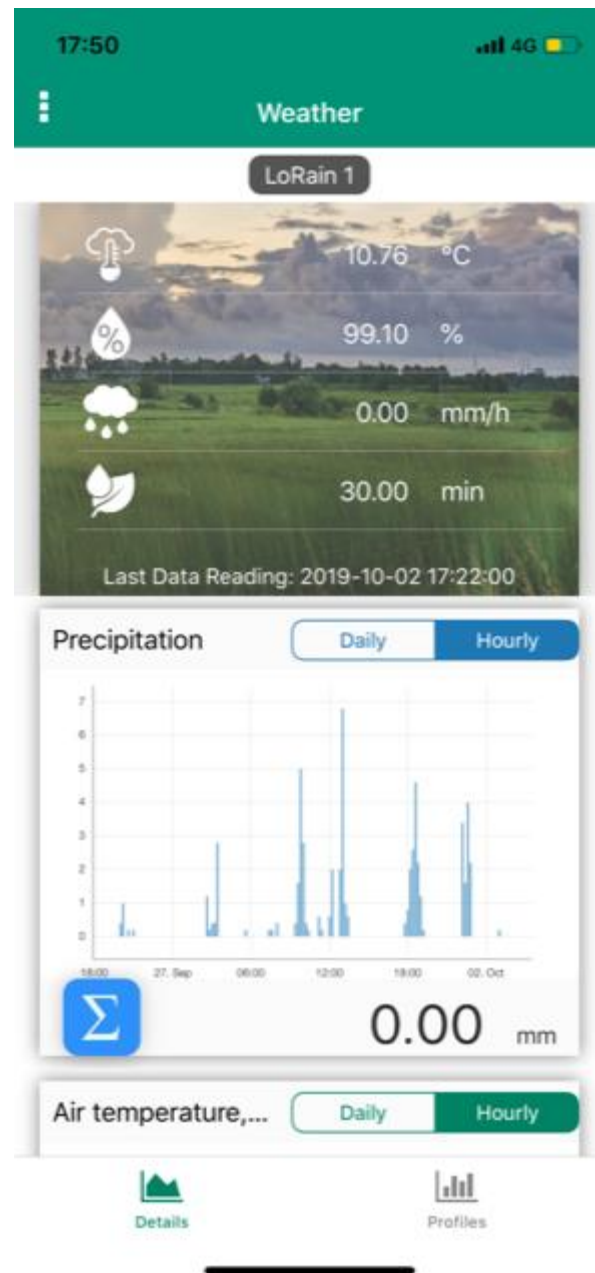
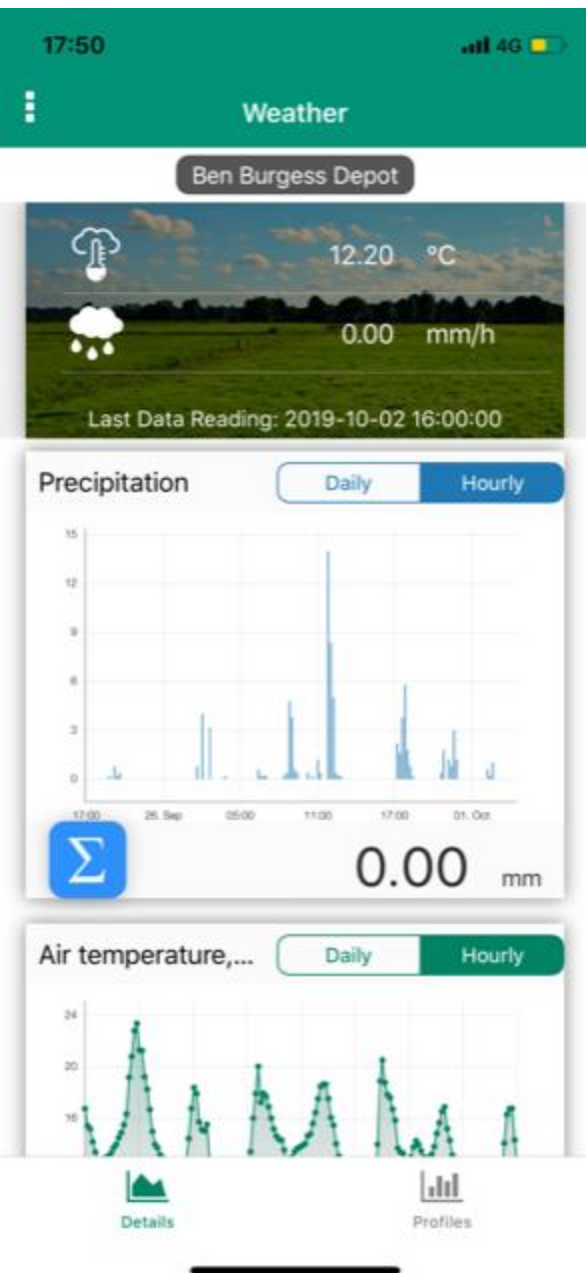
A brand new John  
Deere combine for  
next harvest

CLICK HERE FOR FURTHER









**What else?**

# Boats (Safety)



# Farms (Anti-theft)



# Future Uses

**What could you use this  
Technology for?**

**Water Level  
Monitoring  
(Broads)**

**People  
Counting  
(Trails)**

**Desk  
Utilisation**

**Water Course  
improvements  
(Dykes)**

**Bin Levels**

**Traffic  
Flow  
& Speeding**

**Crop Health**

**Smart  
Lighting**

**Digital  
Exhibits**

**Help People  
Live independently  
longer**

# Back to Cyber....

## How do we stay secure?

- **Do the cyber security basics right (I'll come back to this)**
- **Develop or buy in the skills to enable cyber security by design**
- **Leverage existing security from networks and services**
  - **We use “The Things Network” worldwide community for our LoRaWAN network (featuring 128bit end-to-end encryption). We also get help from Microsoft & Capita.**
- **Increase digital skills & cyber awareness of staff, suppliers, customers, partners, citizens, patients, of all ages...**



Building a global open  
LoRaWAN™ network.



We need to  
develop digital  
skills across  
Norfolk



# Council Staff & Members

# Digital Skills for

# various Personas



# Schools Digital Skills for Children





**Social  
Value  
Capita &  
Step in to tech**

# Care Providers Digital Skills for Care Homes



# Libraries Digital Skills & Inclusion For Residents



# CYBER TIPS

Local public sector cyber resilience needs to build on the good foundations of basic cyber hygiene: patching, NCSC ACD etc.

**My top 3 recommendations to improve cyber resilience:**

(1) **Engage** in national & regional **support networks** through NCSC, LGA, WARPs, MHCLG&LRFs and Socitm regional groups.

Also work with appropriate **suppliers and external organisations**.

**Find friends before the emergency...**

(2) Make sure **cyber resilience is a team effort** in your organisation. If you keep it to yourself in IT, you own it, alone...

(3) It's one thing to believe you are ready for an incident but if you don't **test and exercise**, you aren't well prepared. So practice...



# Summary & Conclusion

We are committed to bringing world class digital connectivity to Norfolk to support business growth, social mobility, tourism, efficient public services & quality of life for our residents.

Digitally enabled new ways of delivering services and achieving outcomes are our best opportunity to transform to cope with funding cuts and growing demand.

## Ensure solutions are cyber secure by design!

**Digital Connectivity**  
[www.norfolk.gov.uk/digital](http://www.norfolk.gov.uk/digital)



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