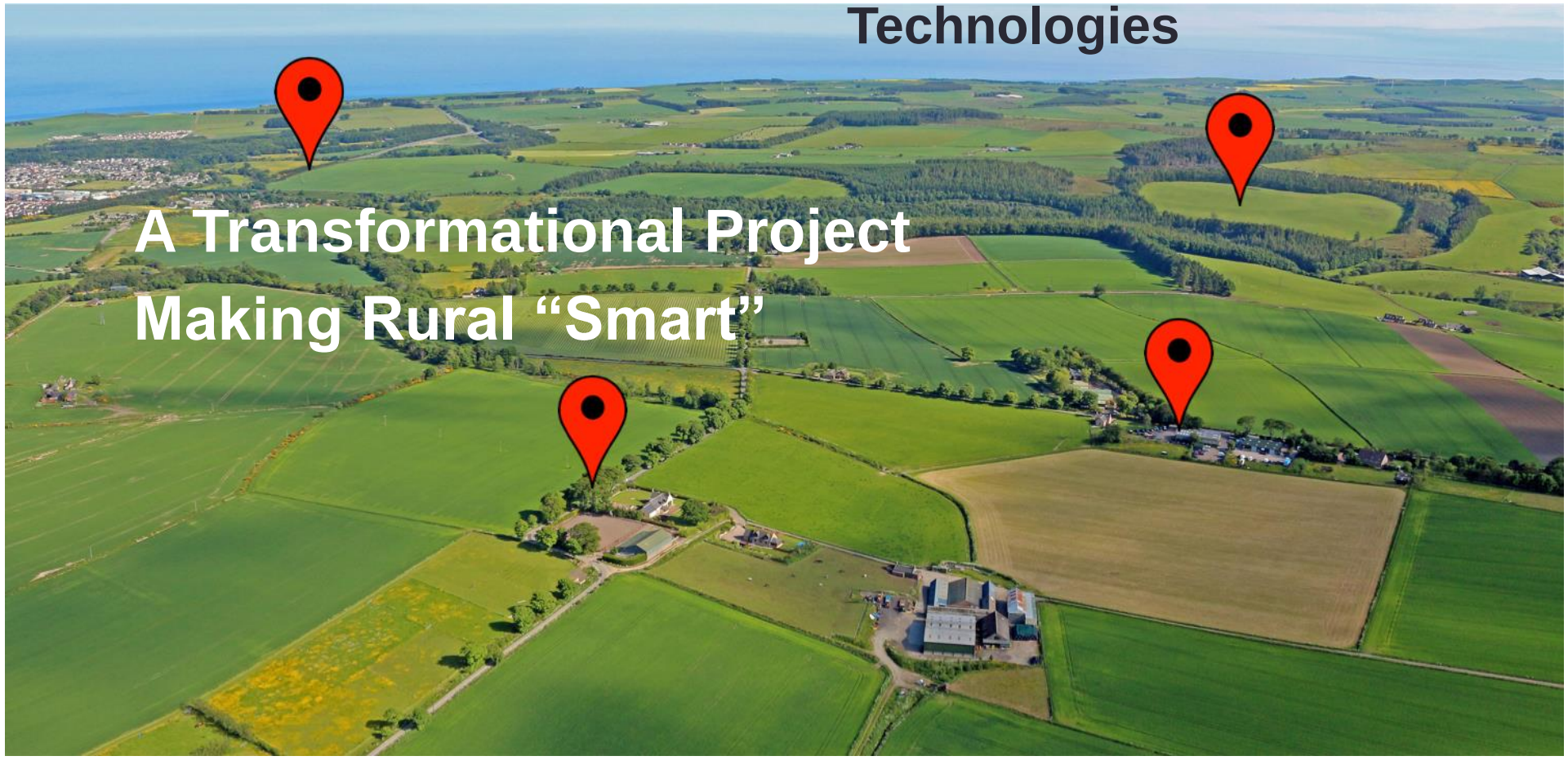




LoRaWAN

6th March 2019

Scottish Forest & Timber Technologies

An aerial photograph of a rural landscape in Scotland. The landscape is a patchwork of green agricultural fields, some of which are yellow with wildflowers. There are several clusters of trees and forests. In the background, a blue coastline and the sea are visible under a clear sky. Four red location pins are overlaid on the image: one in the upper left, one in the upper right, one in the lower left, and one in the lower right.

**A Transformational Project
Making Rural “Smart”**

The Challenges

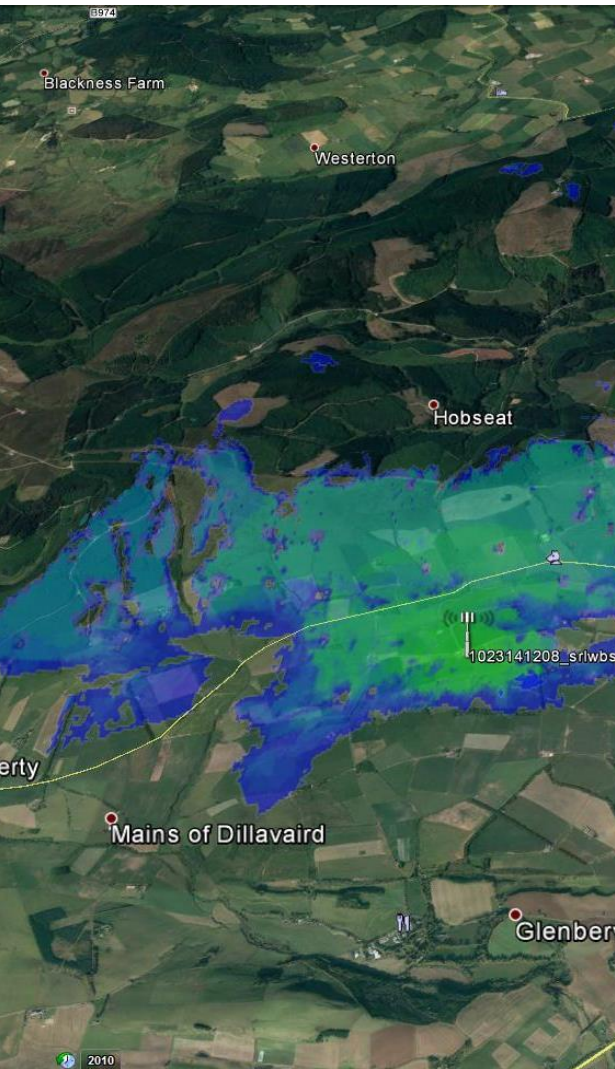


DRAFT CLIMATE CHANGE PLAN
The draft third report on policies
and proposals 2017-2032

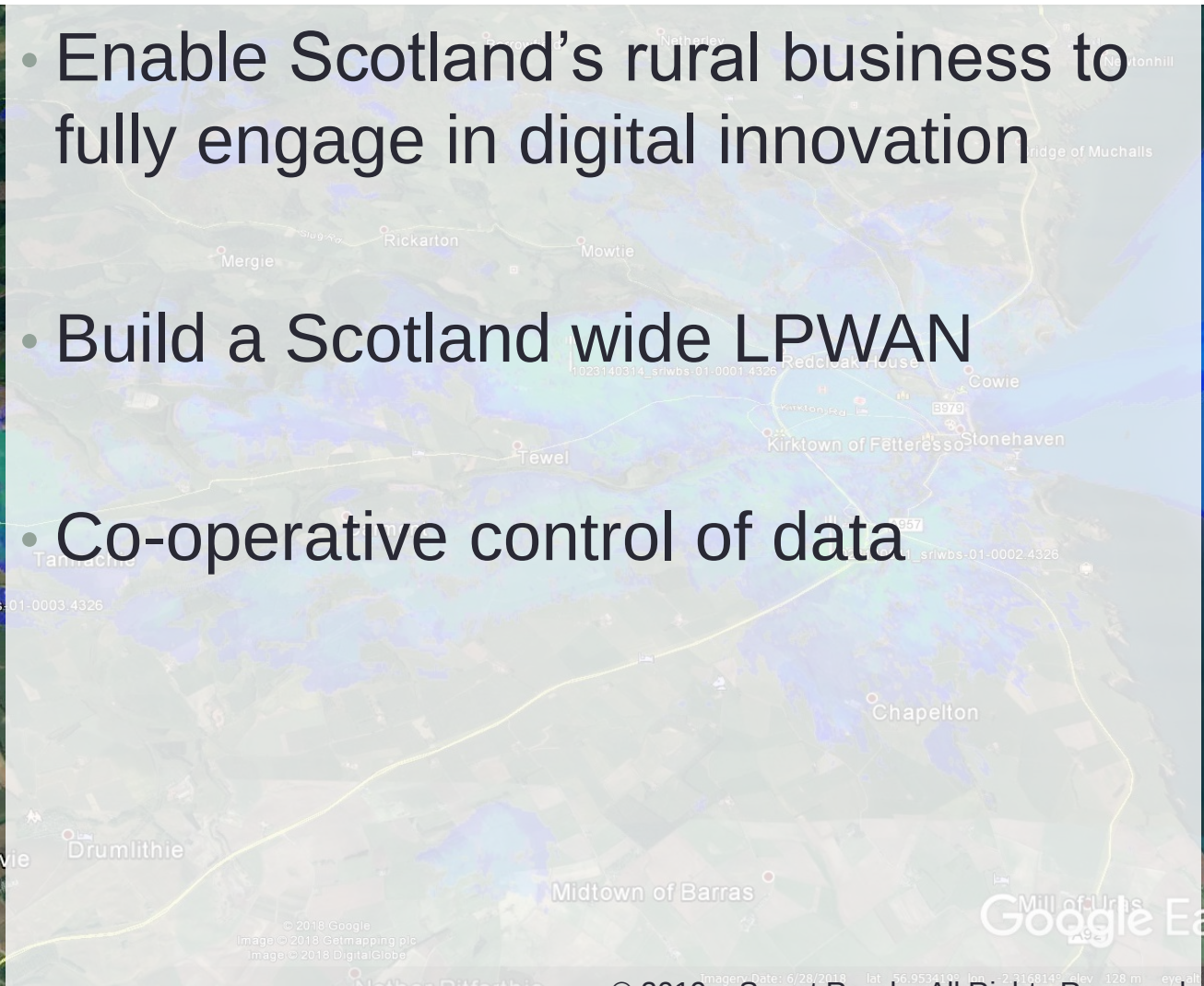
January 2017



SmartRural – Our Vision



- Enable Scotland's rural business to fully engage in digital innovation
- Build a Scotland wide LPWAN
- Co-operative control of data



The Opportunities

- Technology is about data
- Data providing intelligence
 - Reduce waste;
 - Investment return;
 - Take best informed actions.
- The cost of acquiring data is now negligible

LoRaWAN

- LoRaWAN = Long Range Wide Area Network
- Low bandwidth radio technology - small data packets
- Negligible power to communicate between a sensor and the “base station”



Barn Mounted Base Station

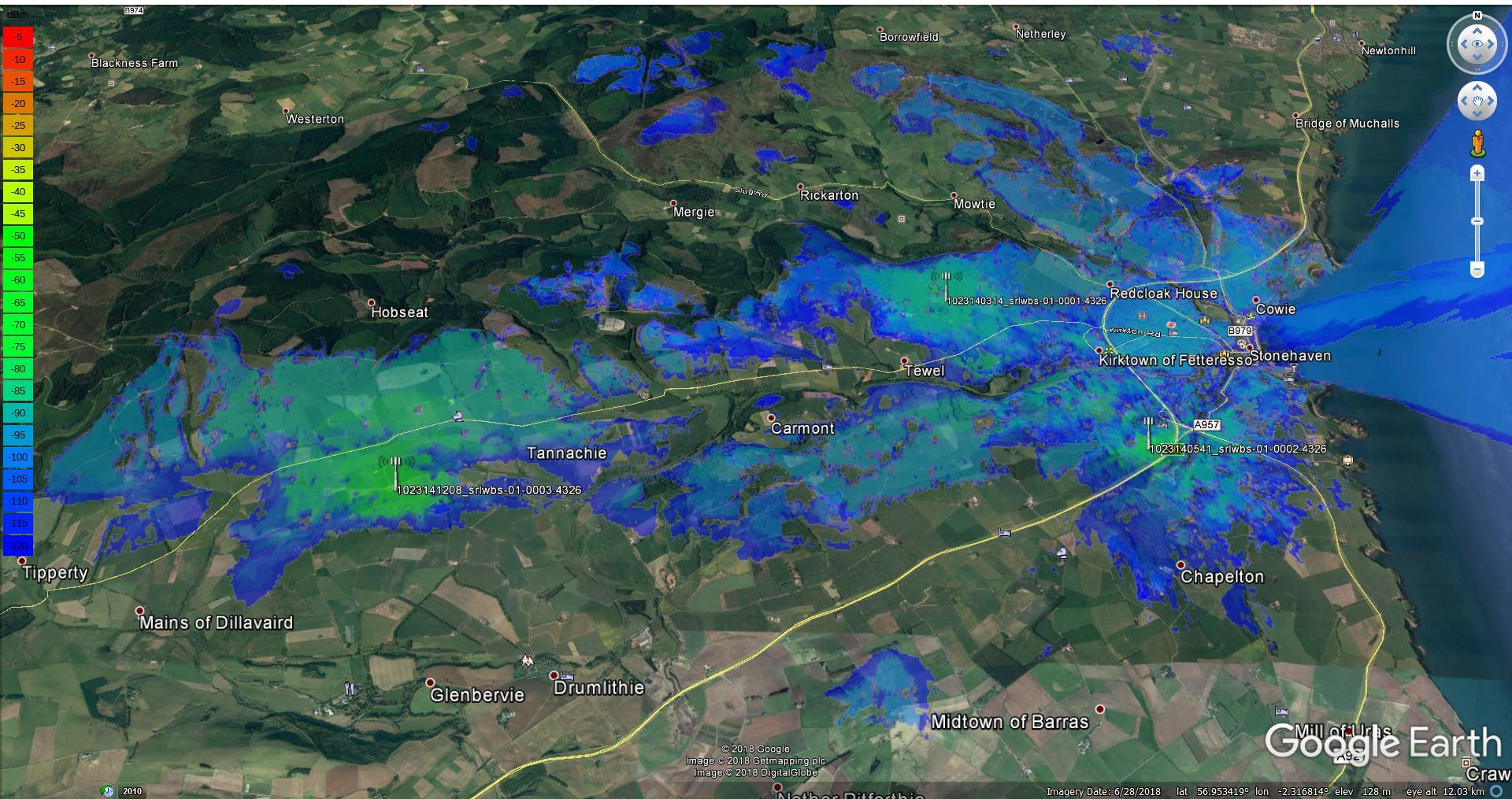


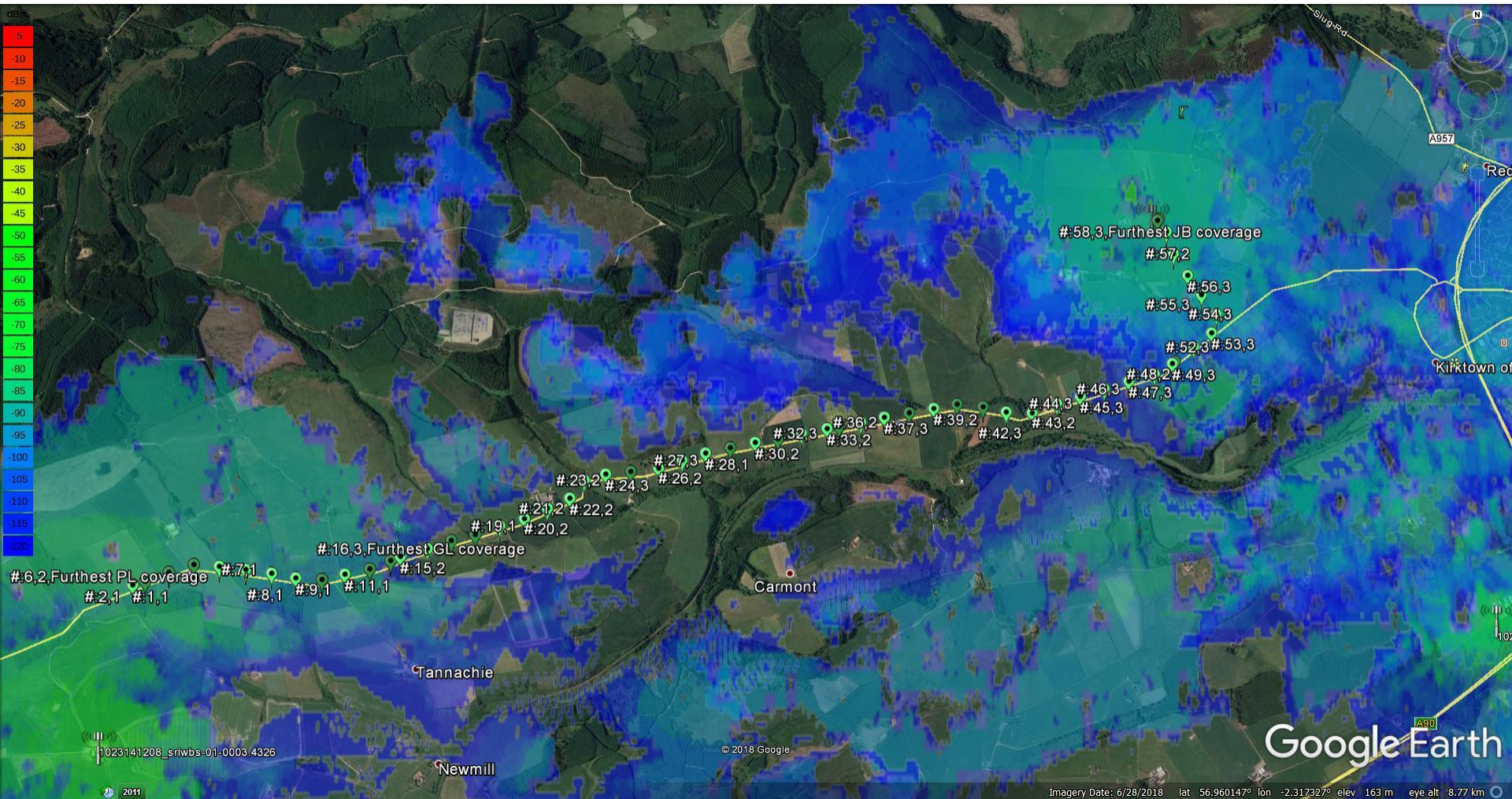
- Sensors - battery powered last 5-10 years.
- Line of Sight range typically 10 km.
- \$10 and getting cheaper & smaller!



Test Area Coverage – Stonehaven

3 out of 6 Base Stations





Some Use Cases – Agriculture & Land

- Flood Warning



- Soil Moisture



- Animal “Fitbits”



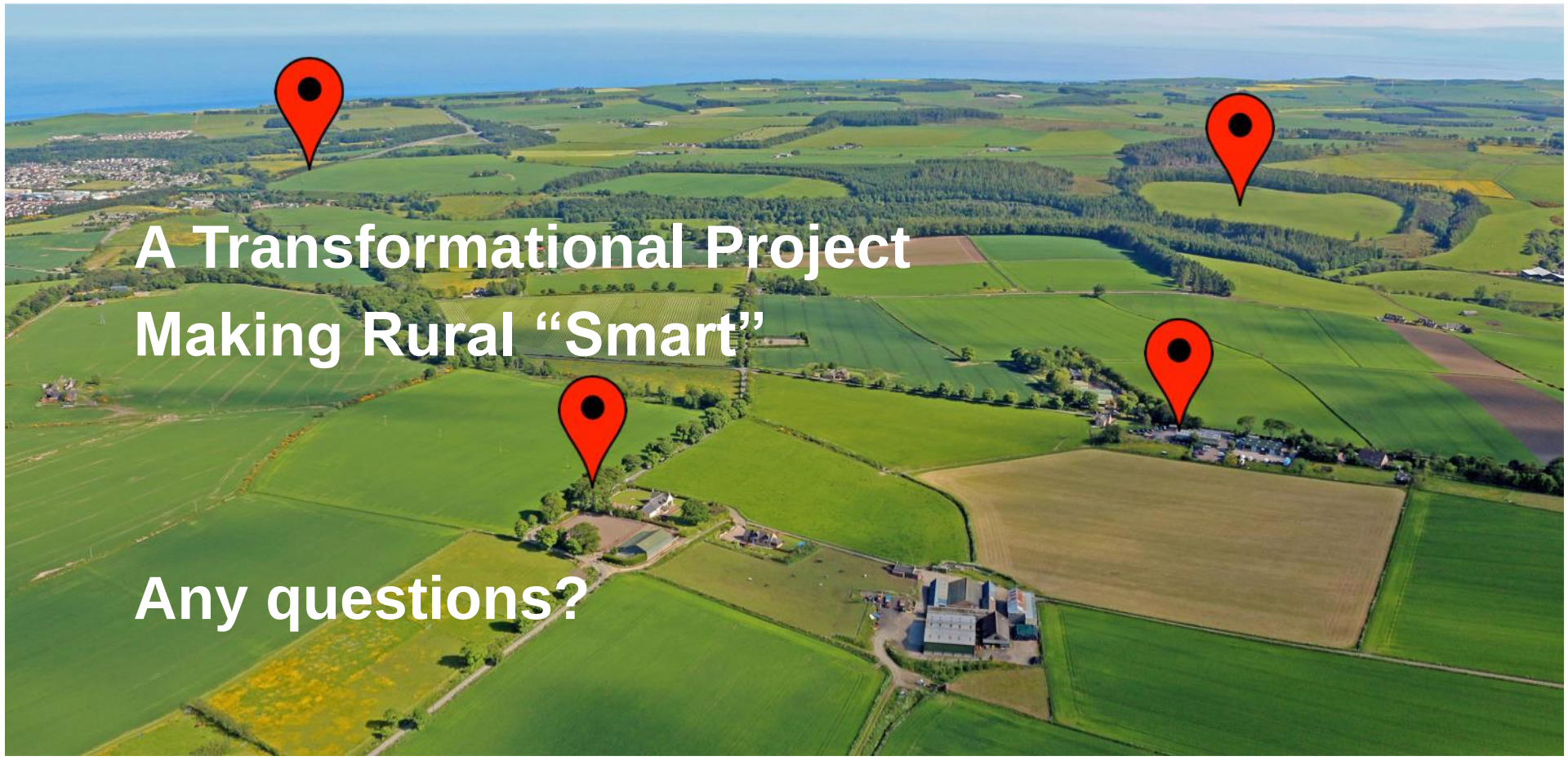
- Sighting Data





Dendrometer – data logger





A Transformational Project
Making Rural “Smart”

Any questions?