

Western O-RAN Deployment



ONE WORD OVERVIEW

December 2024

HDD Project Focus – 5 Different Technologies

Bath & Shropshire

Fixed Fibre Networks in "7.2 Split" – Benetel Cat-A Radios on Poles, Fibre backhaul.

Radisys Software

Radio Processing done on Server

Cardiff St Mary's Street

Fixed Fibre Networks in "7.2 Split" – Benetel Radios on Poles, Fibre backhaul.

IS-Wireless LiquidRAN Platfo

Cardiff Trinity Street

Wireless Mesh Network - Sercom all-in-one radios - processing done on Radio

Lower range, but smaller & easier to deploy

Antevia Indoor Networks

Cardiff Market, Roman Baths, Bath Rugby

Integrated Radios using SRS-RAN & Antevia software

Outdoor Popup Networks – cellXica M5Q and Cablefree Integrated Radios, focused on low power + weight

HDD Project Focus – Target Outcomes

Bath & Shropshire

How do we deliver ultra-fast 5G in fixed environment for high density demand use cases – tourism, commerce, entertainment

Public Policy: Commercial Framework for Neutral Host with cross-industry support

Cardiff St Marys Street

Comparison of build using fibre vs wireless.

2 vendor stacks side by side.

Energy efficiency & AI management of networks.

Cardiff Market, Bath Rugby, Roman Baths

Indoor Private 5G

Supporting Safety, Sports, Tourism and Commerce

Popup Networks

Rural high speed coverage in not-spots

Delivering HDD capacity on demand (events, disaster response).

Off-grid, low power.

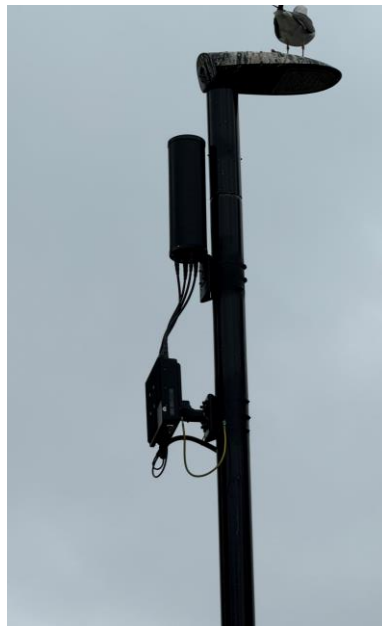
New Vendors Bringing Products to Market: Antevia Indoor Small Cells; cellXica Outdoor Cell; Radisys CU/DU/EMS



We're live!

- Cardiff has 60+ Daily wifi users
- Bath has 20+ Christmas traders
- Base load of 30+ Users in Bath





Bath Deployment

15 Lighting Poles Replaced & Fibre Network (incl Rugby Ground & Roman Baths) installed

20 RRU deployed, servers in Guildhall

Bath Rugby Stadium

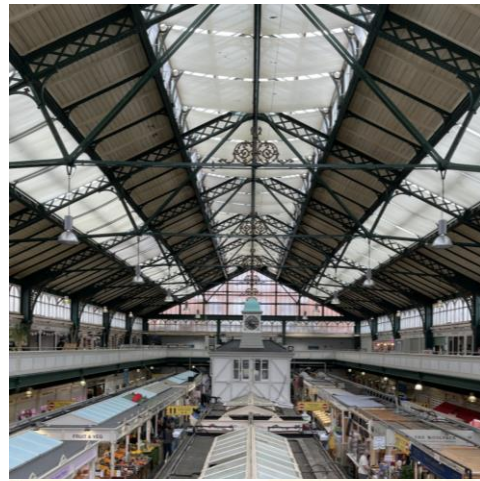
Roman Baths – Listed Building Consent Granted – Build in Jan 25



Working with IS-Wireless

- Commercial vendor to benchmark & derisk the R&D partners
- We deployed Benetel RU, CU/DU and RIC into St Marys Street – main shopping street in Welsh Capital
- Supporting traders & commerce with high quality internet for popup events & markets.
- Work with Uni of Lancaster on RIC and power optimisations
- Working with Radisys to integrate RIC and their CU/DU processing software





Cardiff Deployment – St Marys St, Trinity St, Cardiff Market

3 Types of Network Deployed

Seen heavy use in the Christmas Market period

Working in Cardiff has highlighted the practical difficulties of major events (Taylor Swift, Foo Fighters) and integration with live equipment (e.g. installing on live CCTV poles in the highest traffic area in Cardiff).



Enabling public access

- Open House Events – Twice a month – anyone welcome
- eSIM – public access for own devices
- Group QR code
- Test devices – available for projects to use & test with
 - 5G Wifi Routers
 - iPhone 13
 - Nothing Android Phones



ONE
WORD

Things we're skipping over...

- 6 Post Doc Students working on AI based management of mobile networks / xApps.
- Successful Summer of outdoor popup events in Worcestershire supported by the Landrover + Small Cells – off grid.
- Development of a new All-Wheel Drive Off-Grid vehicle platform for delivering rural 5G connectivity.



Policy-in-a-Box: supporting network deployment

Findings from workshop and 1-1s

Overall Challenges

- **Lack of Standardization:** No consistent processes for approving and installing digital infrastructure
- **Resource Constraints:** Insufficient staff and funding for handling digital infrastructure projects
- **Data and Information Gaps:** Limited access to crucial data for efficient project delivery
- **Collaboration Issues:** Difficulties in coordinating between departments and external partners

Key Areas for Improvement

- Develop **standardized processes** and timelines for digital infrastructure projects
- Increase **resource allocation** for digital infrastructure management
- Improve **data collection and sharing**
- Enhance **collaboration** between departments & external partners
- Strengthen **leadership & strategic direction** for digital connectivity
- Improve **communication and stakeholder engagement**

Next steps to develop guidance

Identify What Already Exists

- **Review current guidance**, e.g.
 - DSIT Barrier Busting Handbook
 - BDUK/DSIT Digital Connectivity Portal
 - LGA Councillors Guide to Digital Connectivity
 - Scottish Futures Trust Infralink Playbook
 - Other 5G projects, e.g. DCIA and 5GIR
 - ONE WORD Councils

Note: existing guidance covers aspects such as street works, wayleaves, poles and passive infrastructure, installing in sensitive locations (national parks, etc) as well as access to assets, the approach to stakeholder engagement and standard terms & conditions.

- **Map to themes**, identify **updates needed** and **gaps** where new guidance required
- **Develop Policy-in-a-Box** that collates lessons learnt, guidance and best practice that can be applied nationally beyond project

Thank you!

