Shared Access License: Sunderland's story

UK Spectrum Policy Forum

TechUK, 22nd November 2022

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bai communications

BAI Communications

Key figures

— Presence on **4 continents**

— **Over 800 full-time employees**

— Communications networks in **400+ subway stations** and **tunnels**

— **Over 750 transmission sites (including towers) in A**ustralia

— **13 MNO partners** globally

— **Majority-owned by** Canada Pension Plan Investment Board (CPP Investments) since 2009

Our footprint and solution portfolio

HONG KONG

| Small cells, DAS and towers | Transit connectivity | Venue connectivity | Fibre | IOT and smart cities | Private networks | Broadcast services | Emergency services |

transitwireless
a bai communications company

mobilitie
a bai communications company

Vilicom
a bai communications company

Neutral Host | Industry Logic

BAI Communications is a global provider of Neutral Host solutions

	Tenants		Site owners / Tenants	
Who	**Network Operators**	**Transit**	**Enterprises and Venues**	**Cities and Communities**
What	Network solutions • Small cells • Towers • Fibre • Build and operate • Access to other networks (transit, enterprise, communities)	Connected transit solutions • DAS • Onboard and in-station Wi-Fi • Fibre • Private networks • Trackside connectivity • Smart transit use cases (incl. analytics) • Build and operate	Connected venue solutions • CaaS / DAS (Private and public connectivity) • Network operators funding • Wi-Fi • Smart venue use cases (incl. analytics) • Build and operate	Connected Place solutions • Private, public, indoor, outdoor connectivity (multi technology) • Network operators (funding) • Fibre • Smart places use cases (incl; analytics) • Build and operate
Why BAI	• Strong relationship/ partnership with network operators • "Real estate" agreements (e.g., TfL assets, DoITT licences)	• International credibility with flagship projects • Smart transit specialist • Experience in complex / transit environments	• International credibility with flagship projects • Specialist in both private and public networks • Global customers	• International credibility with flagship projects (Sunderland) • Long-term investor / risk taker
Proof point flagship customers / projects	verizon✓, T··Mobile·, 3, BT, AT&T	MTA, BART ba, TRANSPORT FOR LONDON, 港鐵	AEG, MGM GRAND, DIAGEO, Ørsted	Sunderland City Council

Smart City Partnership

- A **first of its kind** 'Smart City and 5G Neutral Host' Joint Venture

- 20 year Strategic Partnership; A pivotal next step in achieving our Smart City Vision

- Fund, build & manage a network of networks, taking a layered technology approach focused on outcomes

- Deliver transformational use cases – that make a real difference

BAI Communications

- Invest significant financial and organisational resources and global communications expertise in Sunderland

- Become the aggregator of a strong supplier eco-system to support the Joint Venture

- Work in partnership to develop Sunderland as a **leading UK Smart City** and a **Global Centre of Excellence**
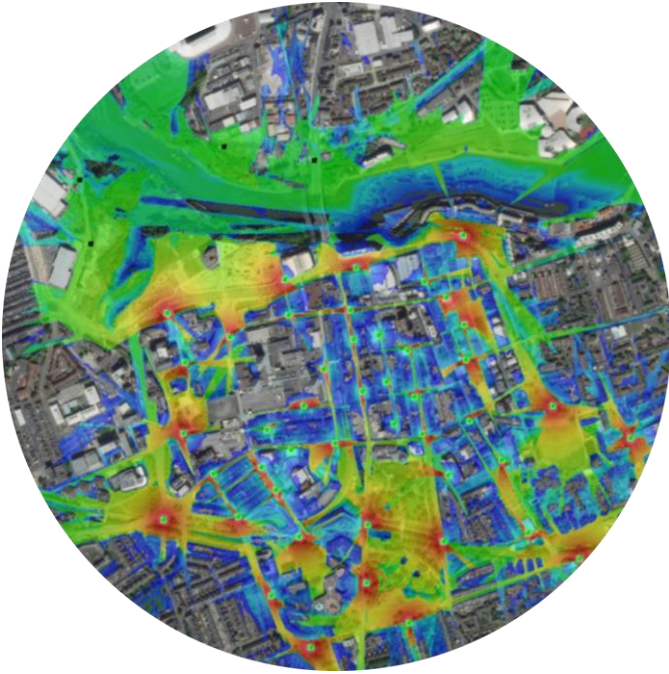
Sunderland
City Council

bai communications

Sunderland

HONG KONG

**Sunderland
a city of ambition**

By 2030 Sunderland will be a connected, international city with opportunities for all.

Sunderland
City Council

bai communications

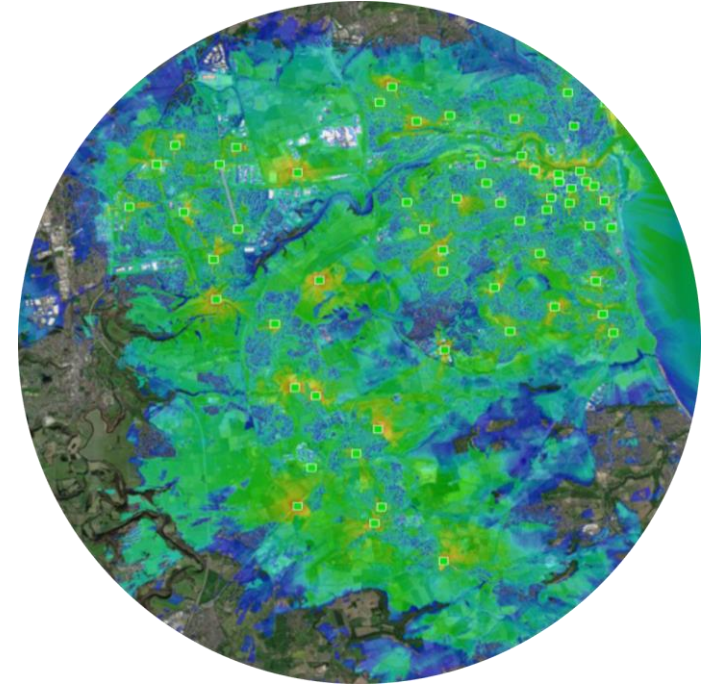# Smart City – Delivery Plan

City Centre 5G
Ultrafast, free Wi-Fi

Roker Ultrafast
free Wi-Fi

City-wide LoRaWAN
(long range, low powered network)

A platform for **innovation**

Linked to **outcomes**

A digital fabric that supports multiple use cases

- IoT/5G Accelerator
- Private Networks
  - Education
  - Manufacturing, transport
- Health care
- Environmental monitoring
- Footfall and vehicular analytics
- Smart places and venues

A unique public, private partnership, creating next generation connectivity to delivery:
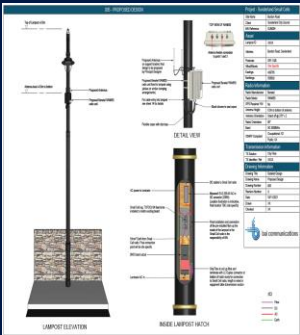
- Ability to scale and develop digital transformations already underway for a broader set of communities
- Economic value
- Reducing digital exclusion
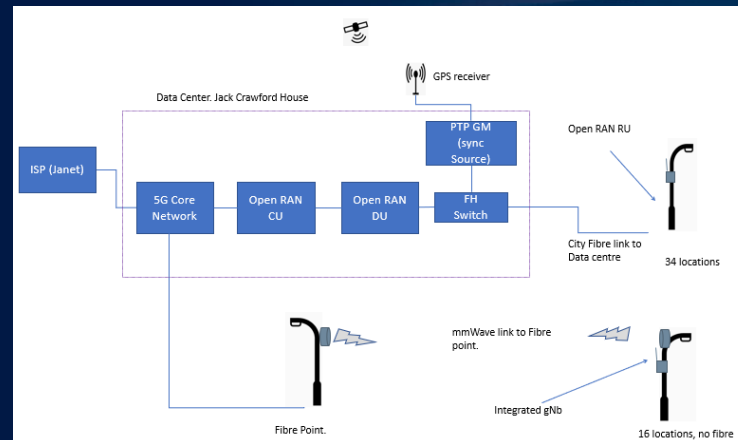- Creating the most advanced smart city in the UK

Sunderland Smart City
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Total Area: 1.384 km²
Minimum Signal: 120 dBm
(outdoor coverage)
Outdoor Coverage: 92%

Network Properties
- 5G Stand Alone
- Frequency N77 (3945 MHz)
- Shared Spectrum with EiRP = 31 dBm
- 53 Omni antennas with 2x2 MIMO
- Bandwidth 100 MHz
- Open-RAN (split 7.2) and Integrated gNb
- Fibre front hall and mmWave back haul

- Certainty
- Application process / tracker
- Higher power
- Other n77 challenges
  - Ecosystem (UEs, CPE)
  - Fibre
  - ORAN integration

Thank You

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