# Miranda Sharp (Ordnance Survey) – Case Study: 3D Geospatial Data enables 5G Telecoms

**Abstract**

Geospatial supports various smart activities, and as a result Ordnance Survey (OS) has been in engaged in a number of national and international initiatives to help drive the advancement of this industry. To OS being Smart means delivering higher quality outcomes for everyone involved. The OS Smart Practice explore and enable:

- Integration of complex location and semantic data from multiple sources to improve efficiency
- Opportunities for more effective collaboration in new technology areas such as IoT, 5G, BIM and CAV.
- Improvement in the quality of life for citizens and profitability for services.

Enabling smart through geospatial means mapping more of our physical environment than ever before.

- What is smart aiming to achieve?
    - An increase in the urban population increases the pressure/cost of the local government
    - However, lots of different topics fall under the term 'smart'
- Research has shown that the cost for adult social care and children's services is set to overtake the predicted budget of local council's in the near future
- Smart captures the dream of many 'utopists'
    - Yet many don't really address the issues faced by cities and communities
- How can NMAs help?
    - Much relies on an understanding of place
- OS' research and engagement demonstrates a need to:
    - Capture and consume more accurate, detailed and current data
    - Develop a data model which is authoritative, federated, fully integrated, extensible and secure.
    - Enable the overlaying and integration of alternative interpretations of the real world
    - Produce machine readable and machine-driven environments
- We need to recognise that we cannot do this on our own
    - This is the reason why OS engages with organisations like the OGC and in consortiums like PETRAS and ESPRESSO

- The CityVerve IoT demonstrator in Manchester is a good example of this
    - The street assets captured goes down to lamp posts, CCTV cameras, and bus shelters
    - Integrating data is key
    - For instance, key questions need to be answered when aiming to address air quality:
        - Where are sensors put? and How will the data be collected?
- Our learnings from the 5G project:
    - Bournemouth is the 5th least connected area in the UK
    - We were working across institutions
    - Modelling signal range
    - The impact of change in weather (in collaboration with the MetOffice)
    - Line of sight
    - One of the most frequent questions asked is: *Why do you not put sensors everywhere?*
        - Because the signal would interfere
        - It is crucial to understand the strategic location of where best to put sensors
- The challenge of commercial models
    - Applications like CityMapper should start giving some data back to Transport for London
    - This would help Transport for London to better understand where people are and connect to better decision making
- Geospatial is only one aspect in the world of smart