

DELIVERING A NEW WAVE OF INFORMATION ON OFCOM'S SPECTRUM INFORMATION PORTAL

CASE STUDY

Ofcom improve the quality and quantity of information relating to the UK's radio spectrum that it provides to its stakeholders and the general public.

CHALLENGE

All wireless communications signals, including TV, radio, GPS and phone services, travel over the air via the radio spectrum. Ofcom is responsible for managing the civilian use of the UK radio spectrum. Its work involves releasing spectrum for new uses as well as developing policies to ensure that the spectrum is used efficiently. Ofcom is required to make information available on how the spectrum is used in the UK.

This includes information such as spectrum bands by sector (aeronautical, public, maritime and business radio), by frequency allocation, such as broadcasting, satellite or fixed, as well as rights of use and licences. Ofcom's Spectrum Information System provides information on how radio spectrum is issued in the UK, including the types of Wireless Telegraphy (WT) Act Licences available from Ofcom and details of tradable licences.

It wanted to improve the quality and quantity of information it presents on its Spectrum Information System – a publicly available portal. Ofcom's Spectrum Team had attempted to do this, but was faced with challenges relating to the complexity of the data and difficulties in accessing the data sources.

"The main source system is the Spectrum Management System, which is very difficult to pull data out of. The subject matter and data it contains is also very complex and we were faced with the challenge of finding the right expertise and technology that would provide us with a seamless, automated solution that presents quality information to our stakeholders and internal team." Kwame Aidoo, Business Solutions Architect, Ofcom.

THE BENEFITS

- Automated daily data refresh
- Improved range of reporting
- Drill down capability
- Interactive dashboard
- Search and filter functionality
- Improved data insight

SOLUTION

Ofcom was introduced to Altius by Microsoft. The initial engagement commenced with a Proof of Concept (PoC). This was designed to demonstrate that together, the Microsoft technology stack and Altius consultants, working in collaboration with Ofcom, could deliver a solution that would exploit the spectrum data Ofcom had, and present it more efficiently and effectively. Following the PoC's success, Ofcom would have the evidence to support a business case to develop and implement this as a live deployment of the Spectrum Information System.

The end goal was to produce an interactive map of the spectrum that would allow users to browse and search for how different spectrum bands are used in the UK, by sector and by product/application. Altius's main challenge was the data modeling involved in mapping frequency bands against specified ranges alongside the various allocations and applications. The problem was that the frequency ranges assigned to allocations are scattered throughout the spectrum. Applications are also dispersed throughout the spectrum and do not necessarily correlate to sector allocation. In addition, frequency ranges can overlap.

Altius worked closely with Ofcom's Spectrum Team and Business Solution Architects to understand the data and the challenges. Our solution was to create a hierarchy of frequency bands. This allows the user to see all the allocations/applications within a top-level band on a visual map. The user can then drill down into that band to see how applications/allocations are split across more granular frequency bands.

"From their ability to understand and model what are incredibly complex and difficult data sets and sources, to their flexible and collaborative approach, and their quality solution, Altius has delivered at a level that has exceeded our expectations at every stage."

Kwame Aidoo, Business Solutions Architect, Ofcom.

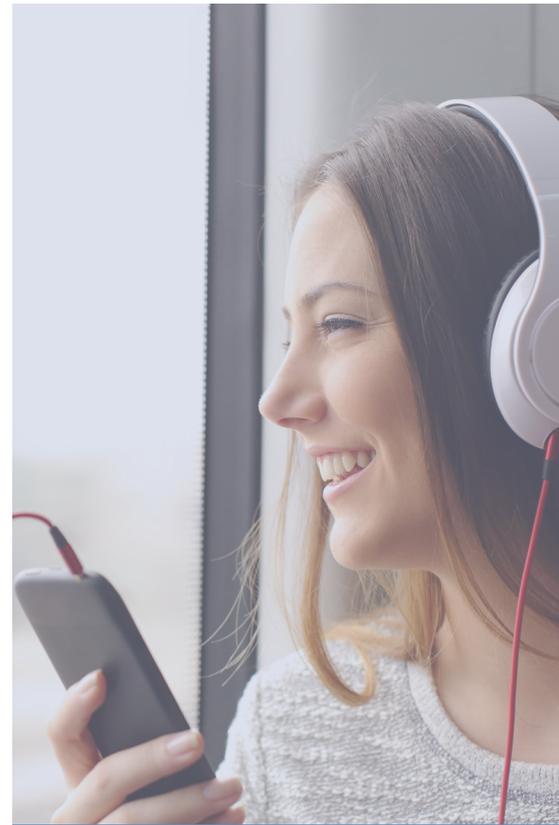
The overlapping of frequency bands added another layer of complexity to the data model, but by using the functionality of the query editor within Power BI to find all intersecting ranges between lists, this too was included in the model.

Microsoft's Power BI software was used to present all the data in highly visual, interactive maps and charts that cover the spectrum from 8.3kHz to 275 GHz. The PoC was deemed incredibly successful by Ofcom's Spectrum Team and its stakeholders, and as a result the business case for the production model was agreed. The solution went live in May 2018.

BENEFITS

The customised Power BI maps and charts that Altius's solution delivers onto the Spectrum Information Portal provide a range of information that was previously unavailable. With data automatically refreshed daily, the highly visual dashboards enable users to easily view up-to-date information on the spread of allocations and applications, bands, frequency ranges, licences and transmitters, and to drill down for detail on each of these.

At the time of writing, the solution has been live for six months and Ofcom is pleased to report a very positive response from its stakeholders and the general public. Its own internal experts are also delighted with the ease at which data that was previously inaccessible, can be filtered, sliced and diced. Due to the collaborative nature of the engagement and the training provided by Altius, Ofcom's internal team is now exploring additional opportunities to leverage the platform to exploit its data further.



ABOUT ALTIUS

With offices in the UK, Netherlands and India, Altius helps organisations to harness data and use it to understand, model and predict business performance. Combining our business knowledge with advanced technology and architecture skills, alongside project management and business change capabilities, Altius delivers real-time, reliable and actionable data-driven business insights direct to decision makers. Altius's management intelligence and data analytics solutions are proven to drive improved end-user engagement, business efficiency and profitability. Its tailored information managed services extend beyond a traditional helpdesk offering, encompassing configuration and management of cloud infrastructure, through management of applications and critical business processes to the provision of fully outsourced data services.

If you would like to discuss how Altius can help you extract value from your data to help improve business performance, please get in touch.

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