

## Designing a national broadband network

# Actavo

### The Challenge

- Survey poles, chambers, cables and buildings across rural Ireland
- Design a next generation broadband network

### The Benefits

- Highly efficient nationwide surveys
- Significant annual saving on design resources
- No technology barriers for new surveyors
- Reliable data collection everywhere in Ireland
- Clear visibility of project performance

Actavo is a primary contractor for the largest and most significant telecommunications initiative ever undertaken by the Irish government. The organisation is using ArcGIS to help fulfil the requirements of its contract as efficiently as possible and design a state-of-the-art, high-speed fibre broadband network which will help transform the lives and livelihoods of 1.1 million people in rural Ireland.

### The Challenge

The National Broadband Ireland project aims to bridge the digital divide between cities and rural areas in Ireland. It will deliver high speed internet connectivity to 537,000 buildings, providing 1.1 million people with better opportunities to learn, work and engage with others. However, before 146,000 km of new fibre cable can be laid, Actavo, one of the primary contractors appointed to the National Broadband Plan project, needs to undertake surveys across the country. It then needs to design the new broadband network, taking into account the requirement to reuse as much of the existing telecommunications infrastructure as possible to ensure efficiencies in cost and build time.

### The Solution

The organisation engaged consultants from Esri Ireland to help it develop a suite of GIS solutions specifically for the National Broadband Ireland project using Esri's ArcGIS platform. Using a workshop approach, the Actavo team and Esri Ireland consultants brainstormed concepts for solutions, which the Esri Ireland consultants then developed, tested and fine-tuned until they precisely met the needs of the business. "Esri Ireland was very quick to turn ideas into solutions," recalls Lindsay Rountree, Project Lead at Actavo. "The consultants were very knowledgeable and excellent to work with."

The following ArcGIS solutions are now pivotal for the ongoing implementation of the National Broadband Ireland contract:

- Planners use ArcGIS Online to review survey areas and plan survey routes, ensuring there is adequate access to poles and other assets that need to be surveyed.
- Surveyors use Collector and Survey123 for ArcGIS to complete map-based surveys on tablets in the field and upload survey data back to the central project office in Dublin.
- Specialist designers use ArcGIS Pro to design the broadband network, taking advantage of advanced programming functionality to automate many aspects of the design process.
- Managers use an Esri dashboard to view the status of surveys, monitor individual and team progress against surveying targets and gather data for client reporting.

According to Rountree, ArcGIS was the ideal technology platform for the National Broadband Ireland project. "ArcGIS is an internationally-recognised GIS solution, used across lots of industries and especially in the telecommunications sector. This makes it easier for us to recruit staff with the required GIS experience and skills for the National Broadband Ireland project."

Learn more at: [esri-ireland.ie](http://esri-ireland.ie)

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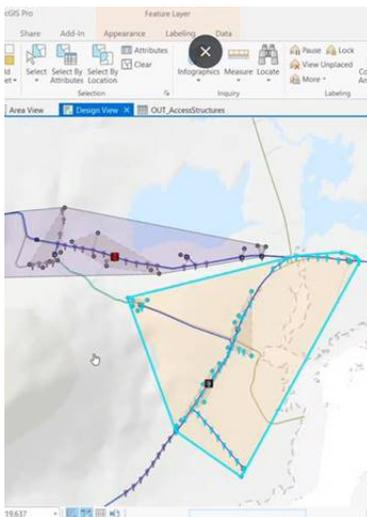
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Broadband Ireland project.”

“ ArcGIS Pro reduces the need for a high number of design resources to deliver such a huge project, creating significant annual cost savings. ”

Lindsay Rountree, Project Lead, Actavo



A section of broadband network, designed using ArcGIS Pro

### The Benefits

#### **Highly efficient nationwide surveys**

The use of Collector and Survey123, together with the creative thinking of Actavo’s survey team, has resulted in a mobile survey process that is highly efficient. Indeed, in just one day, 25 surveyors can survey 800 poles and more than 40km of overhead cable, collecting high quality data, which can be verified centrally immediately. Brian Kelly, Group CEO of Actavo, says: “Actavo is delighted to be involved as one of the primary contractors designing and building the new high speed broadband network in Rural Ireland. National Broadband Ireland is an incredibly important initiative that will connect communities and stimulate the economy of Ireland.”

#### **Significant annual cost savings**

Actavo’s designers can produce accurate network designs very quickly, because ArcGIS Pro uses programming scripts to automate much of the design process. Designers only have to focus on any exceptions and advanced design tasks to produce the final product. Furthermore, if the client requests a change to the broadband network design, the existing design can be adjusted in ArcGIS Pro without starting from scratch. According to Rountree, “ArcGIS Pro reduces the need for a high number of design resources to deliver such a huge project, creating significant annual cost savings.”

#### **No technology barriers for new surveyors**

The field-based surveying method is very intuitive for surveyors, meaning that new employees can get up and running very quickly. This is a key benefit as it enables surveyors to work efficiently and mobilise nationwide to deliver quality surveys from day one. “The ArcGIS mobile solution is very easy for people to pick up, use and follow which survey task to carry out next,” Rountree says.

#### **Reliable data collection everywhere in Ireland**

As Actavo needs to survey very rural areas, where there is often poor or no mobile connectivity, it is a huge advantage that Esri’s mobile solutions work effectively both online and offline. “I have been on plenty of projects in the past where we have had challenges retaining data or syncing when working in rural areas with poor connectivity,” says Marshall Myhan, Survey and Design Manager at Actavo. “ArcGIS works well offline, syncs when online and is very reliable.”

#### **Clear visibility of project performance**

The ArcGIS platform and the Esri dashboard in particular provide Actavo with detailed information that it can use to monitor the status of surveys and provide reports to its client about the overall productivity of the project. As Rountree points out, this visibility was particularly valuable during the COVID-19 crisis. “I could log in from home, see the status of the project and monitor how individual surveyors and teams were performing,” he says.

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