

Taking off on a journey to transform the passenger experience



The Challenge

- Transform the passenger experience, by improving safety, operational efficiency and regulatory compliance

The Benefits

- More efficient airfield asset maintenance processes
- Better information for informing health and safety improvements
- Improved management and mitigation of risks in airfield environment
- Effective compliance with aviation industry regulations
- Meaningful business insight to support future planning



Esri Ireland

Dublin

Block B | Ashtown Gate
Navan Road | Dublin 15 | D15 NP9Y
T +353 (0) 1 869 3928 | F +353 (0) 1 869 3901

Hollywood

Twisler River Studios | 18 High Street
Hollywood | BT18 9AD
T +44 (0) 2890 767336
E mapsmakesense@esri-ireland.ie
W esri-ireland.ie

At the busiest airport in the Republic of Ireland, Esri's ArcGIS platform is being deployed as part of a wide-ranging digital transformation initiative to enhance the passenger experience. The use of ArcGIS on mobile devices, on interactive management dashboards and for complex analysis is leading to improvements in operational efficiency, risk management and safety throughout the airport

The Challenge

Dublin Airport is the busiest airport in the Republic of Ireland. Operated by DAA, it welcomed 31.5 million passengers in 2018, and handled more than 2,300 flights every week. To provide a safe and positive experience for passengers, the airport's employees need to work together to manage and maintain 35,000 assets, with a replacement value of €4 billion, as well as collect, share and analyse a vast amount of operational data.

The Solution

Dublin Airport decided to introduce geospatial information system (GIS) solutions and selected Esri's ArcGIS platform following a successful pilot. It then began to roll out a succession of mobile, desktop and web-based GIS applications to transform processes and build incremental business value. "Our aim was to think big, start small and work fast," says Neil Moran, Dublin Airport Head of Digital Asset Management & Transformation. "ArcGIS gave us the platform we needed to connect systems, give all our employees a single view of the truth and empower them to work more efficiently and flexibly all around the airport."

Now, field-based employees use a range of ArcGIS mobile solutions to access, collect and upload information and photographs from mobile devices. Airfield inspectors use Collector for ArcGIS to check the condition of 1,700,000 m² of airfield, while maintenance teams use ArcGIS Portal to access asset information and download repair manuals in the field, to help them rectify faults more quickly. Other airport workers use Survey 123 for ArcGIS to record safety incidents, such as injuries to baggage handlers, and collect all pertinent details in real-time, on their mobile devices.

Dublin Airport also makes extensive use of Esri Dashboards to provide managers with a clear overview of the status of activities, in real-time. For example, pavement managers use an Esri Dashboard on which completed, scheduled and outstanding repairs are all displayed 'live' on a single screen, coloured coded in green, amber and red. "Esri Dashboards put real-time information into managers' hands and provide valuable insight into the airport's operations, risks and performance, which we can use to make faster, well-informed decisions," says Morgan Crumlish, Dublin Airport Spatial Data Manager.

In addition, Dublin Airport uses Insight for ArcGIS and ArcPro to analyse data and gain deeper understanding of critical issues, including runway and taxiway usage and timings. These tools play a key role in supporting decision making on everything from the future expansion of the airfield to contingency planning. For example, ArcPro has recently been used to analyse ways to transport key members of staff to work following heavy snowfall, to improve the airport's ability to remain operational during winter conditions.

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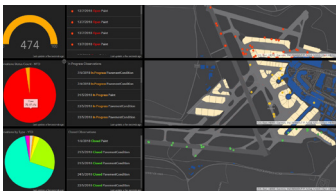
Morgan Crumlish, Spatial Data Manager, Dublin Airport



The airfield maintenance team uses Collector for ArcGIS as an integral part of its maintenance process



Maintenance checks are planned and tracked on Esri dashboards



The airfield pavement manager has a clear overview of the progress of all maintenance work

Benefits

Increased operational efficiency

The use of ArcGIS at Dublin Airport has created significant time savings, by making it easier for teams to collect, share, understand and act upon new information. When asset faults are identified on the airfield, detailed information and images can be collected swiftly using ArcGIS on mobile devices. The data is transferred instantly and digitally to the maintenance team, where jobs are prioritised and scheduled. Managers can then monitor outstanding and completed jobs on their Esri Dashboard, in what is an integrated and highly efficient end-to-end process.

Improved health and safety

Dublin Airport can now record safety incidents very promptly and utilise this information to drive health and safety improvements. For example, if an incident occurs on an escalator, employees can capture the relevant environment conditions and, where appropriate, add witness statements using Survey 123 for ArcGIS. This data can be analysed in ArcGIS, alongside historical data about previous incidents, to identify high risk areas, inform safety improvement opportunities and protect the company against erroneous claims.

Reduced risks in the airfield environment

Using ArcGIS, Dublin Airport is able to reduce risks on the airfield through better monitoring of potential hazards, like laser activity and wildlife incursions. For example, the airport is starting to track all wildlife incidents airside following learnings from colleagues using Esri technology for similar solutions across Europe. With this new insight, airport employees have been able to employ bird management techniques, such as hawk kites and eagle soundtracks, in precisely the right locations to improve safety for passengers.

Effective compliance with industry regulations

In a new initiative, Dublin Airport and third parties are using ArcGIS to develop solutions to assist in the monitoring of runway, taxiway and apron loading at the airport to ensure and demonstrate compliance with aviation industry regulations. When fully implemented, an ArcGIS Dashboard will display live data, indicating where sections of the airfield have been subjected to excessive loading, and alert managers when thresholds are reached, so that inspections can be prioritised.

Meaningful insight for future business planning

Using Insights for ArcGIS, managers can now undertake analysis of large volumes of data and gain accurate information with which to make better decisions about the future of Dublin Airport. Following passenger growth of 51% from 2013 to 2018, Dublin Airport plans to use ArcGIS to enhance passenger wayfinding, maximise route efficiency and present commercial opportunities, while minimising bottlenecks and improving the overall customer experience.

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Block B | Ashtown Gate
Navan Road | Dublin 15 | D15 NP9Y
T +353 (0) 1 869 3928 | F +353 (0) 1 869 3901

Holywood

Twisell River Studios | 18 High Street
Holywood | BT18 9AD
T +44 (0) 2890 767336
E mapsmakesense@esri-ireland.ie
W esri-ireland.ie

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