National Grid

Improving efficiency in the field with a fully integrated, multi-platform mobile working solution

Key points

- Enables engineers to use laptops or iPads to manage all aspects of field work
- Protects investment in valuable existing field data capture processes
- Has helped rationalise scheduling of maintenance activities
- Has created a platform for future growth and innovation in mobile working

Summary

National Grid saw an opportunity to build a new mobile platform that would support field work across multiple mobile device platforms. At the same time, it wanted to keep the best aspects of its existing solution – especially the flexible data collection scripts provided by a field data capture component from AMT-SYBEX.

National Grid formed a project team, working with multiple vendors to deliver a comprehensive, first-of-its-kind project, which included world-first integration between Affinity Fieldreach, SAP Mobile and Ellipse.

The result is a truly flexible mobile architecture that runs seamlessly on both Windows and iOS platforms, enabling National Grid's field engineers to capture and interact with asset, maintenance and cost data in seconds – much faster and more easily than ever before.

The challenge

National Grid wanted to replace its existing, end-of-life mobile solution with a more modern architecture that would support multiple mobile platforms – while also preserving the company's years of investment in its highly specialised field data capture processes. However, bringing all the necessary technologies together into a coherent solution presented a major challenge, as many of the components had never been integrated before.

The solution

Single architecture solution
A new solution would support multiple mobile device platforms and integrate work and asset management, scheduling and data collection into a single architecture.

In a first-of-its-kind project, National Grid worked with AMT-SYBEX and 12 other vendors to extend its Ellipse asset management system and integrate it with Affinity Fieldreach for data collection, SAP's Mobility Platform and Work Manager application, and Workforce Scheduling and Optimization by ClickSoftware. The new solution unites many mobile processes into a seamless solution with single sign-on, and supports both Windows 7 and iOS devices. It has also enabled the company to seamlessly move field data capture scripts onto the new devices – maintaining continuity in its field engineering processes.

The benefits

- Engineers in the field now have the right mobile device for their role: iPads for greater mobility or Windows laptops for more advanced tasks.
- Embedding the best elements of legacy mobile solutions into a more modern, strategic architecture helps to protect existing investments while boosting flexibility for the future.
- Greater integration between mobile applications enables more streamlined, joined-up processes, creating greater efficiency.
- True point-of-work data collection improves the validation and accuracy of asset condition and maintenance records, increasing overall operational effectiveness.
- Increased accessibility of asset, condition and cost data in the field could help to drive long-term cultural change around cost-efficient maintenance.

National Grid owns and manages the systems that deliver gas and electricity to millions of customers across the UK. One of the largest investor-owned utilities in the world, the company plays a vital role in connecting homes and businesses to the energy they use.

Getting ahead of the game

Data challenges
Getting the right data out to – and back from – engineers in the field is a key challenge for most essential industries.

Getting the right data out to – and back from – engineers in the field is a key challenge for most essential industries. The latest generation of smartphones and tablets offers great potential, but most companies are still lagging behind in adoption due to inflexible legacy mobile platforms.

When the mobile infrastructure used by its gas and electricity transmission business reached end-of-life, National Grid decided to replace it with a genuinely modern, flexible platform that would allow engineers to use the right tool for each job – from traditional laptops to leading-edge tablet devices.

The best of both worlds

Malcolm Ankrett, Senior Project Manager at National Grid, says: "Our original mobile platform had been built up gradually over time, starting with email access and gradually adding other features as the need arose. Now we had an opportunity to start from scratch and build a much more unified and coherent platform.

"At the same time, there were elements of the old solution that we had invested a lot of time in, and we didn't want that investment to go to waste. So we needed a solution that would give us the best of both worlds: a new, more flexible mobile platform that would leverage the best parts of the old one."

Protected investment
The collection scripts developed by National Grid over seven years were seamlessly moved to the latest version of Fieldreach for use on new devices.

One of the most important elements of the previous solution was its data collection component, which had been provided by AMT-SYBEX. National Grid calculated that it had spent six or seven years developing data collection scripts for this platform – and these scripts had become vital to help users complete a huge number of field engineering and inspection processes.

"It was important to find a solution that would help us seamlessly port these valuable scripts onto new devices," explains Malcolm. "Affinity Fieldreach from AMT-SYBEX gave us the flexibility to achieve this very quickly, within the tight deadlines of our project.

"Another benefit of Fieldreach was that it already supported iOS as well as Windows, so it fit perfectly with our multi-platform strategy and our focus on offering a simple, intuitive end-user experience on tablet devices."

Integration the key challenge

The key challenge was to integrate all of the components of the solution. The backbone would be the company's Ellipse asset management system, while Affinity Fieldreach would provide field data capture processes.

"From an integration point of view, the project was extremely ambitious," says Malcolm. "We were working with 13 different vendors, and some of the software components had never been integrated before. We also had developers working in India, Israel and Ireland, as well as our main project office in Solihull.

"The great thing was that everyone was prepared to work as one team. We all supported each other, and recognised that we had to stand together – or fall like dominos. We kept up a good team spirit and got the job done on time and on budget, which is a great achievement for a project that involved a number of world-first technologies."

World-first integration of SAP and Fieldreach

Among those world firsts was the integration of Affinity Fieldreach with SAP Work Manager. This enables bidirectional interaction between National Grid's work order management and data collection applications – allowing users in the field to work more seamlessly, and boosting data quality.

Fieldreach integration

Seamless integration with Fieldreach to SAP enabled bidirectional interaction between work order and data collection applications boosting data quality from the field.

Malcolm Ankrett comments: "The powerful integration between Fieldreach and SAP allows us to bring processes together that were previously separate. For example, it used to be possible to close a work order without capturing all the data we require. Now, the two things are linked, so we can ensure we get the right information before the work order gets closed.

Capturing the right data

National Grid now collects the right information before a job is closed allowing visibility over scheduling of maintenance jobs.

"As a direct result of gaining that information, we have been able to identify a number of maintenance jobs that were not being scheduled in accordance with policy. This has enabled us to gain efficiencies in our inspection regimes."

Another example of time savings involves timesheet management. The new solution makes it much easier for field workers to log any extra hours they have worked and subsequently submit them to Ellipse via a much more streamlined process with active approval.

Efficiency in the field

"Engineers can access information on maintenance history, asset condition in a couple of seconds – when previously, they would have had to call the office."

Malcolm Ankrett
National Grid

Transforming the way the field interacts with data

Malcolm says: "It's now possible to use web services to call data onto mobile devices directly from Ellipse. This means that engineers can access information on maintenance history, asset condition in a couple of seconds – when previously, they would have had to call the office.

"Looking at the longer term, we see the ability to access data easily in the field as a driver of cultural change. For example, it's now possible to provide cost estimates for parts and labour, so we can give our engineers some insight into the cost implications of how they do their work. The regulatory regime under which we work drives us to reduce our operating costs while improving our customer service. Greater visibility of costs will support this ambition."

Excellent feedback from field users

For now, National Grid has completed its rollout of Windows 7 laptops to all 1,400 field staff, and has also issued 200 iPads to a first wave of users.

"Everyone wants an iPad now!" says Malcolm Ankrett. "We know from the early adopters that many of them use their iPads almost exclusively, so it's clear that porting the data capture scripts onto a tablet platform with Fieldreach has been a big success. We are planning a wider rollout already."

Malcolm Ankrett concludes: "The project as a whole has been a resounding success, and the role of AMT-SYBEX in helping us with the Ellipse and Fieldreach components has been key. We now have a coherent, multiplatform mobile strategy that will serve National Grid well both now and in the future."

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