

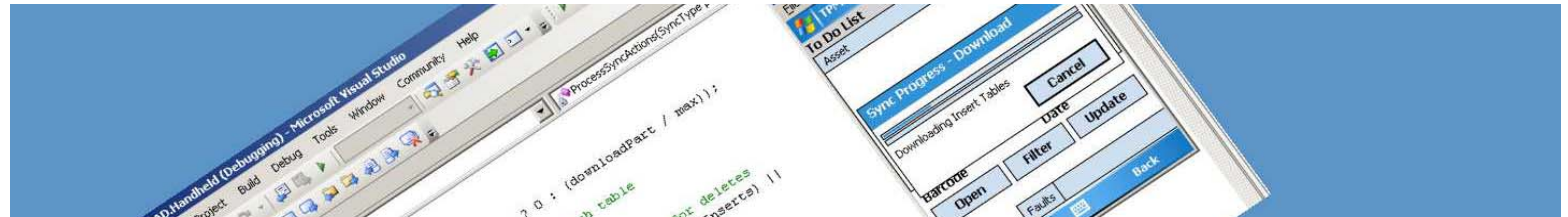
## Mobile application development

Founded in 1979, IPL has a long history of successfully delivering excellent value consultancy and end-to-end software-intensive solutions to both the public and private sectors.

IPL's consultancy is renowned for its quality and value. Our consultants are talented and independent-minded individuals with extensive industry experience. We consistently exceed our clients' expectations through a combination of imaginative thinking, managerial and technical expertise and many years of systems engineering experience.

IPL's track record in end-to-end software solutions development is exceptional. Our proven development methodology allows us to cut through technical complexity, manage risk and completely focus on delivery. We consistently deliver reliable, efficient and accurate systems to a precise schedule.

IPL is an ISO9001:2000/TickIT registered company having a permanent workforce of 240, revenues of ca. £21M p.a. and 40,000 sq ft of secure office space in central Bath.



## Field Force and Fault management

### Business need

This is an account of an IPL development project for a major UK national government agency. The Agency operates a real time communications & control network covering all of England. The integrity and performance of that network contribute significantly to UK public safety.

Naturally, the Agency is at pains to manage its network very closely. IPL became involved when the Agency saw an opportunity to use new software technologies to hugely improve its network management capability, particularly in the areas of fault control and network configuration tracking.

The Agency set out to address some specific business needs:

- to get timely, accurate, actionable information about the state of its network assets
- to get an up-to-the-minute view of the network's configuration
- to maximize both the effectiveness and the efficiency of its maintenance teams

### Technical challenge

The Agency already had a database representing its 100,000-plus network assets – for example, transmission systems, cable links, network nodes, and remotely operated sensors and actuators. But because its field force often has to work in remote locations where no data communications services are available, the database had to be updated from maintainers' reports, manually, after their return to base. As a result, the database was always lagging the real network state, and often missing vital bits of information.

The field workers were already equipped with first-generation PDAs, but the software on those devices only supported very rudimentary job dispatching functions. So the field staff had to carry around bulky paper manuals and forms to supplement it.

The Agency came to IPL to develop a suite of well-integrated applications for a new generation of mobile devices, and to integrate it into their back-end database and dispatch system.

### Why IPL?

Firstly, because of our long experience of working with the Agency's network systems. Secondly, because of our 30-year track record of developing embedded systems for large-scale deployment. But most importantly, because of our reputation for consistently delivering software that's right first time, does what it's meant to, never fails, and is delivered exactly on the day that it's due.

## IPL's answer

As the sole application development subcontractor to the Agency's chosen prime, IPL specified, designed, developed and tested a suite of closely integrated applications for a ruggedized handheld, running the Windows Mobile operating system.

IPL's applications took every advantage of the device's capabilities, integrating 2G and 3G wireless data communications, fine-resolution GPS, camera and bar code scanning to maximise the users' working effectiveness. The applications deliver:

- a full dispatcher interface, giving the worker their next job and automatically downloading all the relevant equipment detail;
- integrated inspection & maintenance instructions, leading the field engineer step by step and making an auditable record of the work done;
- recording of asset changes in the field (including photographs and barcodes), and synchronization back to the central database.

IPL's software includes a local cache of relevant sections of the central asset database, and synchronizes it (via a secure https/wireless link) with the database when the mobile device has network coverage.

IPL developed the mobile applications



using the C# language, the .NET framework, and the Visual Studio development environment. IPL ensured the timely delivery, correct operation and robustness of the software by applying IPL's ISO 9001 Quality Management System, taking the system methodically from painstaking negotiation of detailed requirements, via carefully reviewed design and coding, to exceptionally thorough multi-layered testing.

## Business outcome

IPL delivered the mobile applications on schedule. They worked right, first time, and they have continued to work correctly through many man-months of field use.

For IPL's client, this has proved a very straightforward route to procuring a set of tailored mobile applications which are outstandingly fit for purpose, which are enabling its field force to be more productive, and which most importantly are making the managed network more dependable.

Significant savings have been made by allowing the workforce to remain on the road performing their primary functions without the need to visit the office

IPL continues to work extensively with this client on related projects and in other fields.



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## Contact information

Services Sales  
IPL Information Processing Limited  
Eveleigh House  
Grove Street  
Bath  
BA1 5LR

Tel: +44 (0) 1225 475000  
Fax: +44 (0) 1225 444400  
Email: sales@ipl.com

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