



Trial Trial Results: Mobile Maintenance (Canada Gas)

Network: Mobility & Devices
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Date: July 2002

Goal of Trial

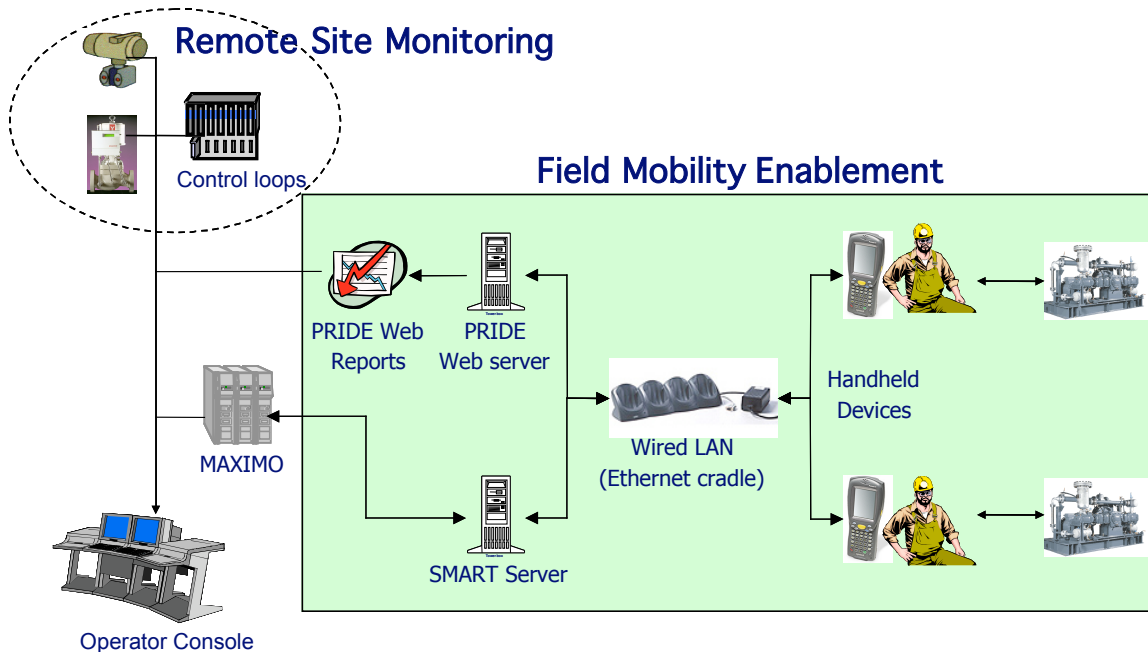
Take the first step toward creating a standard, handheld mobility platform that will enhance productivity and communication between maintenance/operations field personnel and their site office.

Description of Technology

Field personnel were equipped with Intrinsically Safe, Symbol handheld devices running Win-CE/PocketPC 2002, with a "standard sized" _ VGA screen, a soft keyboard, a numeric keypad and an optical barcode scanner. The device used a Symbol ethernet cradle and had integrated WLAN (although the WLAN was not used at this stage of the trial).

The trial encompassed the two main applications envisaged for BP's standard "industrial handheld" build:

1. PRIDE Web server v7.0, enabling field operators to define routes, collect readings and report and analyse field data.
2. SMART server for Maximo v3.4.1.1, enabling field maintenance personnel to access Maximo work orders, job plans and other key data in the field, as well as create Maximo work requests in the field.



Outcome

This technology shows great potential to provide long-term business value however it requires some key modifications. User acceptance may call for a larger screen and/or better resolution/contrast and more user-friendly software that employs (for example) features such as drop-down lists, larger font sizes and bigger buttons. The trial met its goal by providing learning that can be applied to enhance the process and platform and has also brought together a cross stream interest group that will contribute to future developments and avoid duplication of effort.

Strengths of Technology

SMART and PRIDE function well together (although tighter integration between them would ultimately be beneficial.) Client installation was easy and synchronization took only 2-3 minutes. The architecture worked well and there were few issues surrounding network connectivity. The form factor and concept of a *single* ruggedized device to use as a generic work productivity tool was also proven

Weaknesses or Flaws

Many users felt the screen was too small and readability in sunlight was an issue. They also felt the soft keyboard and stylus pen were difficult to use, suggesting a portable keyboard instead (or cleverer software design to make more use of the touch screen). The trial also revealed that SMART cannot handle multiple schemas, resulting in hard-coding within scripts. As well, there are potential security issues with SMART. The trial did not include central/remote device management – and it was confirmed that the absence of this would increase support costs (in other words there **is** business case for including this in the future standard build).

Integration with BP Environment

The platform integrates effectively into the BP environment overall, although a few minor issues exist – as a result of the non-integrated nature of our back-office systems. For example The PRIDE database possesses similar data as contained in Maximo, leading to duplication of data and double maintenance effort. Also, existing Maximo data needs be cleaned up to benefit from the SMART rich functionality.

Next Steps

Determine how Symbol or other vendors' (e.g. Touchstar) roadmaps address the requirements for improvements to the handheld device and consider the option of forming a cross-company group to support the creation of an ideal device (or family of devices) for our needs. Work is already underway on this with Group Technology.

Communicate the lessons learned to the BP CMMS/Operations community. (done)

Add e-LogBook, HSE and Training apps to the standard build and re-run trials using remote wireless access – in conjunction with more significant underlying business process change.

We plan to take forward a recommendation for standard handheld software for maintenance and operations processes and (time permitting for final security checks) a standards position on Symbol Wireless LAN for industrial applications. It is expected that these will be discussed at the October TSB meeting.

Budget \$ 180,000 Spent \$ 170,000