WHITE PAPER

Tony Poole [B.Eng (Hons) MBA]
8th October 2004

ISLANDS OF UNMONITORED REMOTE PLANT

Improve your ability to remotely manage your Assets

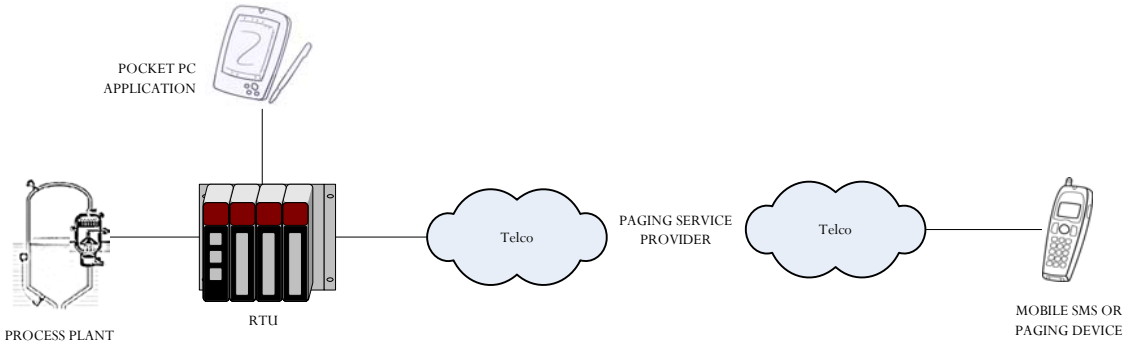
Why are unmanned process plants often unmonitored?

Frequently process plants are not monitored with SCADA or HMI software applications. Sometimes this is because it is believed that telecommunication associated difficulties are too great to be overcome but generally it relates to cost.

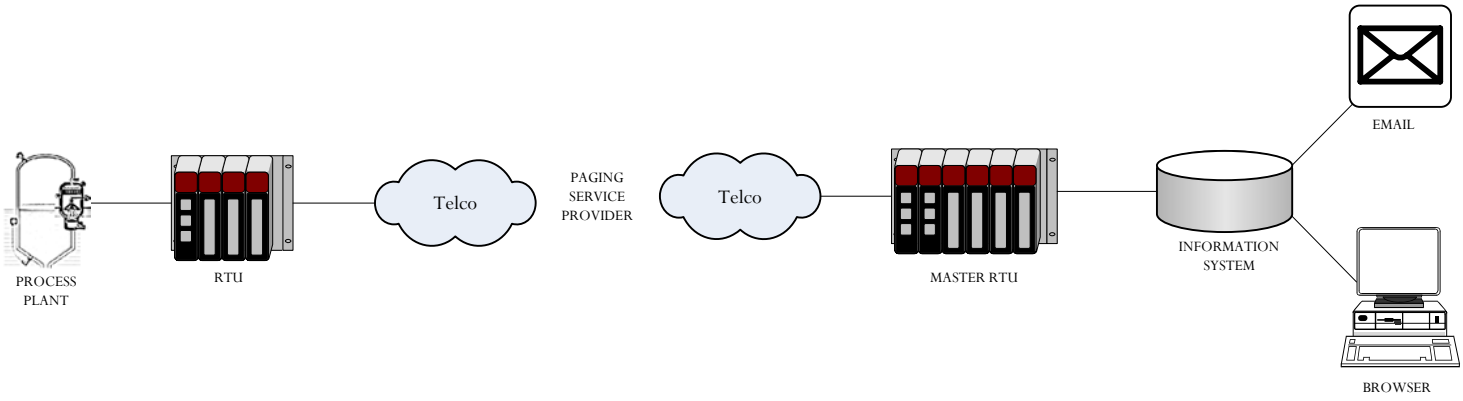
Many plants have very reliable control equipment with local annunciation on switchboards to alert non-maintenance staff when general problems have occurred. At the lowest level, plant trained engineers use low-level diagnostic software for debugging control systems or tuning performance according to specific process parameters. It is when this process adjustment becomes frequent that HMI software applications are often justified.

With technology developments come new opportunities. Remote monitoring equipment (RTU's) capable of employing time stamped event data are ideal for such scenarios. Various models using RTU's follow.

In Case 1, the system logs alarm and process limit accedence events with their associated time and date stamps. Data is event logged usually based on time interval and/or dead band accedence. If critical plant conditions occur the RTU is set to page or notify a target user via some predetermined method or combination of methods. In addition service personnel may use portable computer applications to have basic views into plant operational elements. Pocket PC applications are being used to facilitate this functionality in recent years.



In Case 2, the same functionality applies as case 1 but a central monitoring system periodically calls the outstation RTU to recover its event logged data. Recovered information could be part of an area wide HMI system or a web-based repository for data and its associated reporting system. Traditionally HMI software is used for operators to monitor plant. Today with high speed database systems and web server performance as it is, virtual real time management of plant can be achieved.



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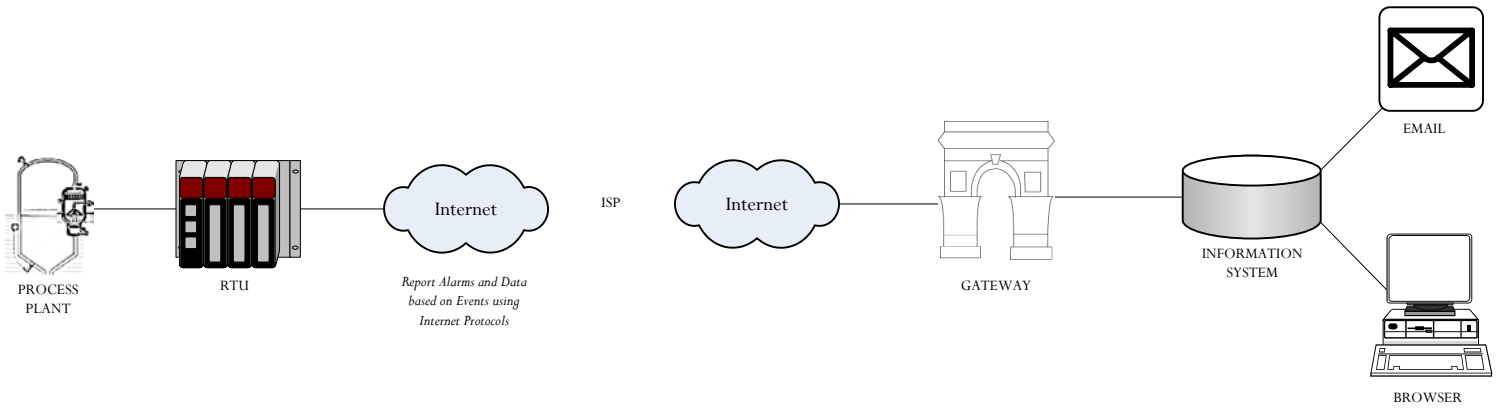
In Case 3, Internet technology is used as the communications media. As both dialup and online communications are both possible, communications is normally initiated from the field device by both exception and periodically.



Do Low Cost Plants need Expensive Infrastructure to support Operation and Historical Data Management?

These models suggest that for stand-alone plants, ASPs (Application Service Providers) may provide the needed infrastructure to coordinate and manage the aggregation of more than one process plant. In addition reports may be generated in a predetermined format with options for recovering adhoc data sets where necessary. This approach allows the process plant providers to allow the data management functionality to be handled by parties who specialise in knowledge management.

The equipment in the remote plant used for monitoring can be standardised and contains its own unique identification. This allows the centralised repository to differentiate between disparate plants no matter where they are located and what medium is used to transfer the data sets.

Ultimately the benefit for the process manager is a uniform interface for managing the performance of the plants. This is naturally the Internet web browser. This benefit is even more pronounced with single plants where the cost to implement an HMI or IS solution cannot be easily justified.

The second major benefit to utilising an ASP is the inherent management of data and methods for information recovery and association. Additionally for those planning long term to implement their own management systems, ASP solutions provide an interim stop-gap to allow process plant deployment to occur while technology solutions and internal capability is developed.

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