Invensys Process Systems User Group
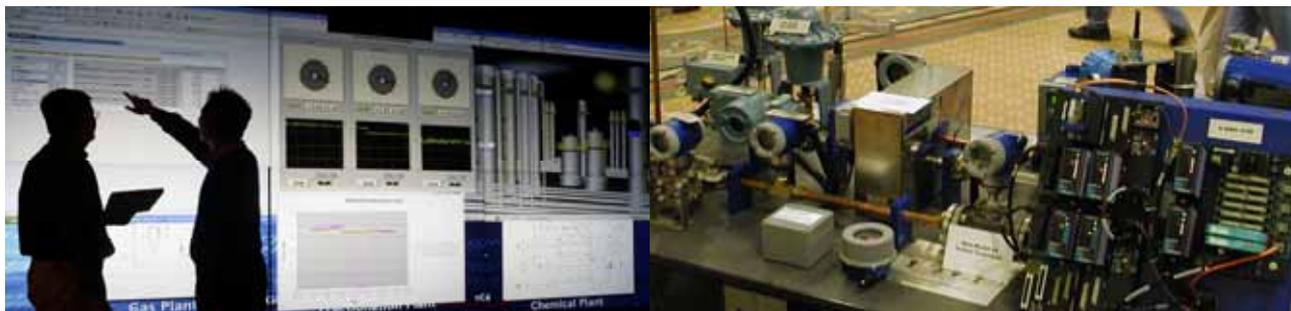## Dallas, December 2006

Process Control

The vision[1]   The reality[2]

Around 850 attended the Invensys Process Systems User Group in Dallas. This is both a sizeable community and a 'broad church.' Invensys, like many vendors, was formed by the acquisition of a number of companies – Foxboro, SimSci, Esscor and Wonderware – all of which have their own, often overlapping fields of action. These units are maintained as separate 'brands' within the organization. Moving a century (Foxboro was established in 1908) of legacy technology into the digital age is not easy and neither is combining multiple high tech companies. This is reflected by a confusing if not confused conference agenda with multiple simultaneous sessions – a situation that also reflects the process industry's own long history and conservatism.

Today, a refinery might have 150,000 points and 25 outputs per point making for a huge amount of data[3] – process has become I/O and data intensive and decision support is increasingly important. In the near future, proliferating low cost sensors may provide more information on the nature and properties of product flowing through the process. Here Invensys' **InFusion** product is both a vehicle for data and process integration and a decision support system closing the gap between process, enterprise resource planning (ERP) and maintenance, repair and operations (MRO) systems. One client described InFusion as 'a working version of the integrated asset management systems that were tried and failed in the 1990s.' Data collection will increasingly rely on wireless – which is perceived as a game changer. Here, Invensys has teamed with wireless specialists Apprion to offer multi-mode connectivity across a plant. This is bringing some interesting security challenges to process IT – which are addressed by a hardware/software '**Isolation Station**.'

The vision of computer control of the whole of a plant is still far from reality. Today's control loops are highly specialized hardware/software bundles that operate at a relatively low level – controlling a small piece of the action. The vision of a computer controlling a whole plant is still some way away, although the role of the simulator is extending from operator training; a presentation on Shell Nigeria's $3.6 billion Bonga development shows how the **operator training simulator**'s role is expanding to project design and equipment checkout.

Targa Resources reported on what is believed to be the first oil country deployment of **SmartSignal**—a data mining-based alarm system developed by the University of Chicago in the wake of the Three Mile Island incident. TransCanada pipeline shows how **Avantis'** 'management operating system' is driving process improvement.

Our main take-home from the Invensys meet is that the closer you look at the 'digital oilfield of the future,' the harder it gets! There is a lot of symmetry across the subsurface/facilities boundary with some marketing 'retrofit' of point solutions applied here and there. In this context, ProdML is full of promise, although evangelizing ProdML in the process community is a challenge.

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[1] *InFusion on Activu wall – image © Invensys.*

[2] *Foxboro Model 84 vortex flowmeter and I/A Series System controller.*

[3] *According to Chevron's Don Paul, a refinery produces 1 TB/day – SPE Digital Security 2005 (TW0528_3).*

Highlights

[Oil and gas upstream session](#)

[Wireless](#)

[Control room IT security](#)

[Targa Reources – Similarity-based modeling](#)

[Petro-Canada – Avantis as 'management operating system'](#)

[Shell Nigeria – Bonga OTS](#)[4]

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[4] *Operator Training System.*