UOP Refinery Modular Equipment Integration in the Modern Refinery
Paul Bonner – Honeywell PMT
Why buy Modular Equipment?
Benefits of Modular Projects

Achieve Profitability Faster

Benefit from UOP Expertise

• Increased speed of project execution
• Modular delivery minimizes site work
• Fixed schedule lowers schedule risk
• Firm price lowers cost risk

UOP execution during design and fabrication through start-up brings:
• Licensed/guaranteed UOP technology
• Optimized layout for maintenance & operation
• Quality assurance

Minimize project schedule and risks with UOP process modules
Simplify your technology implementation with UOP Modular Products
Honeywell - Making it Modular

Quickly Recover NGLs with UOP Russell Modular Units

Gas Pressure Regulating Stations
RMG by Honeywell has successfully engineered gas pressure reduction stations for over 50 years. This includes skid-mounted, pre-packaged pressure reducing solutions for above and below ground applications. The stations range from domestic regulator skids to high-pressure gas transmission stations, and typically include filter, regulators and isolation valves. If necessary, they are also available with slam-shut and safety relief valves.

Meter Provers
Honeywell offers a choice of flowmeter proving skids for liquid metering systems. These range from master meter and bi-directional flow provers, to compact and portable provers for a variety of applications. The Honeywell Enraf Small Volume Prover meets the most stringent requirements for flowmeter proving. It is designed for use with all modern flow measurement devices, including PD, Turbine, Coriolis and Ultrasonic meters and comes with the new SVP Controller, offering a 3.5”, 6-line, multifunction display that gives users real-time visual monitoring and control of the operation for the first time. This advanced prover is available as a standalone unit, mounted onto a purpose-built trailer, or installed onto a modular metering or batching skid.

Modular CCR Platforming Reactor
Agenda

• Challenges with Integration
• Honeywell - Integrated Solutions
• Modular Solutions by UOP
• Case Study: UOP Modular Penex™
Problems with Integration

What customers have told us about their typical project:

- Difficult integrating automation and other control system equipment
- Need for automation testing
- Incompatibility between devices
- Unanticipated programming time
- Late deliveries

Difficult getting everything to “play nice together”
What Defines Value?

• A product that does what I want it to do
• Works the first time
• A product I don’t have to constantly repair
• If I do have to make repairs, it is easy to do
• I get support from the company that I bought it from
What If You Could Have?

Premier PROCESS Knowledge

Complete & ON TIME Delivery

Fully Integrated AUTOMATION
UOP-Honeywell Delivery Model

UOP Process Technology

UOP Modular Delivery

Honeywell Process Solutions
Transferring Technology

Licensing

• UOP grants “Rights to Use” Technology

Products - Catalysts and Adsorbents

• UOP offers proprietary process catalysts

Services

• UOP provides engineering designs and technical services to assist with plant start-up or continued operations
• Dedicated support for control systems

Equipment

• UOP offers process-critical equipment
• Control systems for critical processes
Integrated Automation Solution

Experion PKS Operator Console

C300 Platform

Smartline Transmitters

UOP Process Knowledge
Modular Unit Portfolio

Modular Movie
Project Details – Middle East

**Capacity:**
- 5000 BPSD Penex™ Unit

**Schedule:**
- Module Delivery – 74 weeks

**Scope:**
- 18 Modules including Pipe Racks
- 2 Compressor Skids
- Off-Module equipment
  - 7 Vessels and Exchangers
  - Experion DCS
    - Approximately 500 field wired points
  - DRCS
    - Approximately 400 field wired points
- OSBL Scope
  - Interconnecting Pipe Rack and Battery Limit Platform
  - Substation Design
  - Road Network Design
  - Firewater Network Design
  - Civil Design (Foundations and Underground Piping Network Design)
Project Details – 3D Model
3D CAD model of the unit
Site Progress View – April 2015
Project Specific Automation Integration

- **Experion PKS™ Distributed Control System (DCS)**
  - Delivered in less than 200 Days
  - Experion PKS R410
  - On site testing and integration
  - DSA Communication
  - 500 Hardwired I/O

- **Drier Regeneration Control System (DRCS)**
  - Delivered On-Time
  - Fully tested and integrated with DCS
  - Functional testing and I/O layout confirmed with customer before delivery

Critical for Day One Readiness of the UOP Penex™ Unit
Architecture for Automation
DCS and DRCS at Site

Honeywell - Delivered and installed on time
DRCS (Drier Regeneration Control System)

- UOP Process Graphics on Experion PKS™
- C300 Hardware

- Reliable, high efficiency operation
- Automated Sequencing
  - Start up and shutdown sequences
  - Reduced operator supervision
  - Detailed system diagnostics
DRCS Fabrication and Testing
Summary of Benefits

• We offer a complete “One Honeywell” solution
  – Integrated Controls Solution
  – Protecting your investment with high reliability equipment
  – Modular delivery of UOP technology
UOP’s Modular Delivery Model.... Technology Transfer Through Knowledge