

## Bringing subsystems into one system speaking one language

System integration is the process of bringing together the subsystems – both similar and disparate - into one complete control system.



Integration of systems may create big challenges. The main cause is proprietary solutions speaking their own language. The solution becomes short-term ad-hoc objectives. This results in complex, inefficient and costly systems, and over time challenges often increases as need for changes occurs.

OPC UA is the data exchange standard for safe, reliable, manufacturer- and platform-independent industrial communication. It enables data exchange between products from different manufacturers and across systems. OPC UA is THE system integrator!

### COMMON PRACTICE IS UNSUSTAINABLE

Normal integration practice is to achieve short-term ad-hoc objectives by creating dedicated point-to-point links between the subsystems everywhere it is necessary. Over time this results in complex and inefficient systems. This means increased costs and makes it difficult to maintain an overall control:

- Difficult modification and maintenance
  - System is more and more complex and chaotic
- Inefficiency
  - Same data is transmitted between multiple devices
- Costs
  - Multiple links to implement and maintain
- Partial interoperability
  - Data is only available between linked systems
- Mess
  - Complex connections are difficult to administrate
- Anarchy
  - Difficult to design a secure system

Manufacturers choose their proprietary solutions to ensure the most control both now and in the future.

#### *Typical situation #1*

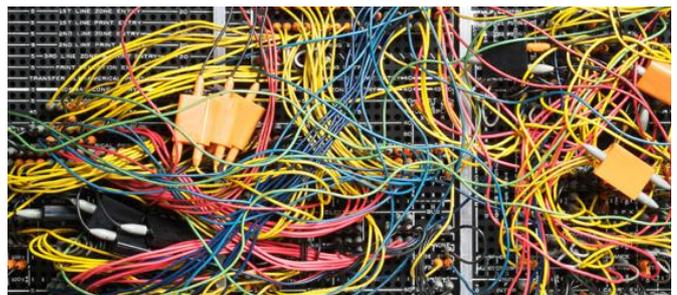
Most systems need to exchange data with other systems. But since the systems are "introverted", closed and speak their own language, a separate project will be required to achieve necessary interaction.

#### *Typical situation #2*

Every solution will eventually require change. Achieve interaction between the existing and the new, then becomes a major challenge.

#### *Typical situation #3*

Systems that live their own life require their own screens, and often separate control and operators. Expensive and difficult to achieve total transparency and control.



# OPC UA has all the resources required to achieve a full system integration

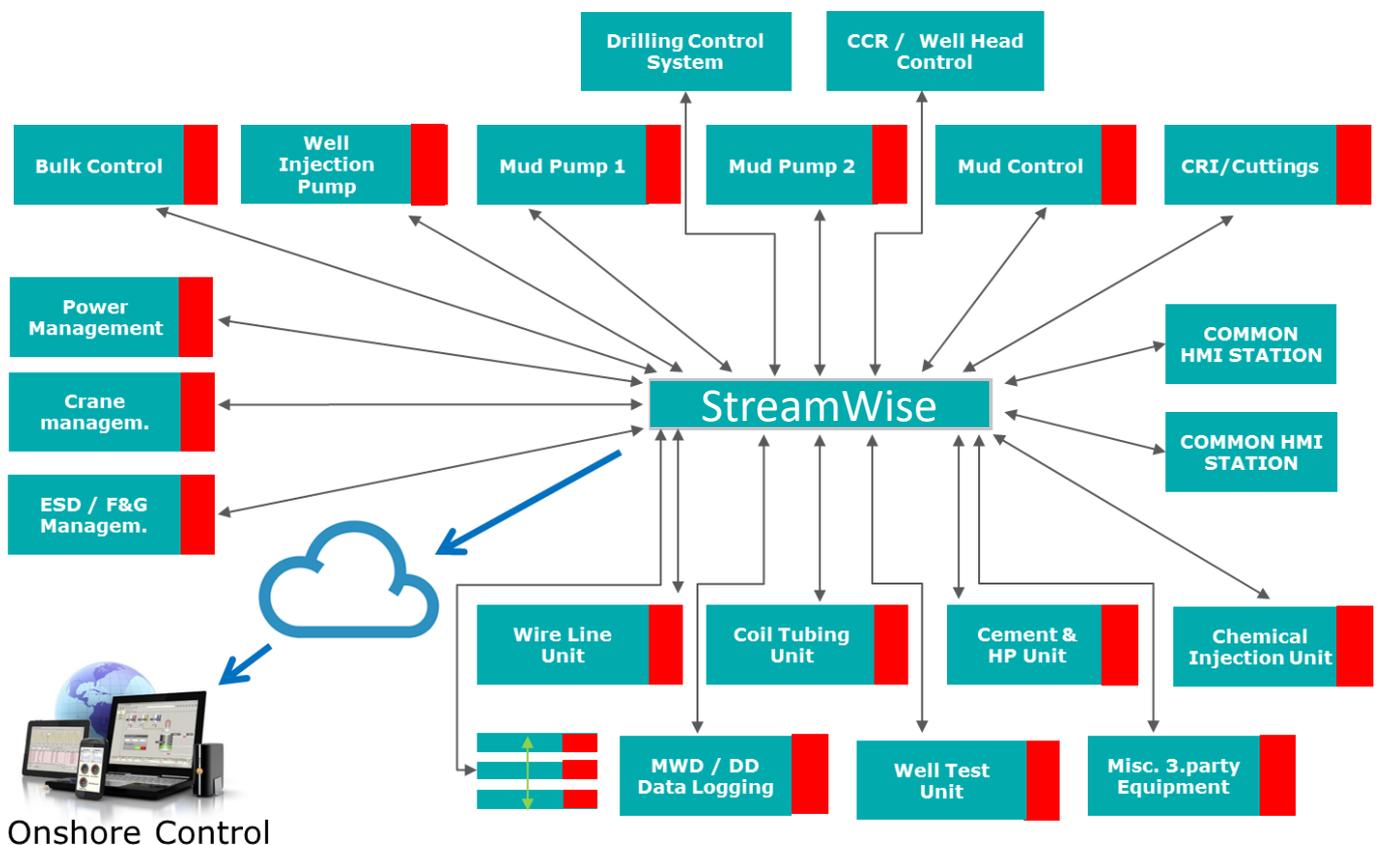
Offshore System have been using the OPC UA technology for several years, and has experience in integrating subsystems into a common control system.



To achieve a full integration it is necessary to look beyond the traditional HMI/SCADA system and PLC solutions.

A preferred solution should include;

- o Standardized communication hardware interface between HMI/SCADA and PLC. The standard interface today is Ethernet.
- o Standardized communication software interface between HMI/SCADA and PLC. The standard interface today is OPC UA.
- o Standardized operator interface on HMI/SCADA. New HTML5 technology provides some of the best user experiences in many fields. In the future HTML5 will be the major technology used for user interfaces



The chart shows a complex configuration where communication has been structured to a standardized hardware and software interface. All systems are collected into one common communication.