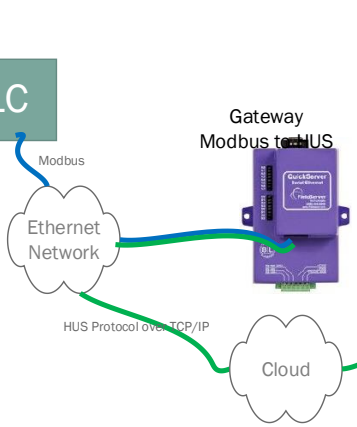
CHIPKIN

Case Study
Custom Driver Development
Interface to
Honeywell Universal Surveillance(HUS)
For an
Oil Refinery Application In Kuwait

Augmenting human operators and improving their productivity with the automatic operation of a CCTV and Surveillance system. Providing an interface which allows the DCS Control System at the Refinery to perform automatic actions on the HUS.



Introduction

The industrial automation system at an Oil Refinery in Kuwait is the source of almost all operational data. It knows the state of the plant, the process and equipment. It knows if a tank is empty, a motor has been left in manual or if there has been a pressure drop that is unusual. In legacy systems all this information is fed to the control room and there humans assess it and make callout decisions. Does an operator need to be sent to inspect the location? Does a maintenance team need to be called? Does an event need to be reported to a manager?

Modern systems like the one at this refinery realize that a great deal of the assess and assign type tasks can be done by the control system itself. It is programmed that so that under various operational conditions it can trigger a specific callout routine. In this project we provide an interface between the control system and the automated digital telephony system. Thus, the DCS is able to call out a person or a crew, or even call he fire and emergency services and report specific alarm / event information. All this without human intervention and thus leaving the humans free to focus on other issues.

(It should be noted that the total system also includes an interface to the CCTV system, which drives cameras to presets based on operational conditions.)

Chipkin Automation Systems

Protocol to protocol – Enabling the IOT Internet of Things

Products that support approx. 140 major protocols. If we don't have a solution for you, we will make you one. More than a dozen customers a year have a custom driver developed for them.

Chipkin are highly regarded for their outstanding support. System integration isn't always trivial even if that is what they tell you.

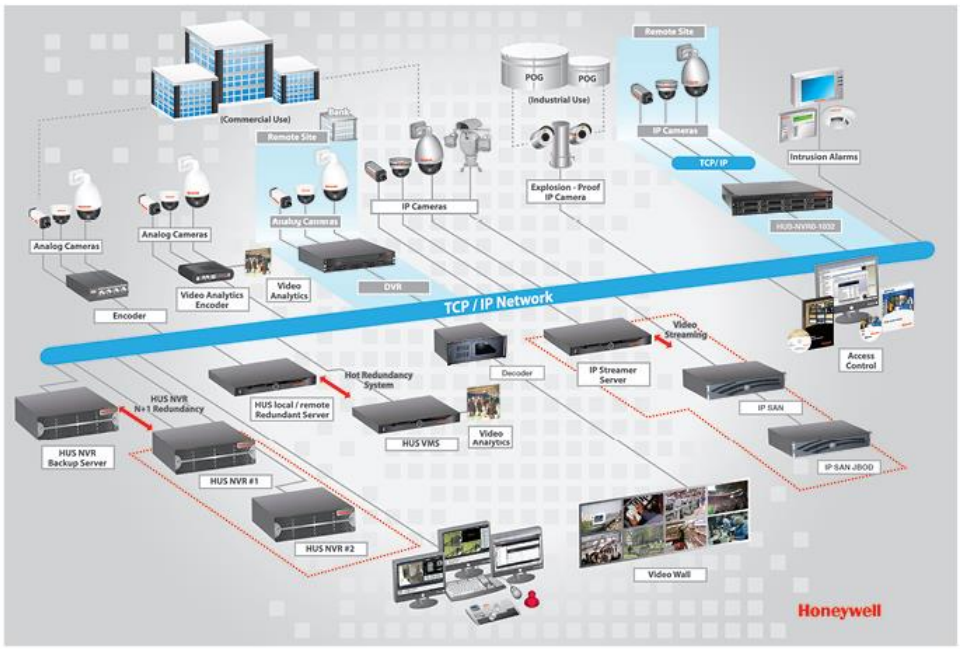
The Chipkin BACnet stack comes with a 100% copyright infringement indemnity to make corporate lawyers happy. To make your engineers happy, customers get direct access to the stack developers for coaching and problem solving.

Honeywell HUS

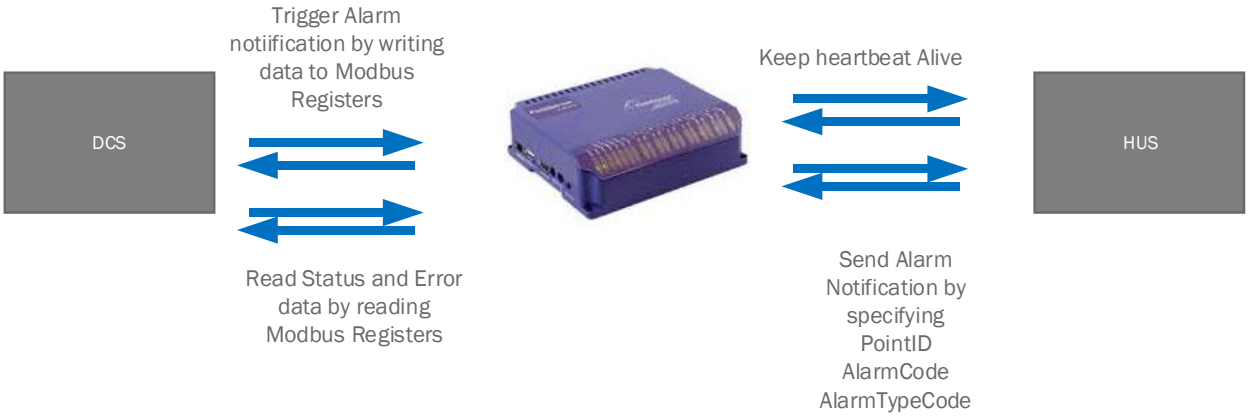
The Smart Platform for IP Security Solution

Powerful. Flexible. Efficient. Reliable. Honeywell Universal Surveillance 4.2 (HUS 4.2) is Honeywell's latest innovation on IP-based security system featuring numerous user-friendly functions and easy-to-operate design. HUS 4.2 is not only for video surveillance, it can also integrate with access control system, such as Pro-Watch® and WIN-PAK®, and intrusion alarm panel VISTA, offering a one-stop IP surveillance solution to protect your valuable assets all year round

System Diagram



Some Details - HUS-Interface



The interface to the HUS is controlled by means of the data in the data array named “HUS-Interface”

These registers are mapped onto ModbusTCP so the DCS can monitor the alarm conditions and trigger alarms.

This Data Array will normally be preloaded from the gateway configuration file. Preload means that value are inserted into the data array as the configuration is loaded and just prior to operation of the communications with the HUS. A sample of how preloads are configured is provided later in this doc. It

is also possible that Modbus could write this data (or even overwrite it). In other words, the DCS could perform configuration by writing to selected registers.

Offset	Name	Notes	Read/Write on Modbus
0	Trigger	Modbus Writes '1' to this point to trigger alarm. Retriggers ignored while timeout is running.	40001,11,21,31… Read / Write (to trigger)
1	Point Number	**Preload** with a value to define a point. Eg. Value =9 then this chunk of 10 registers is for point 9	40002,12,22,32… Read
2	AlarmTypeCode	**Preload** or write to using Modbus.	40003,13,23,33… Read
3	AlarmTypeCode	**Preload** or write to using Modbus.	40003,13,23,34… Read
4	Subscription Count	Increase each time we receive a subscription for the point	40005,15,25,35… Read
5	Not Used		40006,16,26,36… Read
6	Timer/Counter	Will wait this long for response from HUS before retrying or accepting new triggers	40007,17,27,37… Read
7	Xmite Counter	Number of times the AR message has been sent	40008,18,28,38… Read
8	Transaction Success Code	Set to 3 when message is sent. Result extracted from response if we get one and then overwrites the 3 with 0 (success),1,2	40009,19,29,39… Read
9	Sequence Number.	The number used in the Alarm Notification message to report the alarm. We track it because we might need to re-use it	40010,20,30,40… Read

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