15.12 SAMSON EXPERT[1]

Figure 15.8.-1: The evaluation of system test/diagnosis information's helps to minimise down times.

While in the past primarily the savings were discussed at the wiring and the engineering in connection with field busses, another and even more important cost potential moves with a progressive development of the field devices to the foreground: **The diagnosis.**

This one is particularly with a promising future a possible continuous supervision of device attributes and plant conditions by the device intelligence. Through this maintenance costs can be reduced, avoid unplanned interruptions and increase the system availability generally.

Effective instruments are a foresight reconnaissance of possible problems like corrosion, wear or drifts (**predictive maintenance**) and putting into action of this knowledge by a **preventive maintenance** or exchange of equipment.

1 See Data sheet T 8389 EN

The diagnosis is part of the maintenance and takes the medicine as a model. The concept “diagnosis” marks the interpretation of symptoms by the aim of recognizing the causes of a malfunction.

This medical model can almost be transferred unchanged to the functionality “diagnosis” at modern field devices, in which the diagnosis is a component of the maintenance here.

The concept diagnosis in the technique however describes detail information’s out of the field devices or its immediate process environment. The reading of test/diagnosis information’s can be carried out depending on installation in the control system or an engineer station, in a SCADA or Asset Management-System or in a operator terminal.

The equipment description DD[1], eDD[2], EDD[3], eEDD[4], EDDL[5] or the FDT/DTM[6] tool concept offers various possibilities among others for plaintext messages and help texts, for use instructions, explanation to accompanying informations, generation of maintenance intervals as well as links to databases.

This is why the EXPERT valve diagnostics are fully integrated into SAMSON positioners, supplying the required information for predictive maintenance. The Series 3730-X and 3731-X Positioners immediately recognize any zero error or system deviation during operation:

EXPERT issues detailed alarm messages over the HART protocol, PROFIBUS protocol, FOUNDATION Fieldbus protocol and over the serial interface for SAMSON’s TROVIS-VIEW software, or indicate a certain error code on the positioner display.

Besides actually controlling the valve’s position, a digital positioner also provides additional information about its own condition as well as information about the mechanical components such as the valve and actuator. More extensive diagnostic data are obtained by using special diagnostics software with suitable test functions. The plant operator needs to invest time and manpower in training and performing diagnostic tests.

Figure 15.8.-2: Trafic-light

It is exactly these resources that are limited in processing plants where it is important to access direct diagnostic information without being inundated by vast amounts of data.

The following description proposes a new kind of graded diagnostic strategy which involves the data being collected online in the positioner and being evaluated to create on-board status messages. Explicit messages appear in the process management system sorted in traffic-light coding and classified for the attention of either the plant operator or maintenance technician.

1 DD=Device Description
2 eDD=enhanced Device Description
3 EDD=Electronic Device Description
4 eEDD= enhanced Electronic Device Description
5 EDDL= Electronic Device Description Language
6 FDT/DTM=Field Device Tool / Device Type Manager