PROCESS MODEL IN ETHANOL PRODUCTION USING SOFTWARES FOR DATA INTEGRATION IN QUALITY OF RAW MATERIAL

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Introduction

Ethanol production processes with maximum yield and efficiency while keeping its equipment and the operation, without any sudden stoppages, with quick and efficient decision taking and systems to correct the model or to adjust to a new demand is the main objective of the production plants and what they propose with the model herewith presented.

For the construction of the model it is necessary to define indicators, integrate information, and define rules and actions to be taken. Automation is also necessary, along with transactional software for control and MES (Manufacturing Execution Systems). This is schematically shown in Figure 1.

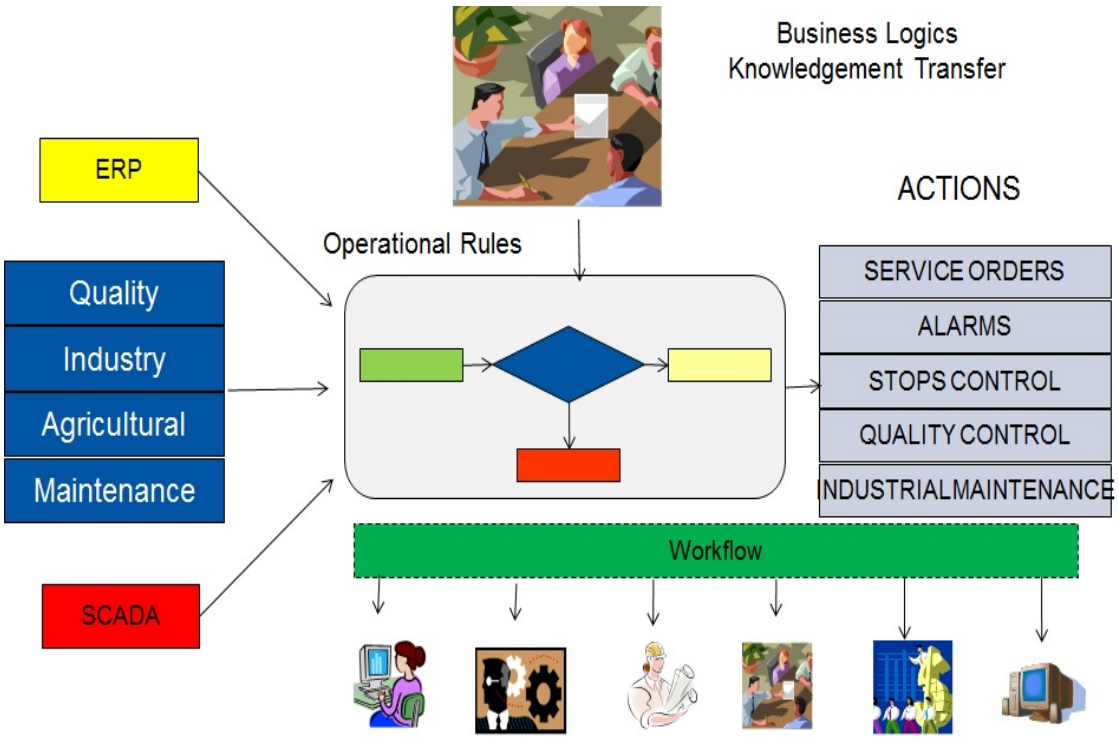

Figure 1 – The Model.

The Software for quality control of the raw material after harvest are:

1. Software for receiving sugarcane, containing data on the cane origin, suppliers or own, variety, time remained in field.

2. Software for saccharose lab, which has the role of automatically obtaining analysis results, calculate daily, weekly and monthly averages for crops and audits and information in general for the payment of sugarcane, own or to suppliers.

3. Business management software, for accounting and fiscal controls, among others.

4. Integration software for all software's mentioned above.

For writing these rules/actions ***MES (Manufacturing Execution Systems)*** is used. This article presents two business rules and actions with parameters of quality for raw material.

Integration with industrial maintenance software.

For the main equipment, preventive maintenance is performed on a time-controlled basis. For this control the article presents one rule/action.

Results and Conclusions

Through the software it is possible to integrate and make available information at any given time, report at web based, or queries on pre-defined screens, emails or text messages by cellular phone. It is possible to define rules with actions which can be totally parameterized, thus representing the reality of the production plant. It is possible to define a workflow, indicating who receives the information.

With information integration, the results of the indicators and the business rules all made available in real time, management models are built which make possible the task of decision making with efficiency and well oriented.

Results obtained from the model are: classification and integration of important data, consolidation of operational indicators, process visibility in real time, correlation among processes, knowledge preservation, decision taking based on information presented, as well as on business rules and its corresponding actions, industrial maintenance with greater efficiency, continued improvement and efficiency in production.

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