

Methodology of Automation and Supervisory Control and Data Acquisition for Restructuring Industrial Systems

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Abstract : Introduction: In most situations, an industrial system already existing, conditioned by its history, its culture and its context are in difficulty facing the necessity to restructure itself in an organizational and technological environment in perpetual evolution. This is why all operations of restructuring first of all require a diagnosis based on a functional analysis. After a presentation of the functionality of a supervisory system for complex processes, we present the concepts of industrial automation and supervisory control and data acquisition (SCADA). Methods: This global analysis exploits the various available documents on the one hand and takes on the other hand in consideration the various testimonies through investigations, the interviews or the collective workshops; otherwise, it also takes observations through visits as a basis and even of the specific operations. The exploitation of this diagnosis enables us to elaborate the project of restructuring thereafter. Leaving from the system analysis for the restructuring of industrial systems, and after a technical diagnosis based on visits, an analysis of the various technical documents and management as well as on targeted interviews, a focusing retailing the various levels of analysis has been done according a general methodology. Results: The methodology adopted in order to contribute to the restructuring of industrial systems by its participative and systemic character and leaning on a large consultation a lot of human resources that of the documentary resources, various innovating actions has been proposed. These actions appear in the setting of the TQM gait requiring applicable parameter quantification and a treatment valorising some information. The new management environment will enable us to institute an information and communication system possibility of migration toward an ERP system. Conclusion: Technological advancements in process monitoring, control and industrial automation over the past decades have contributed greatly to improve the productivity of virtually all industrial systems throughout the world. This paper tries to identify the principles characteristics of a process monitoring, control and industrial automation in order to provide tools to help in the decision-making process.

Keywords : automation, supervision, SCADA, TQM

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