MASEVA: IMPLEMENTATION OF THE DAI/MAS IN THE PROCESS AUTOMATION

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This paper presents one of the various approaches of implementation of the Distributed Artificial Intelligence / Multi-Agent System (DAI/MAS) in a heterogeneous environment of the process automation. A relatively simple SCADA/HMI system known as TomPack designed for measuring, data acquisition and control of laboratory evaporator, has been softly integrated with other autonomous systems (Oracle, Matlab), which form a complex technological-information system (TIS). From the MAS point of view, extended TIS can be understood as a distributed, multi-agent system. The final TIS should be able to fulfill the original tasks as well as the new ones: on-line archiving & direct calculations, prediction of system variables, data presentation and even the diagnosis of the whole system. The aim of the first part of the project was to suggest fragmentation of the system among agents and their competences, to decide MAS framework applicability and finally to establish methods and facilities of communication, coordination and cooperation. The second step was to recommend an organization of agent's community and build a suitable relational database (RDBMS) structure for shared storage of metadata – in other words: platform and hierarchy of the agents & architecture of the black-board.

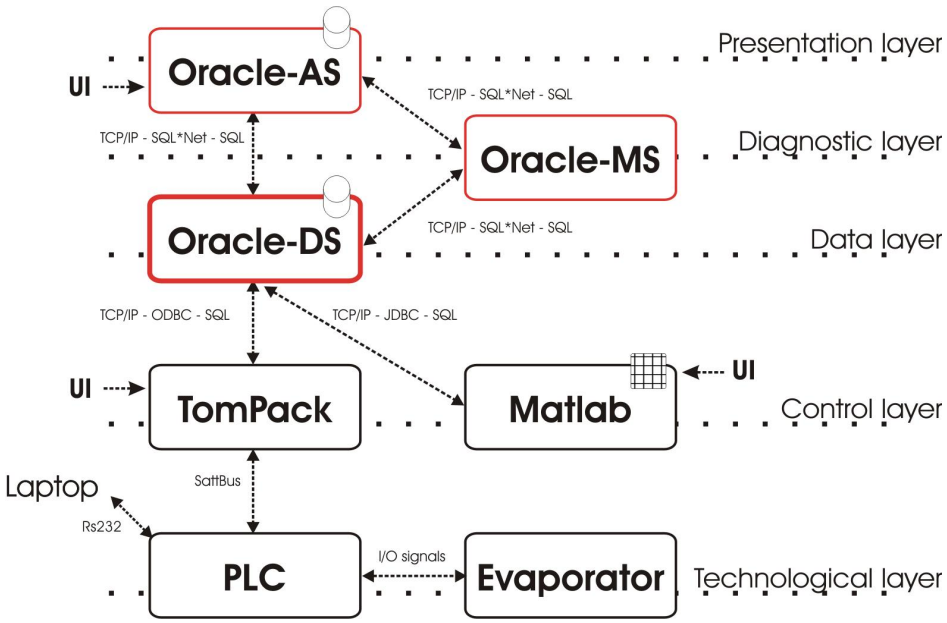

Fig. Schema of MAS for Evaporator