

A VLSI BASED ARCHITECTURE FOR PLAN FORMULATION AND ORGANIZATION IN MULTISENSORY ROBOTIC SYSTEMS

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SUMMARY

A multisensory robotic system is modeled as a three interactive level system of organization, coordination and execution of tasks, as shown in Figure 1. Given a user requested job, plans organization and formulation is performed within the organization level. The organizer sequential functions are defined as machine reasoning (passive), planning, decision making, feedback (learning) and long-term memory exchange. The workspace environment is defined in terms of a set of primitive repetitive and non-repetitive tasks, as well as several other subsets, to be explicitly defined and justified.

This paper will present a VLSI architecture derived for the organizer functions, to accommodate fast and reliable operation at the organization level. All details will be presented, and architecture simulation results will be included.

The problem formulation, principle of operation and related constraints are based on [1].

References

- [1] K. P. Valavanis, G. N. Saridis, *Intelligent Robotic Systems*, Kluwer Academic Publishers, 1992.



Figure 1.4 Intelligent Robotic System with Multi-Sensory Capabilities