

DeMaMech 2005

Hareld van den Brink

Osaka University, Arai laboratory --- Advanced Manufacturing systems

Literature research on workforce planning and scheduling in manufacturing, using a worker-oriented approach

Osaka, Suita --- 15th February to 12th August 2006

Working at the laboratory --- sight seeing --- attending festivals and cultural events --- going to museums, restaurants, bars and clubs --- going to the gym --- wandering around in Osaka and other cities.

Workforce Planning and Scheduling in Manufacturing

A Worker-Oriented Approach: Literature Review

General objective of workforce planning and scheduling is to generate feasible plans and schedules to meet demand in time in an efficient way, while dealing with all constraints involved.

The worker-oriented approach is focused toward the concerns and interests of the workers involved in manufacturing processes.

The worker-oriented approach does not replace, but comprises the general applied feasibility and efficiency approach to workforce planning and scheduling in manufacturing.

The literature research resulted in:

- a qualitative overview of constraints recognized in models and applications which involve worker-oriented planning and scheduling
- an analysis and description of the possibility of a clear distinction between planning, scheduling, dispatching and operating
- analysis and descriptions of functions, tasks, behavior, relations and environments of workers
- short descriptions of constraint optimization problems and simulation techniques
- evaluations of several applications and models for planning and scheduling from research and practice in manufacturing and other fields
- a discussion of awkward findings
- suggestions for directions of future research

