EPASDatabase Offers Manufacturing Industry Greener Alternatives and Cost Savings

An intuitive electronic database that allows manufacturing designers to more effectively evaluate material and process design alternatives is under development at The Boeing Company.

When implemented, the program is expected to save the company's Arizona-based helicopter unit more than $20 million a year.

The Expert Process Advisory System (EPAS[a]) database allows designers to more effectively evaluate the technical, social and economic impact of their design choices, particularly with materials requiring special handling.

When a designer enters a process or material and specific design criteria, the system processes a list of valid alternatives, ranked by cost, environmental, health and safety impact, and compliance with regulatory issues.

EPAS software gives designers access to the most current information on production materials and processes from research studies, seminars and conferences, and libraries around the world, and alerts users to new information as it becomes available on the Internet.

EPAS software references public domain information, such as Occupational Safety and Health Administration and Environmental Protection Agency directives, regulatory information, and product material safety data sheets. It allows users to input customized data, such as proprietary materials and/or processes, and company preferences.

Cost savings result from a reduction in the use of hazardous manufacturing materials, and the training, reporting and disposal costs associated with the use of those materials.

The company is seeking partners from industries who have a common vision for sharing data on critical design issues to collaborate on the project and broaden its information base.

"The current proof of concept system covers the processes of aluminum coating and plating," said John Harper, EPAS software project manager. "But we're looking for industry partners to help us add expertise in processes such as painting, joining/binding, cleaning/deoxidizing, and machining; and in materials such as metals, composites and plastics.

"Upon completion, the system will be applicable to almost any manufacturing environment, including the aerospace, appliance, automotive, chemical, construction, electronics, and heavy equipment industries," noted Harper.

In exchange for their participation in the development effort, Harper says companies will receive an EPAS site license and discounted EPAS maintenance fees.

The software is being developed to operate on both a UNIX- or Windows-based PC system, with the first commercial release expected at the end of 2000.

The EPAS proof of concept was developed by Boeing with assistance from Arizona State University, the National Center for Clean Industrial and Treatment Technologies, and a not-for-profit research consortium lead by Michigan Technological University.

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