

Interactive Facility Programming For Advanced Technology Facilities

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Abstract

In the highly competitive and volatile advanced technology market, profitability of a new product depends upon ‘who makes it to the market first.’ This puts an ever-increasing pressure to make production more responsive by shrinking manufacturing lead times. This translates to spending minimum time for programming by collecting the needed information in the least amount of time. To accomplish this, a more structured method of collecting, storing, sorting and retrieving the large amount of data is needed.

Federal Standard 209E was the official U.S. cleanroom industry guideline for more than 40 years. It was sunsetted by the General Services Administration (GSA) on December 31st 2001 in favor of new ISO standards to avoid potential economical disadvantage to the U.S. due to standardization efforts in the rest of the world.

International standards were developed in an attempt to establish a global common denominator to enhance communication, eliminate trade barriers, and to provide generic guidelines for any industry that requires controlled environments (Cleanrooms). ISO 14644-4, Cleanrooms and associated controlled environments – Design, construction and start-up, provides guidelines for cleanroom design and construction, but it is too generic

for direct use by the semiconductor industry. Construction Research and Education for Advanced Technology Environments (CREATE) at Arizona State University is developing a web based tool in ISO 14644-4 format for use in advanced technology facility programming. The objective is to provide a standard and structured methodology to collect, sort and retrieve information. The main benefits that the tool will provide are:

- Clear identification of project scope to minimize change orders and cost over runs.
- Shorten the time required for facility programming
- Reduced programming cost
- Promote standardization across the advanced technology industry
- Produce multiple ways of sorting and retrieving data