

A Framework for Programming Advanced Technology Facilities

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Abstract

International Organization for Standardization (ISO) Standards for Cleanrooms and associated controlled environments (ISO 14644) were adopted by the US Government in lieu of Federal Standard 209E as the official guideline for US cleanroom/controlled environment industry. These 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 involves some sort of controlled environments or cleanrooms.

ISO 14644-4 'Design, construction and startup' provides guidelines for any type of cleanroom design and construction, but is too generic for direct use by the semiconductor industry. CREATE, Construction Research and Education for Advanced Technology Environments, a research organization of the Del E. Webb School of Construction at Arizona State University (ASU) and a consortium of 30 companies involved in advanced technology facility design and construction is developing a web-based tool in ISO 14644-4 format for use in advanced technology facility programming. The objective is to provide a method to collect, sort and retrieve information in a standard and structured way. 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

This paper outlines the framework developed and provides a short graphic tour of the program.