Automation Capabilities Management (ACM)

Proven methodology and process

- Develops and defines your equipment automation requirements, and clearly communicates them to supplier community.
- Establishes equipment suppliers' automation capabilities and limitations at the start of the procurement cycle, early enough to protect your automation deployment plan.
- Ensures required tool automation functionality on schedule, facilitating rapid Equipment Interface (EI) deployment and reducing EI variety.
- Reduces cycle time, cost, and improves quality of integration in the fab.

Process

Step 1: Requirements gathering • Translate fab-specific automation needs into detailed requirements that apply to all equipment and identifies specific automaton requirements for specific equipment types	**Step 2: procurement support and supplier fact-finding** • Provide technical consulting • Orchestrate supplier meetings • Organize supplier response ratings
Step 3: Project management • Provide supplier technical support and guidance • Conduct automation source inspections	**Step 4: Compliance verification and reporting** • Verify fab automation requirements implementation • Verify fab-specific operational scenarios • Verify automation-related hardware

Ensuring your equipment arrives "automation-ready"

ACM program benefits

IC manufacturers invest considerable effort specifying, evaluating, and negotiating for semiconductor equipment based on their fab's unique process and production requirements. Equipment typically arrives at the fab ready to process wafers, but not ready for fully automated production. With ACM, PEER Group helps you specify your automation needs and clearly communicate them to your supplier community.

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- With clear, testable requirements, your suppliers have a better chance of understanding your unique factory automation needs.
- Our extensive experience with equipment automation integration helps us better communicate your unique requirements to your equipment suppliers.
- Early communication and testing means you can identify automation shortfalls before the equipment ships to your fab, giving you maximum leverage for corrective action.
- Automation deficiencies can be corrected on the equipment, rather than in fab-equipment interfaces, avoiding costly workarounds.
- Past ACM projects have resulted in significantly reduced time and effort for the subsequent equipment integration and production ramp-up.

The PEER Group difference

Various aspects of our ACM approach set us apart from other ACM suppliers.

Process

PEER Group will provide your organization with an ACM activity where all processes are clearly defined by ISO 9001:2008 certified procedures, supported by proven working instructions and templates. This ensures that PEER Group's personnel are able to deliver high-quality ACM work in a repeatable manner.

Experience

PEER Group has compiled the "Fab Automation Requirements Specification" for many IC makers.

The PEER Group team continues to provide program management, supplier management, and test engineering services to more 200mm and 300mm semiconductor manufacturers than any other company.

We have intimate knowledge of various methods, practices, core software technologies and values, and we have ACM experience with more than three hundred tool types.

Competency

PEER Group's membership in SEMI and collaboration with ISMI underlies our commitment to contribute to the technological development of the semiconductor industry. Our team members are active participants in the SEMI standards development process on various task forces, such as GEM300, EDA and Global Automation, thereby assisting forward progress in the industry.

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We provide ACM technical services to many of the industry's leading companies.

Step 1: Requirements Gathering

- PEER Group gathers and consolidates automation requirements for the fab at all levels, working with your fab integration team, CIM/Automation managers, representatives for specific process areas (litho, etch, wet, etc.), and other factory automation stakeholders.
- Those requirements include both software requirements (detailed description of the factory automation interfaces, e.g., the SECS interface, Interface A) and hardware requirements (load port configuration, ID reader, light tower states, etc.).
- Fab-wide automation requirements will be translated into language which is applicable on the equipment level, and will reference relevant automation standards.
- Factory automation test criteria will be developed based on the collected and consolidated automation requirements (hardware and software).

Step 2: Procurement Support and Supplier Fact-Finding

- By including the automation requirements package in the procurement specifications, the automation needs will be clearly communicated to the supplier community.
- PEER group works with potential suppliers, conducting fact-finding meetings to discover, explore, clarify, and investigate automation issues.
- For each supplier, PEER Group evaluates and scores their responses and reports their automation capabilities to the customer.

Step 3: Project Management

- We provide continuous monitoring of the supplier's technical progress.
- Technical consulting, status reviews, and unit testing ensure the supplier has ongoing guidance for the implementation of their factory automation solution.
- We conduct automation source inspections, using the test criteria generated in Step 1.

Step 4: Compliance Verification and Reporting

- The ACM process verifies the correct implementation of factory automation requirements, fab-specific operation scenarios, and automation related hardware components (e.g., load ports).
- ACM test activities include (but are not limited to) delivery inspection, installation testing, re-testing, and final acceptance testing.
- We review supplier documentation, conduct follow-up supplier meetings, and track corrective actions.

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About PEER Group

Smart Manufacturing starts with factory automation software. PEER Group® is the largest supplier of factory automation software for OEMs and factories in the semiconductor and related industries. We help lower the cost of automation for our customers by solving their most challenging equipment automation, data management and process control problems.

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