

# CAPacity

Newsletter for the ISA Certified Automation Professional® (CAP®)



June 2006

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## CAP® Profile – Scott Sifford



When ISA established its Certified Automation Professional® (CAP®) program in 2004 in response to industry requests, Scott Sifford was one of the first to learn about and apply for it.

ISA established the CAP® program to recognize and document the specialized knowledge, education, and experience of automation professionals. CAPs are responsible for the direction, design, and deployment of systems and equipment for manufacturing and control systems.

“My boss served on the committee that developed the exam, and he told us it was coming,” said Sifford, who checked the ISA Web site periodically to find out when the program became available. “I believe my application was the first one they received.”

Sifford works as a technical specialist in the control systems engineering group at Fluor in Houston, Texas. His varied responsibilities include defining project scopes, specifying instrumentation and equipment, and occasionally assisting with control systems construction. He believes his CAP® designation helped him secure his current position in 2005. He had previously worked in the control systems design group.

Fluor is one of the world’s largest, publicly owned engineering, procurement, construction and maintenance services companies. It has offices in more than 25 countries and a work force of more than 35,000 employees. In the Houston office, their work is primarily in the petrochemical industry.

Sifford has worked ten years in the automation industry, nine of them with Fluor. He pursued the CAP® as a professional credential that demonstrates his knowledge and commitment to the field. He believes the designation provides a distinguishing mark on his resume and career history. “I’m not looking to change jobs right now, but I believe the CAP® would be a bonus for a potential employer,” he said.

Fluor does not require certification, but the company supported Sifford’s pursuit of it by

covering his exam fee. He took the exam at ISA EXPO 2004 in Houston.

“The CAP® is one way to advance your career. I recommend it to degreed and non-degreed engineers,” said Sifford. “A lot of engineering jobs are going overseas, so there is more competition for fewer jobs. The individuals who take responsibility for their own professional development and keep their competitive edge will get the jobs.”

Sifford holds an associates degree in control systems. To prepare for the CAP® exam, he reviewed some of his textbooks and notes from his degree program as well as other materials he has compiled over the years. He purchased the ISA study guide, which helped him identify areas where his knowledge and experience were weak. He invested most of his study time in those areas.

For those considering the CAP® program, he recommends using the study guide, review classes and ISA’s *Guide to the Automation Book of Knowledge*. “Use these as tools to find areas of weakness, and focus on those in your individual study time,” he said, explaining that candidates should expect to invest at least 20 hours in individual study. “Everyone brings different experience to the table, but the exam requires a broad base of knowledge.”

Sifford considers the CAP® a “feather in his hat” and is pleased that he pursued it. He takes advantage of training opportunities to get the Professional Development Points (PDPs) required for renewing the certification. He plans to renew in 2007.

Additionally, Sifford believes the CAP® has helped him perform on the job. “I had the privilege to go to ISA and help them develop test questions,” he said. “I learned a lot by interfacing with the other CAPs there.”

CAPs must renew their certification every three years. This is accomplished by earning Professional Development Points (PDPs) by working, training, and continually gaining knowledge in the field.

# Credentials Pay for Themselves

By Nicholas P. Sands

**Dear Career Coach: What do you tell your staff and colleagues when they ask you why they should spend their limited time and hard-earned money trying to get certified or licensed?**

**Answer:** Why worry about credentials? The short answer is money. While credentials lead to personal development, prestige, and peer recognition, the most tangible rewards are the opportunity for a better job, increased responsibilities, and higher pay.

In today's competitive and regulated environment, credentials, such as licenses, certifications, or certificates, can possibly enhance the career of process control practitioners. Thousands of certifications are available, but only a few are very valuable to those in the instrumentation and control field. These certifications vary from specialization in safety or security to general practitioner certification. The three general credentials for instrumentation and control are: Control System Engineer (CSE) license, Certified Automation Professional® (CAP®), and Certified Control System Technician® (CCST®).

Just within the engineering field, professionals with credentials (other than degrees) receive an average of 30% higher salaries. Yet analysts haven't determined the cause-effect relationship, just the correlation. Some credentials are legal requirements while others may be customary or a competitive advantage. And 33% of CCSTs said their employers require certification.

**Certification:** Certification recognizes a level of competency in a certain field or profession. Some general requirements for certification programs—as specified by the American National Standards Institute (ANSI) and International Standards Organization (ISO)—include a job analysis survey, a defined body of knowledge, an ethics statement, and an exam. The job analysis survey defines, by way of a broad survey and statistical analysis, the required skills and tasks for the field and how much of the exam should cover each skill. The body of knowledge is the set of knowledge and skills a competent person in the field should acquire. Also included is a listing of the published works test takers can use as references. These requirements make certification programs expensive to operate in comparison to certificate programs. Certification programs must target more populated professions, where thousands of people might seek certification, to keep them affordable.

Certification programs available now include ISA's CCST®, Certified Industrial Maintenance Mechanic® (CIMM®), and CAP®. The Project Management Institute's (PMI) Certified Project Management Professional (PMP) is the most recog-

nized credential for project managers. Since it started in 1984, over 75,000 PMPs have become certified.

The International Information Systems Security Certification Consortium's Certified Information Systems Security Professional (CISSP) is the most recognized information security credential. Since the first exam in 1989, more than 20,000 CISSPs have received certification. The Certified Software Quality Engineer (CSQE) is one of 12 available American Society for Quality (ASQ) certifications related to quality. While the CSQE has only been around since 1996, ASQ has over 85,000 certifications since 1968. ASQ also offers the Certified Reliability Engineer (CRE), which requires eight years of experience, including education.

The CCST®, CAP®, and CSE credentials are all specific to the instrumentation and control practitioner. The main differences are the educational and experience requirements and the knowledge and skill requirements.

**College degrees:** Surveys confirm salaries and lifetime earnings correlate with highest levels of education. The Accreditation Board for Engineering and Technology is the accrediting body for Science and Engineering in the U.S. The

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Canadian Engineering Accreditation Board performs this function in Canada. ISA collaborated with three universities—Drexel University, Indiana State University (ISU), and Oklahoma State University (OSU)—to provide remote continuing education opportunities to its members. Drexel offers 11 online graduate programs at a discount to ISA members. ISU offers a Master of Science in Electronics and Computer Technology degree, focusing on instrumentation, systems, and automation. OSU's distance learning program includes a Master of Science in Control Systems Engineering.

**Licenses:** A state government grants a professional engineer (PE) license, and states limit the transfer of the licenses from one state to another. Most states require PEs to pass an exam by the National Council of Examiners for Engineering and Surveying (NCEES). Professional societies, such as the American Institute of Chemical Engineers, the Institute of Electronics and Electrical Engineers, the American Society of Mechanical Engineers, and ISA develop specific exams. Forty-four states now recognize the Professional Engineering license in Control Systems Engineering, which has been

available nationally since 1992. An ISA committee develops the questions, and NCEES administers the exam.

**Registrations:** States or other organizations manage registrations, such as the Control and Information Systems Integrators Association (CSIA) registration. Companies register, follow standards, and have periodic audits. More than 250 integrators have joined since the program started in 1994.

**Certificates:** Certificate programs recognize a level of education or proficiency, usually in a very specific area. An educational institution, a company, or an organization can award the certificates, often for completing a course. Rockwell Automation offers certificates to recognize training specific to their products. Matrikon offers a certificate on alarm

management. The rigorous Certified Functional Safety Expert program, backed by TUV and sponsored by Exida and other members of CFSE.org, emulates requirements of a certification program, including educational and experience requirements and a difficult exam based on the international safety standards IEC61508, IEC61511, and IEC60429.

#### About the Author

**Nicholas P. Sands** is a process control technology manager in chemical solutions enterprise, The DuPont Company, Deepwater, N.J.

*This Ask the Career Coach column was reprinted from the January 2006 InTech.*

## Join us for lunch and meet your fellow CAPs face-to-face

ISA will host the second annual CAP Luncheon at ISA EXPO 2006 in Houston, on Wednesday, 18 October.

Enjoy this special event with your fellow CAPs and others that are interested in becoming CAP certified. Expand your personal and professional network and take advantage of this great opportunity.

Tickets are just \$30 per person. Register online today at [www.isa.org/isaexpo2006](http://www.isa.org/isaexpo2006).



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**Please share this publication with others in your company:**

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- Control Systems Engineer
- Plant Manager
- Systems Integrator



### Does your Company Support the CAP Program?

ISA is compiling a list of companies who support the CAP program either by paying for exam fees and/or preparation, providing raises upon receipt of the certification, or incorporating the certification into their career development program.

If your company is doing any of these things – or supporting the program another way – please e-mail [CAP@isa.org](mailto:CAP@isa.org) and let us know. We'll list the companies online at [www.isa.org/CAP](http://www.isa.org/CAP).

Founded in 1945, ISA ([www.isa.org](http://www.isa.org)) is a leading, global, nonprofit organization that is setting the standard for automation by helping over 30,000 worldwide members and other professionals solve difficult technical problems, while enhancing their leadership and personal career capabilities. Based in Research Triangle Park, North Carolina, ISA develops standards; certifies industry professionals; provides education and training; publishes books and technical articles; and hosts the largest conference and exhibition for automation professionals in the Western Hemisphere.

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### Certification

ISA certification provides an objective, third-party assessment and confirmation of a person's skills, and gives them the opportunity to stand out from the crowd and be recognized. ISA currently offers three certification programs: Certified Automation Professional<sup>®</sup> (CAP<sup>®</sup>), Certified Control Systems Technician<sup>®</sup> (CCST<sup>®</sup>), and Certified Industrial Maintenance Mechanic<sup>®</sup> (CIMM<sup>®</sup>).