

Optimally utilizing machines

*Whether vehicle bodies are being put together on an assembly line or soft drink bottles are being filled by machines, automated production processes are controlled by manufacturing execution systems, or MES for short. These systems are continually being refined in order to efficiently coordinate more and more production factors as automatically as possible. Dr. Elena Reggio has developed a program that helps to optimize the capacity utilization of machines and other systems.*

For years now, the various levels of management in companies have been increasingly merging together. However, it will still take years before the so-called “Industry 4.0” program — in which all systems, ranging from human resources planning to materials management and production control are networked together — is a reality. Nonetheless, this development is proceeding inexorably, step by step. ISA-95 is an international industrial standard for the integration of enterprise and control processes within companies. Reggio, an IT specialist, had the idea of supplementing the ISA-95 standard with a program that makes the process of selecting the right production machines automatic.

Reggio invented a method by which all of the available machines and systems are listed and then controlled according to a schedule that keeps all the machines running at their optimal capacity during the manufacture of products. “This makes it much easier to plan production,” she explains. The user now only needs to enter the basic data of the manufacturing process into the MES, which then produces a list of the necessary and available machines. The user can adopt this list as it is or improve it according to his or her own requirements. The production process will then be free of errors. By creating this program, Reggio has closed the gap between traditional automation technology and the factory management level. “Previously the production processes were often inconsistent. This means that errors were reported and the production managers would then have to enter many steps themselves,” she explains. The program has been used in Siemens automation systems since 2007. “It’s not connected with a certain type of production; instead, it can be used wherever machines are producing something,” Reggio explains.

Reggio, who is Italian, works at Siemens Industry in Genoa. Even as a schoolgirl, she was particularly interested in mathematics — “mainly because I had a very good math teacher,” she explains. She started to study mathematics at the University of Genoa and took a course in computer science purely out of curiosity. “I found it even more exciting than math, and I promptly changed my major,” Reggio reports. After receiving her degree, she worked

in the field of automation development and joined Siemens in 2001. Reggio's favorite leisure activity is to spend time with her husband in their house in the mountains near Genoa. "My house is a small zoo," she says. She shares her home with dogs, cats, fish, and turtles.