

RAMP Challenge

Reusable Abstractions of Manufacturing Processes

In the future, manufacturing will be planned out in the virtual world. How can we do this if we don't even have models for the basic processes such as welding, drilling, and forging? Sewing, assembly, or distillation? Nope, we don't even have models for those either! At least, not the types of models really needed for our high-tech world.

Manufacturers need models to improve operations, to protect the environment, to share information, and to compose them into systems. Using your models will let manufacturers simulate, improve, and optimize all sorts of processes.

Help us try out brand new standards created just for this purpose. Be the first to model your favorite processes, share your experiences, and maybe win some cash and honors!



An Automatic Back Scratcher



First prize: \$1000, Total cash prizes: \$3250

Judging criteria:

Novelty - 35%

Accuracy - 35%

Presentation, Complexity, Clarity - 10% each

Submission Deadline: March 20, 2017

Submission form and complete rules:

<https://challenge.gov/challenge/ramp-reusable-abstractions-of-manufacturing-processes>

Finalists announced: April 15, 2017

MSEC Presentations: June 4-6, 2017

Winners announced: June 6, 2017

Sponsor: NIST

Supporters: ASTM Intl, ASME, NSF

Questions? Use the discussion area at the RAMP Challenge website (see above)

The National Institute of Standards and Technology (NIST) is announcing the Reusable Abstractions of Manufacturing Processes (RAMP) Challenge, in partnership with ASTM International, the National Science Foundation (NSF), and the American Society of Mechanical Engineers (ASME), to familiarize the community with recent standards from ASTM E60.13 Subcommittee on Sustainable Manufacturing for modeling manufacturing processes. The RAMP Challenge will provide an opportunity for participants to put these standards into practice in modeling processes of their own interest, and to share experiences in applying the standards across a variety of processes. Formal methods for acquiring and exchanging information about manufacturing processes will lead to consistent characterizations and help establish a collection for reuse of these models. Standard methods will ensure effective communication of computational analytics and sharing of sustainability performance data. In addition, the use of a reusable standard format should result in models suitable for automated inclusion in a system analysis, such as a system simulation model or an optimization program.

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