

**Why write Modeling and Simulation Fact Sheets?**

There are some basic facts about models and simulations that are pertinent to understanding what they are and how they can be utilized. It is important that people who fund the development of models and simulations, or manage projects that develop them, or manage programs that are dependent upon them understand enough about what they are, how they are developed and what makes a good model or simulation and what makes a model or simulation ineffective or even “dangerous.”

Where can interested participants find the information they need? There are many text books on modeling and simulations; most are appropriate for the very technical contributors, but are too theoretical for even the average simulation user. Most people who need some information about models and simulations don’t have the time or capability to sift through the thousands of pages in these books just to get some insights that would help them do their job.

The following are proposed questions to be answered in these M&S Fact Sheets. Fact Sheets will provide focused information that does not require a technical background to understand. The Fact Sheets will be written over the next couple of months, and the questions will most likely change during this time period. In addition, the author encourages the readers to send in topics or questions that should be addressed in future Fact Sheets. Sheets will be written as long people are expressing interest and provide feedback and additional questions. The author strongly recommends readers start with the first three sheets, and then pick and choose others based on their interest or needs.

What are Models and Simulations (M&S)?

Why do we build Models and Simulations?

What are the fundamental steps in building a simulation?

What is a Model or Simulation hierarchy?

What are the most common mistakes made when building a simulation?

Why do we perform Validation and Verification of a model or simulation?

What are deterministic and stochastic Models and Simulations?

What are descriptive and prescriptive Models and Simulations?

What makes a good training simulation?

What makes a good analytical Model or Simulation?

Why is it difficult to build Models and Simulations that we know will be useful?

Why do we need data for a Model or Simulation?

Why do people say, “A model is only as good as the data you feed it?”

Each of these questions will be addressed in a separate fact sheet that will be one or two pages long; they will be hosted at [www.imcva.com](http://www.imcva.com) as they are written. If you have any topics or questions to suggest for future fact sheets please send them to me at [rmight@imcva.com](mailto:rmight@imcva.com).