

Modeling and Simulation Body of Knowledge (M&SBOK) - Index

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M&S: Maturity

In a maturing discipline, several types of capability maturity can be distinguished;

capability maturity of the

- individuals,
- organizations,
- education (individual courses, as well as undergraduate and graduate degree programs and professional development seminars).

Capability Maturity Model of the SEI (Carnegie Mellon Software Engineering Institute) is well known and accepted, for software engineering organizations (SEI-Maturity).

Three categories of individual simulationists are identified in a recent survey (Madewell and Swain). They are simulation developer, simulation analyst, and simulation manager. Certification of individual simulationists, is done by Modeling and Simulation Professional Certification Commission (M&SPCC). People Maturity Model of SEI is a well worked out framework (P-CMM) for the definition and assessment of maturity levels of professionals,. Competence levels recommended for Systems Engineering –with some revision– may be applicable to simulation professionals. The five levels, taken from (Ondore 2004) are given in Table 1.

Table 1. The Competency Levels of Simulationists

Level	Competency
1	<i>Basic knowledge</i> of technical terms, applications, process and techniques.
2	<i>Working knowledge</i> of broad principles and concepts, applications, process and techniques.
3	<i>Good understanding</i> of applications, principles, concepts and practices of the subject.
4	Either <i>deep or wide knowledge</i> and understanding of the basic principles, theory and practices of the subject.
5	<i>Recognized</i> internally and externally as having a substantial body of knowledge in an important area; understanding a wide range of principles; underlying systems.

Next step in the maturity of the M&S discipline would require the development of a Capability Maturity Model, similar to other studies of the SEI for the assessment of **M&S companies** (SEI-CMM).

This may speed up the process of advancing simulation systems engineering to realize more complex simulation studies in a shorter time frame by using reusable, validated and verified components.

This process might be profitable for the M&S industrialists as well as the advanced users and open to the contributions of M&S theoreticians and methodologists.