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Modeling and Simulation Body of Knowledge (MSBOK)

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Three Aspects of Professionalism in M&S

Three aspects of professionalism in M&S and corresponding activities/knowledge needed are depicted in Figure 1 and summarized in the following Table 1:
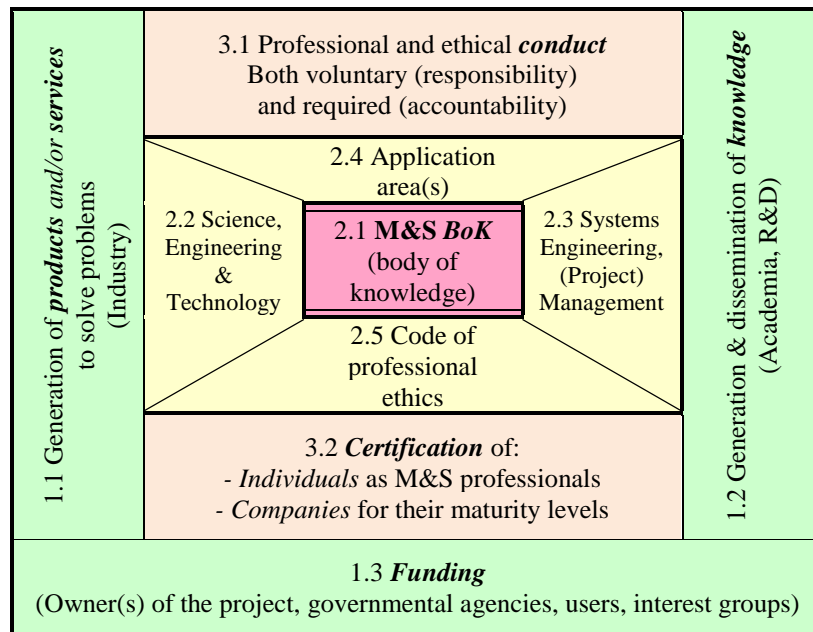

Figure 1. Three Aspects of Professionalism in M&S
(1: activites, 2: knowledge, 3: conduct and monitoring)
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Table 1: Three aspects of professionalism in M&S and corresponding activities/knowledge

Aspect	Activities/knowledge needed
1. Activities	1.1 *Generation of* **products/services** *to solve problems* (Industry) 1.2 *Generation & dissemination* of **knowledge:** (Academia, R&D) 1.3 *Funding:* (Owner(s) of the project, governmental agencies, users, interest groups)
2. Knowledge	**Knowledge to solve problems** 2.1 Knowledge of the M&S Body of Knowledge (Core Elements of M&SBoK) Knowledge of Supporting Domains: 2.2 Science, Engineering, Technology 2.3 Systems Engineering, (Project) Management 2.4 Knowledge of Application Area(s) **2.5 Code of professional ethics**
3. Monitoring	3.1 Professional and ethical **conduct** (both voluntary (responsibility) and required (accountability) **3.2 Certification** of professionalism of 3.2.1 Individuals as M&S professionals 3.2.2 Companies for their maturity levels (yet to be specified)

Hence, a practitioner (or a member of a team) of M&S needs to know the following three types of knowledge to solve problems:

(1) knowledge of M&S that will be referred to as the core elements of M&S BoK, i.e., Body of Knowledge of M&S;
(2) knowledge of supporting domains such as scientific, engineering, and technological knowledge as well as systems engineering and project management knowledge; and
(3) knowledge of the application area(s), i.e., knowledge of existing or system of interest to be engineered,

Furthermore, a practitioner of M&S needs to know and act according to the Code of professional ethics of simulation as well as according to the Code of professional ethics in his/her profession.