

# Sma roles

Technology, Information Technology



SMA Roles Unit This paper talks about mapping various SMA project lifecycle roles into the modeling, conceptual and programmed model paths. It also attempts to justify the user roles and path choices using specific reasoning and evidence.

Key Words: mapping, SMA, modeling, paths, simulation

Introduction.

Simulation is the process of imitation of a real world system. Modeling is the process of producing a model; a representation of the construction and working of some system of interest. A model is similar to but simpler than the system it represents. Building a simulation has many inter-active elements. The main portion of the SMA process can proceed along three parallel paths. While the tasks may be conducted in parallel, they are not independent.

Body

The modeling path begins with the development of a conceptual model. The conceptual model covers the objectives, the inputs (experimental factors) the model content and the outputs (responses).

The purposes of a simulation model are:

Captures the key elements in the system and their relationships.

Its purpose is to document how the system works.

Provide an understanding of how detailed the model needs to be to meet the analysis objectives.

Identify data needs.

Uncover possible modeling challenges.

The conceptual model is a key means of validating the simulation model and

addressing whether the right model is being built. Validation determines whether the model is a meaningful and accurate representation of the real system.

The programmed model used for experimentation is a translation of the conceptual model into computer-executable form. Before experimentation, the programmed model must be verified to determine that it is working as intended. This step focuses on building the model right according to specifications.

The different roles can therefore be classified into paths as follows:

Conceptual modeling-Model formulation since it's a conceptual representation of the system which captures the key elements in the system and their relationships and documents how the system works.

-Validation since it seeks to answer if the model meets the analysis objectives by identifying data needs and specifications.

-Data preparation and collective analysis which is used in identification and collective analysis of needs.

-Design experiments that can uncover modeling challenges after understanding how the system works.

Programmed model-Model translation involving pilot runs since it translates the conceptual model into computer executable form.

-Verification which determines whether the developed system is working as intended.

-Experimenting since it involves execution of the developed model to check its preliminary performance.

The model and project need to be documented throughout the process and

not delayed until the end. Project management emphasizes the need to use good project management practices throughout the study.

Modeling involves characterizing input data as probability distributions.

Models are developed through commercial simulation software packages available in the market place. The reasons for building models is to conduct analyses, increase understanding and obtain results.

The role of a user in a simulation model is verification of the model. Since the model is developed to meet the user requirements, the user is responsible for verifying if the system meets his demands.

Conclusion.

Simulation modeling analysis involves identifying the purpose of the model, designing the model by studying the inputs and the expected outputs and translating the model into computer executable form which is then concluded by implementation of the model; putting the model into use.

References

<https://www.sendspace.com/file/3sxc1p>