

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

updated by: Dr. [Tuncer Ören](#) - 2017-05-09

### References - by Authors

*(Please feel free to send bibliographic information about documents that you recommend for addition to this list to Dr. Tuncer Ören at: [toren@acm.org](mailto:toren@acm.org) )*

- Amico, V. Amico Grace, L. (2004). *Proposed Revisions to the NAICS Codes for Modeling and Simulation*. Modeling and Simulation, Vol. 3, nb. 3, July-Sept., pp.6-8.
- Arbez, G. and Birta, L.G. ABCmod: A Conceptual Modelling Framework for Discrete Dynamic Systems. Proceedings of the 2007 SCSC, San Diego, CA, July 2007.
- Bartolomei, J.E. [The Use of Systems Engineering Processes and Tools](#) to Develop a System Dynamic Simulation Model of Engineering Support During the Development Phase of an Acquisition Program.
- Becker, J., Niehaves, B. and Klose, K., 2005. A Framework for Epistemological Perspectives on Simulation. Journal of the Artificial Societies and Social Simulation, vol. 8, no. 4. <http://jasss.soc.surrey.ac.uk/8/4/7.html>
- Birta, L.G. (2003). [The Quest for the Modelling and Simulation Body of Knowledge](#). Keynote Presentation at the Sixth Conference on Computer Simulation and Industry Applications, Instituto Tecnológico de Tijuana, Mexico, February 19-21, 2003.
- Birta, L.G. [A Perspective of the Modeling and Simulation Body of Knowledge](#). Modeling & Simulation, Volume 2, Number 1, pp. 16-19.
- Birta, L.G. and Arbez, G. (2007). Modelling and Simulation: Exploring Dynamic System Behavior, Springer-Verlag, London.
- BOQK – [Body of Quality Knowledge](#).
- BOK-  
def: <http://www.google.ca/search?hl=en&lr=&oi=defmore&q=define:Body+of+knowledge>
- BOK-refs: References to BOKs of Some Disciplines Other Than  
M&S: <http://www.site.uottawa.ca/~oren/MSBOK/refs-byTopics.htm#1>
- Brassé, M., Kok., A.J.F., Budde, E–W. (2001). [System Engineering and Integration Aspects of a Multi-National HLA Federation Development](#). Proceedings of the 2001 European Simulation Interoperability Workshop, 01E-SIW-037, Harrow Middlesex, UK, June 2001.
- Carrol, L. (1865). Alice's Adventures in Wonderland.

- Cellier, F. Powerpoint Presentations on Modeling Physical Systems (in [English](#), in [German](#), in [Spanish](#))
- Connors, S., Gauldin, J., Smith, M. (2002). Closed-Loop Simulation-Based, Systems Engineering Approach to Life Cycle Management of Defense Systems. Proceedings, 2002 Winter Simulation Conference, 893-900.
- CS-TCSim-BOK: [IEEE CS – Tech. Committee on Simulation: Body of Knowledge](#)
- Darken, R. (2004). [Backing off the Bleeding Edge: Revolutionary Change Using Today's \(Not Tomorrow's\) M&S Technology](#). In: The MOVES Institute Open House, Aug. 24-26, 2004: [DMSO VV&A Glossary](#).
- DoDD: Department of Defense Directive 5000.59: DoD Modeling and Simulation (M&S) Verification, Validation, and Accreditation, January 1994.
- DoDI: DoD Instruction 5000.61: DoD Modeling and Simulation (M&S) Verification, Validation, Accreditation (VVA), April 1996 (under revision)
- Durak, U., T. Ören, and A. Tolk (2017 – In Press). An Index to the Body of Knowledge of Simulation Systems Engineering (Chapter 2 of: Tolk, A. and T. Ören (eds.). [The Profession of Modeling and Simulation](#). Wiley.
- Elzas, M.S. [The BoK Stops Here](#). Modeling and Simulation, Issue 7.
- Fairchild, B. (2002): Simulation. At Aegis Docushare.
- Fishwick, P.A. (1994). [Simulation is the Method of Last Resort](#).
- Fishwick, P.A., Miller, J.A. (2004). [Ontologies for Modeling and Simulation: Issues and Approaches](#). Proceedings of the Winter Simulation Conference, 259-264.
- Frank, U. and Troitzsch, K.G. (eds.) (2005). Epistemological Perspectives on Simulation. Journal of the Artificial Societies and Social Simulation, vol. 8, no. 4. <http://jasss.soc.surrey.ac.uk/8/4/7.html>
- Fraunhofer SAS: [Systems Analysis, Simulation Group of Fraunhofer Institute](#)
- G2SEBoK: [Systems Engineering BOK](#)
- G2SEBoK-use: [Systems Engineering BOK](#)
- Goad, K. (invited talk)(2004). [JFCOM R&D Requirements for Modeling and Simulation](#). The MOVES Institute Open House, Aug. 24-26, 2004:
- [I/ITSEC](#) - Interservice/Industry Training, Simulation & Education Conference
- [ICGCMS \(2002\)](#) – First International Conference on Grand Challenges for Modeling and Simulation:
- [IJIGS](#) – International Journal of Gaming & Simulation:
- [INCOSE-definition](#)
- [Intermath](#)
- ISEBOK – [Information Systems Engineering BO](#)

ITBOK – [Information Technology BOK](#)

Karplus, W. (1976). The spectrum of mathematical modeling and system simulation. In: Simulation and Systems - Proc. of the 8th AICA Congress, L. Dekker (ed.), August 23-28, 1976, Delft, The Netherlands, pp. 5-13.

Links-EdSim – [links to simulation in education](#)

Links-MS – [links to M&S Associations](#)

[Links-SimCourses-Ottawa](#)

M&S-Dics: Modeling and Simulation

Dictionaries: [http://www.site.uottawa.ca/~oren/SCS\\_MSNet/MSdictionaries.htm](http://www.site.uottawa.ca/~oren/SCS_MSNet/MSdictionaries.htm)

M&S-stds – M&S Standards <http://www.site.uottawa.ca/~oren/links-MS-standards>

M&S-taxonomies- Ören: <http://www.site.uottawa.ca/~oren/pubsList/taxonomies.htm>

M&SBOK-Aegis

M&SBOK-Levels. Levels of Perspectives of

M&S: <http://www.site.uottawa.ca/~oren/MSBOK/simTerminologyAndScope.htm#7>

M&SBOK-NTSA: M&S Body of Knowledge being developed under the auspices of the

NTSA: <http://www.site.uottawa.ca/~oren/MSBOK/MSBOK-index.htm>

M&SBOK-prev: Previous Work on M&SBOK: <http://www.site.uottawa.ca/~oren/MSBOK/refs-byTopics.htm#2>

M&SBOK-recs; Recommendations of the Review

Committee: <http://www.site.uottawa.ca/~oren/MSBOK/revComRecs.htm>

M&SBOK-RevCom: Review Committee of the

M&SBOK: <http://www.site.uottawa.ca/~oren/MSBOK/refs-byTopics.htm#2>

M&SBOK-Termin – Terminology and Scope of M&SBOK

– <http://www.site.uottawa.ca/~oren/MSBOK/simTerminologyAndScope.htm>

M&SPCC - [Modeling and Simulation Professional Certification Commission](#)

Madewell C.D, Swain, J.J. [The Huntsville Simulation Snapshot: A Quantitative Analysis of What Employers Want in a Systems Simulation Professional](#). Modeling and Simulation, vol. 2, issue 2.

McLeod, J. (ed.) (1968). Simulation – The Modeling of Ideas and Systems with Computers.

McGraw-Hill, New York, NY.

MITRE-DSSE: [MITRE Distributed Systems Engineering](#)

MITRE-SE: [MITRE Systems Engineering](#)

MOVES-2004: [MOVES Institute Open House](#), 24-26 Aug. 2004:

[NASA: Project: ASEB-J-04-07-J](#)

NATO MSMP (1998). NATO Modeling and Simulation Master Plan, Document AC/323 (SGMS) D/2, Version 1.0, August, 1998

- NDIA-M&SCom: National Defense Industry Association ([NDIA Modeling and Simulation Committee](#))
- NPDBOK – [New Product Development Body of Knowledge](#).
- NTSA: National Training Systems Association: <http://www.trainingsystems.org/>
- Numrich, S.K. (Invited talk) (2004). [DMSO R&D Directions in Modeling and Simulation](#). The MOVES Institute Open House, Aug. 24-26, 2004:
- Ondore, F. (2004). [Competence Framework for Systems Engineers](#), INCOSE UK Autumn Assembly:
- Ören, T.I. & The French Team: Lucile Torres (coordinator), Amblard, F., Duboz, R., Hill, D. et al. (2006 – In Preparation). Modeling and Simulation Dictionary: English-French-Turkish.
- Ören, T.I. (1971). GEST: A Combined Digital Simulation Language for Large-Scale Systems. Proceedings of the Tokyo 1971 AICA (Association Internationale pour le Calcul Analogique) Symposium on Simulation of Complex Systems, Tokyo, Japan, September 3-7, pp. B-1/1 - B-1/4.
- Ören, T.I. (1984a). Model-Based Activities: A Paradigm Shift. In: Simulation and Model-Based Methodologies: An Integrative View, T.I. Ören, B.P. Zeigler, M.S. Elzas (eds.). Springer-Verlag, Heidelberg, Germany, pp. 3-40.
- Ören, T.I. (1984b). Forward to the book: Multifaceted Modelling and Discrete Event Simulation, by B.P. Zeigler. Academic Press London, England.
- Ören, T.I. (1987a). Simulation: Taxonomy. In: Systems and Control Encyclopedia, M.G. Singh (ed.), Pergamon Press, Oxford, England, pp. 4411-4414. (Chinese translation appeared in: Acta Simulata Systematica Sinica, 1989, 1, 60-63).
- Ören, T.I. (1987b). Model Behavior: Type, Taxonomy, Generation and Processing Techniques. In: Systems and Control Encyclopedia, M.G. Singh (ed.), Pergamon Press, Oxford, England, pp. 3030-3035. (Chinese translation appeared in: Acta Simulata Systematica Sinica, 1990, 2, 53-59).
- Ören, T.I. (1990). A Paradigm for Artificial Intelligence in Software Engineering. In: Advances in Artificial Intelligence in Software Engineering - Vol. 1, T.I. Ören (ed.), JAI Press, Greenwich, Connecticut, pp. 1-55
- Ören, T.I. (1994). Artificial Intelligence and Simulation. Annals of Operations Research, vol. 53. pp. 287-319.
- Ören, T.I. (2000 – Invited Opening Paper). [Understanding: A Taxonomy and Performance Factors](#). In: D. Thiel (ed.) Proc. of FOODSIM'2000, June 26-27, 2000, Nantes, France. SCS, San Diego, CA, pp. 3-10.
- Ören, T.I. (2001a - Invited Paper). [Software Agents for Experimental Design in Advanced Simulation Environments](#). In: S.M. Ermakov, Yu.N. Kashtanov, and V.Melas (eds.) Proc. of the 4th St. Petersburg Workshop on Simulation, June 18-23, 2001, pp. 89-95.
- Ören, T.I. (2001b – Invited Paper). [Impact of Data on Simulation: From Early Practices to Federated and Agent-Directed Simulations](#). In: A. Heemink et al. (eds.) Proc. of EUROSIM 2001, June 26-29, 2001, Delft, the Netherlands. ([presentation](#)).

- Ören, T.I. (2002a - Invited Plenary Paper). [Growing Importance of Modelling and Simulation: Professional and Ethical Implications](#). Proceedings of the Asian Simulation Conference / the 5th International Conference on System Simulation and Scientific Computing, Cheng, Zongji et al., eds., Nov. 3-6, 2002, Shanghai, China. International Academic Publishers / Beijing World Publishing Corp. Vol.1, pp. 22-26.
- Ören, T.I. (2002b). [Future of Modeling and Simulation: Some Development Areas](#). Proceedings of the 2002 Summer Computer Simulation Conference, pp. 3-8.
- Ören, T.I. (2005a– Invited Keynote Article). [Maturing Phase of the Modeling and Simulation Discipline](#). In: Proceedings of: [ASC](#) - Asian Simulation Conference 2005 (The Sixth International Conference on System Simulation and Scientific Computing (ICSC'2005), 2005 October 24-27, Beijing, P.R. China, International Academic Publishers - World Publishing Corporation, Beijing, P.R. China, pp. 72-85.
- Ören, T.I. (2005b - Invited Tutorial). [Toward the Body of Knowledge of Modeling and Simulation \(M&SBOK\)](#), In: Proc. of [ITSEC](#) (Interservice/Industry Training, Simulation Conference). Nov. 28 - Dec. 1, Orlando, Florida; paper 2025, pp. 1-19.
- Ören, T.I. (2014-Invited paper). [The Richness of Modeling and Simulation and an Index of its Body of Knowledge](#). (A revised and extended version of the keynote presentation at SIMULTECH'12, Rome, Italy, July 28-31, 2012). In: M.S. Obaidat, J. Filipe, J. Kacprzyk and N. Pina (eds) Simulation and Modeling Methodologies, Technologies and Applications, Advances in Intelligent Systems and Computing, Vol. 256, Springer, pp. 3-24. ([video](#))
- Ören, T.I. and L. Yilmaz (2005). Quality Principles for the Ergonomics of Human-Computer Interfaces of Modeling and Simulation Software, Proceedings of SIMCHI'05 - 2005 International Conference on Human-Computer Interface Advances for Modeling and Simulation, January 23 - 25, 2005, New Orleans, Louisiana.
- Ören, T.I. and L. Yilmaz (2006). Synergy of Systems Engineering and Modeling and Simulation. Proceedings of the 2006 International Conference on Modeling and Simulation - Methodology, Tools, Software Applications (M&S MTSA), July 31 - August 2, 2006, Calgary, AL, Canada, pp. 10
- Ören, T.I. and B. Waite (2007). [Need for and Structure of an M&S Body of Knowledge](#). Tutorial at the I/ITSEC 2007, Orlando, FL
- Ören, T.I., Zeigler, B.P. (1979). Concepts for Advanced Simulation Methodologies. Simulation, 32:3, 69-82.
- Ören, T.I., Zeigler, B.P., Elzas, M.S. (eds.) (1984). Simulation and Model-Based Methodologies: An Integrative View. Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 651 p.
- [Ören-M&S-taxonomies](#)
- P-CMM: <http://www.sei.cmu.edu/cmm-p/obtain.p-cmm.html>
- [PMBOK-1 - Project Management BOK](#)
- [PMBOK-2 - Project Management BOK](#)
- Pritsker, A.A.B. (1979). Compilation of Definitions of Simulation. Simulation, 33: 2 (Aug. 1979), 61-63.

Rogers, R.V. (1997). ). Results of the Workshop: What Makes [What Makes A Modeling & Simulation Professional?: The Consensus View From One Workshop](#). In Proceedings of 1997 WSC, (Atlanta, GA, Dec. 7-10). IEEE, Piscataway, New Jersey. 1375-1382.

[RSESC: The University of Alabama in Huntsville, Rotorcraft Systems Engineering and Simulation Center](#)

Sarjoughian, H.S., et al., (2000), "Graduate Education in Modeling and Simulation- Rationale and Organization of an Online Master's Program", SCSC, July, San Jose, CA, USA.

Sarjoughian, H.S., et al., (2004), "Graduate Education in Modeling and Simulation- Rationale and Organisation of an Online Masters Program", SCSC, July, San Jose, CA. USA.

Sarjoughian, H.S., Chen, Y., Burger, K., (2008), A Component-based Visual Simulator for MIPS32 Processors, Frontiers in Education, October, Saratoga Spring, New York, USA.

H. S. Sarjoughian, Y. Chen, 2011, Standardizing DEVS models: an endogenous standpoint. Symposium on Theory of Modeling and Simulation – DEVS Integrative M&S Symposium, SpringSim Multi-Conference, 266-273, Boston, MA, USA.

Sarjoughian, H. S., and B.P. Zeigler, (2001), Towards Making Modeling & Simulation into a Discipline, Western Multi-Conference, January, Phoenix, AZ, USA.

[SECO Establishment Roster and Simulation System](#)

[SEI-CMM](#)

[SEI-Maturity](#)

SimEthics (of SCS) [http://www.site.uottawa.ca/~oren/SCS\\_Ethics/ethics.htm](http://www.site.uottawa.ca/~oren/SCS_Ethics/ethics.htm)

SISO FISG: Simulation Interoperability Standards Organization (SISO), Fidelity Implementation Study Group (ISG), [Fidelity ISG Glossary](#), V 3.0, December 1998,

Smith, E.C. (1962). [Simulation in Systems Engineering](#). IBM Systems Journal, 1:1, 33.

[SWEBOK](#)

Szczerbicka, H., J. Banks, T.I. Ören, R.V. Rogers, H.S. Sarjoughian, and B.P. Zeigler, (2000), "Conceptions of Curriculum for Simulation Education (panel)," Winter Simulation Conference, pp. 1635-1644, December, Orlando, FL, USA.

Vieira, G.E.; Junior, O.C. (2005). [A conceptual model for the creation of supply chain simulation models](#). Proceedings of the 2005 Winter Simulation Conference, 4-7 Dec. 2005 Page(s): 9 pp. - . Digital Object Identifier 10.1109/WSC.2005.1574561.

Waite, W. (2004). [V&V Education Initiatives](#), Foundations '04.

Waite, W. [High Level Architecture \(HLA\) as a Basis of Systems-Engineering Automation for Simulation Based Acquisition\(SBA\)](#).

Waite, W., Skinner, J. (2003). [Body of Knowledge Workshop](#), 2003 Summer Computer Simulation Conference.

Zeigler, B.P. (1976). Theory of Modelling and Simulation. John Wiley & Sons, New York.

Zeigler, B.P. (1984). Multifaceted Modelling and Discrete Event Simulation. Academic Press London, England.

Zeigler, B.P., Elzas, M.R., Klir, G.J., Ören, T.I. (eds.) (1979). *Methodology in System Modelling & Simulation*. North-Holland, Amsterdam, 537 p.

Zeigler, B.P. and Ören, T.I. (2003). Scientific Exploration of Simulation Phenomena – Supplementary Material– On a More In-Depth View of the Body of Knowledge. Aegis Docushare.

Zeigler, B.P. and H. S. Sarjoughian, (2002), "Implications of M&S Foundations for V&V of Large Scale Complex Simulation Models", Foundations '02 V&V Workshop DMSO, 2002.

Zeigler, B.P., Lin Zhang, Service-Oriented Model Engineering and Simulation for System of Systems Engineering (Chapter 2), Concepts and Methodologies for Modeling and Simulation, Springer International Publishing Switzerland, 2015.

Zhang, Lin, Yuewei Shen, Xuesong Zhang, Xiao Song, Fei Tao, Ying Liu, The model engineering for complex system simulation, Proceedings of the I3M Multiconference, September 10-12 2014, Bordeaux, France.