

Locating M&S Information

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1.0 INTRODUCTION

Typically, there are two groups of people looking for information related to the field of Modelling and Simulation (M&S) for military applications:

1. newcomers, who need introductory material into M&S as a whole or into broad subjects of M&S (e.g. VV&A, or building HLA federations), and
2. experts, who need detailed information about specific topics (e.g. procedures on how to validate flight models for UAV, or availability of middleware products for implementing HLA interfaces).

Where can these two different groups find the information they need?

Let's start with the newcomers. The spontaneous answer to anybody who is looking for information on any given topic will be: "Just use the internet!" (by using your favourite search engine, of course).

But looking for information in the internet can be frustrating for several reasons:

1. Often, there are far too many search results (i.e. links to web sites which could contain relevant information).
2. Or, there are too many search results fulfilling the search criteria, but with no relevance (i.e. links to web sites which contain the search terms, but having no relevance for the subject – this happens quite often if abbreviations are used as search terms).
3. Or, there are hardly any search results – may be, because the topic is very special, and there is simply no information available in the internet.

The solution to problems 1 and 2 is, to look for information not in the internet as a whole, but to use specific web sites which are dedicated to M&S or at least to specific aspects of M&S. There are quite a lot of very good information sources, and the most important ones will be described shortly in what follows.

Providing a solution to problem 3 is much more difficult. For finding useful information on special topics outside the internet, one has to use the classical approaches: libraries, and contacts to institutions or persons. Conferences and participation in the NMSG Technical Activity Programs (examples given below) might be helpful in establishing such contacts.

2.0 IMPORTANT WEB SITES FOR M&S

Some of the most useful international web sites for M&S are provided by the following organizations:

- SISO (Simulation Interoperability Standards Organization): www.sisostds.org

All papers presented at the conferences organized by SISO (see chapter 3 below) are available online, sometimes including even the original PowerPoint presentations. Free access is given to the proceedings of all conferences older than the most recent one. To access the newest proceedings as well, a personal SISO membership is required (such a membership is obtained automatically for two years, if you attend and pay for one SISO conference).

Information about SISO standards (also called SISO products, e.g. RPR FOM) is provided as well.

- RTO (NATO Research and Technology Organisation): www.rta.nato.int

The RTO embraces 6 Technical Panels and the NATO Modelling and Simulation Group (NMSG). Information pertaining to these panels and the NMSG is accessible via corresponding links on the above web site.

The NMSG covers at present more than 60 simulation-related Technical Activity Programs (TAPs). General information regarding these activities including meetings and publications can be obtained directly under www.rta.nato.int/msg. Some NMSG TAPs have their own work spaces providing large amounts of information related to these activities. However, access to these work spaces requires specific authorization which can be initiated via the NMSG national representatives at the NATO Modelling and Simulation Coordination Organization (MSCO).

The NMSG has been promoted as the official NATO authority for the establishment of M&S standards agreement (STANAG) in 2003. Since then the NMSG has defined its own process for this task and put in place an internal organization to deal with this aspect. In parallel the NMSG has promoted the official recognition by NATO of SISO. In the context of this new NATO-SISO partnership the NMSG is preparing a NATO “Common Profile for M&S” to advise the Alliance community on this important topic.

- The NMSG Pathfinder program embraces a bundle of activities regarding timely and effective provision and utilisation of flexible M&S solutions in support of military commanders and staffs. A prototype of a corresponding knowledge portal in a given (but still flexible) structure was developed in the NMSG technology activity program MSG-027 “PATHFINDER Integration Environment (PIE)” and is at present accessible at <http://pathfinder.vmasc.odu.edu/pathfinder>.

This portal provides

- a “resource description” part for contacts and documentation of tools, standards, and federation components,
- a “M&S resources” part for web links, executables, and source code, and
- a “higher level knowledge” part in the form of use-case related process descriptions and guidelines with links to the resource description part and to the M&S resources part.

Focus of this portal is the integration part (step 5) of the High Level Architecture (HLA) Federation Development and Execution Process (FEDEP). This portal is a first attempt of simulation related knowledge sharing across NATO and partner nations. It is planned to install this portal as a permanent institution at the RTA as a means to collect know-how gained in the NMSG TAPs.

- A second attempt for simulation related knowledge sharing across NATO and partners with focus on FEDEP step 3 is going on at present under the NMSG technical activity program MSG-052 “Knowledge Network for Federation Architecture and Design“. It hosts its own Collaborative

Working Environment (<http://msg052.smart-lab.se>) including a wiki based knowledge repository regarding federation architecture and design issues. Here again a user authorization/registration is required to be initiated via the national NMSG representative.

- NC3A (NATO Consultation, Command and Control Agency): www.nc3a.nato.int

The mission of the NATO C3 Agency is to support NATO through the seamless provision of unbiased scientific support and common funded acquisition of Consultation, Command, Control, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR) capabilities. So, M&S is not the main activity of NC3A. But since there are now several projects trying to couple C4I-systems with simulations, it is useful to have a source of information concerning C4I-systems as well.

In addition, there are quite a few simulation related web sites provided by national institutions, especially in the U.S.:

- DMSO (Defense Modelling and Simulation Office): www.dmsomil

This site offers a glossary where most of the words used in the “M&S jargon” can be queried successfully.

DMSO also hosts a Modelling and Simulation Resource Repository (MSRR): www.msrr.dmsomil.

There are more MSRR available: for the army (www.msrr.armymil), air force (<https://afmsrr.afams.af.mil>) and navy (<https://nmsomil.navy.mil/NavyMSRR>).

- MSIAC (Modelling and Simulation Information and Analysis Center): www.dod-msiac.org

The mission of the MSIAC is “to assist Department of Defense activities in meeting their M&S needs by providing scientific, technical, and operational support information and services”. The web site of MSIAC provides a help desk, a calendar with information on upcoming M&S related events, access to an M&S Community Newsletter and to an M&S Journal, and links to more M&S-related information.

Outside U.S., the following web sites are worth mentioning:

- UK: DSTL (Defence Science and Technology Laboratory): www.dstl.gov.uk

A “source of Science and Technology at the heart of Defence”, including M&S.

- Sweden: SDWC (Swedish Defence Wargaming Center): www.mil.se

The SDWC is an independent organization within the Swedish armed forces. The center is responsible for wargaming on both the operational and tactical levels, and for coordinating and standardizing the Swedish defence forces' M&S strategy. The site provides information on exercises and on the center's tasks, organization, philosophy, and methodology.

Of course, only a selection of web sites could be given here.

3.0 IMPORTANT CONFERENCES FOR M&S

The most important international conference series dedicated to M&S for military applications is organized by SISO (see chapter 2): the *Simulation Interoperability Workshop* (SIW). Every year, there are two SIWs in the U.S., in spring and in autumn, and one European SIW, in different nations, usually in June. The workshops consist of a series of forums and special sessions addressing interoperability issues and proposed solutions, tutorials on state-of-the-art methodologies, tools and techniques, and exhibits displaying the latest technological advances. Everybody interested is welcome to participate in a particular study group while at a Workshop, or using the e-mail reflectors.

Locating M&S Information

Besides the SIW, SISO is responsible for the conference series *Behavior Representation in Modeling and Simulation* (BRIMS) which takes place annually in the US.

The NMSG is organizing an annual conference at different locations pertaining to specific simulation related issues. The papers of these conferences are accessible via the above mentioned RTO-NMSG site.

Another well-known event is the *Interservice/Industry Training, Simulation and Education Conference* (I/ITSEC) which always takes place annually in December in Orlando, Florida. The I/ITSEC is a big exhibition of leading suppliers for simulators and simulation systems, mainly from U.S., accompanied by a conference with several lecture series. Abstracts of all submitted papers are available online (www.iitsec.org). Full papers are charged.

A similar event, compared to I/ITSEC, is the ITEC (www.itec.co.uk). The ITEC is the only conference and exhibition outside the USA dedicated to defence training, education and simulation.