

## Open-DIS: Open Source DoD Modeling and Simulation Standards

Distributed Interactive Simulation (DIS) is one of the most widely used Department of Defense modeling and simulation networking standards. The Modeling, Virtual Environment, and Simulation (MOVES) Institute at the Naval Postgraduate School has created a free, open source implementation of the DIS standard in C++ and Java. The code carries the non-viral and business-friendly BSD open source license. Any individual, business, or government entity can use and modify Open-DIS in their simulation application at no cost and without licensing or copyright issues. The project is hosted at sourceforge.net, the world's leading open source project repository.

The Java code can, in addition to the binary DIS standard, read and write DIS information in XML format. An XML schema for DIS is also included. XML serialization allows the information contained in DIS simulations to be archived in a format that is *the* standard for data interchange and that is used today in web services and service-oriented architectures. The emerging World Wide Web Consortium standard called Efficient XML Interchange (EXI) allows XML documents to be saved in a compact format that rivals or exceeds the size of standard binary representations, creating the opportunity to easily extend the information in DIS simulations to other domains, and opening the possibility of adopting XML for future DoD protocols.

The X3D web-based 3D graphics standard includes a profile that reads and writes DIS. We have included Open-DIS

in the X3D-Editor, an interactive tool for writing X3D content. Users can retrieve free and open source models of military vehicles from the Scene Authoring and Visualization for Advanced Graphical Environments (SAVAGE) archive, insert them into a scene, and drive them from DIS network traffic.

Open source, standards-based software has much to offer the Department of Defense. We hope that Open-DIS will be of use to your project.

### Contact:

Don McGregor ([mcgredo@nps.edu](mailto:mcgredo@nps.edu))  
Don Brutzman ([brutzman@nps.edu](mailto:brutzman@nps.edu),  
<http://web.nps.navy.mil/~brutzman>)

### Links:

#### Open-DIS:

<http://open-dis.sourceforge.net>

#### The MOVES Institute:

<http://www.movesinstitute.org>

#### SAVAGE 3D Model Archive:

<https://savage.nps.edu>

#### Efficient XML Interchange:

<http://www.w3.org/XML/EXI/>

#### Web3D:

<http://www.web3d.org>



