ds.tools
DISTRIBUTED SIMULATION TOOLS

coreDS™ FMI

Distributed simulation made easy with coreDS™

Overview

coreDS™ FMI (Functional Mock-up Interface) turns any FMU (Functional Mock-up Unit) into a full-featured HLA federate, DIS simulation or CIGI host/IG – no programming, no protocol expertise, no code.

Every input and output defined in your FMU appears in the Mapping window, ready to be linked to HLA, DIS or CIGI parameters. Need a conversion along the way? The built-in Lua scripting engine handles it.

Under the hood, coreDS™ technology supports all standards, FOM modules and RTIs. Automatic data encoding and decoding lets you work with high-level data rather than wire formats, and the scripting engine gives you full control over simulation behaviour.

Define your objects, variables and messages – that's all it takes.

Main features

- Cost-effective solution using proven technologies – save time and money;
- Switches configuration at runtime – between HLA, DIS and CIGI, to a new set of mappings, to a different FOM, or anything else you can think of;
- Lightweight scripting engine (LUA) for on-the-fly data conversion;
- Data mapping at runtime – change your FOM file or PDU mapping on the fly;
- Automatic data encoding/decoding;
- Integrated dead reckoning;
- No code generation required;
- Integrated data filtering;
- Supports most distributed simulation concepts out of the box.

fmi FUNCTIONAL MOCK-UP INTERFACE

High-Level Architecture (HLA)

Supported protocols

- HLA – DOD 1.3
- HLA – IEEE 1516-2000
- HLA – IEEE 1516-2010 (HLA1516e)
- HLA – IEEE 1516-2025 (HLA4)

Supported RTIs

- All commercial RTIs (Pitch, MAK, RTI Ng Pro, RTI-S, Raytheon RTI, CAE RTI)
- Most OpenSource RTIs (Portico, CERTI, OpenRTI)

Supported FOMs

- Supports any valid FOM file
- Tested with the RPR FOM and NETN FOM

Distributed Interactive Simulation (DIS)

Supported protocols

- DIS 5 (IEEE 1278.1-1995)
- DIS 6 (IEEE 1278.1a-1998)
- DIS 7 (IEEE 1278.1-2012)
- DIS 8 (IEEE 1278.1-202X)
- C-DIS (SISO-STD-023-2024)

Supported PDUs

- All PDUs are supported
- Custom PDUs are supported

Common Image Generator Interface (CIGI)

Supported protocols

- CIGI 4
- CIGI 3.0 to 3.3