

# XMSF Position Paper

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## Background

OpenWorlds, Inc., licenses advanced, extensible, open-standards-based technologies, products, SDKs, and solutions for immersive 3D simulation-based training. OpenWorlds licenses X3D support to companies including Vcom3D Inc. and Sharp Electronics.

## Key Opportunities for Web-based Modeling and Simulation

Provide an open, extensible, living framework for low-cost, reusable simulations to be created, archived, and retrieved much more efficiently than ever before.

## Key Open Problems

### ***Standards for Reusable, Web-based Simulation Components***

- SCORM, XML, X3D, SEDRIS, H-Anim, Metadata integration with distributed protocols.
- Conversion tools

Batch processing, configuration & result analysis

### ***Bridging XML-X3D $\leftrightarrow$ CAD/Modeling formats/applications***

- Native, small, fast import/export of XML-X3D needs to be supported
  - OpenWorlds/Vcom3D partly addressing this need (7 Meg file conversion in < 2.5 seconds)
- Archiving/DB/Repositories (models/animations/behaviors)
  - XML Databases
  - CAD databases
  - SEDRIS (extensions for layering)

### ***Aggregation and Composability***

- Authoring
- Archiving
- Selection

### ***Advanced Rendering Support***

- Rendering Standards (i.e. minimum configurations)
- Multi-vendor support
- Import/Export support in 3Dsmax, etc!!!

### ***Branding/licensing/security of models***

- How does encryption and keys fit into “open” standard?
- How do proprietary script implementations get black-boxed.
- How are extensions validated/certified?

### ***Standards process***

- Need DoD Prime Contractor, corporate involvement (not just academics)

## **Specific Recommendations**

### ***Create tools and source code and libraries for translation***

- Make sure encodings support these tools
- Must be native code implementations

### ***Define hardware configurations for certain profiles***

- Less unexpected results

### ***Built-in Security profile***

- Timed/usage key

### ***Military representatives closely partnered with private companies***

- Help standards meet both needs

### ***Architecture extension of integrated standards***

- See following overview image:

