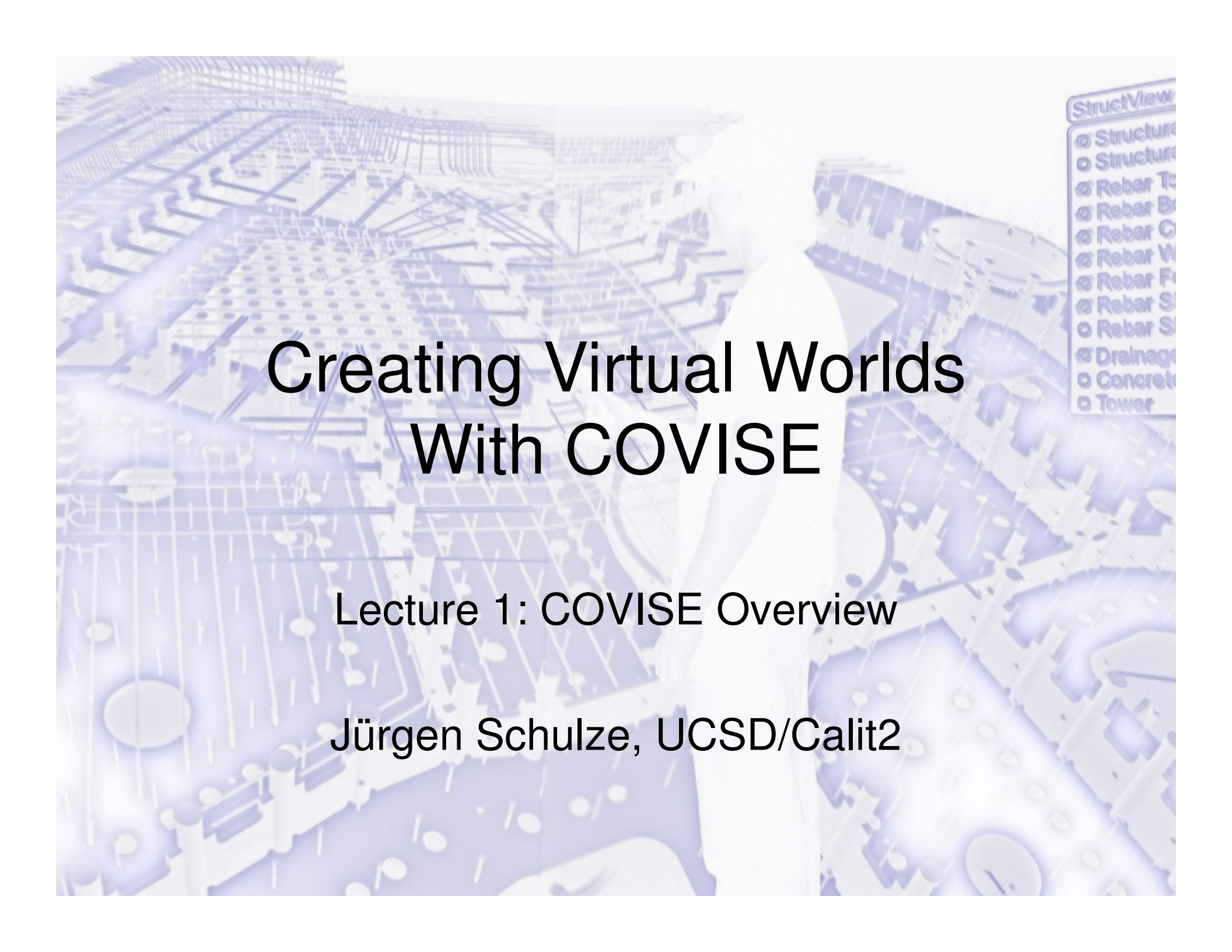




Creating Virtual Worlds With COVISE

Lecture 1: COVISE Overview

Jürgen Schulze, UCSD/Calit2

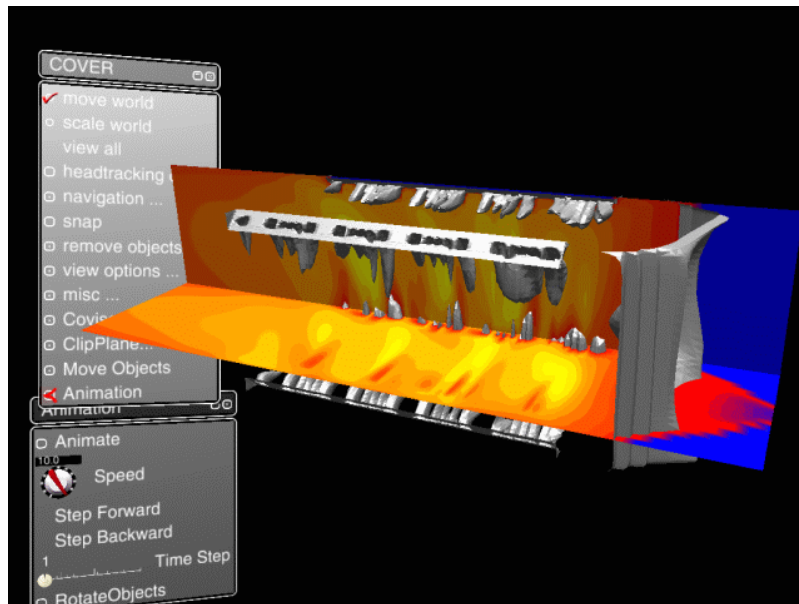
Course Overview

- Lecture 1: COVISE Overview
- Lecture 2: Map Editor and Modules
- Lecture 3: OpenCOVER and Plugins
- Lecture 4: OpenSceneGraph
- Lecture 5: User Interaction
- Lecture 6: Collaborative Applications



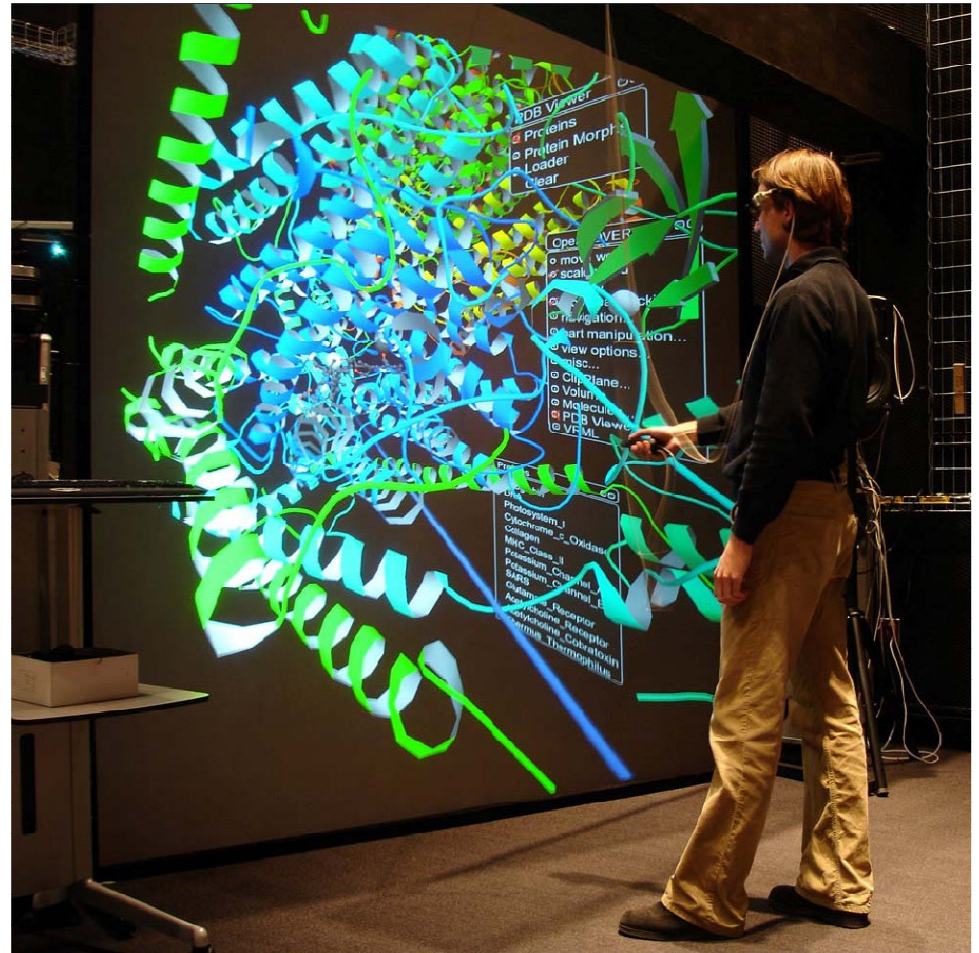
COVISE

- **C**ollaborative **V**isualization and **S**imulation **E**nvironment
- Developed by HLRS, University of Stuttgart, Germany
- Visualization, post-processing and simulation in distributed and cooperative environment



Single Screen Virtual Reality

- C-Wall
- Single or multi-projector
- Active or passive stereo
- Head tracking
- 3D input device



Tiled Display

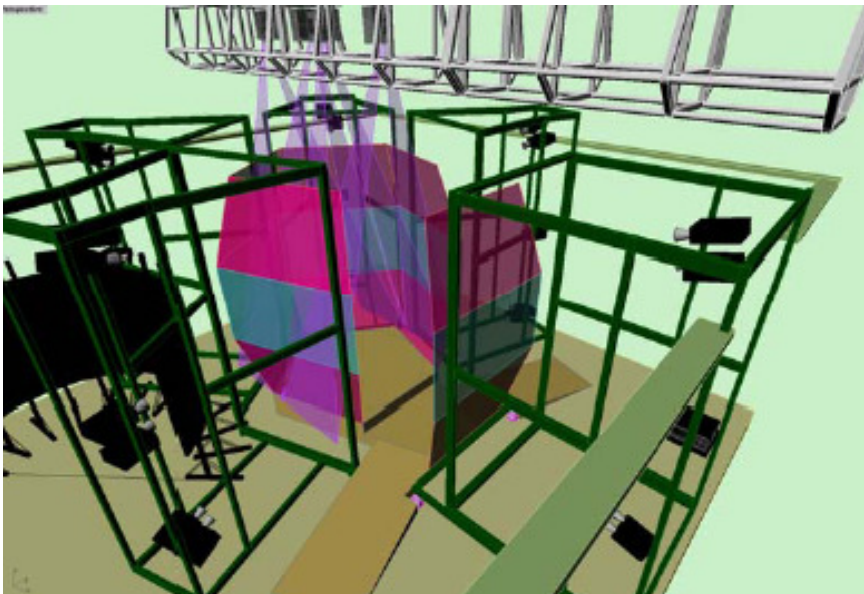
- Multi-node rendering cluster
- Matrix of flat panel displays
- Mono or stereo
- Interaction with mouse or 3D input device



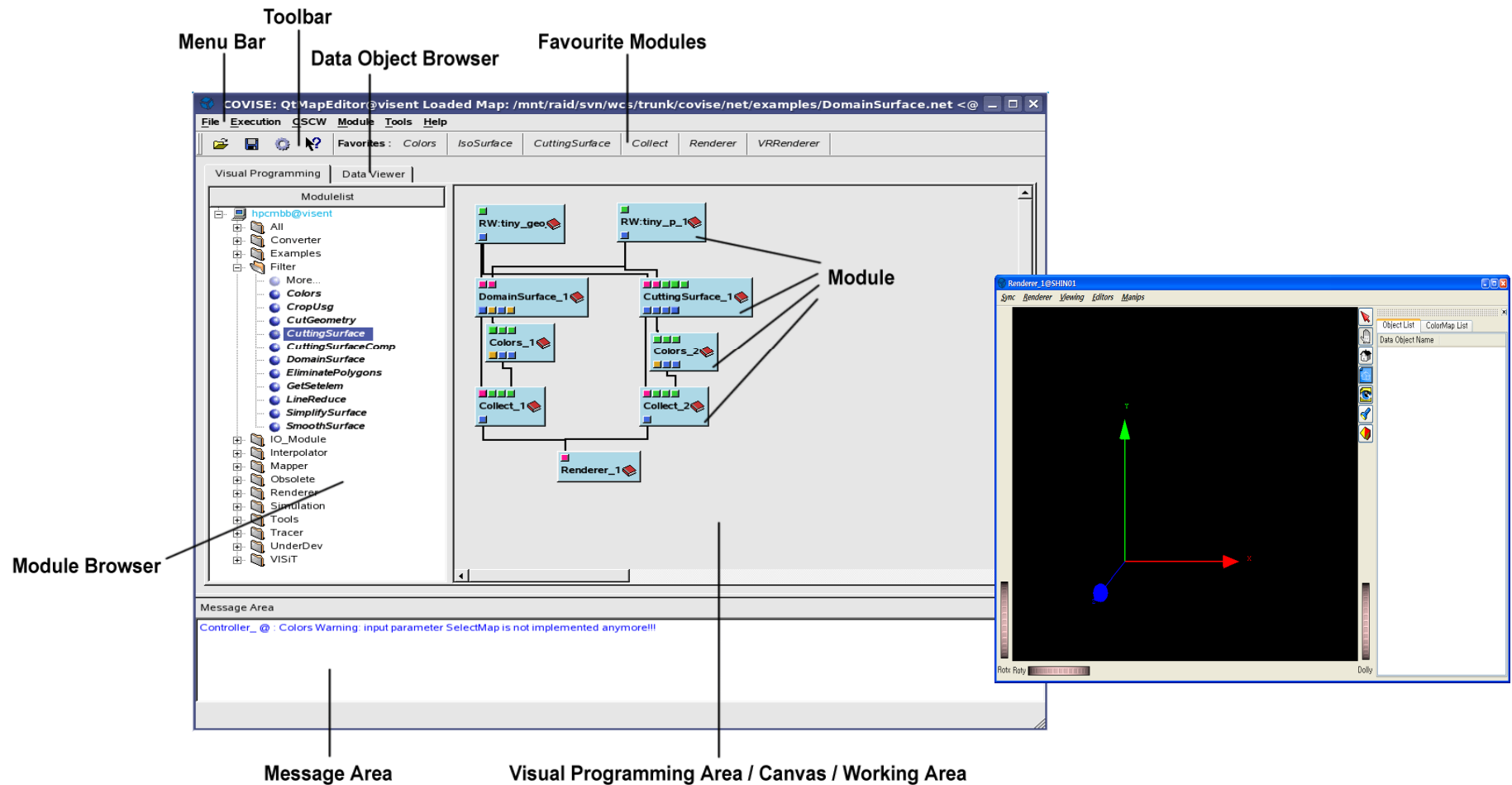
Immersive Virtual Reality: CAVE

(CAVE Automated Virtual Environment)

- COVISE supports multi-screen and rendering clusters

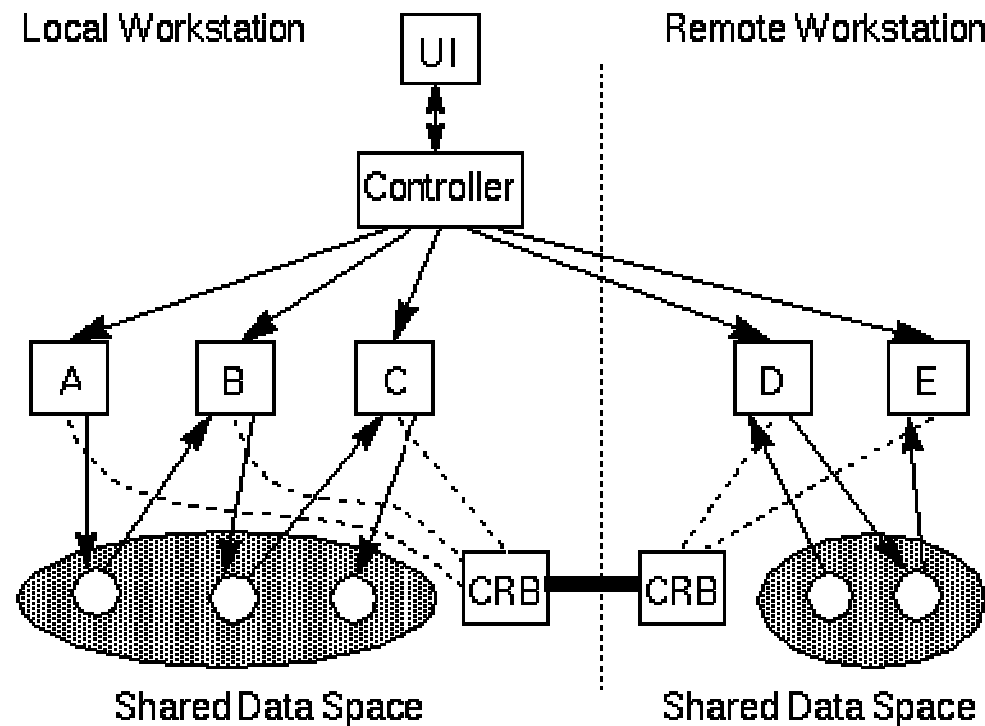


COVISE Map Editor



COVISE Features

- Architecture for Collaborative Work



COVISE Features

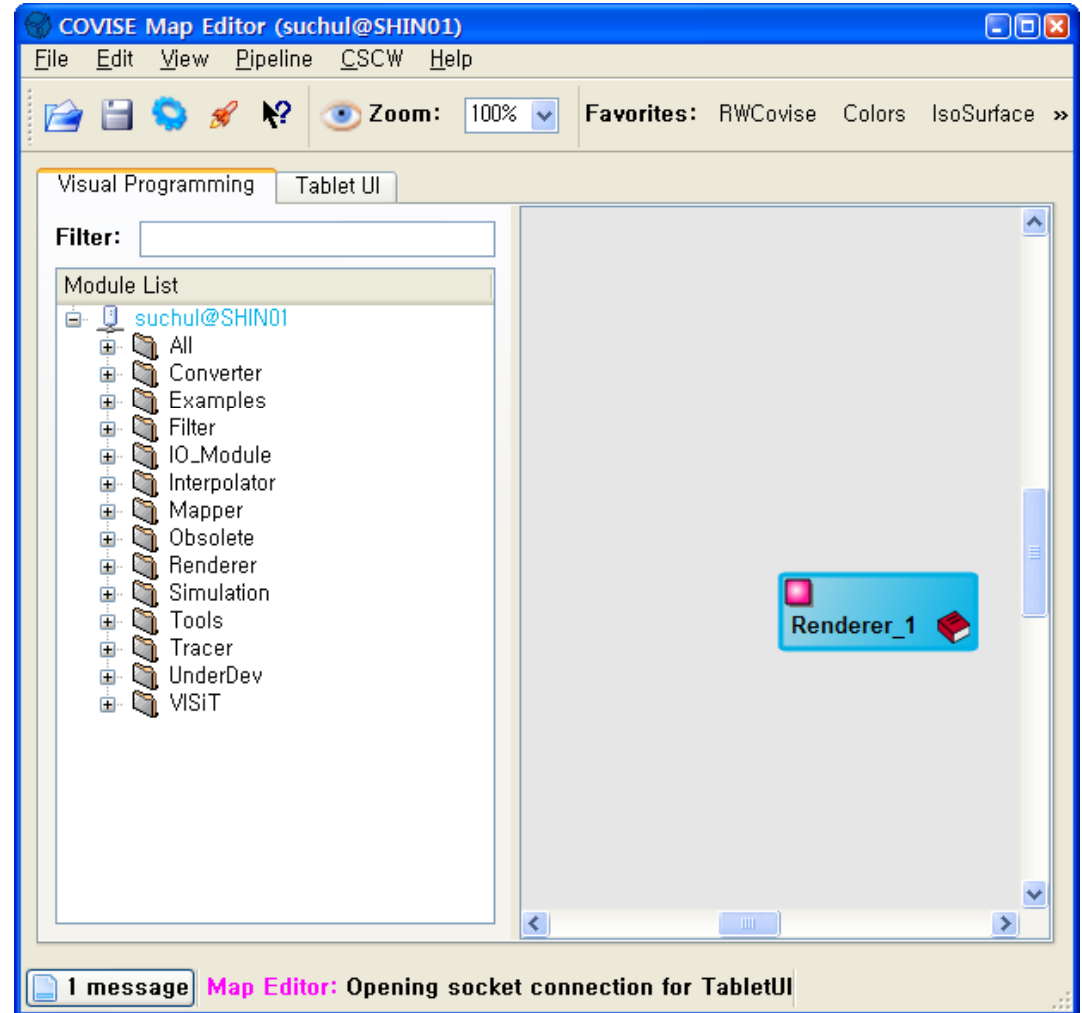
- Integration of Custom Codes and File Formats
 - Custom simulation or rendering code can be integrated into COVISE as new modules
- Supported Platforms
 - Windows XP, 2000, 2003 32 & 64 bit versions
 - Red Hat Linux 8.0 ia32
 - Red Hat Enterprise Linux 3 & 4 ia32, Red Hat Enterprise Linux 3 ia64
 - Fedora Core Linux 3, 4, 5, 6 and 7 (ia32 & x86_64)
 - Suse Linux 9.2 (ia32), 9.3, 10.0, 10.1, 10.2 and 10.3 (ia32 & x86_64)
 - SuSE Linux Enterprise Server 9 and 10 on ia64
 - Debian Linux 3.1 (ia32), 4.0 (x86_64)
 - Ubuntu 6.06 (ia32), 6.10, 7.04 (ia32, x86_64) and 7.1 (x86_64)
 - Mac OS X 10.3, 10.4 (ppc & i386, 64 bit server only)
 - SGI (32 bit & 64 bit)



COVISE Features

- Available Modules

- Category Converter
- Category Filter
- Category Interpolator
- Category I/O
- Category Mapper
- Category Renderer
- Category Simulation
- Category Tools
- Category Tracer
- Category Examples



COVISE Features

- Input Devices & Output Systems

Input Controllers



Cubic Mouse



PINCH Gloves



Space Ball



NeoWand

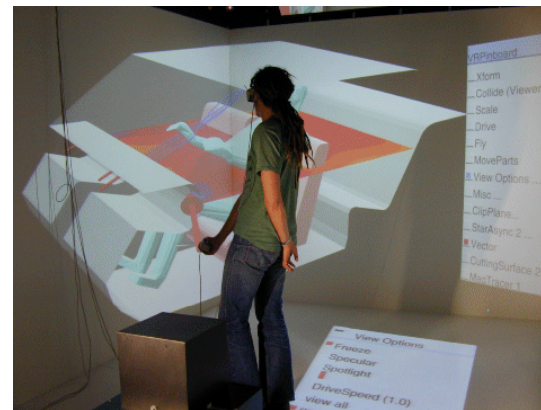
Tracking Systems



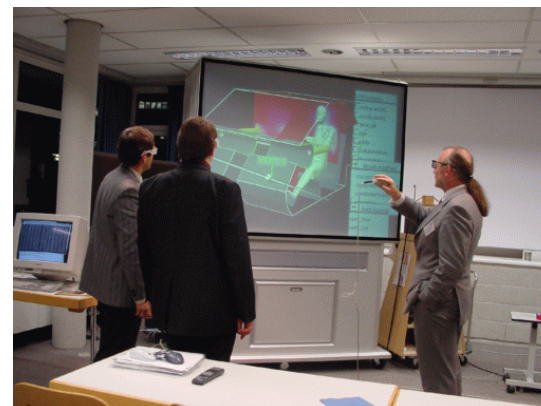
MotionStar



FASTRAK



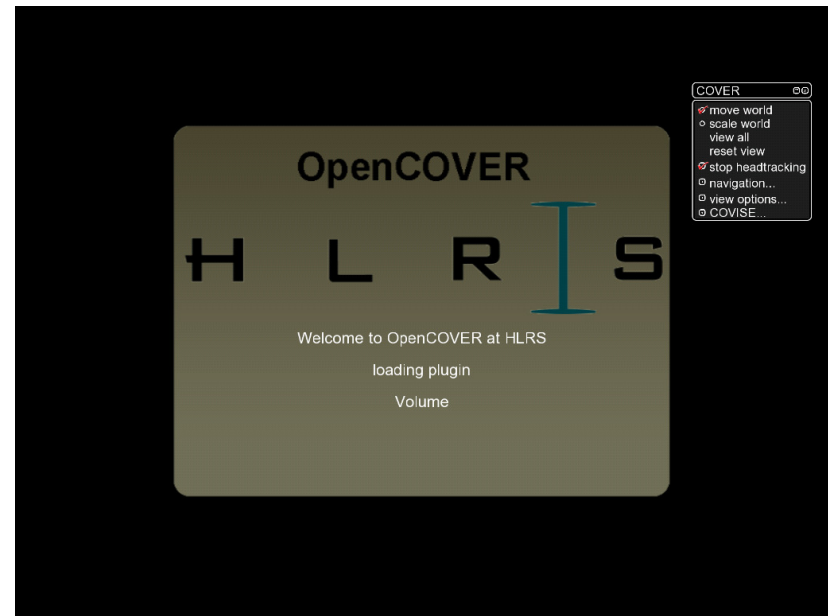
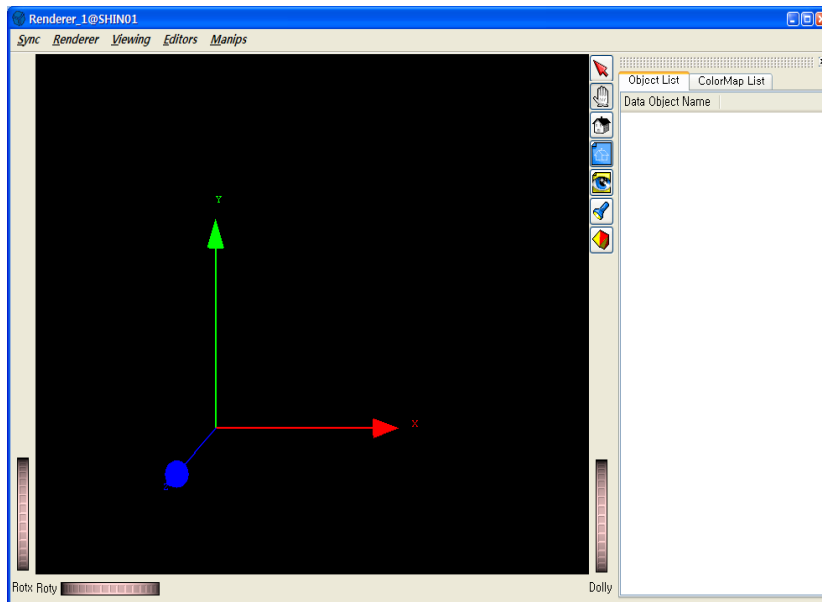
CAVE Sys. : RUS Cube



Viricity Cykloop

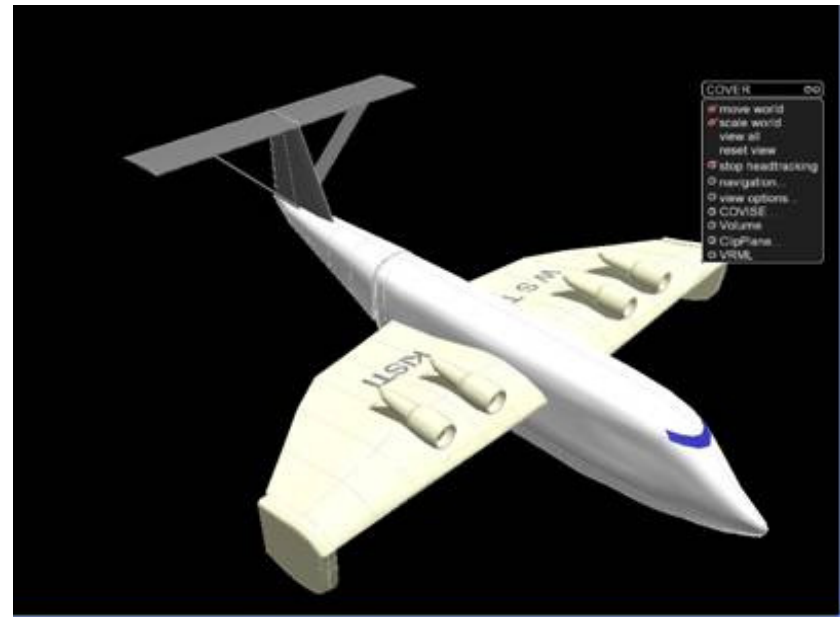
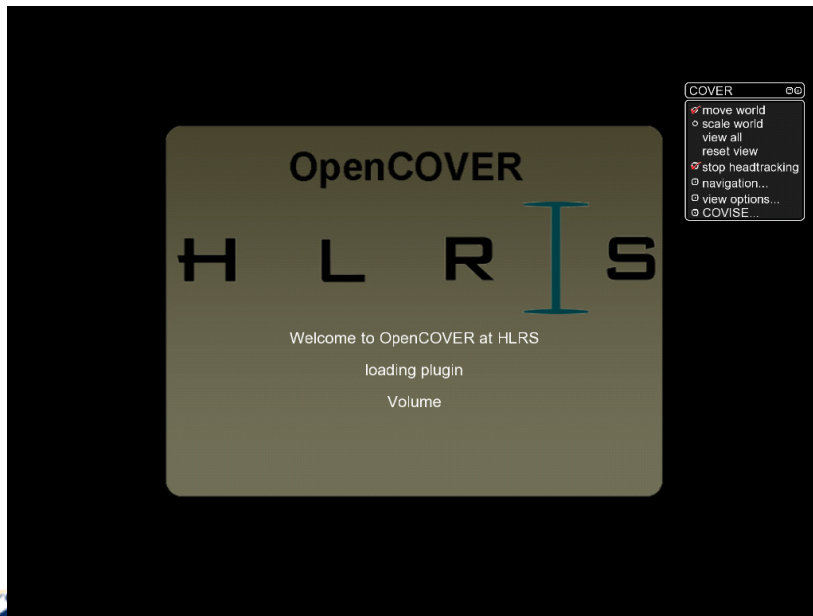
COVISE Renderer

- QtRenderer
- OpenCOVER



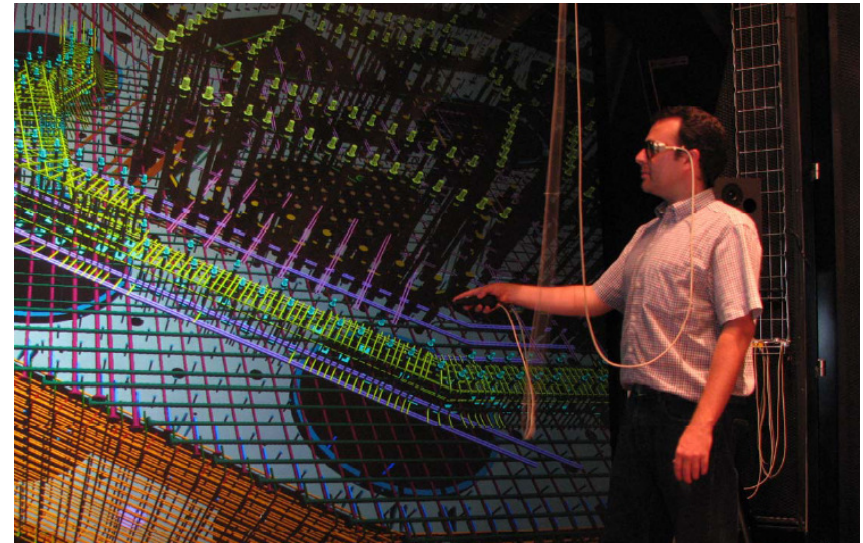
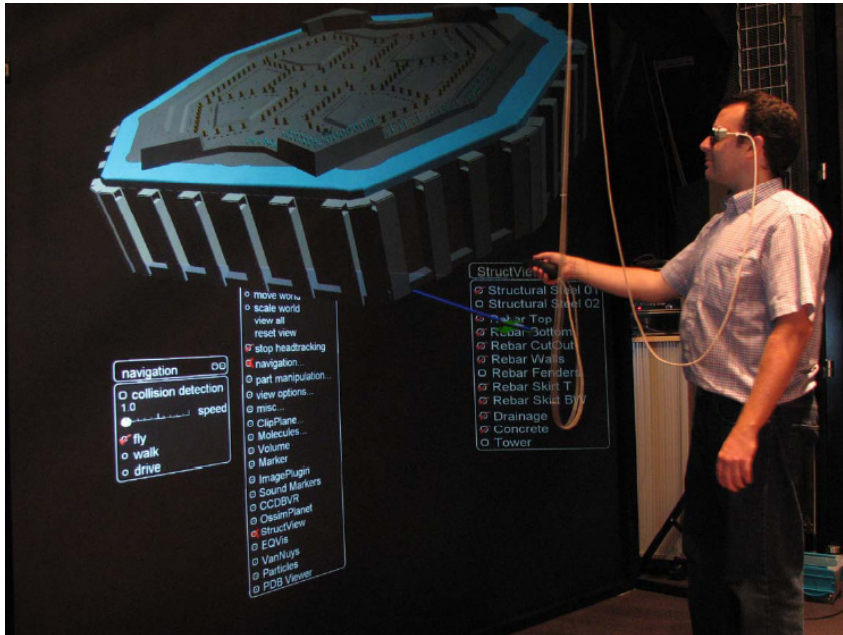
OpenCOVER

- COVISE renderer
- A visualization module based on OpenSceneGraph
- Support various formats of data
 - COVISE own format, Multigen, VRML, and so on
- Extensibility by adding customized “**Plug-In**”s
- new Plug-In by C++ Programming



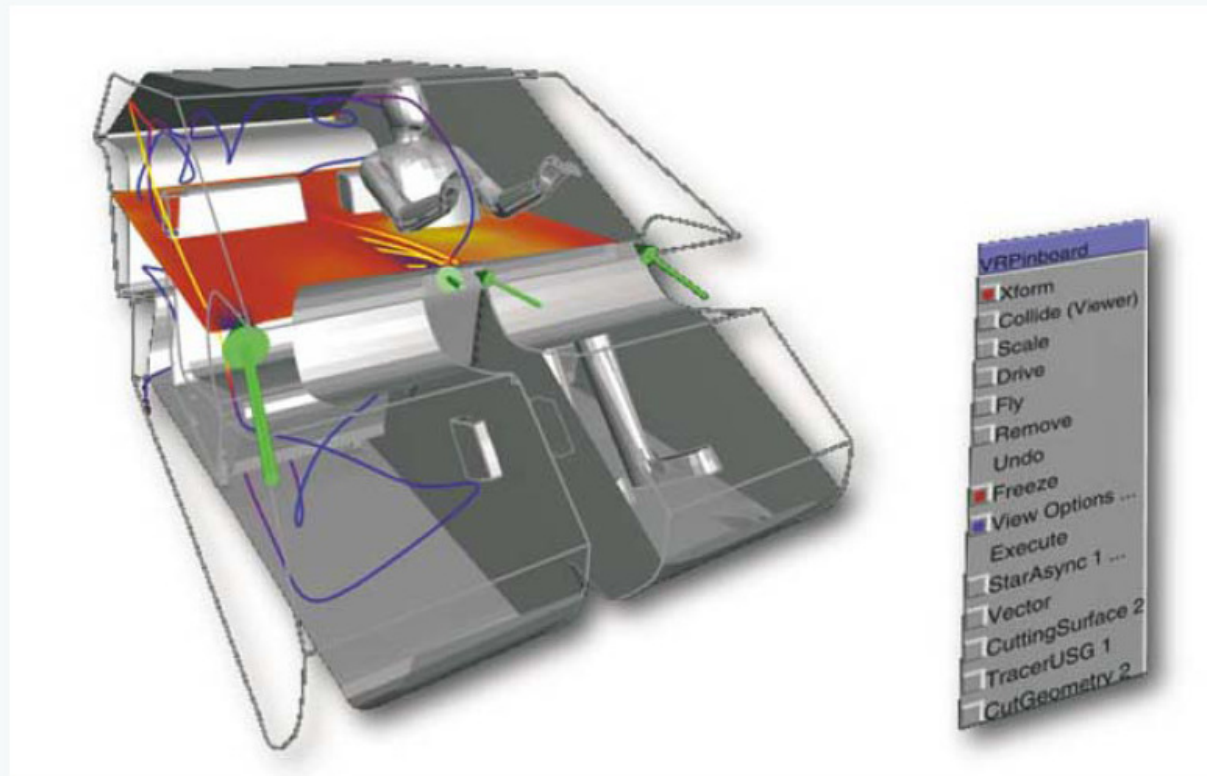
COVISE Applications

- Construction Review



COVISE Applications

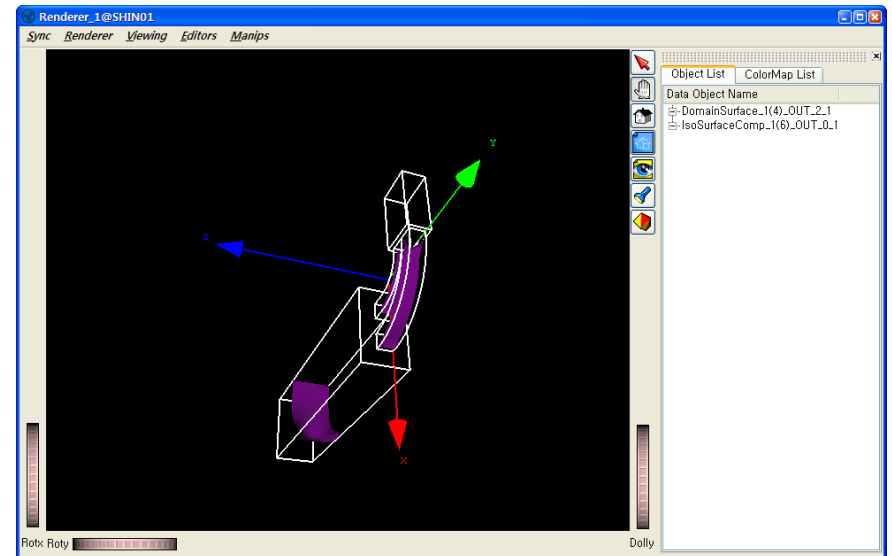
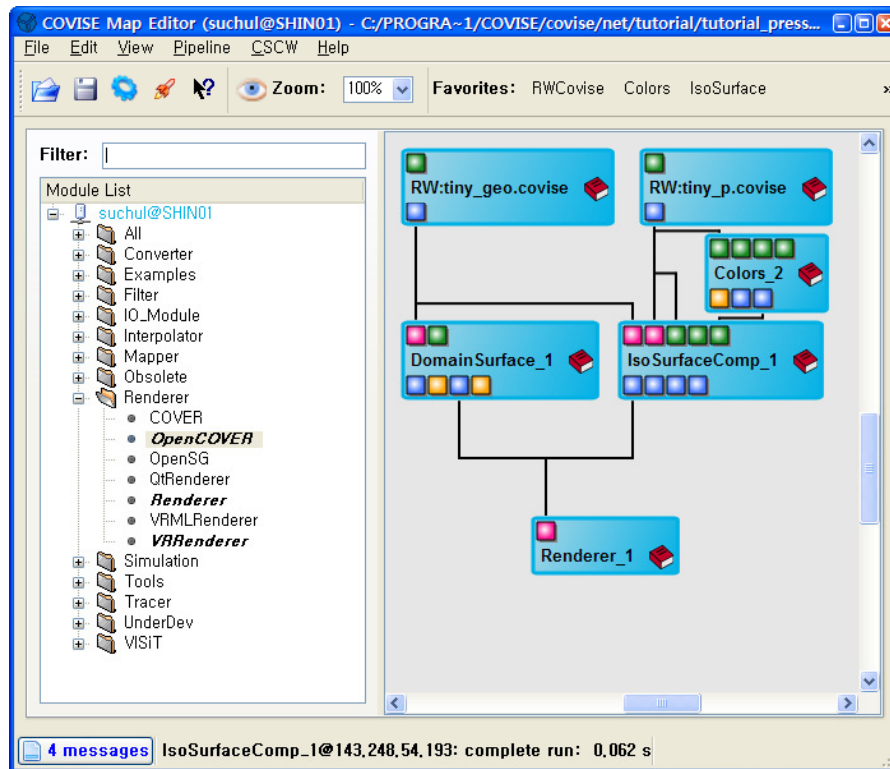
Analysis of Air Flows



Source: DaimlerChrysler and HLRS Stuttgart

Example

- Open → tutorial → tutorial_pressure_2_new.net
- Execute All



License

- COVISE needs a license
- Academic license is free



COVISE URLs

- COVISE Home

<http://www.hlrs.de/organization/vis/covise/>

- Download

<http://www.hlrs.de/organization/vis/covise/support/download/>

- COVISE Tutorial:

<http://vis.uni-koeln.de/covise/doc/html/tutorial/>

