SAGE OptIPortal for NUWC-NPS
Collaboration Building the Virtual Studio

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Building the Virtual Studio

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Motivations

Connect NPS MOVES M&S Expertise to NUWC-Newport (NUWCDIVNPT) Capabilities and Needs

Provide a Vision for the broader DoD in Remote Collaboration, Visualization, Emerging Media, Data Preservation, Collaborative Research, and Scaleable HPC Architectures (Cloud Services)
Numerous Objectives...

In order to “Align already-ongoing, separately-funded NPS and NUWCDIVNPT command initiatives for mutual, and broader Navy benefit.”

with a focus on the Media and M&S needs of USW and CRUSER community
First Project

Establish Initial Display and Workflow Capabilities for SAGE OptiPortal and Rendering Cluster

Vroom @ Calit2
What is SAGE OptIPortal?

SAGE is a mature, Open-Source graphics streaming architecture for supporting collaborative scientific visualization environments with potentially hundreds of megapixels of contiguous display resolution.

An optiportal is a display wall typically integrated with a commodity rendering architecture.

SAGE OptIPortable, a 2-man portable Viz Wall
SAGE is in use at hundreds of locations around the world, connected by LAN and WAN, often using VLANs running on the GLIF.

November 9, 2011

Seamlessly-tiled LCD flat-screen displays stretching floor-to-ceiling and wall-to-wall at the University of Illinois at Chicago's Electronic Visualization Laboratory "Cyber-Commons" has served as a digitally-enhanced way to display, manipulate and exchange information and images since its opening in 2009. On November 11, EVL demonstrates Cyber-Commons' latest enhancement -- three-dimensional imagery, displayed along with traditional 2-D images.

"It's a very powerful way to communicate ideas," said Jason Leigh, UIC-EVL director and professor of computer science. "It lets people work together, make sense of lots of information and hopefully derive insights quicker. We've found it changes the way students work together."
General SAGE Architecture

Input A

Input B

Free Space Manager

App 1
SAIL

App 2
SAIL

App 3
SAIL

SAGE Receiver

SAGE Receiver

SAGE Receiver

SAGE Receiver

High-end Quad Graphics Cards

N Displays

*Arbitrary Number of Displays in arbitrary physical configurations

Pixel Data Stream ↔

SAGE Messaging (Ports and Sockets) ➜

Cluster Synchronization

Wired or Wireless
VRoom at UCSD Calit2
Building the Virtual Studio

Distributed Video and Visualization Capability Themes

- **IDC**
  - SAGE/OptiPortal
  - Collaborate
  - Visualize & Participate

- **SAGE**
  - 4K Lab
  - SAGE/OptiPortal

- **M&S**
  - Explore, Evaluate
  - Simulate
  - M&S

- **4K Media**
  - Create
  - Capture & Produce
  - 4K Codec

**Themes**:
- **Capture & Produce**
- **Explore, Evaluate**
- **Simulate**
- **Collaborate**
- **Visualize & Participate**
- **Participate**
- **Create**
FY12:
IDC Upgrade, Collaborative Computing

A/V Interface (non-network)

Long haul DoD network w/VPN tunnel for NPS edu PoP @ NUWC

A/V Interface (non-network)
What is 4K?

Come see the demo here Wednesday

Laurin = 6’2”
Second Project

Support CNO’s Strategic Studies Group XXXI with NUWCDIVNPT, their contracted media production companies and MOVES in a distributed “Virtual Studio” environment to develop media products and deliver them on mobile devices.

Kickoff meeting at SIGGRAPH 2012
Thanks to

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NUWCDIVNPT

Numerous NPS personnel involved in the MOA

Colleagues at Electronic Visualization Lab, developers of SAGE

NPS IT: Dr. Christine Haska, Joe LoPiccolo, and their Staff

MOVES Director CDR Joe Sullivan