Datastreams to Discovery

John Delaney & CEV

NOVAE Workshop
April 20-22, 2015
Datastreams to Discovery
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Axial Science
Archive Data
Live Data Streams
Content Management
Interactive Visualization
Live Exploration
Discovery

Thursday, April 23, 2015
Networked Observations & Visualizations of the Axial Environment (NOVAE)
Next Generation Immersive Displays

Brown's New Cave, the “YURT”
Currently under construction

An enclosed, circular room - sealed around 360 degrees with projector screens. Front wall, floor and ceiling will yield near 20/20 vision.
Next Generation Immersive Displays

69 Projectors, 173 mirrors,

Brown's New Cave, the "YURT"
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An enclosed, circular room - sealed around 360 degrees with projector screens. Front wall, floor and ceiling will yield near 20/20 vision.
Brown’s new YURT will feature:

- 16' diameter hemi-cylinder, 8.5' walls, 10' doors, conical ceiling
- 69 projectors, 1920 x 1080 resolution / ~40 dpi
- 145,152,000 pixels in total
- Active stereo
Facebook acquires Oculus Rift for $2 billion
Microsoft HoloLens

The era of holographic computing is here.

When you change the way you see the world, you can change the world you see.

Watch the video
Photo of Google Glass by Dan Leveille
Next Generation of Interactive Ocean Science
Large format displays

- RED ONE / 4K DIGITAL CINEMA: 4096 x 2160
- RED SCARLET 2/3 - 3K: 3072 x 1620
- TRUE HD/BLU-RAY: 1920 x 1080
- NTSC DVD: 720 x 480

- RED EPIC S35 5K: 5120 x 2700
- WEB HD: 1280 x 720
- 0.9 MEGA PIXELS
- 2 MEGA PIXELS
- 4 MEGA PIXELS
- 8 MEGA PIXELS
- 13 MEGA PIXELS
- 29 MEGA PIXELS

ISIC VIDEO WALL: 9562 x 3072
RSN Axial Science Site

Axial Seamount on the Juan de Fuca spreading center, located just one day by ship from the Washington and Oregon coasts is one of the main experimental sites on the RSN. It is the most magmatically robust volcano on the spreading center, having erupted in 1998 and most recently in April 2011.

Instruments to be deployed in 2013:

- Secondary Node (5)
- Short period seismometer
- Broadband seismometer
- Seafloor pressure and tilt

- Vent Fluid Temperature (°C)

- 2011 Eruption

- ASHES Vent Field
  - HD Video Camera
  - Vent fluid sampler
  - Thermistor Array

- Black Smoker ASHES Vent Field

- Live Video 24/7

- Primary Node 3B

- International District Vent Field

- Fluid-DNA Sampler
  - Digital Still Camera
  - Chlorinity-T sensor
  - pH-H2-H2S Sensor
U.S. schools are expected to purchase 3.5 million tablets by the end of the year, according to industry analysts, giving students access to an array of modern educational opportunities that come with the technology.

Worldwide, K-12 spending on tablets has increased 60 percent over last year.

By Michael Alison Chandler and Hayley Tsukayama
Washington Post Story    May 17, 2014
Ocean Interaction on Mobile Devices
4D in Browser

Bathymetry:
MBARI AUV Data from D.Caress and D.Clague
EM302 Multi-beam from University of Washington
4D in Browser

New technology allows for the creation of interactive 4D environments that work in standard web browsers.

For example: user controlled visualization of geo-referenced real-time data.
4D Axial Earthquake Web Browser