CineGrid

Dr. Paola Grosso

System and Network Engineering research group
Institute for Infomatics
University of Amsterdam
A community!

- CineGrid is a non-profit international membership organization.

- Members of CineGrid are a mix of:
  - media arts schools,
  - research universities,
  - scientific laboratories,
  - post-production facilities and
  - hardware/software developers

around the world

connected by 1 Gigabit Ethernet and 10 Gigabit Ethernet networks used for research and education.
Mission

To build an interdisciplinary community that is focused on the research, development, and demonstration of networked collaborative tools to enable the production, use and exchange of very-high-quality digital media over photonic networks.

(http://www.cinegrid.org)
Cinema combines art and science, culture and commerce, increasingly digital.

Photo: Naohisa Ohta
Holland Festival 2007

Era la Notte, June 20-21, 2007 (Live!)
Handelingen –
Maarten de Heer
ARTHROPODS
Robin Noorda & Bethany de Forest
Why is more resolution better?
1. More Resolution Allows Closer Viewing of Larger Image
2. Closer Viewing of Larger Image Increases Viewing Angle
3. Increased Viewing Angle Produces Stronger Emotional Response

Visual acuity = 1.0 = 20/20
↓
Standard viewing distance

- **UHDTV (8K)**: 7680 x 4320, 24 Gb/s
- **HDTV (2K)**: 1920 x 1080
- **SHD (4K)**: 3840 x 2160, 7.6 Gb/s

Visual angles:
- **UHDTV (8K)**: 100°
- **HDTV (2K)**: 30°
- **SHD (4K)**: 60°
Three levels of membership:
- **Gold** members
- **Silver** members
- **Bronze** members

Plus annual Corporate and Individual memberships.
CineGrid offers

CineGrid Exchange is a distributed digital media repository:
includes artistic, entertainment, scientific, educational and documentary materials
that can be used by CineGrid members non-commercially with documented permissions from copyright holders as appropriate.

Currently seven sites:
- Academy of Motion Picture Arts and Science in Los Angeles;
- California Institute for Telecommunications and Information Technology at UCSD;
- Czech Republic National Research and Education Network in Prague;
- Electronic Visualization Laboratory at the University of Illinois at Chicago;
- Keio University Research Institute for Digital Media and Content in Tokyo;
- University of Amsterdam;
- Ryerson University Digital Cinema and Advanced Visualization Laboratory, in Toronto.
## Format - Numbers - Bits (examples!)

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<th>Format</th>
<th>X</th>
<th>Y</th>
<th>Rate /s</th>
<th>Color bits/pix</th>
<th>Frame pix</th>
<th>Frame MByte</th>
<th>Raw Stream Gbit/s</th>
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</tbody>
</table>

Note: this is excluding sound and these numbers are raw uncompressed data rates (frames*pix*bit/pix) excluding framing overhead!
CineGrid needs

The CineGrid community is addressing:

- **Automatic/dynamic provisioning of networks paths** among members
  - Paths must provide required QoS to support real-time streaming
- **Sharing of computing resources** for rendering coding/encoding
- **Access to storage facilities** to retrieve/save material
- **Development of workflows** to support the end-to-end usage scenarios
  - Usable by non experts
- **Metadata catalogues** to find content
- **Line rate streaming applications**

How (some of) these needs could be fulfilled by a VRC in EGI?
Want to know more?

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Prof. Cees de Laat (laat@uva.nl)

Browse:
http://www.cinegrid.org
http://www.cinegrid.nl
http://cinegrid.uvalight.nl/portal
http://www.waag.org/project/cinegridhf
http://www.cinegrid.nl/mediawiki