FilmGrid:
Digital Asset Management for Film Post-Production
Wednesday 4 June 2008
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Outline

• What is FilmGrid
• Background to Film Production
• FilmGrid Demo
• Benefits of FilmGrid
• Grid Technology in FilmGrid
• Dissemination
• Conclusions
What is FilmGrid

• FilmGrid is a distributed digital asset management system
  – Accurate supervision of the progress of a film production
  – Secure asset transfer between entities working on the film
  – Complements existing film editing software
    • E.g., Nucoda
  – Software support for current day-to-day manual workflow processes

• Partners
  – JDC/Hat Factory Post
    • Post production company in Soho, London, UK.
      » Hanibal Rising, Speed Racer
    • End user and leader of FilmGrid exploitation
  – EPCC
    • The supercomputing centre at The University of Edinburgh
    • Technology provider
Film: High Level Process

- Films are shot on reel
- Scanned to digital
- Copied back to reel
- Assets
  - The digital files
Film Decomposition

- **Scene**
  - Depicts an event occurring in a single location
  - Length and number variable

- **Shot**
  - Single, continuous piece of action with no breaks
  - Average shot about 5 seconds
  - For 100 minutes of film, 1200 shots

- **Frame**
  - ~1/24 sec
  - For 100 minutes of film, 144,000 frames
The Challenge

Managing post production is complex

– Partners in different locations
– All need same assets
– Up to 100 TB of data
– Security
FilmGrid - Objectives

• Improve film post-production process
  – Better management of assets

• Allow better status monitoring
  – Schedule vs actual
  – Location of assets
  – History

• Utilise network for asset transfer
  – Increase availability
  – Reduced risk
  – Remove need for courier
FilmGrid Demo

• FilmGrid consists of 3 tools
  – Asset Manager
  – Storyboard Manager
  – Scene Manager

• First to appear is the Asset Manager
  – Transfer assets between locations
  – Replacement for the courier
Asset Manager Demo
Metadata

• All assets have metadata attached
• Described at high level
• Allow easy locating of assets
• Can’t be lost
  – unlike a sticky note
Metadata demo
FilmGrid Asset Transfer

• Faster than courier
  – about 2 mins to transfer an average shot at 100Mbps
  – 1 shot ~ 5 seconds ~ 1GB

• More secure
  – Strong encryption (3DES)

• Available from anywhere, anytime
Asset Transfer Demo
# Virtual File Space

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Virtual File Space
Architecture

• Distributed
  – Global file system
  – Avoids unnecessary transfers
    • No single central server (unlike CVS)
  – No single point of failure

• Establishes workflow quickly

• Easy to add or remove organisations
• Next tool: Storyboard Manager
  – Replaces the current manual storyboard

Photo by Jeremy Keith
Storyboard demo
Storyboard

• Visual overview of the status of the production
  – Director, producer, Studios can see the real time progress
  – Enable speedy decision making

• Better than traditional storyboard
  – Can quickly see delays
  – Easier to change ordering
  – Always up-to-date
Storyboard capabilities
Scene Manager Demo

• Last but not least: Scene Manager
  – Contains information on all scenes and shots
  – Contains more info than storyboard
  – Assets automatically associated with shots
Scene Manager Demo
Todos and History

• Up-to-date, visible account of work left to complete

• Can’t be lost or forgotten
  – Post-it notes again!

• Accountability
  – Know who did what to what
Benefits of FilmGrid

- **Reduced cost and time**
  - E.g., time is no longer wasted working on the wrong version of digital assets, waiting for couriers to deliver them

- **Increased productivity and revenue**
  - Efficiency gains afford more time to undertake work increasing the productivity and revenue

- **Clear communication between partners**

- **Improved progress monitoring**
  - Immediate access to changes in state of production

- **Improved security**
  - Couriers are replaced with strongly-encrypted asset transfers over a network
How Grid Technology is used

• Grid architecture
  – Distributed
  – Service oriented
  – Resource based

• Use Globus Toolkit
  – GridFTP for assets transfers
  – Globus container hosts FilmGrid server
  – Globus WS Core for clients
Why Grid Technology?

- **Post Challenges**
  - Partners in different locations
  - All need same assets
  - Up to 100TB of data
  - Security

- **Grid Features**
  - Distributed
  - Resource sharing
  - Huge amounts of data
  - Security
FilmGrid Dissemination

- FilmGrid at NAB Show 2008
  - World’s leading and largest media exhibition
    - Over 100,000 attendees
  - Had a booth to demo FilmGrid
    - Many companies visited
      - Most noted their interest
      - Provided feedback

- SMPTE & VSF 2008 joint conference
  - Presented technical aspects of FilmGrid
  - Organisers highlighted the importance of digital asset management in media
The Future

- More features
  - More transfer options
  - Improved user management

- Testing on small productions
  - Usability, reliability, performance

- Currently working with JDC on exploitation
Conclusions
The FilmGrid prototype

- Highlights benefits of digital asset management to Film Post Production
  - Reduce wastage/increased productivity
  - Visual progress monitoring
    - Storyboard, Scene manager
  - Support for managing workflow elements
    - Todos, History

- Consists of a unique distributed architecture
  - Minimises asset transfers

- Provides secure asset transfers

- Shows how Grid technology is highly appropriate for Film post-production
Questions & Comments

• Visit the demo booth for live demos and consultation

• Thank You!

• Questions?
Asset Manager

Local Files

Transfer Status

Global Assets

Photo by Brad & Sabrina

Business Experiments in GRID
Storyboard

1. Tides of Eternity
   On Schedule
   05/02/2008 11:21

2. Birds in the Sunset
   On Schedule
   05/02/2008 15:30

3. Boat
   Complete
   05/02/2008 11:24

4. Hello and Goodbye
   Late
   05/02/2008 11:28

5. Are You Ready for the Country?
   On Schedule
   05/02/2008 11:30

6. Abandoned
   On Schedule
   05/02/2008 11:32

7. Salvation?
   Complete
   05/02/2008 11:45

8. Bus
   Late
   05/02/2008 11:46

9. Under Surveillance
   On Schedule
   05/02/2008 11:50

Photo by Jeremy Keith
Scene Manager

Scene List

Scene Info

ToDo

History
Shot List

Scene 2
Birds in the Sunset

As the sun sets, Leo watches some birds in the surf.

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<th>Name</th>
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<th>Description</th>
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Shot 2
more waves

More waves roll in.

ToDo List

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History List

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### Asset List

#### Scene 2
**Birds in the Sunset**

As the sun sets, Leo watches some birds in the surf.

#### Shot 1
**wave**

The waves roll in.

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Grid Computing

- Form of distributed computing
- Supporting scientific computing experiments and other research
  - E.g. Large Hadron Collider at CERN

- Features of Grid software
  - Distributed
  - Resource sharing
  - Huge amounts of data
  - Security

Photo By Mike Procario