The AVATS and SUMOVER Projects: The UCL media tools continue

Peter Kirstein
Piers O’Hanlon
Socrates Varakliotis
Overview

• SUMOVER project
• AVATS project
• Current status
• Plans
• Future...
SUMOVER Project

• Funded by JISC: Aug 2005 - Dec 2007
• Created common code base
  – [http://mediatools.cs.ucl.ac.uk/](http://mediatools.cs.ucl.ac.uk/)
    • Subversion and Trac based management system
• Organised two project Workshops
  – Community building and dissemination
• Provision for support and bug fixing of tools
  – With help from others: ANL, AGSC, Glasgow University, University Queensland, NCHC Taiwan, Australian National University, New Mexico State University
• Added a number of new features to the tools
VIC – Feature set for AG release

- **New codecs** \(\{NCHC}\)
  - MPEG4 compliant with RFC
  - H.264 compliant with RFC 3984 \(\{UCL\}\)
- **Advanced rendering** \(\{NCHC\}\)
  - Full-Screen mode, Video window scaling in software
  - X11 XVideo - hardware scaling/colourspace conversion
  - Windows DirectDraw rendering \(\{ANL\}\)
- **Windows Direct Show Grabber** \(\{Mark Petrovick\}\)
- **Image overlay/logo sending functionality**
- **Source-Specific Multicast (SSM) support**
- **MacOSX**
  - Aqua Tcl/Tk support \(\{NCHC\}\)
  - Mac video capture support \(\{MASH\}\)
- **AccessGrid features** \(\{ANL, UCL\}\)
  - Autoplace controls
  - Optional window menus/border
  - Site identifier signalling
RAT – Feature set for AG release

• New look GUI: Dynamic display of Address/port/ttl
• Dynamic address/port re-binding
  – Useful in conjunction with AG for faster room change
• Security padlock icon
  – Indicates when crypto enabled
• Fixes to ALSA driver and updated mixer controls
• AccessGrid Features \{ANL, UCL\}
  – Per user gain control
  – Site identifier signalling
  – Other smaller bugs and patches
• MacOSX \{UCL\}
  – Aqua Tcl/Tk support
  – Core Audio driver fixed for Intel
Common library

• Latest fixes
  – MBUS sequence numbers wrapping
  – Encrypted stream robustness
  – Memory debugging fixed

• Added ANL Network helper functions
  – To pick the right Ethernet interface if multiple available
AVATS Project

• OMII-UK funded Jan 2008 – Dec 2008
  – UCL and Manchester University
• Provide baseline support for VIC and RAT
  – Continued support on new OS’s
• Support code management systems.
• Include contributions by external projects
• Stability enhancements to the tools
  – Establishment of automated testing systems
• Enhance documentation.
AVATS description continued

• Provide for inter-working with IOCOM/inSORS
  – Specifically with IG2 H.264 streams
• Maintain close ties with the AGSC
  – Ensure project outputs are effectively disseminated and included in related developments such as PAG
• Explore avenues for longer-term sustainability of these activities
• Do four releases of the tools
AVATS progress

• IOCOM/IG2 and VIC inter-working
  – Beta release of VIC decoding IG2’s “default (non-standard)” and “standard” H.264 streams.
    • IG2 already decodes VIC H.264 streams
    • VIC currently uses slightly modified ffmpeg H.264 codec

• VIC
  – Tcl/tk8.5 support (UQ), Video menu, H.261 fixes

• RAT
  – Vista/HD audio support, Encrypted stream bug fix, fixed Ctrl-Z crash, Informed exit with Firewall/VPN problems
AVATS progress continued

• Google Summer of Code 2008 student
  – Adding congestion control
    • TCP Friendly Window Control Protocol (TFWC) cf. TFRC
• Documentation updates
  – Manual pages, and Changes updated
  – Developed Trac man page plugin
• Debug improvements
  – Changes to common for debug to file
  – Investigating crash reporting
    • Google breakpad, Ubuntu apport
• Investigation begun for auto testing
  – Mozilla Tinderbox, XORP.org build system
Plan for the next 6 months (Dec ’08)

• Continue to stabilise common code base
  – We need your feedback, use the media tools Wiki/mailinglists
  – Investigate issues with newer OS/API’s
  – Update and maintain Trac/Subversion systems
• Support AG community as far as possible
  – Fix issues in conjunction with ANL and ag-tech
• Follow through with Google Summer of Code project
• Continue collaboration with external developers
  – Many thanks to: Tom Uram, Doug Kosovic (UoQueensland), Colin Perkins (Glasgow), Brook Milligan (NMSU), and others
• Improve documentation and debug facilities
• Deploy automatic build and test systems
• Explore new avenues for funding
Future

• Continued funding is not assured
  – Despite clear need by AccessGrid community
• Other possible options
  – Open source foundation model?
    • Needs members/stakeholders to commit some funds…any takers?
  – AccessGrid maintained?
    • Minimal effort available
  – Side effort on other project?
    • Only minor effort possible
  – Background effort?
    • Probably ineffective
• Let us know your ideas/suggestions!