Topic **Untitled #1**

- ⊟ Video formats
  - ⊟ Spector - always avi
    - ⊟ All but 'full frame' below haven't exported properly - and 'full frame' seems to be just one frame...
      - ⊟ Radius cinepac codec
        - ⊟ compression (0-100)
          - ☑ **100**
          - ☐ 10
        - ⊟ config
          - ☑ colour
          - ☐ b/w
      - ☐ Logitech Video I420
      - ☐ Intel Indeo(R) Video R3.2
        - ☐ Compression
          - ☐ 100
          - ☐ **65**
          - ☐ 10
      - ☐ Intel IYUV codec
      - ☐ Microsoft RLE
        - ☐ Compression
          - ☐ **85**
          - ☐ **100**
          - ☐ **10**
      - ☐ Microsoft Video 1
        - ☐ Compression
          - ☐ 100
          - ☐ **75**
          - ☐ 10
        - ☐ Temporal Quality Ratio
          - ☐ 100
          - ☐ **75**
          - ☐ 10
      - ⊟ Microsoft H263
        - ☑ **100**
        - ☐ 10
      - ☐ Microsoft H261
        - ☐ **100**
        - ☐ 10
      - ☐ Intel indeo video 4.5
        - ☐ compression
          - ☐ 100
          - ☐ **85**
          - ☐ 10
        - ☐ configure
          - ☐ compress
          - ☐ scalabilty
          - ☐ bidireactional
          - ☐ transparency
          - ☐ quality
          - ☐ access key
          - ☐ viewport width/height
      - ⊟ Indeo video 5.10
        - ⊟ Compression
          - ☑ at **85**%
          - ☐ at 100%
          - ☐ at 5%
        - ☐ Configure - defaults
          - ☐ quick compress
          - ☐ scalability
          - ☐ transparenct
          - ☐ Viewport
          - ☐ Access key
      - ☐ Full frame
  - ☐ BB Test Assistant - dropped out of trial
  - ☐ SnapzPro (Mac)
  - ☐ other movie formats - general QT export?
- ⊟ pre-session - installed MS MP 10, VLC 0.8.6d, opened perfmon for the first(!) time
  - ☐ How will test work? 90 minutes to:
    - ☐ check differences between perfmon with all bits on, and perfmon with just CPU - 5 mins min
    - ☐ gather info (2 players, x files (min 2 - avi, WMV), y lengths - need at least 1 5 min file) = min 4 plays ~15 mins minimum - inc. some downtime.
    - ☐ switch over to mac for plotting (use Excel? prefer DataGraph or the scatter browser) (5 mins), do plots of all 4 (15 mins), analyse (10 mins?) = 30mins
    - ☐ this is likely to be the first point that will allow feedback/learning/re-design - leaves max of 40 mins available in session for doing anything exploratory
    - ☐ pre-prep video files
      - ☐ Spector is playing up - various exports of 5 minute range don't export - Full, MS H263, Indeo 5.10 - all tried produce 0-length files (disk space OK). Indeed, the default 'full' export seems to have hung spector. Have saved source file (14MB) of 16-bit colour capture. More successful saving to My Documents - but video is 1:33 long, and horribly compressed. Seconds seems to run fast, too. VLC won't play it.
        BBTA is out of trial period. Still have downloadable movies (if creator doesn't matter, which it does) and SnapzPro.
        - ☐ noticed much later: spector did manage to export it, much later, but filled the USB key. Undoubtedly corrupt file (stopped by fullness, no message from Spector) won't play in WMP. no image in VLC. Binned.
      - ☐ BBTA re-license obtained
        - ☐ WMV (export takes time - 5 min file started at 18:10
          - ☐ video codec
            - ☐ codec
              - ☐ 9
              - ☐ 9 screen
              - ☐ legacy
                - ☐ 7
                - ☐ 8
            - ☐ compression

- ☐ 100
- ☐ 0
- ☐ passes
- ☐ 1
- ☐ 2
- ☐ video
- ☐ frame rate
- ☐ full
- ☐ reduced
- ☐ scale
- ☐ full
- ☐ reduced
- ☐ AVI
- ☐
- ☐ need something changing constantly to spot slowdown. Clock best? Make new recordings?
- ☐ WMP 10.00.00.4036 installed - latest for XP installed - now 10.00.00.3802 - hmmm
- ☐ VLC 0.8.6d-win32
- ☐ Dependent on codec used: details VLC - Features
- ☐ Possible issues - many - container probem (avi can be many formats - can WMV?) - framerate slow for tester stuff, playback problem, difficulties with colour depth, movie size (unless extreme) unlikely to be a problem. Conversion from SnapzPro? SnapzPro alway saves as a .mov (container) but can put any of 30+ formats and codecs in it. None are WMV, and AVI's another container.
- ☐ *How to export from perfmon to csv?*
- ☐ Select something, then in 'Action', choose export list. Unfortunately, it's not visible with 'system monitor' selected.
- ☐ So - within this 'system monitor' group, we can add the right counters, but not export to csv. Within the 'performance logs and alerts', we can e3xport to CSV
- ☐ *Any privacy issues? Didn't thinkso, then bought up my mail on this video!*
- ☐ What perfmon info should be taken? Used 'explain' button. Monitor Processes or machine?
- ☐ Initially, process -
- ☐ CPU (looking for trends?): %process time for this process
- ☐ threads (looking for zombies?): thread count
- ☐ memory (looking for leak?): Private bytes, virtual bytes
- ☐ ?IO?
- ☐ Machine:
- ☐ CPU, clearly %processor time (averaged), also interrupts/sec;
- ☐ memory - pages/sec for faults, ? memory for player process
- ☐ need to get csv out of perfmon...
- ☐ After a **LONG** time, realise that I can add a log... start it manually ... save as .csv
- ☐ System crash on remove USB stick - although all user-started processes quit. Heaven knows.
- ☐ Proof of concept - 8K written in 5 minutes - ? does it open in excel? Datagraph? Yes!!
- ⊟ Available video (finally)

☐ Source	container	encoding	plays on WMP		plays on VLC
☑ Spec	avi	cinepack	y	-	plays fast (bug on export - 3fps export, 1fps capture), full size, blank on VLC
☑ BBTA	avi	cinepack	y	y	quarter rate, half scale
☑ BBTA	wmv	9screen	y	-	half scale, VLC does not open picture window
☑ screencast	wmv	9 std	y	y	full size, with audio, 6.15 fps (downloaded from Microsoft)
☐ Snapz	mov	H.264	n	y	30fps
☐ Snapz	mov	animation	n	y	half scale, 1fps
☐ !!Spec	wmv				** not produced - Spector does not export wmv

- ☐ Proof of concept
- ☐ logging doesn't work with comment
- ☐ sync timestamps
- ☐ both players active (?) run playing player in front window
- ☐ screencast started at 29/02/2008 08:41:01 - playing (slightly reduced) in a window
- ☐ stopped at 29/02/2008 08:45:45
- ☐ VLC started 29/02/2008 08:46:07 and crashed shrotley after - 20 s before 29/02/2008 08:46:37 choose to end noiw 29/02/2008 08:48:12
- ☐ restart 29/02/2008 08:48:40 zoom to half size
- ☐ alway keep plaer win to front
- ☐ SC WMV 29/02/2008 08:54:15 - 29/02/2008 08:55:15
- ☐ SC VLC 29/02/2008 08:55:48 - 29/02/2008 08:56:47
- ☐ Machine characteristics
- ☐ Win XP SP2
- ☐ Dell inspiron I5100
- ☐ Intel P4 at 2.66Ghz
- ☐ 512Mb ram
- ☐ 29/02/2008 09:43:03 start testing
- ☐ Let run for a copuple of minutes for control
- ☐ 1 VLC F1 @29/02/2008 09:45:44 - 29/02/2008 09:47:18 - F1 - AVI from BBTA
- ☐ 2 WMV F2 @ 29/02/2008 09:48:02 - 29/02/2008 09:49:43 - F2 - WMV from BBTA
- ☐ 3 WMV F2 @ 29/02/2008 09:50:25 - 29/02/2008 09:51:34 - F1 - WMV from BBTA
- ☐ 4 VLC F1 @ 29/02/2008 09:52:00 - 29/02/2008 09:53:48 - F2 - AVI from BBTA
- ☐ 5 WMV F3 @ 29/02/2008 09:54:38 finish 29/02/2008 09:55:14 - F3 AVI from Spec
- ☐ 6 VLC F3 @ 29/02/2008 09:56:00 finish 29/02/2008 09:56:32 - F3 AVI from Spec
- ☐ quit VLC - big CPU just after?
- ☐ 7 WMV F4 @ 29/02/2008 09:58:38 - switch to full screen at 1 min back at 5:39 50% 5:55 stop 6:30 29/02/2008 10:05:10
- ☐ 8 VLC F4 @ 29/02/2008 10:06:34 - switch to ful screen at 1 min back at 4:46 50% 5:10 stop 6:15 29/02/2008 10:12:36
- ☐ more time for control. CPU back ~5%
- ☐ stop 29/02/2008 10:14:37
- ☐ 29/02/2008 10:16:19 Analysis of data
- ☐ 29/02/2008 10:19:02 3 minute family pause
- ☐ 29/02/2008 10:23:15 xfer data to DataGraph on mac, make graph
- ☐ Graph complete - some analysis done (see below)

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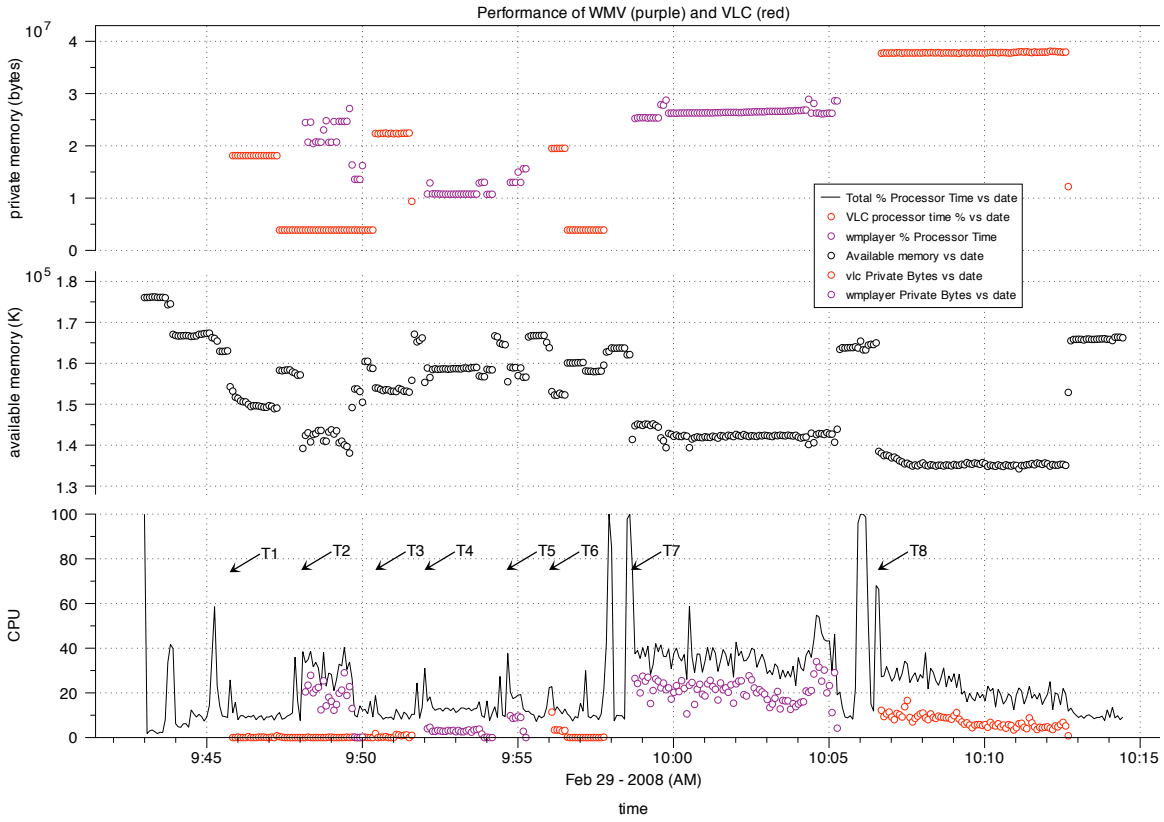
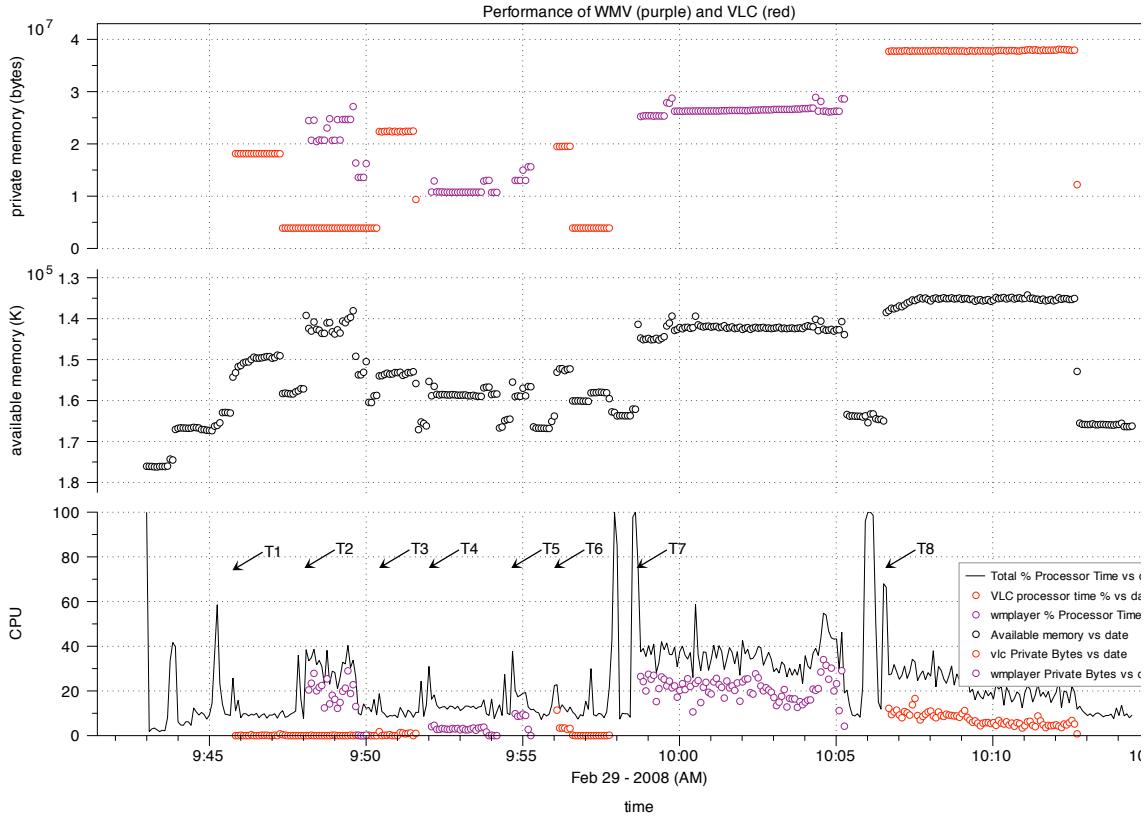


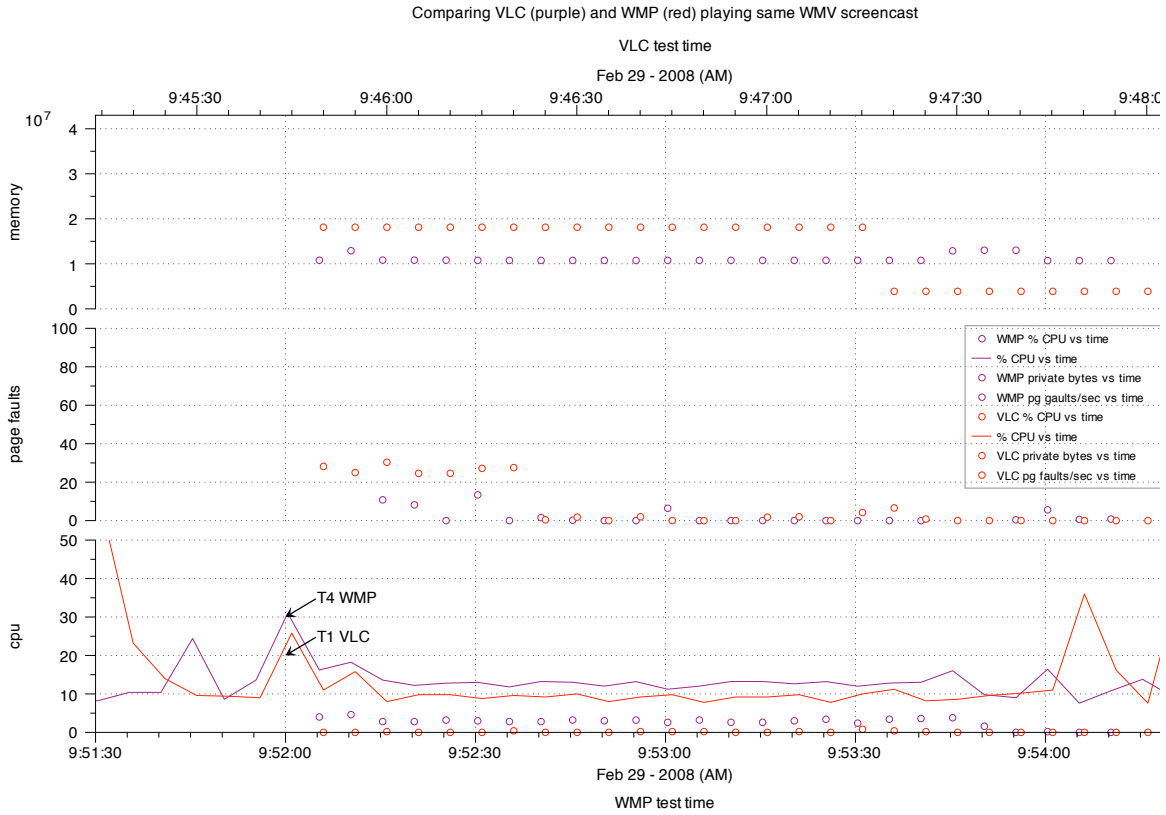
- ☐

- ☐ Improves clarity to reverse the machine memory so it shows memory taken, not memory available, and matches sens of memory taken in other y-axis

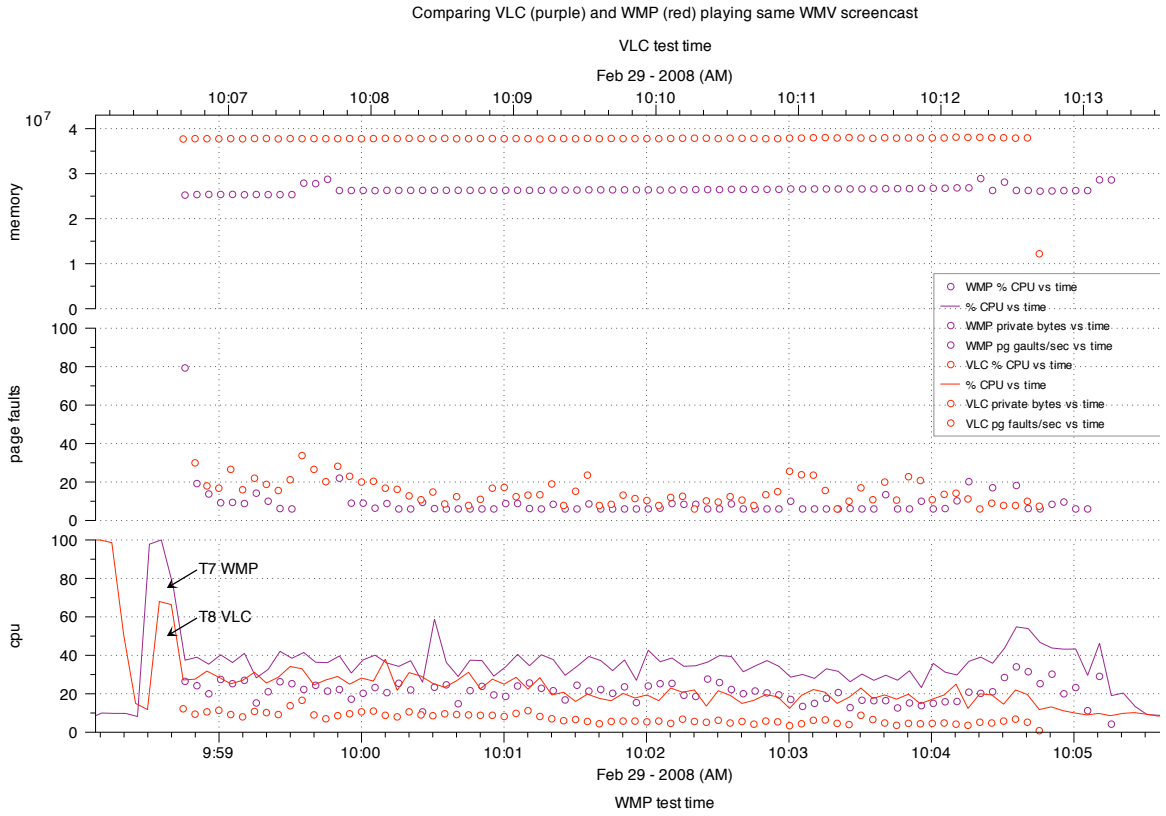


- ☐

- ☐ 29/02/2008 10:45:30 Stop to head off to opticians - 59 minutes used so far
- ☐ 29/02/2008 16:02:24 what's to do further? to 29/02/2008 16:40:06, some pauses - further 35 mins
  - ☐ VLC uses less CPU than WMP - by eye; VLC takes 1/3 CPU of WMP (compare T7 VLC, T8 WMP)
  - ☐ VLC typically uses more memory than WMP.
  - ☐ WMP used a smaller proportion of the available resources playing AVI (compare WMP:(T4 AVI with T2 WMV)). Similar comparison with VLC:(T1 AVI with T3 WMV) not valid - T3 did not play a movie.
  - ☐ changes made to the on-screen playback size made no significant difference to the CPU usage or memory usage
  - ☐ movies encoded at smaller physical size used fewer resources that those encoded with larger dimensions
  - ☐ **Conclusion**: In comparison with WMP, VLC uses approx 70% less CPU, but 50% more memory. Playback was subjectively better, especially when playing back scaled-down movies. VLC is more choosy about what it plays back, although it may be able to play back more codecs independent of container. VLC showed stability issues, WMP showed none.
  - ☐ Analysis of T1 vs T4 - playing an AVI from BBTA



- ☐ Analysis of T8 vs T7 - playing a WMV screencast from microsoft



- ☐ No clear bugs to investigate. Could
  - ☐ re-run test to see if the results are reproducible,
  - ☐ change configuration, use different machine to see what changes, if anything - eliminate systematic effects
  - ☐ analyse comparisons more fully
- ☐ Test problems
  - ☐ *Mostly resolved: Problems creating suitable movies - neither BBTA nor spector are terribly happy exporting*
  - ☐ *Resolved: Problems getting CPU log*
  - ☐ *Resolved: Problems getting CSV out of logger*
  - ☐ *Resolved: Problems getting dates into graph - resolved by going outside brief and using DatGraph, but stripping quotes in excel*
  - ☐ *External bug: DataGraph won't save initial graph*
  - ☐ *finger trouble on T2 got me out of sync with expextations - carried on, but watch the numbers*
  - ☐ *because VLC didn't play WMV from BBTA, or AVI from Spector, two pairs of the tests were pretty pointless (T3/T2, T6/T5). However, their configuration was relatively well covered by T1/T2, T8/T7*
- ☐ Possible bugs - either in exporter, or in player. Choice of codecs within VLC's range.

Topic **Untitled #1**

- ☐ *VLC didn't play WMV from BBTA,*
- ☐ *VLC didn't play WMV from BBTA, or AVI from Spector,*
- ☐ *VLC crashed during WMV play in proof-of-concept, (screencast) taking logs with it, not repeated.*
- ☐ *Spector export plays fast (3fps, but taken at 1fps)*
- ☐ *WMP very bad at preserving legibility when image downsized - particulary with Spector exports.*

- ☐ Note: didn't use quicktime stuff, didn't use pagefault stuff.

- ☐ ET notes: this test had very little exploratory testing during session, as the exploratory work was primarily observation during testing and post-test analysis. Analysis was not confirmed by further testing or exploration of the subjects
- ☐ Rob charter notes:
  - ☐ AVI and WMV are containers - the codec (ie H.264 etc.) used to create the video within the container is more likely to hinder playback. There are many codecs (my machine has 40+, and configuration of each can be crucial to whether playback works on any given player). I assumed we were looking at captured testing stuff, so used Spector and BBTA to generate the source videos with their on-board codecs.
  - ☐ Spector doesn't export WMV.
  - ☐ I couldn't get VLC to play any WMV files from BBTA.
  - ☐ I gave up and used a WMV from Microsoft in the end - http://keithcombs.members.winisp.net/screencast/usability.wmv from blogs.technet.com—08.aspx
  - ☐ Excel's not a great grapher - I hope your work is helped, not hindered, by my use of DataGraph. I could reporoduce these graphs in excel - it would take a couple of hours. DataGraph is here: www.visualdatatools.com—index.html - I'd recommend it (I have before) but it's Mac only.