Testing the Xbox 360

Testing multimedia on an embedded system
Introductions - Me

- I work in Redmond in the Xbox base software department on the Microsoft campus for 8 months
- SDE/T in media and entertainment experiences on the Xbox 360
- The Dashboard (an Operating system)
An Average day

- Meetings
  - Weekly meetings with my lead
  - Daily meetings leading up to launch
  - Lots of daily short term collaboration
- General “What I do”
  - Knowing my area: Investigate, open, resolve, and close bugs
  - Automation
  - Test Plans/Specs
- Workload
  - A demanding work schedule (two releases a year)
Testing a Video Game Console

- Not being on the same machine I’m trying to debug
  - Architectural differences: PowerPC versus Intel, specialized DX10 GPU
  - looking at oscilloscopes
  - New hardware
- Hardware constraints
  - RAM, Hard drive, networking
- Perf, perf, perf
- The Halting problem
Manual Testing

- Advantages
  - Arguably the best way to capture the customer experience and make sure it doesn’t suck
  - Ad hoc/Visual Verification is sometimes the best way to capture some issues, especially in Video quality
    - Video tearing
    - Macro blocking
    - Judder
    - Audio pops

- Disadvantages
  - Time-consuming and irreproducible
  - **Human error**

- Lessons Learned and why
  - These Come First
  - High rate of UI evolution
Automated Testing

- **Advantages**
  - Run 10’s of 1000’s of cases in (relatively) little time
  - Highly reproducible
  - Useful for stress testing, security testing, and code coverage testing

- **Disadvantages**
  - Improving/building a test harness
  - Maintenance of old cases, writing new cases

- **Skills I’ve learned**
  - COM/PPC/C(+/#)/XDK/USB/Hardware stuff