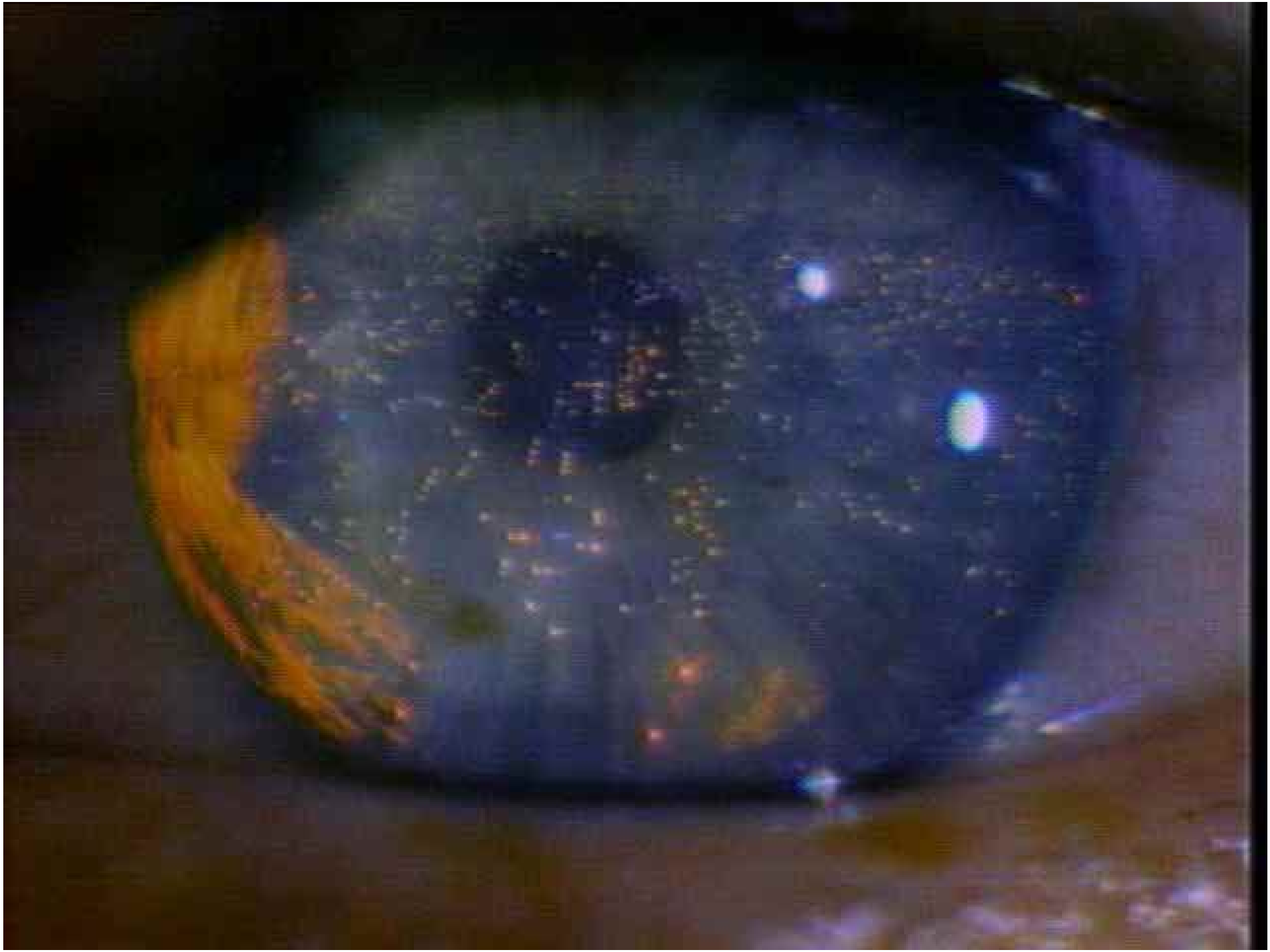

BlackHat 2003 Case Tutorial

Digital Information, User Tokens, Privacy and Forensics Investigations: Windows XP Platform

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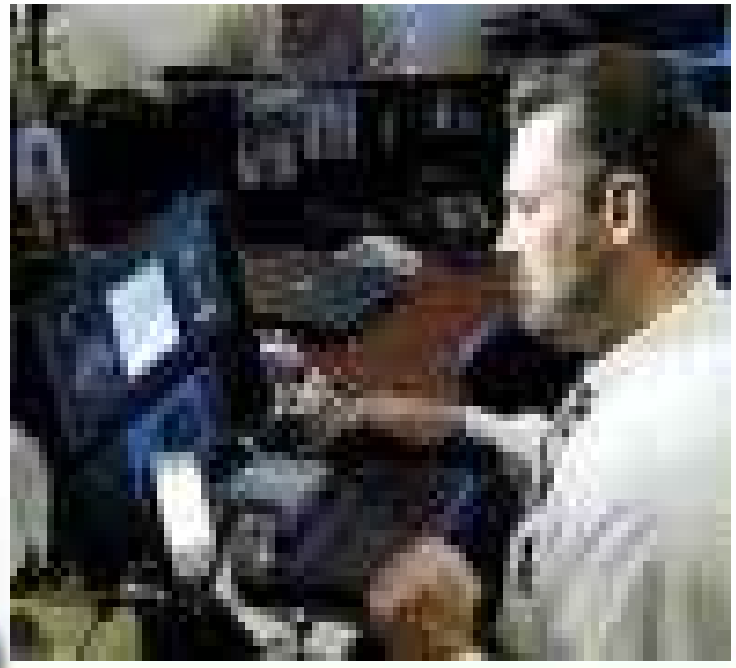
MY SLIDES & YOUR SLIDES ARE DIFFERENT

I am an Information Technologist focusing on Digital Evidence.
I am on the teaching faculty of the University of Texas Law School and Business School, however,
I am *not* a Practicing Attorney



Caveats and Rights of Use

- My skills, background - forensics profession and at trial experience
- This tutorial is ***not – legal advice or legal opinion***
- Who do I speak for? – ***me*** – no university or governmental affiliations – in the context of this tutorial
- No warranty for fitness – express or implied

Caveats and Rights of Use

- No grant of license for software or technology that may be developed that supports this material
- Risk of use – are expressly yours – ***not mine***
- Your attendance in this tutorial, from here on, marks your agreement to these aforementioned caveats, conditions and limitations

Notes for Materials

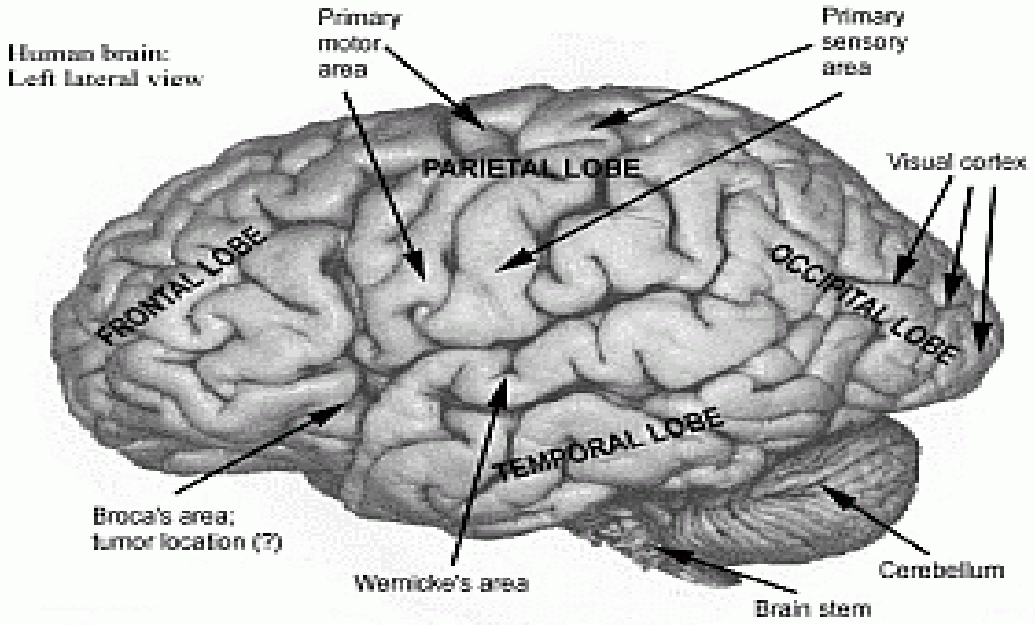
- All materials – slides and case materials and discussion sets are at http://www.eforensics.com
- I will ***not*** use/discuss each slide in this set. There are numerous slides in this set.
- The slides support a notional case – We will use the case as a discussion-leadership vehicle to explore the intersection of

  Digital Information, User Tokens, Privacy and International Forensics Investigations

A Protocol – for this Tutorial

Please Ask Questions – whenever you need to.

- I **reserve** the obligation to ask you questions
- Let's collectively feed our brains.



My Bias

- Digital Forensics is an emerging profession.
- The notion of a profession
  - Body of Knowledge - Competency
  - Tests
- Science, Theory and Peer Review *are necessary but not sufficient* to supporting the digital forensics profession – we need a community of practice among forensics professionals that is also tested with questions of human rights, privacy and ethics.

Forensics

- What does this term imply?

Ubiquity of Digital Devices in everyday life

- **Characteristics**
  - **IT technology everywhere and embedded in everything**
  - **Global connectivity and always on**
  - **Physical world joining virtual**
    - **cyberspace acts can affect real-world processes and vice versa**
  - **Web pages and portals for everything**
    - **documents, people, things, places, events, processes**
    - **pages give access to files, sensors, actuators, controls**
- **Enablers**
  - **Business performance: more bang for buck in less space**
  - **Mobility – Knowledge work**
  - **Criminal**
  - **Non-Criminal**
  - **Proscribed Activity**

Questions

- Review certain tokens (taggants) inherent in digital forensics
- What is a token?
- What is a taggant?
- Can we derive some terms?

Digital

- Data
- Fragment
- Token
- Information
- Findings
- Evidence
- Knowledge
- Judgment

Some Forensics Theory

- Science and Law Intersection?

An exemplar - Windows XP as a forensics platform

- Some details
  - Organization
  - Present Variant & Builds
  - Installations
  - Supported Computers
  - Physical Media
  - Partitions
  - File Types
  - File Hashing of known good and known suspect

The Windows Client

- Its' Role
- The Platform
- The Build
- File System
- Registry
- The Forensics Corpus

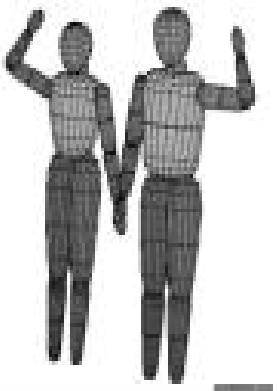
Forensics Instruments

Privacy and Our Government

Responses

- Privacy Needs
- Shredders
- Anti-Forensics
- Encryption
- Special Methods

The Emerging Tensions



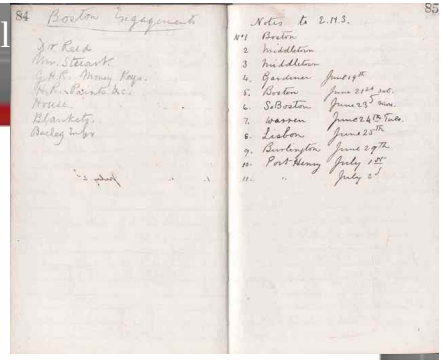
The Generalized Framework

1. Protect seized evidence
2. Recover deleted files
3. Discover (enumerate) files contained in seized materials (notable text, binary, hidden & encrypted)
4. Discover swap, temp/tmp, file slack meta-data and artifacts
5. Explore all unallocated space
6. Conduct searches for key terms, special data – imagery
7. Note any observed versus expected files, folders binaries, www data, emails and file conditions
8. Prepare a written report – archive data, findings
9. Provide expert consultation and testimony, as necessary

Some prevailing frameworks for forensics investigations

- US Laws
- Federal Guidelines
  - DOJ – FBI
  - DOD
  - NIST
- International Organization on Computer Evidence IOCE Guidelines http://www.ioce.org
- Some national and EU Privacy Issues – European Commission on Human Rights – UK RIPA
- Patriot Act October 26,2001
- Data Retention Policies in the Enron Context
- US Sorbane-Oxley – US Corrupt Activities and RICO Statutes

- The prevailing model
  - Seizure, forensics (bit copy), examination, report, deposition, testimony, archiving
  - Data extracted from both logical and physical media (active and recovered) files, data artifacts, swap space and file – device slack
  - Focus is on finding data contained in files



Notes

Your Questions

My Appreciation

- Thank you for your time and interest
- My Coordinates
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