Biometrics, Information Assurance, and Storage

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Two Presentations

1. Biometrics
   • Required by Session Chair
   • Earned Place for Second Presentation

2. Information Assurance & Storage
First Presentation - Biometrics

Why Biometrics?

- Market for Storage
- Volume of Information
- Fill Need of Society
Disclaimer

• Views Expressed Are My Own
• Does Not Reflect Views of Employer
Biometrics (Rump Session)

• Biological Features Targeted
  – Fingerprint
  – Iris
  – Face
  – Etc

• Used For Identification, Authorization
Drawbacks

• Spoofing These Not Difficult
• Opportunities Limited for Passive Collection of Information
• Limited Opportunity to Examine Face, Eye, Fingers
Addressing Drawback

• But Not for Posterior!
• Posterior Anomaly Detection (PAD)
• Dubbed “Butt Print Biometrics”
• Many Parameters To Measure
Posterior Biometrics

• IR Signatures,
  Residual Heat of Recently Seated Person(s)
• Other Parameters
  – Pressure Points
  – Perspiration
  – Area and Outline
  – Weight
Seating

• How Seated
  – On Edge
  – Legs Extended
  – Adjusting Shoes
• Not Seated, But Standing
  – On Feet, Head, Hands
• Duration: Most of Our Lives Spent Seated
Where Seated

- Airlines
- Conferences
- Meetings
- Rental Cars, etc

- Raise Hands:
  How Many of You Are Seated Now?
Deployment of PAD Technology

• Seats on These Conveyances
  And in Those Locations PADed!
• Thin, BlueTooth ® Connect PADs
• Seating Charts Monitored
  – In Cockpit
  – On Net
  – By those in Rear Echelon
Uses

• Detect
  – Terrorists (Shoe Adjustment?)
  – People Upset or Nervous
  – People Who Are Ill

• Identify People
Seating Chart
Seating Chart Usage

• Uncomfortable In Your Seat?
• Examine Seating Chart
  – You in the third Row, Why Are You So Nervous?

• Keywords: Squirm, Wiggle, Shift, Slump
Future Work (FABB)

• Lower Back Biometrics
• Posture Analysis
• Back Therapy,
• Ultimately: Holistic Seating Biometrics (Bottom, Back, Arms (If Any), Foot Area
• FABB: Foot, Arms, Back, and Bottom
Where Do We Stand Now?

• Concerned About Information Collected?
• Your Fears Are, Well, Seated
Second Presentation
Information Assurance & Storage
Information Assurance (IA)
Disclaimer

– Does Not Necessarily Reflect Views of My Employer
– Reflects My Views and Those of A Growing IEEE Information Assurance Community, And Others
Relation to Storage

• One State of Information Storage
• Same Goal: Information Delivery
• Same Issues
  – Recoverability
  – Survivability
  – Resilience
  – Etc
Inter-Dependent IT Areas

• Information Assurance (IA) Depends On All Underlying IT Areas
• Storage Depends on Developments in Information That Cross IT Areas
• E.g., Storage & “Crypto”
Old Definition of IA

- Information Operation (IO) Centric
- Reactive Mode
- Focus on Nuts & Bolts
- Focus on Intrusion Detection, Etc
- Government Committee Developed
- Not Consensus
New Definition

• IA Guarantees Timely Delivery of Information Subject to Requires of Quality of Service (QoS) Set

• QoS Set: Authentication, Authorization, Confidentiality, Integrity, Non-Repudiation (Auditing)
What is IA?

• Helper App for IT?
• Powerful Relationship to Knowledge Management (KM)
Scope of IA

- Encompasses Security, IO, But Is Proactive
- Considers All Sources of Failure
  - Malicious Humans
  - IT Flaws
  - Other?
- (Not Formal, Complete Scope)
IT Flaws, Storage Example

• Storage Capacity Growing 10x Faster Than Storage Throughput
  – Jim Gray, Rules of Thumb Paper

• You Can’t Have Your Data and Read It Too!

• Irresponsible Computing?

• Ship-In-A-Bottle
Higher Level Goals of IA

• Mission Completion
• Business Continuity
• HLGs = Higher Level Goals
Value of HLGs

- Transparent Nuts & Bolts Not Interesting
- CEOs, Generals Interested in HLGs
- Security, IO Viewed As Nuisance Overhead
- Transparency Guarantees This View
- Support for HLGs, Proactive IA Means Better Support Indirectly for Transparent Nuts & Bolts
IEEE IA Activities

• Standards for
  – Reliable Software
  – Protection Profiles (OS, Key Mgmt, VPN, etc)
  – Definition of Terms
  – Security in Storage
• Workshops
• Meetings with NSA, NIST, DHS, etc
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