

Information Accountability

CyberTrust PI Meeting
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Defintions of Accountability

Accountable Systems are those that:

- Hold people responsible for behavior when they deviate from the rules that apply to the system
- Raise the cost of rule violation for adversaries
- **Not** systems that provide provable *a priori* enforcement of rules

Sample Accountable Systems

- Microsoft
- Banking system
- Access logging
- Wiki - edits and citations
 - Plus: logging
 - Minus: spammed - lack of editorial control
 - Admin people may not be accountable
- Secure voting systems - want to know where it may have failed
- Proof carrying authorization
 - Is the goal to hold people or systems accountable?

Sample Accountable Systems

(cont.)

- Hold people accountable
 - Protection of PII in business process
 - Protect user's data
 - Semantically annotated Xaction logs
 - Provide forensics
 - Alert users of potential violations
- Important to hold system accountable
 - Make the people who built the sys. Accountable
 - Reputation of software is critical
- Domain keys (email) - commercial deployment - verify sending domain
- Workflow systems

Sample Accountable Systems

(cont.)

- Online virtual worlds
 - Concern: Bots coming in
 - User experience degraded -> lose of users
- PGP
- Wireless - name the access point & machine
 - Breaks down in ubiq. Comp. CONOPS
- Virtual Organization across multiple physical domains
 - Single sign on
 - Shared storage spaces

Where is it needed?

- Email
 - Spammers not accountable
 - Currently people could lose job via email
- Evidentiary chain of custody?
 - Too much data? Inadequate discovery capability?
 - Problem may be related to semantic structure of information
 - Could have tools to reveal information
 - Someone else judges intent

Where is it needed?

- Need balance with privacy
- Legitimacy of data
 - Confidence in integrity
 - Sensitive data - log who touched when
 - Are access controls OK? (spot checked)
- Cost of accountability?
 - Overhead may overwhelm intended system functionality
- Accountable systems make risk to adversary higher - from adversary point of view
 - Example: Anti fraud systems for credit cards