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Compliance Is Security

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Agenda

- The mantra heard round the world
- Compliance defined
- Official requirements
- Compliance is never done
- Defense in depth
- “A surprise”
- Compliance really is security

The Mantra Heard Round The World

"Compliance does not equal security"

Or … does it?

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The Breaches Do Not Bear That Out

- 2015 Verizon Data Breach Report
  - 40% of attacks are using stolen credentials
  - 25% of attacks using RAM scrapers
  - 25% of attacks using phishing
  - 10% of attacks using keyboard logging

- Do these attack vectors sound like they are coming from "compliant" organizations?
  - Verizon's analysis says they were NOT compliant

Compliance Defined

"Conformity in fulfilling official requirements."

Official Requirements

- NIST
  - FedRAMP
- ISO 27K
- PCI
  - Data Security Standard (DSS)
  - Payment Application Data Security Standard (PA-DSS)
  - Payment Terminal Security (PTS)
- HIPAA HITECH
  - HITRUST

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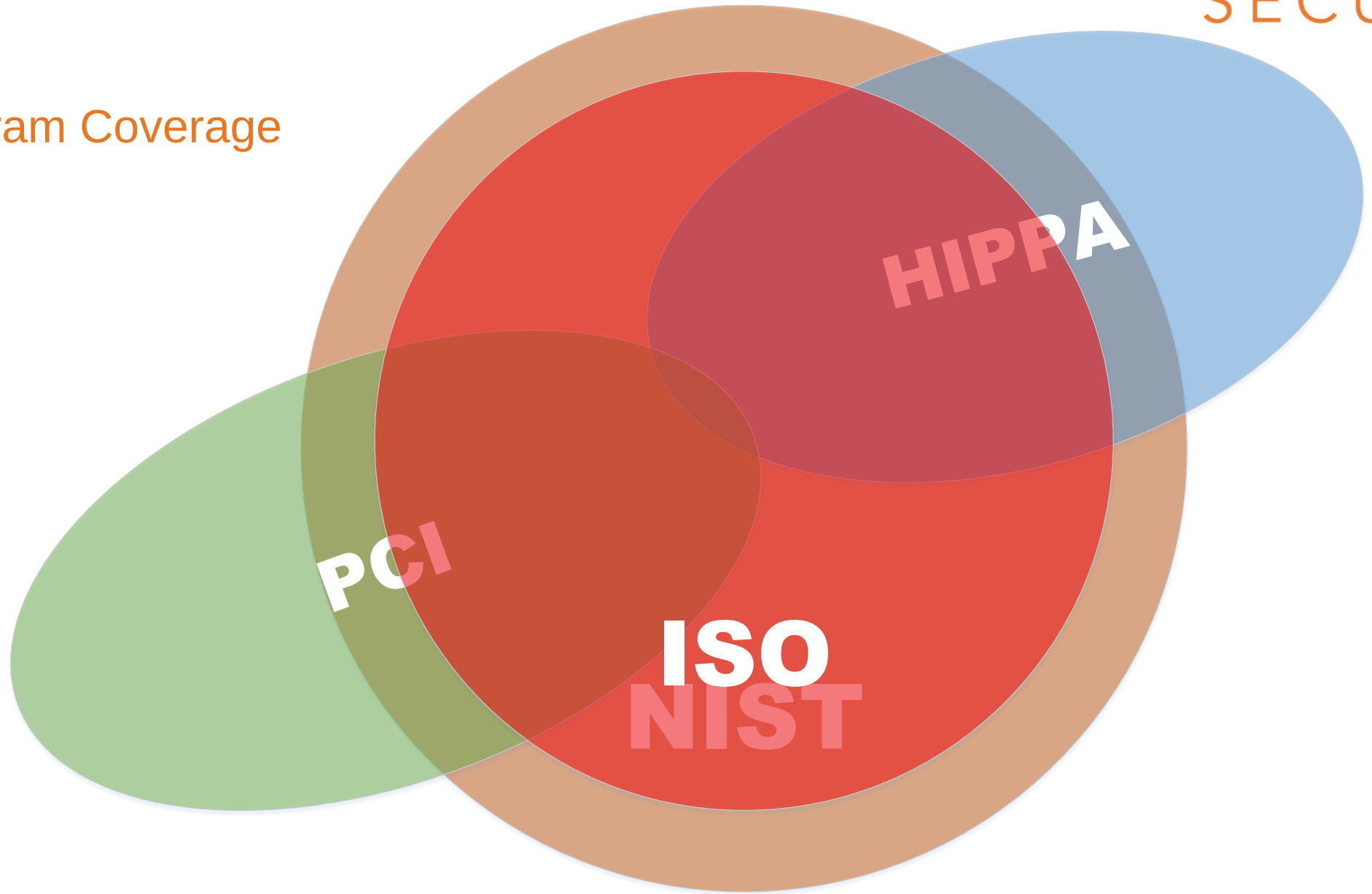
Program Coverage



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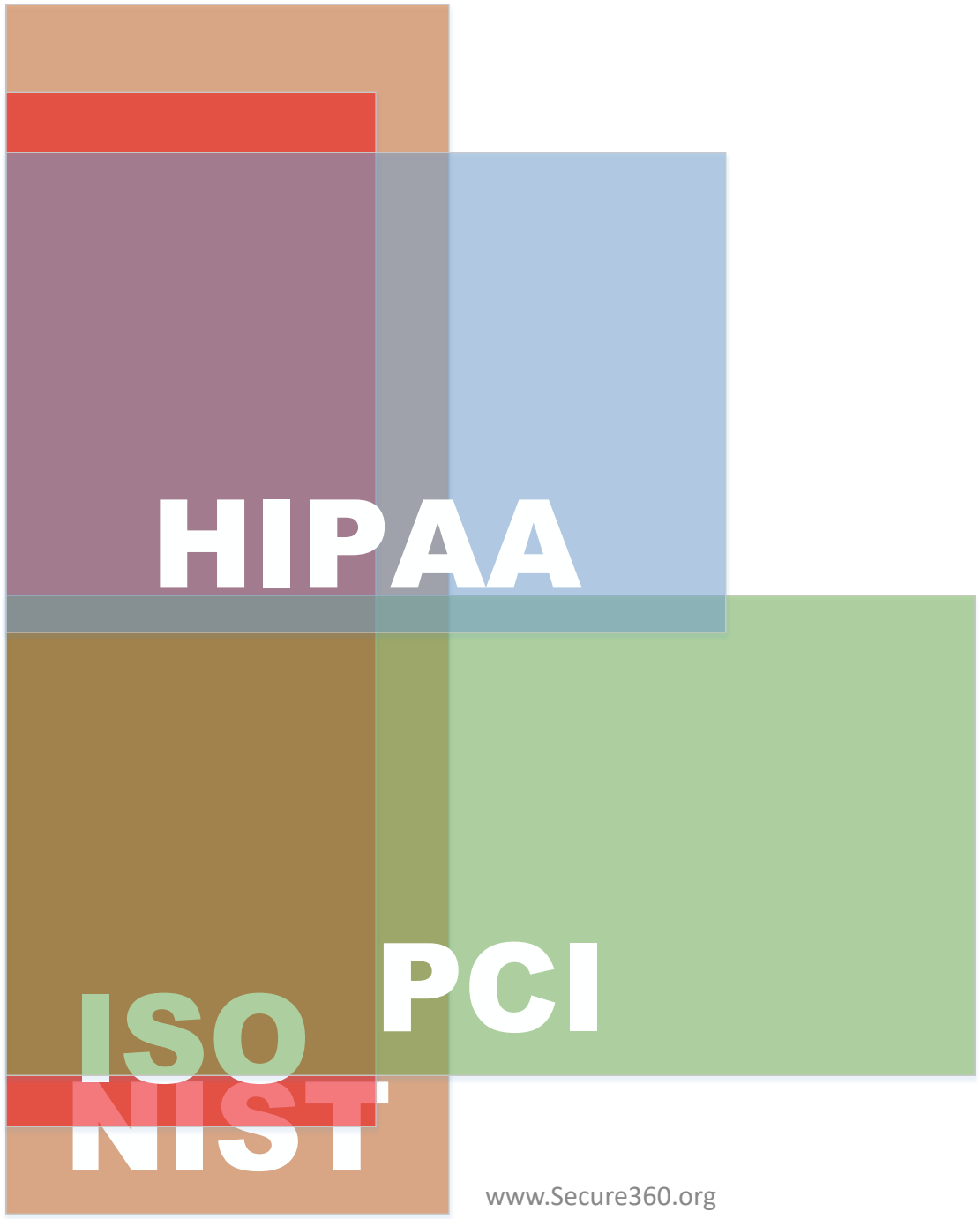
Program Depth



NIST vs ISO 27K

- NIST
  - Focused on all of information security and all systems
  - Multiple standards
    - Some standards are very high level and others are very detailed
  - Basis for most other information security standards
- ISO 27K
  - Focused on all of information security and all systems
  - Multiple standards
    - General standard (27001)
    - More detailed standard (27002)

HITECH vs PCI DSS

- HIPAA HITECH
  - Focused on the processing, storage and transmission of personal health information (PHI)
  - Goes into detail on protection of PHI and its recovery
  - Scope only covers systems that process, store or transmit PHI
- PCI DSS
  - Focused on the processing, storage and transmission of sensitive authentication data (SAD) and cardholder data (CHD)
  - Goes into detail on protection of SAD/CHD
  - Scope only covers systems that process, store or transmit SAD/CHD

Caveats On Official Requirements

- They are all only baselines
  - Collection of “best practices” or “shared knowledgebase” for ensuring information security
  - The bare minimum for being secure
  - Some more in-depth than others
- Scope of each framework is not equivalent
- They are not the “be all to end all” in information security
  - Need to be tweaked for your environment/equipment/architecture
  - May need to be enhanced/changed if your environment does not lend itself to their practices

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Caveats On Official Requirements

- HITRUST
  - An admirable attempt to map various security standards to reduce assessment overlap and fatigue
    - HITECH, NIST, ISO 27K, PCI DSS, SOX
  - At this point, does not deliver on its promise
    - Mapping between the standards does not appear accurate
    - Assumes the scope from one standard is sufficient for other standards
    - Assumes that assessment testing is consistent from standard to standard
    - Assumes the level of testing detail required by one standard is sufficient for other standards

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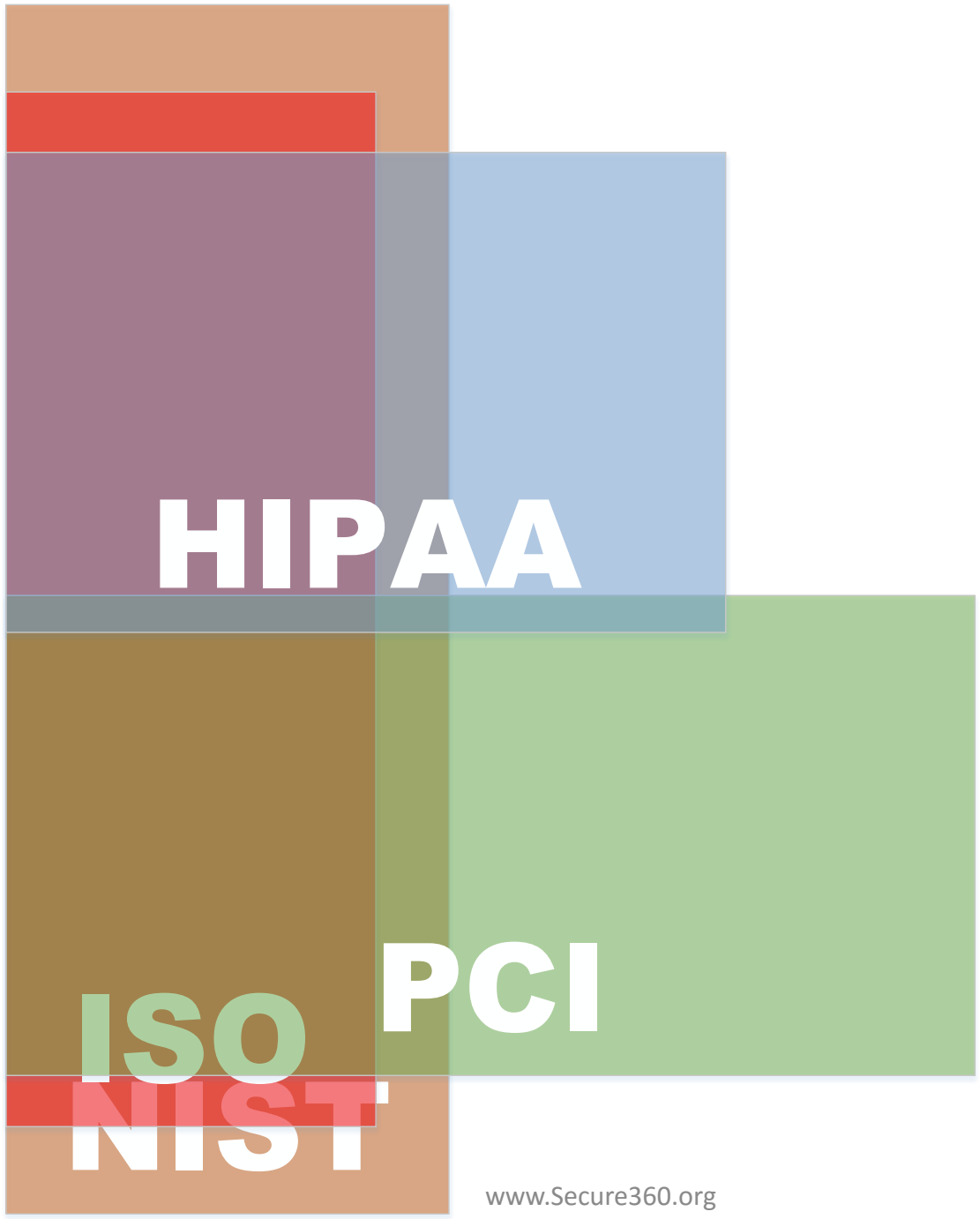
Program Depth



Testing Example #1

- User management
  - HITECH – users with access to PHI are tested
  - PCI DSS – users with access to bulk SAD/CHD are tested
  - SOX – users with access to material financial data are tested

- Are system users in these groups the same?
  - Probably not other than possibly system and network administrators
  - As a result, any testing in one group will not cover the other two groups

Testing Example #2

- Internet-based solutions
  - HITECH – electronic medical records (EMR) online solution is in-house providing a secure gateway to internal EMR
  - PCI DSS – bill payment is outsourced to payment processor
  - SOX – financial systems are isolated away from all other systems

- How do you get leverage from testing?
  - You do not
  - Solutions were isolated from one another for valid security, compliance and business reasons

Compliance vs Consistency

- Standards must be followed and executed 24x7x365 without significant lapses in coverage to ensure security
  - Organizations confuse “compliance” with “consistency”
  - If people are NOT executing security standards and procedures consistently each and every day, then they are NOT complying with those security standards and procedures
    - Therefore, the organization is NOT compliant
  - However, a security assessment is not necessarily a good gauge of an organization being secure because they are usually completed as of a single point in time, not over a period of time

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The Dilemma-Compliance Is Never 100%

- Organizations constantly generate alerts or have gaps in security
  - Spam
  - Phishing
  - User sends an email or instant message that contains prohibited information
  - Account locked out due to password forgotten
  - User attempts to access a “bad” Website
  - User infects computer from email attachment or file from USB drive
  - User accesses an infected USB drive
  - DDoS attacks

Compliance Is Never Done

- Compliance is an on-going effort NOT a one time thing
  - Compliance is a constant journey not a destination
- Compliance with a standard says that, at a given point in time, the organization complied with the standard
  - Although, this appears to be changing for some standards
  - Which means the cost of ensuring compliance will go up because additional testing will be required

Which Is Why …

- We have defense in depth
  - People make mistakes or have accidents
  - Because of mistakes/accidents, we need other controls to prevent those mistakes/accidents from creating holes in our security

Bank Defense In Depth

- Alarm system
- Multiple vaults
- Time locks
- Video surveillance
- Dye packs
- Limited amount of cash in drawers
- Guard(s)
- Bullet proof glass
- Regular cashier training and robbery drills

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Technology Defense In Depth

- Physical security on data centers
- Firewalls with access control lists (ACL)
- Intrusion Detection/Prevention (IDS, IPS)
- Anti-virus and anti-malware
- Application white and/or black listing
- System incident and event management (SIEM)
- Integrated authentication management (IAM)
- Critical file monitoring (FIM)
- Encryption

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What Was Missing Between The Two?

- Security awareness training
  - The big gap that remains in information security
    - We are great technologists
    - We are lousy with people which is why we are technologists
  - Why social engineering techniques are being relied upon to breach organizations
    - Everyone has firewalls with ACLs, IDS/IPS and other security technologies
    - Humans (i.e., hOS) are not regularly “patched”
    - Easier to hack a human than a firewall or network

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Security Awareness Is …

- NOT easy
- NOT effective if not done regularly
  - You really think that annual training is often enough? Think again
- NOT effective if not made relevant
  - Explain the scams not the technologies behind them
- NOT effective for all people
  - Some people are just gullible and cannot be “patched”
  - Have to mitigate this risk with either additional controls or move these people into positions where they present little risk

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Take Aways

- 24x7x365 compliance with an organization's security policies, standards and procedures is NOT easy
- Complying with a standard as of a given point in time IS easy
- We have all of the technology we need but we need to use it better
- Security awareness training is the last area we need to address
- Partner with Human Resources, security training companies and industrial psychologists for security awareness training assistance

Bottom Line

- Done right, compliance does equal security

Thank You!

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