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# Relevance of IT General Controls and Tests of Controls on Performing a More Efficient and Effective Audit

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# The Relevance of ITGCs and Test of Controls to Substantive Procedures

September 18, 2014



Building a better  
working world

# Learning Objectives

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- ▶ IT General vs. Application Controls
- ▶ IT General Control Definitions
  - ▶ Manage Changes
  - ▶ Logical Access
  - ▶ Other ITGC
- ▶ Overview of ITGC Testing
  - ▶ Overview of ITGC Effective Testing
  - ▶ Overview of ITGC Ineffective Testing

# IT Fraud Issue Areas

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Complex environment



Poor use of controls



User override powers



Superuser IDs



Inappropriate programmer access/controls

# IT General Controls



# IT General vs. Application Controls

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## IT General Controls:

Relate to managing change, logical access, and other IT general controls, including IT operations applied to individual applications and do not operate at the individual transaction level

## Application Controls:

Apply to every transaction

Reviewed at a “point in time”

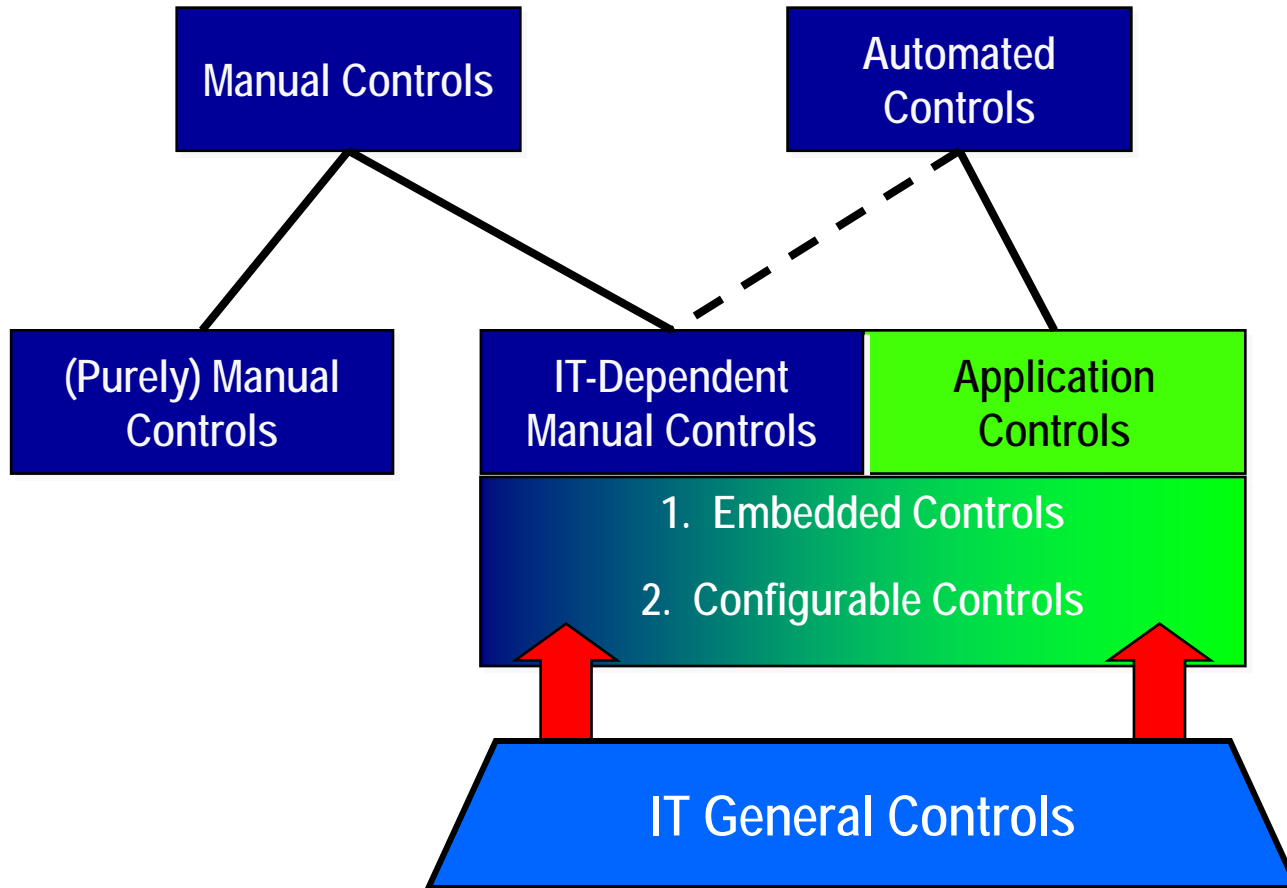
***“Application and IT general controls go hand in hand.”***

# IT General vs. Application Controls (Cont.)

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- ▶ Automated Controls (usually relate to business processes):
  - ▶ Application controls
  - ▶ IT-dependent manual
- ▶ IT General Controls:
  - ▶ Manage changes
  - ▶ Logical access
  - ▶ Other IT general controls, including IT operations

# IT General vs. Application Controls (Cont.)





# IT General Controls – General

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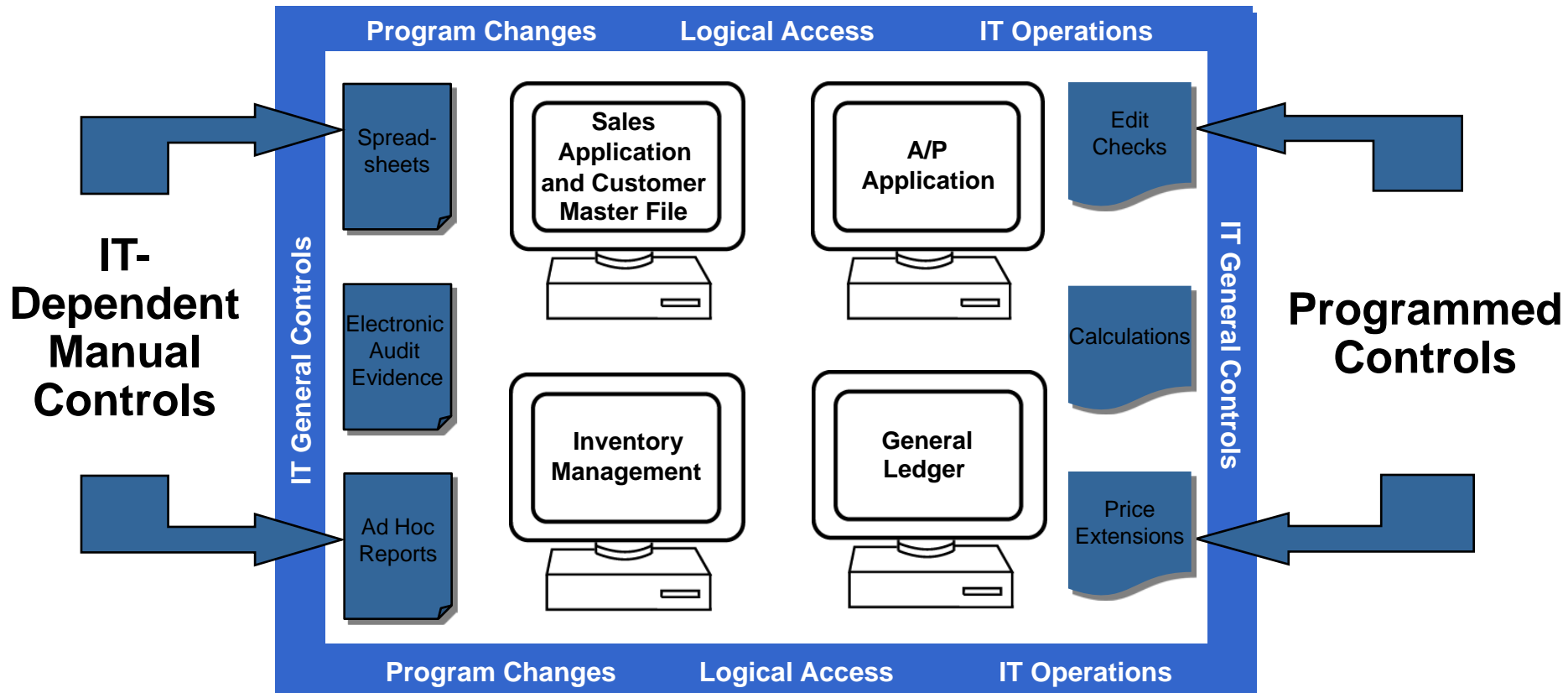
- ▶ Focus Areas:
  - ▶ Application
  - ▶ Operation system
  - ▶ Database
  - ▶ Networks
- ▶ Understand the IT Environment at the Entity Level:
  - ▶ Identify all significant applications and infrastructure
- ▶ Purpose:
  - ▶ Relationship between significant process and applications
  - ▶ Relationship between applications and infrastructure
  - ▶ Indicate where we might want to rely on electronic audit evidence
  - ▶ Identify areas on which to focus our review

# IT General Controls

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<b>ITGC Controls</b>	<b>Relation to IT Processes</b>
Manage Changes	Program Development Program Change
Logical Access	Access to Programs and Data
Other IT General Controls – Including IT Operations	Computer Operations

# Effect of ITGC on Applications/Controls



# IT General Control Definitions



# IT General Controls – Definitions

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- ▶ **Manage Changes:**
  - ▶ Process that provides for the analysis, implementation, and follow-up of all changes requested and made to the existing infrastructure
- ▶ **Logical Access:**
  - ▶ Process of safeguarding IT systems and resources against unauthorized use, modification, disclosure, or loss
- ▶ **Other IT General Controls (including IT operations):**
  - ▶ Process to determining that IT resources and applications continue to function as intended over time

# Manage Changes: Components

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- ▶ Authorization of changes
  - ▶ Are changes authorized to be made?
- ▶ Appropriate testing of the change before moving into production
  - ▶ Are changes tested in a test environment before transferred to a production environment?
- ▶ Approval of change before moving into production
  - ▶ Are changes approved by the appropriate stakeholders or department(s) that are affected.
- ▶ Monitoring of the change process

# Manage Change

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- ▶ What does **manage change** mean to a business?
  - ▶ New system implementation
  - ▶ Upgrade of existing system
  - ▶ Addition of new functionality to an existing system
  - ▶ New or changed interfaces connecting different applications
  - ▶ Minor enhancement
  - ▶ Patched Systems/Applications
  - ▶ Emergency changes
  - ▶ Configuration changes

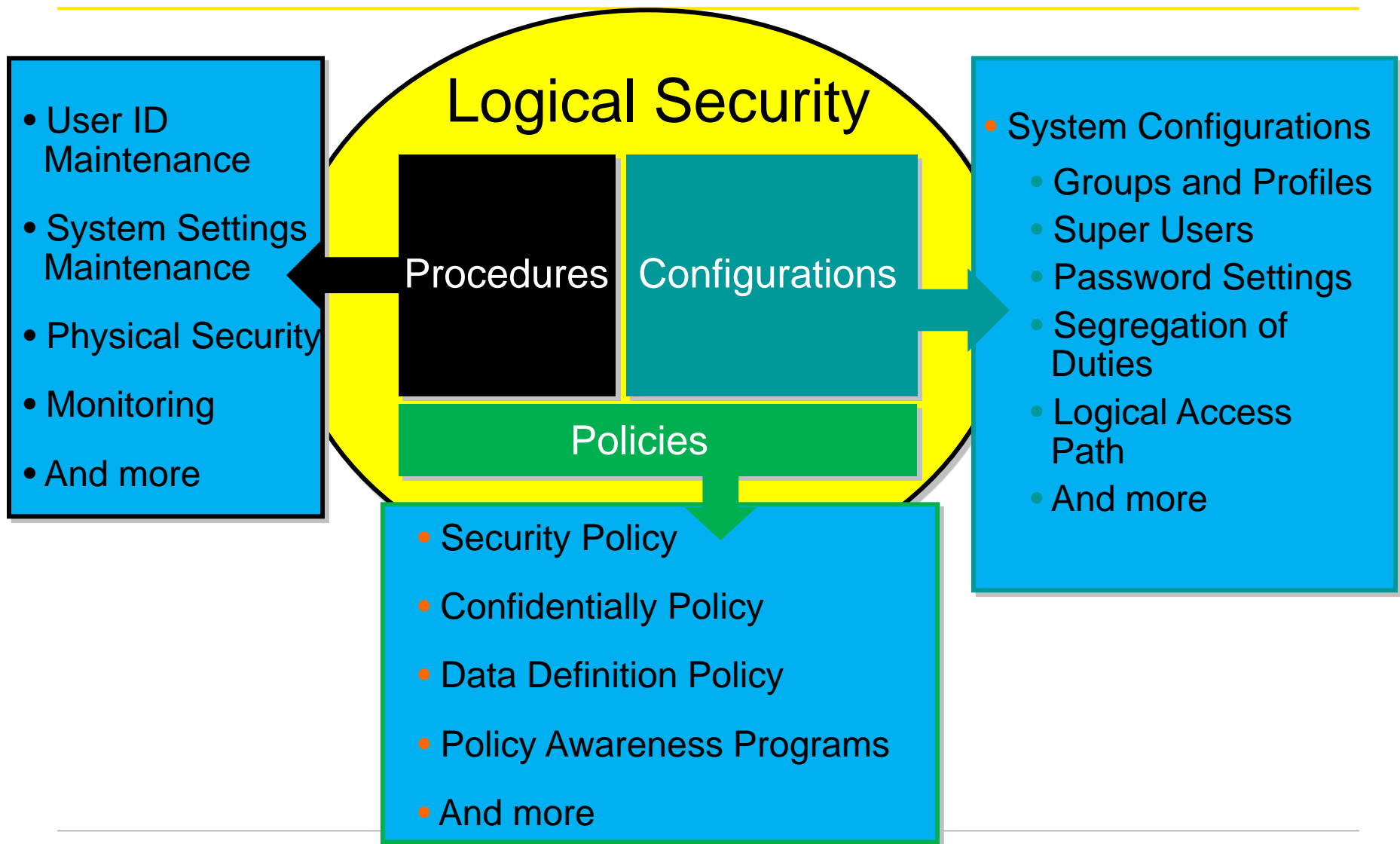
# Logical Access: Components

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- ▶ Access for each relevant element of the logical access path
- ▶ Tools supporting the controls over the relevant elements
- ▶ User-access authorization
- ▶ Physical security of computer equipment used to support initiating, authorizing, recording, processing, and reporting of significant transactions
- ▶ Monitoring of user access (logging of invalid access attempts)



# Logical Access Process Components



# Other IT General Controls : Components

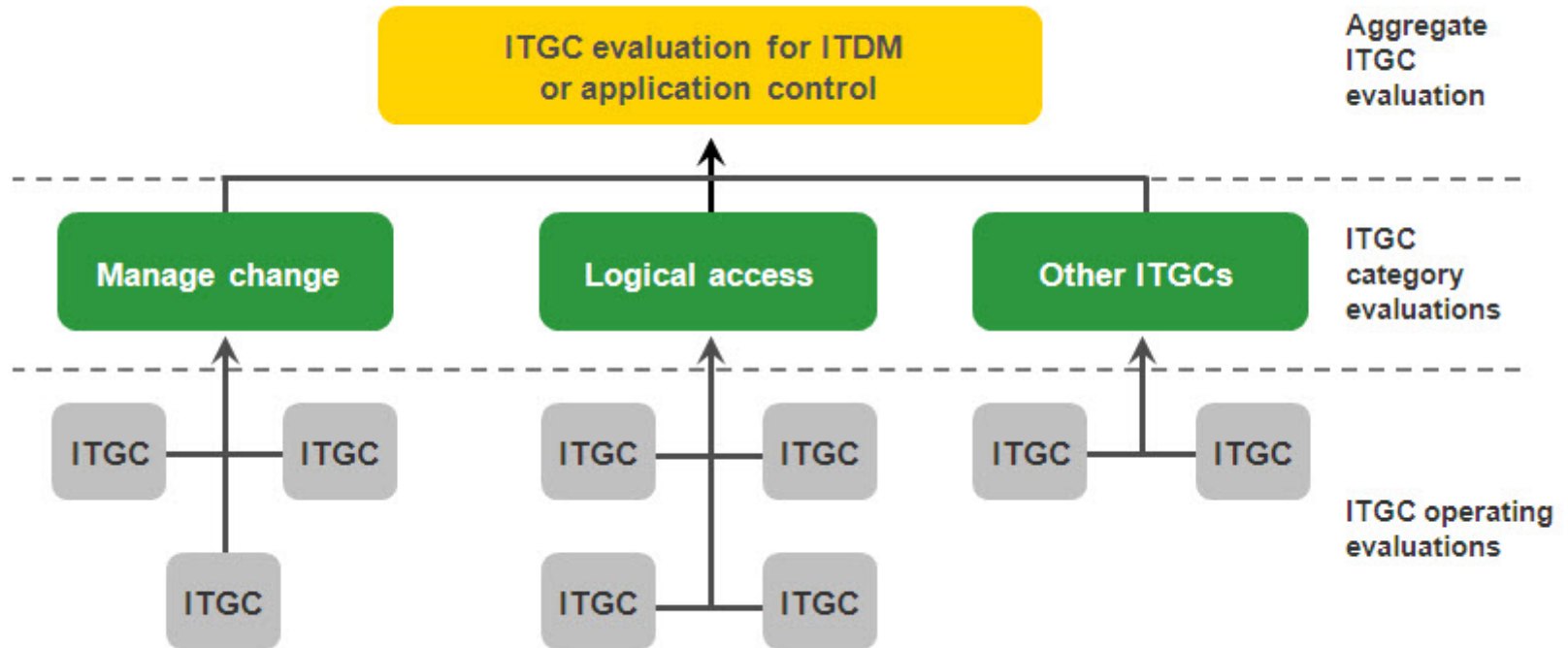
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- ▶ Scheduling of jobs
  - ▶ Automatic system updates; automated scheduled data exports.
- ▶ Back-up and recovery.
  - ▶ Backup policies and restoration testing.
- ▶ Problem and incident management
  - ▶ Monitoring of computer issues to determine if there is a larger underlying issue.

# Overview of ITGC Testing



# Overview of ITGC Testing



# Overview of ITGC Testing (Effective)

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Potential benefits for an effective ITGC environment include:

- ▶ Increasing our confidence in the reliability of data used to generate analytics
- ▶ Streamlining procedures performed between interim and year-end
- ▶ Performing substantive procedures earlier in the year
- ▶ Reducing the overall extent of substantive tests
- ▶ Reducing tests of income statement accounts

# Overview of ITGC Testing (Ineffective)

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## Considerations of Ineffective ITGC

- ▶ Which IT applications has ineffective ITGC category evaluations.
- ▶ Which ITGC category or categories were ineffective overall.
- ▶ Significant Accounts that are affected by the ineffective ITGC Category evaluations.

# Results of Ineffective ITGC

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- ▶ If one or more ITGCs are evaluated as ineffective and we are neither able to identify nor effectively test compensating controls, we may be able to perform other substantive procedures to support an effective evaluation regarding the continued functioning of the affected application and ITDM controls and reliance on sources of EAE.

# ITGC and Electronic Audit Evidence

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## Electronic Audit Evidence (EAE)

- ▶ Determining the source of the EAE (i.e., which IT application produces the EAE)
- ▶ Testing the clerical accuracy of EAE (to address program change weaknesses)
- ▶ Testing of the electronic data to determine the completeness of the data flows to and from original source documents (to address logical access weaknesses). We perform this testing each time the electronic evidence is otherwise tested.



# Test of Controls

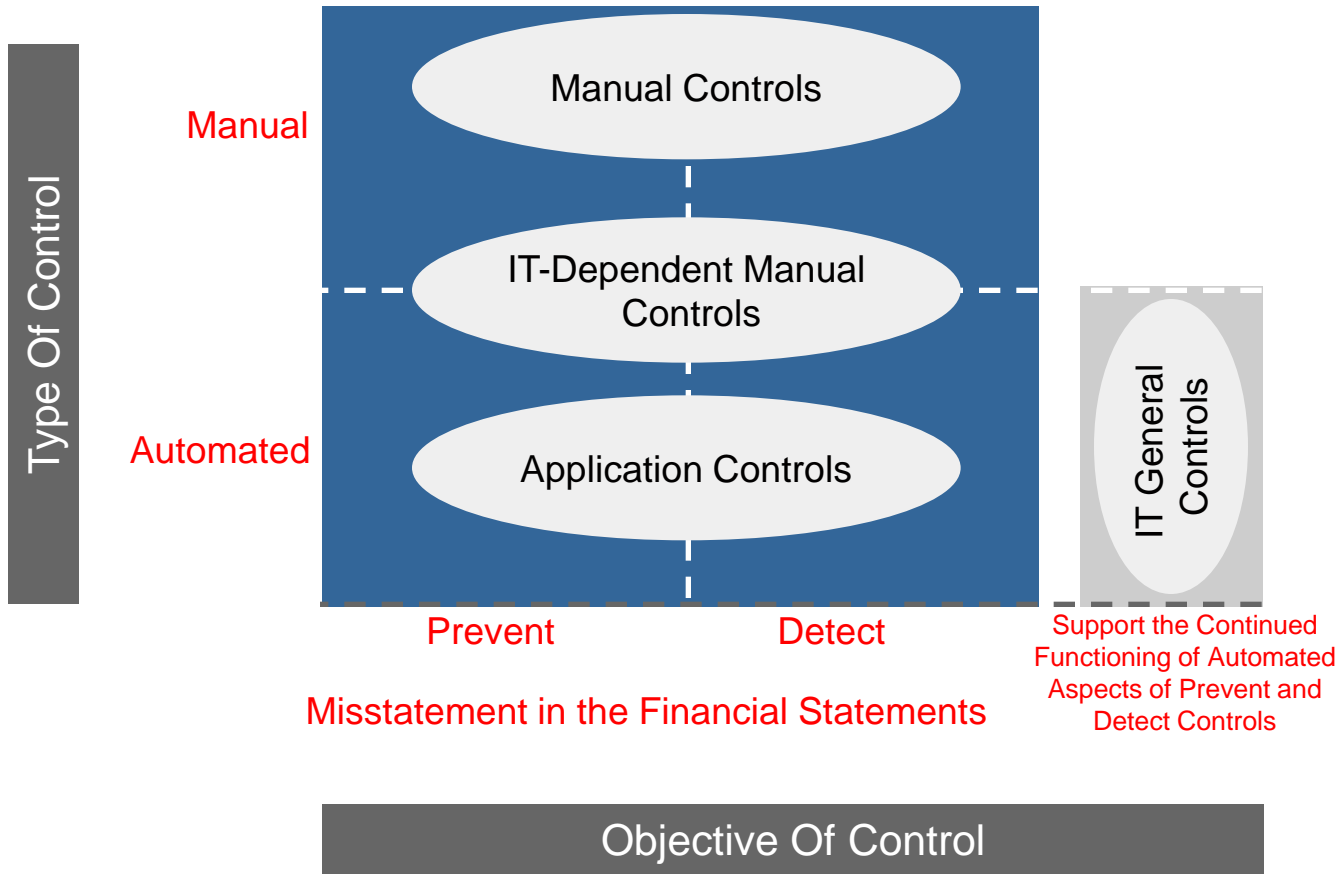


# Learning Objectives

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- ▶ Types of Controls
  - ▶ Manual
  - ▶ IT, Dependent Manual
  - ▶ Application
  
- ▶ Overview of Controls Testing

# Categories of controls



# Manual Controls

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- ▶ Performed by an individual without the assistance of IT systems
  - ▶ i.e. review of controller related to check payments
- ▶ Results of ITGC: No affect on testing of controls
- ▶ Test random samples, amounts depend on frequency of control:
  - ▶ Daily: 25
  - ▶ Weekly/Biweekly: 4
  - ▶ Monthly: 2
  - ▶ Annual/Semi-annual: 1

# Manual Controls

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- ▶ Typical testing procedures
  - ▶ Inquiry (cannot be performed by itself)
  - ▶ Reperformance
  - ▶ Inspection
  - ▶ Observation

# IT-Dependent, Manual Controls

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- ▶ Controls performed by an individual that have both manual and automated aspects
  - ▶ i.e. management review of monthly variance reports produced by the system
- ▶ Results of ITGCs
  - ▶ Effective: Reduce testing requirements of EAE
  - ▶ Ineffective: Require testing of EAE
- ▶ Testing generally follows that of manual controls.

# IT-Dependent, Manual Controls

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- ▶ Typical testing procedures
  - ▶ Inquiry (cannot be performed by itself)
  - ▶ Reperformance
  - ▶ Inspection
  - ▶ Observation

# Application Controls

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- ▶ Automated controls processed by IT applications without input from a person.
  
- ▶ Result of ITGCs:
  - ▶ Effective: Test of 1
  - ▶ Ineffective: extended testing/ control may not be tested
  
- ▶ Types of Application Controls
  - ▶ Edit Checks
  - ▶ Validations
  - ▶ Calculations
  - ▶ Interfaces
  - ▶ Authorizations



# Application Controls

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- ▶ Typical testing procedures
  - ▶ Reperformance
  - ▶ Inspection of authorization
  - ▶ Inspection of configuration

# Timing of Control Testing

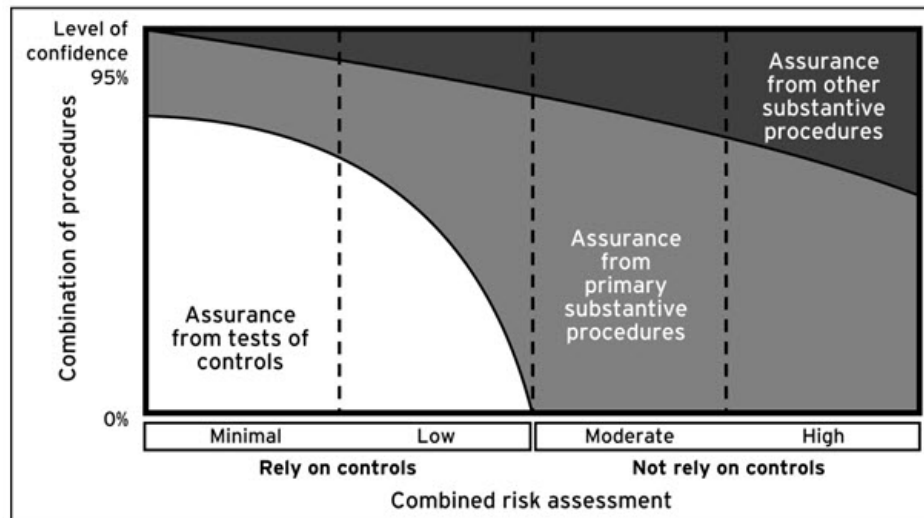
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- ▶ Can be performed before or after the balance sheet date
- ▶ If performed before the balance sheet date, need evidence to support that the controls operated effectively throughout the audit period. May include additional update procedures.

# Combined Risk Assessment

		Control Risk Assessment	
Inherent Risk Assessment		Rely on controls	Not rely on controls
	Lower	Minimal	Moderate
	Higher	Low	High

Combination of procedures dependent on CRA



# Substantive Procedures



# Learning Objectives

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- ▶ Effect of Controls Reliance and effective ITGCs on
  - ▶ Nature
  - ▶ Timing
  - ▶ Extent

# Substantive Procedures

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- ▶ An audit procedure designed to detect material misstatements at the assertion level.
- ▶ Types:
  - ▶ Test of details
    - ▶ Direct testing of data to include:
      - ▶ Key items
      - ▶ Representative sample
      - ▶ Others
  - ▶ Substantive analytical procedures
    - ▶ Analytical procedures designed and performed, either alone or in combination with tests of details, as substantive procedures.

# Substantive Procedures - Nature

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## ▶ Rely Controls

- ▶ Make available, substantive analytical procedures
- ▶ Can reduce the extent of other substantive procedures
  - ▶ i.e. for revenue testing, perform only substantive analytical procedures

## ▶ Not rely on controls

- ▶ Will require assurance from primary and other substantive procedures
  - ▶ i.e. for revenues, test of transactions (separate samples may be required for different revenue streams with different processes)
  - ▶ May also require test of details

# Substantive Procedures - Timing

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## ▶ Effective

- ▶ May perform procedures before year end
- ▶ Will require update on procedures at year end
- ▶ Moves up timing of audit

## ▶ Ineffective

- ▶ Procedures will need to be performed at year end



# Substantive Procedures - Extent

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## ▶ Effective

- ▶ May reduce total sample sizes
  - ▶ Depending on CRA, may test only key items
  - ▶ May also test a limited amount of representative samples

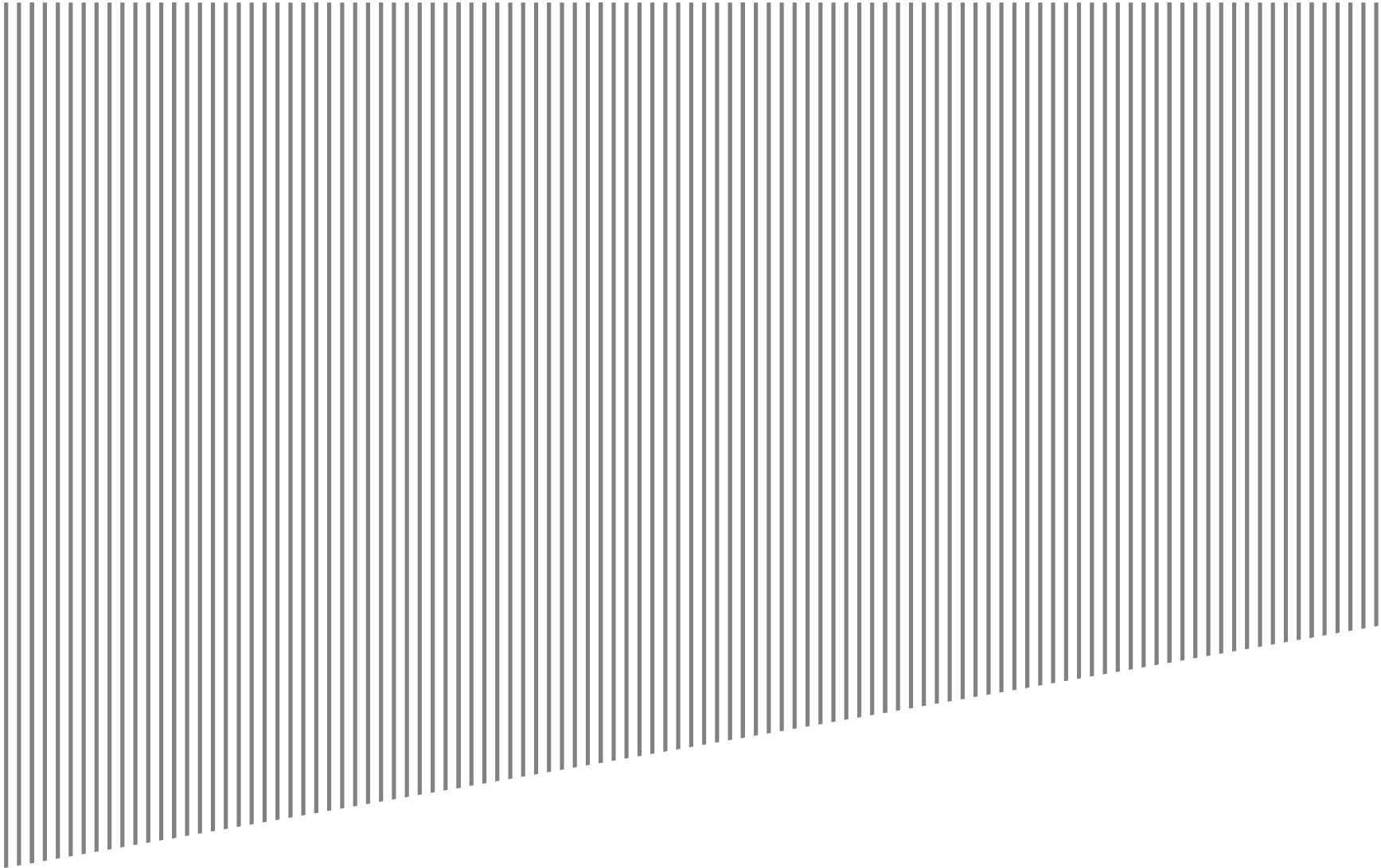
## ▶ Ineffective

- ▶ Will need to test a level of sample that can provide statistical comfort on account, i.e. representative samples.
- ▶ For test of transactions, may need to test upwards to 60 samples per revenue stream.

# Takeaway

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- ▶ Effective ITGCs and controls go a long way in improving a Company's business process
- ▶ Auditor testing helps to improve audit quality
- ▶ Certain advantages in moving procedures before year end, to a non-busy period



# QUESTIONS

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