TAMU ITEC Update

Thursday, February 29, 2024

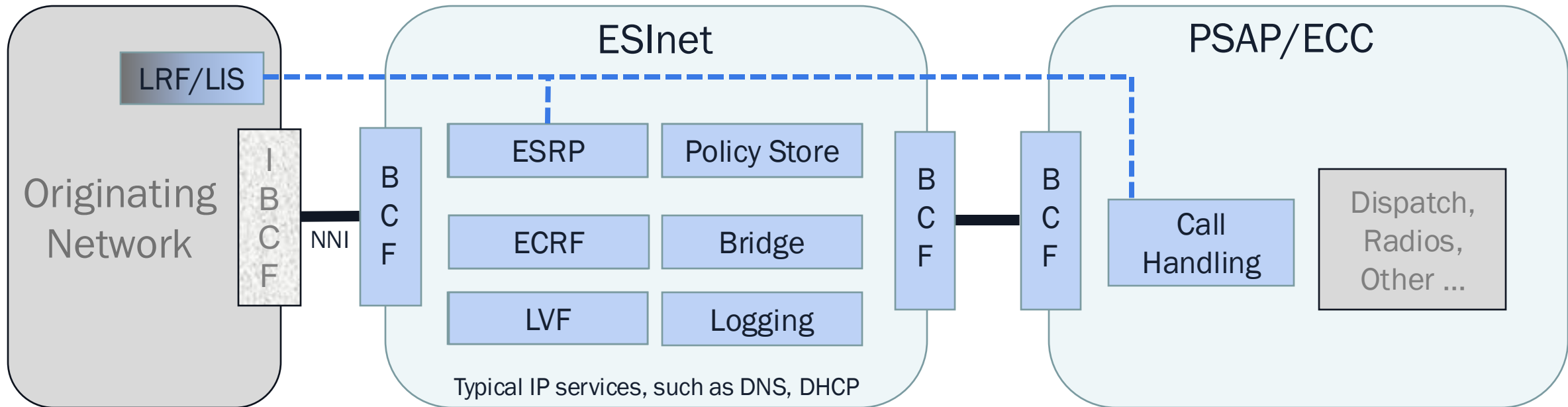**NG9-1-1 Interoperability Task Force**

Agenda

- Statement of Work

- Test System Scope

- Test System Work Breakdown (simplified)

- NG911-ITF Involvement

- Testing as a Service (TaaS) Platform

- ISO 17025 Accreditation
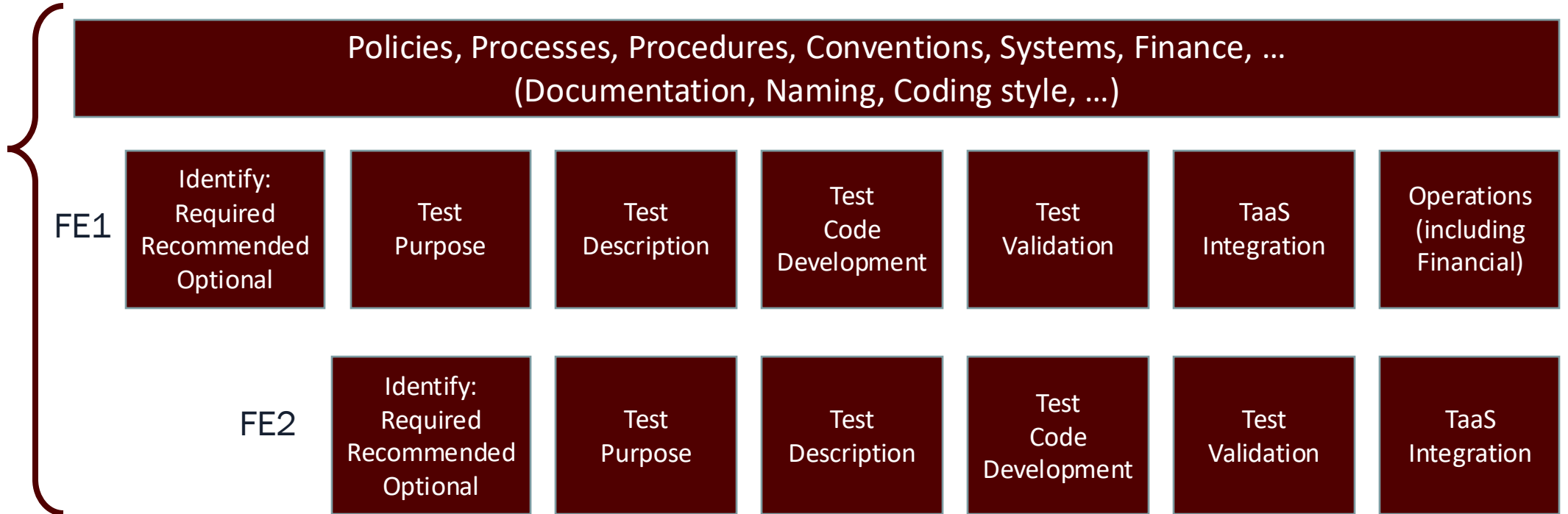
- Next Steps

Statement of Work (TAMU → DHS)

- ## Develop test system
  - Open-source test suite; TaaS web platform
  - Conformance, interoperability, end-to-end

- ## Test validation
  - Define, conduct, and document procedures

- ## ISO 17025 accreditation
  - Including 3rd party audit and documentation of how to achieve it

- ## Research and outreach
  - NENA, APCO, IWCE conferences; ITF, NENA, NASNA, APCO meetings

- ## Cybersecurity assessment and recommendations
  - Testing system, test lab, network elements, EC3

Test System Scope

Originating Network

LRF/LIS

I B C F

NNI

B C F

ESInet

ESRP	Policy Store
ECRF	Bridge
LVF	Logging

Typical IP services, such as DNS, DHCP

B C F

B C F

PSAP/ECC

Call Handling

Dispatch, Radios, Other ...

Legend:

In Scope

Out of Scope
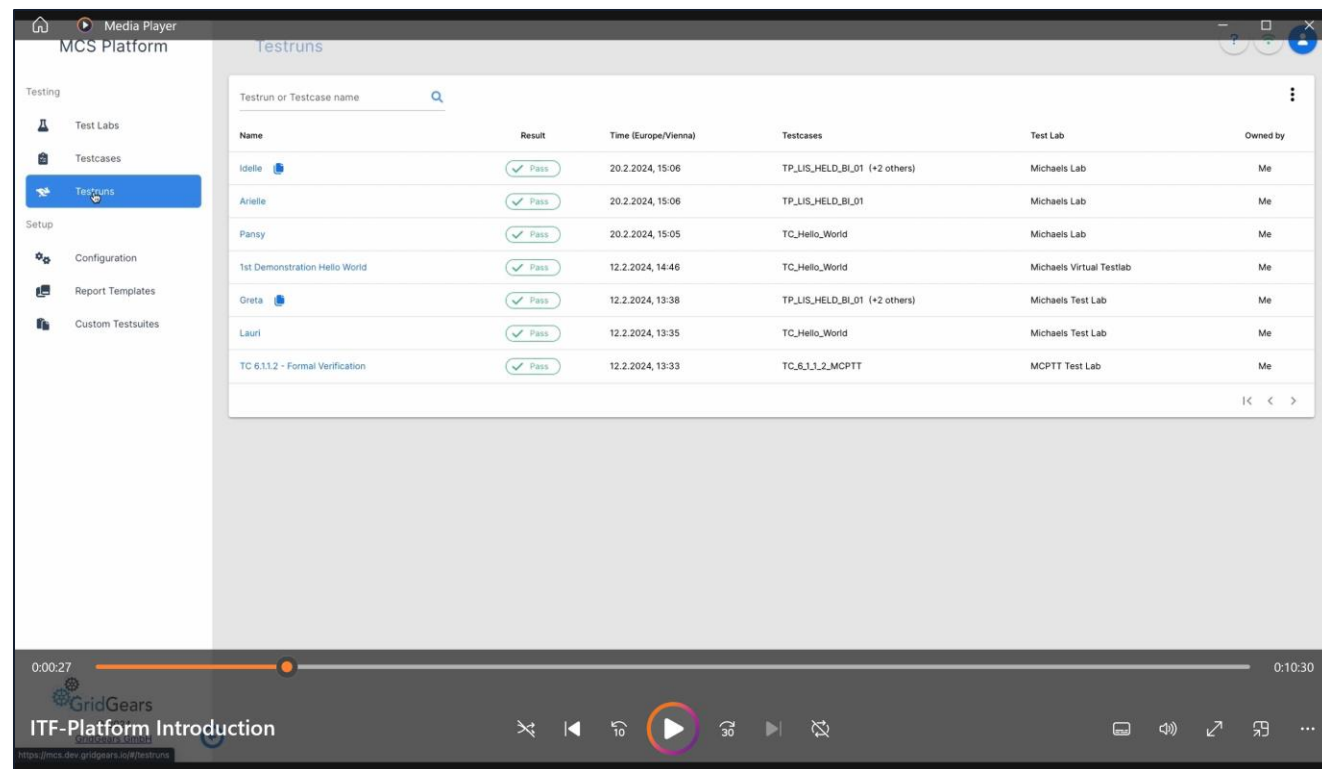
Out of Scope (TAMU)
In Scope (ITF-TC)

LRF = Location Retrieval Function
LIS = Location Information Server
NNI = Network to Network Interface
ESInet = Emergency Services IP Network
PSAP/ECC = Public Safety Answering Point/Emergency Call Ctr
ESRP = Emergency Services Routing Proxy
ECRF = Emergency Call Routing Function
LVF = Location Validation Function
BCF = Border Control Function

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Test System Work Breakdown (Simplified)

ITEC

Policies, Processes, Procedures, Conventions, Systems, Finance, …
(Documentation, Naming, Coding style, …)

FE1

| Identify: Required Recommended Optional | Test Purpose | Test Description | Test Code Development | Test Validation | TaaS Integration | Operations (including Financial) |

FE2

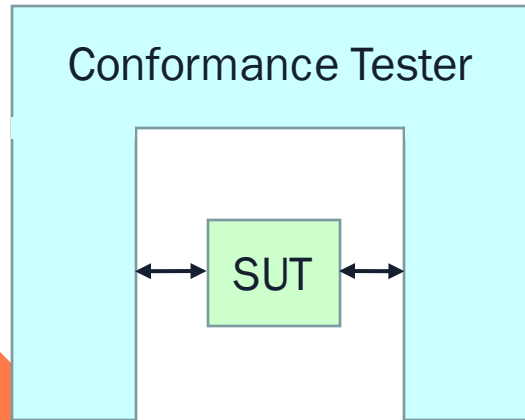| Identify: Required Recommended Optional | Test Purpose | Test Description | Test Code Development | Test Validation | TaaS Integration |

Testing as a Service Platform

- Pulls from same GitHub and runs same open-source tests
- Simplifies configuration, operation, reporting for non-developers
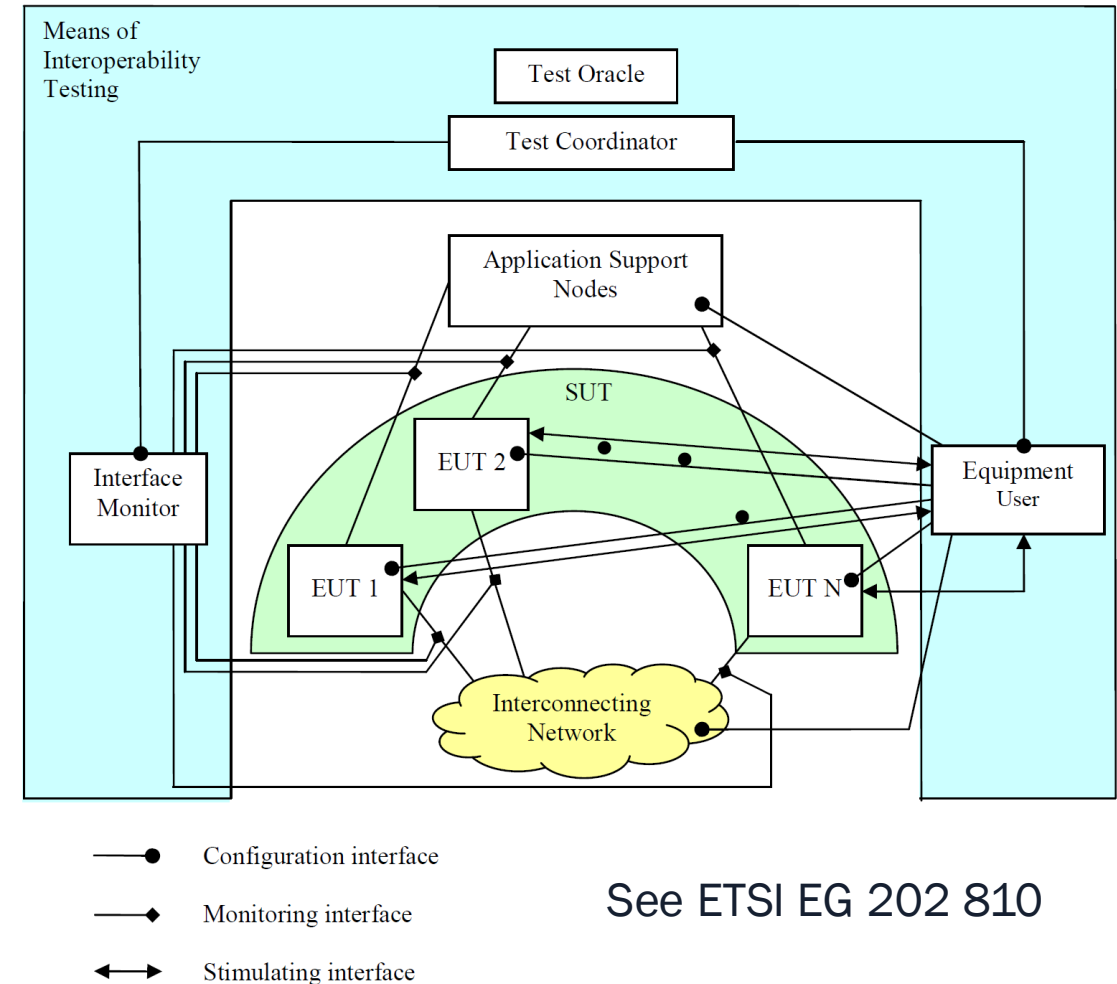
Video:
Testing Platform Introduction

- A 10-minute video demonstrating key capabilities of the testing platform

Investigating: Automated Interoperability Testing

Conformance Tester

SUT

→

Conformance
Testing
Plus
Interoperability
Profiles

→

Key question: Can we architect the test cases such that they can be reused for interoperability testing?
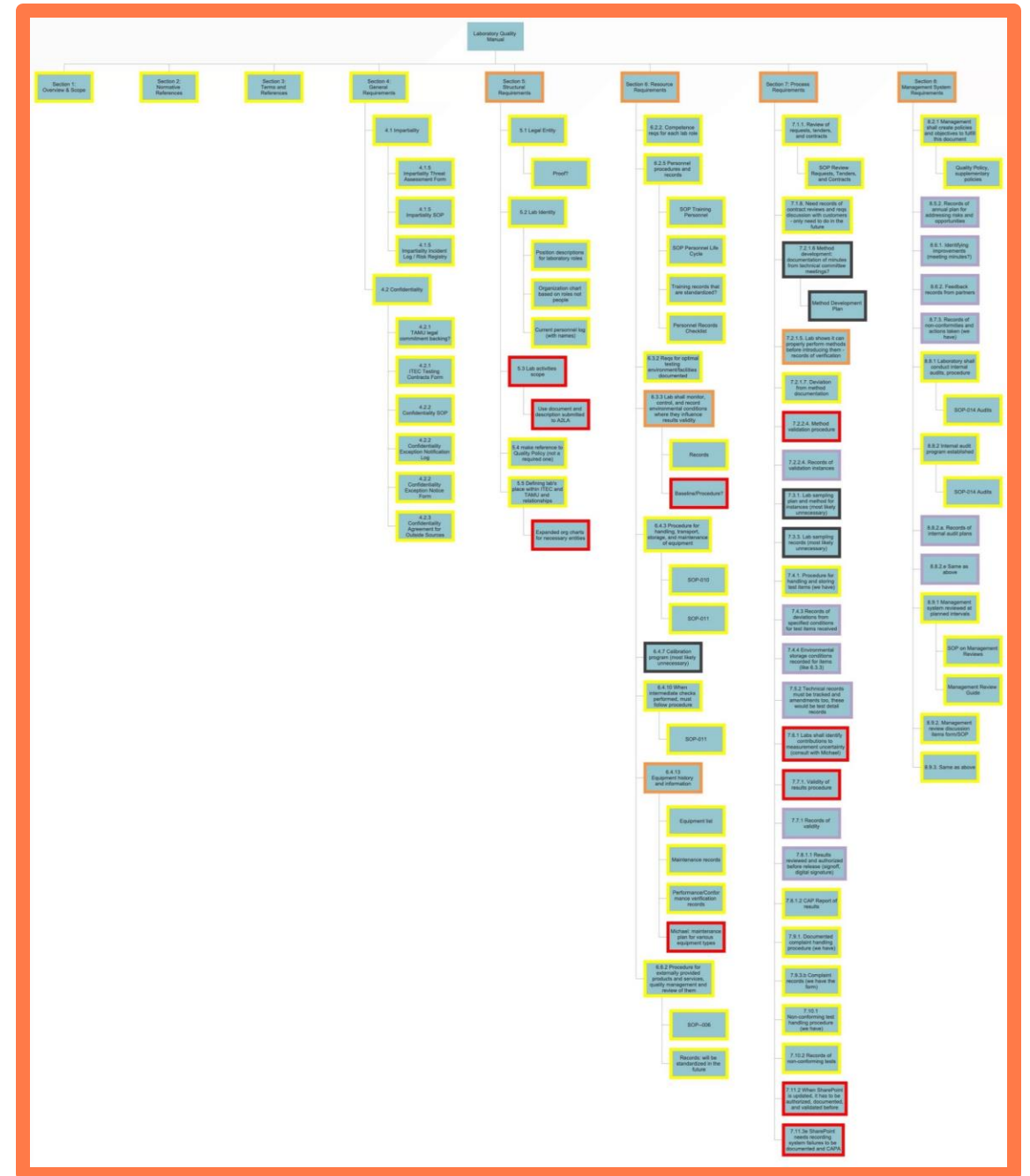
Means of Interoperability Testing

Test Oracle

Test Coordinator

Application Support Nodes

SUT

Interface Monitor

EUT 2

Equipment User

EUT 1

EUT N

Interconnecting Network

●—— Configuration interface

◆—— Monitoring interface

↔ Stimulating interface

See ETSI EG 202 810
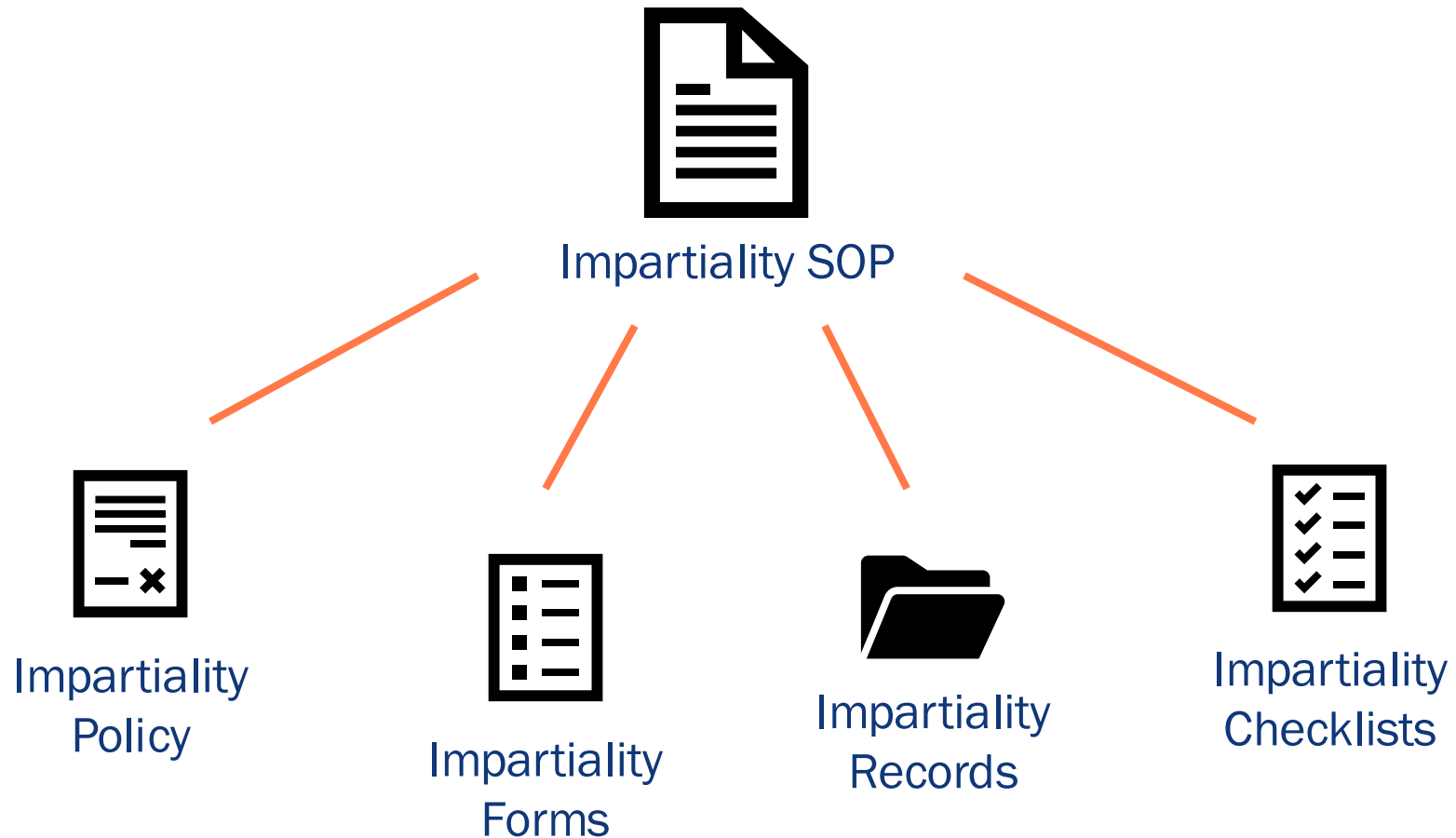
ISO 17025 Objectives

- Develop **documentation** for the procedures and policies to test Next Gen 9-1-1 technologies

- Develop **training** for laboratory personnel and management

- Become ISO 17025 **certified**

- **Audit** processes to improve efficiency and reputability continuously

Quality Manual

1. Overview and Scope
2. Normative References
3. Terms and References
4. General Requirements
5. Structural Requirements
6. Resource Requirements
7. Process Requirements
8. Management System Requirements
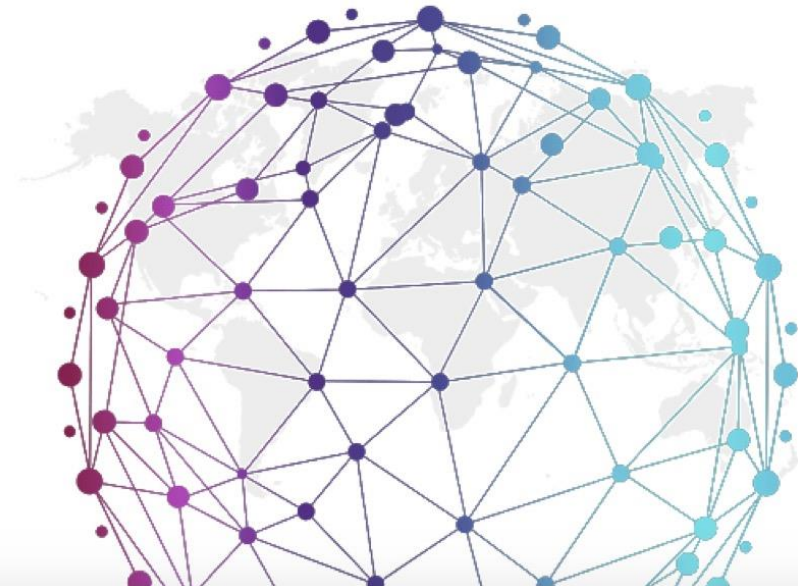
Example: General Requirements > Impartiality Family

Impartiality SOP

Impartiality Policy

Impartiality Forms

Impartiality Records

Impartiality Checklists

Documentation Examples

Documentation Examples

TEXAS A&M UNIVERSITY
Internet2 Technology
Evaluation Center

August 1, 2023

ISO 17025
Conflict of Interest Questionnaire
MISC-001 Version 0

Conflict of Interest Questionnaire	Initial Release	August 1, 2023

This questionnaire should be consulted during the completion of regularly conducted conflict of interest disclosures, and it includes several essential questions that every employee of the ITEC Interoperability Testing Laboratory should consider regarding impartiality.

These questions cover financial relationships and personal connections, among other potential conflicts of interest, to ensure that the ITEC Interoperability Testing Laboratory is aware of possible issues before they become problematic and adversely affect the integrity of testing services.

I. Financial Conflicts

1. Financial Interests

Do you or your family members have any financial interests, stocks in vendors, suppliers, or companies that could be considered a potential competitor or conflict of interest?

2. Gifts and Gratuities

Have you received any gifts or gratuities from any vendors, contractors or suppliers that could influence and/or create a biased perception on your decisions regarding their contracts or business dealings with our laboratory?

3. Investment Activities

Do you have any investment activities that may conflict with your duties or obligations to our laboratory?
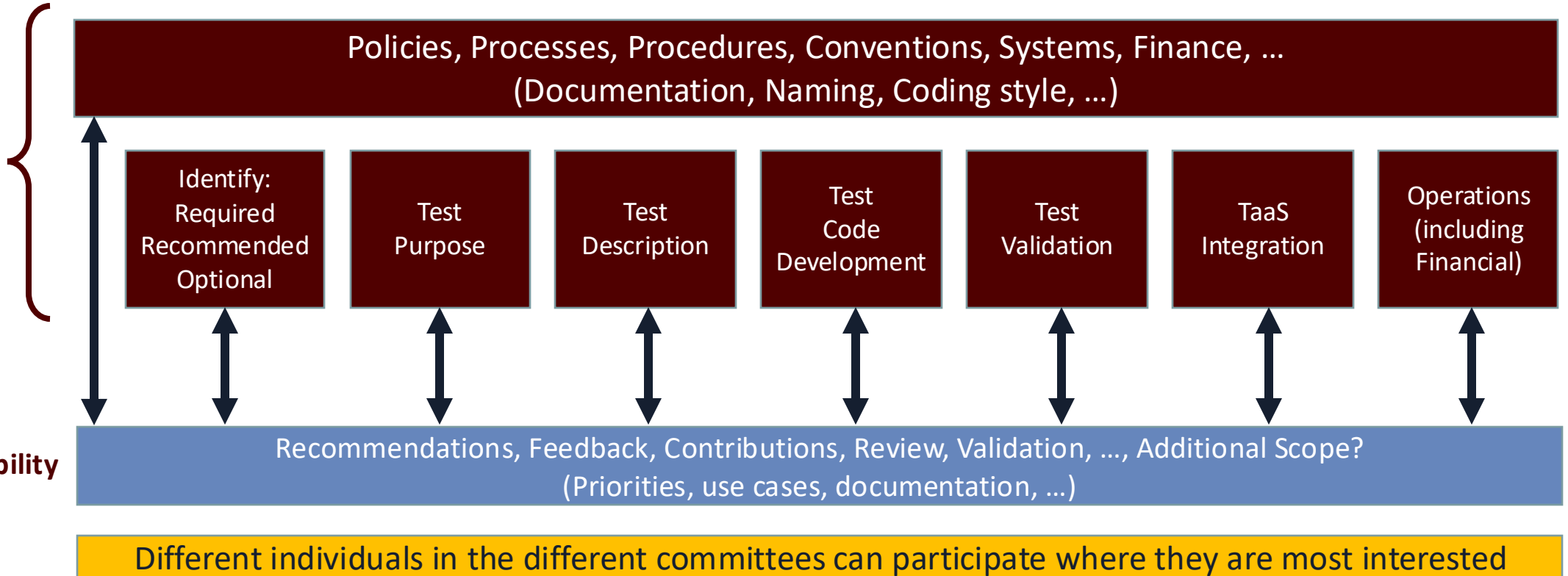
4. Intellectual Property

Do you own or have partial interest in any intellectual properties, patents, licenses, or copyrights that could be relevant to your work at our laboratory?

5. Insider Trading

Do you have access to or know any inside information about our laboratory or any of our customers that could be used for personal gain?

1 of 5

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Phase 3 & ITF Involvement

ITEC

Policies, Processes, Procedures, Conventions, Systems, Finance, … (Documentation, Naming, Coding style, …)

Identify: Required Recommended Optional	Test Purpose	Test Description	Test Code Development	Test Validation	TaaS Integration	Operations (including Financial)

NG9-1-1 Interoperability Task Force

Recommendations, Feedback, Contributions, Review, Validation, …, Additional Scope? (Priorities, use cases, documentation, …)

Different individuals in the different committees can participate where they are most interested

Legend: ⇅ Generally: Meetings; discussions; reviewing documentation and code; testing; logging issues; submitting code; …

Next Steps

- **TAMU Current Activities**
  - Test Suite Architecture
    - Structure, naming/numbering conventions, coding style, log formats, documentation, …
    - Multi-use test cases: conformance and interoperability
  - Statements of work and contract for sub-awards; then start development
    - Test purpose, test description, test code development, TaaS platform, …
  - Infrastructure, processes, and procedures
    - GitHub, IDE, testbed enhancements, remote access, ISO-related documentation, …
  - Cybersecurity plan

- **Interoperability Task Force**
  - Keep going! Everything so far is fantastic.
  - Review, recommendations: On all the above as it progresses
  - Prioritization: Functional Elements; test cases; …
  - Augmentation: TAMU research effort is like a start-up; we can only do so much
  - Your forward-looking ideas: what does this look like in 1-3-5 years?

Questions

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