ISO/IEC/IEEE 29119 The New International Software Testing Standards

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Scope

- The purpose of standards
- Motivation for software testing standards
- Development of standards
- Overview of ISO 29119
- Applicability
- Timeline
- Future involvement

What are standards?

"Guideline documentation that reflects agreements on products, practices, or operations by nationally or internationally recognized industrial, professional, trade associations or governmental bodies"

- ISO

- **Guidelines** documents as they are not compulsory unless mandated by an individual or an organization
- **Agreements** because they should reflect a certain level of consensus

Why use standards?

- Consumers
  - Confidence in compliant products
  - Authors provide expertise in standards
- Manufacturers
  - Conformance and Marketing
  - ‘Safety’ from liability
  - Guidelines on production
- But not ‘Best Practice’…

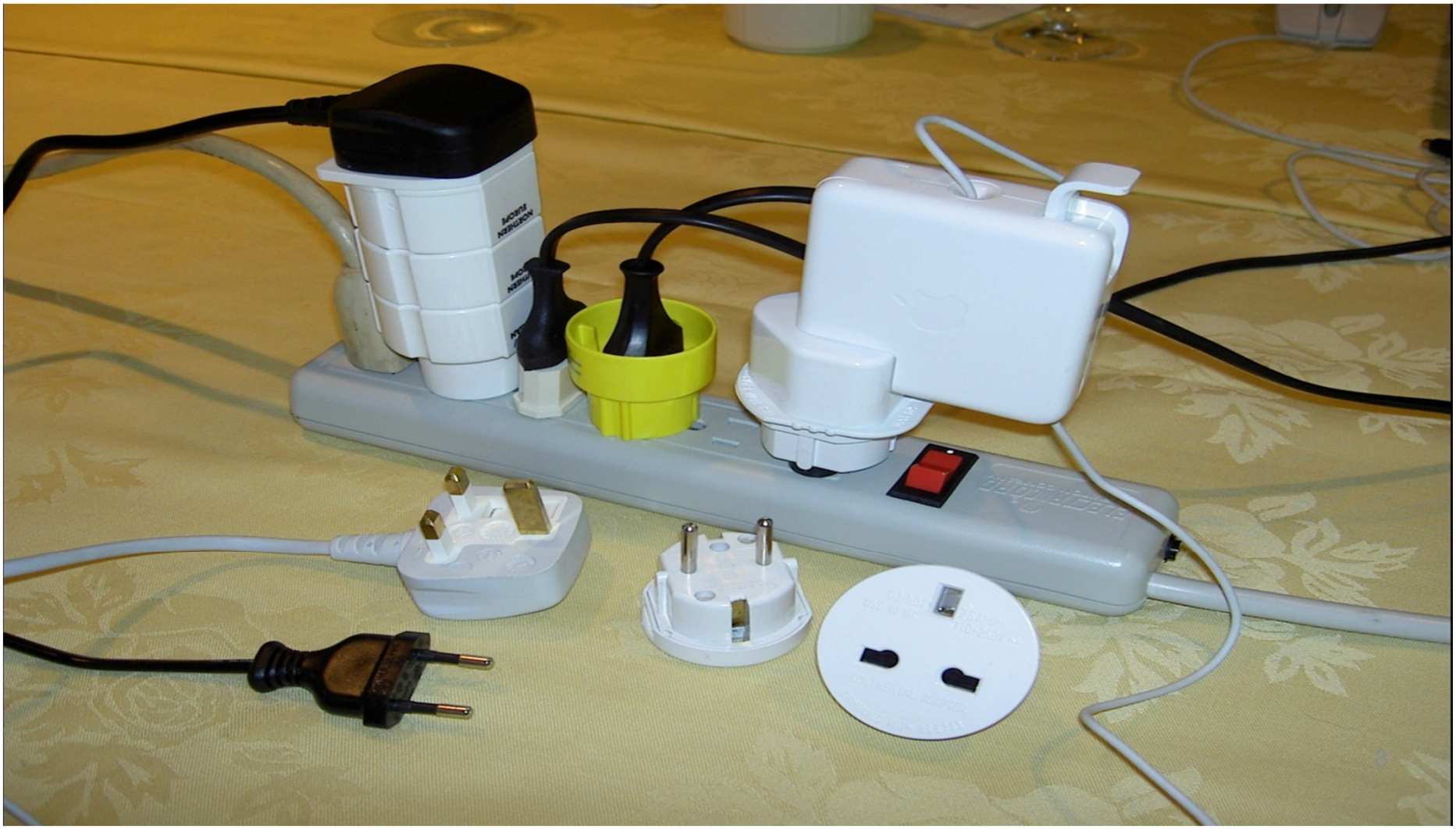
Quality and Standards

What use are standards?

Standards describe a current 'body of knowledge' that provides the basis for a professional discipline

- Basis for:
  - Communication – common terminology
  - Professional qualifications
  - Certification/compliance schemes
  - Benchmark of 'good industry practice'
  - Contracts
  - Interoperability and consistency……

A Case in Point

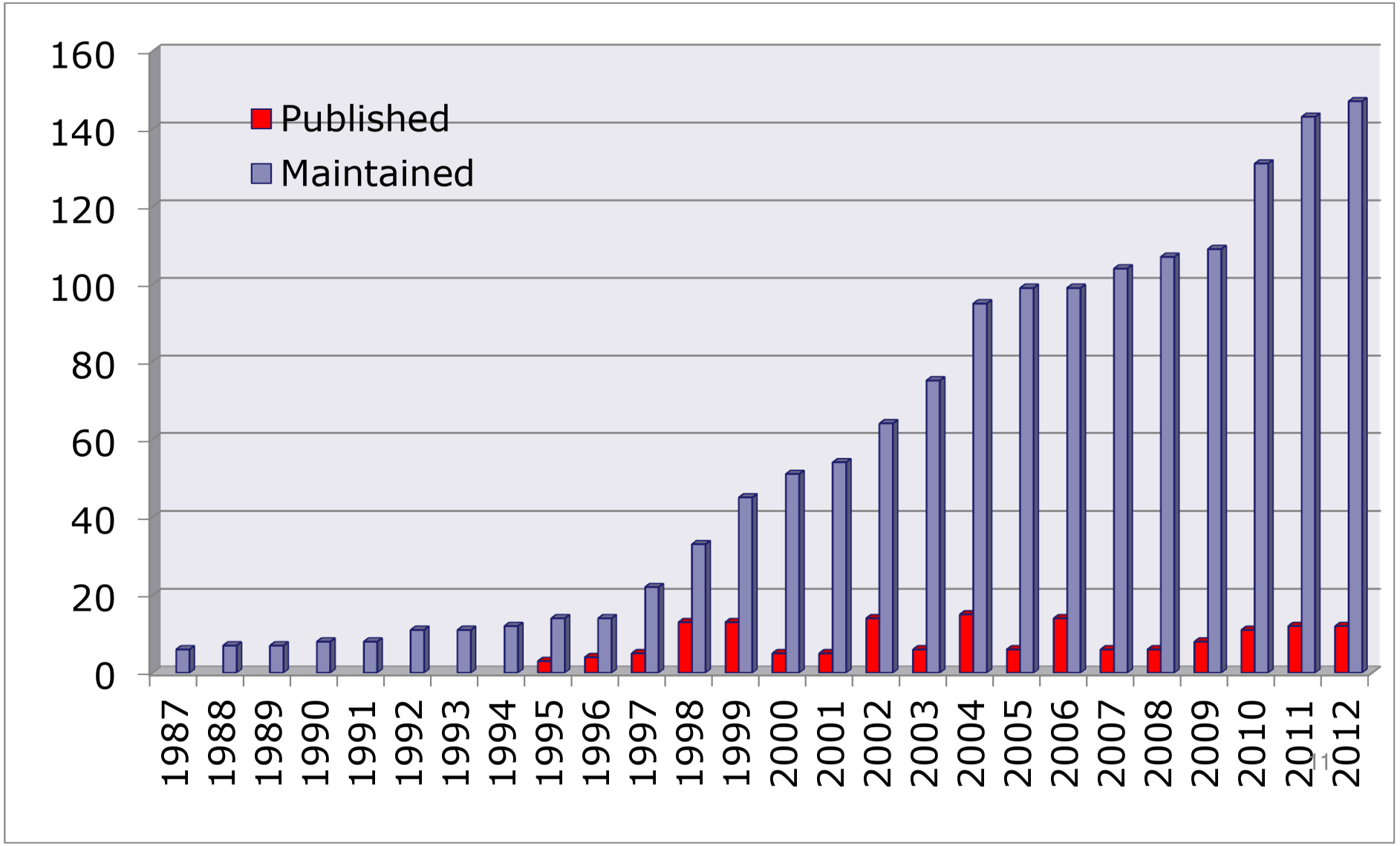


Motivation for ISO 29119

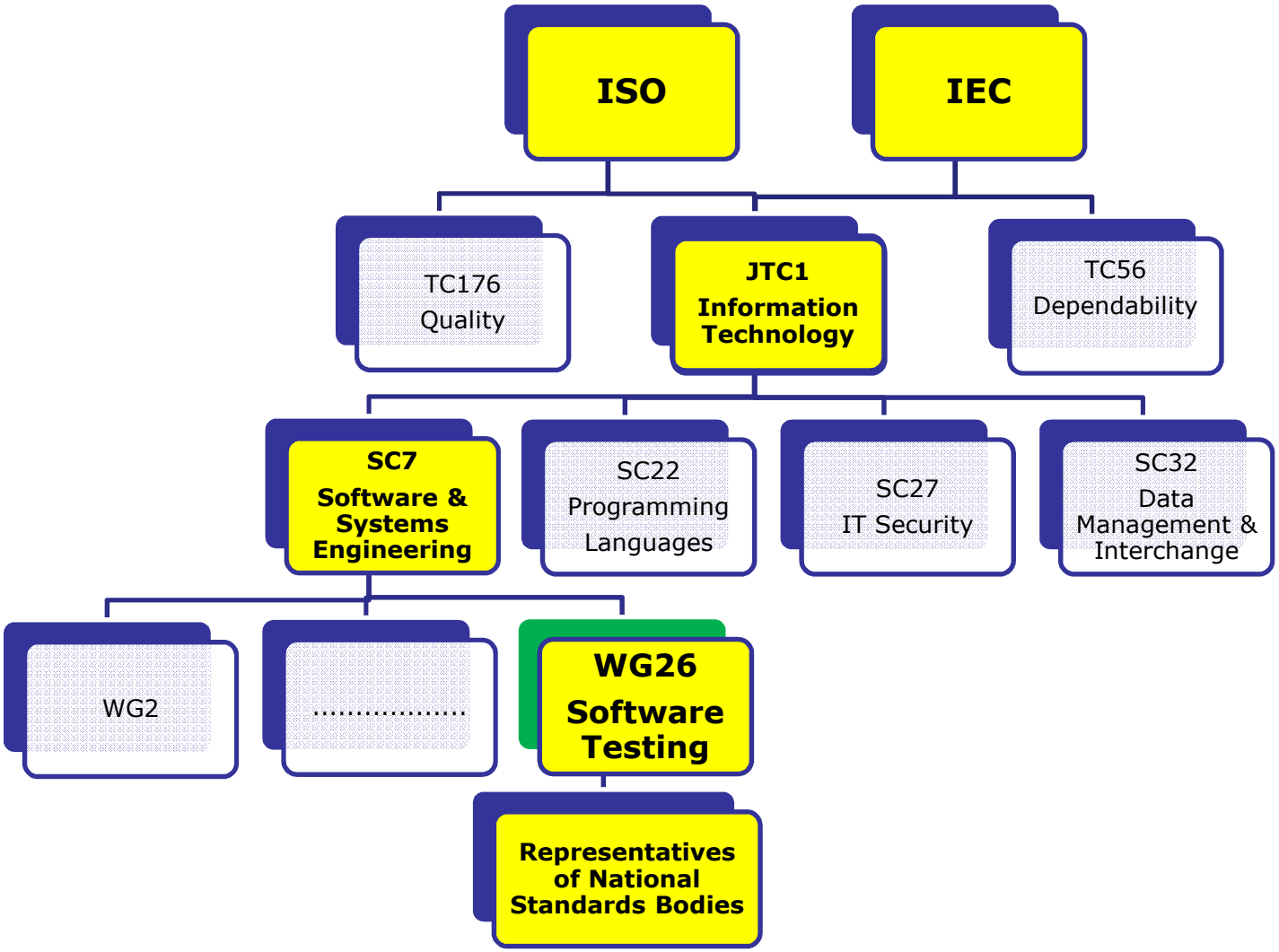
- Demand for existing 'standards’
- Conflicts in current definitions and processes
- Gaps in the current standards provision
- A Baseline for the Testing Discipline
- Current industry practice is lacking
- Buyers unclear on what is 'good test practice'

Standardization Bodies

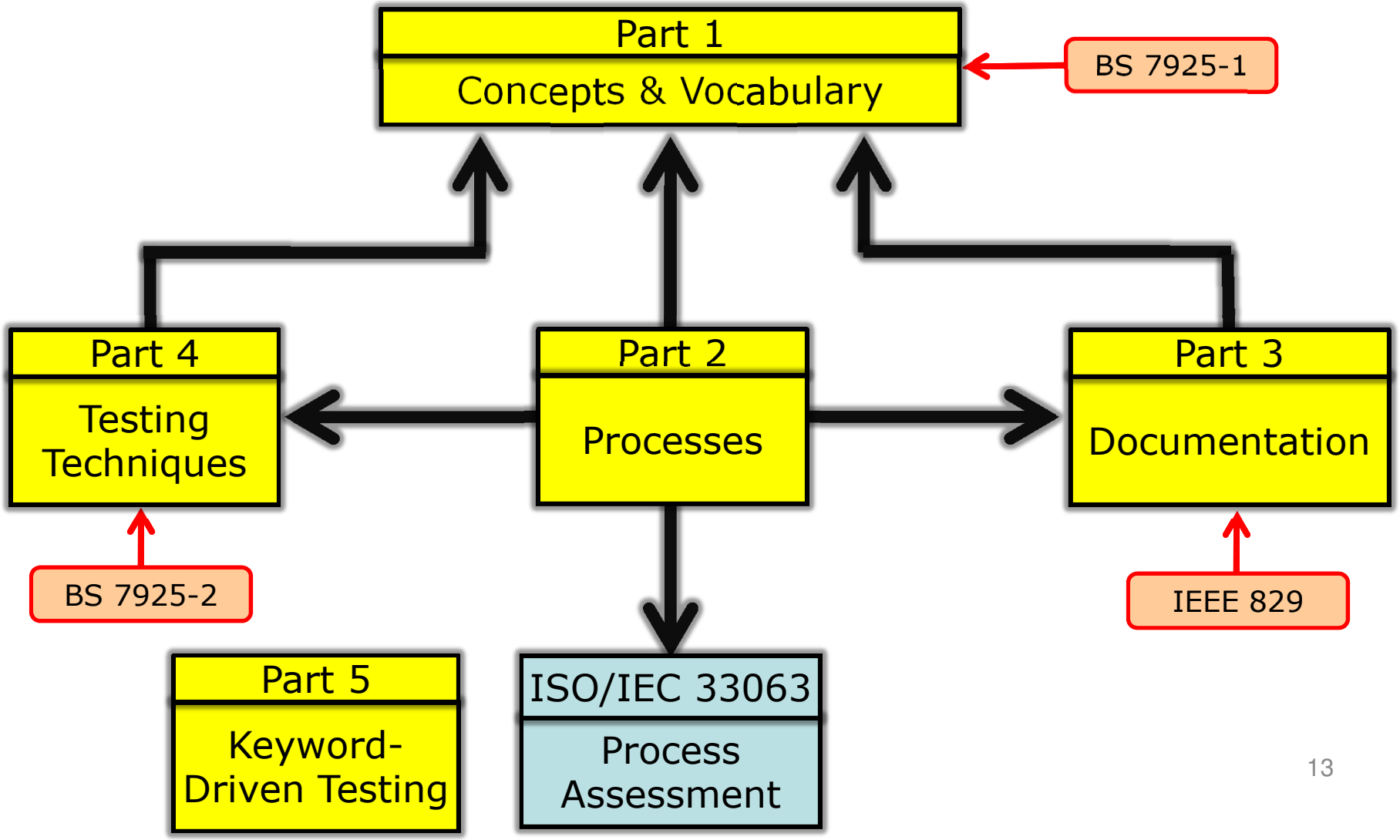
ISO/IEC Software Standards



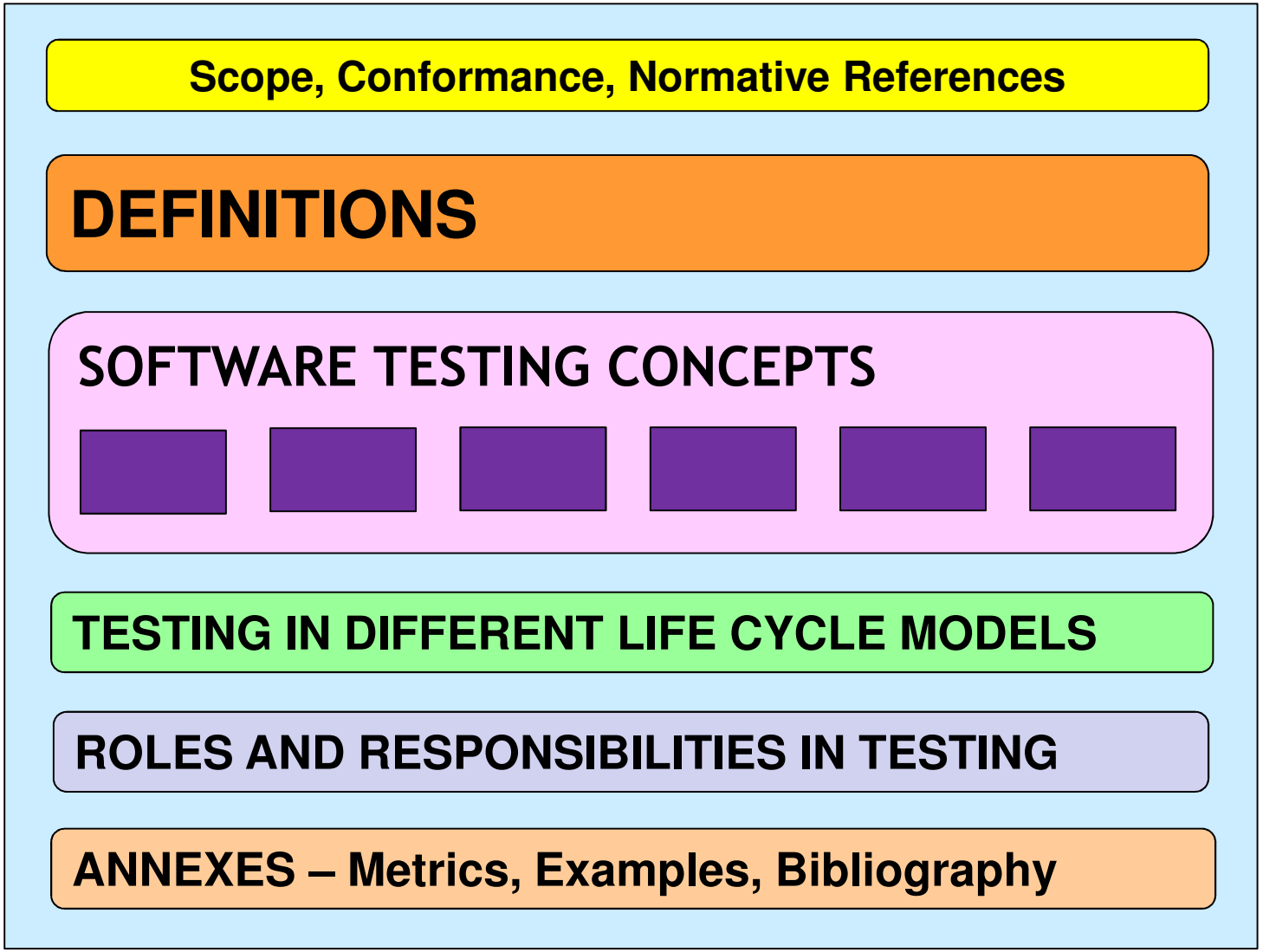
ISO/IEC SC7 – WG26



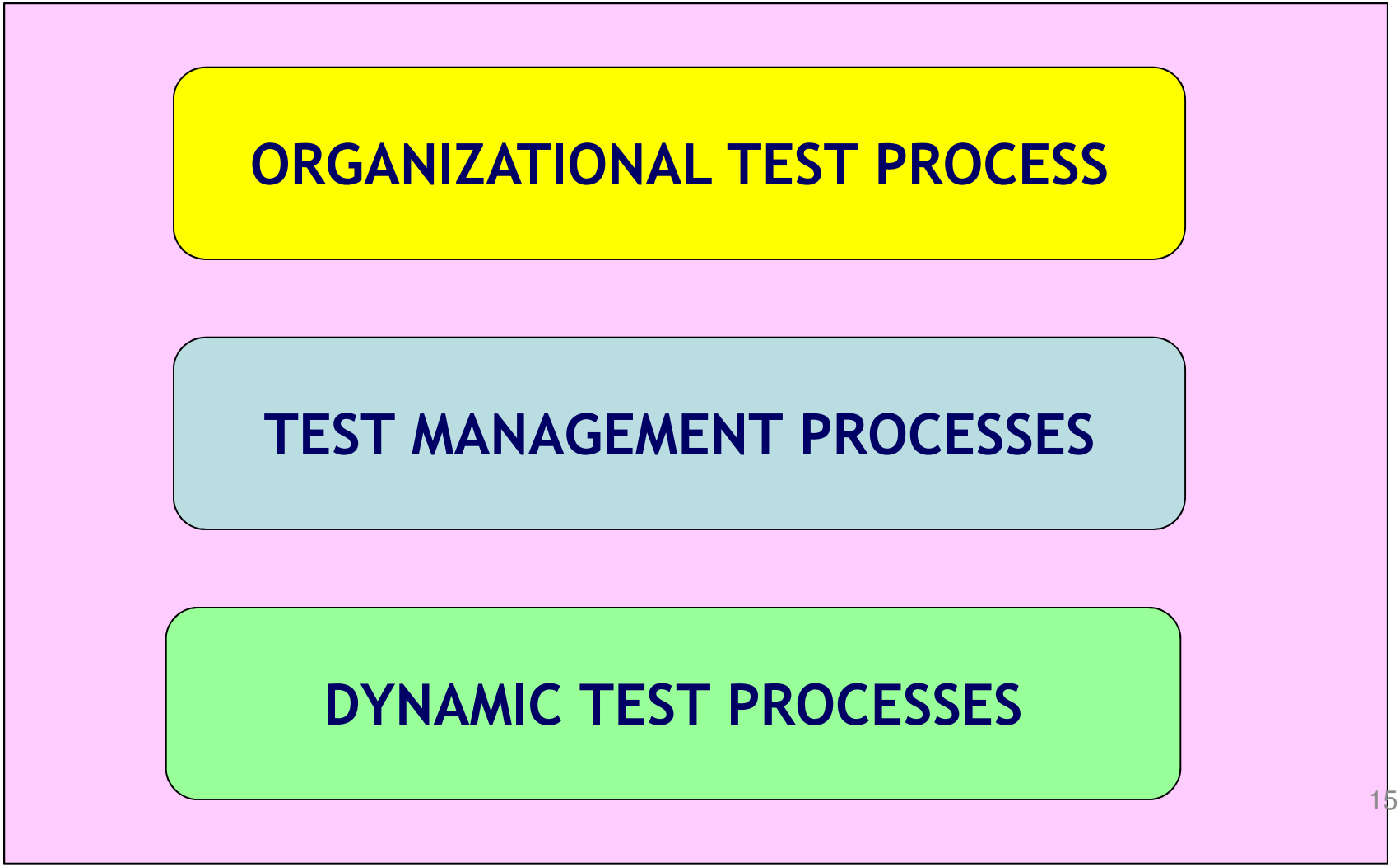
ISO/IEC 29119 – Structure



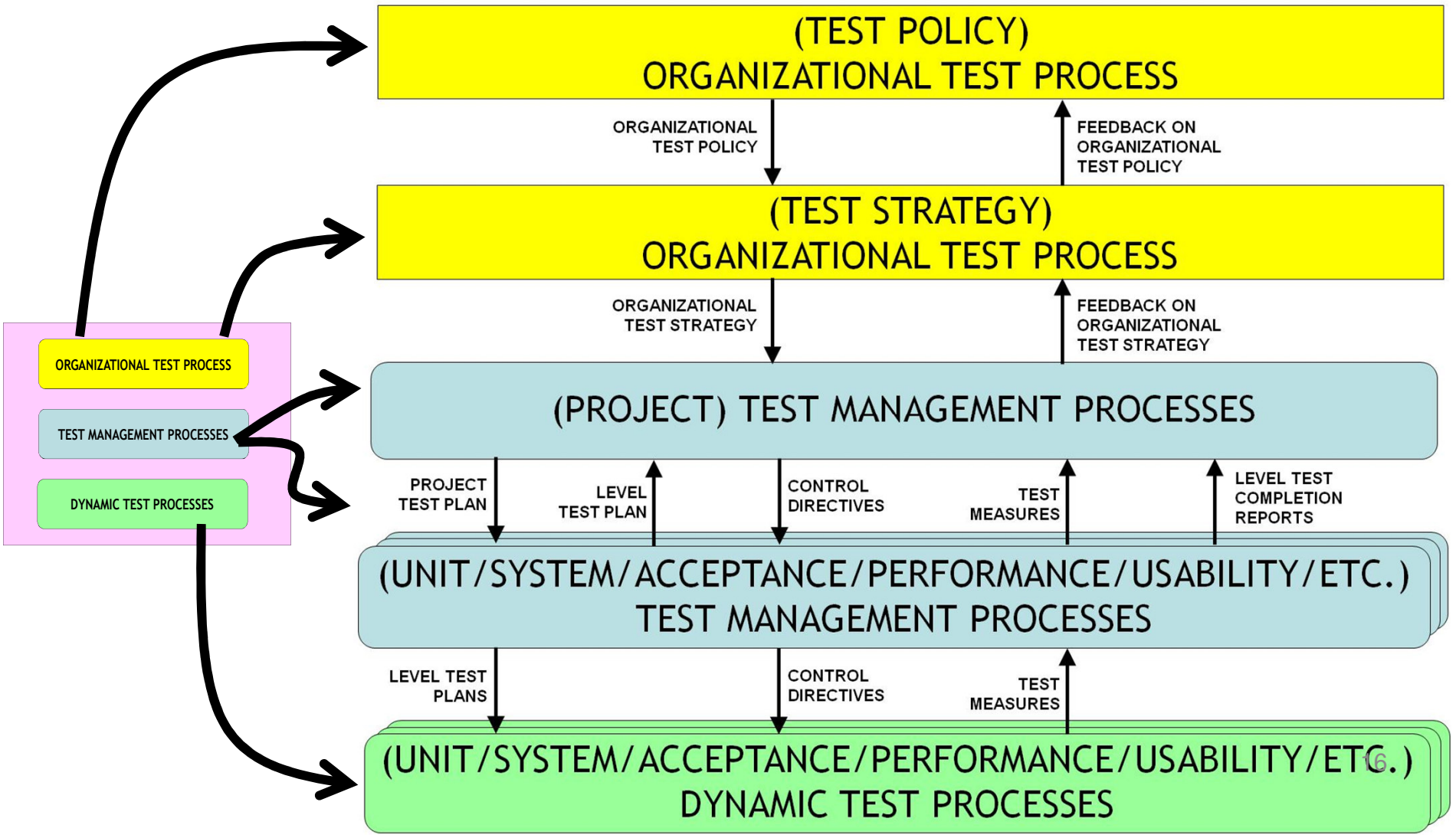
Part 1: Concepts & Vocabulary



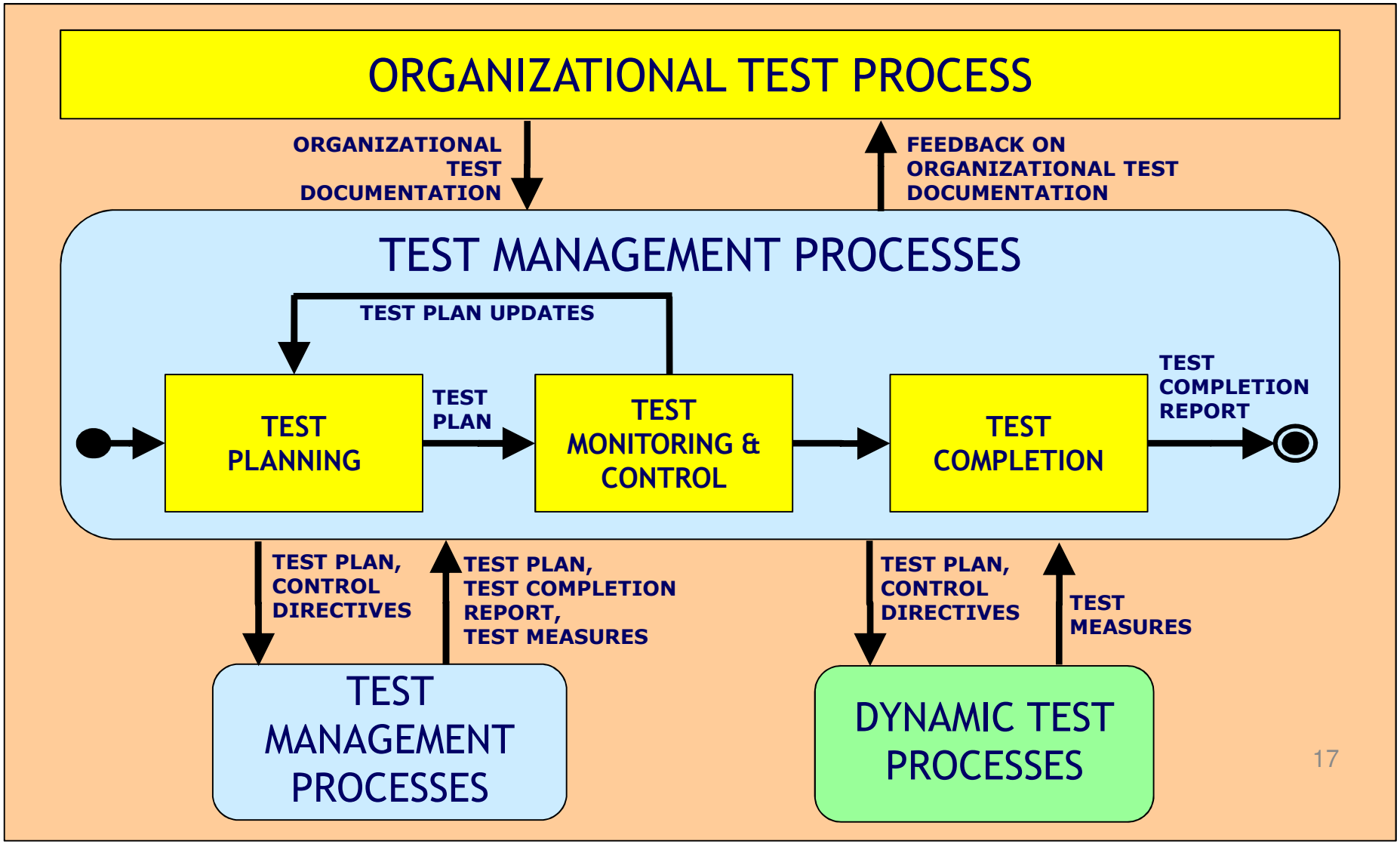
Part 2: Testing Processes



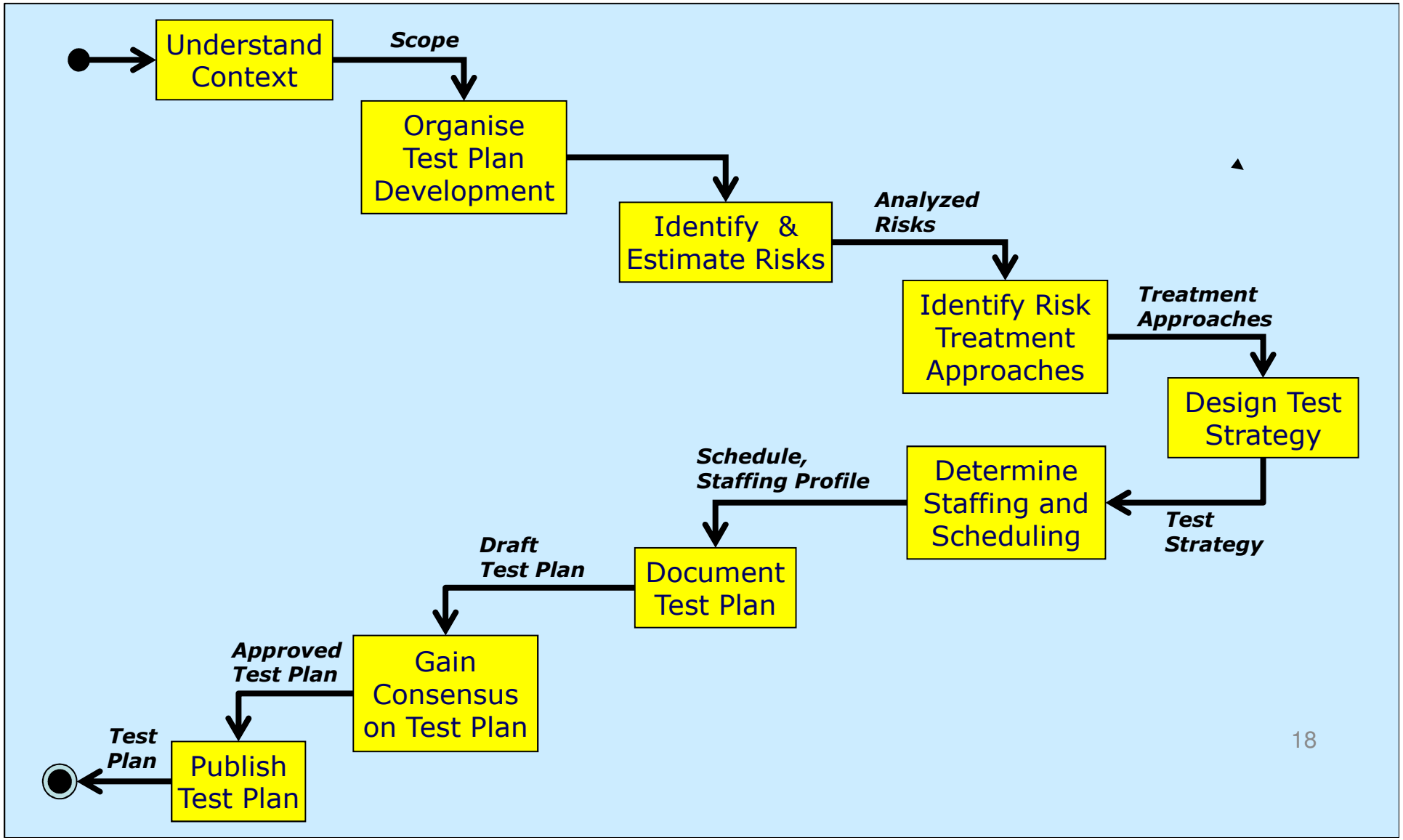
Instantiating Testing Processes



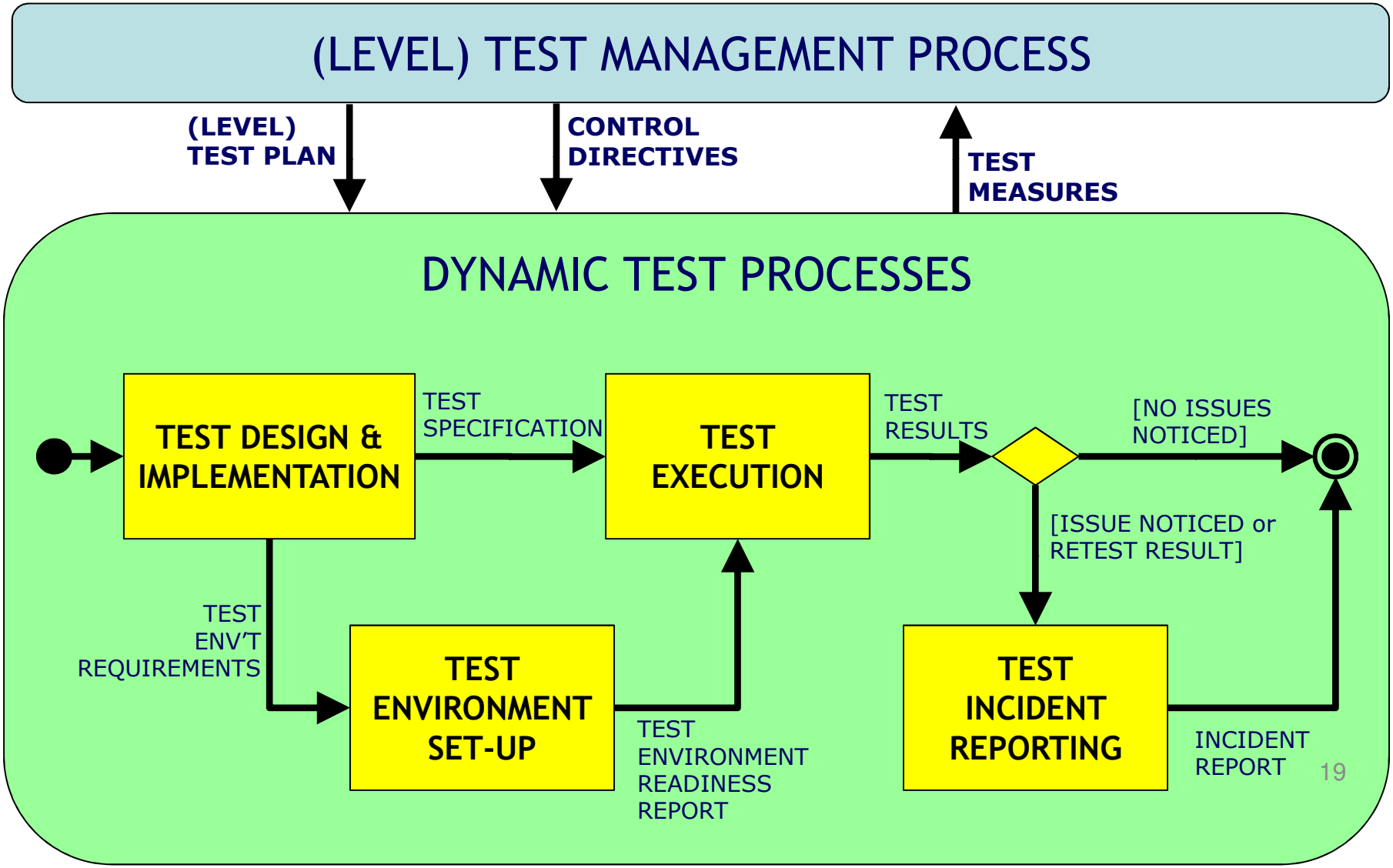
Test Management Processes



Test Planning Process



Dynamic Test Processes

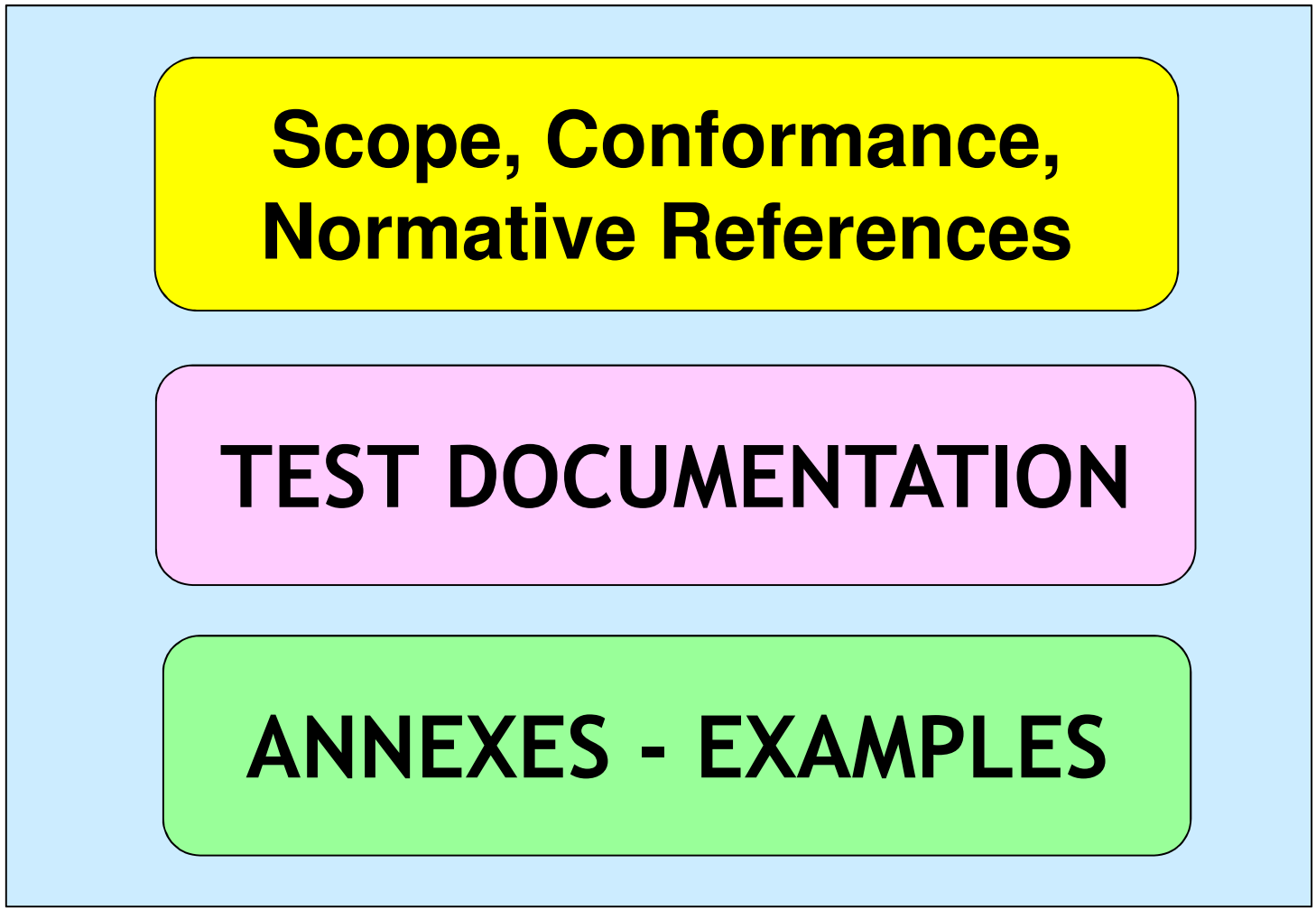


Test Process Descriptions Example - *Organizational Test Process*

- Each testing process is described using a standard template (following ISO 24774), for example:

- **Purpose**
  - The purpose of the *Organizational Test Process* is to develop and maintain organizational test specifications, such as the Test Policy and Organizational Test Strategy**.**
- **Outcomes**
  - As a result of the successful implementation of the *Organizational Test Process:*
    - The organizational test specification is developed based on stakeholder requirements;
    - The organizational test specification is agreed by stakeholders;
    - The organizational test specification is published and accessible to stakeholders;
    - Conformance of stakeholders with the organizational test specification is managed;
    - The organizational test specification is reviewed on a periodic basis;
    - Minor updates to the organizational test specification are made as necessary.
- **Activities and tasks**
  - The tester shall implement the following activities and tasks in accordance with applicable organization policies and procedures with respect to the *Organizational Test Process.*
  - **Develop Test Specification**
    - This activity consists of the following tasks:
      - Analyze any relevant source documents and the current testing practices within the organization to identify requirements for the organizational test specification.
      - etc.
  - **Gain Consensus on Test Specification**
  - **etc.**
- **Information items**
  - The output of the *Organizational Test Process* is the organizational test specification. The Organizational Test Policy and Organizational Test Strategy are typical examples of organizational test specifications.

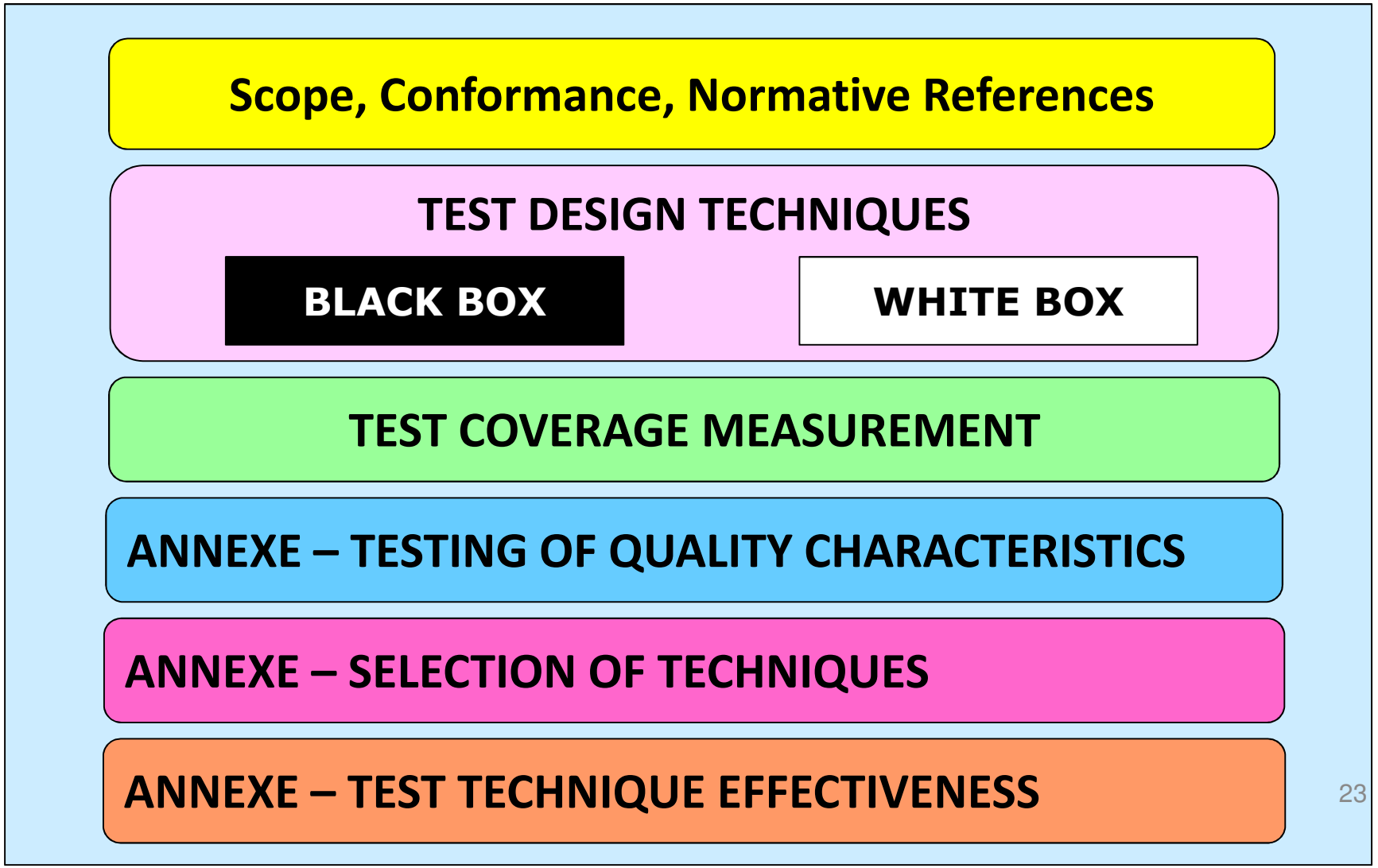
Part 3 – Test Documentation



Test Documentation Types

- Organizational test documentation
  - Test policy
  - Test strategy
- Project test documentation
  - Project test plan
  - Test project completion report
- Test level documentation
  - Test plan
  - Test specification
  - Test results
  - Anomaly reports
  - Level test status report
  - Test environment report
  - Test level completion report

Part 4 – Test Techniques



Are they applicable to you?

- Intended to be a generic standards
- Full vs. tailored conformance
- Small and large organizations
- Agile and Traditional
- Financial, Safety-Critical, Games...
- Following Regulatory Standards?

- Can you afford not to?

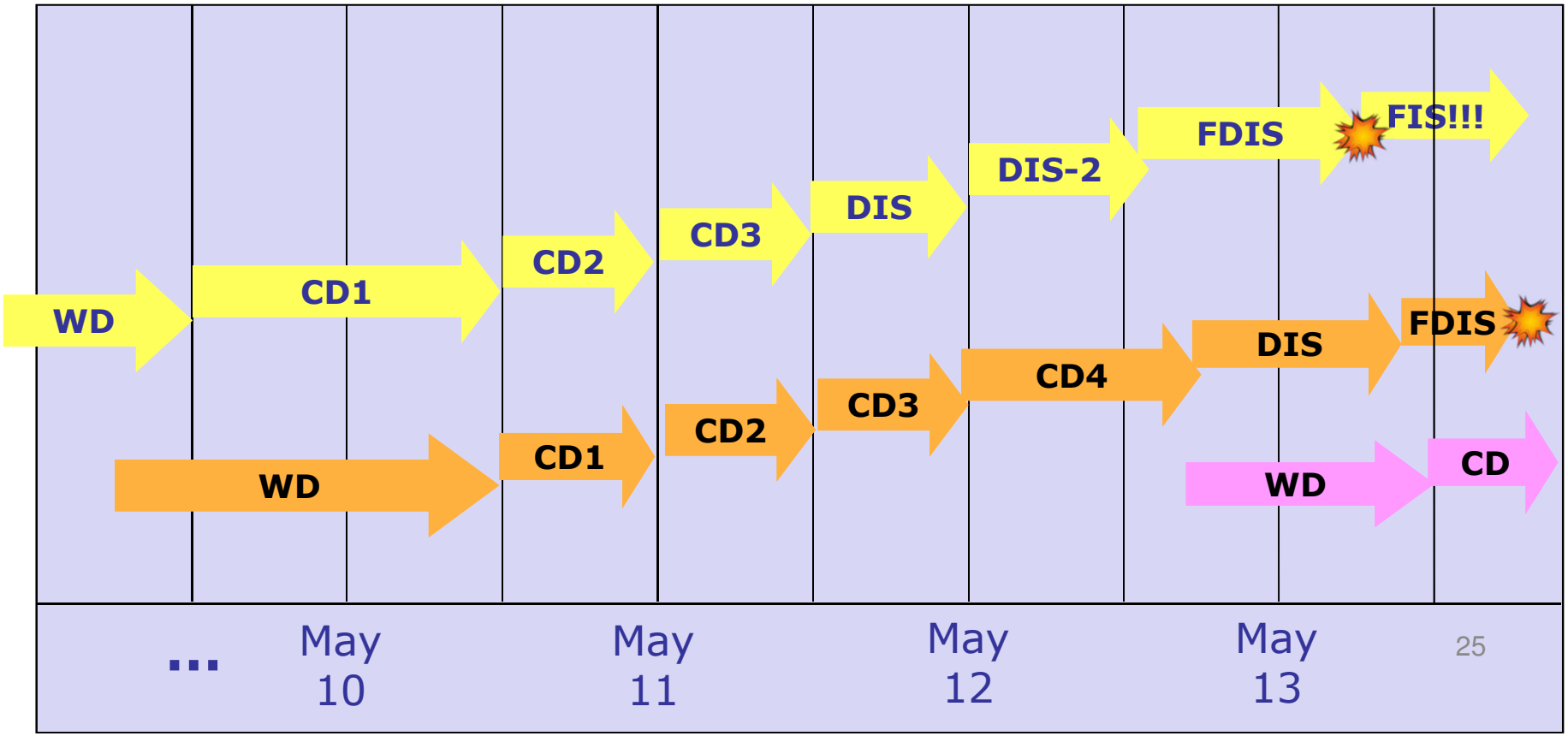
Current Status

Working Draft (WD)
Committee Draft (CD)
Draft International Standard (DIS)
Final Draft International Standard (FDIS)
Final International Standard (FIS)

Parts 1, 2 & 3

Part 5

Part 4



Current status

- Drafts are out for review
  - Unsurprisingly (for a testing standard) we get plenty of comments (1000s)
- Countries attending meetings include:
  - Argentina, Australia, Brazil, Canada, China, Colombia, Denmark, Finland, France, Germany, Hong Kong, India, Japan, Korea, Malaysia, New Zealand, Peru, Poland, Russian Federation, South Africa, Spain, Sweden, Turkey, UK, USA
- Last meeting – Montreal, May 2013
- Next meeting – Edinburgh, Nov 2013

What is most likely to stop ISO 29119?

- Fear of change
- 'Not invented here' syndrome
- Perceived as competition
- Lack of required use
- Anti-standardization – craftsmen
- No evidence of efficacy
- Cost of use
- Complexity
- Lack of responsiveness
- Lack of inclusiveness…

Conclusions

- Parts 1, 2 & 3 published September 2013
  - My thanks to the editors and reviewers ☺
- International standard will provide practitioners with guidelines for testing that cover all aspects of the life cycle
  - Provides a consistent set of definitions, processes, procedures & techniques for software testing
- Will be adopted by IEEE, BSI, ISO and other national standards bodies

Do you want to be involved?

- Join the working group
  - representing your national standards body
  - 6 day meetings, every 6 months
  - contribute between meetings
- Join a WG26 mirror group
  - for your national standards body
- Contribute materials
- Review drafts

Any Questions?
Any Volunteers?

Finally…

- sreid@testing-solutions.com
  - if you have any questions on the standards
  - if you are interested in trialling the standard on a project, reviewing drafts or writing examples
- http://softwaretestingstandard.org/
  - WG26 website
- http://www.jtc1-sc7.org/
  - access to official documents released by WG 26