Validation and Data Integrity

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Validation Requirements

- Validation is a Regulatory Requirement for manufacturers of pharmaceuticals and medical devices who must demonstrate that their processes produce consistent product quality
- It applies to all processes that fall under Life Science regulation, i.e. to those process which may have an impact on Product Quality, Patient Safety and Data Integrity

EU RULE (EU GMP Annex 11)	US RULE (21 CFR Part 11)
A computerized system is a set of software and hardware components which together fulfill certain functionalities. The application should be validated; IT infrastructure should be qualified	Procedures and controls shall include the following: (a) Validation of systems to ensure accuracy, reliability, consistent intended performance

Requirements for regulated data

DATA INTEGRITY

The extent to which all **data** are **complete**, **consistent** and **accurate** throughout the data lifecycle, i.e. from initial data generation and recording through processing (including transformation or migration), use, retention, archiving, retrieval and destruction.

REGULATORY EXPECTATION

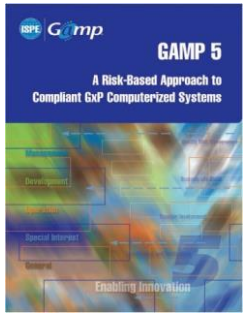
Where DATA is generated and used to make **GxP quality decisions**, ensure it is TRUSTWORTHY and RELIABLE

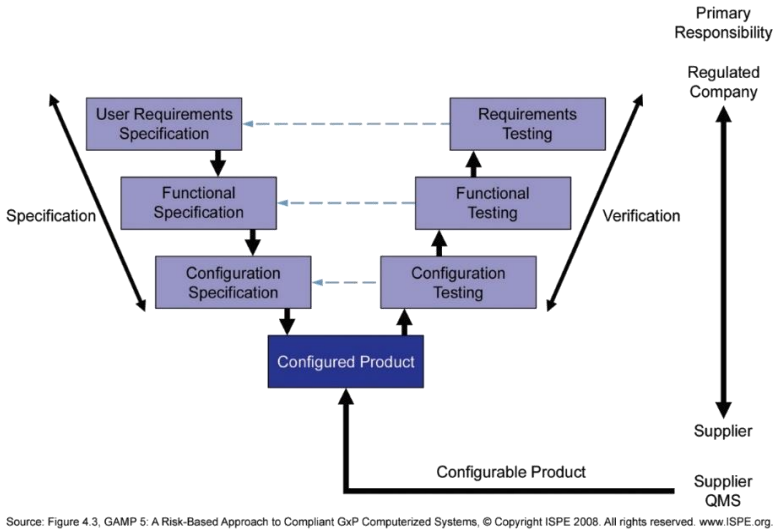
YOUR GxP RECORDS REQUIRED TO BE ALCOA

Attributable	• Clearly indicate who recorded the data or performed the activity • Sign/Date • Record Who wrote it/when
Legible	• Allow to read/interpret the data after it is recorded • Ensure Permanent Data • Properly Correct if necessary
Contemporaneous	• Record Data at the time it was generated • Ensure close proximity to occurrence
Original	• Preserve data in its unaltered state • Create certified copies if needed
Accurate	• Ensure data reflect the action/observation made • Review data routinely • Provide explanation as needed

Validation is the structured process to

- ensure the reliability of processes executed through the system
- implement and verify the control measures oriented to prevent Data Integrity Violations

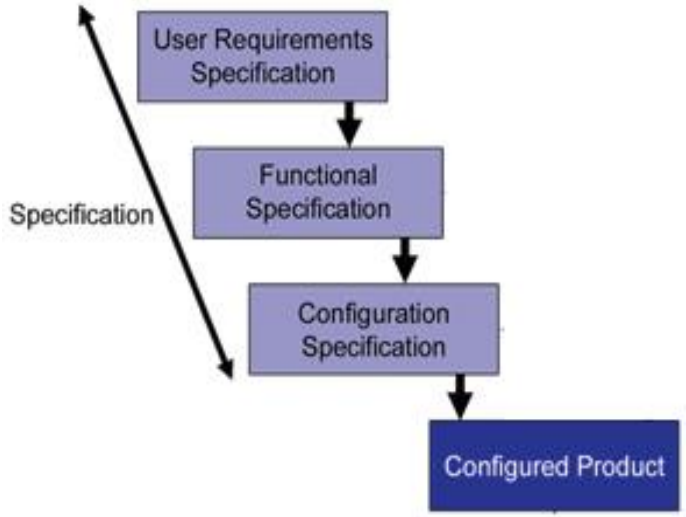




Source: Figure 4.3, GAMP 5: A Risk-Based Approach to Compliant GxP Computerized Systems, © Copyright ISPE 2008. All rights reserved. www.ISPE.org.

- Validation is the basic defense line
- Validation allows to demonstrate that the Management has implement the proper actions to prevent Data Integrity violations

LEFT HARM - Specification phase

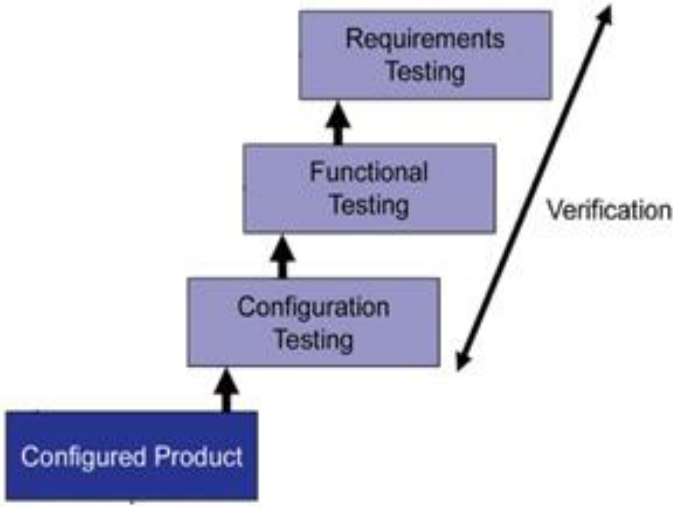


- **User Requirements** shall include
  - List of Regulated Electronic Records & Signatures
  - Regulatory requirements determined as applicable to ensure ALCOA
  - Configuration requirements, i.e.
- **Functional Specifications** (or User Manual) shall details
  - Description of functionalities for DI (e.g. Audit Trail)

- **Configuration Specifications** shall define
  - The client configuration determined to be implemented by the Regulated company to ensure Data Integrity (e.g. Security Matrix, Security Parametrization)
- **Risk Assessment** shall identify
  - The Risk scenarios to Data Integrity and the corresponding Mitigation actions

Right HARM - Testing phase

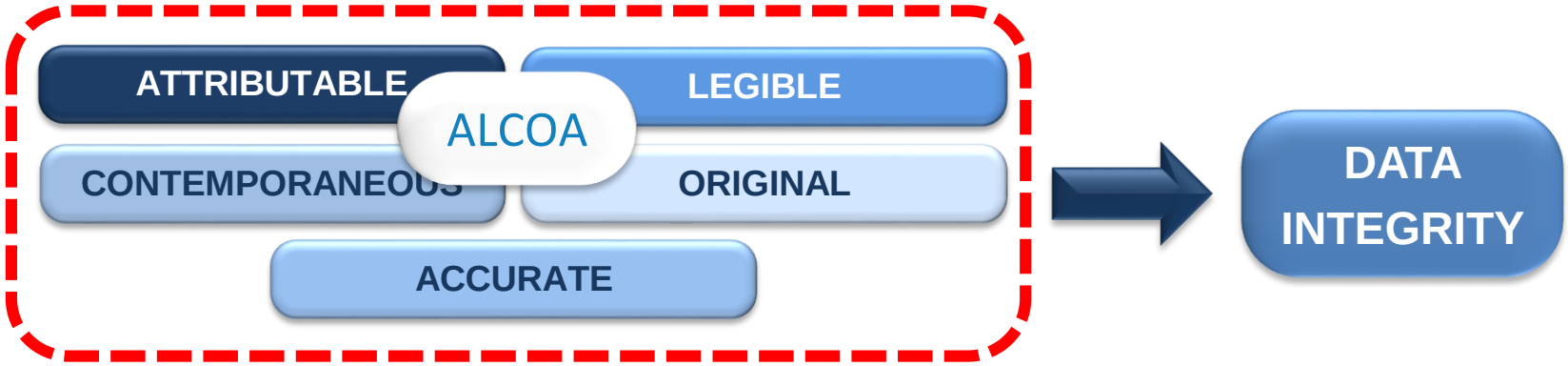
- **Configuration Testing (IQ)**
  - Verification of system configuration (Security Matrix, Security parametrization)
- **Functional Testing (OQ)**
  - Verification of system functionalities
- **Data Migration Verification**
  - Verification of reliability of migrated data, including metadata



- **Requirements Testing**
  - Procedures effectiveness related to Supporting processes (e.g. Security Management)
  - Process capabilities to prevent Data Integrity Violation (e.g. Audit Trail review)
- **Traceability Matrix**
  - Link of Regulatory Requirements vs Testing

Bear in mind

- **Every severe Data Integrity violation is triggered by Validation failure**



- Life Science firms shall be aware of the verifications addressed by the Validation life cycle
- In case of inspection, the outputs of the Validation process shall be leveraged

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Acknowledgements

References

- ISPE GAMP Forum - GAMP 5 - A Risk-Based Approach to Compliant GxP Computerized Systems