Revised AGIT Paper: Guidelines for the Validation of Computerised Systems

AGIT ArbeitsGruppe InformationsTechnologie

Peter M. Esch, Novartis Pharma AG

Content

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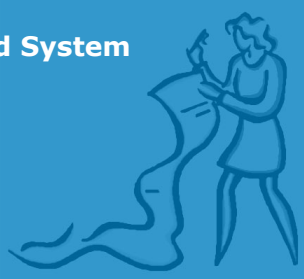


AGIT (ArbeitsGruppe InformationsTechnologie)

- **Working Group on Information Technology (AGIT) founded on 27 March 1998**
- **AGIT intends to set up guidelines based on legislative requirements and practical experience to support test facilities in applying information technology in a GLP area**
- **The members of the AGIT are representatives of the Swiss GLP Monitoring authorities and from industry**

Gérard Donzé	Federal Office of Public Health (BAG)
Peter M. Esch	Novartis Pharma AG
Bruno Eschbach	PDS Pathology Data Systems AG
Stephan Hassler	RCC Ltd.
Leo Hutter	RCC Ltd.
Uwe Timm	Hoffmann-La Roche AG
Hans Peter Saxer	Federal Office for the Environment (BAFU)
Roger Zühlke	Swissmedic

AGIT Publications

- **Guidelines for the Validation of Computerised Systems (Version 01, June 2000, *under revision*)**
- **Guidelines for the Management of Electronic SOPs in a GLP Environment (Version 01, July 2001)**
- **Guidelines for the Archiving of Electronic Raw Data in a GLP Environment (Version 01, May 2003)**

  Qual. Assur. J. 2003; **7**, 262-269
- **Guidelines for the Acquisition and Processing of Electronic Raw Data in a GLP Environment**

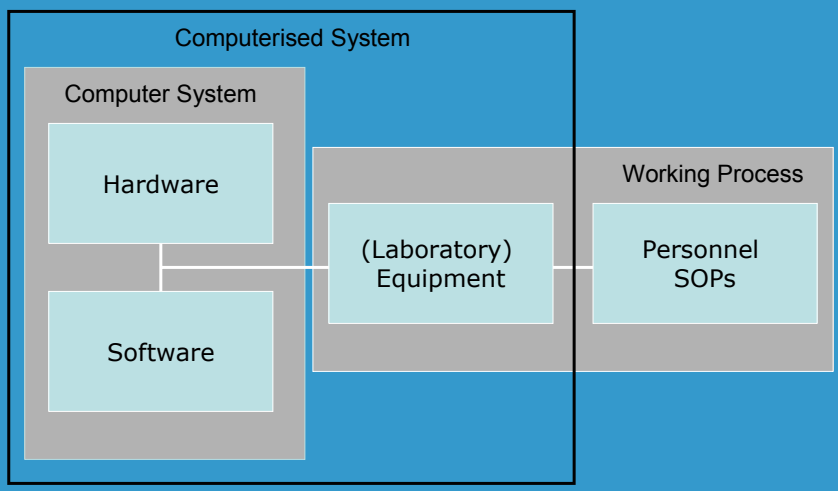
  (Version 01, December 2005)

  Qual. Assur. J. 2006; **10**, 3-14

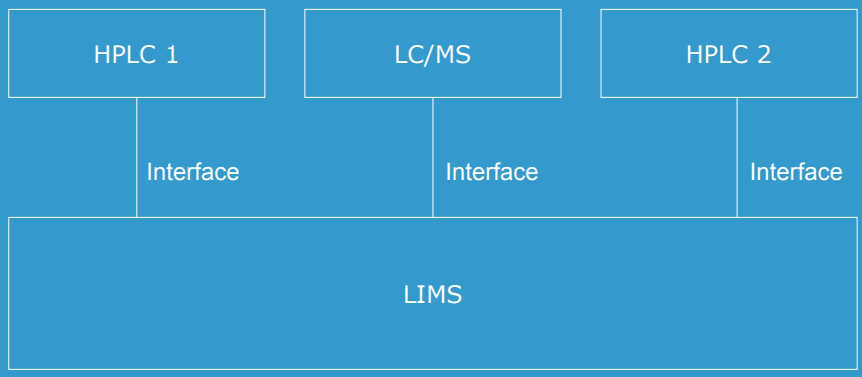
Why version 2?

- Incorporate the experience over the last years
- Information better structured
- Categories of Computerised Systems
  - Simplified
- Introduction of Risk Assessments
  - High Level Risk Assessment
  - Functional Risk Assessment
  - Change Risk Assessment
- Validation process (V-model) more in the foreground

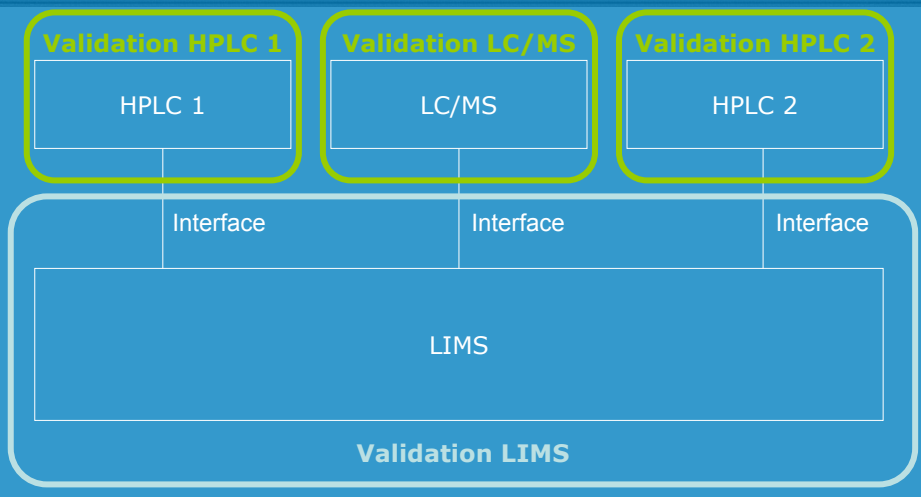
Computerised System



Computerised System Bounderies



Computerised System Bounderies



OECD GLP Consensus Document No. 10

„Where these computerised systems are associated with the conduct of studies intended for regulatory purposes, it is essential that they are developed, validated, operated and maintained in accordance with the OECD Principles of Good Laboratory Practice (GLP)"

"Wenn solche computergestützten Systeme bei der Durchführung von Prüfungen eingesetzt werden, deren Ergebnisse nach den entsprechenden nationalen Vorschriften einer Bewertungsbehörde im Rahmen eines Zulassungs-, Erlaubnis-, Registrierungs-, Anmelde- oder Mitteilungsverfahrens vorzulegen sind, ist es erforderlich, dass sie in Übereinstimmung mit den OECD-Grundsätzen der Guten Laborpraxis (GLP) entwickelt, validiert, betrieben und gewartet werden."

Which systems should be validated?

High Level Risk Assessment

GLP relevance of the system

- **Is the system used to produce or process data that may be used in regulatory submissions?**
- **Is the system involved in the environmental control processes (e.g. temperature, humidity, light) of test systems and test items used in GLP studies?**
- **Is the system part of a process liable to inspections by GLP monitoring authorities (e.g. electronic document management system for SOPs or training records)?**

Which systems should be validated? (2)

- **Computerised systems should be validated if calibration alone is not sufficient to prove the functionality and reliability of the system**

Validation necessary in case:

- **Data collection and processing is too complex**
- **Too many parameters can influence the process**

Balance Example

Stand-alone Balance

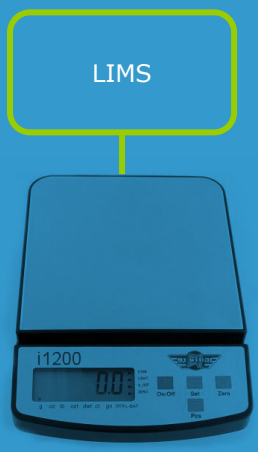
- **Body weight measurements**
- **Documentation on paper**

Calibration sufficient

Balance Example (2)

Balance part of a LIMS system

- **Body weight measurements**
- **Data transfer into LIMS**



Balance part of the LIMS validation

Ensure for example:

- Weight is entered in the correct data base field
- correct rounding
- Device ID

Remarks

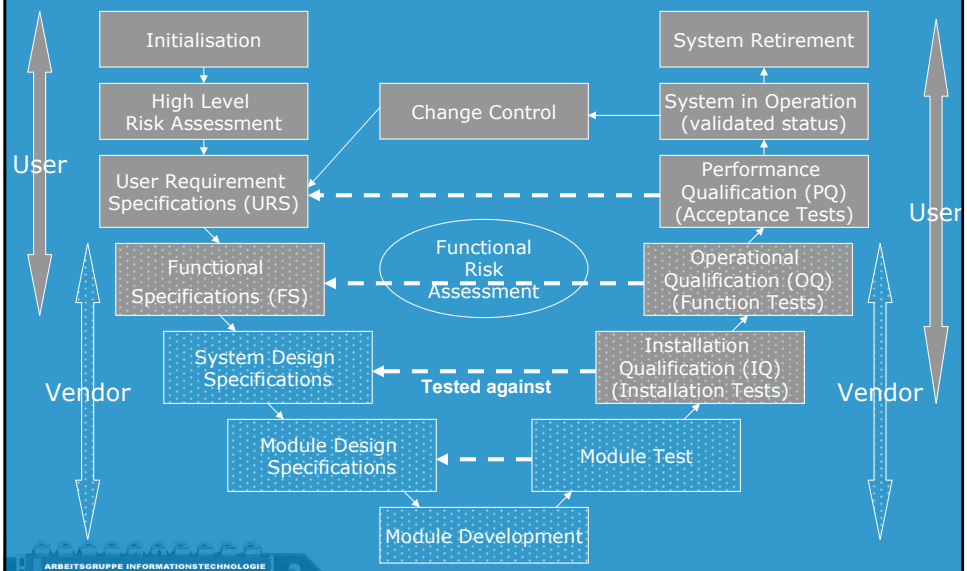
Operating Systems (e.g. Windows, UNIX)

- **are implicitly validated during the course of the validation of a computerised system**

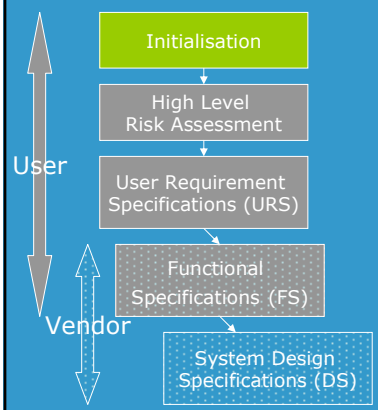
Databases and framework packages (e.g. Oracle, SAS, Excel)

- **The user application written within or by means of these packages should be validated**
- **If such user application is not validated, a documented quality control of the generated data is necessary**

System Life Cycle (V-Model)

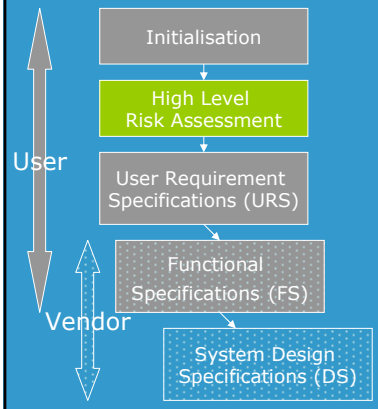


V-Model - Initialisation



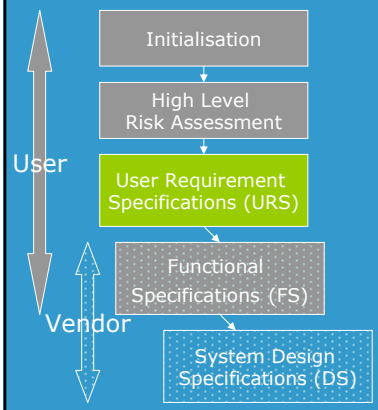
The potential users define the specific tasks for which the computerised system will be used

V-Model – High Level Risk Assessment



The decision whether a system is GLP relevant and a validation is needed

V-Model – URS

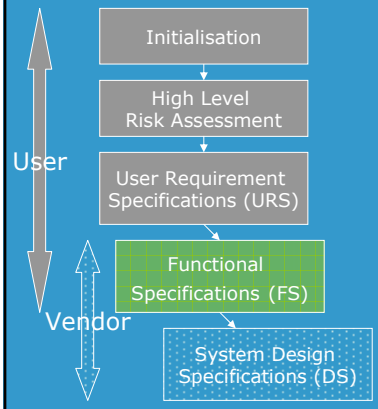


The URS contain scientific, business, regulatory, safety, performance and quality aspects of the future system.

URS should be

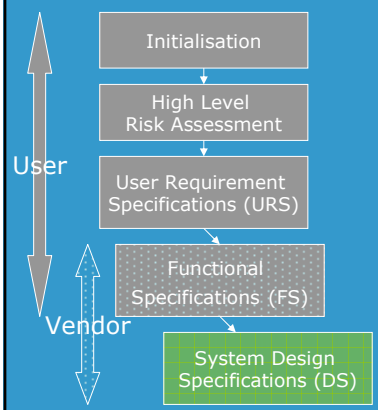
- unequivocal
- testable

V-Model - FS

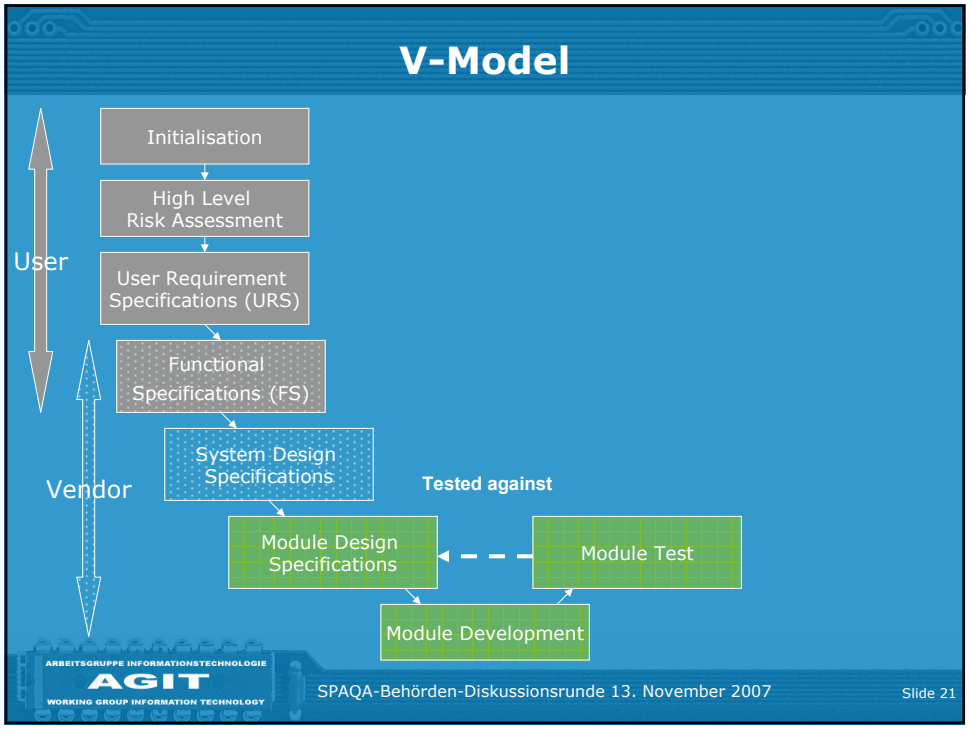


FS are derived from the URS

V-Model - DS



Necessary system components: hardware, equipment, software, operating system, network components, etc.


V-Model
Initialisation
High Level Risk Assessment
User Requirement Specifications (URS)
Functional Specifications (FS)
System Design Specifications
Module Design Specifications
Module Development
Module Test
Tested against
User
Vendor
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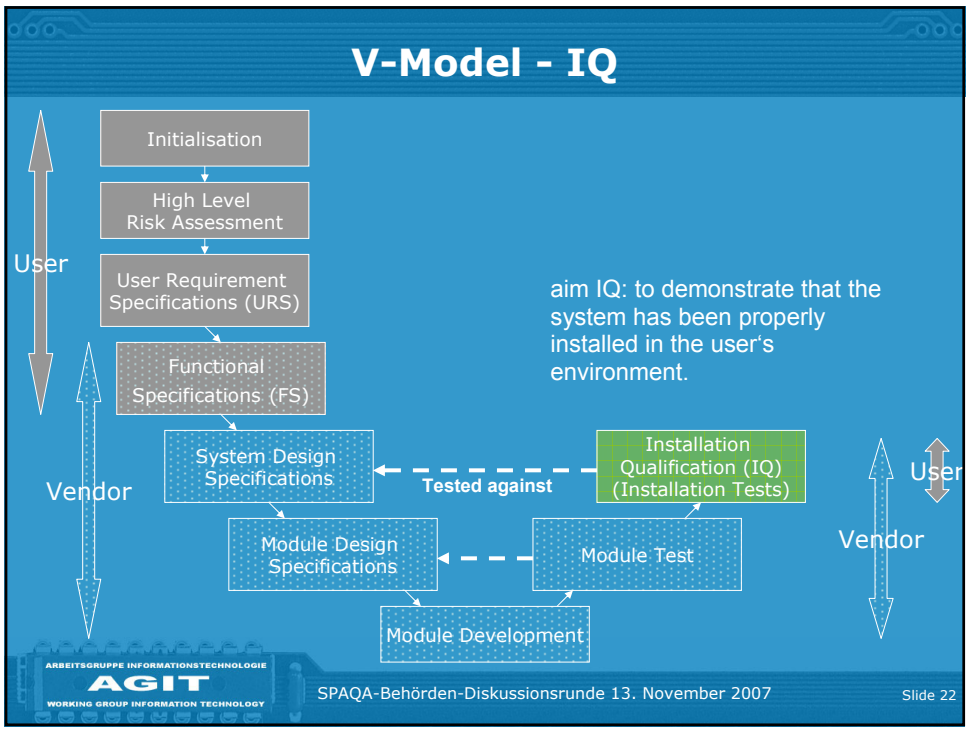
V-Model - IQ
Initialisation
High Level Risk Assessment
User Requirement Specifications (URS)
Functional Specifications (FS)
System Design Specifications
Module Design Specifications
Module Development
Module Test
Installation Qualification (IQ) (Installation Tests)
Tested against
aim IQ: to demonstrate that the system has been properly installed in the user's environment.
User
Vendor
User
Vendor
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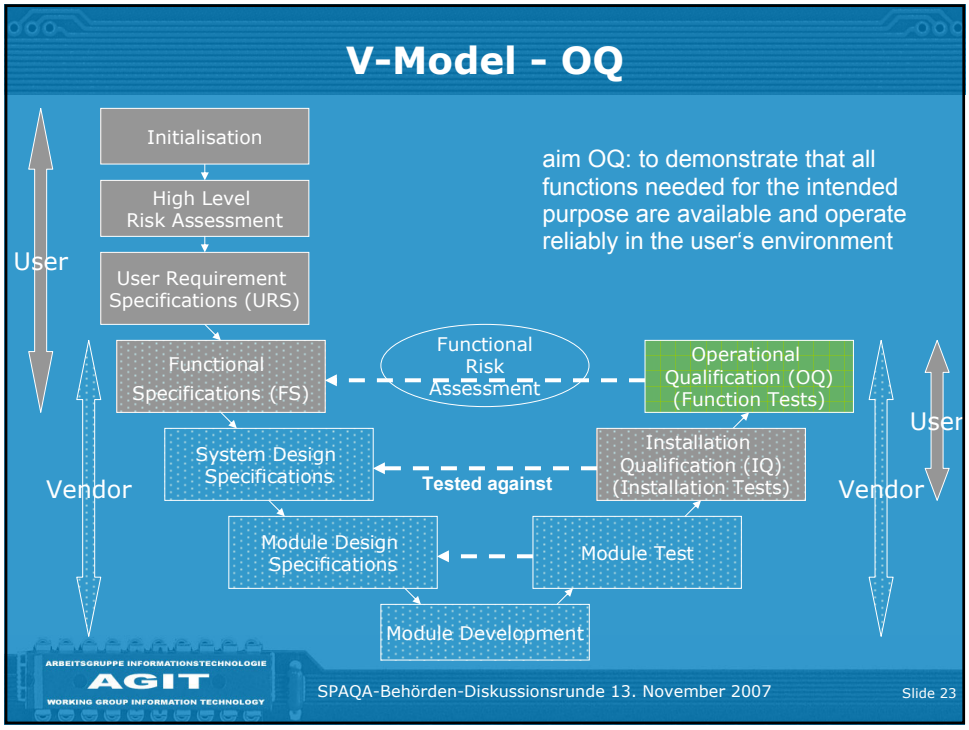
V-Model - OQ
Initialisation
High Level Risk Assessment
User Requirement Specifications (URS)
User
Functional Specifications (FS)
Functional Risk Assessment
Operational Qualification (OQ) (Function Tests)
aim OQ: to demonstrate that all functions needed for the intended purpose are available and operate reliably in the user's environment
System Design Specifications
Tested against
Installation Qualification (IQ) (Installation Tests)
Vendor
Vendor
User
Module Design Specifications
Module Test
Module Development
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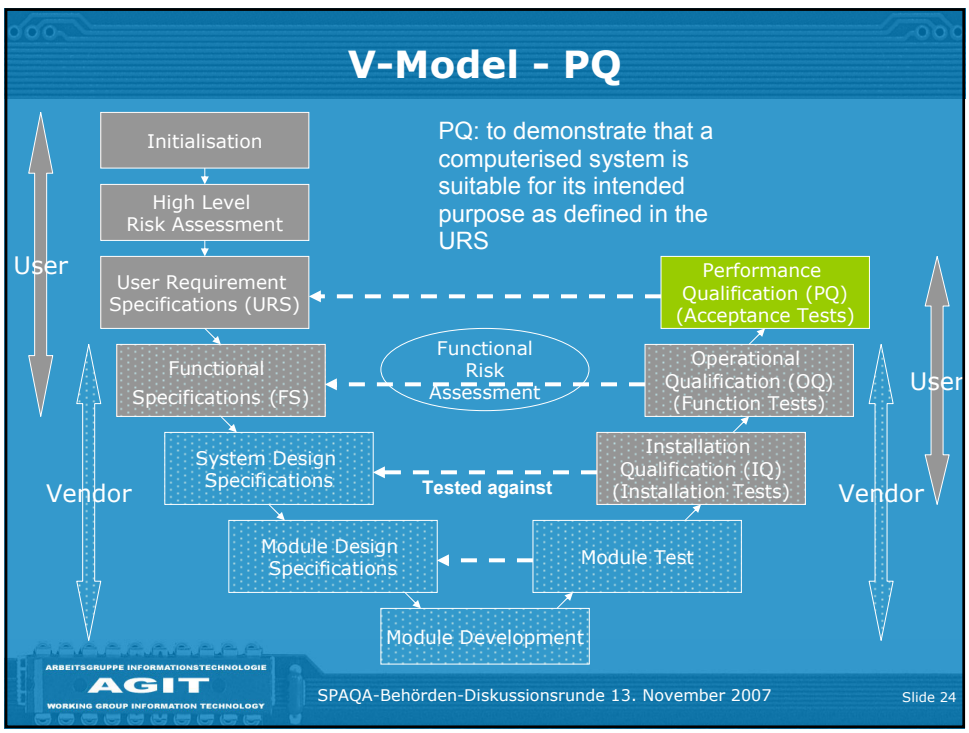
V-Model - PQ
Initialisation
High Level Risk Assessment
User Requirement Specifications (URS)
User
PQ: to demonstrate that a computerised system is suitable for its intended purpose as defined in the URS
Performance Qualification (PQ) (Acceptance Tests)
Functional Specifications (FS)
Functional Risk Assessment
Operational Qualification (OQ) (Function Tests)
System Design Specifications
Tested against
Installation Qualification (IQ) (Installation Tests)
Vendor
Vendor
User
Module Design Specifications
Module Test
Module Development
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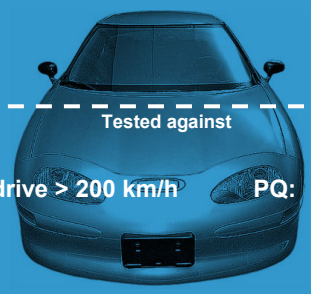
URS/FS - OQ/PQ – Car Example



User Requirement Specifications (URS)

Tested against

Performance Qualification (PQ) (Acceptance Tests)

URS: The car has to drive > 200 km/h

PQ: I try to drive 210 km/h

Functional Specifications (FS)

Tested against

Operational Qualification (OQ) (Function Tests)

FS:
…
Motor with 12 cylinders
Tyres qualified > 200 km/h
…

OQ:
…
Test the motor
Tyres verified > 200 km/h
…

V-Model – System in Operation

Initialisation

High Level Risk Assessment

User Requirement Specifications (URS)

Functional Specifications (FS)

System Design Specifications

Module Design Specifications

Module Development

Module Test

Installation Qualification (IQ) (Installation Tests)

Operational Qualification (OQ) (Function Tests)

Performance Qualification (PQ) (Acceptance Tests)

System in Operation (validated status)

Functional Risk Assessment

Tested against

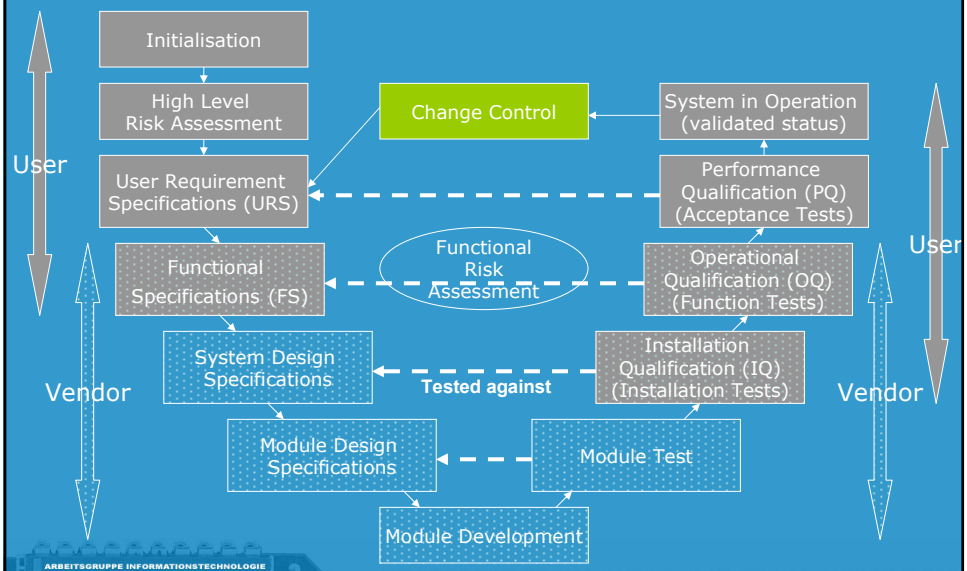
User

Vendor

Vendor

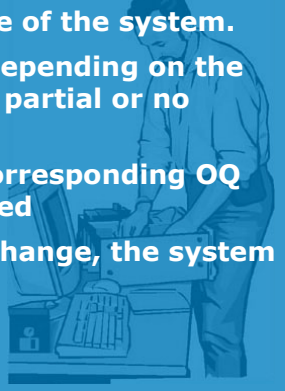
User

V-Model – Change Control

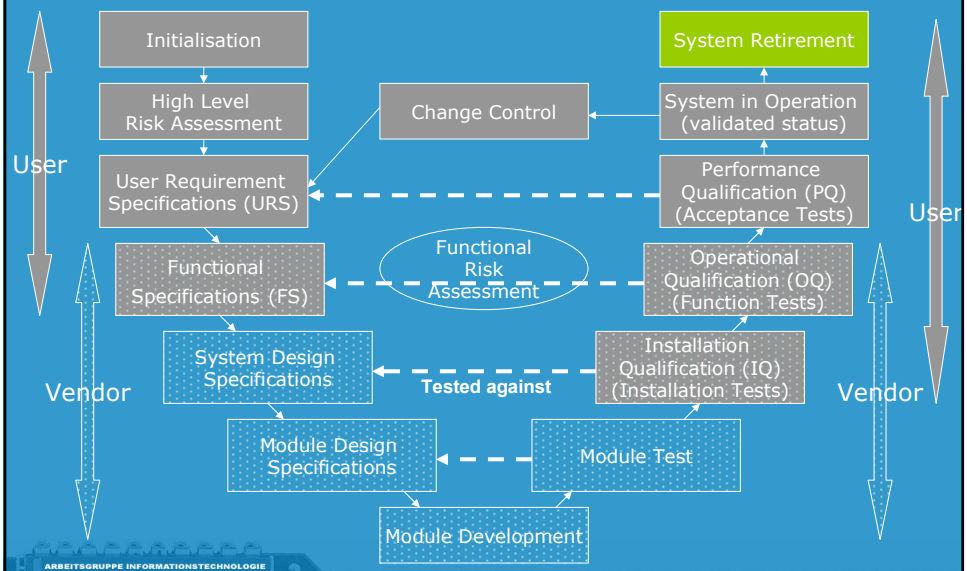


Change Control

- **Change request must be formally approved by the system owner and documented**
- **The risk of the change should be assessed for its potential impact on the performance of the system.**
- **Based on the risk assessment and depending on the extent of changes, either complete, partial or no testing should be performed**
- **If necessary, URS and FS and the corresponding OQ and PQ test scripts should be updated**
- **After successful completion of the change, the system is released for operational use**

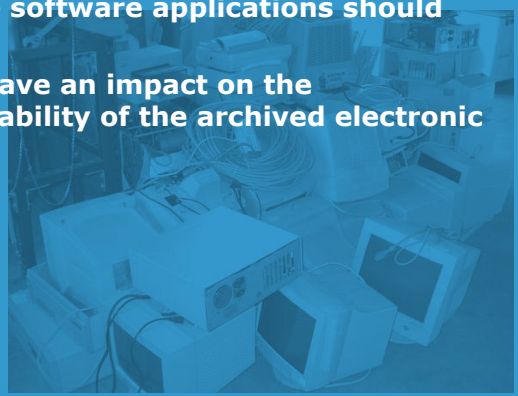


V-Model – System Retirement



System Retirement

- **Performed according to a formal system retirement plan and documented in a report**
- **Entire system documentation (log books, system manuals etc.) and the software applications should be archived**
- **The retirement may have an impact on the accessibility and readability of the archived electronic raw data**



Guideline Concept

Computerised System Validation (CSV)

can be carried out in a way analogous to GLP studies

GLP study versus CSV

GLP Study	CSV	Remarks
Study Director (SD)	Validation Director (VD)	Ultimate responsibility
Study plan	Validation plan	Approved by SD/VD
Method description	Test Scripts	Referenced to or included in plan
Conduct of study	Conduct of testing	The process executed according to validation plan and test scripts
Raw data	Validation raw data	Documented evidence of test results
Study report	Validation report	Audited by QA and signed by SD/VD

Responsibilities and Documents

Document	Responsible persons	Signature	Responsibilities/Activities
User Requirement Specifications	System Owner	mandatory	Listing of all appropriate URS which reflect the intended use of the system
Validation Plan	Validation director	mandatory	Overall responsibility for conducting the validation according to GLP, approval of validation plan
	Test Facility Management	optional	Recommended for the designation of the validation director
	System Owner	optional	Responsibility for the system
	Person responsible for IT	optional	IT infrastructure support
	Quality assurance inspector	optional	Reviews validation plan

Responsibilities and Documents (2)

Document	Responsible persons	Signature	Responsibilities/Activities
Validation Plan Amendments	Validation Director	mandatory	Amendments to validation plan (e.g. test plan if not included in the validation plan)
	Quality assurance inspector	optional	Reviews validation plan amendments
Test raw data	Validation personnel	Mandatory (minimally initials)	Conduct of tests and documentation of test results and deviations if they occur
Validation Report	Validation Director	mandatory	Overall responsibility for conducting the validation according to GLP, approval of validation report
	System Owner	optional	Responsibility for the system
	Person responsible for IT	optional	IT infrastructure support
	Quality assurance inspector	optional	Reviews validation report

Responsibilities and Documents (3)

Document	Responsible persons	Signature	Responsibilities/Activities
GLP statement	Validation Director	mandatory	Overall responsibility for compliance with GLP
QA statement	Quality assurance inspector	mandatory	Assurance of the GLP compliant conduct of the validation: provides dates of review of validation documentation and inspections
Validation Report Amendment	Validation director	mandatory	Amendments to validation report
System release	Test facility management/ system owner	mandatory	Release of the system for productive use

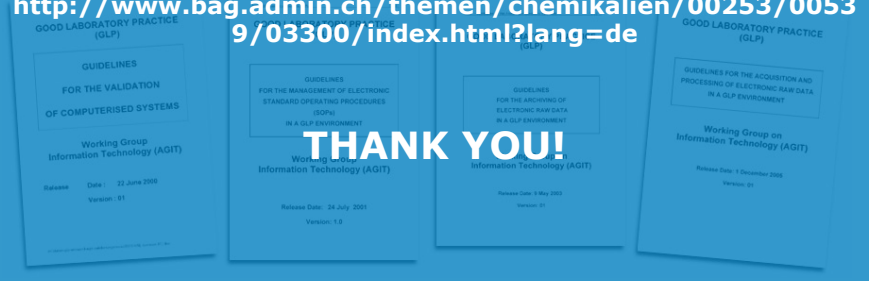
AGIT

Guidelines are available at:

www.glp.admin.ch

or

http://www.bag.admin.ch/themen/chemikalien/00253/00539/03300/index.html?lang=de



THANK YOU!