

GLP / GMP Multi-Vendor Instrument Validation and Service Harmonization of Protocols

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1 Introduction

> The Issue

Multiple Methods & Documents Hinder Ability to Meet Regulatory Compliance

Pharmaceutical companies have a complex array of instruments that are daunting to "qualify" since many are manufactured by different vendors and used in multi-vendor configurations. For example, a typical LC/MS/MS system is composed of an injector from Company X, an HPLC pump from Company Y and a triple quadrupole mass spectrometer from Company Z. Who qualifies the instrument? How do you prove compliance?

Multiple Validation / Qualification Protocols Can Be Suspect

GxP validation protocols and compliance data generated by companies X, Y, and Z are usually dissimilar and generally do not test the overall function of the complete configuration. Prior to this point, the validation data from various vendors may be too complex and ill-documented to understand. In addition, the overall system (holistic) validation may be completely overlooked and, therefore, the instrument validation may be suspect.

> The Solution

Reduce Complexity and Improve Compliance Through the Harmonization of Protocols

A major step in harmonizing the management process and the documents is to develop one generic protocol (e.g., for LC/MS/MS) that covers all instrument configurations from instrument companies A – Z.

At this point it becomes easier for a laboratory manager to understand, control, document and defend validation data and manage preventative maintenance (PM) and service.

3 Qualification Options

> OEM (Original Equipment Manufacturer)

- Specializes only in validating equipment that they manufacture
- Not flexible in tailoring to customer needs and requirements
- Lack of competition drives price up
- Protocols vary among vendors. Example: An HPLC protocol from one OEM differs from another OEM's HPLC protocol even though the instruments perform the same task

> Do it Yourself – By qualified personnel

- Protocol creation requires internal resources and skill sets
- Need to determine and acquire proper tools and standards for each instrument (inventory of protocols, standards, tools)
- Who will implement the qualification? User, QA, internal specialist?

> Multi-Vendor Service Providers

- Proven technical capabilities and experience
- Proven protocol format and tests – Years of experience
- Qualifies mixed instruments – such as LCMS (different vendors)
- Uniform protocols for the entire range of equipment
- Flexibility, lower cost than OEM and when done by end user

5 OEM Qualification of Mixed LCMS System



> 4 Separate Protocols:

- Vendor 1: Autosampler
- Vendor 2: Pumping System
- Vendor 2: Degasser
- Vendor 3: MS

- Difficult to Review
- Difficult to Audit
- Unacceptable to FDA

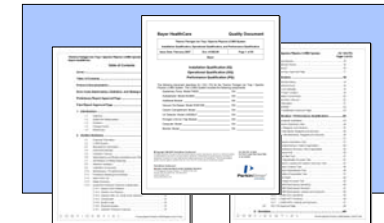
> Each vendor performs qualification separately, each with their own styling and arrangement of protocols

> Customer arranges for qualification with each vendor separately

> The LCMS system is NEVER qualified as a whole

4 Separate Protocols – Not Qualified as a Complete System

7 Harmonized Protocol Benefits



One Harmonized Protocol

- ✓ Qualification of ALL HPLC components
- ✓ Qualification of HPLC System
- ✓ Qualification of MS System
- ✓ Qualification of the WHOLE System

At this point it becomes easier for a laboratory manager to understand, control, document and defend validation data and also manage preventative maintenance and service.

2 Business Qualification Needs

> A robust instrument qualification solution that meets ALL regulatory and internal requirements

- Have a corporate approved MASTER VALIDATION PLAN
- Identify instruments that require qualification
- Determine when calibration may be adequate
- Ensure all appropriate parties are involved with the process (Management, QA, QC, Regulatory Affairs, Users, ...)

> A defined risk assessment

- All regulatory requirements are met
- Qualification process / protocol is robust and approved
- Cost-benefits

> A streamlined process

- Make the process simple, yet acceptable – take complexity out of the qualification process and eliminate unnecessary tests
- Create protocol uniformity across the entire line of instruments
- Create consistent documentation to simplify review and auditing
- Make it cost effective

4 OEM Qualification of Mixed LCMS System

One System Requires 3 OEMs to Qualify Instrument



Leap CTC HTS Gensel Gilson Agilent PerkinElmer Shimadzu	Agilent Waters PerkinElmer Shimadzu Gilson Varian	ABI / PE Sciex Micromass ThermoFinnigan
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Drawbacks

- Each OEM performs a qualification on his "part" of the system, employing its own tests, setting its own standards, and producing its own documentation, which varies from OEM to OEM.
- The sum of the parts does not "qualify" the whole instrument. The overall system (holistic) validation may be completely overlooked, resulting in a "suspect" instrument qualification.
- Expensive and time consuming – Scheduling 3 OEMs, Paying 3 OEMs

6 OneSource Multi-Vendor Approach

One Document / One Qualification for Entire System



One Service Provider

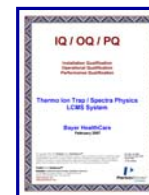
Performed by Multi-Vendor Service Provider

- > Harmonized, Single Protocol Including:
 - Qualification of ALL HPLC components
 - Qualification of HPLC System
 - Qualification of MS System
 - Qualification of the WHOLE System

> Same Day

> One Service Provider Contact

> Less Expensive



8 Summary

> Business Needs

- Streamlined validation / qualification process
- Comprehensive protocols that address the entire system
- Uniform protocols to simplify the auditing / management of instruments
- Consistent documentation

> Business Options

- OEM
- Do-It-Yourself
- Multi-Vendor Service Providers

> Solution

- Reduce complexity and improve compliance through the harmonization of protocols. Multi-vendor service providers like PerkinElmer:
 - Create protocol uniformity across the entire line of instruments
 - Create consistent documentation to simplify review and auditing
 - Provide one contact for qualifying all the instruments in your lab
 - Make it cost effective

