S-Matrix®

Fusion QbD®

Experiment While You Sleep – Walk-away CDS Automation

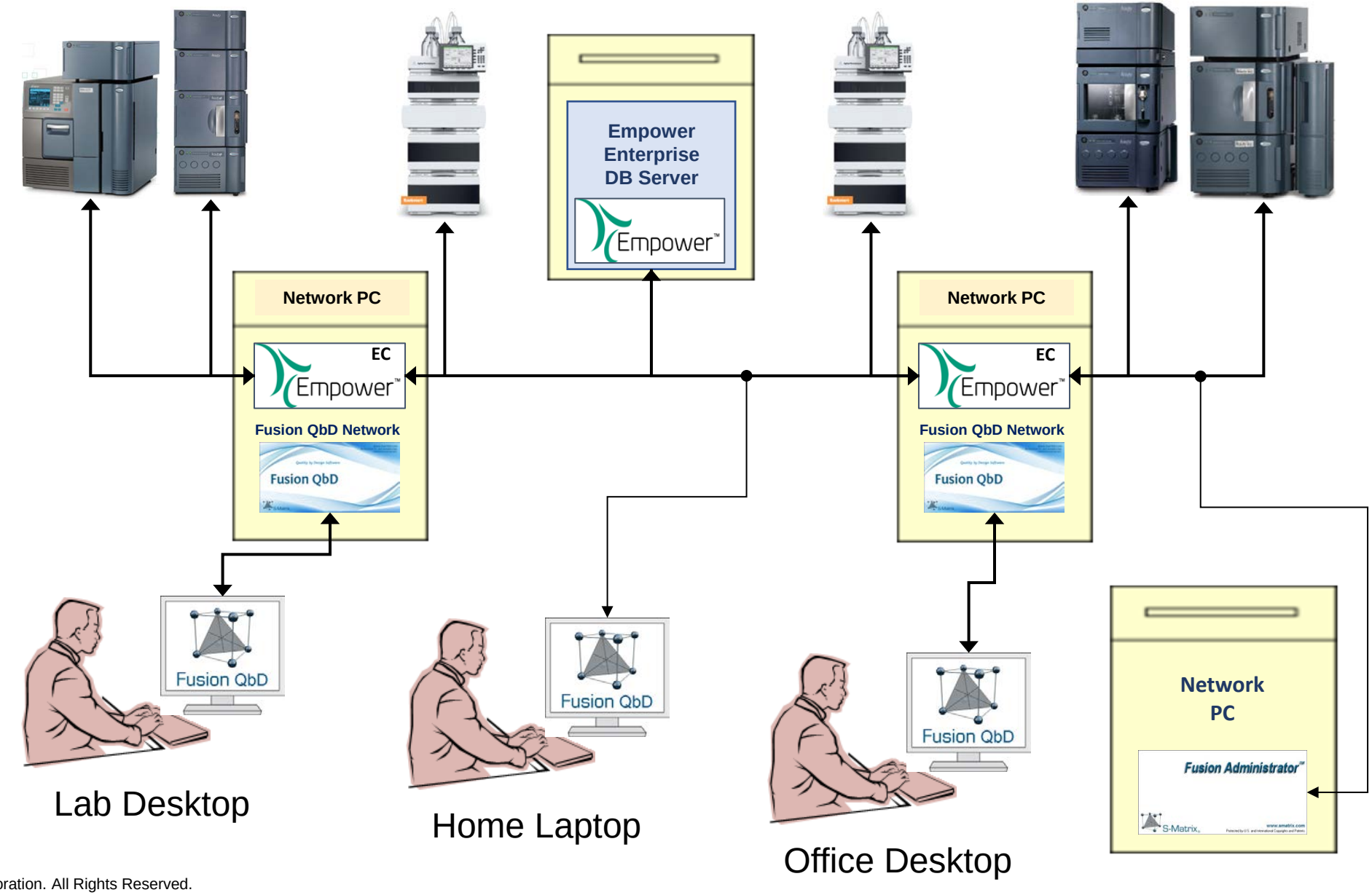
S-Matrix Corporation
www.smatrix.com

Fusion QbD – Supports All Install Environments

Install Environment	Fusion QbD
Standalone (Workstation)	✓
WorkGroup / Network	✓
Citrix Ready Certified	✓
Fully Qualifiable for GxP*	✓

* – Fusion QbD is operating in the GxP environments of international pharmaceutical companies worldwide.

Fusion QbD – Supports All Install Environments



Key Differentiators – Automation & Compliance

✓ Full Experiment Automation Support

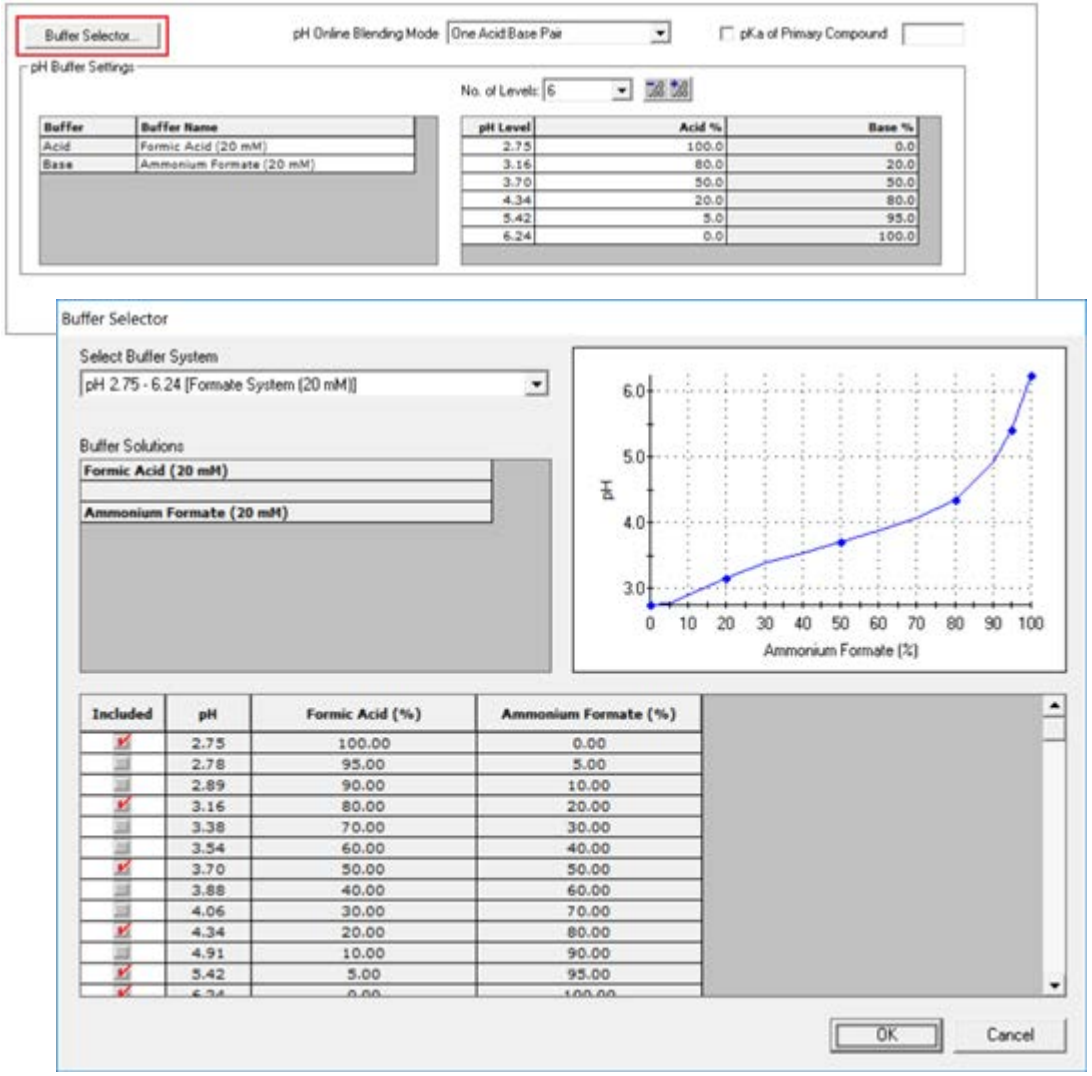
- LC Systems
- Column/Solvent Valves
- Separation Modes
- Automation Supports Data Quality

✓ Forced Degradation Studies

✓ Bi-directional Audit Trail Support

- Automation/Auditing Support Data Integrity

Online Prep – pH, Salt ΔC, Buffer ΔC, Additive ΔC



Built-in pH Titration Curves for Quaternary Pump Modules!

Or Use Your Own Buffer Curve.

Extremely Precise!

Fusion QbD – LC System Automation

Empower™

- ✓ Solvent Selection Valves
- ✓ Column Switching Valves

Alliance HPLC

Alliance iS HPLC

Acquity Binary

Acquity H-Class

Acquity Arc

Acquity UPC²

Fusion QbD – LC System Automation

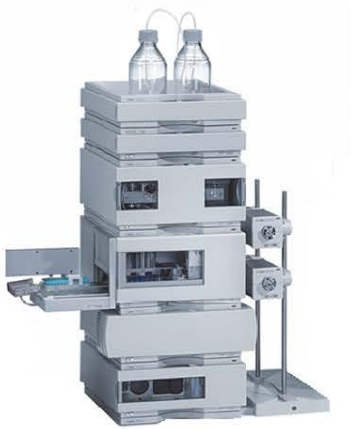
ChemStation
OpenLab

CHROMELEON 7.2

Empower™

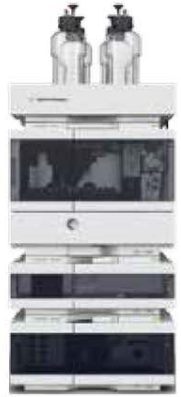
- ✓ Solvent Selection Valves
- ✓ Column Switching Valves

Agilent 1100s And 1200s



Agilent 1260 Infinity Series

Agilent 1260 Infinity II Series



Agilent 1290 Infinity Series

Agilent 1290 Infinity II Series

Fusion QbD – LC System Automation

- ✓ Solvent Selection Valves
- ✓ Column Switching Valves

UltiMate LCs

Vanquish Horizon And Flex LCs

Fusion QbD – Study Parameter Flexibility

Full utilization of Quaternary Pumps, Solvent Selection Valves, and Column Switching Valves.

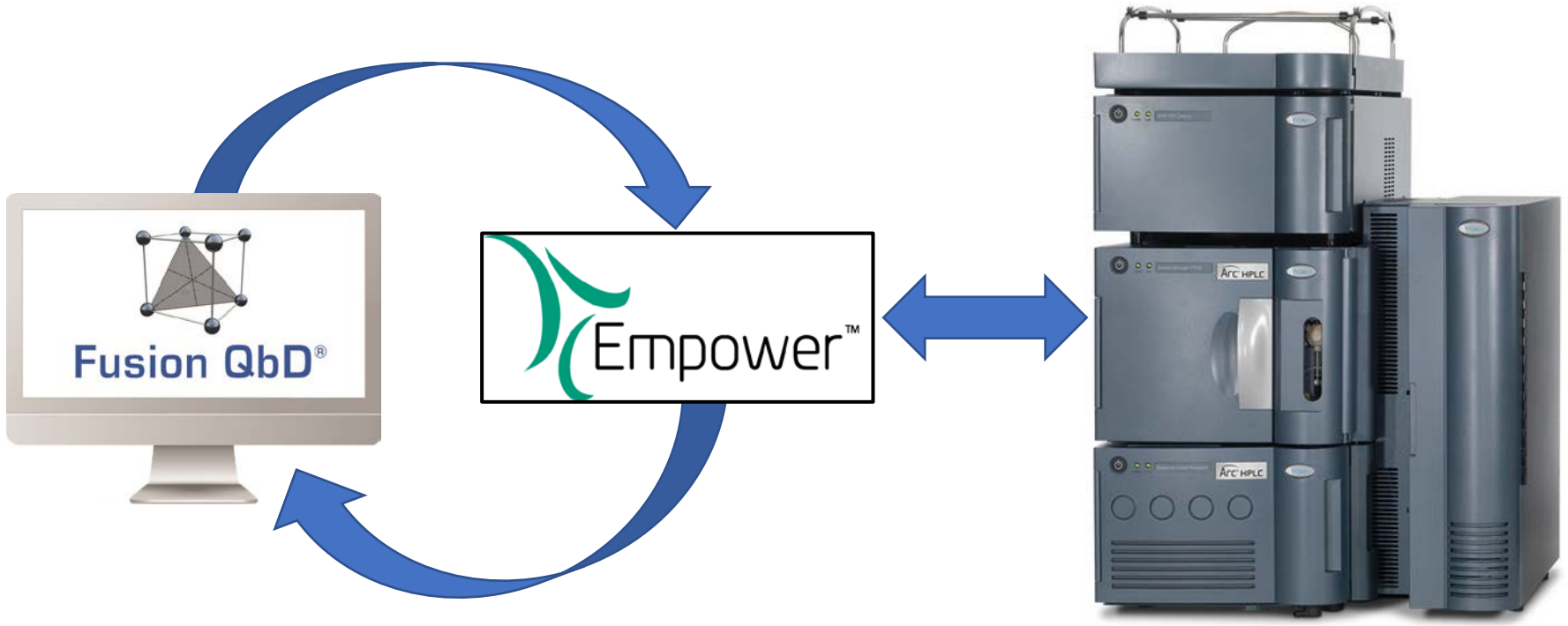
Study **any combination** of LC parameters which can **interactively effect** method performance!

- Isocratic and Gradient Methods
- Strong Solvent Type
- Any pump program steps – e.g.
  - Equilibration Time & %
  - Isocratic Hold Time & %
  - Gradient Time / Slope
  - Initial / Final Hold Time & %
  - Re-equilibration Time & %
- Column Temperature
- Column Type
- Flow Rate
- Injection Volume
- pH
- Mobile Phase Blends
- Salt, Buffer, Additive – Type & ΔC
- Wavelength

Fusion QbD Automation with Empower

Supports All These Separation Modes

- Reversed Phase
- Normal Phase
- Chiral
- HILIC
- Ion Exchange
- Size Exclusion
- SFC



Experiment Automation Intelligence

Maximum Efficiency + Maximum Data Quality:

- ✓ Automates Mobile Phase Preparation.
- ✓ Maximizes use of reservoirs and solvent selection valves.
- ✓ Incorporates column conditioning.
- ✓ Ramps on pH.
- ✓ Ramps on Temperature.

Fusion QbD – Export to CDS

Generates QbD-aligned DOE Experiment

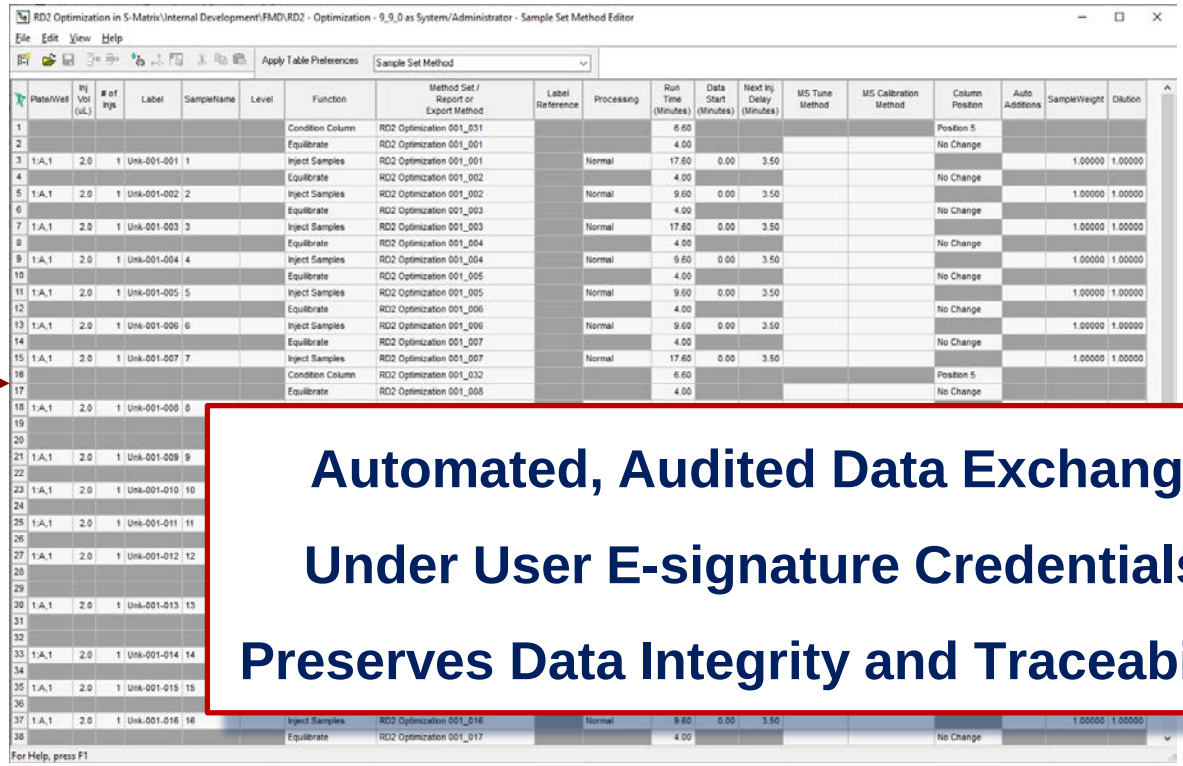
Automatically Builds Sequence and All Instrument Methods

CDS Software

ChemStation
OpenLab

CHROMELEON 7.2

Empower™



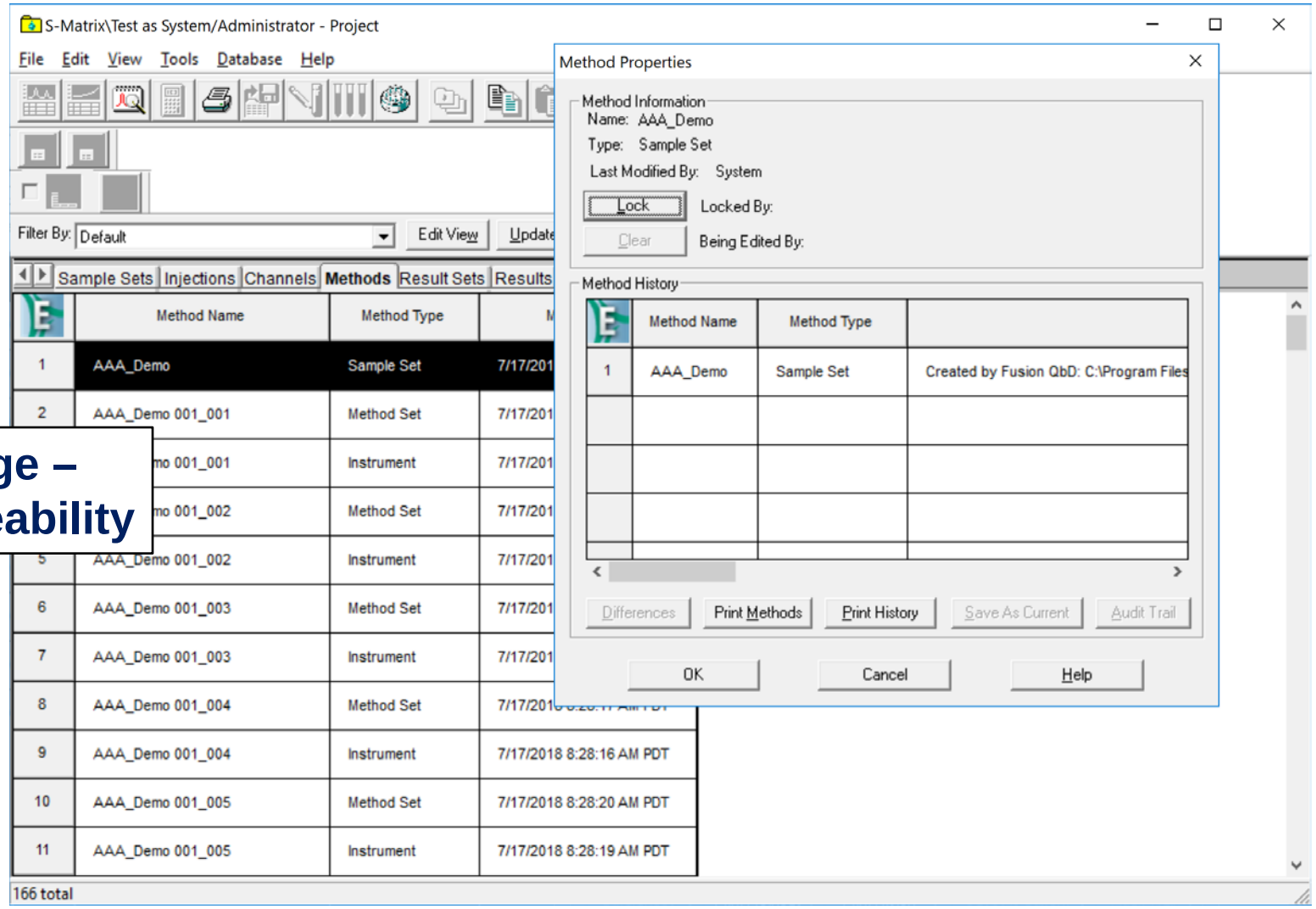
Automated, Audited Data Exchange

Under User E-signature Credentials

Preserves Data Integrity and Traceability

Auditing assures Data Integrity and Traceability

Automated, Audited Data Exchange – Preserves Data Integrity and Traceability



Fusion QbD – Import from CDS

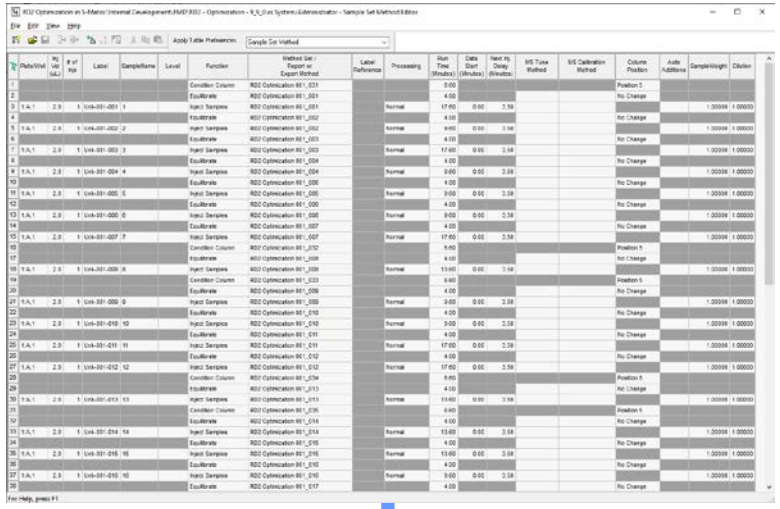
Automatically Retrieves All Chromatograms & Results

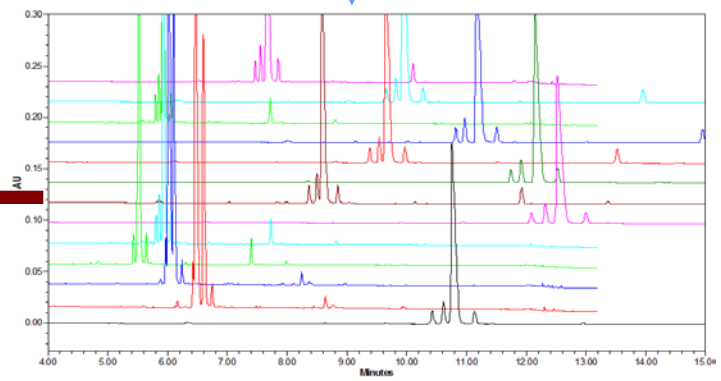
CDS Software

ChemStation
OpenLab

CHROMELEON 7.2

Empower™





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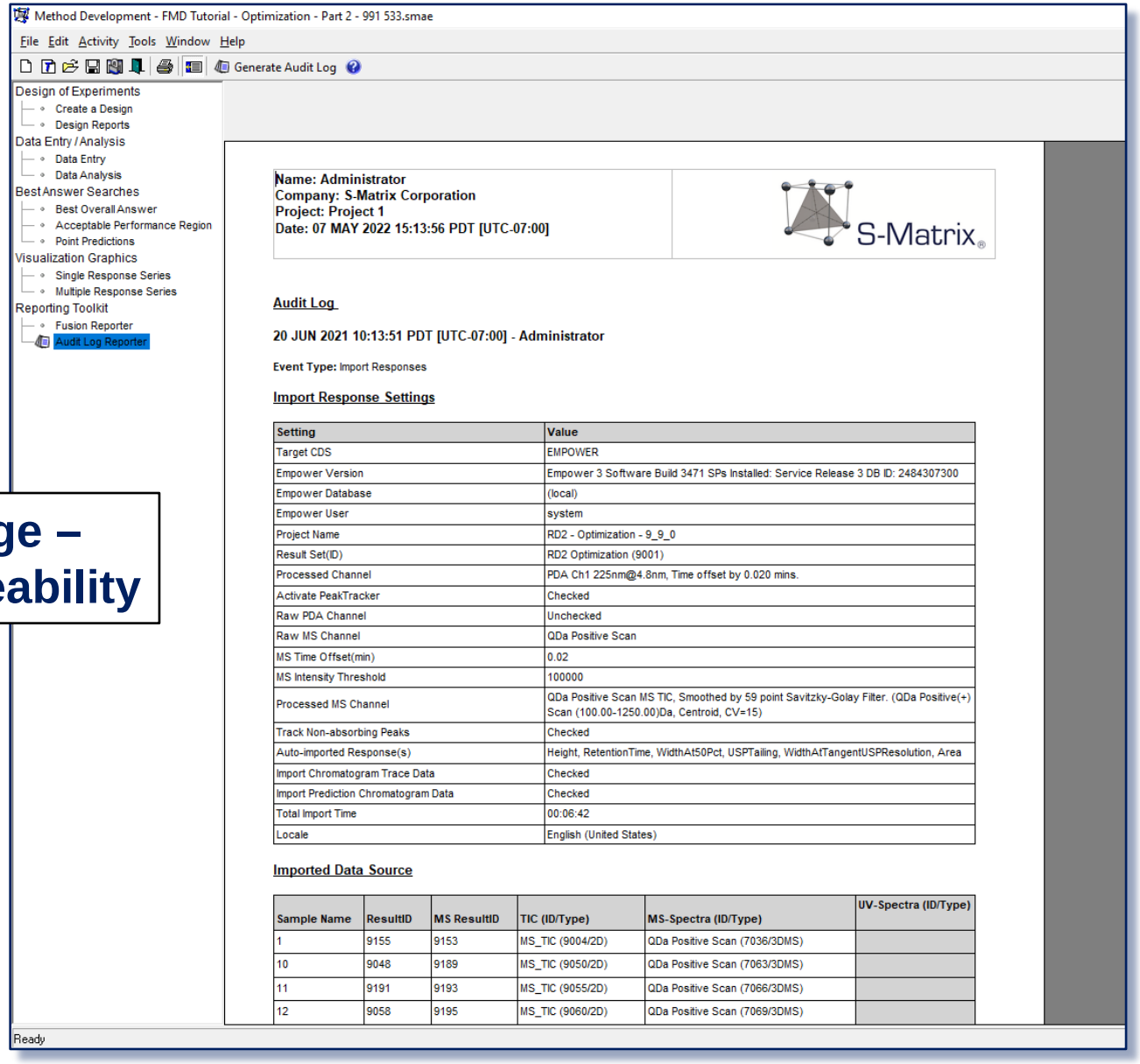
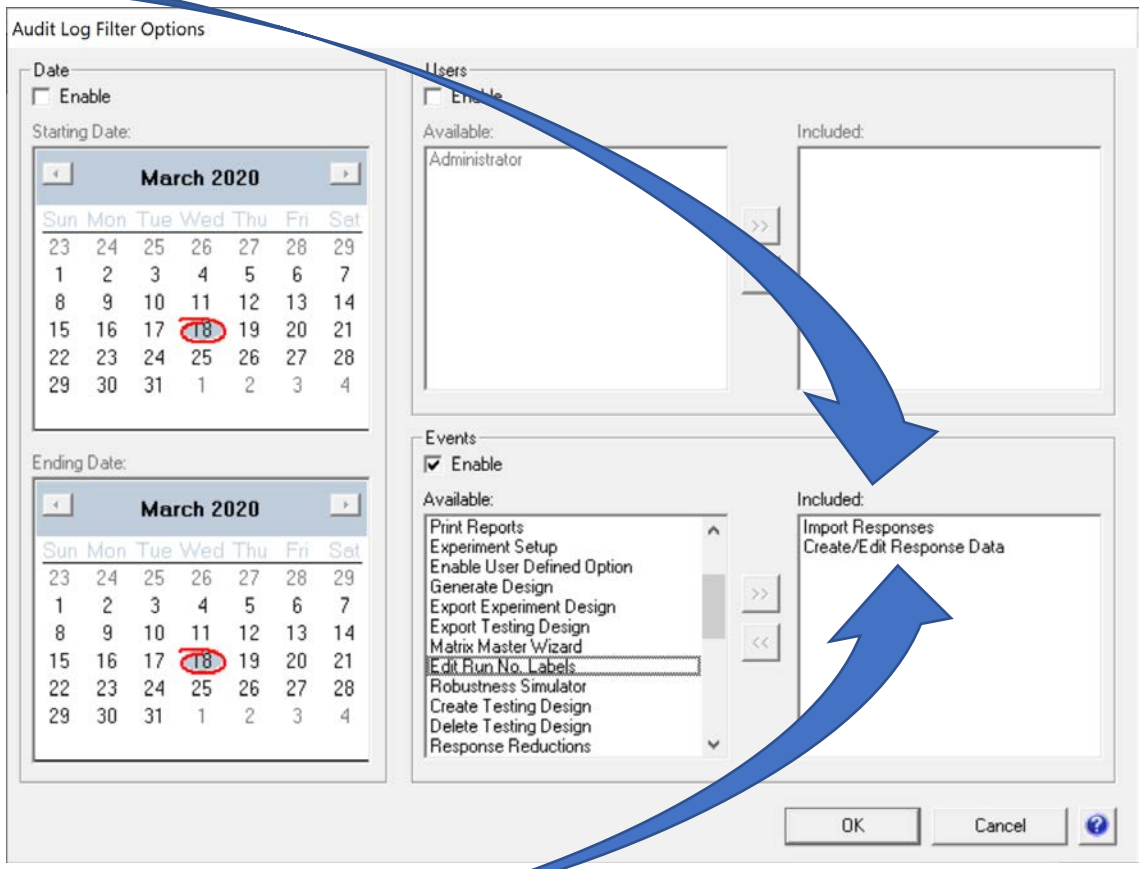


Why Audit Trail is Important !

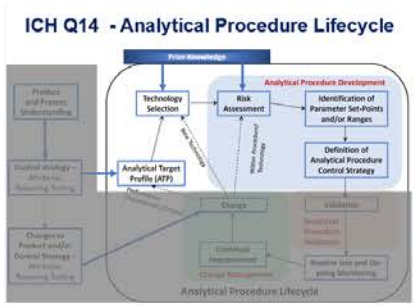
Where did this data come from?
Which Project?
Which Results Set?
Which Chromatograms?

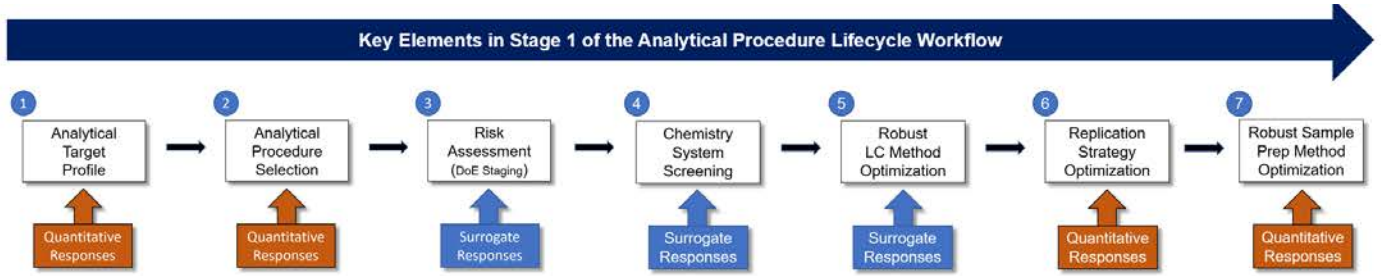
Who imported this data – was the data modified?

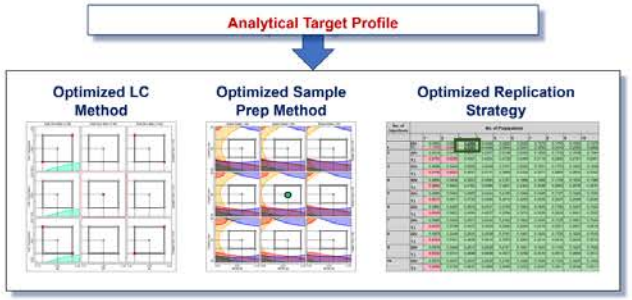


End of Presentation

Fusion QbD is the Only LC Method Development Software Which Completely Supports the AQbD / APLM Workflow in the Regulatory Guidances







ICH Q2(R2) / ICH Q14 / USP <1210> / USP <1220> / EP 11.60

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