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Agenda




- Waters Informatics
- Empower 3 CDS
- NuGenesis SDMS
- Managing the eLife-cycle of your Empower data
- Case study
NuGenesis SDMS bij Centraal Laboratorium van
Covestro N.V. te Antwerpen
- Questions



Customer Success is our Mission!

Waters
THE SCIENCE OF WHAT'S POSSIBLE.®

- Established in 1958
- \$1.85 billion in annual revenue
- Publicly traded (NYSE:WAT)
- Multiple manufacturing and distribution centers worldwide
 - All facilities are cGMP-compliant
 - ISO 9001-2000 certified
- 2000 Direct sales/service personnel in 97 offices serving 54 countries worldwide
- 5,900 employees with an average of 10 years of service



Push the
boundaries
of
**What's
Possible**

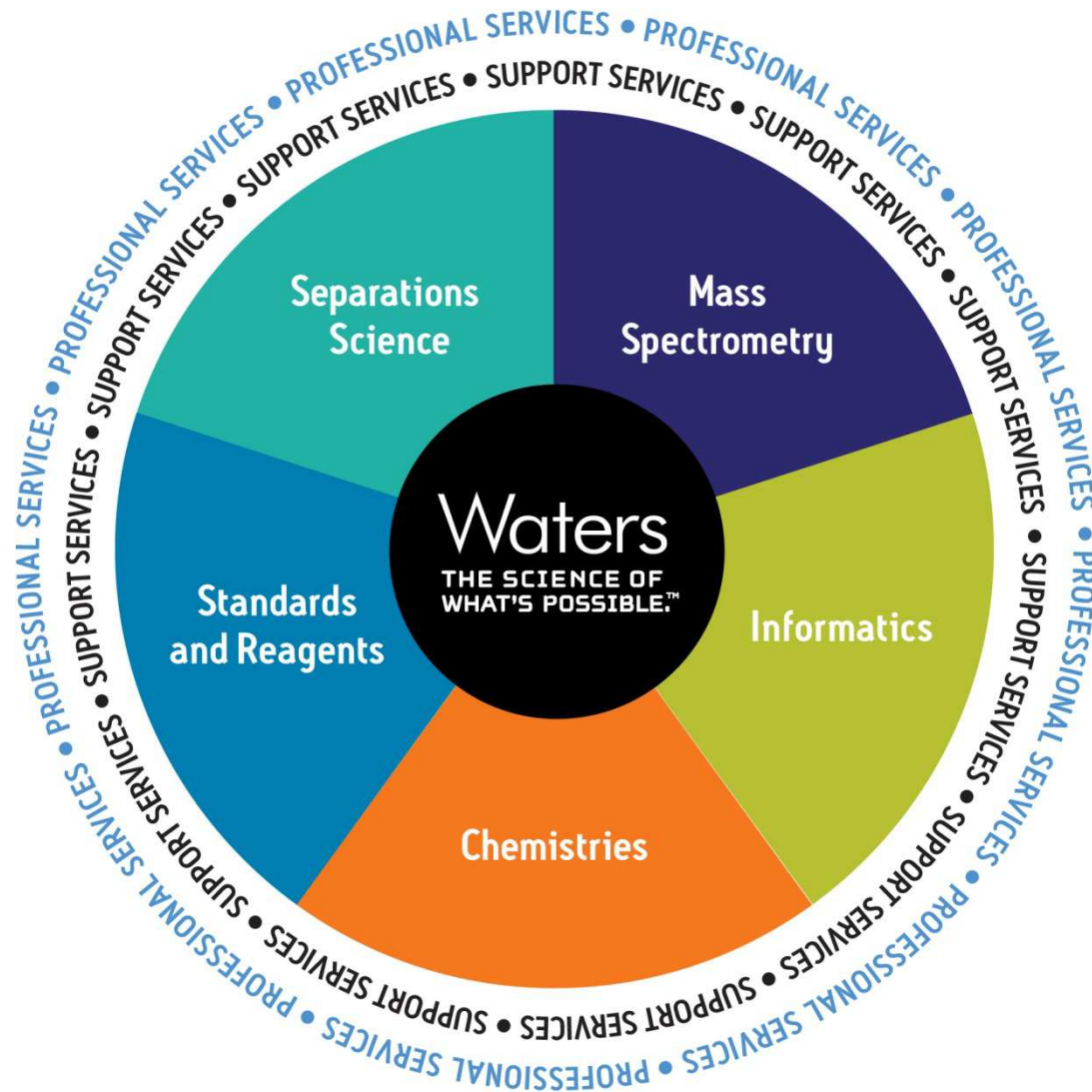
&



Unleash
**The
Science**
to make it
a reality

Technology Portfolio + Expertise

Waters
THE SCIENCE OF WHAT'S POSSIBLE.®



Waters Belgium

- 45 people working from office in Brussels (Zellik)
- Waters key contacts in Vlaanderen



Gert Martens
Accountmanager



Kim de Kock
Accountmanager



Frederic Delaruelle
Laboratory
Informatics Sales



Evelien Dejaegere
Accountmanager
Consumables

Waters Laboratory Informatics

■ Laboratory Informatics development and service centers:

- Milford, MA, USA
- Manchester, UK
- Frechen, Germany
- Brasov, Romania

■ Metrics on our division

- # Employees550
- # Networks
 - Empower.....4000
 - NuGenesis500
- # Licenses450,000

Waters Corporation
Milford, Massachusetts, USA



Waters Center of Excellence
Manchester, England



Waters Development Center
Frechen, Germany



[inform] 2016 – Save the Date!



WHEN: May 17–20
WHERE: Sheraton Lisboa Hotel, Lisbon, Portugal

Maximize the value of your Waters' software

Choose from over **35 workshops**, tutorials, partner sessions, and plenary presentations on Empower, NuGenesis LMS, UNIFI, Regulatory Compliance, System Administration & Integration, and more.



Why Attend?

- Influence future product features and direction through direct contact with our product management team.
- Network with colleagues, share experiences and knowledge, and pick up helpful tips from other Waters software users.
- Meet with Waters experts – interact with our technical teams in the workshops or schedule a one-on-one session to discuss your individual software needs and requirements.

Accurate, rapid decision making

Greater scientific insight

Easier collaborations

Laboratory efficiency

Shorter time to market

Less waste and lower costs

Connecting lab and business

[re]imagine...

Fewer errors

Information accessibility

Meeting regulatory requirements

Ensuring product quality

Streamlined workflows

User personalization

Analytical effectiveness

**Software integration and
standardization**

Empower 3



Chromatography Data Software

Eliminate Risk in your Chromatography workflow

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Empower 3

- Market leading CDS worldwide - corporate standard for instrument control, data acquisition, processing and reporting
- Success based on several key attributes
 - Flexible and easy to use
 - Data management with embedded relational database
 - Expanded portfolio for instrument control
 - Most comprehensive compliant ready solution
 - Integrated advanced detection and application specific software
 - Enterprise scalability



Standardize on one CDS

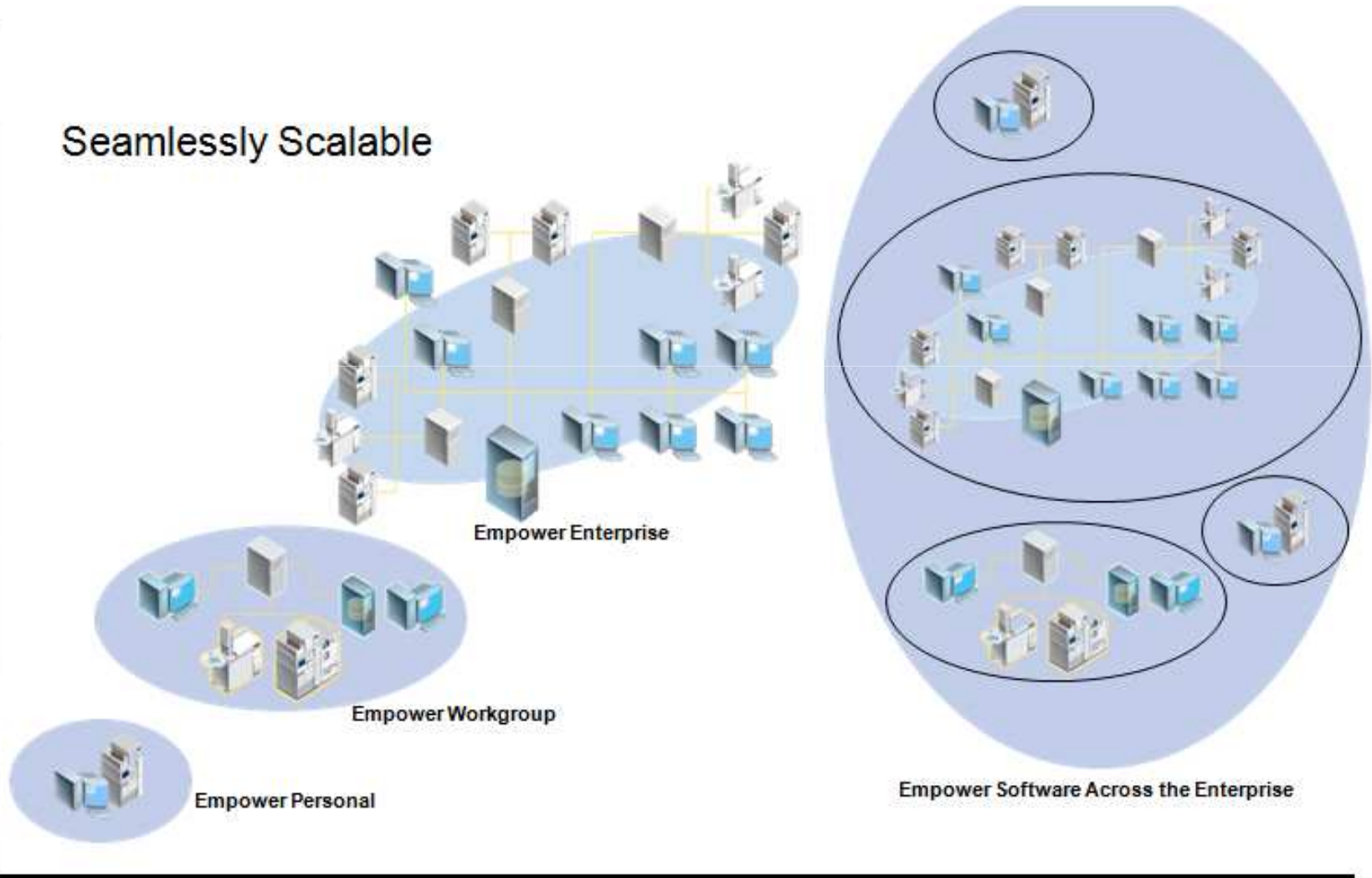
- Standardized Data format
 - Exchange of information easier
 - Reduced time for Review and sign-off
- Reduced Training Effort
 - Training required for only 1 software package
- Improved Data Integrity & Compliance
 - Relational database provides better traceability
 - Eliminate excel for processing
- Promotes Collaboration
 - Sharing methods easier
 - Data review from different geographies possible



From Personal to Enterprise

Empower 3

Seamlessly Scalable



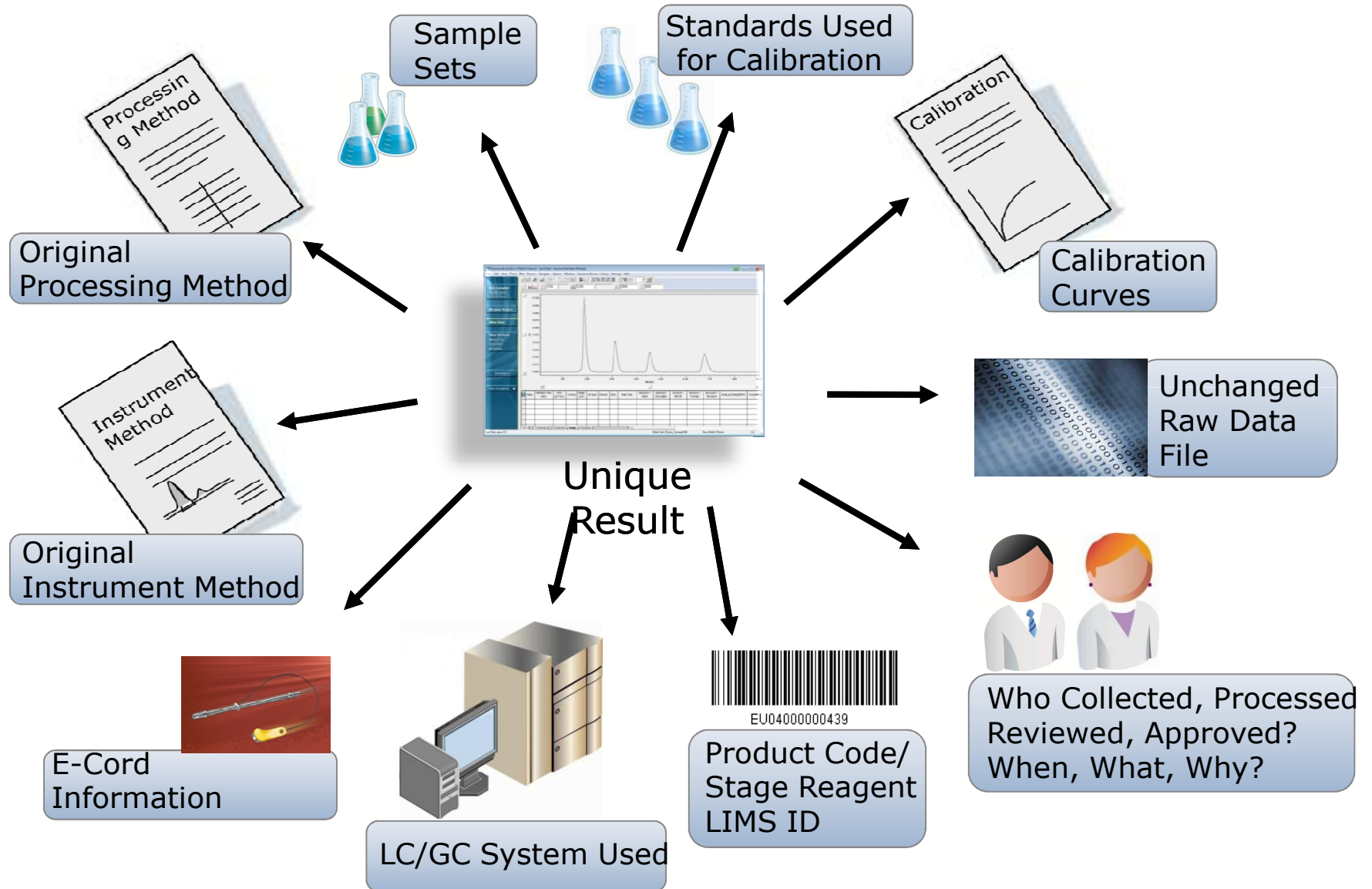
Advantages network based CDS

- Globalization of Operations
 - Centralization & Harmonization IT systems
 - Increased flexibility
- Cost Reduction
 - Centralized Administration & Data Management
 - Lower Requirements for computer hardware
 - Qualification & Validation
 - Rapid Deployment & Easy Upgrade
- Integration with other software
 - SDMS, ELN, LES and/or LIMS
 - Eliminate Manual Transcription
 - Optimize Review & Approval process
- Security & Traceability
 - Paperless initiatives (eSignature)



Data Traceability & Integrity

Empower 3



Single User Experience for Equipment from Many Vendors

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Empower 3



All Major HPLC



QDa, SQD, TQD



All Major GC



UPLC



UPC²



APC



PATROL



CE



Dissolution

Empower 3

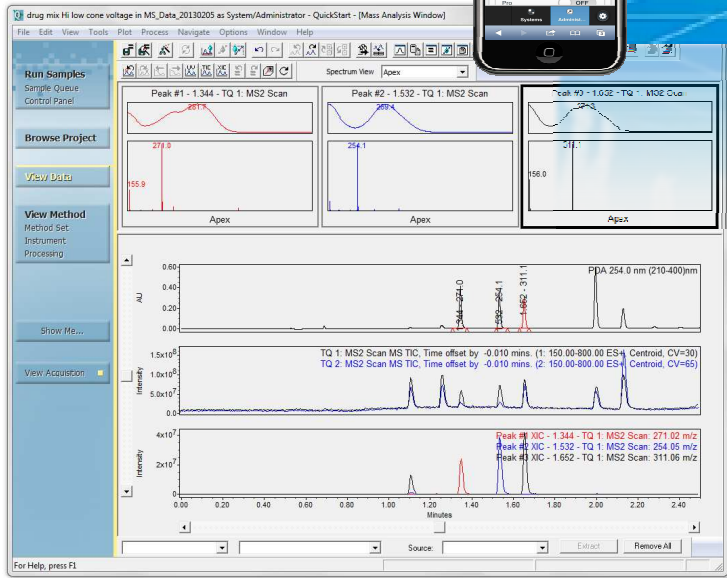
Analytics

MS Peak Tracking

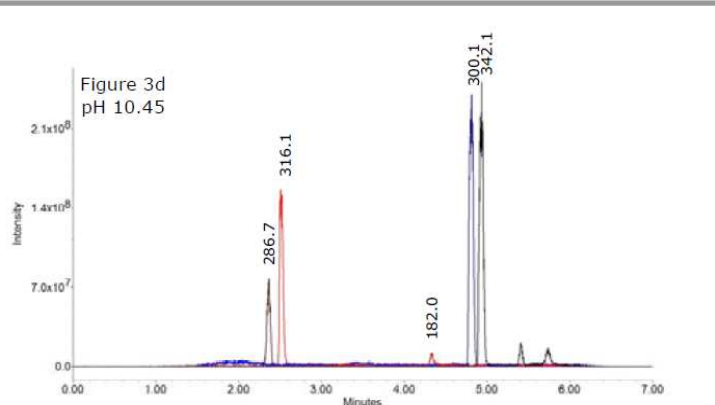
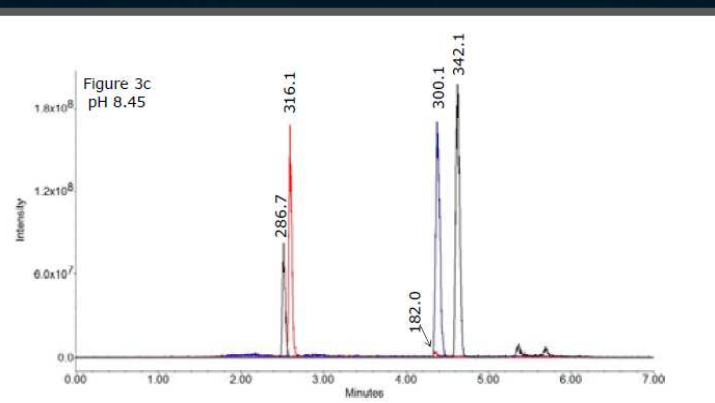
Mass Spectrometry



Empower Laboratory Analytics



Mass Analysis Window



QDa Detector

Retention Time (min)	Intensity	Mass (m/z)
1.344	~1.5e8	271.02
1.532	~1.5e8	254.05
1.652	~1.5e8	311.06

Empower Driven Services 365

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Empower 3

Quality &
Traceability



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Easily Configured for GxP Use in Your Lab

- Advanced Transaction Safeguards
- Granular User Privileges
- Electronic Record Controls
- Electronic Review & Signature Controls
- Embedded Suitability Calculations
- Audit Trails

Empower 3

Regulatory Compliance

- Increase efficiency and reduce compliance risks
 - Supporting data integrity with leading security features
 - Facilitating audit-readiness, traceability, and eData review
 - Supporting data authenticity through eSignature workflows
 - Eliminating risks of spreadsheet-based calculations
 - Leveraging well-established technologies to facilitate validation
- Empower's compliance-minded design affords decreased reliance on procedural controls.



NuGenesis SDMS



NuGenesis SDMS Patented Technology

File Capture

- NuGenesis File Capture is a means of collecting files from instruments
 - It could be from a workstation or from a file share in the lab
 - It could also collect Office Documents and PDFs
 - All this happens automatically in the background

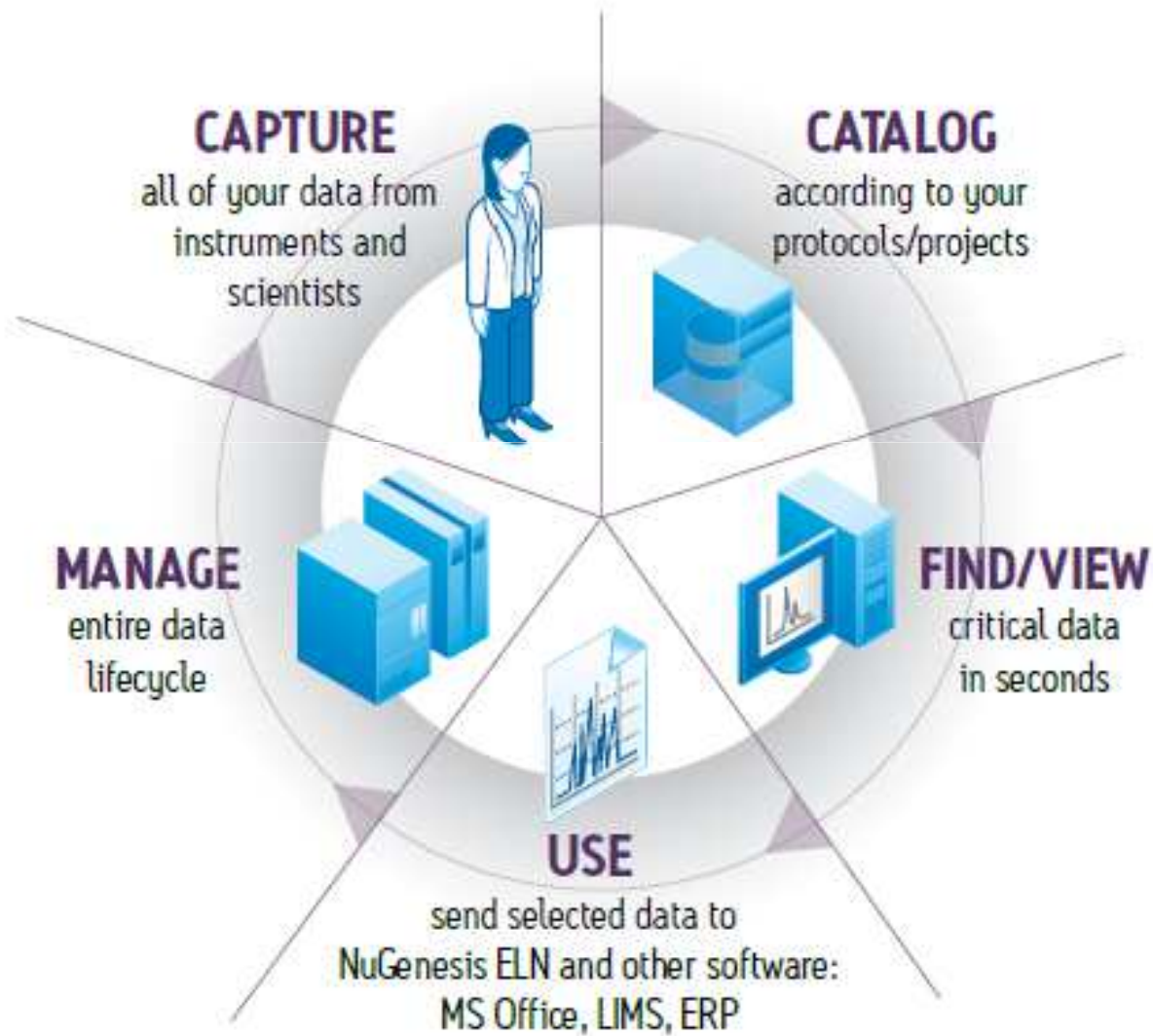
Print Capture

- NuGenesis Print Capture is a way of printing to the database
 - It's just like printing to a networked printer
 - You get a permanent record of the print in NuGenesis
 - Once in the database you can reuse all the content of the report

Scientific Data Management System (SDMS)

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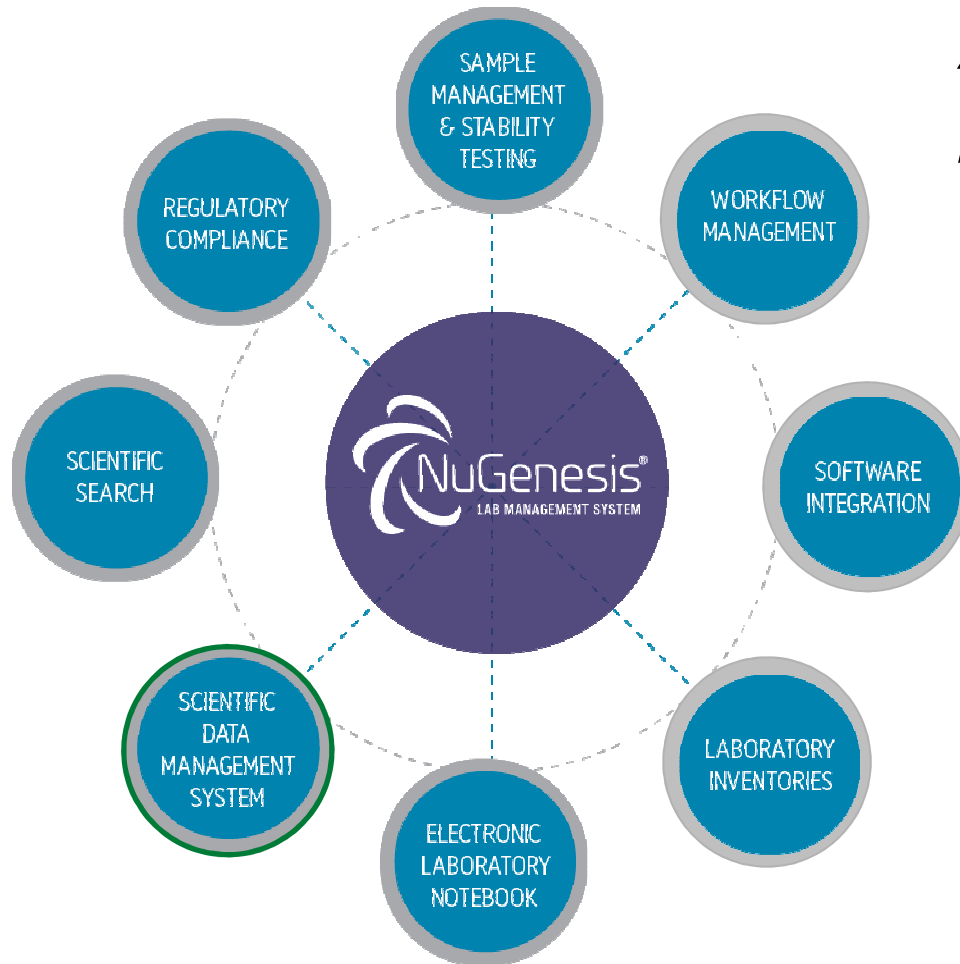
NuGenesis SDMS



NuGenesis Laboratory Management System (LMS)

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NuGenesis LMS



*A **laboratory-oriented** platform that allows you to...*

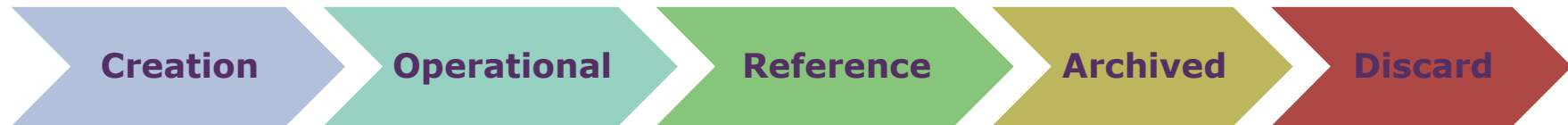
- Capture, protect, and find scientifically-relevant information
- Document laboratory-based processes
- Manage samples and laboratory workflows

Managing the eLife-cycle of your Empower CDS Data



eLife-cycle of Data

- **5 phases:**



- **Backup**

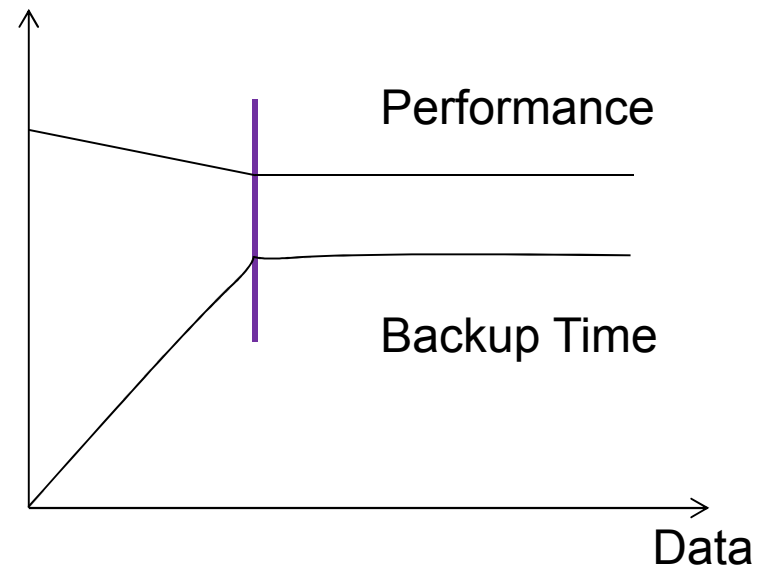
- copying and archiving of *changeable* data so it may be used to restore the original after a data loss event
 - Applied to whole database

- **Archiving**

- removing selected data records from operational databases that are not expected to be referenced again and storing them in an archive data store where they can be retrieved if needed.
 - Protecting long-term retention of *unchangeable* data for regulatory or legal purpose.
 - Applied to selected parts (projects) of the database
 - data must be readily accessible without requiring a lot of manual intervention
 - Retention policies are applied

Why Archiving your Empower CDS ?

- Archive Projects
 - Keep performance high
 - Keep backup times low
 - Manage project life time
 - *Provide a mechanism to save e-records and their metadata for future reference*



Keep Empower LEAN !

What are the Challenges ?

“Our Empower projects need to be **archived**, but we will need to access them again.”

“We need to look at the Empower data **before** we decide to **restore** them. The more we can do without restoring the better.”

“The chromatographic runs leading to the final results need to be **accessible** during an audit.”



What are the Challenges ?

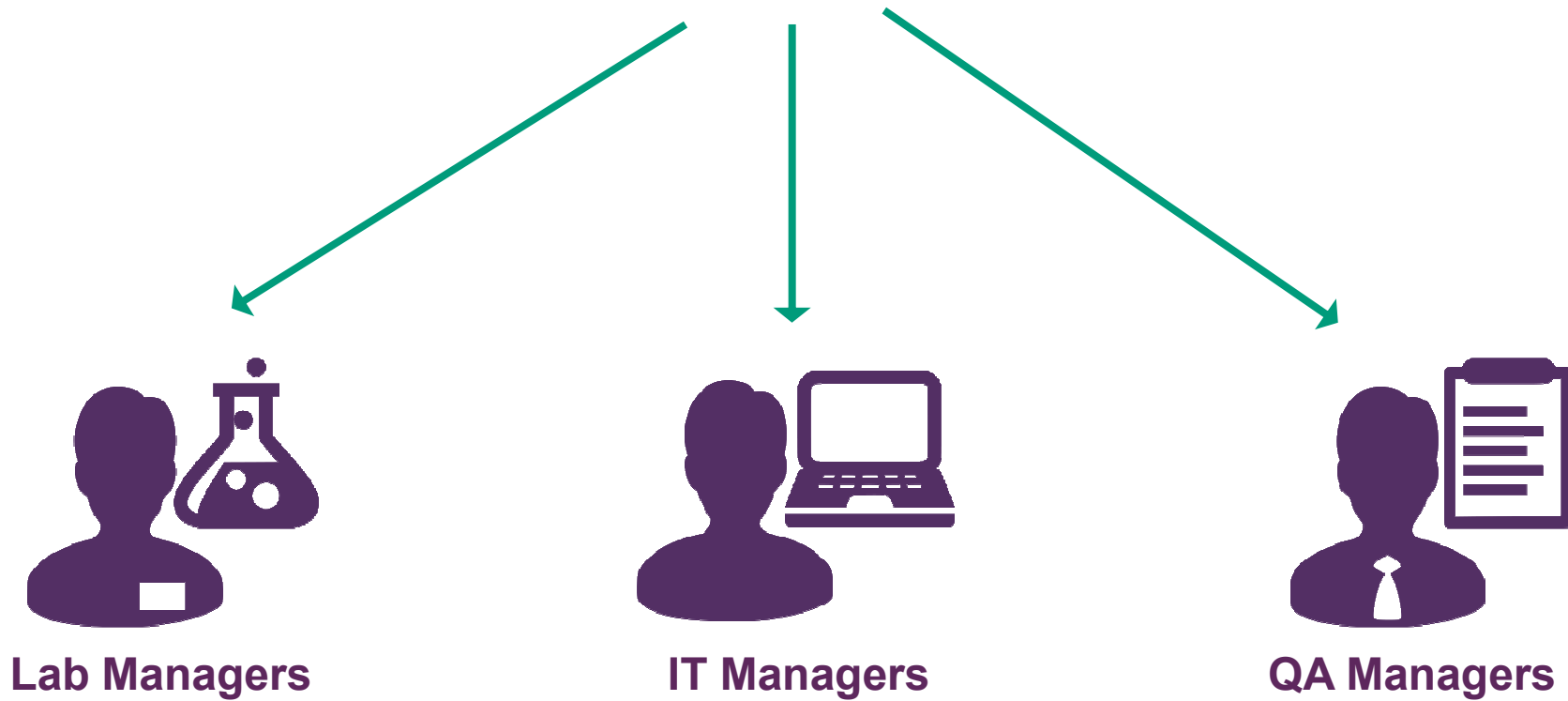
“The consequences of losing data are not acceptable. Our projects need to be **secure** - inside as well as outside Empower.”

“Identifying projects by just name is not enough for **searching**. We need to find data by their LIMS ID.”

“We need **easy access** to our reports, also for non Empower users, such as Lab Managers, QA...”



Who are the consumers of CDS Data?



What are their requirements?



Lab Manager

- Streamlined Empower system
- Optimize sign offs
- Less time archiving



IT Manager

- Compliance worries
- Easy to maintain Empower system
- Easy Data Management and Retention



QA Manager

- Quality confidence and audit readiness
- Want to support electronic submissions

Why is this important?

...example recent FDA Warning Letter (May 2015)

*...Our inspection noted that **your firm did not retain complete raw data from testing performed to assure the quality of (b)(4), API ...***

*...“While investigating these discrepancies, our investigator requested the original electronic raw data. Your quality unit, after consulting with the Information Technology (IT) department, stated they were unable to retrieve the original electronic raw data because **back-up discs were unreadable.** Your quality unit then stated that back-up disks **have been unreadable since at least 2013.** Your HPLC system is used to test (b)(4), API for batch release. However, without complete, accurate, reliable, or retrievable raw data about the HPLC system’s qualification, you lacked complete assurance that the system was operating as intended.”...*

*... This **lack of control over the integrity of your data** raises questions about your analytical data’s authenticity and reliability, and about the quality of your APIs....*

<http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/2015/ucm448433.htm/>

Solution:
**Archiving Empower Data
to NuGenesis SDMS**



NuGenesis Central Empower Archive

Includes the following pre-defined labels:

- Project
- Sample Name
- Emp DB Service Name
- System Name
- System Comments
- Injection Id
- Channel Id
- Date Processed
- Date Acquired
- Instrument Method Name
- Sample Set Name
- Acquired Method Set
- Acquired By

...And more



NuGenesis SDMS Administrator - WLIIVMDEMO - Archived Empower Projects

File Edit View Actions Help

Order	Name	Label	Indexed	Modifiable
1	ID	ID	<input type="checkbox"/>	<input type="checkbox"/>
2	User definable field 34	Emp Project	<input type="checkbox"/>	<input type="checkbox"/>
3	User definable field 1	Sample Name	<input type="checkbox"/>	<input type="checkbox"/>
4	User definable field 23	Sample Set Name	<input type="checkbox"/>	<input type="checkbox"/>
5	Report Name	Data Name	<input type="checkbox"/>	<input type="checkbox"/>
6	Page	Pages:Files #	<input type="checkbox"/>	<input type="checkbox"/>
7	Date/Time of Print	Date/Time of Capture	<input type="checkbox"/>	<input type="checkbox"/>
8	Time	Time of Capture	<input type="checkbox"/>	<input type="checkbox"/>
9	Date	Date of Capture	<input type="checkbox"/>	<input type="checkbox"/>
10	User definable field 7	System Name	<input type="checkbox"/>	<input type="checkbox"/>
11	User definable field 8	System Comments	<input type="checkbox"/>	<input type="checkbox"/>
12	User definable field 50	Parent Project	<input type="checkbox"/>	<input type="checkbox"/>
13	User definable field 51	Child Project (1)	<input type="checkbox"/>	<input type="checkbox"/>
14	User definable field 6	Emp DB Service Name	<input type="checkbox"/>	<input type="checkbox"/>
15	User definable field 35	Project Owner	<input type="checkbox"/>	<input type="checkbox"/>
16	User definable field 36	Project Comment	<input type="checkbox"/>	<input type="checkbox"/>
17	User definable field 10	Channel Id	<input type="checkbox"/>	<input type="checkbox"/>
18	User definable field 26	Sample Set Comment	<input type="checkbox"/>	<input type="checkbox"/>
19	Date/Time of Print in UTC	Date/Time of Capture in UTC	<input type="checkbox"/>	<input type="checkbox"/>
20	Archive Product	Archive (VPR) Product	<input type="checkbox"/>	<input type="checkbox"/>
21	Archive Vendor	Archive (VPR) Vendor	<input type="checkbox"/>	<input type="checkbox"/>
22	Archive Revision	Archive (VPR) Revision	<input type="checkbox"/>	<input type="checkbox"/>
23	Report's DB UserId at print time	Capture Module UserId	<input type="checkbox"/>	<input type="checkbox"/>
24	Login	Capture Module O/S Login	<input type="checkbox"/>	<input type="checkbox"/>
25	Domain	Capture Module Domain	<input type="checkbox"/>	<input type="checkbox"/>
26	Machine	Capture Module Machine	<input type="checkbox"/>	<input type="checkbox"/>
27	UNIFY Template Name	Template Name	<input type="checkbox"/>	<input type="checkbox"/>
28	User definable field 37	Archived Date	<input type="checkbox"/>	<input type="checkbox"/>
29	User definable field 17	Date Processed	<input type="checkbox"/>	<input type="checkbox"/>
30	User definable field 18	Date Acquired	<input type="checkbox"/>	<input type="checkbox"/>
31	User definable field 22	Instrument Method Name	<input type="checkbox"/>	<input type="checkbox"/>
32	User definable field 27	Acquired Method Set	<input type="checkbox"/>	<input type="checkbox"/>
33	User definable field 38	Latest Processed Date	<input type="checkbox"/>	<input type="checkbox"/>
34	User definable field 39	Latest Acquired Date	<input type="checkbox"/>	<input type="checkbox"/>
35	User definable field 40	Project Creation Date	<input type="checkbox"/>	<input type="checkbox"/>

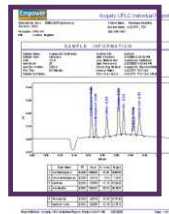
Advanced Archive Logic

- Easily manage your Empower projects.
- Central administration of the project archive process for one or more Empower servers or workstations
- Automated scheduling of the project archive process based on predefined rules
- Automated archive verification prior to project deletion
- Long term archival on external media



Archive reports after Sign Off

- Review the report
- Click the sign off button
- Automatically prints to NuGenesis SDMS



Default Individual Sign Off in Pharmaceutical\Defaults on EMPOWER3.WORLD as demouser/Administrator...

Empower2
Default Individual Sign Off

SAMPLE INFORMATION

Sample Name:	PQ Std 5.0x	Acquired By:	System
Sample Type:	Standard	Sample Set Name:	PQ Sample Set
Vial:	2	Acq. Method Set:	LC Demo Method Set
Injection #:	1	Processing Method:	LC PQ ApexTrack
Injection Volume:	20.00 ul	Channel Name:	498
Run Time:	6.0 Minutes	Proc. Chnl. Descr.:	254 nm
Date Acquired:	Wednesday, September 17, 1997 5:03:14 PM EDT		
Date Processed:	Thursday, May 12, 2005 8:48:01 AM EDT		

PeakName	RT	Area	% Area	Height	Amount
1 Acetone	1.249	394015	27.94	9448.4	1875.000
2 Acetophenone	2.132	390990	27.72	7941.6	5.000
3 Propiophenone	3.110	310316	22.00	5289.5	5.000
4 Butyrophenone	4.782	314988	22.22	4081.0	5.000

Result Sign Off

SampleName	ResultID	Sign Off Full Name	Sign Off Date	Sign Off Reason
1 PQ Std 5.0x	215	Demonstration User (demouser)	Thursday, April 18, 2013 10:41:30 AM EDT	Sign Off Level 1, Reason: Authorized

Reported by User: Demonstration User (demouser) Project Name: Pharmaceutical\Default
Report Method: Default Individual Sign C Date Printed: Thursday, April 18, 2013 10:41:30 AM US-Eastern
Report Method ID: 2508 Page: 1 of 1

Page 1 of 1 Project: Pharmaceutical\Default Inc

Empower Project Data in NuGenesis SDMS

The screenshot displays the NuGenesis SDMS web interface. On the left, a navigation tree under 'Links' shows 'Recently viewed' and 'All Available' sections. A red box highlights the 'Archived Empower Projects' folder, which contains sub-folders for 'All Projects', 'Archived Last Month', 'Archived This Month', 'Archived Today', 'DefaultView', 'JCAMP Converted Results', 'Past 180 Days', and 'Past 30 Days'. A callout bubble labeled 'Customizable Views' points to this tree.

The main area shows a table titled 'Project: Archived Empower Projects' with columns: ID, Emp Project, Time of Capture, Date of Capture, Date/Time of Capture, System Name, Sample Set Name, Project Owner, and Project Comment. A red box highlights the first three rows of the table. A callout bubble labeled 'Project Metadata' points to the table.

ID	Emp Project	Time of Capture	Date of Capture	Date/Time of Capture	System Name	Sample Set Name	Project Owner	Project Comment
802	Chemical Analysis\Chemicals	12:21:04	2012-09-26	2012-09-26 12:21:04	Rick_Sys		demouser	GC, LC, PDA, GPC and UPLC data for chemical industry
801	Chemical Analysis\CE_Data	12:08:47	2012-09-26	2012-09-26 12:08:47	CIA_ANALYSER		demouser	Contains CIA (Capillary Ion Analysis) data and hopefully some Bio app
800	Chemical Analysis	12:08:47	2012-09-26	2012-09-26 12:08:47			demouser	NOT FOR COLLECTING DATA
442	Pharmaceutical\Acetaminophen	10:15:46	2012-09-26	2012-09-26 10:15:46	B101_09_Waters1	Acetaminophen ID_Assay	demouser	Identity_and_Assay
441	TTAcetaminophen	10:04:37	2012-09-26	2012-09-26 10:04:37	Prep_Met_Dev	Identity	demouser	Identity_and_Assay
440	Pharmaceutical\IPM-CU	10:01:12	2012-09-26	2012-09-26 10:01:12		CU stage 1		
439		08:44:14	2012-09-26	2012-09-26 08:44:14				
8	Pharmaceutical\DissolutionVP31	12:13:25	2012-09-24	2012-09-24 12:13:25	LC 011		demouser	ELN-Demo
79	Pharmaceutical\Defaults	12:07:10	2012-09-24	2012-09-24 12:07:10				Default project
78	TTAcetaminophen	07:57:29	2011-08-30	2011-08-30 07:57:29				
77	IPM-CUtest	07:44:43	2011-08-30	2011-08-30 07:44:43				
12	IPM-CUtest	04:27:35	2011-04-12	2011-04-12 04:27:35				
76	TTAcetaminophen	04:18:36	2011-04-12	2011-04-12 04:18:36				
75	TTAcetaminophen	04:18:03	2011-04-12	2011-04-12 04:18:03				
		21:23:10	2009-08-17	2009-08-17 21:23:10	Prep_Met_Dev	Identity	demouser	Identity_and_Assay
		18:42:10	2009-08-14	2009-08-14 18:42:10	Prep_Met_Dev	Identity	demouser	Identity_and_Assay
		18:38:10	2009-08-14	2009-08-14 18:38:10	Prep_Met_Dev	Identity	demouser	Identity_and_Assay
		11:49:39	2007-02-07	2007-02-07 11:49:39			edmadmin	GC Demonstration Project
		11:35:44	2007-02-07	2007-02-07 11:35:44			System	GC Demonstration Project
20	67 GC_Default_res1	15:56:28	2007-02-06	2007-02-06 15:56:28			edmadmin	GC Demonstration Project
21	66 GC_Default_res	15:33:16	2007-02-06	2007-02-06 15:33:16			edmadmin	GC Demonstration Project
22	65 GC_Default_res3	15:27:48	2007-02-06	2007-02-06 15:27:48			edmadmin	GC Demonstration Project
23	64 GC_Default_res2	15:09:49	2007-02-06	2007-02-06 15:09:49			edmadmin	GC Demonstration Project
24	63 GC_Default_res1	14:54:44	2007-02-06	2007-02-06 14:54:44			edmadmin	GC Demonstration Project
25	62 GC_Default_res1	14:14:39	2007-02-06	2007-02-06 14:14:39			edmadmin	GC Demonstration Project
26	58 TT_MVM_Defaults	12:51:28	2007-02-06	2007-02-06 12:51:28	ACQ01_TUve	Sample Stability 22C	System	Demonstration Project
27	57 GC_Default	12:48:15	2007-02-06	2007-02-06 12:48:15			System	GC Demonstration Project
28	56 PharmaceuticalDev	12:47:12	2007-02-06	2007-02-06 12:47:12	LC43	80mg_Content Uniformity	System	Pharmaceutical Development Project
29	55 Demo	12:40:56	2007-02-06	2007-02-06 12:40:56	GPCV_TCB	Hungary_3Col_Set2	System	
30								

View Project Details

The screenshot displays the Waters NuGenesis8 web application interface. The main window shows a project titled "Archived Empower Projects" with a table of project entries. The table includes columns for ID, Emp Project, Time of Capture, Date of Capture, Date/Time of Capture, System Name, Sample Set Name, Project Owner, Project Comment, Parent Project, Child Project (1), and Emp DB Service Name. The first row shows a project with ID 80, Emp Project "Chemical Analysis\CE_Data", and Project Owner "demouser".

Below the table, there are sections for "File Properties" and "Original File Name" with a detailed table of file information. The "File Properties" table has columns for ID, Emp Project, Time of Capture, Date of Capture, Date/Time of Capture, System Name, Sample Set Name, Project Owner, Project Comment, Parent Project, Child Project (1), and Emp DB Service Name. The "Original File Name" table has columns for Original File Name, Original File Path, Moved Out Status, Delete Status, NT File Owner, NT Machine, NT Domain, File Size, Creation UTC Date, Modified UTC Date, Mouse Out Date, Mouse Out Volume Name, Mouse Out Device Name, and Mouse Out.

The interface also features a left-hand navigation pane with "Links" and "All Available" sections, and a top navigation bar with "File", "Annotate", and "Tools" menus.

ID	Emp Project	Time of Capture	Date of Capture	Date/Time of Capture	System Name	Sample Set Name	Project Owner	Project Comment	Parent Project	Child Project (1)	Emp DB Service Name
80	Chemical Analysis\CE_Data	12:08:47	2012-09-26	2012-09-26 12:08:47	CIA_ANALYSER		demouser	Contains CIA (Capillary Ion Analysis) data and hopefully some Bio applications	Chemical Analysis		WAT10

Original File Name	Original File Path (Mapped)	Moved Out Status	Delete Status	NT File Owner	NT Machine	NT Domain	File Size	Creation UTC Date	Modified UTC Date	Mouse Out Date	Mouse Out Volume Name	Mouse Out Device Name	Mouse Out
backup_log	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	5180	2012-09-26 16:08:18	2012-09-26 16:08:25	N/A	N/A	N/A	N/A
CE_Data.EXP	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	7333888	2012-09-26 16:08:18	2012-09-26 16:08:25	N/A	N/A	N/A	N/A
CE_Data.INF	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	363	2012-09-26 16:08:25	2012-09-26 16:08:25	N/A	N/A	N/A	N/A
CE_Data.EXP.CKS	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	2004	2012-09-26 16:08:25	2012-09-26 16:08:25	N/A	N/A	N/A	N/A
CE_Data.INF.CKS	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	2004	2012-09-26 16:08:25	2012-09-26 16:08:25	N/A	N/A	N/A	N/A
d1103.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1105.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1109.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1112.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1115.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1118.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1121.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1124.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1127.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1130.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1133.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
d1136.dat	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	9632	2012-09-26 16:08:25	2011-11-17 13:59:06	N/A	N/A	N/A	N/A
Project_Integrity.txt	c:\EMP_SCAN_PATH\WAT10\Chemical\	Not moved out	Delete Date not set	Administrators	NUGENESIS8	BUILTIN	1780	2012-09-26 16:08:25	2012-09-26 16:08:25	N/A	N/A	N/A	N/A

Easily Review data without original application

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Convert final result to JCAMP.DX at point of archive...

The screenshot displays the NuGenesis8 software interface. On the left, a tree view shows project folders under 'Recently viewed' and 'Available'. The main window shows a table of 'JCAMP Converted Results' with columns for ID, Emp Project, Sample Name, Sample Set Name, Data Name, Pages/Files #, Date/Time of Capture, Time of Capture, Date of Capture, System Name, and System Comment. The table lists several entries, with ID 799 highlighted. Below the table, a chromatogram plot is shown, displaying peaks labeled 'Asprin', 'Cafena', 'Ephedrine', and 'Codeine'. The plot has a y-axis labeled 'Ab' and an x-axis labeled 'min'. A 'Present Properties' window is open at the bottom, showing details for the selected object.

ID	Emp Project	Sample Name	Sample Set Name	Data Name	Pages/Files #	Date/Time of Capture	Time of Capture	Date of Capture	System Name	System Comment
799	Pharmaceutical/PM-CU	STD-2	CU stage 2 CU fail	STD-2_Standard_1611_09-24-2012_12-21-27.DX	1	2012-09-26 11:29:02	11:29:02	2012-09-26	HClass_PDA	
798	Pharmaceutical/PM-CU	STD-2	CU stage 2 CU fail	STD-2_Standard_1625_09-24-2012_12-21-27.DX	1	2012-09-26 11:29:02	11:29:02	2012-09-26	HClass_PDA	
797	Pha									
796	Pha									
795	Pha									
794	Pha									
793	Pha									
792	Pha									
791	Pha									
790	Pha									
789	Pha									
788	Pha									
787	Pha									
786	Pha									
785	Pha									
784	Pha									
783	Pha									
782	Pha									
781	Pha									
780	Pha									
779	Pha									
778	Pha									
777	Pha									
776	Pha									
775	Pha									
774	Pha									
773	Pha									
772	Pha									
771	Pha									
770	Pha									
769	Pha									
768	Pha									
767	Pha									
766	Pha									

Empower Reports

The screenshot displays the NuGenesis VISION Preview window. On the left, a 'Projects' tree shows a folder structure with 'Empower_Reports' highlighted. A red box highlights this folder, with a callout bubble containing the text 'Customizable Views'. The main window shows a 'Default Individual Report' for 'SAMPLE INFORMATION'. Below this is a chromatogram plot with peaks labeled 'Acetone=1.240', 'Acetophenone=2.190', and 'Propiophenone=3.165'. A red box highlights a table on the right side of the interface, with a callout bubble containing the text 'Managers can sign off data in NuGenesis SDMS'. The table has columns for 'Date', 'Date/Time of Print', and 'Date Processed'.

Date	Date/Time of Print	Date Processed
-04-23	2012-04-23 21:42:02	Thursday, July 02, 2009 11:4
-07-05	2011-07-05 09:51:56	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:51:45	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:51:34	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:51:23	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:51:12	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:51:01	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:50:49	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:39:10	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:39:09	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:39:08	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:39:07	Thursday, May 12, 2005 8:46
-07-05	2011-07-05 09:39:06	Thursday, May 12, 2005 8:46
-06-27	2011-06-27 08:19:54	Monday, February 22, 2010
-04-12	2011-04-12 05:13:47	Thursday, May 12, 2005 8:46
-04-22	2010-04-22 10:37:38	
-04-22	2010-04-22 10:23:30	
-12-15	2009-12-15 14:40:55	Thursday, May 12, 2005 8:46
-12-15	2009-12-15 14:40:44	Thursday, May 12, 2005 8:46
-12-15	2009-12-15 14:40:33	Thursday, May 12, 2005 8:46
-12-15	2009-12-15 14:40:22	Thursday, May 12, 2005 8:46
-12-15	2009-12-15 14:40:11	Thursday, May 12, 2005 8:46
-12-15	2009-12-15 14:40:00	Thursday, May 12, 2005 8:46
	5 14:39:47	Thursday, May 12, 2005 8:46
	4 07:23:06	Monday, January 23, 2006 5
	7 12:05:20	1/29/2003 4:40:03 PM EST
	6 14:02:58	6/4/2003 8:50:16 AM EDT
	9 10:32:12	4/12/2005 10:20:21 AM EDT
	9 10:31:28	4/12/2005 10:20:21 AM EDT
	9 10:30:13	4/12/2005 10:21:38 AM EDT
	9 10:29:29	4/12/2005 10:21:38 AM EDT
	9 10:28:38	4/12/2005 10:21:38 AM EDT
	11-09	2006-11-09 10:24:50
	-11-09	2006-11-09 10:24:14

Easy Searching of Content – structured metadata

The screenshot shows a web browser window displaying a report management interface. The browser address bar shows a URL starting with 'http://bf-2008r2-64e...'. The interface includes a search bar, a 'Log off' button, and a navigation pane on the left with a tree view of projects and reports. The main area displays a table of reports for the 'Empower_Reports' project. A red box highlights the header row of the table, which contains the following columns: ID, Emp Project, Sample Name, Report Name, Sample Set Name, Time, Date, Date/Time of Print, Date Processed, and Injection. The table lists 17 reports with various details such as sample names, report names, and dates.

ID	Emp Project	Sample Name	Report Name	Sample Set Name	Time	Date	Date/Time of Print	Date Processed	Injection
151	PharmaceuticalQA	557A	Electronic Signatures		12:05:20	2007-02-07	2007-02-07 12:05:20	1/29/2005 4:40:05 PM EST	1
150	PharmaceuticalQA	PQ mix Test	Electronic Signatures		14:02:58	2007-02-06	2007-02-06 14:02:58	6/4/2003 8:50:16 AM EDT	1
149	PDA Default	Mixture	PDA Spectrum Index Plot in PDA		10:32:12	2006-11-09	2006-11-09 10:32:12	4/12/2005 10:20:21 AM EDT	1
148	PDA Default	Mixture	4 Pass Peak Purity in PDA Defau		10:31:28	2006-11-09	2006-11-09 10:31:28	4/12/2005 10:20:21 AM EDT	1
147	PDA Default	Paraben Stds	4 Pass Peak Purity in PDA Defau		10:30:13	2006-11-09	2006-11-09 10:30:13	4/12/2005 10:21:38 AM EDT	1
146	PDA Default	Paraben Stds	PDA Default in PDA Default on W		10:29:29	2006-11-09	2006-11-09 10:29:29	4/12/2005 10:21:38 AM EDT	1
145	PDA Default	Paraben Stds	3D Plot in PDA Default on WAT6.		10:28:38	2006-11-09	2006-11-09 10:28:38	4/12/2005 10:21:38 AM EDT	1
144	Defaults	PQ Std. 2.5x	Sample Summary Table in Default		10:24:50	2006-11-09	2006-11-09 10:24:50		
143	Defaults	PQ Std. 2.5x	Replicate Injection Report in D	PQ Sample Set	10:24:14	2006-11-09	2006-11-09 10:24:14		
142	Defaults	PQ Std. 2.5x	Multi Sample Summary in Default	PQ Sample Set	10:22:59	2006-11-09	2006-11-09 10:22:59	10/12/2006 5:25:51 PM EDT	1
141	Defaults		Overlay Report in Defaults on W		10:22:03	2006-11-09	2006-11-09 10:22:03		
140	Defaults	PQ Std. 2.5x	Injection Summary Report in Def	PQ Sample Set	10:21:39	2006-11-09	2006-11-09 10:21:39	10/12/2006 5:25:51 PM EDT	
139	Defaults		LC Calibration Report in Defaul		10:20:06	2006-11-09	2006-11-09 10:20:06		
138	SysSuit_Default	PQ SysSuit	LC Individual Report	LC Demo SysSuit	10:05:00	2006-11-09	2006-11-09 10:05:00	5/12/2005 9:10:05 AM EDT	2
137	SysSuit_Default	PQ SysSuit	LC Individual Report	LC D				5/12/2005 9:10:05 AM EDT	3
136	SysSuit_Default	PQ SysSuit	LC Individual Report	LC D				5/12/2005 9:10:05 AM EDT	4
135	SysSuit_Default	PQ SysSuit	LC Individual Report	LC D				5/12/2005 9:10:05 AM EDT	5

End of Reports

Across all reports & projects

Integrated Scientific Search to search for unstructured data

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The screenshot displays the Paradigm Scientific Search web application interface. The browser address bar shows the URL: <http://demo01/ParadigmScientificSearch/BrowserApp/BrowserApp.xbp>. The application title is "Paradigm SCIENTIFIC SEARCH" and the user is identified as "User: DEMO01\ADMIN".

The interface is divided into several sections:

- Results Summary:** Shows search statistics: Results Returned: 10, Total Artifacts: 145169, Search Time: 7.029 sec, Total Time: 7.462 sec. A "Back" button is available.
- Current Search:** Sources: Science Objects. Analytical Search [Similarity] is shown with a small bar chart.
- Refine These Results:** Includes a checkbox for "Refine results using Facets" and a list of shared facets: Search SubSource, File Type, and Path Folders. A "Search Again" button is at the bottom.
- Main Results Area:** Displays a grid of 10 search results, each with a chromatogram plot and associated data:
 - NP160952: N/A, 0.604 Science Objects
 - NP1190925: N/A, 0.605 Science Objects
 - NN295326: N/A, 0.607 Science Objects
 - NP151634: N/A, 0.614 Science Objects
 - NP194925: N/A, 0.619 Science Objects
 - NN295336: N/A, 0.642 Science Objects
 - NP161642: N/A, 0.674 Science Objects
 - NN228422: N/A, 0.688 Science Objects
 - NN290003: N/A, 0.803 Science Objects
 - NP81770: N/A, 1.000 Science Objects
- Facets:** A vertical list of facets on the left side of the results grid, including: Score (Over 0.6044), Authors, File Extension, Source, Stars, Created Date, Modified Date, minY, maxY, and increasing.
- View Options:** Includes "View", "Save As", and "Copy Listing" buttons at the top left of the results area. A "Sort: Score" dropdown and view toggles (grid, list, pivot) are at the top right.
- Navigation:** A vertical sidebar on the right side contains "Details View", "List View", and "Pivot View" buttons.

Empower Reports Beyond The Lab



- View electronic reports via a web browser years after the data or report was compiled
- Review reports without needing to have Empower Software installed locally
- Extend electronic reports through the corporate network
- Reduce paper and hard-copy storage costs with a compliant electronic process
- Improved search to quickly find results during a quality audit

Eliminate manual transcription - Reuse Report Content

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Send Selections to... Microsoft Excel - Blank Excel Spreadsheet.xls

Graphics Mode Ctrl+G
Text Mode Ctrl+T
Table Mode Ctrl+B

Empower software

Acquity UPLC Individual Report

Reported by User: DBMUSER (dbmouse) Project Name: Pharmacokinetics
 Report ID: 2819 System Name: ACQUITY_TUV
 Technique: UPLC-UV Lab: DBM-345
 Site: London, England

Sample Name: Analgesics Optimization
 Sample Type: Unknown
 Vial: 1A.8
 Injection #: 26
 Injection Volume: 5.00 µl

SAMPLE

Sample Name: Analgesics Optimization
 Sample Type: Unknown
 Vial: 1A.8
 Injection #: 26
 Injection Volume: 5.00 µl
 Ret. Time: 0.5 Minutes
 Sample Set Name:

Microsoft Excel - Blank Excel Spreadsheet.xls

Waters Compound Purification Lab

Peak Name	RT	Area	% Area	Height
1 Acetaminophen	0.209	120022	21.07	390583.00
2 Acetaminophen	0.226	21314	3.74	71521.00
3 Caffeine	0.265	63363	11.12	152925.00
4 Acetamide	0.307	135291	23.75	391031.00
5 ASA	0.324	67703	11.89	186888.00
6 Phenacetin	0.359	92570	16.25	213740.00

TOTALS: 1.69 500253 87.82 1376688.00

Normalized Area Component Analysis

Peak Name	RT	Area	% Area	Height
1 Acetaminophen	0.209	120022	21.07	390583
2 Acetaminophen	0.226	21314	3.74	71521
3 Caffeine	0.265	63363	11.12	152925
4 Acetamide	0.307	135291	23.75	391031
5 ASA	0.324	67703	11.89	186888

Peak Name	RT
1 Acetaminophen	0.209
2 Acetaminophen	0.226
3 Caffeine	0.265
4 Acetamide	0.307
5 ASA	0.324
6 Phenacetin	0.359
7 Salicylic Acid	0.381

Report Method: Acquity UPLC Individual Report Printed: 4:49:51 PM 2/25/2005 Page: 1 of 1

What are the benefits?



Lab Manager

- Easy archiving (time saving)
- Easy data access
- Easy data search (one single system for all)



IT Manager

- Easy sharing of data within the organization
- Intellectual property protection (secure and traceable)
- Long-term solution for data retention

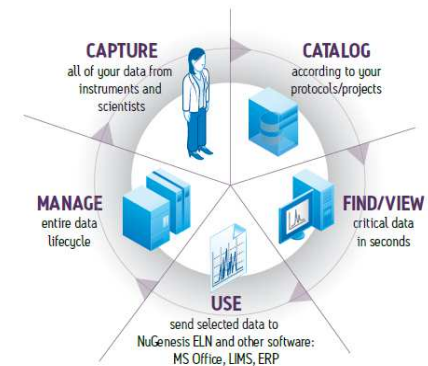


QA Manager

- Traceability & Data Integrity
- Compliance-Ready system (21 CFR Part 11, Annex 11 etc.)
- Peace of mind at Audit

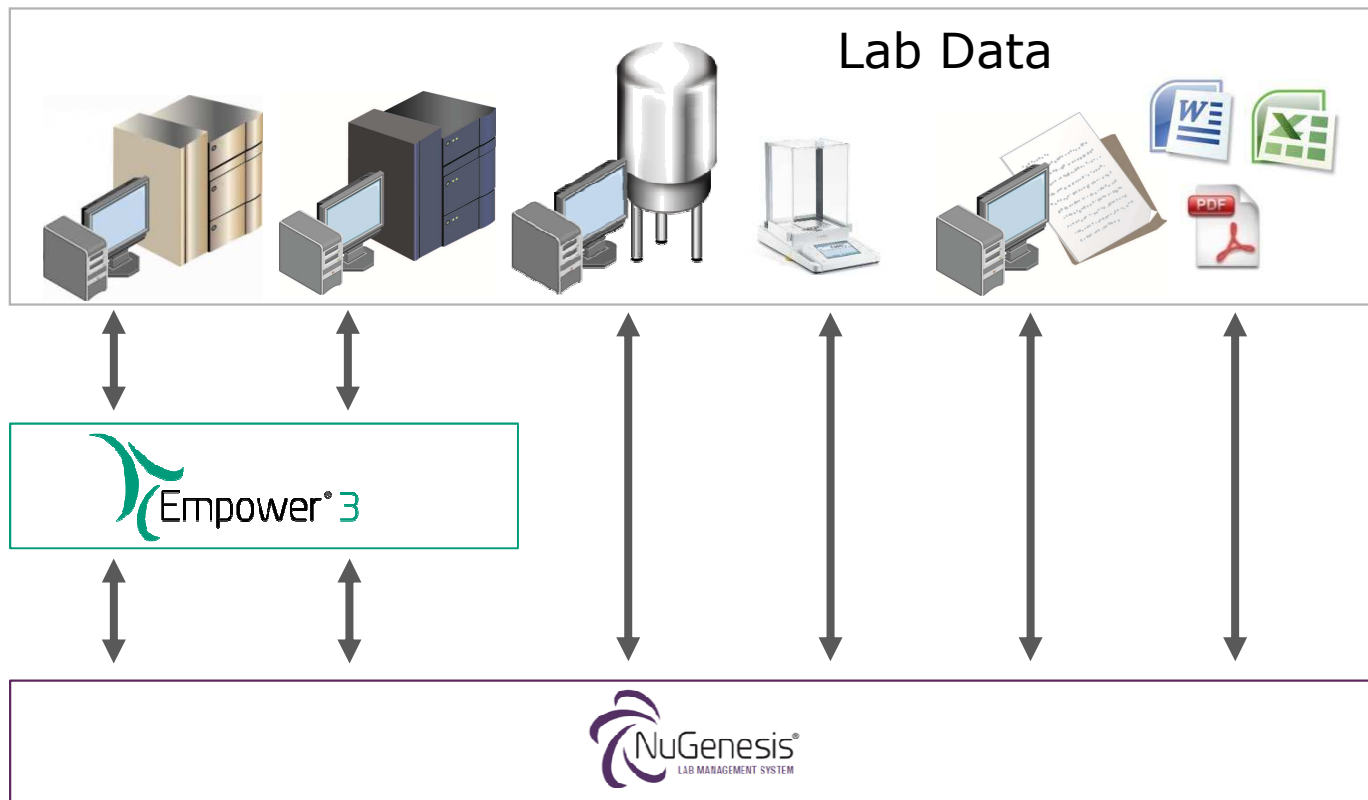
Benefits NuGenesis SDMS for Empower...

- Empower project Archival
 - Automatically archives Empower projects
 - Removes projects from Empower (based on rules)
 - Indexes for Searching
- Empower Report Management
 - Collect & maintain all Empower reports (background printing)
 - Automatic Indexing via templates
 - Reviewing without need to have Empower available
- Empower result transfer to LIMS & SAP
- ... Not only for Empower...
 - Universal interface to devices & instrument software
 - Non-specific sample management (LC/MS, NMR, ICP/MS, etc)
 - Scientific (raw) Data Management



Connect Your Whole Lab in One Place

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...a stepwise approach to build an
Integrated (Paperless) Lab



Covestro NV

Centraal laboratorium

NuGenesis SDMS

Version 8.0.0.21 SR-2

*W Bogaerts, A Verbueken
KVCV 26 november 2015
Grobbendonk*

covestro.com

**Bedankt
voor uw
Aandacht!**

Any
Questions?