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Midd	leware s	vstems

Part 1 of 8	Abbott Diagnostics Amelia Presley amelia.presley@abbott.com
	100 Abbott Park Road, AP6C-5, Abbott Park, IL 60064
	847-935-0039 www.abbottdiagnostics.com
Name of middleware system	Instrument Manager (supplied by Data Innovations)
First ever middleware installation/Most recent installation*  Last update of middleware system	2007/2009 2009
No. of contracts for sites operating middleware	42
U.S. contracts/Foreign contracts (In what countries?)	25/17 (Argentina, Canada, China, Curacao, Hong Kong, Singapore, Thailand,
No. of these contracts signed in 2009	New Zealand) 9
No. of sites operating middleware/Percent of business that is middleware	35/—
No. of employees in entire company  • No. of employees dedicated to middleware development, install, support	72,000
Hardware platforms	Windows PC, server
Proprietary hardware required?	no
Smallest hardware platform system can run on Largest hardware platform in use	Core 2 Duo PC with 2.0 GHz, 512 MB RAM, 80 GB hard disk Core 2 Duo Windows PC/server with 3.4 GHz, 2 GB RAM, 320 GB hard disk
Software platforms	Windows 2000 Professional, XP, Windows 2000 server, Windows 2003
Fault-tolerant solutions/Hardware must be purchased from company?	server, Windows 2008 server, Windows Vista yes/no
Support virtualization? Primary databases used/Alternative databases supported	yes InterSustama Cashá/nana
Storage capacity of standard configuration of hardware	InterSystems Caché/none Core 2 Duo Windows PC/server with 2.0 GHz, 1 GB RAM, 200 GB hard disk
No. of results that can be stored/No. of orders that can be stored	unlimited/unlimited
Middleware can interface with instruments from any manufacturer?  Types of data system can receive, store, transmit	yes alpha numeric, image
No. of instruments one middleware device can support	unlimited
Configuration of middleware device Protocols middleware supports to interface to instruments	PC with standard interfaces HL7, ASTM, XML, proprietary, ODBC
Low-level transport middleware supports to interface to instruments	serial RS232, serial USB, TCP/IP, ODBC, FTP, LAT
Can middleware send results to and receive orders from reference labs?	yes
LIS/HIS/EMR interfaces for receiving orders	Sunquest, Oasis, Meditech, Healthvision, Cerner, Misys, GE Healthcare, others
LIS/HIS/EMR interfaces for sending results	Sunquest, Oasis, Meditech, Healthvision, Cerner, Misys, GE Healthcare, others
No. of diff. host system connections that can operate at once on middleware	unlimited
Protocols system supports to interface to other systems	HL7, ASTM, XML, proprietary, ODBC
Human languages middleware supports (other than English)  • Multiple languages can be used at same time on one system?	most languages yes
System supports local date and time formats?	yes
No. of users that can access system at once No. of user security levels system supports	unlimited unlimited (user defined)
Users can write all rules for middleware?	yes
System supports simple rules?     System supports compound nested rules with multiple event actions?	yes yes
Multiple event actions fired from one "if" condition statement?  Full and persistent audit trail of rule execution?/System supports rules testing?	yes yes/yes
Rule sets applied to individual instruments or connections?	yes
QC data used as part of auto-verification or rules process?  Data from external databases retrieved and incorporated in rules processing?	yes no
Results that are entered manually processed by rules?	yes
Rules test cases created, saved, used on demand for rules validation testing?	yes
System supports event notification? System user notified of rules-based events?/Notification methods supported	yes yes/pop-up windows, e-mail, pager, audio/visual device
Automation routes determined by user-defined rules?	yes
System supports test-based load balancing across instruments?  Events that lead to automation routes being dynamically updated	yes new test requests, reflex test requests, instrument down
Audit trail of the route a sample has taken?	yes
Laboratory automation system interfaces System interfaces with noninstrument automation devices?	Abbott yes (pre-analytic automation, tube sorter, decapper, specimen storage
, and the second	and retrieval module, centrifuge, resealer, desealer)
Back-end specimen storage and retrieval tracking?  System allows management of inst. & automation device maintenance records?	yes yes
System provides alerts when an instrument needs maintenance?	yes
System provides LIS downtime functions?/System allows manual order entry?	yes/yes
System generates downtime specimen ID?/Algorithm user definable?  Orders entered in middleware manually are sent back to LIS automatically?	yes/yes yes
System supports data collection or data mining?	yes
Quality control module? Middleware interfaces to third-party QC packages?	yes yes (Bio-Rad Unity Real Time)
System supports multi-rule QC?	yes (Bio-Rad Unity Real Time) yes
System supports moving averages or average of normals?	no
Users can customize screens?/Users can define custom fields? Users can populate custom fields via user-defined rules?	yes/yes
Screen has image support for any type of image?	yes yes
Users can design own reports?/Report-generation software used • Reports can include any data elements in database?	yes/ODBC-compliant applications yes
Around-the-clock customer service in U.S.?	yes
System training available/On-site consulting?	classroom, on site/yes
Smallest cost for hardware/software/monthly maintenance	_
Largest cost for hardware/software/monthly maintenance Fee for additional users	
Distinguishing features of middleware (supplied by vendor)	integration of quality control results and instrument events within the
	processing of results • open middleware solution can connect to any vendor's instrumentation
	and to multiple disciplines inside the laboratory, including immunoassay,
*based on December 2009 survey deadline Note: a dash in lieu of an answer means company did not answer question or	clinical chemistry, hematology  • connectivity for use in multi-site, multi-LIS, and multi-workstation
question is not applicable	environments

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Middleware systems

Part 2 of 8	Beckman Coulter Ellen Storms estorms@beckman.com 250 S. Kraemer Blvd., Brea, CA 92886 714-961-4810 www.beckmancoulter.com	Data Innovations sales@datainnovations.com 120 Kimball Ave., Suite 100, South Burlington, VT 05403 802-658-2850 www.datainnovations.com
Name of middleware system	Remisol Advance <sup>†</sup> (supplied by Normand Infomatique)	Instrument Manager
First ever middleware installation/Most recent installation* Last update of middleware system	1996/December 2009 February 2010	1993/December 2009 June 2009
No. of contracts for sites operating middleware	~1,600	6,000+
U.S. contracts/Foreign contracts (In what countries?)     No. of these contracts signed in 2009  No. of sides encycling middleways /Paraget of hydrogen that is middleways	~800/~800 (Europe, Canada, New Zealand, Israel, India, Hong Kong) — (20/ (United States)	5,400+/650+ (63 countries) 343
No. of sites operating middleware/Percent of business that is middleware  No. of employees in entire company	—/3% (United States) 12,400	5,000+/100% 95
No. of employees dedicated to middleware development, install, support  Hardware platforms	dual-core server	48 Windows PC, server
Proprietary hardware required?     Smallest hardware platform system can run on	yes PC	no P4, 2.8 GHz, 80 GB hard drive, 512 MB RAM
Largest hardware platform in use Software platforms	dual-core server Microsoft Windows	1 server cluster connecting multiple laboratories worldwide Windows 2000 Pro, XP, Windows 2003 server, 2008 server, Vista
Fault-tolerant solutions/Hardware must be purchased from company? Support virtualization?	yes/yes no	yes/no yes
Primary databases used/Alternative databases supported Storage capacity of standard configuration of hardware	Microsoft SQL/— 6 GB	InterSystems Caché/— 160 GB (any storage size supported)
No. of results that can be stored/No. of orders that can be stored	4,000,000 chemistry and immunoassay results/160,000 hematology orders without graphics and 80,000 orders with graphics	limited only by storage size/limited only by storage size
Middleware can interface with instruments from any manufacturer?  Types of data system can receive, store, transmit	no (with Beckman Coulter, Instrumentation Laboratory ACL Top) alpha numeric, image, other binary	yes alpha numeric, image
No. of instruments one middleware device can support Configuration of middleware device	5 PC with standard interfaces	unlimited PC with standard interfaces
Protocols middleware supports to interface to instruments  Low-level transport middleware supports to interface to instruments	ASTM (ASTM 2), proprietary serial RS232, TCP/IP	HL7 (2.2, 2.3, 2.4, 2.5, 3.0), ASTM (1238, 1394), XML, proprietary, ODBC/SQL serial RS232, serial USB, TCP/IP, ODBC, FTP, LAT, files, Web services, http
Can middleware send results to and receive orders from reference labs?  LIS/HIS/EMR interfaces for receiving orders	yes	yes (Quest, LabCorp, ARUP, others)  McKesson, Cerner, Siemens, SCC Soft Computer, Sunguest, Meditech,
LIS/HIS/EMR interfaces for sending results	_	GE, Wyndgate, Epic, CliniSys, Healthland, Eclipsys, Omnitech, others McKesson, Cerner, Siemens, SCC Soft Computer, Sunquest, Meditech,
No. of diff. host system connections that can operate at once on middleware Protocols system supports to interface to other systems	2 ASTM (ASTM 2), proprietory	GE, Wyndgate, Epic, CliniSys, Healthland, Eclipsys, Omnitech, others unlimited
Human languages middleware supports (other than English)	ASTM (ASTM 2), proprietary  French, German	HL7 (2.2, 2.3, 2.4, 2.5, 3.0), ASTM (1238, 1394), XML, proprietary, others all known languages
Multiple languages can be used at same time on one system?     System supports local date and time formats?	no yes	yes yes
No. of users that can access system at once No. of user security levels system supports	5 unlimited	unlimited unlimited (user defined)
Users can write all rules for middleware? • System supports simple rules?	yes yes	yes yes
System supports compound nested rules with multiple event actions?     Multiple event actions fired from one "if" condition statement?	yes yes	yes yes
Full and persistent audit trail of rule execution?/System supports rules testing? Rule sets applied to individual instruments or connections?	no/yes yes	yes/yes yes
QC data used as part of auto-verification or rules process?  Data from external databases retrieved and incorporated in rules processing?	yes no	yes yes
Results that are entered manually processed by rules? Rules test cases created, saved, used on demand for rules validation testing?	yes yes	yes yes
System supports event notification? System user notified of rules-based events?/Notification methods supported	yes yes/pop-up windows, filtered window views, color and flag codes	yes yes/pop-up windows, e-mail, pager, audio/visual device, data color coding
Automation routes determined by user-defined rules? System supports test-based load balancing across instruments?	yes yes	yes yes
Events that lead to automation routes being dynamically updated Audit trail of the route a sample has taken?	new test requests, reflex test requests, instrument down —	new test requests, reflex test requests, instrument down yes
Laboratory automation system interfaces System interfaces with noninstrument automation devices?	Beckman Coulter, Olympus America yes (tube sorters, decappers, aliquotters, slide makers, stainers)	Beckman Coulter, Ortho, Abbott, Roche, Olympus America, Siemens, others yes (sorters, decappers, aliquotters, slide maker/stainers, pipetting, others)
Back-end specimen storage and retrieval tracking? System allows management of inst. & automation device maintenance records?  • System provides alerts when an instrument needs maintenance?	yes no no	yes yes
System provides LIS downtime functions?/System allows manual order entry?	yes/yes	yes/yes
System generates downtime specimen ID?/Algorithm user definable?  Orders entered in middleware manually are sent back to LIS automatically?	yes/yes no	yes/yes yes
System supports data collection or data mining?  Quality control module?	yes yes	yes yes
Middleware interfaces to third-party QC packages?  System supports multi-rule QC?	no yes	yes (Bio-Rad Unity Real Time, Bio-Rad QC OnCall, others) yes
System supports moving averages or average of normals?	yes	yes
Users can customize screens?/Users can define custom fields? Users can populate custom fields via user-defined rules?	yes/yes no	yes/yes yes
Screen has image support for any type of image? Users can design own reports?/Report-generation software used	yes no/SQL compatible	yes yes/any ODBC-compliant application, internal proprietary program
Reports can include any data elements in database?  Around-the-clock customer service in U.S.?	yes yes	yes yes
System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance	classroom, on site, e-learning/no	classroom, on site, e-learning, Web based/yes /\$3.075k/1.5% of software cost
Smallest cost for nardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance Fee for additional users		—/\$3.0/3K/1.5% of software cost —/\$300k/1.5% of software cost \$1.65k for each concurrent access
*based on December 2009 survey deadline Note: a dash in lieu of an answer means company did not answer question or question is not applicable	extended quality control module monitors the quality of diagnostic system operation using patient moving average data; detects drifts in diagnostic systems between commercial QC runs; provides autoverification procedure to address includes dictionary; compex, compound rules can be developed/maintained by lab's key operator on-site customization and implementation services available formerly DL2000 Data Manager	IMSolutions provides discipline-specific turnkey autoverification systems; includes a rules package containing a pre-populated set of rules and documented algorithms, data-collection forms to gather parameters, pre-populated test suites, validation templates in support of those rules; includes hardware, software, installation, and training     FDA 510(k) cleared; ISO 13485 certification and device licensure for Canada     full suite of services, including standard and customized training covering all aspects of the product, on-site consulting, installation options, more

## 34 / CAP TODAY February 2010 Middleware systems Part 3 of 8 Data Innovations Europe-PGP **Dawning Technologies** Bob Rothstein europe-sales@datainnovations.com Jay Sax sales@dawning.com 8140 College Parkway, Suite 202, Fort Myers, FL 33919 34 Avenue Jacques Brel, Brussels, Belgium B-1200 +3227706222 www.datainnovations.com 800-322-0499 www.dawning.com Name of middleware system **Laboratory Production Manager (LPM)** JavaLin interfaces First ever middleware installation/Most recent installation\* 1982/December 2009 1984/2009 October 2009 2009 Last update of middleware system No. of contracts for sites operating middleware ~2.600 • U.S. contracts/Foreign contracts (In what countries?) 3/231 (Belgium, France, U.K., Netherlands, Luxembourg, many others) ~2,300/~300 (45+ countries) . No. of these contracts signed in 2009 ~200 500+/100% ~2,650/100% No. of sites operating middleware/Percent of business that is middleware No. of employees in entire company 95 23 • No. of employees dedicated to middleware development, install, support 48 19 PC **Hardware platforms Dawning JavaLin/PDI** • Proprietary hardware required? no .laval in/PDI Smallest hardware platform system can run on P4. 2 GB RAM. 30 GB hard drive Largest hardware platform in use 2 redundant systems with 4 dual-core CPUs, shared disk cluster cabinet JavaLin/300 Software platforms Windows 2000, 2003, XP Linux OS, Java-based embedded JResultNet software Fault-tolerant solutions/Hardware must be purchased from company? yes/no yes/yes Support virtualization? Primary databases used/Alternative databases supported Oracle/-**HSQL/Codebase** Storage capacity of standard configuration of hardware 70 GB 1 GB • No. of results that can be stored/No. of orders that can be stored limited only by storage size/limited only by storage size 1,000+ internal and unlimited external/1,000+ internal and unlimited external Middleware can interface with instruments from any manufacturer? yes Types of data system can receive, store, transmit alpha numeric, image, sound alpha numeric No. of instruments one middleware device can support 250 Configuration of middleware device PC with standard interfaces special-purpose device (no PC involved) HL7 (all versions below 3.0), ASTM (NCCLS LIS 1A, 2A), XML, proprietary, others Protocols middleware supports to interface to instruments HL7, ASTM (1238, 1394), XML, proprietary serial RS232, TCP/IP, ODBC, FTP, files, specific .dll Low-level transport middleware supports to interface to instruments serial RS232, serial USB, TCP/IP, ODBC, FTP, flat file Can middleware send results to and receive orders from reference labs? yes (Quest Diagnostics, Specialty Laboratories, AML) LIS/HIS/EMR interfaces for receiving orders MIPS, Cortex, Molis, Agfa, Medasys, MBC, Seralis, Helios, Hexaflux, others Cerner, CPSI, Custom Software Solutions, GE Healthcare, McKesson, others LIS/HIS/EMR interfaces for sending results MIPS, Cortex, Molis, Agfa, Medasys, MBC, Seralis, Helios, Hexaflux, others Cerner, CPSI, Custom Software Solutions, GE Healthcare, McKesson, others No. of diff. host system connections that can operate at once on middleware HL7, ASTM (1238, 1394), XML, proprietary HL7 (all versions below 3.0), ASTM (NCCLS LIS 1A, 2A), XML, proprietary, others Protocols system supports to interface to other systems Human languages middleware supports (other than English) French, German, Dutch, Hebrew, others German, French, Spanish, Portuguese, others • Multiple languages can be used at same time on one system? System supports local date and time formats? ves yes 256 unlimited No. of users that can access system at once user definable No. of user security levels system supports unlimited Users can write all rules for middleware? yes yes • System supports simple rules? yes yes System supports compound nested rules with multiple event actions? yes yes • Multiple event actions fired from one "if" condition statement? yes yes Full and persistent audit trail of rule execution?/System supports rules testing? yes/yes yes/yes Rule sets applied to individual instruments or connections? yes ves QC data used as part of auto-verification or rules process? yes yes Data from external databases retrieved and incorporated in rules processing? ves ves Results that are entered manually processed by rules? yes yes Rules test cases created, saved, used on demand for rules validation testing? yes yes System supports event notification? yes System user notified of rules-based events?/Notification methods supported yes/pop up, pager, e-mail, phone call, audio/visual devices, others yes/pop-up windows, e-mail, audio alert, message displays, save to file, others Automation routes determined by user-defined rules? ves ves System supports test-based load balancing across instruments? Events that lead to automation routes being dynamically updated new test requests, reflex test requests, instrument down new test requests, reflex test requests, instrument down Audit trail of the route a sample has taken? Laboratory automation system interfaces Beckman Coulter, Ortho, Abbott, Roche, Siemens, Thermo Scientific, others Beckman Coulter, Ortho, Abbott, Roche, Olympus America, Siemens, Sysmex System interfaces with noninstrument automation devices? yes (sorters, centrifuges, decappers, aliquotters, slide makers, stainers) yes (slide makers) Back-end specimen storage and retrieval tracking? no no System allows management of inst. & automation device maintenance records? no • System provides alerts when an instrument needs maintenance? no System provides LIS downtime functions?/System allows manual order entry? yes/yes yes/yes System generates downtime specimen ID?/Algorithm user definable? yes/yes yes/yes Orders entered in middleware manually are sent back to LIS automatically? yes System supports data collection or data mining? yes Quality control module? Middleware interfaces to third-party QC packages? yes (Bio-Rad, Instrumentation Laboratory, SKML) ves (Bio-Rad) System supports multi-rule QC? yes System supports moving averages or average of normals? ves no Users can customize screens?/Users can define custom fields? yes/yes yes/yes Users can populate custom fields via user-defined rules? yes Screen has image support for any type of image? yes no Users can design own reports?/Report-generation software used yes/Report Builder yes/Crystal Reports • Reports can include any data elements in database? Around-the-clock customer service in U.S.? classroom, on site/yes System training available/On-site consulting? classroom, on site, Web based/yes \$2k/\$4.5k/\$0.068k Smallest cost for hardware/software/monthly maintenance \$2.2k/included/~\$0.018k Largest cost for hardware/software/monthly maintenance \$200k/\$300k/\$4.5k \$2.2k/\$1.5k/~\$0.032k Fee for additional users \$2.3k • high level of workflow customization meeting customer-specific Distinguishing features of middleware (supplied by vendor) • distributed processing in a minimal footprint — PC power in a 3-in. x 5-in. footprint unit that runs standard JResultNet middleware; ideal for requirements via a powerful parameterization tool remote instruments or where the footprint of a PC is costly • rules across multiple disparate specimens belonging to the same order

\*based on December 2009 survey deadline Note: a dash in lieu of an answer means company did not answer question or

question is not applicable

- rules across multiple disparate specimens belonging to the same order
   robust multi-site, multi-lab, and multi-LIS implementation support with full LIS downtime management
- minimal impact on existing LIS operations add a new instrument on a single connection to the LIS using any standard protocol without disturbing existing connections; easily integrated with large-scale middleware implementations
- complete message mapping control with instrument and LIS connection

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## Middleware systems Part 4 of 8 Dawning Technologies Fletcher-Flora Healthcare Systems Jay Sax sales@dawning.com Terry Watson fflexelinksales@fletcher-flora.com 8140 College Parkway, Suite 202, Fort Myers, FL 33919 1580 Orangethorpe Way, Anaheim, CA 92801 800-322-0499 www.dawning.com 800-777-1471 www.fletcher-flora.com JResultNet Interface Engine Software FFlex eLink Middleware Name of middleware system First ever middleware installation/Most recent installation<sup>a</sup> 1984/2009 2006/November 2010 Last update of middleware system 2009 July 2009 No. of contracts for sites operating middleware ~1,450 • U.S. contracts/Foreign contracts (In what countries?) ~1,275/~175 (45+ countries) 12/0 No. of these contracts signed in 2009 ~100 5 ~1,500/100% No. of sites operating middleware/Percent of business that is middleware 15/5% No. of employees in entire company 23 45 • No. of employees dedicated to middleware development, install, support 5 19 **Hardware platforms** platform-portable Java-based application, JavaLin interfaces, PCs, PC running Windows XP Professional, Vista Macintosh, servers • Proprietary hardware required? Smallest hardware platform system can run on JavaLin/PDI 1 GB RAM, 80 GB hard disk 1 GB RAM, 80 GB hard disk Largest hardware platform in use rack servers connecting multiple remote sites Software platforms Windows Vista, 2000, XP Pro or 2003 server, Linux, OS X Windows XP, Vista, 2000, 2003 Fault-tolerant solutions/Hardware must be purchased from company? no/no Support virtualization? Primary databases used/Alternative databases supported Postgre SQL/HSQL, Codebase, several external databases Microsoft Express, Microsoft SQL 2000, Microsoft 2003, MySQL/-Storage capacity of standard configuration of hardware unlimited 80 GB (limited only by disk space) • No. of results that can be stored/No. of orders that can be stored unlimited/unlimited limited only by disk space/limited only by disk space Middleware can interface with instruments from any manufacturer? Types of data system can receive, store, transmit alpha numeric alpha numeric No. of instruments one middleware device can support unlimited Configuration of middleware device PC with standard interfaces PC with standard interfaces HL7 (all versions below 3.0), ASTM (NCCLS LIS 1A, 2A), XML, proprietary, others Protocols middleware supports to interface to instruments HL7, ASTM, proprietary Low-level transport middleware supports to interface to instruments serial RS232, serial USB, TCP/IP, ODBC, FTP, flat file serial RS232, serial USB, TCP/IP Can middleware send results to and receive orders from reference labs? yes (Quest Diagnostics, Specialty Laboratories, AML) Cerner, CPSI, Custom Software Solutions, GE Healthcare, others OncoEMR, eClinicalWorks, others LIS/HIS/EMR interfaces for receiving orders LIS/HIS/EMR interfaces for sending results Cerner, CPSI, Custom Software Solutions, GE Healthcare, others Noteworthy, OncoEMR, eClinicalWorks, Misys, others No. of diff. host system connections that can operate at once on middleware HL7 (all versions below 3.0), ASTM (NCCLS LIS 1A, 2A), XML, proprietary, Protocols system supports to interface to other systems HL7, ASTM, proprietary CSV, flat file, direct database, HPRIM, others **Human languages middleware supports (other than English)** German, French, Spanish, Portuguese, others none • Multiple languages can be used at same time on one system? no ves System supports local date and time formats? yes no No. of users that can access system at once unlimited No. of user security levels system supports unlimited Users can write all rules for middleware? yes yes System supports simple rules? System supports compound nested rules with multiple event actions? yes yes yes no Multiple event actions fired from one "if" condition statement? yes no Full and persistent audit trail of rule execution?/System supports rules testing? yes/yes no/no Rule sets applied to individual instruments or connections? yes ves QC data used as part of auto-verification or rules process? yes no Data from external databases retrieved and incorporated in rules processing? yes no Results that are entered manually processed by rules? yes no Rules test cases created, saved, used on demand for rules validation testing? yes yes System supports event notification? yes System user notified of rules-based events?/Notification methods supported yes/pop-up windows, e-mail, audio alert, message displays, save to file, others no/result flags Automation routes determined by user-defined rules? ves no System supports test-based load balancing across instruments? yes no Events that lead to automation routes being dynamically updated new test requests, reflex test requests, instrument down Audit trail of the route a sample has taken? no Beckman Coulter, Ortho, Abbott, Roche, Olympus America, Siemens, Laboratory automation system interfaces Sysmex, others System interfaces with noninstrument automation devices? ves (slide makers) no Back-end specimen storage and retrieval tracking? no no System allows management of inst. & automation device maintenance records? no no • System provides alerts when an instrument needs maintenance? no no System provides LIS downtime functions?/System allows manual order entry? yes/yes no/ves System generates downtime specimen ID?/Algorithm user definable? yes/yes no/no Orders entered in middleware manually are sent back to LIS automatically? yes System supports data collection or data mining? yes no **Quality control module?** no no Middleware interfaces to third-party QC packages? yes (Bio-Rad) no System supports multi-rule QC? yes no System supports moving averages or average of normals? no no Users can customize screens?/Users can define custom fields? yes/yes no/no Users can populate custom fields via user-defined rules? yes Screen has image support for any type of image? Users can design own reports?/Report-generation software used yes/Crystal Reports no/results sent to EMR, EHR, practice management system for reporting • Reports can include any data elements in database? yes Around-the-clock customer service in U.S.? yes yes System training available/On-site consulting? classroom, on site, Web based/yes online, on site/yes Smallest cost for hardware/software/monthly maintenance -/\$1.9k/~\$0.019k -/\$0.031k Largest cost for hardware/software/monthly maintenance --/\$4k+/~\$0.036k --/--/\$0.34k Fee for additional users none Distinguishing features of middleware (supplied by vendor) • JResultNet Rules Development Kit allows middleware rules to be • cost-effective solution that connects laboratory instruments directly to developed, tested, validated, and saved offline or online; offline rules · simply manages orders and results to and from an EMR, practice development allows the process to occur with no interruption of the management system, or other host system to analyzers middleware operating Dawning DataMiner — a U.S. patent-pending advanced data mining · easy to use for small labs that want to minimize manual transcription of application that is part of Dawning's database rules option results into their host system JResultNet rules organization features — develop nested "if" and "then" \*based on December 2009 survey deadline rules statements for more efficient rules in fewer steps; organize rules by Note: a dash in lieu of an answer means company did not answer question or specific instrument, connection, or lab area question is not applicable

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## Middleware systems Part 5 of 8 **PVT LabSystems** Pathagility Mark McCuin mark@pathagility.com Miriam Hoelzel info@pvtlabsystems.com 1125 Oak Street, Suite 303, Conway, AR 72032 300 Town Park Drive, Suite 190, Kennesaw, GA 30144 501-327-7700 ext. 0 www.pathagility.com 877-788-5227 www.pvtlabsystems.com Name of middleware system AgilityEngine Silver Server 1997/2009 First ever middleware installation/Most recent installation\* January 2008/October 2009 October 2009 Last update of middleware system No. of contracts for sites operating middleware 3 • U.S. contracts/Foreign contracts (In what countries?) 3/0 5/40 (Germany, Belgium, Netherlands) . No. of these contracts signed in 2009 12 No. of sites operating middleware/Percent of business that is middleware 3/30% 45/-No. of employees in entire company 6 17 • No. of employees dedicated to middleware development, install, support 3 **Hardware platforms** hosted virtualized servers (partnership with BlueLock) IBM PC-compatible x86 computer • Proprietary hardware required? Smallest hardware platform system can run on infrastructure as a service x86 Intel Pentium 4 Largest hardware platform in use infrastructure as a service network of 7 to 8 standard computers Software platforms Windows 2003 server, SQL server 2005, BizTalk 2005 Fault-tolerant solutions/Hardware must be purchased from company? yes/no yes/yes Support virtualization? Primary databases used/Alternative databases supported Microsoft SQL server 2005/-SAM database/unlimited Storage capacity of standard configuration of hardware 20 GB unlimited/unlimited 1,000,000+/1,000,000+ • No. of results that can be stored/No. of orders that can be stored Middleware can interface with instruments from any manufacturer? Types of data system can receive, store, transmit alpha numeric No. of instruments one middleware device can support 16 Configuration of middleware device PC with standard interfaces Protocols middleware supports to interface to instruments ASTM, proprietary serial RS232, TCP/IP, FTP Low-level transport middleware supports to interface to instruments serial RS232, serial USB, TCP/IP, ODBC, FTP Can middleware send results to and receive orders from reference labs? LIS/HIS/EMR interfaces for receiving orders Impac, eMDs, proprietary system interfaces LIS/HIS/EMR interfaces for sending results Impac, eMDs, proprietary system interfaces No. of diff. host system connections that can operate at once on middleware unlimited Protocols system supports to interface to other systems ASTM, proprietary HL7 (2.x, 3), XML, proprietary **Human languages middleware supports (other than English)** German • Multiple languages can be used at same time on one system? no System supports local date and time formats? yes no No. of users that can access system at once unlimited 20+ No. of user security levels system supports Users can write all rules for middleware? no • System supports simple rules? yes yes System supports compound nested rules with multiple event actions? yes • Multiple event actions fired from one "if" condition statement? yes Full and persistent audit trail of rule execution?/System supports rules testing? yes/yes --/yes Rule sets applied to individual instruments or connections? yes QC data used as part of auto-verification or rules process? yes Data from external databases retrieved and incorporated in rules processing? Results that are entered manually processed by rules? yes yes Rules test cases created, saved, used on demand for rules validation testing? System supports event notification? yes System user notified of rules-based events?/Notification methods supported yes/e-mail, fax Automation routes determined by user-defined rules? yes no System supports test-based load balancing across instruments? no Events that lead to automation routes being dynamically updated new test requests Audit trail of the route a sample has taken? Laboratory automation system interfaces PVT Probenverteiltechnik GmbH, Sarstedt System interfaces with noninstrument automation devices? yes (sorters, decappers, recappers, aliquotters) Back-end specimen storage and retrieval tracking? no yes System allows management of inst. & automation device maintenance records? • System provides alerts when an instrument needs maintenance? no System provides LIS downtime functions?/System allows manual order entry? no/yes yes/yes System generates downtime specimen ID?/Algorithm user definable? no/no Orders entered in middleware manually are sent back to LIS automatically? no yes System supports data collection or data mining? yes **Quality control module?** ves no Middleware interfaces to third-party QC packages? no no System supports multi-rule QC? no System supports moving averages or average of normals? no Users can customize screens?/Users can define custom fields? no/no no/no Users can populate custom fields via user-defined rules? no Screen has image support for any type of image? yes no Users can design own reports?/Report-generation software used no/-• Reports can include any data elements in database? yes Around-the-clock customer service in U.S.? ves ves System training available/On-site consulting? on site/ves -/ves Smallest cost for hardware/software/monthly maintenance -/\$.25k Largest cost for hardware/software/monthly maintenance —/—/\$5.5k Fee for additional users • flexible and can be adapted to customer needs Distinguishing features of middleware (supplied by vendor) • software-as-a-service platform that provides infrastructure savings to • efficient and effective; improves and expedites workflow • provides a blend of interoperability and customized workflow solution simplifies handling and coordination of various tests for samples potential; company involved in the short- and long-term business strategies of clients · Web-based collaboration portal and multi-channel report distribution management tool can enhance the capabilities and extend the lifespan of technology investments and anatomic pathology lab systems \*based on December 2009 survey deadline Note: a dash in lieu of an answer means company did not answer question or question is not applicable

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hematology and coagulation analyzers solution with proven record  • more than a decade-long supplier partnership with Data Innovations as • comprehensive and integrated quality control package—patient movi		wilduleware systems	
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System supports multi-rule QC?  System supports moving averages or average of normals?  Users can customize screens?/Users can define custom fields?  Users can populate custom fields via user-defined rules?  Users can populate custom fields via user-defined rules?  Screen has image support for any type of image?  Users can design own reports?/Report-generation software used  Users can design own reports?/Report-generation software used  * Reports can include any data elements in database?  * Reports can include any data elements in database?  * Yes  Around-the-clock customer service in U.S.?  System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance  Largest cost for hardware/software/monthly maintenance  Largest cost for hardware/software/monthly maintenance  — — — — — — — — — — — — — — — — — — —	Quality control module?	no	yes
System supports moving averages or average of normals?  Users can customize screens?/Users can define custom fields? Users can populate custom fields via user-defined rules? Screen has image support for any type of image? Users can design own reports?/Report-generation software used Users can design own reports./MySQL Excel. yes Users can design own reports./MySQL, Excel. yes yes/Advia CentraLink's internal software  ves/Advia CentraLink's internal softwar			
Users can customize screens?/Users can define custom fields? Users can populate custom fields via user-defined rules? Screen has image support for any type of image? Users can design own reports?/Report-generation software used Users can include any data elements in database?  *Reports can include any data elements in database?  *Reports can include any data elements in database?  *Around-the-clock customer service in U.S.?  System training available/On-site consulting?  *System training available/On-site consulting?  *Smallest cost for hardware/software/monthly maintenance  *Largest cost for hardware/software/monthly maintenance  *Eargest cost for hardware/software/monthly maintenance  *Distinguishing features of middleware (supplied by vendor)  *Supports third-party connectivity to specific high-volume instruments, hematology and coagulation analyzers  *more than a decade-long supplier partnership with Data Innovations as  *comprehensive and integrated quality control package—patient movi			
Users can populate custom fields via user-defined rules? Screen has image support for any type of image? Users can design own reports?/Report-generation software used Users can include any data elements in database?  Around-the-clock customer service in U.S.? System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance Fee for additional users  Distinguishing features of middleware (supplied by vendor)  Users can populate custom fields via user-defined rules?  yes yes yes yes yes/Advia CentraLink's internal software yes/Advia CentraLink's internal s			
Users can design own reports?/Report-generation software used  yes/any ODBC-compliant reporting application (Crystal Reports, MySQL, Excel, others)  yes  no  Around-the-clock customer service in U.S.?  System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance  Largest cost for hardware/software/monthly maintenance  Fee for additional users  Distinguishing features of middleware (supplied by vendor)  **supports third-party connectivity to specific high-volume instruments, hematology and coagulation analyzers  **more than a decade-long supplier partnership with Data Innovations as  yes/advia CentraLink's internal software	Users can populate custom fields via user-defined rules?	yes	yes
• Reports can include any data elements in database?  yes  no  Around-the-clock customer service in U.S.?  System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance  Largest cost for hardware/software/monthly maintenance  Fee for additional users		•	•
Around-the-clock customer service in U.S.?  System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance  Largest cost for hardware/software/monthly maintenance  ———————————————————————————————————		others)	
System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance ————————————————————————————————————		yes	no
Smallest cost for hardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance Fee for additional users			
Largest cost for hardware/software/monthly maintenance Fee for additional users		ondoroun, on one, webman/yes	o rearring, on oner yes
Fee for additional users  — — — — — — — — — — — — — — — — — — —			Ξ
hematology and coagulation analyzers solution with proven record  • more than a decade-long supplier partnership with Data Innovations as • comprehensive and integrated quality control package—patient movi		_	-
• more than a decade-long supplier partnership with Data Innovations as • comprehensive and integrated quality control package—patient movi	Distinguishing features of middleware (supplied by vendor)		• robust and mature multi-discipline data-management and networking
			•
	though an December 2000 survivor deciding	well as the highest placement volume partner in the U.S.	averages used in quality control and autoverification
*based on December 2009 survey deadline  *Note: a dash in lieu of an answer means company did not answer question or project managers, and installation consultants  *market-leading automation system controller project managers, and installation consultants	Note: a dash in lieu of an answer means company did not answer question or	•	market-leading automation system controller
question is not applicable project managers, and installation consultants		project manayers, and installation Consultants	

Midd	dleware	system	3
			÷

	wilddieware systems	
Part 7 of 8	Siemens Healthcare Diagnostics Sepehr Seyedzadeh sepehr.seyedzadeh@siemens.com 511 Benedict Ave., Tarrytown, NY 10591 914-524-3827 www.siemens.com/diagnostics	Sysmex America Tammy Kutz communications@sysmex.com 1 Nelson C. White Parkway, Mundelein, IL 60060 847-996-4500 www.sysmex.com
Name of middleware system	EasyLink Informatics System	Sysmex WAM <sup>†</sup>
First ever middleware installation/Most recent installation*	2001/December 2009	2003/December 2009
Last update of middleware system	August 2009	November 2009
No. of contracts for sites operating middleware		136
U.S. contracts/Foreign contracts (In what countries?)	_	130/6 (Canada)
No. of these contracts signed in 2009	_	30
No. of sites operating middleware/Percent of business that is middleware	_ <del>_</del>	333/5%
No. of employees in entire company  • No. of employees dedicated to middleware development, install, support		451 96
Hardware platforms	Windows-based PC	Red Hat Linux
Proprietary hardware required?	yes	no not time.
Smallest hardware platform system can run on	Windows-based PC	Linux
Largest hardware platform in use Software platforms	Windows-based PC Windows XP Pro	Unix Compuware Uniface
Fault-tolerant solutions/Hardware must be purchased from company?	no/yes	yes/no
Support virtualization? Primary databases used/Alternative databases supported	no Firebird/—	no Oracle/—
Storage capacity of standard configuration of hardware	120 GB	sized for 2 years of data storage
No. of results that can be stored/No. of orders that can be stored	34,000,000/7,000,000	2 years worth/2 years worth
Middleware can interface with instruments from any manufacturer?	yes (third-party manufacturers' instruments can be interfaced upon	no (with Sysmex hematology analyzers and automation, including
Types of data system can receive, store, transmit	Siemens' approval) alpha numeric, image (non-patient related)	SP1000i slidemaker/stainer, TS-500 tube sorter, others) alpha numeric, image
No. of instruments one middleware device can support	8	unlimited across multiple sites
Configuration of middleware device	PC with standard interfaces	— HI 7 (2 3) ASTM (E1204) proprietory
Protocols middleware supports to interface to instruments  Low-level transport middleware supports to interface to instruments	ASTM (NCCLS LIS 1A, 2A [old standard E1394-97]), proprietary serial RS232, serial USB, TCP/IP, FTP	HL7 (2.3), ASTM (E1394), proprietary serial RS232, serial USB, TCP/IP
Can middleware send results to and receive orders from reference labs?	yes	<u> </u>
LIS/HIS/EMR interfaces for receiving orders	Siemens, Cerner, Meditech, Sunquest, SCC Soft Computer, others	Data Innovations, Sunquest, Cerner, Meditech, McKesson, SCC Soft Computer,
LIS/HIS/EMR interfaces for sending results	Siemens, Cerner, Meditech, Sunquest, SCC Soft Computer, others	Siemens, Dawning, others Data Innovations, Sunquest, Cerner, Meditech, McKesson, SCC Soft Computer, Siemens, Dawning, others
No. of diff. host system connections that can operate at once on middleware  Protocols system supports to interface to other systems	2 ASTM (NCCLS LIS 1A, 2A [old standard E 1394-97]), proprietary	unlimited HL7 (2.3), ASTM (E1394), proprietary
Human languages middleware supports (other than English)	Spanish, French, Italian, German, Portuguese, Japanese, Greek	none
Multiple languages can be used at same time on one system?	yes	no
System supports local date and time formats?	yes	yes
No. of users that can access system at once No. of user security levels system supports	25 3	unlimited unlimited
Users can write all rules for middleware?	yes	yes
System supports simple rules?     System supports compound nested rules with multiple event actions?	yes	yes
System supports compound nested rules with multiple event actions?     Multiple event actions fired from one "if" condition statement?	yes yes	yes yes
Full and persistent audit trail of rule execution?/System supports rules testing?	yes/yes	yes/yes
Rule sets applied to individual instruments or connections?  QC data used as part of auto-verification or rules process?	yes yes	yes yes
Data from external databases retrieved and incorporated in rules processing?	no	no
Results that are entered manually processed by rules? Rules test cases created, saved, used on demand for rules validation testing?	yes	yes
	yes	No.
System supports event notification? System user notified of rules-based events?/Notification methods supported	yes yes/visual notifications	yes yes/pop-up, audio/visual
Automation routes determined by user-defined rules?	yes	yes
System supports test-based load balancing across instruments?	yes	yes
Events that lead to automation routes being dynamically updated Audit trail of the route a sample has taken?	new test requests, reflex test requests, instrument down yes	new test requests, reflex test requests, instrument down yes
Laboratory automation system interfaces	Siemens	Sysmex
System interfaces with noninstrument automation devices?	no	yes (Sysmex SP1000i slidemaker/stainer, TS-500 tube sorter, CellaVision digital cell morphology)
Back-end specimen storage and retrieval tracking?	yes	yes
System allows management of inst. & automation device maintenance records?  • System provides alerts when an instrument needs maintenance?	no no	no no
System provides LIS downtime functions?/System allows manual order entry?	yes/yes	yes/yes
System generates downtime specimen ID?/Algorithm user definable?	no/no	no/yes
Orders entered in middleware manually are sent back to LIS automatically?  System supports data collection or data mining?	yes	yes ves
	yes	yes
Quality control module? Middleware interfaces to third-party QC packages?	yes yes (export-only feature into Bio-Rad)	yes no
System supports multi-rule QC?	yes	yes
System supports moving averages or average of normals?	yes	yes
Users can customize screens?/Users can define custom fields?	no/no	no/yes
Users can populate custom fields via user-defined rules? Screen has image support for any type of image?	no no	yes yes
Users can design own reports?/Report-generation software used	yes/Jasper Reports	no/—
Reports can include any data elements in database?  Around the clock quaterner corriges in U.S.2.	yes	yes
Around-the-clock customer service in U.S.? System training available/On-site consulting?	yes e-learning, on site, classroom/yes	yes classroom, on site, e-learning/yes
Smallest cost for hardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance Fee for additional users	- - -	_ _ _
Distinguishing features of middleware (supplied by vendor)	browser-based system utilizing standard Internet browser for access	flexible rule engine with extensive rule-variable combinations for building
garannag contact of initialistics (outphilos by foliatis)	to patient results, QC data, and specimen information across multiple	rules for autovalidation, reflexing, add-on testing, generation of manual
	network locations	differential smears, and sample routing  • ability to support orders and results from multiple LISs and multiple sites
	<ul> <li>comprehensive and integrated QC package—patient median calculation, customizable rules, audit trail and reporting</li> </ul>	<ul> <li>ability to support orders and results from multiple LISs and multiple sites</li> <li>proactive alert monitoring system to notify user of system server alerts,</li> </ul>
*based on December 2009 survey deadline	supports preventative maintenance and remote diagnosis/access of	instrument and LIS interface alerts, and QC alerts
Note: a dash in lieu of an answer means company did not answer question or question is not applicable	connected instruments	†formerly Molis WAM

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	Middleware systems	
Part 8 of 8	Technidata America Medical Software Ricardo Nunez ricardo.nunez@technidata-web.com 1760 E. River Rd., Suite 302, Tucson, AZ 85718 520-577-2872 www.technidata-web.com/americas	Technidata America Medical Software Ricardo Nunez ricardo.nunez@technidata-web.com 1760 E. River Rd., Suite 302, Tucson, AZ 85718 520-577-2872 www.technidata-web.com/americas
Name of middleware system	TD-Harmony suite: TD-IDM/TD-WAM (instrument and work area manager)	TD-Harmony suite: TD-LPM
First ever middleware installation/Most recent installation*  Last update of middleware system	1991/December 2009 December 2009	1991/October 2009 October 2009
No. of contracts for sites operating middleware  • U.S. contracts/Foreign contracts (In what countries?)  • No. of these contracts signed in 2009  No. of sites operating middleware/Percent of business that is middleware	599 220/379 (Europe, Middle East, Asia-Pacific, Latin America, Africa, Canada) 159 690 (primarily via OEM and distributors)/25% corporate office; 75% subsidiary	43 5/38 (Canada, France, Netherlands, Italy, U.K., Greece, United Arab Emirates, others) 19 43+ (primarily via OEM and distributors)/25% corporate office; 75% subsidiary
No. of employees in entire company  • No. of employees dedicated to middleware development, install, support	170+ 40	170+ 40
Hardware platforms • Proprietary hardware required? Smallest hardware platform system can run on	hardware independent no 1 Windows-based PC	hardware independent no 1 Windows-based server/PC
Largest hardware platform in use Software platforms Fault-tolerant solutions/Hardware must be purchased from company?	5 PCs Windows 2003, XP, Vista (older versions of Windows on previous versions of TD-IDM/TD-WAM) no/no	fault-tolerant system supporting 25 concurrent users Linux, Windows 2003 server, VMWare ESX yes/no
Support virtualization? Primary databases used/Alternative databases supported Storage capacity of standard configuration of hardware  • No. of results that can be stored/No. of orders that can be stored	yes Microsoft Access, proprietary/none hardware and site dependent; 40 GB 500,000/500,000	yes Oracle, SQL server/none hardware and site dependent; up to 10 years of data (not limited in size) unlimited/unlimited
Middleware can interface with instruments from any manufacturer?  Types of data system can receive, store, transmit  No. of instruments one middleware device can support	yes alpha numeric, image 6 per PC	yes alpha numeric, image 200
Configuration of middleware device Protocols middleware supports to interface to instruments Low-level transport middleware supports to interface to instruments Can middleware send results to and receive orders from reference labs?	PC with standard interfaces HL7 (2.3), ASTM (1394), XML, proprietary, POCT1-A serial RS232, serial USB, TCP/IP, FTP no	PC with standard interfaces HL7 (2.3), ASTM (1394), XML, proprietary, POCT1-A serial RS232, serial USB, TCP/IP, FTP, LAT yes
LIS/HIS/EMR interfaces for receiving orders  LIS/HIS/EMR interfaces for sending results  No. of diff. host system connections that can operate at once on middleware	Cerner, Dawning, Data Innovations, McKesson, Sunquest, Meditech, SCC Soft Computer, Technidata, homegrown, proprietary, others Cerner, Dawning, Data Innovations, McKesson, Sunquest, Meditech, SCC Soft Computer, Technidata, homegrown, proprietary, others	homegrown, Technidata, Meditech, Sysmex, MIPS, Sunquest, others homegrown, Technidata, Meditech, Sysmex, MIPS, Misys, others
Protocols system supports to interface to other systems  Human languages middleware supports (other than English)	HL7 (2.3), ASTM (1238, 1394), proprietary  Spanish, French, German, Greek, Italian, others (21 languages)	HL7 (2.3), ASTM (1238), proprietary  Spanish, French, German, Greek, Italian, others (21 languages)
Multiple languages and the used at same time on one system?     System supports local date and time formats?     No. of users that can access system at once     No. of user security levels system supports	no yes 5 (requires Windows 2003 server) 5	yes yes unlimited; hardware and licensing dependent
Users can write all rules for middleware?  • System supports simple rules?  • System supports compound nested rules with multiple event actions?  • Multiple event actions fired from one "if" condition statement?  Full and persistent audit trail of rule execution?/System supports rules testing?  Rule sets applied to individual instruments or connections?	yes yes yes no/yes yes	yes yes yes yes/yes yes/
QC data used as part of auto-verification or rules process?  Data from external databases retrieved and incorporated in rules processing?  Results that are entered manually processed by rules?  Rules test cases created, saved, used on demand for rules validation testing?	yes no yes yes	yes no yes yes
System supports event notification? System user notified of rules-based events?/Notification methods supported	yes yes/background color, review status	yes yes/e-mail, ISMS (pager), POP/VP, visual coloring
Automation routes determined by user-defined rules?  System supports test-based load balancing across instruments?  Events that lead to automation routes being dynamically updated  Audit trail of the route a sample has taken?	no no — no	yes no new test requests, reflex test requests, instrument down
Laboratory automation system interfaces  System interfaces with noninstrument automation devices?	Roche, Siemens, Sysmex, A&T Corp.	Beckman Coulter, Abbott, Roche, Siemens, Thermo Scientific, Sysmex, A&T Corp., Tecan yes (any)
Back-end specimen storage and retrieval tracking? System allows management of inst. & automation device maintenance records?  • System provides alerts when an instrument needs maintenance?	no yes no	yes yes no
System provides LIS downtime functions?/System allows manual order entry? System generates downtime specimen ID?/Algorithm user definable? Orders entered in middleware manually are sent back to LIS automatically? System supports data collection or data mining?	yes/yes yes/yes yes yes	yes/yes yes/yes yes yes
Quality control module? Middleware interfaces to third-party QC packages? System supports multi-rule QC? System supports moving averages or average of normals?	yes yes (export to Microsoft Excel) yes yes	yes yes (Bio-Rad Unity, export to Microsoft Excel) yes yes
Users can customize screens?/Users can define custom fields? Users can populate custom fields via user-defined rules? Screen has image support for any type of image? Users can design own reports?/Report-generation software used • Reports can include any data elements in database?	yes/no no yes yes/proprietary, export to Excel	yes/no no yes yes/proprietary, Crystal Reports, others
Around-the-clock customer service in U.S.?	yes	yes yes
System training available/On-site consulting?  Smallest cost for hardware/software/monthly maintenance Largest cost for hardware/software/monthly maintenance Fee for additional users	classroom, on site, e-learning/yes  -//1.5% of software cost  -//1.5% of software cost  Windows terminal server license	classroom, on site, e-training/yes //1.5% of software cost//1.5% of software cost
*based on December 2009 survey deadline  Note: a dash in lieu of an answer means company did not answer question or	<ul> <li>remote QC function allows users to view the QC values from multiple instruments and generate QC reports from remote locations</li> <li>offers a dashboard approach to sample results management, with the same user interface for all instruments in the clinical laboratory</li> <li>easy to install and simple to use; offers robust functionality to the clinical laboratory</li> </ul>	general lab module: user-friendly and powerful rules editor; production and operational audit trail; customizable automatic real-time processes; comprehensive management tools and reports     specialized microbiology module: paperless microbiology workflow; real-time rule-based system; epidemiology analysis and threshold alerting; results entry via worksheets, card reader devices, batch, or by request six subsidiaries on three continents; ISO 9001-2000/ISO 13485 certified;
question is not applicable		solutions available in 25 countries through 18 partners