

# Laboratory automation systems & workcells

<b>Part 1 of 12</b>	<b>A&amp;T Corporation</b> Akira Igarashi igarashi@alice.aandt.co.jp 549 Cardiff Irvine, CA 92606 650-346-6543 www.aandt.co.jp	<b>Abbott Diagnostics</b> Bart Cobb bart.cobb@abbott.com 100 Abbott Park Rd., AP6D-LL Abbott Park, IL 60064 847-937-9509 www.abbottdiagnostics.com
<i>Please see accompanying article on page 22</i>		
<b>Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia</b>	CLINILOG/1993/10 0/0/85	Accelerator APS/2005/36 1/10/0
<b>Automation products that are available</b> • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	—/— yes/yes/yes/yes yes/yes/yes/no yes/yes yes/yes/open yes/yes	yes/yes yes/yes/yes/yes yes/no—/yes yes/yes yes/yes/open yes/no
<b>Software features/functionality</b> • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	LIS feature/automation SW feature automation SW feature/LIS feature automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feature LIS feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature	LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature/automation SW feature automation SW feature automation SW feature/automation SW feature/automation SW feature LIS feature automation SW feature LIS feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/automation SW feature
<b>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</b>	A&T, Techni Data/HL7	GE, Misys, Cerner, Nexus, MIPS, Lab master, Cortex, Meditech, others/HL7, ASTM
<b>Transportation systems available</b> • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	yes —/—/yes 16, 13x100, 16, 13x75/— yes yes/floor mounted/yes electricity/annually single specimen container per carrier/yes	yes APS Track Section/40.2xvariablex17.0 in/yes 16, 13x100, 16, 13x75, multiple types simultaneously/13 yes yes/floor mounted/yes compressed air, electricity, water/— single specimen container per carrier/yes
<b>Automated centrifugation available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required <b>Automated input/accessioning available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required <b>Automated decapping available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps <b>Automated sorting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by <b>Specimen integrity monitor available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required <b>Automated aliquoting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	yes —/—/yes 250/16, 13x100, 16, 13x75 yes yes yes quarterly, annually yes —/43.3x35.4x49.8 in./yes/300 16, 13x100, 16, 13x75/yes 300/annually yes —/52x17.7x49.8 in./yes/350 16, 13x100, 16, 13x75/quarterly, annually yes/yes yes —/53.1x35.4x49.8 in./yes/300 16, 13x100, 16, 13x75/specimen, method, output no — — yes —/56.3x58.3x49.8 in./yes/250 16, 13x100, 16, 13x75 yes/yes yes/quarterly, annually	yes Centrifuge Module/Hettich/58.5x32x42 in/yes 320/16, 13x100, 16, 13x75, multiple types simultaneously/weekly, monthly yes yes no weekly, monthly yes Input Output Module/54.3x77.6x39.6 in/yes/300-600 16, 13x100, 16, 13x75, others/yes 720/weekly, monthly yes Decapper Module/46.7x34.7x17 in/yes/300 16, 13x100, 16, 13x75, multiple types simultaneously/daily, weekly yes/yes yes Input Output Module/54.3x77.6x39.6 in/yes/300-600 16, 13x100, 16, 13x75, multiple types simultaneously/specimen, method, output no — — no — — — —
<b>Instrument (analyzer) interfaces</b> • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem <b>Physical/hardware (instrument/specimen) interface</b> • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	yes yes pt-of-ref samp. & robotic arm interf./pt-of-ref samp./pt-of-ref samp. pt-of-ref sampling/pt-of-ref sampling	yes yes no/point-of-reference sampling/no point-of-reference sampling/no
<b>Instruments to which your system/product is interfaced</b> <b>Other robotic products/components to which system, product is linked</b>	Bayer: ADVIA 1650 Centaur; Abbott: Aeroset i-2000 C-16000; Tosoh: AIA1800LA; Roche: Modular; Beckman Coulter: DxI800 —	Architect c8000, Architect i2000, Architect i2000SR/c16000 (in development), Ortho Fusion 5.1 n/a
<b>Automated recapper or sealer available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	no — —	sealer Resealer Module/49.2x44.9x17 in/yes/300 yes/16, 13x100, 16, 13x75, multiple types simultaneously monthly
<b>Automated storage &amp; retrieval available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability <b>Longitudinal upgrade pathway or plan to protect users' investments</b> <b>Avg. time to install/Who provides service, support/Hours support is available</b> <b>On-site biomedical engineer required/User group meets regularly</b>	yes —/—/yes/— 16, 13x100, 16, 13x75/yes yes/2,000 yes/annually yes scalable modular automation can be designed from front-end workcell to full-scale TLA format; can be upgraded by LAN-like IT solution 1 month/A&T or designated engineer/24/7 no/no	yes Tube Storage Module/95x94.5x70 in/yes/600 16, 13x100, 16, 13x75, multiple types simultaneously/yes no/0 & 15,360 yes/daily, monthly yes modular open architecture depends on configuration/Abbott Diagnostics/business & extended hours no/yes
<b>List price</b> <b>Individual list prices for components</b> • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	varies by configurations — — — —	varies by configuration — — — —
<b>Distinguishing features</b> <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	open modular automation; high-speed single-tube transportation; integrated process control software with LAN-like flexible format	more flexibility: component-based design & high level of configurability; full functionality: refrigerated online storage & multiple tube types simultan.; advanced tech.: RFID, point in space sampling, heat soldering-resealing

Tabulation does not represent an endorsement by the College of American Pathologists.

Editors: Raymond D. Aller, MD; Robin Felder, PhD

# Laboratory automation systems & workcells

<b>Part 2 of 12</b>	<b>Ai Scientific</b> Brian Fowler brian.fowler@aiscientific.com 10-22 Hornibrook Esp. Clontarf, QLD 4019 +61 7 3105 5000 www.aiscientific.com	<b>Beckman Coulter</b> Jeff Quint jfquint@beckman.com 200 S. Kraemer Blvd. Brea, CA 92822 714-961-4118 www.beckmancoulter.com
<i>Please see accompanying article on page 22</i>		
Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia	Pathfinder/—/50 0/38/—	AutoMate 800/2006/25 0/20/0
Automation products that are available • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	—/— no/—/no/yes yes/yes/—/yes yes/— no/no/open yes/—	yes/no yes/no/yes/yes yes/yes/yes/no yes/yes yes/no/open yes/—
Software features/functionality • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	n/a/automation SW feature automation SW feature/automation SW feature automation SW feat./automation SW feat./automation SW feat. n/a auto. SW & LIS feat./auto. SW & LIS feat./auto. SW feat. LIS feature automation SW feature n/a automation SW & LIS feature/automation SW feature automation SW feature/LIS feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW & LIS feature/n/a	LIS feature/automation SW feature LIS feature/— automation SW feature/LIS feature/automation SW feature LIS feature automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feature automation SW feature automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature
LIS(s) & versions interfaced & live with LAS/How LIS(s) are interfaced with your LAS	Apollo, other/ASTM, HL7	SCC, Siemens, Philips/ASTM, Power Processor
Transportation systems available • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	yes, has capability but not in use —/—/—/— 16, 13x100, 16, 13x75/— — —/— — —	no — — — — —
Automated centrifugation available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required Automated input/accessioning available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required Automated decapping available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps Automated sorting available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by Specimen integrity monitor available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required Automated aliquoting available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	no — — — — — yes Pathfinder 900/2x2.5x1.5 m/no/900 16, 13x100, 16, 13x75/yes flexible input & output/weekly, monthly, quarterly, annually yes Pathfinder 900/2x2.5x1.5 m/no/450 16, 13x100, 16, 13x75/weekly, monthly, quarterly, annually yes/yes yes Pathfinder 900/2x2.5x1.5 m/no/900 16, 13x100, 16, 13x75/specimen, method, output yes Pathfinder 900/2x2.5x1.5 m/no/900 16, 13x100, 16, 13x75/weekly, monthly, quarterly, annually yes Pathfinder 900/2x2.5x1.5 m/no/900 16, 13x100, 16, 13x75 yes/yes yes/weekly, monthly, quarterly, annually	yes AutoMate 800/—/yes 300/16, 13x100, 16, 13x75, Sarstedt, Greiner, BD Pediatric tubes no no no daily yes AutoMate 800/—/yes/420 16, 13x100, 16, 13x75, Sarstedt, Greiner, BD Pediatric tubes/yes 600/daily, monthly yes AutoMate 800/n/a/yes/420 16, 13x100, 16, 13x75, Sarstedt, Greiner, BD Pediatric/daily, monthly yes/yes yes AutoMate 800/n/a/yes/420 16, 13x100, 16, 13x75, Sarstedt, Greiner, BD Pediatric/method, output no — yes AutoMate 800/n/a/yes/420 16, 13x100, 16, 13x75, Sarstedt yes/yes yes/daily, monthly
Instrument (analyzer) interfaces • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem Physical/hardware (instrument/specimen) interface • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	no no —/—/— —/—	no no —/—/— —/—
Instruments to which your system/product is interfaced	—	n/a
Other robotic products/components to which system, product is linked	—	n/a
Automated recapper or sealer available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	both available Pathfinder 900/2x2.5x1.5 m/no/900 yes/16, 13x100, 16, 13x75 weekly, monthly, quarterly, annually	no — —
Automated storage & retrieval available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability Longitudinal upgrade pathway or plan to protect users' investments	yes Pathfinder 900/2x2.5x1.5 m/no/900 16, 13x100, 16, 13x75/yes —/1,000 yes/weekly, bi-monthly, quarterly, annually no Pathfinder 900 is designed as a module system	yes AutoMate 800/n/a/yes/420 16, 13x100, 16, 13x75, Sarstedt, Greiner, BD Pediatric tubes/no yes/1 & 400 yes/daily, monthly no —/—
Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly	1 week/Ai Scientific/flexible on a contractual basis no/no	7 days/Beckman Coulter/24/7 no/no
List price Individual list prices for components • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	\$380,000 (Australian dollars) — — — —	n/a — — — —
Distinguishing features <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	automation products for front- and back-end sample handling; full service and support; application support team	automatic rack layout can be reconfigured with another rack style; intelligent aliquoting; sample storage routing by duration and temperature

Tabulation does not represent an endorsement by the College of American Pathologists.

# Laboratory automation systems & workcells

<p><b>Part 3 of 12</b></p> <p><i>Please see accompanying article on page 22</i></p>	<p><b>Beckman Coulter</b>                  Jeff Quint jfquint@beckman.com                  200 S Kraemer Blvd.                  Brea, CA 92822                  714-961-4118 www.beckmancoulter.com</p>	<p><b>Dade Behring Inc.</b>                  Terry Thompson terry_thompson@dadebehring.com                  PO Box 6101                  Newark, DE 19714                  302-631-6874 www.dadebehring.com</p>
<p>Name of system/First year installed/No. of 2006 contracts signed                  No. of live sites installed in N. America/Europe/Asia-Australia</p>	<p>Power Processor/1998/51                  285/70/60</p>	<p>StreamLAB Analytical Workcell/2002/—                  —/—/—</p>
<p>Automation products that are available</p> <ul style="list-style-type: none"> <li>• Pre-analytical processor/Total laboratory automation</li> <li>• Automated functions: Accessioning/Track load/Centrifugation/Decapping</li> <li>• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing</li> <li>• Automated functions: Storage-retrieval/Intelligent sample routing</li> <li>• SW: Dedicated Process Control/Middleware control using LIS/Architecture</li> <li>• Company has dedicated automation support team/Remote sys. monitoring</li> </ul>	<p>yes/yes                  yes/yes/yes/yes                  yes/yes/yes/yes                  yes/yes                  yes/yes/open                  yes/yes</p>	<p>yes/yes                  yes/yes/yes/yes                  yes/no/no/in development                  yes/yes                  yes/yes/open                  yes/yes</p>
<p>Software features/functionality</p> <ul style="list-style-type: none"> <li>• Patient demographics &amp; insurance data/Rules-based architecture</li> <li>• Supports data retrieval/Internet connectivity</li> <li>• Online real-time help system/QC/Stats &amp; management reports</li> <li>• Evaluates validity &amp; releasability of results from automated analyzers</li> <li>• Specimen tracking/Priority processing/Random-access spec. movement</li> <li>• Supports accession No. redundancy (duplicate specimen ID)</li> <li>• Supports specimen carrier &amp; level identification</li> <li>• Unique bar-code number per container required</li> <li>• Specimen routing/Multistop routing (one tube to multiple workstations)</li> <li>• Specimen scheduling/Instrument scheduling</li> <li>• Routes test to workstation/Automatic reflex, repeat, dilutions</li> <li>• Supports multiple HW config./Supports other proprietary transport. HW</li> <li>• Sample storage &amp; retrieval SW/Supports approved CLSI standards</li> </ul>	<p>LIS feature/auto SW feature                  automation SW feature/ automation SW feature                  automation SW feat./ automation SW feat./ automation SW feat.                  automation SW feature                  automation SW feat./ automation SW feat./ automation SW feat.                  n/a                  automation SW feature                  automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/n/a                  automation SW feature/automation SW feature</p>	<p>automation SW &amp; LIS feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feat./ automation SW feat./ automation SW feat.                  automation SW feature                  automation SW feat./ automation SW feat./ automation SW feat.                  automation SW feature                  automation SW &amp; LIS feature                  automation SW &amp; LIS feature                  automation SW feature/automation SW feature                  automation SW &amp; LIS feature/automation SW &amp; LIS feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature</p>
<p>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</p>	<p>SCC, Siemens, Philips, Misys, Cerner, McKesson, GE, Meditech, PerSe, Molis, MIPS, Vista, Swiss Lab/Power Processor, Direct, HL7</p>	<p>Cerner, Meditech, SCC, Misys, CHCS, LabGem, Swiss Lab, Medicom, Izasa, Confidentia, others/DBASTM, Dimension Protocol, HL7, ASTM</p>
<p>Transportation systems available</p> <ul style="list-style-type: none"> <li>• Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Containers device accommodates/Avg. throughput in cm per second</li> <li>• Supports automatic rerouting for reflex-repeat-dilutions</li> <li>• Modular HW/Installed options/Device can operate in track &amp; manual mode</li> <li>• Required utilities/Required maintenance</li> <li>• Carrier type/Scalable system</li> </ul>	<p>yes                  Power Processor II/n/a/yes                  16, 13x100, 16, 13x75, Sarsedt/—                  yes                  yes/floor &amp; subfloor mounted/yes                  compressed air, electricity/monthly                  single specimen container per carrier/yes</p>	<p>yes                  StreamLAB/60x70x35in/yes                  16, 13x100, 16, 13x75/300 tubes per hour                  yes                  yes/floor mounted/yes                  compressed air, electricity/weekly                  single specimen container per carrier/yes</p>
<p>Automated centrifugation available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Maximum throughput/Containers device accommodates</li> <li>• Can identify tube types for custom programmed rate &amp; spin times per run</li> <li>• More than one centrif. can be connected to track system</li> <li>• For multi-unit centrif., each centrif. operates independently for rate &amp; time</li> <li>• Maintenance required</li> </ul> <p>Automated input/accessioning available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Dedicated lanes for stat samples</li> <li>• Maximum No. of samples that can be loaded/Maintenance required</li> </ul> <p>Automated decapping available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> <li>• Removes multiple size tube caps per run/ Removes screw type sample caps</li> </ul> <p>Automated sorting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Software can sort by</li> </ul> <p>Specimen integrity monitor available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> </ul> <p>Automated aliquoting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates</li> <li>• Inspects samples for bar code/Detects &amp; reports clots in specimen</li> <li>• Detects &amp; reports quantity not sufficient specimens/Maintenance required</li> </ul>	<p>yes                  Power Processor II/n/a/yes                  300-450/16, 13x100, 16, 13x75, Sarsedt                  no                  yes                  yes                  weekly                  yes                  Power Processor II/n/a/yes/900                  16, 13x100, 16, 13x75, Sarsedt/yes                  200/monthly                  yes                  Power Processor II/n/a/yes/600                  16, 13x100, 16, 13x75, Sarsedt/monthly                  yes/no                  yes                  Power Processor II/n/a/yes/500                  16, 13x100, 16, 13x75, Sarsedt/method, output                  yes                  Power Processor II/n/a/yes/90                  16, 13x100, 16, 13x75, Sarsedt/monthly                  yes                  Power Processor II/n/a/yes/140 primary samples                  16, 13x100, 16, 13x75, Sarsedt                  yes/yes                  yes/daily, weekly</p>	<p>yes                  StreamLAB/31x23x29 in/yes                  up to 400 per hr/16, 13x100, 16, 13x75, handles various sizes simultan.                  yes                  no                  —                  weekly, monthly                  yes                  StreamLAB/60x70x35 in/yes/300 tubes                  16, 13x100, 16, 13x75/yes                  up to 600/daily, monthly                  yes                  StreamLab/integrated with input-output track/yes/300                  16, 13x100, 16, 13x75/daily, monthly                  yes/yes                  yes                  StreamLab/integrated with input-output track/yes/300                  16, 13x100, 16, 13x75/specimen, method, output                  yes                  StreamLab/integrated with analyzer/yes/300                  16, 13x100, 16, 13x75/—                  yes                  StreamLab/integrated with sample transfer module/yes/300                  16, 13x100, 16, 13x75                  yes/yes                  yes/daily</p>
<p>Instrument (analyzer) interfaces</p> <ul style="list-style-type: none"> <li>• Rules-based instrument interface control subsystem</li> <li>• Process control of instrument via control subsystem</li> </ul> <p>Physical/hardware (instrument/specimen) interface</p> <ul style="list-style-type: none"> <li>• Hematology/Chemistry/Coagulation</li> </ul> <p>• Immunoassay/Urinalysis</p>	<p>yes                  yes                  rob. arm interf./pt-of-ref samp. &amp; rob. arm interf./pt-of-ref samp. &amp; rob. arm interf.                  pt-of-ref sampling &amp; robotic arm interface/pt-of-ref sampling</p>	<p>yes                  yes                  no/pt-of-ref samp. &amp; rob. arm interf./pt-of-ref samp. &amp; rob. arm interf.                  pt-of-ref sampling &amp; robotic arm interface/no</p>
<p>Instruments to which your system/product is interfaced</p> <p>Other robotic products/components to which system, product is linked</p>	<p>Abbott Architect, AxSYM; Bayer Centaur, Atlas; Beckman Coulter LX 20, DxC, Dxl; Ortho 950, 250, Eci; Roche Modular; Stago Star</p> <p>n/a</p>	<p>Dimension RxL Max (Dimension VISTA in develop.); DPC Immulite 2000 &amp; 2500; Sysmex CA 7000; Abbott Architect, others</p> <p>—</p>
<p>Automated recapper or sealer available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Recaps-seals multiple size tubes simultaneously/Containers device accomm.</li> <li>• Maintenance required</li> </ul>	<p>yes                  Power Processor III/—/yes/500                  no/ 13x100, 13x75, Sarstedt                  weekly</p>	<p>sealer in development                  StreamLAB/40x36x17 in/yes/300                  yes/13x100, 13x75, 16x100, 16x75                  daily, monthly</p>
<p>Automated storage &amp; retrieval available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Containers device accommodates/Connects to the track</li> <li>• Room temperature/Min. &amp; max. No. of tubes stored per module</li> <li>• Multiple size tubes can be stored in the same module/Maintenance required</li> <li>• Refrigerated storage &amp; retrieval capability</li> <li>• Longitudinal upgrade pathway or plan to protect users' investments</li> <li>• Avg. time to install/Who provides service, support/Hours support is available</li> <li>• On-site biomedical engineer required/User group meets regularly</li> </ul>	<p>yes                  Power Processor III/—/yes/500                  13x100, 13x75, Sarstedt/yes                  yes/1 &amp; 6,000                  no/weekly                  yes                  Power Processor is expandable for upgrades as lab needs grow                  7-21 days/Beckman Coulter/24/7                  no/yes</p>	<p>yes                  StreamLAB SW &amp; input-output module/n/a/yes/n/a                  13x100, 13x75, 16x100, 16x75 (47,952 storage capacity)/no                  yes/up to 576                  yes/n/a                  no                  StreamLAB systems are scalable with open configurations                  5 days/Dade Behring/24/7                  no/yes</p>
<p>List price</p> <p>Individual list prices for components</p> <ul style="list-style-type: none"> <li>• Process control SW/Transportation systems/Auto. centrifugation</li> <li>• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage &amp; retrieval</li> <li>• Specimen integrity monitor/Automated aliquot</li> <li>• Instrument (analyzer) interfaces/Automated recap</li> </ul>	<p>depends on configuration</p> <p>—                  —                  —                  —</p>	<p>contact Dade Behring representative</p> <p>—                  —                  —                  —</p>
<p>Distinguishing features</p> <p>* For basic building block unit</p> <p>** Average throughput in specimen containers per hr per device</p>	<p>refrigerated storage with recapping and auto rerun; totally open system; intelligent aliquoting; proven consistent TAT results</p>	<p>simplified operation with single operator interface; integrated storage &amp; retrieval software reduces need for additional modules; dedicated automation support and services; compact footprint</p>

Tabulation does not represent an endorsement by the College of American Pathologists.

# Laboratory automation systems & workcells

<p><b>Part 4 of 12</b></p> <p><i>Please see accompanying article on page 22</i></p>	<p><b>Dade Behring Inc.</b> Terry Thompson terry_thompson@dadebehring.com PO Box 6101 Newark, DE 19714 302-631-6874 www.dadebehring.com</p>	<p><b>Integrated Laboratory Automation Solutions Inc.</b> William Neeley, MD wneeleymd@lab-ilas.com 1223 Chicago Rd. Troy, MI 48083 866-825-3477 www.lab-ilas.com</p>
<p>Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia</p>	<p>Dimension Lynx System/2005/— —/—/—</p>	<p>The Efficiency Series/2003/1 1/—/—</p>
<p>Automation products that are available</p> <ul style="list-style-type: none"> <li>• Pre-analytical processor/Total laboratory automation</li> <li>• Automated functions: Accessioning/Track load/Centrifugation/Decapping</li> <li>• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing</li> <li>• Automated functions: Storage-retrieval/Intelligent sample routing</li> <li>• SW: Dedicated Process Control/Middleware control using LIS/Architecture</li> <li>• Company has dedicated automation support team/Remote sys. monitoring</li> </ul>	<p>yes/no yes/yes/yes/yes yes/no/no/in development yes/yes yes/yes/open yes/yes</p>	<p>yes/yes yes/in development/in development/in development yes/yes/yes/in development in development/yes yes/yes/open yes/yes</p>
<p>Software features/functionality</p> <ul style="list-style-type: none"> <li>• Patient demographics &amp; insurance data/Rules-based architecture</li> <li>• Supports data retrieval/Internet connectivity</li> <li>• Online real-time help system/QC/Stats &amp; management reports</li> <li>• Evaluates validity &amp; releasability of results from automated analyzers</li> <li>• Specimen tracking/Priority processing/Random-access spec. movement</li> <li>• Supports accession No. redundancy (duplicate specimen ID)</li> <li>• Supports specimen carrier &amp; level identification</li> <li>• Unique bar-code number per container required</li> <li>• Specimen routing/Multistop routing (one tube to multiple workstations)</li> <li>• Specimen scheduling/Instrument scheduling</li> <li>• Routes test to workstation/Automatic reflex, repeat, dilutions</li> <li>• Supports multiple HW config./Supports other proprietary transport. HW</li> <li>• Sample storage &amp; retrieval SW/Supports approved CLSI standards</li> </ul>	<p>automation SW &amp; LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feat./ automation SW feat./ automation SW feat. automation SW feature automation SW feat./ automation SW feat./ automation SW feat. automation SW feature automation SW &amp; LIS feature automation SW &amp; LIS feature automation SW feature/automation SW feature automation SW &amp; LIS feature/automation SW &amp; LIS feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature</p>	<p>LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feature/LIS feature/automation SW feature automation SW feature automation SW feat./ automation SW feat./ automation SW feat. automation SW feature automation SW feature automation SW &amp; LIS feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature</p>
<p>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</p>	<p>Cerner, Meditech, SCC, Misys, CHCS, LabGem, Swiss Lab, Medicom, IZASA, others/DBASTM, Dimension Protocol, HL7, ASTM</p>	<p>Misys (Smart)/direct LIS</p>
<p>Transportation systems available</p> <ul style="list-style-type: none"> <li>• Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Containers device accommodates/Avg. throughput in cm per second</li> <li>• Supports automatic rerouting for reflex-repeat-dilutions</li> <li>• Modular HW/Installed options/Device can operate in track &amp; manual mode</li> <li>• Required utilities/Required maintenance</li> <li>• Carrier type/Scalable system</li> </ul>	<p>yes Lynx/60-70x35in/yes 16, 13x100, 16, 13x75/300 tubes per hour yes yes/floor mounted/yes compressed air, electricity/weekly single specimen container per carrier/yes</p>	<p>yes The Efficiency Series/varies with instrument size/yes 16, 13x100, 16, 13x75/2,300 tubes per hour yes yes/floor mounted, overhead mounted, subfloor mounted/yes compressed air, electricity/quarterly single specimen container per carrier/yes</p>
<p>Automated centrifugation available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Maximum throughput/Containers device accommodates</li> <li>• Can identify tube types for custom programmed rate &amp; spin times per run</li> <li>• More than one centrif. can be connected to track system</li> <li>• For multi-unit centrif., each centrif. operates independently for rate &amp; time</li> <li>• Maintenance required</li> </ul> <p>Automated input/accessioning available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Dedicated lanes for stat samples</li> <li>• Maximum No. of samples that can be loaded/Maintenance required</li> </ul> <p>Automated decapping available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> <li>• Removes multiple size tube caps per run/ Removes screw type sample caps</li> </ul> <p>Automated sorting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Software can sort by</li> </ul> <p>Specimen integrity monitor available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> </ul> <p>Automated aliquoting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates</li> <li>• Inspects samples for bar code/Detects &amp; reports clots in specimen</li> <li>• Detects &amp; reports quantity not sufficient specimens/Maintenance required</li> </ul>	<p>yes Lynx/31-23x29 in/yes up to 400 tubes/16, 13x100, 16, 13x75 yes no — weekly, monthly yes Lynx/60-70x35 in/yes/300 tubes 16, 13x100, 16, 13x75/yes up to 600/daily, monthly yes Lynx/integrated with input-output track/yes/300 16, 13x100, 16, 13x75/daily, monthly yes/yes yes Lynx/integrated with input-output track/yes/300 16, 13x100, 16, 13x75/specimen, method, output yes Lynx/integrated with analyzer and sample transfer monitor/yes/300 16, 13x100, 16, 13x75/— yes Lynx/integrated with sample transfer module/yes/300 16, 13x100, 16, 13x75 yes/yes yes/daily</p>	<p>— — — — — — yes The Efficiency Series/can be customized/yes/2,300 16, 13x100, 16, 13x75/yes 2,300/quarterly — — — yes The Efficiency Series/can be customized/yes/2,300 16, 13x100, 16, 13x75/specimen, output, tube type yes The Efficiency Series/can be customized/yes/2,300 16, 13x100, 16, 13x75 — — — — — —</p>
<p>Instrument (analyzer) interfaces</p> <ul style="list-style-type: none"> <li>• Rules-based instrument interface control subsystem</li> <li>• Process control of instrument via control subsystem</li> </ul> <p>Physical/hardware (instrument/specimen) interface</p> <ul style="list-style-type: none"> <li>• Hematology/Chemistry/Coagulation</li> <li>• Immunoassay/Urinalysis</li> </ul>	<p>yes yes no/pt-of-ref samp. &amp; rob. arm interf./pt-of-ref samp. &amp; rob. arm interf. pt-of-ref sampling &amp; robotic arm interface/no</p>	<p>yes yes robotic arm interface/pt-of-ref sampling/robotic arm interface point-of-reference sampling/point-of-reference sampling</p>
<p>Instruments to which your system/product is interfaced</p> <p>Other robotic products/components to which system, product is linked</p>	<p>Dimension RxL Max; DPC Immulite 2000 &amp; 2500; Abbott Architect i2000 (in development) —</p>	<p>Ortho: Vitros 5,1,950; Abbott: Architect i2000, AxSym; Olympus: DPC Immulite 2000; Roche: Modular; Beckman Coulter: DXI 800 (in devel.) —</p>
<p>Automated recapper or sealer available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Recaps-seals multiple size tubes simultaneously/Containers device accomm.</li> <li>• Maintenance required</li> </ul>	<p>sealer in development Lynx/40-36x17 in/yes/300 yes/16, 13x100, 16, 13x75 daily, monthly</p>	<p>— — — —</p>
<p>Automated storage &amp; retrieval available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Connects to the track</li> <li>• Room temperature/Min. &amp; max. No. of tubes stored per module</li> <li>• Multiple size tubes can be stored in the same module/Maintenance required</li> <li>• Refrigerated storage &amp; retrieval capability</li> <li>• Longitudinal upgrade pathway or plan to protect users' investments</li> </ul>	<p>yes Lynx SW &amp; input-output module/n/a/yes/n/a yes/16, 13x100, 16, 13x75 (47,952 storage capacity)/no yes/up to 576 yes/n/a no Lynx systems are scalable with open configurations</p>	<p>— — — — — —</p>
<p>Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly</p>	<p>5 days/Dade Behring/24/7 no/yes</p>	<p>1-2 weeks/Integrated Laboratory Automation Solutions/24/7 no/no</p>
<p>List price</p> <p>Individual list prices for components</p> <ul style="list-style-type: none"> <li>• Process control SW/Transportation systems/Auto. centrifugation</li> <li>• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage &amp; retrieval</li> <li>• Specimen integrity monitor/Automated aliquot</li> <li>• Instrument (analyzer) interfaces/Automated recap</li> </ul>	<p>contact Dade Behring representative — — — —</p>	<p>depends on configuration — — — —</p>
<p>Distinguishing features</p> <p>* For basic building block unit ** Average throughput in specimen containers per hr per device</p>	<p>single operator interface &amp; common input/output of multiple size tubes; integrated storage &amp; retrieval SW; dedicated automation support and services; compact footprint; can be customized</p>	<p>prioritizes stat orders; uses variety of tube sizes; provides smart sorting and delivery; totally flexible; interfaces with any track ready instruments; remote management; adaptable for all size labs</p>

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# Laboratory automation systems & workcells

<b>Part 5 of 12</b>	<b>Olympus America Inc.</b> Hiroshi Sekiya hiro.sekiya@olympus.com 3500 Corporate Parkway Center Valley, PA 18034-0610 484-896-5229 www.olympusamerica.com	<b>Olympus America Inc.</b> Hiroshi Sekiya hiro.sekiya@olympus.com 3500 Corporate Parkway Center Valley, PA 18034-0610 484-896-5229 www.olympusamerica.com
<i>Please see accompanying article on page 22</i>		
<b>Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia</b>	<b>OLA2500 High Speed Sorter/2004/7 40/200+/3</b>	<b>OLA2500 Lab Automation System/2003/7 40/200+/3</b>
<b>Automation products that are available</b> • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	—/— yes/—/no/yes yes/yes/—/yes no/yes no/yes/open yes/yes	—/— yes/—/no/yes yes/yes/—/yes no/yes no/yes/open yes/yes
<b>Software features/functionality</b> • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a/automation SW feature n/a auto. SW feature/auto. SW & LIS feature/auto. SW feature automation SW feature automation SW feature not necessary automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature automation SW feature/automation SW feature	LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a/automation SW feature n/a auto. SW feature/auto. SW & LIS feature/auto. SW feature automation SW feature automation SW feature not necessary automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature automation SW feature/automation SW feature
<b>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</b>	Cerner, Misys, Modulus, Data Innovations, SCC, Atlas, McKesson/HL7, ASTM, Olympus format conforms to ASTM1381	Cerner, Misys, Modulus, Data Innovations, SCC, Atlas, McKesson/HL7, ASTM, Olympus format conforms to ASTM1381
<b>Transportation systems available</b> • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	no — — — — —	no — — — — —
<b>Automated centrifugation available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required <b>Automated input/accessioning available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required <b>Automated decapping available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps <b>Automated sorting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by <b>Specimen integrity monitor available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required <b>Automated aliquoting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	no — — — — — yes OLA2500 HSS/64.6x73.2x52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/— —/— yes OLA2500 HSS/64.6x73.2x52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/weekly yes/yes yes OLA2500 HSS/64.6x73.2x52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/specimen, method, output no — — yes —/—/yes/— — —/— —/—	no — — — — — yes OLA2500 LAS/64.6x100x52.8 in/yes/800 16, 13x100, 16, 13x75, others/— —/— yes OLA2500 LAS/64.6x100x52.8 in/yes/800 16, 13x100, 16, 13x75, others/weekly yes/yes yes OLA2500 LAS/64.6x100x52.8 in/yes/800 16, 13x100, 16, 13x75, others/specimen, method, output no — — yes OLA2500 LAS/64.6x100x52.8 in/yes/— 16, 13x100, 16, 13x75, others yes/yes yes/daily
<b>Instrument (analyzer) interfaces</b> • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem <b>Physical/hardware (instrument/specimen) interface</b> • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	no no —/—/— —/—	no no —/—/— —/—
<b>Instruments to which your system/product is interfaced</b>	n/a	n/a
<b>Other robotic products/components to which system, product is linked</b>	—	—
<b>Automated recapper or sealer available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	sealer OLA2500 HSS/64.6x73.2x52.8 in/yes/1,200 yes/16, 13x100, 16, 13x75, others —	sealer OLA2500 LAS/64.6x100x52.8 in/yes/800 yes/16, 13x100, 16, 13x75, others —
<b>Automated storage &amp; retrieval available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability Longitudinal upgrade pathway or plan to protect users' investments	no — — — — — —	no — — — — — —
<b>Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly</b>	1 week/Olympus America/M-F 8 AM to 5 PM & 24/7 available no/no	1 week/Olympus America/M-F 8 AM to 5 PM & 24/7 no/no
<b>List price</b> <b>Individual list prices for components</b> • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	\$250,000 list price —/—/— —/—/—/— —/— —/—	\$350,000 list price —/—/— —/—/—/— —/— —/—
<b>Distinguishing features</b> <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	economical, flexible, open, standalone; automates the most labor-intensive manual tasks with speed and flexibility; raises safety, quality, productivity, and efficiency without large investment	economical, flexible, open, standalone; automates the most labor-intensive manual tasks with speed and flexibility; raises safety, quality, productivity, and efficiency without large investment

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# Laboratory automation systems & workcells

<b>Part 6 of 12</b>	<b>Olympus America Inc.</b> Hiroshi Sekiya hiro.sekiya@olympus.com 3500 Corporate Parkway Center Valley, PA 18034-0610 484-896-5229 www.olympusamerica.com	<b>Ortho-Clinical Diagnostics</b> Nadav Kaufman nkaufman@ocdus.jnj.com 1001 US Route 202 Raritan, NJ 08869 908-704-3839 www.orthoclinical.com
<i>Please see accompanying article on page 22</i>		
<b>Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia</b>	OLA2500 High Speed Sorter with Aliquotter (HSSA)/2006/— 40/200+/3	enGen Laboratory Automation System/2000/16 5/18/0
<b>Automation products that are available</b> • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	—/— yes/—/no/yes yes/yes/—/yes no/yes no/yes/open yes/yes	yes/yes yes/yes/yes/yes yes/yes/no/in development in development/yes yes/yes/open yes/yes, for VITROS 5,1 FS & EciQ
<b>Software features/functionality</b> • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	LIS feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a/automation SW feature n/a auto. SW feature/auto. SW & LIS feature/auto. SW feature automation SW feature automation SW feature not necessary automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature automation SW feature/automation SW feature	automation SW feature/automation SW feature automation SW feature/automation SW feature n/a/automation SW feature/automation SW feature automation SW feature automation SW feat./automation SW feat./automation SW feat. no automation SW feature automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/yes, Sysmex HST automation SW feature/—
<b>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</b>	Cerner, Misys, Modulus, Data Innovations, SCC, Atlas, McKesson/HL7, ASTM, Olympus format conforms to ASTM1381-91	enGen interfaces with many LIS programs via Data Innovations MW: Cerner, Misys, SCC, several others/HL7, ASTM
<b>Transportation systems available</b> • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	no — — — — —	yes Covered Conveyor/600 (L) & 2,400 mm/— 16, 13x100, 16, 13x75/10 cm per second yes yes/floor mounted/yes compressed air, electricity/annually single specimen container per carrier/yes
<b>Automated centrifugation available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required <b>Automated input/accessioning available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required <b>Automated decapping available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps <b>Automated sorting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by <b>Specimen integrity monitor available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required <b>Automated aliquoting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	no — — — — — yes OLA2500 LAS/64.6x100.6-52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/— —/— yes OLA2500 LAS/64.6x100.6-52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/weekly yes/yes yes OLA2500 LAS/64.6x100.6-52.8 in/yes/1,200 16, 13x100, 16, 13x75, others/specimen, method, output no — — yes OLA2500 LAS/64.6x100.6-52.8 in/yes/— 16, 13x100, 16, 13x75, others yes/yes yes/daily, quarterly	yes Centrifuge Module/1,900x1,200x1,375 mm/— 400-500, depends on spin time; 96-tube capacity/13x100, 13x75 yes yes yes quarterly yes Rack Entry-Exit Module/1,900x1,200x965 mm/—/500 16, 13x100, 16, 13x75/yes 600/annually yes Decapper Module/1,600x600x965 mm/—/500 16, 13x100, 16, 13x75/annually yes/yes yes Rack Exit-Entry Module/1,900x1,200x965 mm/—/500 16, 13x100, 16, 13x75/specimen, method, output yes via VITROS 5,1 FS Chem. System when part of enGen/—/—/— 16, 13x100, 16, 13x75/daily, weekly, monthly, annually yes Aliquotter & Labeler Module/1,900x1,500x965 mm/—/240 16, 13x100, 16, 13x75 yes/yes yes/quarterly
<b>Instrument (analyzer) interfaces</b> • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem <b>Physical/hardware (instrument/specimen) interface</b> • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	no no —/—/— —/—	yes — robotic arm interface/pt.-of-ref. sampling/in development point-of-reference sampling/—
<b>Instruments to which your system/product is interfaced</b>	n/a	VITROS 5,1 FS Chemistry System, 950, 250/350, VITROS EciQ IA System (in devel.); enGen interfaces with several nonVITROS IA systems; others Siemens/DPC SMS; Sysmex HST
<b>Other robotic products/components to which system, product is linked</b>	—	
<b>Automated recapper or sealer available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	sealer OLA2500 LAS/64.6x100.6-52.8 in/yes/1,200 yes/16, 13x100, 16, 13x75, others —	recapper in development Recapper Module/1,600x600x965 mm/—/n/a yes/16, 13x100, 16, 13x75 annually
<b>Automated storage &amp; retrieval available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability Longitudinal upgrade pathway or plan to protect users' investments	no — — — — —	yes, in development — — — — — customized automation offering, enGen can be reconfigured or upgraded as needs change; SW configuration updates available periodically depends on config., custom./depends on service contract with Ortho no/no
<b>Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly</b>	1 week/Olympus America/M-F 8 AM to 5 PM & 24/7 available no/no	
<b>List price</b> Individual list prices for components • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	\$400,000 —/—/— —/—/—/— —/— —/\$40,000 (optional)	depends on configuration — — — —
<b>Distinguishing features</b> <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	economical, flexible, open, standalone; automates the most labor- intensive manual tasks with speed & flexibility; raises safety, quality, productivity & efficiency without large investment	customizable: systems designed to fit in existing floor space while providing LEAN workflow; configurable: systems designed to interface with several lab analyzers; systems grow with the lab

Tabulation does not represent an endorsement by the College of American Pathologists.

# Laboratory automation systems & workcells

<p><b>Part 7 of 12</b></p> <p><i>Please see accompanying article on page 22</i></p>	<p><b>PVT LabSystem LLC</b>          Miriam Hoelzel info@pvtlabsystems.com          530 Means Street, Ste. 120          Atlanta, GA 30318          877-788-5227 www.pvtlabsystems.com</p>	<p><b>PVT LabSystems LLC</b>          Miriam Hoelzel info@pvtlabsystems.com          530 Means St., Ste. 120          Atlanta, GA 30318          877-788-5227 www.pvtlabsystems.com</p>
<p>Name of system/First year installed/No. of 2006 contracts signed          No. of live sites installed in N. America/Europe/Asia-Australia</p>	<p>Aliquoting System RSA/2002/59          5/96/19</p>	<p>Workstation/2003/11          4/13/0</p>
<p>Automation products that are available</p> <ul style="list-style-type: none"> <li>• Pre-analytical processor/Total laboratory automation</li> <li>• Automated functions: Accessioning/Track load/Centrifugation/Decapping</li> <li>• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing</li> <li>• Automated functions: Storage-retrieval/Intelligent sample routing</li> <li>• SW: Dedicated Process Control/Middleware control using LIS/Architecture</li> <li>• Company has dedicated automation support team/Remote sys. monitoring</li> </ul>	<p>yes/n/a          yes/yes/yes/yes          yes/yes/no/yes          yes/yes          yes/yes/open          yes/yes</p>	<p>yes/n/a          yes/yes/yes/yes          yes/yes/no/yes          yes/yes          yes/yes/open          yes/yes</p>
<p>Software features/functionality</p> <ul style="list-style-type: none"> <li>• Patient demographics &amp; insurance data/Rules-based architecture</li> <li>• Supports data retrieval/Internet connectivity</li> <li>• Online real-time help system/QC/Stats &amp; management reports</li> <li>• Evaluates validity &amp; releasability of results from automated analyzers</li> <li>• Specimen tracking/Priority processing/Random-access spec. movement</li> <li>• Supports accession No. redundancy (duplicate specimen ID)</li> <li>• Supports specimen carrier &amp; level identification</li> <li>• Unique bar-code number per container required</li> <li>• Specimen routing/Multistop routing (one tube to multiple workstations)</li> <li>• Specimen scheduling/Instrument scheduling</li> <li>• Routes test to workstation/Automatic reflex, repeat, dilutions</li> <li>• Supports multiple HW config./Supports other proprietary transport. HW</li> <li>• Sample storage &amp; retrieval SW/Supports approved CLSI standards</li> </ul>	<p>automation SW feature/automation SW feature          automation SW feature/n/a          automation SW feat./automation SW feat./automation SW feat.          n/a          automation SW feat./automation SW feat./automation SW feat.          automation SW feature          automation SW feature          n/a          automation SW feature/automation SW feature          automation SW feature/automation SW feature          automation SW feature/n/a          automation SW feature/n/a          automation SW feature/automation SW feature</p>	<p>automation SW feature/automation SW feature          automation SW feature/n/a          automation SW feat./automation SW feat./automation SW feat.          n/a          automation SW feat./automation SW feat./automation SW feat.          automation SW feature          automation SW feature          n/a          automation SW feature/automation SW feature          automation SW feature/automation SW feature          automation SW feature/n/a          automation SW feature/n/a          automation SW feature/automation SW feature</p>
<p>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</p>	<p>Cerner, MCS, LDS, Syspek, Providens, MIPS, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, others/ASTM</p>	<p>Cerner, MCS, Syspek, Providens, Mips, Bayer, Molis, Omega, Misys, Vertex, Qque, LDS, Zanacore, DI, SCC Soft, Cirrus, others/ASTM</p>
<p>Transportation systems available</p> <ul style="list-style-type: none"> <li>• Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Containers device accommodates/Avg. throughput in cm per second</li> <li>• Supports automatic rerouting for reflex-repeat-dilutions</li> <li>• Modular HW/Installed options/Device can operate in track &amp; manual mode</li> <li>• Required utilities/Required maintenance</li> <li>• Carrier type/Scalable system</li> </ul>	<p>yes          —/—/yes          16, 13x100, 16, 13x75, others/n/a          no          yes/floor mounted/yes          compressed air, electricity/annually          multiple specimen (5) container per carrier/yes</p>	<p>yes          —/—/yes          16, 13x100, 16, 13x75, others/n/a          no          yes/floor mounted/yes          compressed air, electricity/every 6 months          single speciemn container per carrier/yes</p>
<p>Automated centrifugation available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Maximum throughput/Containers device accommodates</li> <li>• Can identify tube types for custom programmed rate &amp; spin times per run</li> <li>• More than one centrif. can be connected to track system</li> <li>• For multi-unit centrif., each centrif. operates independently for rate &amp; time</li> <li>• Maintenance required</li> </ul> <p>Automated input/accessioning available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Dedicated lanes for stat samples</li> <li>• Maximum No. of samples that can be loaded/Maintenance required</li> </ul> <p>Automated decapping available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> <li>• Removes multiple size tube caps per run/ Removes screw type sample caps</li> </ul> <p>Automated sorting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Software can sort by</li> </ul> <p>Specimen integrity monitor available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> </ul> <p>Automated aliquoting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates</li> <li>• Inspects samples for bar code/Detects &amp; reports clots in specimen</li> <li>• Detects &amp; reports quantity not sufficient specimens/Maintenance required</li> </ul>	<p>yes          EC1 or EC2/EC1: 71.65x53.54x67.71; EC2: 71.65x76.77x67.71/yes          depends on configuration/16, 13x100, 16, 13x75, others          yes          yes          yes          every 6 months          yes          input sorter/78.74x33.47x69.29/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/yes          600/every 6 months          yes          decapping module/14.96x12.60x5.90/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/every 6 months          yes/yes          yes          output sorter/71.65x55.90x55.11/yes/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/specimen, method, output          yes, optional          QSI module/62.99x30.71x43.31/yes/850          16, 13x100, 16, 13x75, others/every 6 months          yes          aliquoting unit/66.92x30.70x46.10/yes/270 primary tubes          16, 13x100, 16, 13x75, others          yes/yes          yes/every 4 months</p>	<p>yes          EC1 or EC2/EC1: 71.65x53.54x67.71; EC2: 71.65x76.77x67.71/yes          depends on configuration/16, 13x100, 15, 13x75, others          yes          yes          yes          every 6 months          yes          input sorter/78.74x33.47x69.29/ yes/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/yes          600/every 6 months          yes          decapping module/14.96x12.60x5.90/yes/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/every 6 months          yes/yes          yes          output/71.65x55.90x55.11/yes/1,200 with sort &amp; decap          16, 13x100, 16, 13x75, others/specimen, method, output          yes, optional          QSI module/62.99x30.71x43.31 in/yes/850          16, 13x100, 16, 13x75, others/every 6 months          yes          aliquoting unit/66.92 x 30.70 x 46.10 in/ yes/270 primary tubes          16, 13x100, 16, 13x75, others          yes/yes          yes/every 6 months</p>
<p>Instrument (analyzer) interfaces</p> <ul style="list-style-type: none"> <li>• Rules-based instrument interface control subsystem</li> <li>• Process control of instrument via control subsystem</li> </ul> <p>Physical/hardware (instrument/specimen) interface</p> <ul style="list-style-type: none"> <li>• Hematology/Chemistry/Coagulation</li> <li>• Immunoassay/Urinalysis</li> </ul>	<p>no          no          —/—/—          —/—</p>	<p>no          no          —/—/—          —/—</p>
<p>Instruments to which your system/product is interfaced</p> <p>Other robotic products/components to which system, product is linked</p>	<p>—</p> <p>—</p>	<p>—</p> <p>—</p>
<p>Automated recapper or sealer available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Recaps-seals multiple size tubes simultaneously/Containers device accomm.</li> <li>• Maintenance required</li> </ul>	<p>recapper          recapping module/13.39x12.20x8.66/yes/1,100 with sort &amp; decap          yes/16, 13x100, 16, 13x75, others          every 6 months</p>	<p>recapper          recapping module/13.39x12.20x8.66 in/yes/1,100 with sort &amp; decap          yes/16, 13x100, 16, 13x75, others          every 6 months</p>
<p>Automated storage &amp; retrieval available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Connects to the track</li> <li>• Room temperature/Min. &amp; max. No. of tubes stored per module</li> <li>• Multiple size tubes can be stored in the same module/Maintenance required</li> <li>• Refrigerated storage &amp; retrieval capability</li> <li>• Longitudinal upgrade pathway or plan to protect users' investments</li> </ul> <p>Avg. time to install/Who provides service, support/Hours support is available</p> <p>On-site biomedical engineer required/User group meets regularly</p>	<p>yes          —/—/yes/1,200          16, 13x100, 16, 13x75, others/no          yes/1,200          yes/every 6 months          no          independent of any analyzer company and modules can be upgraded          1-2 weeks/PVT/daily 8 AM-5 PM &amp; 24/7 on request          no/no</p>	<p>yes          —/—/yes/1,200          16, 13x00, 16, 13x75, others/no          yes/1,200          yes/every 6 months          no          independent of any analyzer company; modules can be upgraded          1-2 weeks/PVT/daily 8 AM-5 PM &amp; 24/7 on request          no/no</p>
<p>List price</p> <p>Individual list prices for components</p> <ul style="list-style-type: none"> <li>• Process control SW/Transportation systems/Auto. centrifugation</li> <li>• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage &amp; retrieval</li> <li>• Specimen integrity monitor/Automated aliquot</li> <li>• Instrument (analyzer) interfaces/Automated recap</li> </ul>	<p>\$290k</p> <p>\$15k-\$45k/—/\$137-\$196k          included/included/included/—          \$72k/included          —/\$44k-\$74k</p>	<p>\$470k-\$540k</p> <p>\$15k-\$45k/—/included          included/included/included/—          \$72k/included          —/\$44k-\$74k</p>
<p>Distinguishing features</p> <p>* For basic building block unit</p> <p>** Average throughput in specimen containers per hr per device</p>	<p>one platform can be assembled with all modules for a so-called all-in-one system; low consumable costs through standard products; quality module QSI for monitoring</p>	<p>independent from any IVD company; automated centrifuge works with tubes or racks; all kinds of tubes and racks can be used</p>

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# Laboratory automation systems & workcells

<b>Part 8 of 12</b>	<b>PVT LabSystems LLC</b> Miriam Hoelzel info@pvtlabsystems.com 530 Means St., Ste. 120 Atlanta, GA 30318 877-788-5227 www.pvtlabsystems.com	<b>PVT LabSystems LLC</b> Miriam Hoelzel info@pvtlabsystems.com 530 Means St., Ste. 120 Atlanta, GA 30318 877-788-5227 www.pvtlabsystems.com
<i>Please see accompanying article on page 22</i>		
<b>Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia</b>	<b>Sorting System RSD/2001/26 3/53/5</b>	<b>High Throughput Sorter ProW2005/4 2/4/0</b>
<b>Automation products that are available</b> • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	yes/n/a yes/yes/yes/yes yes/no/no/yes yes/yes yes/yes/open yes/yes	yes/n/a yes/yes/no/yes yes/yes/no/yes yes/yes yes/yes/open yes/yes
<b>Software features/functionality</b> • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature automation SW feature/n/a automation SW feat./automation SW feat./automation SW feat. n/a automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feature n/a automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature	automation SW feature/automation SW feature automation SW feature/n/a automation SW feat./automation SW feat./automation SW feat. n/a automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feature n/a automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/n/a automation SW feature/n/a automation SW feature/automation SW feature
<b>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</b>	Cerner, MCS, LDS, Medat, Syspek, PSM, Providens, Mips, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, Cirrus, others/ASTM	Cerner, MCS, LDS, Medat, Syspek, Providens, Mips, Bayer, Molis, Omega, Misys, Vertex, Zanacore, DI, others/ASTM
<b>Transportation systems available</b> • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	yes —/—/yes 16, 13x100, 16, 13x75, others/n/a no yes/floor mounted/yes compressed air, electricity/annually multiple specimen container per carrier/yes	yes —/—/yes 16, 13x100, 16, 13x75, others/n/a no yes/floor mounted/yes compressed air, electricity/every 6 months multiple specimen (5) container per carrier/yes
<b>Automated centrifugation available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required <b>Automated input/accessioning available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required <b>Automated decapping available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps <b>Automated sorting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by <b>Specimen integrity monitor available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required <b>Automated aliquoting available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	yes, optional EC1 or EC2/EC1: 71.65x 53.54x67.71; EC2: 71.65x76.77-67.71/yes depends on config./ 16, 13x100, 15, 13x75, others yes yes yes every 6 months yes input sorter/78.74x33.47x69.29/ yes/1,200 with sort & decap 16, 13x100, 16, 13x75, others/yes 600/every 6 months yes decapping module/ 14.96x12.60x5.90/yes/1,200 with sort & decap 16, 13x100, 16, 13x75, others/every 6 months yes/yes yes output sorter/71.65x55.90-55.12/yes/1,200 with sort & decap 16, 13x100, 16, 13x75, others/specimen, method, output yes, optional QSI module/62.99x30.71x43.31/yes/850 16, 13x100, 16, 13x75, others/every 6 months no — — — —	no — — — — — yes input sorter/78.74x33.47x49.60/yes/1,200 16, 13x100, 16, 13x75, others/yes 600/every 6 months yes decapping module/14.96x12.99x5.90/yes/1,200 16, 13x100, 16, 13x75, others/every 6 months yes/yes yes output sorter/78.74x33.47x74.40/yes/1,200 16, 13x100, 16, 13x75, others/— yes TTI/—/yes/1,200 16, 13x100, 16, 13x75, others/every 6 months no — — — —
<b>Instrument (analyzer) interfaces</b> • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem <b>Physical/hardware (instrument/specimen) interface</b> • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	no no —/—/— —/—	no no —/—/— —/—
<b>Instruments to which your system/product is interfaced</b>	—	—
<b>Other robotic products/components to which system, product is linked</b>	—	—
<b>Automated recapper or sealer available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	recapper recapping module/43.39x12.20x8.66/yes/1,100 yes/16, 13x100, 16, 13x75, others every 6 months	recapper recapping module/13.39x12.20-8.66/yes/1,100 yes/16, 13x100, 16, 13x75, others every 6 months
<b>Automated storage &amp; retrieval available</b> • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput* • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability Longitudinal upgrade pathway or plan to protect users' investments	yes —/—/yes/1,200 16, 13x00, 16, 13x75, others/no yes/1,200 yes/every 6 months no independent of any analyzer company; modules can be upgraded	yes —/—/no/1,200 16, 13x100, 16, 13x75, others/no, connects to system yes/— —/every 6 months no independent of any analyzer company and modules can be upgraded
<b>Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly</b>	1 week/PVT/daily 8 AM-5 PM; 24/7 on request no/no	1 week/PVT/daily 8 AM-5 PM; 24/7 on request no/no
<b>List price</b> Individual list prices for components • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	\$215k \$15k-\$45k/—/\$137k-\$196k included/included/included/— \$72k/no —/\$44k	\$200k \$15k-\$45k/—/— included/included/included/— \$10k/n/a n/a/\$44k
<b>Distinguishing features</b> <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	recapping can be used for all kinds of tubes; perfect solution for archiving; PVT offers customized solution	HW & SW completely customized; high throughput; upgradable with more modules

Tabulation does not represent an endorsement by the College of American Pathologists.

# Laboratory automation systems & workcells

<p><b>Part 9 of 12</b></p> <p><i>Please see accompanying article on page 22</i></p>	<p><b>Roche Diagnostics Corp.</b>                  Richard Connors richard.connors@roche.com                  9115 Hague Rd.                  Indianapolis, IN 46250                  317-521-2649 www.us.labsystems.roche.com</p>	<p><b>Siemens Medical Solutions Diagnostics</b>                  Maureen Kirby maureen.kirby.b@bayer.com                  555 Benedict Avenue                  Tarrytown, NY 10591                  914-524-5136 www.siemens.com/diagnostics</p>
<p>Name of system/First year installed/No. of 2006 contracts signed                  No. of live sites installed in N. America/Europe/Asia-Australia</p>	<p>MODULAR PRE-ANALYTICS/2000/34                  50/109/105</p>	<p>ADVIA LabCell/1998/16                  20/46/10</p>
<p>Automation products that are available</p> <ul style="list-style-type: none"> <li>• Pre-analytical processor/Total laboratory automation</li> <li>• Automated functions: Accessioning/Track load/Centrifugation/Decapping</li> <li>• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing</li> <li>• Automated functions: Storage-retrieval/Intelligent sample routing</li> <li>• SW: Dedicated Process Control/Middleware control using LIS/Architecture</li> <li>• Company has dedicated automation support team/Remote sys. monitoring</li> </ul>	<p>yes/yes                  yes/n/a/yes/yes                  yes/yes/yes/yes                  yes/in development                  yes/yes/open                  yes/yes</p>	<p>yes/yes                  yes/yes/yes/yes                  yes/no/no/in development                  yes/yes                  yes/yes/open                  yes/yes</p>
<p>Software features/functionality</p> <ul style="list-style-type: none"> <li>• Patient demographics &amp; insurance data/Rules-based architecture</li> <li>• Supports data retrieval/Internet connectivity</li> <li>• Online real-time help system/QC/Stats &amp; management reports</li> <li>• Evaluates validity &amp; releasability of results from automated analyzers</li> <li>• Specimen tracking/Priority processing/Random-access spec. movement</li> <li>• Supports accession No. redundancy (duplicate specimen ID)</li> <li>• Supports specimen carrier &amp; level identification</li> <li>• Unique bar-code number per container required</li> <li>• Specimen routing/Multistop routing (one tube to multiple workstations)</li> <li>• Specimen scheduling/Instrument scheduling</li> <li>• Routes test to workstation/Automatic reflex, repeat, dilutions</li> <li>• Supports multiple HW config./Supports other proprietary transport. HW</li> <li>• Sample storage &amp; retrieval SW/Supports approved CLSI standards</li> </ul>	<p>automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feat./automation SW feat./automation SW feat.                  automation SW feature                  automation SW feat./automation SW feat./automation SW feat.                  automation SW feature                  automation SW feature                  automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature</p>	<p>LIS feature/automation SW feature                  automation SW feat./LIS feature                  automation SW feat./automation SW feat./automation SW feat.                  automation SW feature                  automation SW feat./automation SW feat./automation SW feat.                  automation SW feature                  automation SW feature                  automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature                  automation SW feature/automation SW feature</p>
<p>LIS(s) &amp; versions interfaced &amp; live with LAS/How LIS(s) are interfaced with your LAS</p>	<p>Cerner, Misys, Cerner Millennium, Vista, Meditech, McKesson, Soft, DoD, others/LIS to LAS, ASTM, HL7</p>	<p>Siemens, Cerner, Meditech, SCC Soft, Misys, Data Innovations, OSI, Telepath-iSoft, Netlab, LMX Labzis II, SCL 2000, others/ASTM</p>
<p>Transportation systems available</p> <ul style="list-style-type: none"> <li>• Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Containers device accommodates/Avg. throughput in cm per second</li> <li>• Supports automatic rerouting for reflex-repeat-dilutions</li> <li>• Modular HW/Installed options/Device can operate in track &amp; manual mode</li> <li>• Required utilities/Required maintenance</li> <li>• Carrier type/Scalable system</li> </ul>	<p>yes                  Hitachi CTL/984x300x600-2,700 mm/yes                  16, 13x100, 16, 13x75/16                  yes                  yes/floor mounted/yes                  electricity/—                  multiple specimen (5) container per carrier/yes</p>	<p>yes                  —/950x2,000x530 mm/yes                  16, 13x100, 16, 13x75, others/71.6                  yes                  yes/floor &amp; subfloor mounted/yes                  compressed air, electricity, water/weekly, monthly, quarterly, annually                  single specimen container per carrier/yes</p>
<p>Automated centrifugation available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Maximum throughput/Containers device accommodates</li> <li>• Can identify tube types for custom programmed rate &amp; spin times per run</li> <li>• More than one centrif. can be connected to track system</li> <li>• For multi-unit centrif., each centrif. operates independently for rate &amp; time</li> <li>• Maintenance required</li> </ul> <p>Automated input/accessioning available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Dedicated lanes for stat samples</li> <li>• Maximum No. of samples that can be loaded/Maintenance required</li> </ul> <p>Automated decapping available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> <li>• Removes multiple size tube caps per run/ Removes screw type sample caps</li> </ul> <p>Automated sorting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Software can sort by</li> </ul> <p>Specimen integrity monitor available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> </ul> <p>Automated aliquoting available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates</li> <li>• Inspects samples for bar code/Detects &amp; reports clots in specimen</li> <li>• Detects &amp; reports quantity not sufficient specimens/Maintenance required</li> </ul>	<p>yes                  Hitachi ACU/1,250x750x1,045 mm/yes                  250 for 1 unit, 400 for 2/16, 13x100, 16, 13x75                  no                  yes                  no                  daily, 5 minutes                  yes                  Hitachi IBM/1,065x970x1,045 mm/yes/600                  16, 13x100, 16, 13x75/yes                  300/—                  yes                  Hitachi DSP/1,250x450x1,045/yes/400                  16, 13x100, 16, 13x75/—                  yes/yes                  yes                  Hitachi FSS/1,350x600x1,045 mm/yes/500                  16, 13x100, 16, 13x75/specimen, method, output                  no                  —                  —                  yes                  Hitachi AQN/1,350x1,200x1,045 mm/yes/400                  16, 13x100, 16, 13x75                  yes/yes                  yes/—</p>	<p>yes                  —/1,900x1,570x860 mm/yes                  240/16, 13x100, 16, 13x75, others                  no                  yes                  yes                  weekly, monthly, quarterly, annually                  yes                  —/1,900x2,040x860 mm/yes/600                  16, 13x100, 16, 13x75, others/yes                  1,000/weekly, monthly, quarterly, annually                  yes                  —/included in centrifuge module/yes/240                  16, 13x100, 16, 13x75, others/weekly, monthly, quarterly, annually                  yes/yes                  yes                  —/1,900x2,040x860 mm/yes/600                  16, 13x100, 16, 13x75, others/specimen, method, output                  onboard each instrument                  —/—/—/—                  16, 13x100, 16, 13x75, others/—                  no                  —                  —                  —                  —</p>
<p>Instrument (analyzer) interfaces</p> <ul style="list-style-type: none"> <li>• Rules-based instrument interface control subsystem</li> <li>• Process control of instrument via control subsystem</li> </ul> <p>Physical/hardware (instrument/specimen) interface</p> <ul style="list-style-type: none"> <li>• Hematology/Chemistry/Coagulation</li> <li>• Immunoassay/Urinalysis</li> </ul>	<p>yes                  yes                  no/point-of-reference sampling/point-of-reference sampling                  point-of-reference sampling/no</p>	<p>yes                  yes                  robotic arm interface/pt-of-ref. sampling/robotic arm interface                  pt.-of-ref. sampling &amp; robotic arm interface/pt.-of-ref. sampling</p>
<p>Instruments to which your system/product is interfaced</p> <p>Other robotic products/components to which system, product is linked</p>	<p>Roche Hitachi MODULAR ANALYTICS, Roche cobas 6000 Analyzer series</p> <p>none</p>	<p>Siemens: ADVIA 120/2120, ADVIA Centaur/Centaur XP, IMMULITE 2000/2500, ADVIA 1650/1800/2400; Stago, Tosoh, Dade, others                  Siemens: SMS; Dade: STM</p>
<p>Automated recapper or sealer available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Recaps-seals multiple size tubes simultaneously/Containers device accomm.</li> <li>• Maintenance required</li> </ul>	<p>recapper                  Hitachi RSP/1,280x450x1,045/yes/500                  no/13x100, 13x75                  —</p>	<p>recapper in development                  —/—/—/—                  —/—/16, 13x100, 16, 13x75, others                  —</p>
<p>Automated storage &amp; retrieval available</p> <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Containers device accommodates/Connects to the track</li> <li>• Room temperature/Min. &amp; max. No. of tubes stored per module</li> <li>• Multiple size tubes can be stored in the same module/Maintenance required</li> <li>• Refrigerated storage &amp; retrieval capability</li> <li>• Longitudinal upgrade pathway or plan to protect users' investments</li> </ul> <p>Avg. time to install/Who provides service, support/Hours support is available</p> <p>On-site biomedical engineer required/User group meets regularly</p>	<p>no                  —                  —                  —                  —                  system can be extended or modified on-site to upgrade/change configuration                  &lt;1 week/Roche/24/7                  no/yes</p>	<p>yes                  —/1,900x2,040x860 mm/yes/600                  16, 13x100, 16, 13x75, others/yes                  yes/1 &amp; 1,000                  yes/weekly, monthly, quarterly, annually                  in development                  flexible &amp; expandable: can contain as few as 2 interfaced components-instruments and can expand to up to 16 interfaces                  3-4 weeks/Siemens Medical Systems Diagnostics/24/7                  no/yes</p>
<p>List price</p> <p>Individual list prices for components</p> <ul style="list-style-type: none"> <li>• Process control SW/Transportation systems/Auto. centrifugation</li> <li>• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage &amp; retrieval</li> <li>• Specimen integrity monitor/Automated aliquot</li> <li>• Instrument (analyzer) interfaces/Automated recap</li> </ul>	<p>\$300k-\$800k, depends on configuration</p> <p>n/a                  n/a                  n/a                  n/a</p>	<p>varies by configuration</p> <p>—                  —                  —                  —</p>
<p>Distinguishing features</p> <p>* For basic building block unit</p> <p>** Average throughput in specimen containers per hr per device</p>	<p>PMI project manager oversees installation; system designed and manufactured to integrate with Roche Analytics; 8-12 minute processing time</p>	<p>broad menu delivers complete core lab automation offering; single LIS connection with autovalidation; can be reconfigured to change with the lab's needs; flexible to fit in lab space</p>

Tabulation does not represent an endorsement by the College of American Pathologists.



# Laboratory automation systems & workcells

<b>Part 11 of 12</b>	Siemens Medical Solutions Diagnostics Mark Smith 511 Benedict Ave. Tarrytown, NY 10591 800-431-1970 www.siemens.com/diagnostics	Sysmex America Inc. Nilam Patel pateln@sysmex.com 1 Nelson C. White Parkway Mundelein, IL 60060 800-379-7639 ext. 4309 www.sysmex.com/usa
<i>Please see accompanying article on page 22</i>		
Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia	Integrated Workcell/2007/— —/—/—	HSTN/1991/50 100+/1,000+ (Europe, Asia, & Australia)
Automation products that are available • Pre-analytical processor/Total laboratory automation • Automated functions: Accessioning/Track load/Centrifugation/Decapping • Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing • Automated functions: Storage-retrieval/Intelligent sample routing • SW: Dedicated Process Control/Middleware control using LIS/Architecture • Company has dedicated automation support team/Remote sys. monitoring	yes/yes yes/yes/yes/yes yes/no/no/in development yes/yes yes/yes/closed yes/yes	—/— yes/—/no/no yes/no/—/no no/— yes/yes/closed yes/—
Software features/functionality • Patient demographics & insurance data/Rules-based architecture • Supports data retrieval/Internet connectivity • Online real-time help system/QC/Stats & management reports • Evaluates validity & releasability of results from automated analyzers • Specimen tracking/Priority processing/Random-access spec. movement • Supports accession No. redundancy (duplicate specimen ID) • Supports specimen carrier & level identification • Unique bar-code number per container required • Specimen routing/Multistop routing (one tube to multiple workstations) • Specimen scheduling/Instrument scheduling • Routes test to workstation/Automatic reflex, repeat, dilutions • Supports multiple HW config./Supports other proprietary transport. HW • Sample storage & retrieval SW/Supports approved CLSI standards	automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feat./automation SW feat./automation SW feat. automation SW feature automation SW feature automation SW feature automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW & LIS feature/automation SW feature	n/a/automation SW feature automation SW feature/LIS feature automation SW feature /automation SW feature /LIS feature automation SW feature automation SW feature/automation SW feature/n/a automation SW feature automation SW feature automation SW feature automation SW feature/automation SW feature n/a/n/a automation SW feature/automation SW feature automation SW feature/automation SW feature automation SW feature/automation SW feature
LIS(s) & versions interfaced & live with LAS/How LIS(s) are interfaced with your LAS	Cerner, Misys, SCC, Data Innovations; others; can interface with many LISs/ASTM	Cerner (Classic and Millenium), Misys, SCC, Meditech, GE/HL7 & ASTM
Transportation systems available • Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Containers device accommodates/Avg. throughput in cm per second • Supports automatic rerouting for reflex-repeat-dilutions • Modular HW/Installed options/Device can operate in track & manual mode • Required utilities/Required maintenance • Carrier type/Scalable system	yes SMS/42-70x37 in./yes 16, 13x100, 16, 13x75/n/a yes yes/floor mounted/yes compressed air, electricity/weekly, monthly, quarterly, annually single specimen container per carrier/no	yes HSTN/depends on configuration/yes 16x75, 13x75/min throughput 150/hr; max as high as lab needs/hr yes yes/floor mounted/yes —/— multiple specimen (10) container per carrier/yes
Automated centrifugation available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5 • Maximum throughput/Containers device accommodates • Can identify tube types for custom programmed rate & spin times per run • More than one centrif. can be connected to track system • For multi-unit centrif., each centrif. operates independently for rate & time • Maintenance required	no — — — — — —	no — — — — — —
Automated input/accessioning available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Dedicated lanes for stat samples • Maximum No. of samples that can be loaded/Maintenance required	yes SMS/—/yes/— 16, 13x100, 16, 13x75/yes —/weekly, monthly, quarterly, annually	yes —/—/—/— —/no 200 samples per input module/—
Automated decapping available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required • Removes multiple size tube caps per run/ Removes screw type sample caps	no — — —	no — — —
Automated sorting available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Software can sort by	yes SMS/42-70x37 in./yes/varies 16, 13x100, 16, 13x75/method, output	yes PVT TS1000 & TS500/TS1000: 5'9" x 4'6" x 3'3"; TS500: 5'15" x 3'16" x 3x75/specimen, method, output
Specimen integrity monitor available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Maintenance required	yes, clot detection on T60 and IMMULITE 2500/2000 —/—/yes/— 16, 13x100, 16, 13x75/weekly, monthly, quarterly, annually	yes (located within the analyzers) —/—/—/— —/—
Automated aliquoting available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates • Inspects samples for bar code/Detects & reports clots in specimen • Detects & reports quantity not sufficient specimens/Maintenance required	no — — — —	no — — — —
Instrument (analyzer) interfaces • Rules-based instrument interface control subsystem • Process control of instrument via control subsystem Physical/hardware (instrument/specimen) interface • Hematology/Chemistry/Coagulation • Immunoassay/Urinalysis	yes yes no/robotic arm interface/no robotic arm interface/no	yes yes point-of-reference sampling/—/— —/—
Instruments to which your system/product is interfaced	Siemens: IMMULITE 2000/2500, T60	Bio-Rad Variant II A1C system
Other robotic products/components to which system, product is linked	Siemens: ADVIA LabCell, ADVIA WorkCell; Thermo: TCA; others	Thermo automation, Lab Interlink/Labotix
Automated recapper or sealer available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Recaps-seals multiple size tubes simultaneously/Containers device accomm. • Maintenance required	no — — —	no — — —
Automated storage & retrieval available • Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput** • Containers device accommodates/Connects to the track • Room temperature/Min. & max. No. of tubes stored per module • Multiple size tubes can be stored in the same module/Maintenance required • Refrigerated storage & retrieval capability Longitudinal upgrade pathway or plan to protect users' investments	no — — — — — next generation instruments in development to be compatible with the SMS so upgrading can be easily accomplished	no — — — — —
Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly	<1 week/Siemens Medical Solutions Diagnostics/24/7 no/no	1 week/Sysmex/24/7 no/no
List price Individual list prices for components • Process control SW/Transportation systems/Auto. centrifugation • Auto. input, accession/Auto. decap/Auto. sort/Auto. storage & retrieval • Specimen integrity monitor/Automated aliquot • Instrument (analyzer) interfaces/Automated recap	varies by configuration — — — —	depends on configuration — — — —
Distinguishing features <small>* For basic building block unit ** Average throughput in specimen containers per hr per device</small>	4-hour walk-away time reduces operator interventions & helps create a LEAN lab; uses Internet-based service & support to reduce down-time; components operate independently	scalable and flexible configurations with proven history; one-week installation; scalable middleware solutions are developed & supported by Sysmex

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# Laboratory automation systems & workcells

<b>Part 12 of 12</b>	<p>Sysmex America Inc.          Nilam Patel pateln@sysmex.com          1 Nelson C. White Parkway          Mundelein, IL 60060          800-379-7639 ext. 4309 www.sysmex.com/usa</p>	<p>Thermo Fisher Scientific          Janne Järvinen sales.cca.fi@thermofisher.com          Ratastie 2. P.O. Box 100 FI-01621          Vantaa, Finland          +358 9 329100 www.thermo.com</p>
<i>Please see accompanying article on page 22</i>		
Name of system/First year installed/No. of 2006 contracts signed No. of live sites installed in N. America/Europe/Asia-Australia	XE-Alpha N/1991/20 100+/250+/-	TCAutomation/2000/- 5/43/-
Automation products that are available <ul style="list-style-type: none"> <li>• Pre-analytical processor/Total laboratory automation</li> <li>• Automated functions: Accessioning/Track load/Centrifugation/Decapping</li> <li>• Automated functions: Rack specific sort/Aliquot/Tube relabeling/Resealing</li> <li>• Automated functions: Storage-retrieval/Intelligent sample routing</li> <li>• SW: Dedicated Process Control/Middleware control using LIS/Architecture</li> <li>• Company has dedicated automation support team/Remote sys. monitoring</li> </ul>	<p>—/—          yes/—/no/no          yes/no/—/no          no/—          yes/yes/closed          yes/—</p>	<p>—/—          yes/—/yes/yes          yes/yes/—/in development          in development/—          yes/yes/open          yes/—</p>
Software features/functionality <ul style="list-style-type: none"> <li>• Patient demographics &amp; insurance data/Rules-based architecture</li> <li>• Supports data retrieval/Internet connectivity</li> <li>• Online real-time help system/QC/Stats &amp; management reports</li> <li>• Evaluates validity &amp; releasability of results from automated analyzers</li> <li>• Specimen tracking/Priority processing/Random-access spec. movement</li> <li>• Supports accession No. redundancy (duplicate specimen ID)</li> <li>• Supports specimen carrier &amp; level identification</li> <li>• Unique bar-code number per container required</li> <li>• Specimen routing/Multistop routing (one tube to multiple workstations)</li> <li>• Specimen scheduling/Instrument scheduling</li> <li>• Routes test to workstation/Automatic reflex, repeat, dilutions</li> <li>• Supports multiple HW config./Supports other proprietary transport. HW</li> <li>• Sample storage &amp; retrieval SW/Supports approved CLSI standards</li> </ul>	<p>n/a/automation SW feature          automation SW feature/LIS feature          automation SW feature /automation SW feature /LIS feature          automation SW feature          automation SW feature/automation SW feature/n/a          automation SW feature          automation SW feature          automation SW feature          automation SW feature/automation SW feature          n/a/n/a          automation SW feature/automation SW feature          n/a/automation SW feature          n/a/n/a</p>	<p>LIS feature/LIS feature          automation SW feature/automation SW feature          n/a/LIS feature/automation SW feature          LIS feature          automation SW feat./automation SW feat./automation SW feat.          automation SW &amp; LIS feature          automation SW feature          automation SW feature          automation SW feature/automation SW feature          automation SW feature/automation SW feature          LIS feature/LIS feature          automation SW feature/—          automation SW feature/—</p>
LIS(s) & versions interfaced & live with LAS/How LIS(s) are interfaced with your LAS	Cerner (Classic and Millennium), Misys, SCC, Meditech, GE/HL7 & ASTM	—/HL7
Transportation systems available <ul style="list-style-type: none"> <li>• Model/Dimen.* (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Containers device accommodates/Avg. throughput in cm per second</li> <li>• Supports automatic rerouting for reflex-repeat-dilutions</li> <li>• Modular HW/Installed options/Device can operate in track &amp; manual mode</li> <li>• Required utilities/Required maintenance</li> <li>• Carrier type/Scalable system</li> </ul>	<p>yes          AlphaN/2x7.3-3.4 feet          16x75, 13x75/based on No. of analyzers          no          yes/—/yes          —/—          —/no</p>	<p>yes          —/—/—          16, 13x100, 16, 13x75/10          yes          yes/floor mounted/yes          compressed air, electricity/annually          single specimen container per carrier/yes</p>
Automated centrifugation available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5</li> <li>• Maximum throughput/Containers device accommodates</li> <li>• Can identify tube types for custom programmed rate &amp; spin times per run</li> <li>• More than one centrif. can be connected to track system</li> <li>• For multi-unit centrif., each centrif. operates independently for rate &amp; time</li> <li>• Maintenance required</li> </ul> Automated input/accessioning available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Dedicated lanes for stat samples</li> <li>• Maximum No. of samples that can be loaded/Maintenance required</li> </ul> Automated decapping available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> <li>• Removes multiple size tube caps per run/ Removes screw type sample caps</li> </ul> Automated sorting available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Software can sort by</li> </ul> Specimen integrity monitor available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates/Maintenance required</li> </ul> Automated aliquoting available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput**</li> <li>• Containers device accommodates</li> <li>• Inspects samples for bar code/Detects &amp; reports clots in specimen</li> <li>• Detects &amp; reports quantity not sufficient specimens/Maintenance required</li> </ul>	<p>no          —          —          —          —          —          —          yes          —/—/—/—          —/no          200 samples per input module/—          no          —          —          —          —          yes          —/—/yes/—          —/specimen, method, output          yes (located within the analyzers)          —/—/—/—          —/—          no          —          —          —          —</p>	<p>yes          —/1,900x1,200x1,375 mm/—          400/13x100, 13x75          yes          yes          no          quarterly          yes          —/1,900x1,200x965 mm/—/500          16, 13x100, 16, 13x75/yes          600/annually          yes          decapper module/1,600x600x965 mm/—/500          16, 13x100, 16, 13x75/annually          yes/yes          yes          Rack Exit/1,900x1,200x965 mm/—/500          16, 13x100, 16, 13x75/specimen, method          no          —          —          yes          —/1,900x1,500x965 mm/—/240          16, 13x100, 16, 13x75/specimen, method          yes/yes          yes/quarterly</p>
Instrument (analyzer) interfaces <ul style="list-style-type: none"> <li>• Rules-based instrument interface control subsystem</li> <li>• Process control of instrument via control subsystem</li> </ul> Physical/hardware (instrument/specimen) interface <ul style="list-style-type: none"> <li>• Hematology/Chemistry/Coagulation</li> <li>• Immunoassay/Urinalysis</li> </ul>	<p>yes          yes          —/—/—          —/—</p>	<p>—          —          rob. arm inter./pt.-of-ref. samp. &amp; rob. arm inter./rob. arm inter.          point-of-reference sampling/—</p>
Instruments to which your system/product is interfaced	—	Roche Modular, Konelab 30 & 60, Konelab Prime; Bayer Advia 1650 & Centaur; Abbott Architect; Ortho Clinical VITROS; others
Other robotic products/components to which system, product is linked	—	—
Automated recapper or sealer available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Recaps-seals multiple size tubes simultaneously/Containers device accomm.</li> <li>• Maintenance required</li> </ul>	<p>no          —          —          —</p>	<p>recapper          Recapper Module/1,600x600x965 mm/—/n/a          yes/16, 13x100, 16, 13x75          annually</p>
Automated storage & retrieval available <ul style="list-style-type: none"> <li>• Model/Dimen. (HxWxD)/Conforms to CLSI Stand. Auto 1-5/Avg. throughput*</li> <li>• Containers device accommodates/Connects to the track</li> <li>• Room temperature/Min. &amp; max. No. of tubes stored per module</li> <li>• Multiple size tubes can be stored in the same module/Maintenance required</li> <li>• Refrigerated storage &amp; retrieval capability</li> <li>• Longitudinal upgrade pathway or plan to protect users' investments</li> </ul>	<p>no          —          —          —          —          —</p>	<p>in development          —          —          —          —          —</p>
Avg. time to install/Who provides service, support/Hours support is available On-site biomedical engineer required/User group meets regularly	3 days/Sysmex/24/7 no/no	1-2 weeks/local distributor & Thermo Fisher/varies no/no
List price Individual list prices for components <ul style="list-style-type: none"> <li>• Process control SW/Transportation systems/Auto. centrifugation</li> <li>• Auto. input, accession/Auto. decap/Auto. sort/Auto. storage &amp; retrieval</li> <li>• Specimen integrity monitor/Automated aliquot</li> <li>• Instrument (analyzer) interfaces/Automated recap</li> </ul>	<p>depends on configuration          —          —          —          —</p>	<p>—          —          —          —          —</p>
Distinguishing features <small>* For basic building block unit          ** Average throughput in specimen containers per hr per device</small>	scalable and flexible configurations with proven history; 3-day installation; scalable middleware solutions are developed & supported by Sysmex	modular system can be customized; both workcell and pre-analytical part can be upgraded and linked; multi-tube carrier with programmable chip; open—can be linked to different analyzers

Tabulation does not represent an endorsement by the College of American Pathologists.