Laboratory information systems

Part 1 of 14	American HealthNet Inc.* Mark Thornton mthornton@americanhealthnet.com 2707 N. 108th St., Ste. 100 Omaha, NE 68164 402-733-2700 www.americanhealthnet.com	Antek Richard Jefferson rjefferson@labdaq.com 228 Business Center Drive Reisterstown, MD 21136 800-359-0911 www.labdaq.com www.daqbilling.com	CCA (Creative Computer Applications Inc.) Chris Coleman sales@ccainc.com 26115-A Mureau Rd. Calabasas, CA 91302 800-437-9000 www.ccainc.com
Name of system	AccentLab	LabDaq	CyberLab II
No. of contracts for sites operating LIS • Hospital/independent lab contracts in U.S. • Clinic or group practice contracts in U.S. • Other contracted U.S. sites/contracts for foreign sites Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	26 21/1 4 0/0 3 (3/0/0)	1,069 141/928* — 0/0 8 (3/5*/0)	227 106/64 42 10/5 3 (3/0/0)
No. of sites operating LIS First/most recent LIS installation	26 1996/2001	1,069 1990/2001	400+ 1982/2001
Staff to develop/install/support/other* in entire firm Staff to develop/install/support/other* in LIS division	5/5/10/8 3/3/3/1	— 10/14 (installation and support)/11	12/4/19/38 6/4/13/38
No. of terminals/workstations in live sites (min.–max.)	1–35	1–80+	3–250
• Central hardware • Central hardware redundant/fault-tolerant? • Terminals/workstations • Workstation set-up	HP, Dell, Intel Pentium III or IV yes HP, Dell, Intel PC only PC workstation supported	Intel 3/AMD 6 — Intel 3/AMD 6 only PC workstation supported	Compaq, IBM RS/6000, HP 9000 yes PC workstations dumb terminal supported
• Software programming language(s) • Operating system(s) • Database system(s) • System includes full transaction logging?	Delphi Windows XP, 2000, NT 4.0, 98 MS SQL yes	Delphi Windows NT Oracle, Ctrieve yes	C, C++, Cobol, Java Unix ODBC compliant yes

Features (listed as a percentage of live installations,
   available but no installations, or not available)
• Chemistry/hematology
• Bar-coded collection labels
• Handheld devices for bedside-positive patient ID
• Microbiology
• Blood bank donor center
• Blood bank transfusion service
• Surgical pathology
• Cytology
• HIS interface
   —A/D/T
   —Order entry
   —Result reporting
• Ad hoc reporting
• Rules-based system
• Utilization management
• Outreach/commercial laboratory
• Compliance checking
• Accounts receivable
• Materials management/inventory
• Test partition
• Remote faxing/printing
• Physician office outreach
	
	100%
	46%
	available in July 2002
	12%
	not available
	not available
	not available
	not available
	
	53%
	12%
	12%
	12%
	19%
	available but not installed
	31%
	19%
	available but not installed
	available but not installed
	available but not installed
	77%
	19%
		
		100%
		20%
		not available
		100%
		not available
		not available
		not available
		—
		
		20%
		5%
		25%
		not available
		not available
		100%
		not available
		100%
		not available
		not available
		not available
		35%
		15%
			
			100%
			100%
			15%
			90%
			not available
			not available
			10%
			100%
			
			65%
			55%
			55%
			100%
			100%
			100%
			100%
			100%
			20%
			not available
			100%
			100%
			40%

Complete LIS ASP solution? ASP for physician order entry/result reporting? Method of charging for ASP service Client software required ASP information conduit Client contracts supported from data center not operated by client How data center is operated	yes yes fixed fee requires software be installed on client PC operates over Internet 3 by vendor	no reporting only fixed fee browser-based operates over Internet 30 by vendor	yes yes fixed fee browser-based operates over Internet 0 by vendor
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard: • Microbiology data • Tumor diagnosis/registry data	 available but not installed not available	 not available not available	 available but not installed available but not installed
ASTM/HL7 interface? Hospital/integrated health care systems interfaced Physician office management systems interfaced Automated lab transportation systems interfaced	yes American HealthNet, major vendors PMSI, HL7-compliant systems none	yes SMS, Quest, LabCorp HL7-compliant systems, Medic, Practice Partners, Medical Manager, PDS, IDX none	yes McKesson, IDX, Medic, Keane, Meditech, Quadramed, others Practice Partners, Medical Manager, Atlas planned
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	yes no	no —	yes no
LIS permits use of SNOMED II/SNOMED International?	yes/no	no/no	yes/yes
Market modules for other hospital departments? Percentage of LIS installations stand-alone	yes 33%	no —	yes 75%
No. of different lab instruments interfaced with LIS Source code?/User group? User programming in separate partition? Query language to get info. from LIS database	250+ escrow/yes yes Transact SQL	200+ escrow/no no n/a	450+ escrow/yes no SQL
Smallest cost (hardware/software/monthly maintenance) Largest cost (hardware/software/monthly maintenance)	$4k/$21k/$.3k $40k/$80k/$1.2k	$1.5k/$8k/$.069k $30k/$50k/$.4k	— —
Distinguishing features (supplied by vendor)	• state-of-the-art Windows application for small to medium-sized laboratories • company offers a full line of integrated health care products, including financial, clinical, and ancillary software	• affordable, fully featured Windows-based 32-bit LIS • totally scalable and supports LAN and WAN configurations	• addresses security and accountability • corporate commitment to client service • multi-entry functionality
*other=sales, marketing, administration, and other company functions	* AHN is the parent company of Accent Information Systems	* independent lab contracts and clinic/group practice contracts are combined	

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

Survey editor: Raymond D. Aller, MD

Laboratory information systems

Part 2 of 14	Cerner Citation **Sue Tarkka** starkka@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117 816-201-1644 www.cerner.com	Cerner Corp. **Sue Tarkka** starkka@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117 816-201-1644 www.cerner.com	Cerner Corp. **Sue Tarkka** starkka@cerner.com 2800 Rockcreek Parkway Kansas City, MO 64117 816-201-1644 www.cerner.com
Name of system	LIS; CLab; CLab Plus*	Millennium PathNet	PathNet HNA Classic
No. of contracts for sites operating LIS	278	45	387
• Hospital/independent lab contracts in U.S.	—	37/0	363/18
• Clinic or group practice contracts in U.S.	—	2	6
• Other contracted U.S. sites/contracts for foreign sites	—	0/6	0/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	—	5 (5/0/0)	8 (8/0/0)
No. of sites operating LIS	278	85	666
First/most recent LIS installation	1979/2000	1997/2001	1984/2001
Staff to develop/install/support/other* in entire firm	90 total	1,010/954/355/723	1,010/954/355/723
Staff to develop/install/support/other* in LIS division	—	70/50/35/40	70/50/35/40
No. of terminals/workstations in live sites (min.–max.)	3–250	7–620+	7–620
• Central hardware	Compaq, HP	IBM, Compaq	IBM, Compaq
• Central hardware redundant/fault-tolerant?	yes	yes	yes
• Terminals/workstations	Compaq, HP	PCs	VTs, PCs
• Workstation set-up	only PC workstation supported	only PC workstation supported	dumb terminal supported
• Software programming language(s)	C++, Visual Basic	Visual C++, Visual Basic, Java	Cobol, C++
• Operating system(s)	Windows NT	Windows, Windows NT	Open VMS, AIX
• Database system(s)	Pervasive Btrieve, MS SQL	Oracle RDBMS	proprietary
• System includes full transaction logging?	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)			
• Chemistry/hematology	—	76%	98%
• Bar-coded collection labels	—	100%	80%
• Handheld devices for bedside-positive patient ID	—	2%	5%
• Microbiology	—	62%	86%
• Blood bank donor center	—	not available	17%
• Blood bank transfusion service	—	18%	73%
• Surgical pathology	—	46%	58%
• Cytology	—	35%	58%
• HIS interface			
—A/D/T	—	100%	98%
—Order entry	—	100%	90%
—Result reporting	—	100%	98%
• Ad hoc reporting	—	100%	65%
• Rules-based system	—	80%	31%
• Utilization management	—	5%	10%
• Outreach/commercial laboratory	—	12%	22%
• Compliance checking	—	available but not installed	15%
• Accounts receivable	—	available but not installed	not available
• Materials management/inventory	—	not available	—
• Test partition	—	100%	80%
• Remote faxing/printing	—	100%	37%
• Physician office outreach	—	5%	5%
Complete LIS ASP solution?	no	yes	—
ASP for physician order entry/result reporting?	no	yes	—
Method of charging for ASP service	—	fixed fee	—
Client software required	—	browser-based, requires software be installed on client PC	—
ASP information conduit	—	requires use of private, dedicated circuit	—
Client contracts supported from data center not operated by client	—	12	—
How data center is operated	—	by vendor	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:			
• Microbiology data	available but not installed	not available	not available
• Tumor diagnosis/registry data	available but not installed	not available	not available
ASTM/HL7 interface?	—	yes	yes
Hospital/integrated health care systems interfaced	major vendors	major vendors	major vendors
Physician office management systems interfaced	HL7-compliant vendors	major vendors	major vendors
Automated lab transportation systems interfaced	planned (to link to most automated lab transportation systems)	available but not yet operational (to Lab InterLink/Labotix, Beckman Coulter IDS, Roche/BMC/Hitachi)	Lab InterLink/Labotix, Beckman Coulter IDS, Roche/BMC/Hitachi
Software provides indexed field in each test definition for LOINC code?	yes	yes	yes
Provide LOINC dictionary for each new installation?	no	no	no
LIS permits use of SNOMED II/SNOMED International?	yes/yes	yes/yes	yes/yes
Market modules for other hospital departments?	yes	yes	yes
Percentage of LIS installations stand-alone	95%	50%	40%
No. of different lab instruments interfaced with LIS	300+	200+	400+
Source code?/User group?	escrow/yes	escrow/yes	escrow/yes
User programming in separate partition?	no	yes	yes
Query language to get info. from LIS database	SQL	Discern Explorer	Discern Explorer
Smallest cost (hardware/software/monthly maintenance)	—	—	—
Largest cost (hardware/software/monthly maintenance)	—	—	—
Distinguishing features (supplied by vendor)	• relational database management system • flexible reporting, formatting, and distribution • Windows NT platform	• totally integrated LIS • advanced decision support logic: Discern Expert • Web access	• multi-facility logic • decision support: Discern Expert • robotics interface

*other=sales, marketing, administration, and other company functions

* information provided is from CAP TODAY's 2000 LIS survey

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SYSTEM REVIEW SERIES

Laboratory information systems

Part 3 of 14	Clinical Information Systems Inc. V.L. Flaxbeard cisbiw@aol.com 18805 Willamette Drive West Linn, OR 97068 800-869-0680 www.cislab.com	Clinical Software Solutions Bryan Jones info@clinsoft.com 219 S. Fir Chandler, AZ 85226 800-570-0474 www.clinsoft.com	Clinlab Inc. Michael Selvaggi sales@clinlabinc.com 2411 E. Graves Ave., Ste. 1 Orange City, FL 32763 386-774-0030 www.clinlabinc.com	Comp Pro Med Inc. Avarie Fisher afisher@comppromed.com 5550 Skylane Blvd., Ste. N Santa Rosa, CA 95403 707-578-0239 www.comppromed.com
Name of system	CISlab	CSSWIN	Clinlab LIS	Polytech for Windows
No. of contracts for sites operating LIS	101	200+	30	14
• Hospital/independent lab contracts in U.S.	8/86	60/160+	4/4	5/0
• Clinic or group practice contracts in U.S.	4	10	14	9
• Other contracted U.S. sites/contracts for foreign sites	0/3	3/—	8/0	0/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	5 (0/5/0)	7 (5/0/2)	2 (2/0/0)	5 (2/0/3)
No. of sites operating LIS	101	200+	28	14
First/most recent LIS installation	1988/2001	1987/2001	1987/2001	2001/2001
Staff to develop/install/support/other* in entire firm	6/7/7/1	—	4/2/4/2	5/5/9/4
Staff to develop/install/support/other* in LIS division	—	—	—	—
No. of terminals/workstations in live sites (min.–max.)	1–47	1–20	2–70	1–9
• Central hardware	generic PCs, HP, Dell, Compaq	IBM compatible	IBM, Dell, Compaq servers	Dell, IBM, HP
• Central hardware redundant/fault-tolerant?	yes	yes	yes	—
• Terminals/workstations	PCs, Wyse, Link	IBM compatible	IBM, Dell, Compaq	Dell, IBM, HP
• Workstation set-up	dumb terminal supported (Unix), PC workstation supported (Windows)	only PC workstation supported	only PC workstation supported	only PC workstation supported
• Software programming language(s)	Delphi, C++, Cobol, VB	4GL	Clipper, Visual Fox Pro, Delphi	C, C++, Assembler
• Operating system(s)	Windows NT, SCO Unix, Windows SQL 2000 server	Windows	Novell, Windows NT, 2000, 9X	98 SE, ME, NT 4, NT 2000, XP
• Database system(s)	Interbase, RDBMS, C-ISAM, MS SQL 7	SQL	Dbase, Fox Pro, Advantage DBS	SQL, Btrieve
• System includes full transaction logging?	no	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	95%	100%	100%
• Bar-coded collection labels	90%	45%	80%	75%
• Handheld devices for bedside-positive patient ID	0	5%	not available	not available
• Microbiology	100%	15%	100%	available but not installed
• Blood bank donor center	1%	—	not available	not available
• Blood bank transfusion service	—	—	not available	not available
• Surgical pathology	25%	5%	not available	not available
• Cytology	30%	5%	not available	not available
• HIS interface				
—A/D/T	5%	20%	90%	43%
—Order entry	5%	20%	70%	43%
—Result reporting	5%	20%	70%	43%
• Ad hoc reporting	1%	20%	100%	100%
• Rules-based system	—	90%	50%	100%
• Utilization management	1%	10%	100%	100%
• Outreach/commercial laboratory	10%	10%	40%	available but not installed
• Compliance checking	90%	90%	70%	100%
• Accounts receivable	98%	10%	available but not installed	10%
• Materials management/inventory	1%	10%	available but not installed	not available
• Test partition	100%	100%	100%	100%
• Remote faxing/printing	100%	40%	40%	75%
• Physician office outreach	60%	30%	40%	not available
Complete LIS ASP solution?	yes	no	yes	no
ASP for physician order entry/result reporting?	yes	no	yes	—
Method of charging for ASP service	fixed fee	—	fixed fee	—
Client software required	browser-based, requires software be installed on client PC or uses dumb terminals	—	requires software be installed on client PC	—
ASP information conduit	operates over Internet	—	operates over Internet	—
Client contracts supported from data center not operated by client	all	—	1	—
How data center is operated	by vendor	—	by vendor	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	4 sites	available but not installed	4 sites	available but not installed
• Tumor diagnosis/registry data	3 sites	available but not installed	n/a	—
ASTM/HL7 interface?	yes	yes	yes	yes
Hospital/integrated health care systems interfaced	McKesson, PCS, Tower Systems, Dairyland	SMS, Pearl, LabCorp, Dairyland, HL7-compliant systems	Meditech	SMS, CHC, Intermed, Cerner, First Data, HDS, Antrim, Saint, Infostat, others
Physician office management systems interfaced	Medical Manager	HL7-compliant systems	Medical Manager, IDX, Medic, Neusoft, SoftAid, Medstar	MedicaLogic, others
Automated lab transportation systems interfaced	planned (to Beckman Coulter IDS, Bayer, Sysmex, Roche/BMC/Hitachi)	none	planned	planned
Software provides indexed field in each test definition for LOINC code?	yes	yes	no	yes
Provide LOINC dictionary for each new installation?	no	no	no	yes
LIS permits use of SNOMED II/SNOMED International?	yes/yes	yes/yes	no/no	no/no
Market modules for other hospital departments?	no	yes	no	no
Percentage of LIS installations stand-alone	—	25%	—	—
No. of different lab instruments interfaced with LIS	150+	300+	125	200+
Source code?/User group?	escrow/no	no/no	escrow/no	escrow/—
User programming in separate partition?	no	yes	no	no
Query language to get info. from LIS database	SQL	SQL, Microsoft Access, Crystal Reports	Report Writer	n/a
Smallest cost (hardware/software/monthly maintenance)	$3k/$5k/$0.2k	—	—/$15k/$.170k	—
Largest cost (hardware/software/monthly maintenance)	$100k/$150k/$1.5k	—	—/$170k/$2.125k	—
Distinguishing features (supplied by vendor)	• completeness of functionality/user friendly • willingness to customize • economical	• versatile for any size facility (from single user to multi-site) • customized programming available • integrates well with other departments and systems	• reputation among clients for exceptional support • easy-to-use menus and screen layouts • high quality at a conservative price; on-site training	• zero down-time with Medlink's redundant database topology • excellent live customer support • high customer satisfaction

*other=sales, marketing, administration, and other company functions

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Laboratory information systems

Part 4 of 14	Comp Pro Med Inc. Avarie Fisher afisher@comppromed.com 5550 Skylane Blvd., Ste. N Santa Rosa, CA 95403 707-578-0239 www.comppromed.com	Computer Service & Support Inc. James T. O'Neill jimjr@csslis.com 2106 New Rd., Bldg. E-6 Linwood, NJ 08221 609-653-6444 ext. 108 csslis.com	CPSI James Bouchard james@cpsinet.com 6600 Wall St. Mobile, AL 36695 251-639-8100 www.cpsinet.com	Dynamic Healthcare Technologies Inc. Cindy Hartmann chartmann@dht.com 615 Crescent Executive Court, Ste. 500 Lake Mary, FL 32746 800-832-3020 www.dht.com
Name of system	Polytech 2000	CLS-2000	CPSI System	Premier Series*
No. of contracts for sites operating LIS	118	84	188	82
• Hospital/independent lab contracts in U.S.	51/33	0/74	187/1	65/5
• Clinic or group practice contracts in U.S.	23	10	1	12
• Other contracted U.S. sites/contracts for foreign sites	0/11	0/0	0/0	0/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	2 (1/1/0)	5 (0/5/0)	10 (10/0/0)	8 (8/0/0)
No. of sites operating LIS	118	84	188	100+
First/most recent LIS installation	1990/2001	1980/2001	1986/2001	1990/2001
Staff to develop/install/support/other* in entire firm	5/5/9/4	6/4/4/5	58/99/297/53	12/8/37/21
Staff to develop/install/support/other* in LIS division	—	—	22/29/43/0	3/2/7/1
No. of terminals/workstations in live sites (min.–max.)	1–65	4–60	14–300	6–500
• Central hardware	Dell, IBM, HP	IBM RS/6000	HP LH6000	IBM AS/400
• Central hardware redundant/fault-tolerant?	—	yes	yes	yes
• Terminals/workstations	Dell, IBM, HP	IBM	Wyse 50 compatible, IBM compatible	any 486 or greater PC that can run IBM Client Access or Web browser
• Workstation set-up	only PC workstation supported	dumb terminal supported	dumb terminal supported	dumb terminal supported
• Software programming language(s)	C, C++, Assembler	C	Cobol, C++	RPG CL 4GL, Java
• Operating system(s)	Windows 95, 98, NT, others	AIX	Unixware 7, Windows 2000 server	IBM OS/400
• Database system(s)	SQL, Btrieve	Lab Base	proprietary	DB2/400 integrated with OS
• System includes full transaction logging?	yes	yes	no	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	100%	100%	100%
• Bar-coded collection labels	90%	90%	100%	95%
• Handheld devices for bedside-positive patient ID	not available	0	5%	5%
• Microbiology	10%	85%	100%	100%
• Blood bank donor center	not available	0	not available	not available
• Blood bank transfusion service	not available	0	not available	not available
• Surgical pathology	not available	20%	available in fall 2002	20%
• Cytology	not available	60%	available in fall 2002	20%
• HIS interface				
—A/D/T	25%	—	100%	99%
—Order entry	25%	20%	100%	85%
—Result reporting	25%	30%	100%	85%
• Ad hoc reporting	100%	60%	100%	100%
• Rules-based system	100%	100%	100%	100%
• Utilization management	100%	100%	100%	100%
• Outreach/commercial laboratory	15%	100%	100%	85%
• Compliance checking	100%	100%	100%	60%
• Accounts receivable	60%	75%	100%	not available
• Materials management/inventory	not available	60%	100%	not available
• Test partition	100%	25%	50%	100%
• Remote faxing/printing	90%	100%	100%	90%
• Physician office outreach	not available	70%	100%	available but not installed
Complete LIS ASP solution?	no	no	yes	yes
ASP for physician order entry/result reporting?	—	yes	yes	yes
Method of charging for ASP service	—	transaction-based	fixed fee	transaction-based
Client software required	—	browser-based	requires software be installed on client PC, uses dumb terminals	browser-based, uses dumb terminals
ASP information conduit	—	operates over Internet	operates over Internet	operates over Internet, requires private, dedicated circuit
Client contracts supported from data center not operated by client	—	—	10	0
How data center is operated	—	by ProxyMed and Labtest.com	by vendor	by vendor
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	2 sites	available but not installed	not available	not available
• Tumor diagnosis/registry data	not available	—	not available	not available
ASTM/HL7 interface?	yes	yes	no	yes
Hospital/integrated health care systems interfaced	SMS, CHC, Intermed, Cerner, First Data, HDS, Antrim, Saint, Infostat, others	McKesson, Medic, SCC, CCA	integrated with CPSI HIS	McKesson, SMS, IDX, Keane, Cerner, Dairyland, Compucare, others
Physician office management systems interfaced	MedicaLogic, others	PCN, Medical Manager, IDX	n/a	available
Automated lab transportation systems interfaced	planned	available but not yet operational	none	none
Software provides indexed field in each test definition for LOINC code?	yes	yes	no	no
Provide LOINC dictionary for each new installation?	yes	no	no	no
LIS permits use of SNOMED II/SNOMED International?	no/no	no/no	no/no	yes/yes
Market modules for other hospital departments?	no	yes	yes	yes
Percentage of LIS installations stand-alone	—	70%	<1%	85%
No. of different lab instruments interfaced with LIS	200+	300	220	180+
Source code?/User group?	escrow/no	yes/no	escrow/yes	escrow/yes
User programming in separate partition?	no	no	no	yes
Query language to get info. from LIS database	n/a	Access, Oracle	CPSI's ad hoc report writer	Query 400
Smallest cost (hardware/software/monthly maintenance)	—	$7.5k/$15k/$.3k	$61k/$138k/$2k	$7.5k/ $125k/$19.8k
Largest cost (hardware/software/monthly maintenance)	—	$50k/$250k/$4k	$186k/$458k/$8.5k	$75k/$650k/$40k
Distinguishing features (supplied by vendor)	• zero down-time with Medlink's redundant database topology • excellent live customer support • high customer satisfaction	• integrated laboratory financial system • nursing home module • toxicology and clinical trial applications available	• CPSI provides a fully integrated HIS • CPSI provides all conversion, installation, training, and ongoing support services • CPSI is a single-source vendor supplying all necessary hardware and software	• provide entire customer list to prospects • integration of new technology: Internet ready • feature/price comparison=value
*other=sales, marketing, administration, and other company functions				* also sold as an ASP branded as CoMed for Laboratory Management

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Laboratory information systems

Part 5 of 14	ETG Genesys Sales and Support Teresa Gates tgates@entretechnology.com 2935 Crockett St. Fort Worth, TX 76107 800-522-6331 www.dynamedix.com	ETG Genesys Sales and Support Teresa Gates tgates@entretechnology.com 2935 Crockett St. Fort Worth, TX 76107 800-522-6331 www.dynamedix.com	Fletcher-Flora Inc. Ken Mitchell ken@labpak.com 1580 Orangethorpe Way Anaheim, CA 92801 800-777-1471 ext. 231 www.labpak.com	Hex Laboratory Systems Susan Bollinger sbollinger@hexlab.com 1042B El Camino Real, Ste. 308 Encinitas, CA 92024-1322 800-729-2085 www.hexlab.com
Name of system	Genesys Plus*	Genesys Pro*	Labpak	Lab/Hex
No. of contracts for sites operating LIS • Hospital/independent lab contracts in U.S. • Clinic or group practice contracts in U.S. • Other contracted U.S. sites/contracts for foreign sites Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	confidential — — — —	confidential — — — —	765 100/34 626 0/5 n/a	122 9/50 42 11/10 4 (1/3/0)
No. of sites operating LIS First/most recent LIS installation	confidential 1982/2001	confidential 1982/2001	765 1980/2001	132 1981/2001
Staff to develop/install/support/other* in entire firm Staff to develop/install/support/other* in LIS division	confidential confidential	confidential confidential	— 8/7/7/12	5/5/5/3 —
No. of terminals/workstations in live sites (min.–max.)	1	1	1–24	2–40+
• Central hardware	ATX-micro	ATX-micro	Intel Pentium III	Intel Pentium, Dell, HP 9000, IBM, DEC, others
• Central hardware redundant/fault-tolerant? • Terminals/workstations	yes ATX-micro	yes —	optional PCs	— PCs, Wyse terminals, thin clients
• Workstation set-up	dumb terminal supported	dumb terminal supported	only PC workstation supported	dumb terminal supported
• Software programming language(s) • Operating system(s)	C DynaGen OS	C DynaGen OS	C, C++, Visual Basic Windows 98, NT	TBred Basic, Inquire IV SCO Unix, Red Hat Linux
• Database system(s)	relational	relational	Pervasive Btrieve-SQL	IDOL IV, 4GL, SQL
• System includes full transaction logging?	no	no	no	yes

Features (listed as a percentage of live installations,
    available but no installations, or not available)
• Chemistry/hematology
• Bar-coded collection labels
• Handheld devices for bedside-positive patient ID
• Microbiology
• Blood bank donor center
• Blood bank transfusion service
• Surgical pathology
• Cytology
• HIS interface
  —A/D/T
  —Order entry
  —Result reporting
• Ad hoc reporting
• Rules-based system
• Utilization management
• Outreach/commercial laboratory
• Compliance checking
• Accounts receivable
• Materials management/inventory
 	
• Test partition
• Remote faxing/printing
• Physician office outreach
	
	100%
	25%
	0
	0
	0
	0
	0
	0
	
	10%
	—
	—
	10%
	—
	—
	—
	10%
	—
	—
	
	—
	15%
	0
		
		100%
		25%
		0
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		0
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		0
		0
		
		10%
		—
		—
		10%
		—
		—
		—
		100%
		0
		0
		
		0
		15%
		0
			
			100%
			75%
			not available
			25%
			not available
			not available
			not available
			not available
			
			30%
			20%
			80%
			50%
			100%
			100%
			40%
			90%
			not available
			available in Dec. 2001
			
			70%
			90%
			35%
				
				100%
				100%
				available but not installed
				100%
				through a partnership with Mediware
				through a partnership with Mediware
				50%
				75%
				
				15%
				10%
				15%
				100%
				100%
				100%
				40%
				90%
				65%
				through a partnership with Cove Laboratory Software
				100%
				100%
				65%

Complete LIS ASP solution? ASP for physician order entry/result reporting? Method of charging for ASP service Client software required ASP information conduit Client contracts supported from data center not operated by client How data center is operated	no no — — — — —	no no — — — — —	no no — — — — —	yes yes fixed fee browser-based operates over Internet 5 by vendor
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard: • Microbiology data • Tumor diagnosis/registry data	 not available not available	 not available not available	 not available not available	 not available not available
ASTM/HL7 interface? Hospital/integrated health care systems interfaced Physician office management systems interfaced Automated lab transportation systems interfaced	yes via Gateway-ASTM, Meditech, Dairyland, SMS Medical Manager, QRS, Paradigm, Pratice Partners, Dairyland, Logician none	yes ASTM — none	yes IDX, Dairyland, HSI, Experior, Logician Medical Manager, Medic, IDX, Logician, Practice Partners, PMSI, CompuSystems, Vital Works, others none	yes McKesson, SMS, Cerner, PSI, Sunquest, Antrim, Experior, Logician, proprietary Medical Manager, Medic, IDX, MedicaLogic, proprietary planned
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no —	no —	yes no	yes no
LIS permits use of SNOMED II/SNOMED International?	no/no	no/no	no/no	yes/yes
Market modules for other hospital departments? Percentage of LIS installations stand-alone	no —	no —	no —	no —
No. of different lab instruments interfaced with LIS Source code?/User group? User programming in separate partition? Query language to get info. from LIS database	— no/no no —	— no/no no —	300+ on request/no no proprietary	250+ escrow/no no SQL
Smallest cost (hardware/software/monthly maintenance) Largest cost (hardware/software/monthly maintenance)	$16k (hardware & software)/$2.6k yearly $50k (hardware & software)/$4.5k yearly	$8k (hardware & software)/$2.225k yearly $10k (hardware & software)/—	$1k/$1.795k/$.050k $25k/$75k/$.4k	$5k/$15k/$.2k $100k/$180k/$2.8k
Distinguishing features (supplied by vendor)	• outstanding customer support • user friendly	• outstanding customer service • user friendly	• ease of use • scalability • value	• flexible and user friendly with excellent support • medical necessity, billing, e-billing, accounts receivable • reliable and stable with extensive growth potential
*other=sales, marketing, administration, and other company functions	* Genesys Plus was formerly a product of DynaMedix Corp.	* Genesys Pro was formerly a product of DynaMedix Corp.		

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Laboratory information systems

Part 6 of 14	Informática Tesi de Italia, SA de CV Fernando Estrada comercial@tesi.com.mx Bosques de los Ciruelos #168 Piso 8, Col. Bosques de las Lomas Mexico, DF 11700 52-5596-6616	Information Data Management Inc. Susan L. McBride 9701 W. Higgins Rd., Ste. 500 Rosemont, IL 60018 800-249-4276/847-825-2300 www.idm.com	Intellidata Inc. Gary Rex gary_rex@intellidata.com 1483 Old Bridge Rd. Woodbridge, VA 22192 800-711-5525 www.intellidata.com
Name of system	WinLab	Surround	IntelliLab
No. of contracts for sites operating LIS	580	3	60
• Hospital/independent lab contracts in U.S.	0/0	0/0	13/6
• Clinic or group practice contracts in U.S.	0	0	38
• Other contracted U.S. sites/contracts for foreign sites	0/580	3/0	3/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	13 (10/3/0)	2 (0/0/2)	7
No. of sites operating LIS	—	2	223
First/most recent LIS installation	1981/2001	2000/2001	1988/2001
Staff to develop/install/support/other* in entire firm	12/13/4/12	23/3/10/9	6/4/6/8
Staff to develop/install/support/other* in LIS division	8/13/4/12	—	—
No. of terminals/workstations in live sites (min.–max.)	1–35	3–40	1–1,300+
• Central hardware	Intel Pentium III server, Dell	Intel Pentium III servers	Intel-based servers, IBM RS/6000, DEC, HP, DG, others
• Central hardware redundant/fault-tolerant?	yes	yes	yes
• Terminals/workstations	Pentium III PCs	PC workstations	Windows 95, 98, 2000, NT, PCs
• Workstation set-up	only PC workstation supported	only PC workstation supported	—
• Software programming language(s)	Visual Basic 6	Java	Visual Basic, Basic, C, C++
• Operating system(s)	Windows NT, 95, 98, 2000	Windows NT	Windows NT, Linux, Unix, AIX
• Database system(s)	MS SQL server	Oracle 8	mv Base, multi-dimensional database
• System includes full transaction logging?	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)			
• Chemistry/hematology	80%	100%	100%
• Bar-coded collection labels	50%	100%	95%
• Handheld devices for bedside-positive patient ID	available but not installed	not available	—
• Microbiology	10%	not available	10%
• Blood bank donor center	40%	not available	available but not installed
• Blood bank transfusion service	40%	not available	available but not installed
• Surgical pathology	not available	not available	40%
• Cytology	not available	not available	50%
• HIS interface			
—A/D/T	10%	not available	40%
—Order entry	5%	not available	100%
—Result reporting	10%	not available	100%
• Ad hoc reporting	100%	not available	100%
• Rules-based system	5%	not available	100%
• Utilization management	available but not installed	not available	100%
• Outreach/commercial laboratory	available but not installed	not available	40%
• Compliance checking	10%	50%	—
• Accounts receivable	5%	not available	10%
• Materials management/inventory	5%	not available	not available
• Test partition	2%	100%	100%
• Remote faxing/printing	20%	100%	100%
• Physician office outreach	2%	not available	—
Complete LIS ASP solution?	no	no	yes
ASP for physician order entry/result reporting?	no	—	yes
Method of charging for ASP service	—	—	—
Client software required	—	—	requires software be installed on client PC
ASP information conduit	—	—	operates over Internet
Client contracts supported from data center not operated by client	—	—	1
How data center is operated	—	—	by a third party
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:			
• Microbiology data	not available	not available	not available
• Tumor diagnosis/registry data	not available	not available	not available
ASTM/HL7 interface?	no	no	yes
Hospital/integrated health care systems interfaced	—	none	SMS, CPL, Antrim, MPMS, Vanguard, SmithKline, LabCorp, others
Physician office management systems interfaced	—	none	Medic, MedicaLogic, IDX, Medical Manager, Data Medic, Autochart, Disc, Dairyland, Impac, PenChart, Centrex, others
Automated lab transportation systems interfaced	none	none	planned
Software provides indexed field in each test definition for LOINC code?	no	no	planned
Provide LOINC dictionary for each new installation?	no	no	planned
LIS permits use of SNOMED II/SNOMED International?	no/no	no/n/a	no/no
Market modules for other hospital departments?	no	no	no
Percentage of LIS installations stand-alone	—	—	0%
No. of different lab instruments interfaced with LIS	200+	3	300+
Source code?/User group?	no/no	escrow/no	escrow/no
User programming in separate partition?	yes	no	yes
Query language to get info. from LIS database	SQL	SQL	SQL, AQL
Smallest cost (hardware/software/monthly maintenance)	$2k/$7k/$.2k*	n/a/$125k/$1k	$5k/$25k/1.5% after first year
Largest cost (hardware/software/monthly maintenance)	$80k/$50k/$.3k*	n/a/$550k/$5k	$75k/$175k/1.5% after first year
Distinguishing features (supplied by vendor)	• very easy to use • complete management of all laboratory activities • electronic work lists and automatic programming of host query instruments	• software methodology and support procedures have been audited by several customers and third-party auditors • 24/7 customer support services • large customer base, financial stability, continual research and development	• high functionality • open system supported by personalized technical support • system self-diagnosis using advanced tools—PhD, Baseboard Management, Simulscreen
*other=sales, marketing, administration, and other company functions	*listed as U.S. dollars		

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Laboratory information systems

Part 7 of 14	Isys Biovation Mary Kay Jones mjones@isys.tv 6925 Lake Ellenor Drive, Ste. 135 Orlando, FL 32809 407-859-2881/800-527-4797 www.isys.tv	Keane Inc. Leslie Johnson info.hsd@keane.com 290 Broadhollow Rd. Melville, NY 11747 800-699-6773 www.keane.com/hsd	LabSoft Inc. Tina Zaffuto tzaffuto@labsoftlis.com 8402 Laurel Fair Circle, Ste. 207 Tampa, FL 33610 800-767-3279 www.labsoftlis.com	LabSoft Inc. Tina Zaffuto tzaffuto@labsoftlis.com 8402 Laurel Fair Circle, Ste. 207 Tampa, FL 33610 800-767-3279 www.labsoftlis.com
Name of system	Messenger	LabFusion	Beethoven II LIS	BloodHound II LIS
No. of contracts for sites operating LIS	18	28	151	539
• Hospital/independent lab contracts in U.S.	5/3	26/1	33/9	110/0
• Clinic or group practice contracts in U.S.	5	0	105	409
• Other contracted U.S. sites/contracts for foreign sites	2/3	0/1	0/4	0/20
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	6 (5/1/0)	—	1 (0/0/1)	—
No. of sites operating LIS	18	29	151	539
First/most recent LIS installation	2000/2001	1989/2001	1995/2001	1992/2000
Staff to develop/install/support/other* in entire firm	5/8/7/4	145/123/107/104	2/3/5/3	2/3/5/3
Staff to develop/install/support/other* in LIS division	—	6/1/2/0	—	—
No. of terminals/workstations in live sites (min.–max.)	3–75	6–50	1	1
• Central hardware	platform-independent PCs	IBM RS/6000, IBM AS/400	Compaq, Acer, Dell	Compaq, Acer (all Pentium)
• Central hardware redundant/fault-tolerant?	yes	yes	yes	yes
• Terminals/workstations	platform-independent PCs	PCs, Wyse terminals	Compaq, Acer, Dell	—
• Workstation set-up	only PC workstation supported	dumb terminal supported	only PC workstation supported	only PC workstation supported
• Software programming language(s)	Delphi, C++	Progress	Delphi	C++
• Operating system(s)	Windows NT, 98, ME, 2000, XP-OS independent	Unix	Windows 2000, ME, NT, 98	MS DOS
• Database system(s)	DB independent, SQL server preferred	Progress	MS SQL server	—
• System includes full transaction logging?	yes	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	100%	100%	100%
• Bar-coded collection labels	100%	100%	90%	3%
• Handheld devices for bedside-positive patient ID	available but not installed	5%	available but not installed	not available
• Microbiology	available but not installed	80%	not available	not available
• Blood bank donor center	available in Sept. 2002	0	available but not installed	not available
• Blood bank transfusion service	not available	0	available but not installed	not available
• Surgical pathology	available but not installed	5%	not available	not available
• Cytology	available but not installed	5%	not available	not available
• HIS interface				
—A/D/T	100%	90%	50%	available but not installed
—Order entry	100%	80%	50%	available but not installed
—Result reporting	100%	80%	50%	available but not installed
• Ad hoc reporting	100%	100%	50%	not available
• Rules-based system	100%	100%	50%	available but not installed
• Utilization management	100%	100%	100%	not available
• Outreach/commercial laboratory	100%	10%	30%	not available
• Compliance checking	100%	20%	50%	not available
• Accounts receivable	not available	10%	not available	not available
• Materials management/inventory	available but not installed	n/a	not available	not available
• Test partition	100%	100%	available but not installed	10%
• Remote faxing/printing	100%	70%	50%	not available
• Physician office outreach	100%	10%	not available	not available
Complete LIS ASP solution?	yes	no	no	no
ASP for physician order entry/result reporting?	yes	no	no	no
Method of charging for ASP service	fixed fee, transaction-based	—	—	—
Client software required	requires software be installed on client PC	—	—	—
ASP information conduit	operates over Internet	—	—	—
Client contracts supported from data center not operated by client	0	—	—	—
How data center is operated	by vendor	—	—	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	available but not installed	not available	available but not installed	not available
• Tumor diagnosis/registry data	available but not installed	not available	not available	not available
ASTM/HL7 interface?	yes	yes	yes	yes
Hospital/integrated health care systems interfaced	McKesson, Epic, ECHN	McKesson, SMS, Meditech, IMN, Quadramed	McKesson, SMS, Dairyland, Epic, custom	—
Physician office management systems interfaced	Medical Manager	—	Health Care Data, Medical Manager, STC, Physix, Epicare, IDX, custom, others	—
Automated lab transportation systems interfaced	available but not yet operational	none	planned	none
Software provides indexed field in each test definition for LOINC code?	yes	no	yes	no
Provide LOINC dictionary for each new installation?	no	—	no	no
LIS permits use of SNOMED II/SNOMED International?	yes/yes	yes/no	yes/yes	no/no
Market modules for other hospital departments?	yes	yes	no	no
Percentage of LIS installations stand-alone	100%	25%	—	—
No. of different lab instruments interfaced with LIS	450+	100	162	152
Source code?/User group?	escrow/yes	no/yes	escrow/no	escrow/no
User programming in separate partition?	no	no	yes	no
Query language to get info. from LIS database	ANSI SQL 92	Progress, CyberQuery	SQL, ODBC	—
Smallest cost (hardware/software/monthly maintenance)	$30k/$50k/$1.2k	—	$2.5k/$6k/$.07k	$1.5k/$4.5k/$.38k
Largest cost (hardware/software/monthly maintenance)	$500k/$1m/$15k	—	$6k/$15k/$.13k	$2.7k/$15k/$.5k

Distinguishing features
   (supplied by vendor)
	• 100% user definable; full HL7 messaging
	• interface engine and data repository
	• operating system, platform, database
	   independent
		• highly user-defined system can meet
		   specific facility needs
		• implementation and support by registered
		   medical technologists who understand
		   laboratory and hospital needs
		• numerous data delivery options to meet
		   provider expectations
			• ODBC compliant
			• flexibility
			• software upgrades/updates included
			   in annual support packages
				• cost-effective
				• time-tested and proven
				• easy to use

*other=sales, marketing, administration, and other company functions				

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Laboratory information systems

Part 8 of 14	LabSoft Inc. Tina Zaffuto tzaffuto@labsoftlis.com 8402 Laurel Fair Circle, Ste. 207 Tampa, FL 33610 800-767-3279 www.labsoftlis.com	LabSoft Inc. Tina Zaffuto tzaffuto@labsoftlis.com 8402 Laurel Fair Circle, Ste. 207 Tampa, FL 33610 800-767-3279 www.labsoftlis.com	L.I.M.S. (U.S.A.) Inc. William Qualls billq@limsltd.com 4000 Hollywood Blvd., Ste. 730 North Hollywood, FL 33021 954-964-8663 www.starlims.com	M/MGMT Systems Inc. Stacey Cook mlab@mmgmt.com 2335 American River Drive, Ste. 402 Sacramento, CA 95825 800-664-8797 www.mmgmt.com
Name of system	EZ Link LIS	LabNet LIS	StarLIS	M/Lab
No. of contracts for sites operating LIS	60	111	3	20
• Hospital/independent lab contracts in U.S.	16/7	38/18	0/2	0/18
• Clinic or group practice contracts in U.S.	37	55	0	1
• Other contracted U.S. sites/contracts for foreign sites	0/0	0/0	1/0	1/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	2 (0/0/2)	6 (1/0/5)	1 (0/1/0)	2 (0/2/0)
No. of sites operating LIS	60	156	3	24
First/most recent LIS installation	1995/2001	1995/2001	1997/2001	1987/2001
Staff to develop/install/support/other* in entire firm	2/3/5/3	2/3/5/3	4/12/4/6	4/4/6/2
Staff to develop/install/support/other* in LIS division	—	—	2/2/1/1	3/3/5/2
No. of terminals/workstations in live sites (min.–max.)	2–3	3–65	18–50	8–64
• Central hardware	Compaq, Acer, Dell	Compaq, Acer, Dell	any 32-bit (minimum) CPU	Pentium
• Central hardware redundant/fault-tolerant?	yes	yes	—	yes
• Terminals/workstations	Compaq, Acer, Dell	Compaq, Acer, Dell	any 32-bit Windows	Pentium
• Workstation set-up	only PC workstation supported	only PC workstation supported	dumb terminal supported	only PC workstation supported
• Software programming language(s)	Delphi	Visual C++, Delphi	Visual Objects, Visual Basic, others	Caché
• Operating system(s)	Windows 2000, ME, NT, 98	Windows 2000, ME, NT, 98	server: any 32-bit OS; workstation: any 32-bit Windows (Mac or dumb terminals)	Windows NT, 2000
• Database system(s)	SQL server	SQL server	Oracle, SQL server	Caché
• System includes full transaction logging?	yes	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	100%	100%	20%
• Bar-coded collection labels	100%	100%	100%	20%
• Handheld devices for bedside-positive patient ID	available but not installed	available but not installed	available but not installed	not available
• Microbiology	20%	20%	100%	100%
• Blood bank donor center	available but not installed	available but not installed	0	not available
• Blood bank transfusion service	available but not installed	available but not installed	0	not available
• Surgical pathology	not available	not available	0	not available
• Cytology	not available	not available	0	available but not installed
• HIS interface				
—A/D/T	40%	55%	60%	not available
—Order entry	40%	45%	60%	60%
—Result reporting	40%	45%	60%	50%
• Ad hoc reporting	100%	100%	100%	100%
• Rules-based system	100%	55%	100%	50%
• Utilization management	100%	100%	70%	100%
• Outreach/commercial laboratory	30%	30%	70%	not available
• Compliance checking	50%	100%	70%	not available
• Accounts receivable	not available	not available	available but not installed	85%
• Materials management/inventory	not available	not available	60%	not available
• Test partition	available but not installed	not available	100%	100%
• Remote faxing/printing	80%	100%	100%	50%
• Physician office outreach	20%	55%	0	not available
Complete LIS ASP solution?	no	no	no	no
ASP for physician order entry/result reporting?	no	no	no	no
Method of charging for ASP service	—	—	—	—
Client software required	—	—	—	—
ASP information conduit	—	—	—	—
Client contracts supported from data center not operated by client	—	—	—	—
How data center is operated	—	—	—	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	available but not installed	available but not installed	—	3 sites
• Tumor diagnosis/registry data	not available	not available	—	not available
ASTM/HL7 interface?	yes	yes	yes	yes
Hospital/integrated health care systems interfaced	McKesson, SMS, Dairyland, Epic, custom	—	—	any HL7
Physician office management systems interfaced	Health Care Data, Medical Manager, STC, Physix, Epicare, IDX, custom, others	—	—	any HL7
Automated lab transportation systems interfaced	planned	planned	Roche/BMC/Hitachi, Bayer	none
Software provides indexed field in each test definition for LOINC code?	yes	yes	—	yes
Provide LOINC dictionary for each new installation?	no	no	—	yes
LIS permits use of SNOMED II/SNOMED International?	yes/yes	yes/yes	yes/yes	in development/no
Market modules for other hospital departments?	no	no	no	no
Percentage of LIS installations stand-alone	—	—	—	—
No. of different lab instruments interfaced with LIS	162	162	—	15
Source code?/User group?	escrow/no	escrow/no	escrow/yes	yes/yes
User programming in separate partition?	yes	yes	yes	yes
Query language to get info. from LIS database	SQL, ODBC	SQL, ODBC	SQL	can export ASCII for input to other database tools
Smallest cost (hardware/software/monthly maintenance)	$5k/$11k/$.11k	$0/$31k/$.5k	—/$75k/—	—/$64k/$.5k
Largest cost (hardware/software/monthly maintenance)	$12k/$21k/$.15k	$130k/$270k/$3.5k	—/$320k/—	—/$560k/$1.2k
Distinguishing features (supplied by vendor)	• provides small to mid-sized labs with many high-end features • medical necessity logic • expandable for growing laboratories	• superior connectivity for network, satellite sites • versatile order-entry and result-reporting options • software upgrades/updates included in annual support packages	• multiple-tier architecture • user configured • automation services	• integrated human and environmental recording • patient medical history built and maintained in electronic medical record • designed by public health directors specifically for public health labs
*other=sales, marketing, administration, and other company functions				

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Laboratory information systems

Part 9 of 14	McKesson Mary Beach mary.beach@mckesson.com 5995 Windward Parkway Alpharetta, GA 30005 404-338-2081	Medcom Information Systems Inc. David Baird dbaird@emirj.com 2117 Stonington Ave. Hoffman Estates, IL 60195 847-885-1553 www.emirj.com	Meditech Paul Berthiaume info@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com	Meditech Paul Berthiaume info@meditech.com Meditech Circle Westwood, MA 02090 781-821-3000 www.meditech.com
Name of system	Horizon Lab	Medcom Lab Manager	Meditech client/server LIS	Meditech Magic LIS
No. of contracts for sites operating LIS	29	425	446	793
• Hospital/independent lab contracts in U.S.	26/0	17/62	—	—
• Clinic or group practice contracts in U.S.	2	346	—	—
• Other contracted U.S. sites/contracts for foreign sites	0/1	0/0	—	—
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	16 (15/1/0)	4 (0/4/0)	—	—
No. of sites operating LIS	27	450	446	793
First/most recent LIS installation	1998/2001	1992/2001	1969/2001	1969/2001
Staff to develop/install/support/other* in entire firm	—	4/6/4/7	2,000 total	2,000 total
Staff to develop/install/support/other* in LIS division	—	3/6/4/5	2,000 total	2,000 total
No. of terminals/workstations in live sites (min.–max.)	—	1–11	—	—
• Central hardware	HP, DG, IBM	Medcom IBM-compatible PC	EMC, Compaq, Dell	EMC, Compaq, Dell
• Central hardware redundant/fault-tolerant?	yes	yes	yes	yes
• Terminals/workstations	PCs	Medcom IBM-compatible PC	—	—
• Workstation set-up	only PC workstation supported	only PC workstation supported	only PC workstation supported	only PC workstation supported
• Software programming language(s)	Delphi, ANSI Standard C	C++	Magic CS	Magic
• Operating system(s)	Unix	DOS/Windows 9X/NT	Windows 2000, ME	Magic
• Database system(s)	Oracle	D-Base compatible	Magic	Magic
• System includes full transaction logging?	yes	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	100%	100%	100%
• Bar-coded collection labels	100%	70%	100%	100%
• Handheld devices for bedside-positive patient ID	3%	—	10%	10%
• Microbiology	90%	5%	100%	100%
• Blood bank donor center	through Mediware	—	15%	15%
• Blood bank transfusion service	through Mediware	—	100%	100%
• Surgical pathology	through Tamtron	—	100%	100%
• Cytology	through Tamtron	—	100%	100%
• HIS interface				
—A/D/T	100%	3%	25%	25%
—Order entry	100%	2%	25%	—
—Result reporting	100%	4%	25%	—
• Ad hoc reporting	100%	100%	100%	100%
• Rules-based system	100%	—	100%	100%
• Utilization management	100%	—	100%	100%
• Outreach/commercial laboratory	100%	—	25%	25%
• Compliance checking	100%	5%	40%	40%
• Accounts receivable	0	—	100%	100%
• Materials management/inventory	0	—	100%	100%
• Test partition	100%	100%	100%	100%
• Remote faxing/printing	100%	8%	100%	100%
• Physician office outreach	100%	—	25%	25%
Complete LIS ASP solution?	yes	yes	no	no
ASP for physician order entry/result reporting?	yes	yes	no	no
Method of charging for ASP service	fixed fee or transaction-based	fixed fee	—	—
Client software required	browser-based, requires software be installed on client PC	browser-based	—	—
ASP information conduit	operates over Internet, requires use of private dedicated circuit	operates over Internet	—	—
Client contracts supported from data center not operated by client	1	none	—	—
How data center is operated	by vendor	by a third party (YNC)	—	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	—	not available	—	—
• Tumor diagnosis/registry data	not available	not available	—	—
ASTM/HL7 interface?	yes	yes	yes	yes
Hospital/integrated health care systems interfaced	McKesson, IDX, Siemens, Meditech, homegrown	—	Cerner, McKesson, SMS, others	Cerner, McKesson, SMS, others
Physician office management systems interfaced	McKesson, Cliniscan	Medical Manager, MedicaLogic, AMS, Edimis, Wismer Martin, others	—	—
Automated lab transportation systems interfaced	available but not yet operational	none	Sysmex, Roche/BMC/Hitachi	Sysmex, Roche/BMC/Hitachi
Software provides indexed field in each test definition for LOINC code?	yes	no	no	no
Provide LOINC dictionary for each new installation?	yes	no	no	no
LIS permits use of SNOMED II/SNOMED International?	n/a	no/no	yes/yes	yes/yes
Market modules for other hospital departments?	yes	no	yes	yes
Percentage of LIS installations stand-alone	25%	—	25%	25%
No. of different lab instruments interfaced with LIS	200+	200+	hundreds	hundreds
Source code?/User group?	escrow/yes	escrow/no	yes/yes	yes/yes
User programming in separate partition?	yes	no	no	no
Query language to get info. from LIS database	any ODBC software package, Crystal Reports	language supported by SQL server	SQL, Meditech Report Writer	SQL, Meditech Report Writer
Smallest cost (hardware/software/monthly maintenance)	—	$2k/$7k/.$1k	—	—
Largest cost (hardware/software/monthly maintenance)	—	$35k/$70k/$.75k	—	—
Distinguishing features (supplied by vendor) *other=sales, marketing, administration, and other company functions	• smart quality management, including auto-verification and enforced QC • order-status monitor provides real-time turnaround time tracking • can handle all care settings, including hospital, reference labs, hybrid labs	• cost-effective interfacing for data exchange with other software • software support includes updates, upgrades, modem support, phone help • interfaces available for reference labs, billing systems, EMRs	• more than 30 years' experience developing and implementing LISs • seamless support for labs in an integrated delivery network • accurate, up-to-the-minute patient data and charge information	• more than 30 years' experience developing and implementing LISs • seamless support for labs in an integrated delivery network • accurate, up-to-the-minute patient data and charge information

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SYSTEM REVIEW SERIES

Laboratory information systems

Part 10 of 14	Multidata Computer Systems Inc. Michael Slater mrslater@mul.com 330 Seventh Ave. New York, NY 10001 212-967-6700 www.mul.com	Northern Software Inc. Steve Chehansky sjchehansky@northernsoft.com P.O. Box 309 N8898 Van Buskirk Rd. Ironwood, MI 49938 906-932-9990 www.northernsoft.com	Opus Healthcare Solutions Inc. Jerry Michaud mail@opushealthcare.com 10713 N. Ranch Rd. 620, Ste. 400 Austin, TX 78726 512-336-7200/800-676-3371 www.opushealthcare.com
Name of system	MultiTech LIS	eLab.Sys	OpusLab
No. of contracts for sites operating LIS	39	23	43
• Hospital/independent lab contracts in U.S.	7/31	9/2	38/2
• Clinic or group practice contracts in U.S.	1	10	2
• Other contracted U.S. sites/contracts for foreign sites	0/0	0/2	0/1
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	1 (0/1/0)	8 (0/0/8)	3 (2/0/1)
No. of sites operating LIS	39	23	43
First/most recent LIS installation	1983/2001	1998/2001	1987/2001
Staff to develop/install/support/other* in entire firm	4/2/3/2	2 total	14/14/7/6
Staff to develop/install/support/other* in LIS division	—	—	11/16/5/6
No. of terminals/workstations in live sites (min.–max.)	4–~100	1–50	3–200
• Central hardware	Intel Pentium compatible, most Unix RISC, DEC Alpha	Dell servers, AOpen servers	HP 9000 (L Series)
• Central hardware redundant/fault-tolerant?	optional	yes	yes
• Terminals/workstations	DEC VT series or compatible, PC with WRQ Reflection software	Dell Optiplex, AOpen custom PC	Windows PC workstations
• Workstation set-up	dumb terminal supported	only PC workstation supported	only PC workstation supported
• Software programming language(s)	Caché (M), Visual Basic, HTML	C++	C, Java, PERL
• Operating system(s)	Windows 2000, NT, Unix, Linux, DEC VMS	Windows 95, 98, 2000	Unix
• Database system(s)	Caché (M)	SQL	Opus DBMS, Postgre SQL
• System includes full transaction logging?	optional	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)			
• Chemistry/hematology	90%	100%	100%
• Bar-coded collection labels	80%	61%	100%
• Handheld devices for bedside-positive patient ID	—	0	—
• Microbiology	80%	15%	80%
• Blood bank donor center	—	not available	not available
• Blood bank transfusion service	—	not available	not available
• Surgical pathology	10%	not available	30%
• Cytology	40%	not available	20%
• HIS interface			
—A/D/T	20%	5%	80%
—Order entry	20%	5%	75%
—Result reporting	10%	5%	75%
• Ad hoc reporting	40%	100%	100%
• Rules-based system	90%	100%	100%
• Utilization management	20%	100%	100%
• Outreach/commercial laboratory	90%	5%	75%
• Compliance checking	70%	100%	25%
• Accounts receivable	90%	not available	not available
• Materials management/inventory	20%	not available	not available
• Test partition	100%	100%	75%
• Remote faxing/printing	80%	100%	100%
• Physician office outreach	80%	—	70%
Complete LIS ASP solution?	no	no	yes
ASP for physician order entry/result reporting?	prototyped	—	yes
Method of charging for ASP service	—	—	fixed fee
Client software required	—	—	browser-based
ASP information conduit	—	—	operates over Internet
Client contracts supported from data center not operated by client	—	—	1
How data center is operated	—	—	by vendor
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:			
• Microbiology data	not available	not available	available but not installed
• Tumor diagnosis/registry data	not available	not available	available but not installed
ASTM/HL7 interface?	yes	yes	yes
Hospital/integrated health care systems interfaced	SMS, CSM, custom	SMS, Dairyland	SMS, McKesson, Cycare, First Coast, Western Star, Hemocare
Physician office management systems interfaced	Medical Manager, custom	—	—
Automated lab transportation systems interfaced	planned	planned	none
Software provides indexed field in each test definition for LOINC code?	yes	yes	yes
Provide LOINC dictionary for each new installation?	on request	yes	no
LIS permits use of SNOMED II/SNOMED International?	no/no	no/no	yes/yes
Market modules for other hospital departments?	no	no	yes
Percentage of LIS installations stand-alone	—	—	50%
No. of different lab instruments interfaced with LIS	125+	51	200+
Source code?/User group?	escrow/no	escrow/no	escrow/yes
User programming in separate partition?	yes	no	yes
Query language to get info. from LIS database	any ODBC compliant: Crystal Reports, Access, SQL	SQL	SQL, Crystal Report Writer
Smallest cost (hardware/software/monthly maintenance)	$15k/$40k/$.75k	$1k/$1k/$.03k	$30k/$100k/$1k
Largest cost (hardware/software/monthly maintenance)	$250k/$400k/$6k	$25k/$35k/$.6k	$200k/$600k/$6k
Distinguishing features (supplied by vendor)	• complete billing, A/R, and management reporting for commercial labs and hospital outreach • special functionality for dialysis and toxicology laboratories • scheduling system with medical necessity for house calls, nursing homes, more	• fully integrated with EMR, billing, practice management options • lab will be up and running, including interfaces, at end of installation • users are part of development team via feedback	• Internet technologies • user-driven product • seamless integration with Opus' clinical suite

*other=sales, marketing, administration,
   and other company functions

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Laboratory information systems

Part 11 of 14	Orchard Software Corp. **Robin Ades** rades@orchardsoft.com 701 Congressional Blvd., Ste. 360 Carmel, IN 46032 800-856-1948 www.orchardsoft.com	Orchard Software Corp. **Robin Ades** rades@orchardsoft.com 701 Congressional Blvd., Ste. 360 Carmel, IN 46032 800-856-1948 www.orchardsoft.com	Premier Laboratory Systems Inc. **Jon Chollet** jon@premierlabsystems.com 16582 Gothard St., Ste. 0 Huntington Beach, CA 92647 714-903-0299
Name of system	Aqueduct	Orchard Harvest LIS	Orion ALS
No. of contracts for sites operating LIS • Hospital/independent lab contracts in U.S. • Clinic or group practice contracts in U.S. • Other contracted U.S. sites/contracts for foreign sites Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	9 8/1 0 0/0 8 (7/1/0)	259 75/25 147 12/0 30 (4/3/23)	17 1/2 14 0/0 2 (0/2/0)
No. of sites operating LIS First/most recent LIS installation	9 1999/2001	280 1993/2001	17 1999/2001
Staff to develop/install/support/other* in entire firm Staff to develop/install/support/other* in LIS division	11/10/10/12 —	11/10/13/13 —	2/2/3/5 —
No. of terminals/workstations in live sites (min.–max.)	1–11	1–150+	1–2
• Central hardware	business-class Pentium compatible	HP Business Class, Pentium compatible	Dell Dimension
• Central hardware redundant/fault-tolerant? • Terminals/workstations	yes business-class Pentium compatible	yes HP Business Class, Pentium compatible	yes Dell Dimension
• Workstation set-up	only PC workstation supported	dumb terminal supported, PC workstation supported	only PC workstation supported
• Software programming language(s) • Operating system(s)	4D Windows NT, 2000	ACI 4D, C++ Windows 2000, NT, 98, Mac OS 8.0 and higher	MS Visual Studio 6.0 Windows 98, NT 4.0, 2000 Professional
• Database system(s)	4D	ACI 4D, 4D client/server	Access 2000, SQL server 7.0
• System includes full transaction logging?	yes	yes	no

Features (listed as a percentage of live installations,
  available but no installations, or not available)
• Chemistry/hematology
• Bar-coded collection labels
• Handheld devices for bedside-positive patient ID
• Microbiology
• Blood bank donor center
• Blood bank transfusion service
• Surgical pathology
• Cytology
• HIS interface
  —A/D/T
  —Order entry
  —Result reporting
• Ad hoc reporting
• Rules-based system
• Utilization management
• Outreach/commercial laboratory
• Compliance checking
• Accounts receivable
• Materials management/inventory
• Test partition
• Remote faxing/printing
• Physician office outreach
	
	100%
	100%
	not available
	not available
	not available
	not available
	not available
	not available
	
	not available
	100%
	100%
	100%
	100%
	100%
	—
	not available
	not available
	not available
	not available
	100%
	not available
		
		100%
		100%
		available third quarter 2002
		5%
		not available
		not available
		not available
		not available
		
		60%
		60%
		30%
		100%
		30%
		90%
		40%
		70%
		not available
		available fourth quarter 2002
		25%
		80%
		40%
			
			100%
			12%
			available in June 2002
			available in June 2002
			not available
			not available
			available in June 2002
			available in June 2002
			
			6%
			6%
			6%
			100%
			100%
			100%
			—
			100%
			available in Dec. 2002
			available but not installed
			—
			20%
			—

Complete LIS ASP solution? ASP for physician order entry/result reporting? Method of charging for ASP service Client software required ASP information conduit Client contracts supported from data center not operated by client How data center is operated	no no — — — — —	no no — — — — —	no no — — — — —
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard: • Microbiology data • Tumor diagnosis/registry data	 not available not available	 not available not available	 not available not available
ASTM/HL7 interface? Hospital/integrated health care systems interfaced	yes McKesson, Antrim, Cerner, Psyche, Dawning, Data Innovations	yes McKesson, SMS, Dairyland, Meditech, Cerner, A4 Health Systems, CPSI, Experior, M2, IDX, others	yes —
Physician office management systems interfaced	—	Medical Manager, Clintek, Medic, IDX, MedicaLogic, NextGen, Millbrook, others	QRS
Automated lab transportation systems interfaced	none	planned	planned
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	yes no	no no
LIS permits use of SNOMED II/SNOMED International?	no/no	no/no	no/no
Market modules for other hospital departments? Percentage of LIS installations stand-alone	no —	no —	no —
No. of different lab instruments interfaced with LIS Source code?/User group? User programming in separate partition? Query language to get info. from LIS database	5 no/no no n/a	— —/no no —	24 escrow/no no SQL
Smallest cost (hardware/software/monthly maintenance) Largest cost (hardware/software/monthly maintenance)	$7k/$18k/$.2k —	— —	$6.995k (hardware & software)/$.1k $25k*/$.2k
Distinguishing features (supplied by vendor)	• paperless hematology • advanced decision support and auto-validation • sample status tracking	• HIPAA-compliant Web-based outreach • superior functionality and flexibility • install and support staff are clinical lab professionals	• unlimited flexibility to define system set-up and reports • low-cost, on-the-fly interfacing—hours not weeks • modular design allows for configuration in any size laboratory
*other=sales, marketing, administration, and other company functions			* includes hardware, software, server, and multiple workstations

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Laboratory information systems

Part 12 of 14	Psyche Systems Corp. Patricia Salem pattys@psychesystems.com 321 Fortune Blvd. Milford, MA 01757 800-345-1514 ext. 314 www.psychesystems.com	SCC Soft Computer Ellie Vahman sales@softcomputer.com 34350 U.S. Highway 19 North Palm Harbor, FL 34684 800-763-8352/727-789-0100 www.softcomputer.com	Schuyler House Sasha Gurkweitz sasha@schuylerhouse.com 14635 Titus St. Panorama City, CA 91402 800-706-0266 www.schuylab.com
Name of system	LabWeb	SoftLab	SchuyLab
No. of contracts for sites operating LIS	25	229	404
• Hospital/independent lab contracts in U.S.	15/4	172/26	404/0
• Clinic or group practice contracts in U.S.	2	4	0
• Other contracted U.S. sites/contracts for foreign sites	0/4	0/27	0/0
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	2 (1/0/1)	17 (13/3/1)	7 (2/3/2)
No. of sites operating LIS	29	376	404
First/most recent LIS installation	1976/2001	1985/2001	1993/2001
Staff to develop/install/support/other* in entire firm	8/8/4/12	276/185/147/112	3/5/6/4
Staff to develop/install/support/other* in LIS division	4/5/3/6	207/139/110/84	3/0/0/4
No. of terminals/workstations in live sites (min.–max.)	5–100+	3–220	1–40
• Central hardware	Compaq	IBM p Series (RS/6000), HP 9000 series	Dell Pentium 4 PCs
• Central hardware redundant/fault-tolerant?	yes	yes	no
• Terminals/workstations	PC	PCs, ASCII terminals	Dell Pentium 4 PCs
• Workstation set-up	dumb terminal supported	dumb terminal supported	only PC workstation supported
• Software programming language(s)	Fortran, Visual Basic	C, C++, Visual C++, Java	C
• Operating system(s)	Open VMS, Windows NT, 2000	AIX/Unix, Windows	Windows NT, 95, 98, 2000, ME, Novell
• Database system(s)	SQL server, Oracle RDB	RDM++, Oracle	Pervasive (Btrieve)
• System includes full transaction logging?	yes	yes	no
Features (listed as a percentage of live installations, available but no installations, or not available)			
• Chemistry/hematology	100%	100%	100%
• Bar-coded collection labels	100%	100%	20%
• Handheld devices for bedside-positive patient ID	available but not installed	7%	available in 2002
• Microbiology	33%	96%	70%
• Blood bank donor center	not available	2 beta sites	0
• Blood bank transfusion service	33%	57%	not available
• Surgical pathology	33%	54%	—
• Cytology	33%	54%	not available
• HIS interface			
—A/D/T	90%	100%	5%
—Order entry	50%	80%	5%
—Result reporting	50%	80%	1%
• Ad hoc reporting	100%	100%	not available
• Rules-based system	5%	100%	not available
• Utilization management	100%	100%	100%
• Outreach/commercial laboratory	100%	—	20%
• Compliance checking	5%	100%	20%
• Accounts receivable	not available	17%	not available
• Materials management/inventory	not available	available in 2002	not available
• Test partition	100%	100%	not available
• Remote faxing/printing	100%	100%	20%
• Physician office outreach	100%	90%	5%
Complete LIS ASP solution?	yes	yes	no
ASP for physician order entry/result reporting?	yes	yes	no
Method of charging for ASP service	fixed fee	transaction-based	—
Client software required	requires software be installed on client PC	requires software be installed on client PC	—
ASP information conduit	requires use of private, dedicated circuit	operates over Internet, requires use of private, dedicated circuit (VPN recommended)	—
Client contracts supported from data center not operated by client	9	1	—
How data center is operated	by vendor	by vendor	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:			
• Microbiology data	available but not installed	30+ sites	not available
• Tumor diagnosis/registry data	available but not installed	30+ sites	not available
ASTM/HL7 interface?	yes	yes	—
Hospital/integrated health care systems interfaced	various HL7, Keane, McKesson, SMS, Meditech, homegrown, others	major vendors, including IDX, SMS, McKesson, Quadramed, Keane, Perot, CPSI, custom	Dairyland, McKesson, Wismer Martin, SMS, Nelson Data
Physician office management systems interfaced	Medical Manager, other HL7-compliant systems	Medical Manager, HealthWorks, Medic, MedicaLogic, Trizetto, others	APEX, QSI, PCN
Automated lab transportation systems interfaced	none	Lab InterLink/Labotix, Beckman Coulter IDS, Bayer, Roche/BMC/Hitachi, others	planned
Software provides indexed field in each test definition for LOINC code?	yes	yes	yes
Provide LOINC dictionary for each new installation?	no	yes	—
LIS permits use of SNOMED II/SNOMED International?	yes/yes	yes/yes	no/no
Market modules for other hospital departments?	yes	yes	no
Percentage of LIS installations stand-alone	—	90%	—
No. of different lab instruments interfaced with LIS	100+	300+	200+
Source code?/User group?	yes/yes	no/yes	escrow/no
User programming in separate partition?	no	yes	no
Query language to get info. from LIS database	SQL	SQL, ODBC, CORBA	ASCII, ASTM, DBase, HL7
Smallest cost (hardware/software/monthly maintenance)	$5.9k/$7.5k/$.2k	$30k/$50k/1.25%	$1.6k/$5k/$.21k
Largest cost (hardware/software/monthly maintenance)	$200k/$30k/$6.5k	$1.6m/$3m/1.25%	$32k/$55k/$1.4k
Distinguishing features (supplied by vendor)	• corporate focus on LabWeb LIS and WindoPath AP ASP services • three levels of ASP service to accommodate different service-level needs • browser capabilities to customize different lab environments	• advanced client/server architecture using CORBA, MS OCX, Oracle • full LIS suite developed in-house • leading systems interfacing team; largest LIS programming house	• true 32-bit state-of-the-art graphic system • 24/7 toll-free technical support • Internet module available

*other=sales, marketing, administration, and other company functions

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Laboratory information systems

Part 13 of 14	SIA (a Sysmex company) Bill Blair blairb@sysmex.com 5210 E. Williams Circle Tucson, AZ 85711 520-790-4624 www.sia-molis.com	Siemens Medical Solutions Health Services Corp. M. Kaytrosh maryellen.kaytrosh@smed.com 51 Valley Stream Parkway Malvern, PA 19355-1406 610-219-3156 www.smed.com	StarLab Custom Software Systems Inc. George Widuch george@css-corporate.com DeWitt Rhaly dewitt@css-corporate.com 7012 Westbelt Drive Nashville, TN 37209 800-344-8053 www.css-corporate.com	Sunquest Information Systems Ken A. Kark info@sunquest.com 4801 E. Broadway Blvd. Tucson, AZ 85711 800-748-9658 www.sunquest.com
Name of system	Molis	Novius Lab	StarLab	FlexiLab
No. of contracts for sites operating LIS	95	58	22	642
• Hospital/independent lab contracts in U.S.	1/1	56/1	15/4	621/10
• Clinic or group practice contracts in U.S.	0	0	3	0
• Other contracted U.S. sites/contracts for foreign sites	0/93	0/1	0/0	0/21
Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	5 (1/4/0)	19 (18/1/0)	—	33 (33/0/0)
No. of sites operating LIS	142	39	23	—
First/most recent LIS installation	1989/2001	1984/2001	1984/2001	1979/2001
Staff to develop/install/support/other* in entire firm	300/200/400/300	1,300/1,400/900/2,000+	8/4/5/12	195/150/242/193
Staff to develop/install/support/other* in LIS division	41/36/25/25	40/30/40/10	4/2/4/3	165/125/235/187
No. of terminals/workstations in live sites (min.–max.)	5–200	15–250+	4–70	32–1,000+
• Central hardware	Compaq (Alpha, Intel), IBM (Intel, RS/6000, 3090), HP (Intel, 900), Sun	Compaq Alpha, IBM RS/6000	HP 9000 series 800, IBM RS/6000	IBM RS/6000
• Central hardware redundant/fault-tolerant?	yes	yes	yes	yes
• Terminals/workstations	Windows-based PCs, VT 320 or equivalent	Windows-based PCs	HP 700/70, Pentium workstations	Dell, Compaq
• Workstation set-up	dumb terminal supported	dumb terminal supported	dumb terminal supported	dumb terminal supported
• Software programming language(s)	Uniface	C, C++	Cobol	Open M, Caché
• Operating system(s)	NT, NT 2000, AIX, HP-UX, TRU 64, Alpha, Solaris, Open VMS, others	Unix, Windows NT, 2000	HP-UX, AIX, Linux	AIX, Open VMS
• Database system(s)	Oracle, Sybase, Informix, C-ISAM	Sybase	T-ISAM	Caché
• System includes full transaction logging?	yes	yes	yes	yes
Features (listed as a percentage of live installations, available but no installations, or not available)				
• Chemistry/hematology	100%	100%	100%	100%
• Bar-coded collection labels	100%	100%	80%	100%
• Handheld devices for bedside-positive patient ID	available but not installed	—	not available	100%
• Microbiology	95%	100%	10%	98%
• Blood bank donor center	through Wyndgate	through Wyndgate/Hemocare	not available	6%
• Blood bank transfusion service	through Wyndgate	through Wyndgate/Hemocare	not available	40%
• Surgical pathology	16%	through Tamtron	available but not installed	70%
• Cytology	16%	through Tamtron	available but not installed	70%
• HIS interface				
—A/D/T	55%	98%	80%	99%
—Order entry	55%	98%	50%	95%
—Result reporting	55%	90%	50%	98%
• Ad hoc reporting	100%	100%	45%	80%
• Rules-based system	100%	100%	not available	100%
• Utilization management	100%	100%	10%	100%
• Outreach/commercial laboratory	90%	60%	50%	75%
• Compliance checking	available but not installed	40%	100%	25%
• Accounts receivable	90%	15%	10%	5%
• Materials management/inventory	0	—	not available	20%
• Test partition	100%	100%	available but not installed	99%
• Remote faxing/printing	100%	100%	75%	80%
• Physician office outreach	30%	20%	100%	20%
Complete LIS ASP solution?	yes	no	no	no
ASP for physician order entry/result reporting?	yes	yes	no	no
Method of charging for ASP service	transaction-based	transaction-based	—	—
Client software required	requires software be installed on client PC	browser-based	—	—
ASP information conduit	requires use of private, dedicated circuit	operates over Internet	—	—
Client contracts supported from data center not operated by client	0	0	—	—
How data center is operated	by vendor	—	—	—
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard:				
• Microbiology data	available but not installed	not available	—	1,100 sites
• Tumor diagnosis/registry data	available but not installed	not available	—	not available
ASTM/HL7 interface?	yes	yes	yes	yes
Hospital/integrated health care systems interfaced	SMS, SAP, Cepage, LaLisa, Sandra, BHIS	McKesson	Dairyland, HMS, SMS	McKesson, Epic, SMS, Cerner, IDX, 3M, Hemocare, others
Physician office management systems interfaced	MCS, Medistar, Healthone	Novius Physician Enterprise Manager	MegaWest, IOX	n/a
Automated lab transportation systems interfaced	Sysmex, Roche/BMC/Hitachi, PVT, Streamline	Beckman Coulter IDS	planned	Lab InterLink/Labotix
Software provides indexed field in each test definition for LOINC code?	yes	yes	yes	no
Provide LOINC dictionary for each new installation?	no	no	no	no
LIS permits use of SNOMED II/SNOMED International?	yes/yes	no/no	no/no	yes/no
Market modules for other hospital departments?	no	yes	yes	yes
Percentage of LIS installations stand-alone	—	2%	42%	80%
No. of different lab instruments interfaced with LIS	245	150+	60+	595
Source code?/User group?	escrow/no	yes/yes	escrow/yes	no/yes
User programming in separate partition?	yes	yes	no	no
Query language to get info. from LIS database	ODBC compliant, SQL	ODBC	IQ, PC downloads to desktop	SQL
Smallest cost (hardware/software/monthly maintenance)	$25k/$150k/$.95k	—	$15k/$25k/$6k	$100k/$250k/1.5%
Largest cost (hardware/software/monthly maintenance)	$300k/$1.2m/$15k	—	$200k/$250k/$4k	$500k/$1m/1.5%
Distinguishing features (supplied by vendor)	• functional enhancements without waiting for the next release • install with minimal lab disruption • fully integrated billing with low upfront costs	• sample tracking, turnaround-time monitor, more • connectivity to point-of-care and lab automation systems • integrated clinical system with multi-entity functionality and outreach support	• standardized screens and functions make the system easy to use • total system integration eliminates duplication of work effort • StarLab is developed from the clinical perspective with an emphasis on results reporting	• product features and functions • company commitment to support and service and demonstrated client satisfaction • lab automation connectivity and point-of-care interfaces
*other=sales, marketing, administration, and other company functions				

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Laboratory information systems

Part 14 of 14	Sunquest Information Systems Ken A. Kark info@sunquest.com 4801 E. Broadway Blvd. Tucson, AZ 85711 520-570-2000 www.sunquest.com	Sysware Healthcare Systems Inc. Atman Trivedi atman@sysware1.com 26677 W. 12 Mile Rd. Southfield, MI 48034 248-888-7701 www.sysware1.com	Triple G Systems Group Inc. Angelica Lau angelica.lau@tripleg.com 3100 Steeles Ave. East, Ste. 600 Markham, Ontario, L3R 8T3, Canada 905-305-0041 www.tripleg.com	Triple G Systems Group Inc. Angelica Lau angelica.lau@tripleg.com 3100 Steeles Ave. East, Ste. 600 Markham, Ontario, L3R 8T3, Canada 905-305-0041 www.tripleg.com
Name of system	Sunquest Commercial Lab*	PowerLab	TriWin	Ultra
No. of contracts for sites operating LIS • Hospital/independent lab contracts in U.S. • Clinic or group practice contracts in U.S. • Other contracted U.S. sites/contracts for foreign sites Contracts signed as of 8/1/01 but LIS not yet operational (hospitals/independent labs/other sites)	46 8/37 1 0/0 —	17 1/12 0 3/1 3 (0/1/2)	73 2/1 0 0/70 2 (2/0/0)	42 6/6 0 0/30 7 (6/1/0)
No. of sites operating LIS First/most recent LIS installation	89 1982/2000	16 1990/2001	130 1991/2001	250 1990/2001
Staff to develop/install/support/other* in entire firm Staff to develop/install/support/other* in LIS division	28/12/14/30 14/4.5/5/10	8/10/10/7 —	50/35/16/30 4/4/2/5	50/35/16/30 46/31/14/25
No. of terminals/workstations in live sites (min.–max.)	10–1,000+	5–200	1–125	21–500+
• Central hardware	IBM RISC, Compaq, DEC Alpha	Dell server, workstations	hardware independent	Unix server
• Central hardware redundant/fault-tolerant? • Terminals/workstations • Workstation set-up	yes Compaq, DEC VT 480 or compatible dumb terminal supported	yes Dell only PC workstation supported	yes hardware independent only PC workstation supported	yes Windows NT, 2000 only PC workstation supported
• Software programming language(s) • Operating system(s) • Database system(s) • System includes full transaction logging?	Open M VMS, Unix Open M yes	C++, Clarion, Visual Basic, Java Windows NT SQL yes	Visual Basic Windows NT, 2000, Novell Netware Advantage yes	C, Unify Vision, Unify 4GL, Unify Accell, Java, Visual Basic Unix, Windows NT, 2000, 98, 95 Unify Dataserver yes

Features (listed as a percentage of live installations,
  available but no installations, or not available)
• Chemistry/hematology
• Bar-coded collection labels
• Handheld devices for bedside-positive patient ID
• Microbiology
• Blood bank donor center
• Blood bank transfusion service
• Surgical pathology
• Cytology
• HIS interface
  —A/D/T
  —Order entry
  —Result reporting
• Ad hoc reporting
• Rules-based system
• Utilization management
• Outreach/commercial laboratory
• Compliance checking
• Accounts receivable
• Materials management/inventory
• Test partition
• Remote faxing/printing
• Physician office outreach
	
	100%
	100%
	not available
	100%
	not available
	not available
	100%
	95%
	
	100%
	100%
	100%
	100%
	100%
	100%
	100%
	100%
	90%
	13%
	100%
	100%
	not available
		
		100%
		100%
		available but not installed
		75%
		available but not installed
		available but not installed
		25%
		25%
		
		50%
		50%
		50%
		100%
		100%
		100%
		80%
		25%
		75%
		not available
		100%
		100%
		25%
			
			85%
			70%
			not available
			25%
			available but not installed
			10%
			10%
			5%
			
			80%
			5%
			5%
			30%
			available but not installed
			available but not installed
			20%
			available but not installed
			20%
			5%
			not available
			70%
			available but not installed
				
				100%
				100%
				available but not installed
				80%
				not available
				10% (foreign installs)
				40%
				40%
				
				50%
				50%
				50%
				75%
				75%
				75%
				75%
				10%
				80%
				not available
				100%
				100%
				25%

Complete LIS ASP solution? ASP for physician order entry/result reporting? Method of charging for ASP service Client software required ASP information conduit Client contracts supported from data center not operated by client How data center is operated	yes no monthly subscription browser-based or uses dumb terminals operates over Internet 12 by vendor	yes yes fixed fee browser-based operates over Internet 2 by vendor	no no — — — — —	yes yes transaction-based browser-based requires use of private, dedicated circuit 0 by vendor
LIS provides surveillance data to public health agencies using CDC/HL7/LOINC/SNOMED standard: • Microbiology data • Tumor diagnosis/registry data	 available but not installed available but not installed	 available but not installed available but not installed	 not available not available	 available but not installed available but not installed
ASTM/HL7 interface? Hospital/integrated health care systems interfaced Physician office management systems interfaced Automated lab transportation systems interfaced	yes Cerner, SMS, IBAX, ARUP, Specialty Labs, Meditech, IDX, Compucare, others — planned (to Lab InterLink/Labotix, Beckman Coulter IDS, or as needed by customers)	yes Cloverleaf, Cerner, Dynamic, Keane, Phoenix, LabCorp, Quest PMSI, Medical Manager available but not yet operational	yes Meditech, Cerner, McKesson, SMS, MDS Labs, Hemocare, Health Vision, Momentum, MediSolution Jonoke, Clinicare, Health Screen Lab InterLink/Labotix, MDS AutoLab	yes Meditech, SmithKline, EDS, Epic, McKesson, SMS, Hemocare, Ulticare, Health Vision, Affinity, IDX, Phamis, MediSolution MedicaLogic, iMcKesson, LDX Lab InterLink/Labotix, MDS AutoLab, Beckman Coulter IDS, Sysmex
Software provides indexed field in each test definition for LOINC code? Provide LOINC dictionary for each new installation?	no no	yes yes	yes no	yes no
LIS permits use of SNOMED II/SNOMED International?	yes/no	yes/yes	no/no	yes/yes
Market modules for other hospital departments? Percentage of LIS installations stand-alone	no —	yes 100%	no —	no —
No. of different lab instruments interfaced with LIS Source code?/User group? User programming in separate partition? Query language to get info. from LIS database	300+ yes/yes yes SQL	200+ escrow/no yes SQL	250+ escrow/yes no Crystal Report Writer	200+ yes/yes yes SQL, ODBC
Smallest cost (hardware/software/monthly maintenance) Largest cost (hardware/software/monthly maintenance)	$35k/$75k/$1.6k $1.8m/$2.25m/$60.75k	$20k/$85k/$.8k $200k/$350k/$9k	$10k/$20k/1.3% of total software $150k/$250k/1.3% of total software	$100k/$150k/$2k n/a/$1.5m+/$28k+

Distinguishing features
  (supplied by vendor)
	• definable medical necessity logic
	• proven high-volume processing and
	  extensive outreach capability
	• complete line of integrated financial
	  management system products
		• easy to learn and use
		• complete integrated solution
		• low maintenance overhead
			• integrated LIS
			• implementation time frames
			• price/performance
				• high-volume relational database
				• integrated LIS
				• large multi-site labs processing more
				  than 10,000 patients per day, validated for
				  more than 25,000

*other=sales, marketing, administration, and other company functions	* information provided is from CAP TODAY's 2000 LIS survey			

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