**Part 1 of 9**

**Allscripts**
Susan Eben, susan.eben@allscripts.com
Chicago, IL
www.allscripts.com

**ApolloLIMS (formerly Common Cents Systems)**
Brett Paulus, brett.paulus@apollolims.com
Brentwood, TN
615-834-7666 www.apollolims.com

**Aspyra LLC**
Gary Bennett, gbennett@aspyra.com
Jacksonville, FL
800-437-9000 www.aspyra.com

**Name of laboratory information system**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Contact Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allscripts</td>
<td>Susan Eben, <a href="mailto:susan.eben@allscripts.com">susan.eben@allscripts.com</a></td>
</tr>
<tr>
<td>ApolloLIMS</td>
<td>Brett Paulus, <a href="mailto:brett.paulus@apollolims.com">brett.paulus@apollolims.com</a></td>
</tr>
<tr>
<td>CyberLabs</td>
<td>Gary Bennett, <a href="mailto:gbennett@aspyra.com">gbennett@aspyra.com</a></td>
</tr>
</tbody>
</table>

**How LIS functionality is deployed**

<table>
<thead>
<tr>
<th>Company</th>
<th>Available as</th>
<th>Source Code/User Group that meets on established schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allscripts</td>
<td>as an ASP and cloud based</td>
<td>escribe (via conference call)</td>
</tr>
<tr>
<td>ApolloLIMS</td>
<td>available as local server/software, ASP, and cloud based</td>
<td>* (via conference call)</td>
</tr>
<tr>
<td>CyberLabs</td>
<td>available as local server/software and cloud based</td>
<td>escribe (via conference call)</td>
</tr>
</tbody>
</table>

**Standard software maintenance fee covers periodic updates to LIS**

<table>
<thead>
<tr>
<th>Company</th>
<th>Available as</th>
<th>Source Code/User Group that meets on established schedule</th>
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<tbody>
<tr>
<td>Allscripts</td>
<td>yes</td>
<td>escribe (via conference call)</td>
</tr>
<tr>
<td>ApolloLIMS</td>
<td>yes (specific references supplied on request)</td>
<td>* (via conference call)</td>
</tr>
<tr>
<td>CyberLabs</td>
<td>yes (list of comparable sites but prospective clients must sign a nondisclosure agreement)</td>
<td>escribe (via conference call)</td>
</tr>
</tbody>
</table>

**Schedule for providing standard updates to clients**

<table>
<thead>
<tr>
<th>Company</th>
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</tbody>
</table>

**Fee for software modifications to comply with federal regulations and laws**

<table>
<thead>
<tr>
<th>Company</th>
<th>Available as</th>
<th>Source Code/User Group that meets on established schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allscripts</td>
<td>yes</td>
<td>escribe (via conference call)</td>
</tr>
<tr>
<td>ApolloLIMS</td>
<td>yes (information is not confidential)</td>
<td>* (via conference call)</td>
</tr>
<tr>
<td>CyberLabs</td>
<td>yes (list of comparable sites but prospective clients must sign a nondisclosure agreement)</td>
<td>escribe (via conference call)</td>
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</tbody>
</table>

**Other vendors’ lab systems to which LIS can bidirectionally interface**

<table>
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<tr>
<th>Company</th>
<th>Available as</th>
<th>Source Code/User Group that meets on established schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allscripts</td>
<td>Cerner, Meditech, Epic, Orchard, Olympus, Roche, Abbott, Tecan, Bayer, others</td>
<td>any with HL7 or CSV file drop group</td>
</tr>
<tr>
<td>ApolloLIMS</td>
<td>Beckman, Siemens, Ortho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer, others</td>
<td>any that can communicate via HL7 or CSV file drop group</td>
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<td>CyberLabs</td>
<td>Beckman, Siemens, Ortho, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer, others</td>
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**LIS uses third-party middleware for LIS–instrument interfaces**

<table>
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<tr>
<td>CyberLabs</td>
<td>yes</td>
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</table>

**LIS allows for image capture, display, reporting**

<table>
<thead>
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**Distinguishing product features (supplied by company)**

<table>
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All information is supplied by the companies listed. The tabulation does not represent an endorsement by the CAP.

Product guide editors: Raymond D. Aller, MD, and Dennis Wisten
Laboratory Information Systems

Part 3 of 9

Name of laboratory information system

Polytech LIS

How LIS functionality is deployed

Company provides list of client sites to potential customers on request

available as an ASP and cloud based

available as local server/software

available as local server/software

Standard software maintenance fee covers periodic updates to LIS

Schedule for providing software updates to clients

Clients must install updates in specified timespans to avoid maintenance fee increase

Fee for software modifications to comply with federal regulations and laws

all updates every 6–9 months

no standard (no charge)

no standard (no charge)

First ever/Most recent LIS installation (latter based on August 2021 survey deadline)

1983/April 2021 (last update: February 2021, version 8.6.4)

180/11

180/11

Total No. of contracts for sites operating LIS/No of sites by services at Aug. 2020–July 2021

No standard (no charge)

no (partial list of comparable sites with no restrictions regarding its use)

yes (partial list of comparable sites with no restrictions regarding its use)

Percentage of high-volume* U.S. sites installed/Low-volume** U.S. sites installed

11

21

Foreign countries where company actively markets LIS

Philippines, Africa (installed in Dubai, Canada, Caribbean, Ethiopia, Philippines, other countries)

none (installed in Dubai, Lngonee, Virgin Islands, Tanzania, Iran)

none (installed in Dubai, Lngonee, Virgin Islands, Tanzania, Iran)

Languages (other than English) offered on LIS

any supported by Windows operating system

none

none

No. of employees in entire company

9

1,600

1,600

Central hardware or service type

any (client supported)

client/server (business grade)

client/server (business grade)

Operating system(s)

C++, PHP, HTML, JavaScript

Windows

Net

Databases and tools/System includes full transaction logging

Pervasive, MySQL/yes

Microsoft SQL Server 2019/yes

Microsoft SQL Server 2019/yes

Features/modules incorporated in product:

• Chemistry/Hematology/bar-coded collection labels

• Microbiology/Pathology/clinical microbiology

• Blood bank donor/Blood bank transfusion

• Surgical pathology/Cytology

• Molecular pathology/Genealogy/Flow cytometry

• EHR interface for admission/discharge/transfer (ADT)

• EHR interface for order entry/EHR interface for results reporting

• EHR interface for result package results in PDF format

• EHR interface for result package results in CD/DVD format

• Ad hoc reporting/Rules-based system

• Management and statistical reporting/Connection to provider offices (POL links)

• Web portal to physician offices/Patient Web portal

• Commercial lab functionality/Compliance checking

• Billing and accounts receivable

• Materials management and inventory/Test partition

• Remote faxing/Remote printing

• HIPAA-standard transaction formats

• Web-based remote inquiry of reports/Web access for order entry

• Specimen management and tracking/GA tools/Environmental health

• Interfaces for sending orders from primary lab to reference lab, handling results return, and status updates

• Business analytics/Clinical analytics

• Ability to schedule patient for test collection/Patient-based test registration

• Ability to coordinate with nurses for collections/phlebotomists cannot perform

• Interfaces with public health databases using ELR as part of Promoting Interoperability

• Contact tracing applications interfaced or embedded in LIS

• Results for tests run using different methods are annotated with method on clinical reports

LIS can generate analytics for tests based on specific data elements

yes (based on all data in database)

yes (based on all data in database)

yes (based on all data in database)

LIS can perform artificial intelligence with LIS

—

no

—

LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., I2K 25.5, LOINC, SNOMED, etc.) for:

• Microbiology (culture and sensitivity)

• Other reportable diseases (blood lead, immunology, etc.)

• Tumor diagnosis and case data to regional cancer registry***

• 90% of work done on one screen

• 90% of work done on one screen

• 90% of work done on one screen

Other vendors’ lab systems to which LIS has direct bidirectional interface

any system that supports HL7 interfacing

NovPath, Ap Easy, Center, Epic, Orchard, Sunquest, Psyche, SimpleLIMS, Hex, others

Beckman Coulter, Siemens, Syneix, Roche Diagnostics, Abbott Diagnostics, Toscan, Bayer combination of direct interfaces and third-party middleware (Data Innovations, Telor, others)

Orchard Software

Beckman Coulter, Siemens, Ortho, Syneix, Scientific, Olympus, Roche, Abbott, Bayer

no (interface directly)

Lab automation systems or workstations to which LIS has a direct interface

Ortho Clinical Diagnostics

Ortho Clinical Diagnostics

Ortho Clinical Diagnostics

LIS uses third-party middleware for LIS-instrument interfaces

no (interface directly)

no (interface directly)

no (interface directly)

LIS supports use of SNOMED CT for all cases

—

—

—

LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies

—

—

—

LIS allows for image capture, display, reporting

—

—

—

LIS provides indexed field in each test definition for LOINC code

—

—

—

Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside

—

no

no

Source code/user group that meets on established schedule

—

—

—

Qualified users or third parties can modify or augment LIS functions or features Methods by which users can tailor LIS in their own setting

no/no

no (all modifications made by vendor)

no (all modifications made by vendor)

Distinguishing product features (supplied by company)

• unlimited custom reporting with built-in report generator; create, edit, and personalize reports within the LIS

• user friendly; 90% of work done on one screen

• unlimited custom reporting with built-in report generator; create, edit, and personalize reports within the LIS

NOVEMBER 2021

65
LIS automatically ingests and applies electronic updates of tables and rules. LIS uses third-party middleware for LIS-instrument interfaces. No direct interface for all instrument interfaces (Data Innovations). No direct interface for all instrument interfaces.

- Languages (other than English) offered on LIS:
  - Norwegian, French, German, Finnish, Dutch, Danish
  - None (planned for future)
  - Beckman Coulter, Siemens, Ortho, Sysmex, Thermo

- Remote-facing/Remote printing:
  - Installed at client sites (all 3 features)
  - Installed at client sites (all 3 features)
  - Installed at client sites (all 3 features)

- HIPAA-standard transaction formats:
  - Installed at client sites
  - Installed at client sites
  - Installed at client sites

- Management and statistical reporting/Connection to provider offices (POL links):
  - Installed at client sites
  - Installed at client sites
  - Installed at client sites

- EHR interface for order entry/EHR interface for results reporting:
  - Installed at client sites
  - Installed at client sites
  - Installed at client sites

- EHR interface for order entry/Order entry interface:
  - Installed at client sites
  - Installed at client sites
  - Installed at client sites

- LIS can interface to third-party positive patient ID software to identify patients and blood specimens:
  - Installed at client sites
  - Installed at client sites
  - Installed at client sites

- LIS can provide a list of client sites to potential customers on request:
  - Yes (complete list but prospective clients must sign a nondisclosure agreement)
  - Yes (complete list but prospective clients must sign a nondisclosure agreement)
  - Yes (complete list but prospective clients must sign a nondisclosure agreement)

- Distinguishing product features (supplied by company):
  - Low cost
  - Reliability and performance
  - Seamless native data transfer from LIS to EHR without need for interfaces or translation tables
  - One product across all laboratory disciplines: core laboratory, microbiology, flow cytometry, surgical pathology, cytology, cyogenetics, more
  - Fully integrated EHR and CNC-certified HIT
  - On-site and remote training and support for all end users
  - Formerly CPSI System

- Total No. of contracts for sites operating LIS/No. of sales between Aug. 2020–July 2021:
  - 9/16 (1/1-10/30)
  - 9/16 (1/1-10/30)
  - 9/16 (1/1-10/30)

- Note: a dash as an answer means company did not respond or question is not applicable.
**Laboratory Information Systems**

**Part 5 of 9**

<table>
<thead>
<tr>
<th>Company</th>
<th>Webpage</th>
<th>Key Features</th>
</tr>
</thead>
</table>
| Beckman Coulter | [www.beckmancoulter.com](http://www.beckmancoulter.com) | - Molecular pathology/Cytogenetics/Flow cytometry
- Interfaces for sending orders from primary lab to reference lab, handling results
- Web-based remote inquiry of reports/Web access for order entry
- Interfaces for sending orders from primary lab to reference lab, handling results
- Interfaces for sending orders from primary lab to reference lab, handling results
- Ad hoc reporting/Rules-based system
- EHR interface for order entry/EHR interface for results reporting
- EHR interface for admission/discharge/transfer (ADT)
- Reliable, flexible, stable multi-featured LIS for all sizes and types of labs, including molecular and toxicology
- One system manages entire process, including ordering, remote sample collection, routing, QC, more
- Generic interfaces for connecting a new analyzer, tool, user-defined interfaces, dictionary settings, user programming
- One system manages entire process, including ordering, remote sample collection, routing, QC, more
- Fully integrated LIS, including genetics, pathology, and blood transfusion (the latter not available in the U.S.)
- Integrated Laboratory analytics module |

**Company Information**

- **Name of laboratory information system:** Beckman Coulter
- **Programming language(s):** Perl, Python, C++, Java, C
- **Operating system(s):** Windows, Linux
- **Database and tools/System includes full transaction logging:** installed at client sites/installed at client sites/installed at client sites/installed at client sites/installed at client sites/installed at client sites
- **Features/modules incorporated in product:**
  - Basic laboratory functions
data integration and management
- **Qualifying users or third parties:** yes (client users and designated third parties)
- **Source code/User group that meets on established schedule:** no/no escrow/no escrow/no (via webinar, conference call, and in person)
- **Other vendors’ tabular systems to which LIS can be bidirectionally interface:** Beckman Coulter, Siemens, Syneva, Thermo Scientific, Olympus, Chiron, Roche, Abbott, Tecan, Bayer, others
- **Lab automation systems or workcells to which LIS has a direct interface:** no
- **Company provides LIS clients with positive patient ID software to identify patients:** no
- **Company provides list of client sites to potential customers on request:** yes (partial list of comparable sites with no restrictions)
- **Company provides list of client sites to potential customers on request:** yes (complete list with no restrictions regarding its use)
- **Company provides list of client sites to potential customers on request:** available as local server/software and cloud based
- **Company provides list of client sites to potential customers on request:** depends on type of contract
- **Company provides list of client sites to potential customers on request:** 3 times per year
- **Company provides list of client sites to potential customers on request:** no standard (no charge)
<table>
<thead>
<tr>
<th>Feature</th>
<th>LabWare</th>
<th>LiqLab Information Systems</th>
<th>NovoPath</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>Olympus America, Roche Diagnostics, Abbott, Tecan</td>
<td>Sony</td>
<td>Datascope, Siemens, Siemens, Thermo Scientific, Abbott</td>
</tr>
<tr>
<td><strong>Contact Information</strong></td>
<td><a href="mailto:Sales@novopath.com">Sales@novopath.com</a></td>
<td><a href="mailto:Sales@novopath.com">Sales@novopath.com</a></td>
<td><a href="mailto:Sales@novopath.com">Sales@novopath.com</a></td>
</tr>
</tbody>
</table>

### Laboratory Information Systems

#### Part 6 of 9

#### Name of laboratory information system
- LabWare
- LiqLab Operating Platform 2021
- NovoPath

#### How LIS functionality is deployed

**Company**

- Provides list of client sites to potential customers on request
  - Available as local server/software and cloud based
- No full list of comparable sites with no restrictions regarding its use

**Standard software maintenance fee covers periodic updates to LIS**

- All updates
  - Maintenance patches 3–4 times per year; new modules 6–10 times per year
  - No standard (no charge)
  - No standard (no charge)

**First ever/Most recent LIS installation**

- 1999/2021 (last update: August 2021)
  - LiqLab Operating Platform 2021
- 2006/2021 (last update: August 2021)
  - NovoPath

**Total No. of contracts for sites operating LIS/No. of sales between Aug. 2020–July 2021**

- 217/13
  - 217/13
  - 3/2

**Percentage of high-volume U.S. sites installed**

- 60%/55%
  - 60%/55%
  - 3/2

**Languages (other than English) offered on LIS**

- Latin languages

**Central hardware or service type**

- Database server: Sun, Unix, Linux, Windows, others
  - Java,.Net, Smalltalk
  - Java, Macintosh

**Programming language(s)**

- Application: Windows
  - Oracle, SQL server, PostgreSQL/yes
  - Microsoft SQL/yes

**Operating system(s)**

- Databases and tools/System includes full transaction logging
  - Java
  - Windows

**Features/modules included in product**

- Microbiology/Public health microbiology
  - Installed at client sites (all 3 features)
  - Not available/not available

**Inclusive user license provides access to fully integrated tools for all clinical laboratory disciplines**

- Yes (based on all data in database)
  - Yes (based on all data in database)
  - Yes (based on all data in database)

**Configuration empowers customers to quickly set up settings, user programming, rules engine, others**

- Yes (based on all data in database)
  - Yes (based on all data in database)
  - Yes (based on all data in database)

**Distinguishing product features (supplied by company)**

- Configurability empowers customers to quickly respond to changing technology, business needs
  - Comprehensive and enterprise-grade SaaS that integrates AP, CP, MDx, RCM, and direct-to-consumer ordering in a single integrated infrastructure
- Inclusive user license provides access to fully integrated tools for all clinical laboratory disciplines and research
  - Aligned pricing model and no upfront licensing fees

---

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LABORATORY INFORMATION SYSTEMS

Orchard Software Corp.  
Steve Harwitz  
Carmel, IN  
800-856-1948  
www.orchardsoftware.com

Orchard Software Corp.  
Steve Harwitz  
Carmel, IN  
800-856-1948  
www.orchardsoftware.com

Pathagility  
Mark McGuin  
Conway, AR  
888-222-2792  
www.pathagility.com

Name of laboratory information system  
Orchard Enterprise Lab®  
Orchard Harvest LIS  
WorkPath

How LIS functionality is deployed  

Company provides list of client sites to potential customers on request  
available as local server/software, ASP, and cloud-based (partial list of comparable sites with no restrictions regarding its use)

Standard software maintenance fee covers periodic updates to LIS  
Schedule for providing standard software updates to clients  
- every 3 months  
- no standard (no charge)

- Clients must install updates in specified timeframes to avoid maintenance fee increase  
- Fee for software modifications to comply with federal regulations and laws  
- yes  
- no (partial list of comparable sites with no restrictions regarding its use)

First ever most recent LIS installation (last based on August 2021 survey deadline)  
1993/4 April 2021 (last update: July 2021, version v6)

- Total No. of contracts for sites operating LIS: No. of sites at August 2020–July 2021: 41/14  
- Total No. of sites operating LIS: U.S. hospitals/U.S. independent labs/U.S. clinics or practices/U.S. public health labs/Others/U.S. sites/foreign sites: 41/2/30/0/9/universities, drug testing, pain management, COVID-19

- No. of LIS installations between August 2020–July 2021: 14  
- Percentage of high-volume* U.S. sites installed/univ/other*: 100%/0

- Foreign countries where company actively markets LIS: none

- Languages (other than English) offered on LIS: none

- No. of employees in entire company: 264

Central hardware or service type  

Programming language(s):  
HP Business Class  
SQL, Java  
HP Business Class in a client/server environment, Saga 4th Dimension with portions in C, C++, HTML; some modules in Java  
Windows 7+, Windows Server 2008+  
SGL/yes

Operating system(s):  
Windows  
Microsoft SQL/yes  
4D/yes

Databases and tools/System includes full transaction logging  

Features/modules incorporated in product:  
- Chemistry/Hematology/Bar-coded collection labels  
- Microbiology/Public health microbiology  
- Blood bank donor/Blood bank transfusion  
- Surgical pathology/Cytology  
- Molecular pathology/Genetics/Flow cytometry  
- EHR interface for admission/discharge/transfer (ADT)  
- EHR interface for order entry/EHR interface for results reporting  
- EHR interface for packaging results into PDF format  
- EHR interface for packaging results into CDAX format/CDAX format  
- Ad hoc reporting/Rules-based system  
- Management and statistical reporting/Connection to provider offices (POL links)  
- Web portal to physician offices/Patient Web portal  
- Commercial lab functionality/Compliance checking  
- Billing and accounts receivable  
- Materials management and inventory/Test partitioning  
- Remote faxing/Remote printing  
- HIPAA-standard transaction formats  
- Web-based remote inquiry of reports/Web access for order entry  
- Specimen management and tracking/DA tools/Environmental health  
- Interfaces for sending orders from primary lab to reference lab, handling results, return, and status updates  
- Business analytics/Clinical analytics  
- Ability to schedule patient for test collection/Patient-based test registration  
- Ability to coordinate with nurses for collections/phlebotomists cannot perform  
- Interfaces with public health databases using ELR as part of Promoting Interoperability  
- Contact tracing applications interfaced or embedded in LIS  
- Results for tests run using different methods are annotated with method on clinical reports  
- LIS can generate analytics for tests based on specific data elements  
- Ability to use artificial intelligence with LIS  
- LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for  
- Microbiology (culture and sensitivity)  
- Other reportable diseases (blood lead, immunology, etc.)  
- Tumor diagnosis and case data to regional cancer registry***

Other vendors' lab systems to which LIS can bidirectionally interface  

Lab automation systems or workcells to which LIS has a direct interface  

LIS uses third-party middleware for LIS–instrument interfaces  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee, yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS supports use of SNOMED CT for all cases  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS automatically fetches and applies electronic updates of tables and rules  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS allows for image capture, display, reporting  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS provides indexed field in each test definition for LOINC code  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS can request updates from LIS vendors regarding its use  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS can report clinical lab results to public health systems, departments, and reference labs  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS provides list of client sites to potential customers on request  
- yes (partial list of comparable sites with no restrictions regarding its use)

LIS uses any software maintenance fee to cover periodic updates to LIS  
- yes (partial list of comparable sites with no restrictions regarding its use)

- No. of employees in entire company: 264

LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for  
- Microbiology (culture and sensitivity)  
- Other reportable diseases (blood lead, immunology, etc.)  
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- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS supports use of SNOMED CT for all cases  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS automatically fetches and applies electronic updates of tables and rules  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS allows for image capture, display, reporting  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS provides indexed field in each test definition for LOINC code  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS can request updates from LIS vendors regarding its use  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS can report clinical lab results to public health systems, departments, and reference labs  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS provides list of client sites to potential customers on request  
- yes (partial list of comparable sites with no restrictions regarding its use)

LIS uses any software maintenance fee to cover periodic updates to LIS  
- yes (partial list of comparable sites with no restrictions regarding its use)

- No. of employees in entire company: 264

LIS can report lab data to public health agencies via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for  
- Microbiology (culture and sensitivity)  
- Other reportable diseases (blood lead, immunology, etc.)  
- Tumor diagnosis and case data to regional cancer registry***

Other vendors' lab systems to which LIS can bidirectionally interface  

Lab automation systems or workcells to which LIS has a direct interface  

LIS uses third-party middleware for LIS–instrument interfaces  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS supports use of SNOMED CT for all cases  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

LIS automatically fetches and applies electronic updates of tables and rules  
- yes, via interface to Orchard Collect to identify patients and/or blood specimens; additional fee

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LIS provides list of client sites to potential customers on request  
- yes (partial list of comparable sites with no restrictions regarding its use)

LIS uses any software maintenance fee to cover periodic updates to LIS  
- yes (partial list of comparable sites with no restrictions regarding its use)

- No. of employees in entire company: 264

Source code/user interface that meets on established schedule  

Qualified users or parties can modify or augment LIS functions or features  

Methods by which users can tailor LIS in their own setting  

Distinguishing product features (supplied by company)  

- generate >500,000 billed tests annually or >300 bed hospitals, or >500 requisitions per day  
- generate >500,000 billed tests annually or >300 bed hospitals, or >500 requisitions per day  
- generate >500,000 billed tests annually or >300 bed hospitals, or >500 requisitions per day  
- generate >500,000 billed tests annually or >300 bed hospitals, or >500 requisitions per day  

*using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed.

CAP TODAY  
NOVEMBER 2021  
69

All information is supplied by the companies listed. The tabulation does not represent an endorsement by the CAP.
Databases and tools/System includes full transaction logging 
SQL/yes Oracle, OAS, Tomcat, ServiceMix, others/yes GT.M, KB_SQL/yes

Programming language(s) 
ASP.Net C, C++, C#, Java

LIS can report lab data to public health agencies via automated electronic transmission

Central hardware or service type
Dell servers

Foreign countries where company actively markets LIS

• Tumor diagnosis and case data to regional cancer registry*** yes yes no
• Other reportable diseases (blood lead, immunology, etc.) yes yes yes

LIS can interface to third-party positive patient ID software to identify

Medical pathology/Cytogenetics/Flow cytometry installed at client sites/installed at client sites available via SoftGenePortal†/available via SoftFlowCytometry†

• EHR interface for order entry/EHR interface for results reporting installed at client sites/installed at client sites installed at client sites/installed at client sites installed at client sites/installed at client sites

• Billing and accounts receivable installed at client sites available via SoftBill,† SoftA/R† available via Seacoast’s Easy Pay

• Interface for printing devices available but not installed available via SoftPrint†/available via SoftTotalQC†/available via SoftGenePortal†/available via SoftMolecular†/available via SoftPathology†/available via SoftFlowCytometry†

• Information for providing standard software updates to clients variable upgrades recommended every 3-4 years (optional) annually

• Client must install updates in specified timespans to avoid maintenance fee increase no yes (LOINC, CPT, CAP) yes (LOINC, ICD-10, SNOMED)

• Microscopy (culture and sensitivity)
yes yes yes

• Other reportable diseases (blood lead, immunology, etc.) yes yes no

• Tumor diagnosis and case data to regional cancer registry*** no yes (LOINC, CPT, CAP) no

• Other vendors’ lab systems to which LIS can bidirectionally interface no yes (provide current LOINC dictionary with install) no

• Lab automation systems or workflocks to which LIS has a direct interface yes yes yes yes

• LIS uses third-party middleware for LIS-instrument interfaces no yes yes yes

• LIS supports use of SNOMED CT for all cases no yes yes yes

• LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies yes yes yes yes

• LIS allows for image capture, display, reporting yes yes yes yes

• LIS provides indexed field in each test definition for LOINC code yes yes yes yes

• Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside yes yes yes yes

• LIS can interface to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside no yes yes yes

• Source code/user group that meets on established schedule no/no escrow/yes (in person) no/no

• Qualified users or third parties can modify or augment LIS functions or features yes yes yes yes

• Distinguishing product features (supplied by company) yes yes yes yes

• First ever/Most recent LIS installation (latter based on August 2021 survey deadline) 1984/July 2021 (last update: July 2021, version 10.3)

• Billing and accounts receivable installed at client sites available via SoftBill,† SoftA/R† available via Seacoast’s Easy Pay

• Interface for printing devices available but not installed available via SoftPrint†/available via SoftTotalQC†/available via SoftGenePortal†/available via SoftMolecular†/available via SoftPathology†/available via SoftFlowCytometry†

• Information for providing standard software updates to clients variable upgrades recommended every 3-4 years (optional) annually

• Client must install updates in specified timespans to avoid maintenance fee increase no yes (LOINC, CPT, CAP) yes (LOINC, ICD-10, SNOMED)

• Microscopy (culture and sensitivity)
yes yes yes

• Other reportable diseases (blood lead, immunology, etc.) yes yes no

• Tumor diagnosis and case data to regional cancer registry*** no yes (LOINC, CPT, CAP) no

• Other vendors’ lab systems to which LIS can bidirectionally interface no yes (provide current LOINC dictionary with install) no

• Lab automation systems or workflocks to which LIS has a direct interface yes yes yes yes

• LIS uses third-party middleware for LIS-instrument interfaces no yes yes yes

• LIS supports use of SNOMED CT for all cases no yes yes yes

• LIS automatically ingests and applies electronic updates of tables and rules from organizations and government agencies yes yes yes yes

• LIS allows for image capture, display, reporting yes yes yes yes

• LIS provides indexed field in each test definition for LOINC code yes yes yes yes

• Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside yes yes yes yes

• LIS can interface to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside no yes yes yes

• Source code/user group that meets on established schedule no/no escrow/yes (in person) no/no

• Qualified users or third parties can modify or augment LIS functions or features yes yes yes yes

• Distinguishing product features (supplied by company)

• true browser-based LIS with comprehensive lab and billing modules yes yes yes yes

• company customizes client Web portal, LIS, billing, and sales portal for each customer no no yes yes

• LIS allows for image capture, display, reporting yes yes yes yes

• LIS provides indexed field in each test definition for LOINC code yes yes yes yes

• Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens collected at bedside yes yes yes yes

• LIS can interface to third-party positive patient ID software to identify patients and/or blood specimens collected at bedside no yes yes yes
LABORATORY INFORMATION SYSTEMS

Part 9 of 9

Sunquest Information Systems
S. Clowes
stephanie.clowes@sunquestinfo.com
Tucson, AZ
520-570-2000 www.sunquestinfo.com

XFIN
Joseph Nollor
jolllor@xfin.com
San Diego, CA
858-783-5700 www.xfin.com

Name of laboratory information system
Sunquest Laboratory
XFIN LIS

How LIS functionality is deployed
available as local server/software, ASP, and cloud based
available as a cloud-based offering

Company provides list of client sites to potential customers on request
yes (partial list of comparable sites with no restrictions regarding its use)
yes (partial list of comparable sites but prospective clients must sign a nondisclosure agreement)

Standard software maintenance fee covers periodic updates to LIS
all updates every 5–6 months
all updates monthly code updates, including new features

Schedule for providing standard software updates to clients
no standard (no charge)
yes standard (no charge)

Clients must install updates in specified timespan to avoid maintenance fee increase

Fee for software modifications to comply with federal regulations and laws

First ever/Recent LIS installation (latter based on August 2021 survey deadline)
1979/July 2021 (last update: December 2020, version 10)
2004/July 2021 (last update: August 2021, version 7.8)

Total No. of contracts for sites operating LIS/No. of sales between Aug.-2020–July 2021
5
7/20

Total No. of sites operating LIS (U.S. hospitals/Inpatient lab U.S. clinics or group practices/U.S. public health lab/Other U.S. sites/foreign sites)
—
—
—
—

Percentage of high-velocity* U.S. sites installed/Low-velocity** U.S. sites installed
70%/30%
45%/55%

Foreign countries where company actively markets LIS
Canada, Australia, New Zealand (installed in Canada, UK, Ireland, Denmark, Middle East, New Zealand, Bahamas)
Africa, Asia, Europe (installed in UK, Holland, China, Russia, Tanzania, Ethiopia, Haiti)

Languages (other than English) offered on LIS

No. of employees in entire company
—
484

Central hardware or service type
IBM, virtual servers
ASP
câ€”Net,

Operating system(s)

Programming language(s)

Database(s) and tools/System includes full transaction logging

Features/modules incorporated in product:

• Chemistry/Hematology/bar-coded collection labels
• Microbiology/Public health microbiology
• Blood bank donor/Blood bank transfusion
• Surgical pathology/Cytology
• Molecular pathology/Genetics/Flow cytometry
• ERH interface for admission/discharge/transfer (ADT)
• ERH interface for order entry/ERH interface for results reporting
• ERH interface for packaging results into PDF format
• ERH interface for packaging results into COAD format
• Ad hoc reporting/Rules-based system

Management and standard reporting/Connection to provider offices (POL links)

Web portal to physician offices/Patient Web portal

features

• Commercial lab functionality/Compliance checking
• Billing and accounts receivable
• Materials management and inventory/Test partition
• Remote faxing/Remote printing
• HIPAA-standard transaction formats
• Web-based remote inquiry of reports/Web access for order entry
• Specimen management and tracking/IT tools/Environmental health
• Interfaces for sending orders from primary lab to reference lab, handling results return, and status updates

• Business analytics/ Clinical analytics
• Ability to schedule patient for test collection/Patient-based test registration
• Ability to coordinate with nurses for collections/phlebotomists cannot perform
• Interfaces with public health databases using ELR as part of Promoting Interoperability
• Contact tracing applications interfaced or embedded in LIS
• Results for tests run using different methods are annotated with method on clinical reports

• Accuracy of data entered into LIS vs data output from LIS
• LIS can generate analytics for tests based on specific data elements

Ability to use artificial intelligence with LIS

LIS can report lab data to public health agency via automated electronic transmission using specified formats (e.g., HL7 2.5.1, LOINC, SNOMED, etc.) for:

• Microbiology (culture and sensitivity)
• Other reportable diseases (blood lead, immunology, etc.)
• Tumor diagnosis and case data to regional cancer registry***

Other vendors’ lab systems to which LIS can bidirectional interface

Lab automation systems or workcells to which LIS has a direct interface

LIS uses third-party middleware for LIS–instrument interfaces

LIS supports use of SNOMED CT for all cases

LIS uses automated ingest and applies electronic updates of tables and rules from organizations and government agencies

LIS allows for image capture, display, reporting

LIS provides indexed field in each test definition for LOINC code

Company provides LIS clients with positive patient ID software to identify patients and/or blood specimens gathered at bedside

LIS can interface to third-party positive patient ID software to identify patients and/or blood specimens gathered at bedside

Service code/user group that meets on established schedule

Qualified users or third parties can modify or augment LIS functions or features

Methods by which users can tailor LIS in their own setting

Distinguishing product features (supplied by company)

• multi-task test routing/sharing for medium to large expanding health systems and independent labs
• multi-disciplinary lab workgroup and reporting, including molecular/genetics, digital pathology, and integrated EHR

*generate <50,000 billed tests annually, or >200 bed hospital, or >500 requisitions per day **generate <500,000 billed tests annually, or >200 bed hospital, or >500 requisitions per day
***using NAACCR Pathology Laboratory Electronic Reporting, vol. 4, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable

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CAP TODAY product guides help you weigh your options when it’s time for a new instrument or software system

INSTRUMENTS

Bedside glucose testing systems
Chemistry and immunoassay analyzers for mid- and high-volume laboratories
Chemistry and immunoassay analyzers for point-of-care and low-volume laboratories
Coagulation analyzers
Hematology analyzers
Next-generation sequencing instruments
Urinalysis instrumentation

SOFTWARE SYSTEMS

Anatomic pathology computer systems
Billing/Accounts receivable/RCM systems
Laboratory information systems

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