

# SOFT LIS Interface Testing.

## SOFT DRIVER

The following capabilities are available in the existing driver for EpiCenter to SOFT SCC.

### Physical Connection Capabilities




Describe the architecture of the connection	
Is a terminal Server Used?	✓
List known terminal server types that can be used.	Itouch Xyplex
Provide known serial to RJ45 pin configurations	

### Driver Configuration

Describe the architecture of the connection	
Does the LIS have a mechanism for logging low level communications?	✓
Describe the mechanism for low level communication logging.	
Does the user/administrator have the ability to configure the driver features	✓
Describe the utility and features.	Interface Setup manager. The interface setup screen allows one to see all interfaces. EpiCenter interface appears under the "Instruments Micro" tree.
Required Setup Tables	» List of tests to be ordered » For each test, entry in driver definition for LIS code translation » List of panels and associated panel LIS codes. » Organism Translation table » Antibiotic translation table

## Demographic Download Capabilities

<p><b>Driver able to multiplex multiple instrument type orders?</b></p> <p>Tests to Perform:</p> <ol style="list-style-type: none"> <li>1. Create a test type in the LIS for each of the respective instrument Types, Phoenix, MGIT 960 and Bactec 9000.</li> <li>2. Ensure the appropriate configuration has been done to the tests to allow them to download to the EpiCenter driver. Provide a description, transaction codes and screenshots if possible, indicating how this setup is done in the LIS application. Indicate if the test has to be linked to a specific instrument or interface type, or whether all tests are potentially available to the interface.</li> <li>3. Create 3 test Patients in LIS, each with different name. Ensure all the demographic fields have some data in them. If possible take a screen shot of the data fields.</li> <li>4. For each patient, create a specimen. On each specimen, order a test for one of the 3 instrument types, Phoenix, MGIT and Bactec.</li> <li>5. Use the appropriate Host Query or Order download mechanism to obtain the demographic information from the LIS.</li> <li>6. Confirm the ASTM message is received by the EpiCenter containing the correct Patient and Specimen information.</li> </ol>	✓
<p><b>Host Query supported?</b></p> <ol style="list-style-type: none"> <li>1. With a patient and specimen record created, send a host query message to the LIS from the EpiCenter.</li> <li>2. Confirm the LIS responds to the HQ message with the appropriate patient and specimen information.</li> <li>3. Confirm whether demographics only are downloaded, or whether test orders on that specimen are also sent.</li> <li>4. Confirm the field mapping is the same with HQ as with Order Download</li> <li>5. Confirm multiple HQ on ana accession is supported</li> <li>6. Determine if an instrumented or supported test must be ordered in order for the interface to respond to the HQ.</li> </ol>	✓
<p><b>Unsolicited order download supported?</b></p> <ol style="list-style-type: none"> <li>1. On each of the tests created to download to the EpiCenter, perform the actions needed to trigger the demographic download.</li> <li>2. Confirm in the downloaded ASTM message whether the Order record contains demographic information only, or whether there is test order information (Organism ID, Isolate Number, Test Code)</li> </ol>	✓
<p><b>Unsolicited Test ordering supported?</b></p> <ol style="list-style-type: none"> <li>1. Determine whether Demographic download contains test order details (isolate number, test code, organism).</li> <li>2. If yes, indicate what differentiates a demographic download and order download</li> <li>3. If yes determine whether both are supported or only 1</li> </ol>	✓
<p><b>LIS result query?</b></p>	✗

<b>Able to order offline test?</b> <ol style="list-style-type: none"> <li>1. Create a test definition in the LIS for a manual test e.g. manual AST such as an E-Test. Ensure the appropriate configuration has been done to the tests to allow them to download to the EpiCenter driver. Provide a description, transaction codes and screenshots if possible, indicating how this setup is done in the LIS application.</li> <li>2. For a patient and specimen, order a manual test.</li> <li>3. Use the appropriate Host Query or Order download mechanism to obtain the demographic information from the LIS.</li> <li>4. How easy is it to configure the download of offline test orders to EpiCenter. How are the triggers downloaded?</li> </ol>	
<b>Able to download offline ID results to EpiCenter</b>	
<b>Able to download offline AST results to EpiCenter</b>	

## Tests to Perform:

1. Test Order download for Phoenix ID AST test
  - » Patient record fields confirmed. Confirm SOFT field names for EpiCenter field Names, and Patient ID format.
  - » Identify if any additional fields are available for download into the Patient or specimen user fields.

## Patient ASTM Field Mapping

Field Name	Sent By Soft	Sent By Epi	Coded Field	F	C	R	SOFT FIELD NAME
Patient ID	✓	✓		4	1	1	Medical Record Number
Patient Last Name	✓	✓		6	1	1	Last Name First Name
Patient First Name	✓	✗		6	2	1	
Patient Middle Name	✗	✗		6	3	1	
Patient Name Suffix	✗	✗		6	4	1	
Patient Name Title	✗	✗		6	5	1	
Date of Birth	✓	✓		8	1	1	DOB
Patient Sex Code	✓	✓		9	1	1	Sex
Admitting Physician Code	✓	✓	✓	14	1	1	<b>Attending Physician</b> (Stay Level) and Admitting Physician (Stay level)
Patient User Field 1 Code	✗		✓	15	1	1	
Patient User Field 2 Code	✗		✓	15	1	2	
Patient User Field 3 Code	✗		✓	15	1	3	
Admission Date/Time	✓	✓		24	1	1	Admission DT
Room Number	✗	✓		26	1	1	Room Bed
Hospital Service (Ward)	✓	✓	✓	33	1	1	WARD / Unit(custom name)
<b>Client Code (Facility)</b>	Need	✓	✓	34	1	1	Investigate if sent

\*Antimicrobial Code

2. Test Order download for Phoenix ID AST test
  - » Order record fields confirmed. Confirm SOFT field names for EpiCenter field Names, and Accession number format.
  - » Identify if any additional fields are available for download into the specimen user fields.
  - » Confirm Accession number appears on barcode label. Confirm whether media barcode label has the order number only encoded in the barcode, or does it contain the isolate number information when reprinted for a particular ID/AST test?
    - i. Only accession number. This is configurable in SOFT. This is typically set up for a “workstation” eg a work area like micro.
  - » Describe/define use of isolate numbers in SOFT for ordering.
3. Specific field mapping requirements
  - » Can SOFT send the required ‘Client’ code to identify the hospital the sample came from? Expected in field position P 34, 1, 1.
  - » Investigate possibility of mapping user fields (optional)
  - »

#### Order ASTM Field Mapping

Field Name	Sent By Soft	Accepted By Soft	Coded Field	F	C	R	Comments
Accession Number	✓	✓		3	1	1	Order Number
Isolate Number	✓	✓		3	2	1	Isolate Number
Organism LIS Code	✓	✓	✓	3	3	1	
Test Code	✓	✓		5	4	1	
Test Sequence Number	✗	✓		5	5	1	
Collect Date/Time	✓	✓		8	1	1	Collected DT
Collected By Code	✓	✓	✓	11	1	1	Collected By
Received By Code	✓	✓	✓	11	2	1	Received By
Receipt Date/Time	✓	✓		15	1	1	Deceived DT
Specimen Type Code	✓	✓	✓	16	1	1	Source
Body Site Code	✓	✓	✓	16	2	1	Site
Ordering Physician Code	✓	✓	✓	17	1	1	Requested By
Specimen User Field 1 Code	✗		✓	19	1	1	
Specimen User Field 2 Code	✗		✓	19	1	2	
Specimen User Field 3 Code	✗		✓	19	1	3	
Finalized Date/Time	✗	✓		23	1	1	
Isolate Classification	✗						

Billing Number: Stay #  
Antimicrobial Therapy (4 coded and 1 free text)

#### NOTE:

Need to modify the customer specific control points in their hosparams file This will enable or disable the auto download (order). Typically they prefer the host query option.

## Result Capabilities

Driver able to multiplex multiple instrument type results?	✓
Able to receive Isolate level ID/AST results?	✓
Isolate Results use Test Source field?	✓
Able to receive Test level ID/AST results?	✗
Able to receive preliminary results?	✓
Able to receive Final results?	✓
Rapid Complete "C" results supported?	✓
Inferred results supported?	✓
MGIT AST supported?	✗
Able to receive offline test results?	✓
Able to receive offline Isolate results (Kirby Bauer, E-Test)?	✓
Resistance markers treated as drug results?	✗
Resistance markers treated as separate results?	✓

### LIS testing investigation:

- » How does SOFT handle updated isolate results from a preliminary set and then a final set. Are statuses appearing differently in SOFT?
- » How does soft handle and display "X" "C" "and blank MICs.
- » How does SOFT handle inferred results/manual AST results?
- » Where are resistance markers displayed?
- » Possibility of using rapid complete and complete to speed up TTR.
- » There are the different comment on patient, specimen and isolate displayed in SOFT.

### For Investigation with Sheila:

- » When writing a rule in SOFT, does it require a result to be triggered, or can it be triggered to suppress a missing result? Not on blanks.
- » How will SOFT handle suppressed results and blank MICs? A blank MIC is added as a result to the results screen. A blank MIC and SIR value is also posted if sent.
- » Is it possible to generate chart report in SOFT without finalizing the results? IE can updated final isolate message be received and integrated in SOFT after a chart report is generated.

If drug code does not exist in SOFT, then the result does not post, even if sent.

In the instrument translation table, the test ID must exist in order for the LIS to respond with demographics for a HQ.

1. In response to an order sent from the LIS, respond with an appropriate Isolate result message containing:
  - a. Normal ID record
  - b. Normal AST record with MICs covering different result ranges
  - c. Normal AST with SIR covering S, I, R.
  - d. AST result with X
  - e. Rapid Complete record (no MIC, source test)
  - f. Inferred Result (no MIC no source test)
  - g. Resistance Markers
  - h. Specimen comments
  - i. Isolate comments
  - j. Chartable rules
2. Same as 1 but as a preliminary result. Resend with changed values as final result.
3. Same as 1 but with ast results coming from 2 different panels
4. Same as 1 but with results coming from manual AST test.

#### Isolate Result ASTM Field Mapping

Field Name	Accepted By Cerner	Coded Field	F	C	R	Comments
Result Type	✓		3	4		
Antimicrobial Code	✓	✓	3	6		
Antimicrobial Conc.	✗		3	7		
Antimicrobial Conc. Units	✗		3	8		
MIC (AST)	✓		4	2		
Organism (ID)	✓	✓*	4	2		
Final SIR (AST)	✓		4	3		
Organism Profile (ID)	✓		4	3		
Interpreted SIR (AST)	✗		4	4		
Resistance Marker 1 (ID)	✓		4	4		
Expert SIR (AST)	✗		4	5		
Resistance Marker 2 (ID)	✓		4	5		
AST Test Source	✓		4	6		
Resistance Marker 3 (ID)	✓		4	6		
Resistance Marker 4 (ID)	✓		4	7		
Resistance Marker 5-10	✓		4	8		
Comment Text	✓		4	1	1	
Comment Type	✓		5	1	1	

5. In response to an order sent from the LIS, respond with an appropriate Isolate result message containing:
  - a. MGIT G&D result preliminary ongoing
  - b. MGIT G&D test result positive preliminary
  - c. MGIT G&D result negative preliminary
  - d. MGIT G&D result negative final
  - e. Bactec G&D result preliminary ongoing
  - f. Bactec G&D test result positive preliminary
  - g. Bactec G&D result negative preliminary
  - h. Bactec G&D result negative final

#### Test Result ASTM Field Mapping

Field Name	Coded Field	F	C	R	Phoenix	MGIT	BT9000	Comments
Result Type		3	4		✓	✓	✓	
Sequence Number		3	5		✗	✗	✗	
Antimicrobial Code	✓	3	6		✓	✗	✗	
Antimicrobial Conc.		3	7		✗	✗	✗	
Antimicrobial Conc. Units		3	8		✗	✗	✗	
Test Status Code	✓	4	1		✓	✓	✓	
Result Data Field 1	✓*	4	2		✓	✓	✗	
Result Data Field 2		4	3		✓	✗	✗	
Result Data Field 3		4	4		✓	✗	✗	
Result Data Field 4		4	5		✗	✗	✗	
Result Data Field 5		4	6		✗	✗	✗	
Preliminary/Final Status		9	1	1	✓	✓	✓	
Entry Date/Time		12	1	1	✗	✗	✗	
Test Result Date/Time		13	1	1	✗	✗	✗	
Test Complete Date/Time		13	2	1	✓	✓	✓	
Instrument Type		14	1	1	✗	✗	✗	
Media Type		14	2	1	✗	✗	✗	
Protocol Length		14	3	1	✗	✗	✗	
Instrument Number		14	4	1	✗	✗	✗	
Instrument Location		14	5	1	✗	✗	✗	
Additional Result Quantity 1		15	1	1	✗	✗	✗	
Additional Result 1		15	2	1	✗	✗	✗	
Additional Result Quantity 2		15	1	2	✗	✗	✗	
Additional Result 2		15	2	2	✗	✗	✗	
Additional Result Quantity 3		15	1	3	✗	✗	✗	
Additional Result 3		15	2	3	✗	✗	✗	
Additional Result Quantity 4		15	1	4	✗	✗	✗	
Additional Result 4		15	2	4	✗	✗	✗	
Additional Result Quantity 5		15	1	5	✗	✗	✗	
Additional Result 5		15	2	5	✗	✗	✗	

\*Coded Organism field for ID tests only

BT Negatives are received and posted, but the negative result reporting to the chart is actually done elsewhere ~ Cerner Mysis.

Positives do post and the reporting triggers actions in SOFT.



### Query ASTM Field Mapping

Field Name	Accepted By Epi	Sent By Epi	Coded Field	F	C	R	Comments
Request Start Patient ID	✓	✗		3	1	1	
Request Start Accession No	✓	✓		3	2	1	
Request Start Sequence No	✓	✗		3	3	1	
Request End Patient ID	✓	✗		4	1	1	
Request End Accession No	✓	✗		4	2	1	
Request End Sequence No	✓	✗		4	3	1	
Request Test ID	✓	✗		5	1	1	
Request Test Status Code	✓	✗		5	2	1	
Request Instrument Type	✓	✗		5	3	1	
Request Instrument Number	✓	✗		5	4	1	
Request Result Qualifier	✓	✗		5	5	1	
Request Time Qualifier	✓	✗		6	1	1	
Request Starting Date/Time	✓	✗		7	1	1	
Request Ending Date/Time	✓	✗		8	1	1	
Request Information Status	✓	✓		1	1	1	

### Comment ASTM Field Mapping

Field Name	Accepted By Epi	Sent By Epi	Coded Field	F	C	R	Comments
Comment Text	✗	✓		4	1	1	
Comment Type	✗	✓		5	1	1	

## Appendix A: Interface Setup Screens

**Interface Setup - [Main System]**

File Edit View Interface Tools Window Help

Id:  Instr Name:  Active:  ☐ Not On Menu

Port Name:  Autog:  ☐ Autopost

Instr Charact:  Help Label: HI  Ord Range:

Ldl Def:  Translat Table:

Auto Ldl Def:  Location:  Wkst:

SCC Exclusive Parameters | Port Characteristic | Translation Table | Error Translation Table | Flags

Lstn Name:  Dir Lstn:  Dir Name:

Trace File:  Res Dbase:  Tracing Level:

Inst Dep1:  Inst Dep2:  Inst Dep3:

Device version:  Model id:  Ord Off:

Creat/Modif Date:   Env.:

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**Interface Setup - [Main System]**

File Edit View Interface Tools Window Help

Id:  Instr Name:  Active:  ☐ Not On Menu

Port Name:  Autog:  ☐ Autopost

Instr Charact:  Help Label: HI  Ord Range:

Ldl Def:  Translat Table:

Auto Ldl Def:  Location:  Wkst:

SCC Exclusive Parameters | Port Characteristic | Translation Table | Error Translation Table | Flags

Add Delete Search Check

	Instrument	System	Ext	Flt	Description	P	Q
1	CXAER	CXAER	X2		Aerobic Culture		
2	CXANA	CXANA	XS		Culture Anaerobic		
3	CXBLD	CXBLD	X4		Culture Blood		
4	CXCF	CXCF	XS		CF Culture		
5	CXCSF	CXCSF	XS		Culture CSF		
6	CXFLD	CXFLD	XS		Culture Fluid		
7	CXFNB	CXFNB	X7		Culture Fungal, BI		
8	CXFNS	CXFNS	XS		Culture Fungal, Sk		
9	CXFUN	CXFUN	XS		Culture Fungal		
10	CXGEN	CXGEN	XS		Culture Genital		
11	CXGON	CXGON	XS		Culture Gonorrhoea		
12	CXGRA	CXGRA	XS		Culture Group A St		
13	CXGRB	CXGRB	XS		Culture Group B St		
14	CXNOS	CXNOS	XS		Culture Nose		
15	CXRES	CXRES	XS		Culture Respirator		
16	CXSTE	CXSTE	XS		Culture Sterility		
17	CXSTO	CXSTO	XS		Culture Stool		
18	CXTHR	CXTHR	XS		Culture Throat		
19	CXTIS	CXTIS	XS		Culture Tissue		
20	CXURM	CXURM	XS		Culture Urine		

Ready Ln 1, Col 6 User : SCC Env: mLIVE4 Term : FMIC4

**Interface Setup - [Main System]**

File Edit View Interface Tools Window Help

Instruments Lab (67)  
 Instruments Micro (3)  
   MMABC  
   MMAPN  
   MMAVT  
 Autodownloading (1)  
 Autoposting (1)  
 Autoreporting Lab (4)  
 Autoreporting Micro (5)  
 HIS Communication (29)  
 HIS ADT Posting (6)  
 HIS Order Entry Posting (5)  
 HIS Result Reporting (11)  
 HIS Billing (1)  
 HIS Order Status (0)  
 Autoreporting Blood Bank (1)  
 Rule Based System (3)  
 Blood Bank Interfaces (3)  
 Master Patient Index Server (0)  
 Robotic Server (0)  
 Label Server (2)

Id: MMAPN Instr Name: Epicenter Phoenix Active: Y ☐ Not On Menu  
 Port Name: :02mr:2 MMAPN Autog: Q ☒ Autopost  
 Instr Charact: Bidirectional using message queue Help Label: HI Ord Range: 99  
 Ldl Def: Non Downloaded Orders with Isolates Translat Table: With extension  
 Auto Ldl Def: Non Downloaded Orders with Isolates Location: MLAB Wrkst: MMAER

SCC Exclusive Parameters | Port Characteristic | Translation Table | Error Translation Table | Flags

☐ 0 Flag order when autodownloaded?  
☐ 1 Not used!  
☐ 2 Check collection of specimen!  
☐ 3 Not used!  
☐ 4 Check receiving of specimen when downloading!  
☐ 5 Not used!  
☐ 6 Long order?  
☐ 7 Do not check workstation when building the ldl?  
☐ 8 Not used!  
☐ 9 Verify posting?  
☐ 10 Verify test posting?  
☒ 11 Post Isolate Comments?  
☐ 12 Append notes results  
☐ 13 Do NOT post results if test is finalized  
☐ 14 Post results if order is finalized  
☐ 15 Not used!  
☐ 16 Not used!  
☐ 17 Ign Port Wr?  
☐ 18 Omit sending checksum character?  
☐ 19 Not used!  
☐ 20 Not used!  
☐ 21 Not used!  
☐ 22 Check lty when autodownloading?  
☐ 23 Not used!  
☐ 24 Therapeutic Comment is Printable?  
☐ 25 Mark Deduced Drugs?  
☐ 26 Adjust results according to the rules in transl.tbl?  
☐ 27 Store Therapeutic Comment?  
☐ 28 Enable significant/insignificant flags?  
☐ 29 Not used!  
☐ 30 Not used!  
☐ 31 Suppress posting test if test is not ordered?

Ready User : SCC Env: mLIVE4 Term

