STATE OF TENNESSEE
DEPARTMENT OF HEALTH

REQUEST FOR INFORMATION # 34308-11225 AMENDMENT # 1 FOR LABORATORY INFORMATION MANAGEMENT SYSTEM

DATE: NOVEMBER 1, 2024

RFI # 34308-11225 IS AMENDED AS FOLLOWS:

1. **This RFI Schedule of Events updates and confirms scheduled RFI dates.** Any event, time, or date containing revised or new text is highlighted.

EVENT		TIME (Central Time Zone)	DATE (all dates are State business days)
1.	RFI Issued		October 15, 2024
2.	Written "Questions & Comments" Deadline	2:00 p.m.	October 25, 2024
3.	State Response to Written "Questions & Comments"		November 1, 2024
4.	RFI Response Deadline		November 8, 2024
5.	Review Responses and Schedule Demos		November 15, 2024
6.	Conduct Demos	8:00am to 4:30pm	November 18-21, 2024

2. **State responses to questions and comments in the table below amend and clarify this RFI.**

   Any restatement of RFI text in the Question/Comment column shall NOT be construed as a change in the actual wording of the RFI document.

#	Question/Comment	State Response
1	Regarding RFI Question 18: "Can the system capture various data points from samples to perform analysis?" - Please provide more context, detailed description. What kind of various data points are they collecting and from which sources? Is the analysis in this question referring to data analysis or sample analysis?	Multiple data points are needed to calculate various performance measures for grant metrics. These could include turn-around-time from collection to receipt, collection to reporting, receipt to preliminary report, collection to final report, time spent on each test, culture identification to sequencing identification, etc. Sample condition at receipt by lab. Sample container condition at receipt by lab. Sample rejection which issues a lab report/HL7 LRI/ELR message.

2	Regarding RFI Question 21: "Can the system merge data for analysis purposes?" Please provide more detail. What kind of data needs to be merged (i.e., are we merging patient data for a single patient that was entered multiple times or are we doing additional data analysis on results held in multiple databases--or some other situation) and what sort of analysis needs to be performed?	Data cleaning and patient merging in preparation for data migration from existing LIMS database to new LIMS database. Maintaining a minimum of 10-year history. Also describe any archival processes supported by your LIMS. Analysis across active and archived records. Prior positive checks on specific tests.
3	Regarding RFI Question 46: "How does the system execute multiple lab orders in multiple formats?" - Please explain in more detail. Are the multiple lab orders coming from the same or different submitters? [Supplier] can handle both situations, I want to provide the best response for the situation(s) DLS has in mind. Does "formats" refer to the format of the lab order (e.g., email, web, PDF, phone call) or some other attribute of the lab order?"	Current LIMS supports lab order placement via manual lab order entry, HL7 v2.5.1 LOI messaging, and direct database connection via a portal. This is the minimum methods of receiving lab orders. Please discuss any HL7 FHIR capabilities of your LIMS.
4	Regarding RFI Question 56: "Can the system identify the relevant test(s) for the order file?" Please provide context and more detail. Please confirm that the below is the use case to which this question refers? When a test order is submitted and requests HIV testing, [supplier] will automatically assign a sample ID, queue the whole blood to be aliquoted and subsamples to be created, as well as for labels to be automatically printed for each. Once the derivatives are created, they are automatically queued for the proper processing for the screening test and when prep'd they are automatically queued for the screening analysis. Based on the results of the initial screen, the system automatically queues the appropriate 2nd tier analysis. When the analyses are complete, the system automatically creates the appropriate report and queues it	The example describes the test scenario accurately. Demonstrate how the LIMS would handle an electronic lab order where the lab test existed on more than one order panel.

	for review with the appropriate user(s). All of the above can be set up in the system with standard, native functionality using OOTB method set-up tools that trained LIMS admins can apply without needing to engage [supplier] professional services.	
5	Regarding RFI Question 82: "Does the system allow for the delivery and receipt of lab results?" What does this mean, delivery to whom and from whom? Please provide more details about the use case here? Who will be sending and receiving the results? Does "lab results" refer to raw lab data or finalized lab reports?	Delivery of lab results refers to preliminary and final lab reports performed at DLS being transmitted to multiple interested parties. Lab reports are delivered in multiple ways. LIMS should be able to deliver results using HL7 2.5.1 LOI/LRI standards to the submitting organization's EHR system and PDFs to the TDH DLS Lab Web Portal. Results should also be delivered following HL7 2.5.1 standards via ELR to Public Health Authorities such as TN Epidemiology, CDC, and other Epi jurisdictions. Use of EDI engines including Rhapsody, Cloverleaf and Iguana are currently used to achieve this transmission. For Environmental test results, transmission of results from the laboratory to TN Dept of Conservation using EDDs is also expected.
6	How many laboratory staff are in each location (Nashville and Knoxville)?	Nashville: 170 FT employees plus 18 contractors/fellows Knoxville: 15
7	How many samples are processed in a year for Clinical, Environmental, and NBS?	Clinical: 185,000 samples/750,000 tests Environmental: 31,000 samples/63,000 tests NBS: 112,000 samples/1,267,000 tests
8	How many ETOR partners does the laboratory have and what is the volume of electronic orders?	The lab currently has ETOR established with 94 of 95 county health departments in the state, with 2 Department of Corrections locations and with >1000 users in the Lab Web Portal. For NBS, we have 42 hospitals using ETOR via Oz and 265 clients using the NBS web portal. New interfaces with all counties in the state are in process that spans 6 different projects with 6 different EHR systems. For clinical orders, around 330,000 are received electronically. For newborn screening, around 50,000.
9	Does the laboratory scan and store paper request and other forms to attach to a sample accession number? If not, is this a desirable feature?	Yes. This is done in some sections of the lab, but desire is to make this standard practice across the entire lab. So yes, this is a desirable feature. It is also desirable that documents can be scanned and saved to the associated folder post test results release. This task is sometimes performed afterwards by administrative personnel who do not need access to a module where they could edit anything except for adding attachments.
10	Does the laboratory currently have an external web portal for submitters? For individual patients?	The lab currently has a LWP for a portion of testing but is in the process of expanding this portal. Tentative go-live for clinical testing is by the end of 2024. Once the expansion of the portal is complete, then the lab does have plans to add a patient portal. A separate portal is used for NBS at the current time.

11	How are the current LIMS systems (STARLIMS, Environmental Sciences, Neometrics, and Specimen Gate) hosted?	Neometrics & Specimen Gate are hosted on State Servers, with STS doing OS upgrades, while Vendors do application upgrades. StarLIMS PHL v11 and StarLIMS ES are hosted on-prem for both web servers and database servers. State technology services support servers and database. State technology group also has cloud hosting option. Updates and Release Management coordinated between State technology group and business unit. The Lab Web Portal is primarily hosted by the vendor. Some components are State on prem. Vendor supports all maintenance and enhancements. FAT performed by vendor. UAT performed by State business unit.
12	Does the laboratory have an instrument interfacing system? Who is the vendor? How many instruments are connected and how many are anticipated to be hosted?	The lab uses Data Innovations, Instrument Manager for instrument interfacing between the lab instruments and STARLIMS. This project is just getting started and we have one instrument in PROD. In addition, we have NBS instruments interfaced utilizing Revitty. We anticipate close to 80 instruments to be interfaced.
13	How does the laboratory currently handle billing?	The billing data is extracted from various sources (Neometrics, StarLIMS Clinical, StarLIMS Environmental) depending on the type of billing. A .txt file is generated for each billing, which is encrypted using software called Kleopatra. The .txt file is then uploaded into Edison using software called WinSCP. Edison creates the invoice(s) and sends them as an email .pdf attachment to the person in the Billing Section who generated the invoice(s). The invoice(s) are then sent to the clients by either mail, email, or automatically. Some billings are reimbursements only and are handled by Journal Voucher or Interunit Requests which are sent to the Health Department Accounts Management Office, Department of Finance & Administration. In addition, we process a file that is received from our CHS partners that is generated from patient encounter data submitted for laboratory testing and extracted from the PTBMIS database. This data is validated and updated by the laboratory staff, then keyed back into the PTBMIS database for submission to the Regional Office billing staff, who batch the encounters into 837 files, which are then uploaded to the clearinghouse, Availity. The information is then submitted to the MCOs for processing. The MCOs sent send remittance files to the laboratory to key post payments and/or write-offs to each patient account. All HL7 v2.5.1 LOI interfaces will include Insurance segments that will populate into the LIMS to support billing operations whether client

		bill or patient insurance bill. Describe how your LIMS can support insurance claim billing internally or via a 3rd-party billing clearinghouse. Environmental invoicing is handled through an "invoice Manager." The invoices are generated monthly through this program. The invoices are segregated by client and contain the client's name, LIMS order number, test names and prices for the work completed during that month. The invoices are reviewed for accuracy, downloaded to a pdf, and emailed to the client for approval. Once approved the invoices are emailed to Health Department Accounts Management Office for further processing.
14	Please further describe this question: Can the system place pre-ordered labs, including electronic lab orders (different from HL7)?	Manual lab orders, HL7 v2.5.1 LOI messages, and portal lab orders need to be supported. StarLIMS PHL (Clinical) supports pre-logged lab orders which are either manually entered or the Lab Web Portal directly interfaces into the LIMS database to place pre-logged lab orders. StarLIMS ES (Environmental) supports entering lab orders ahead of the physical sample delivery. Application user can also configure client project with a defines a testing profile by sample collection site. If the sample collectors are unable to collect the expected set of samples, then the pre-logged lab order can be edited upon physical sample receipt.
15	Please further describe this question: Does the system allow for teams-based testing (tests are associated with staff on those teams)?	This question refers to being able to associate staff with specific teams thus allowing members of the teams to only have access to those tests associated with the team. It's a way of restricting access to only those authorized. Example: Someone assigned to the Serology team would only have access to the Serology tests. For the Environmental lab, they need the ability to release lab result reports at the Team level and not the entire lab order level. Example: General Inorganics testing, and Metals testing is complete, but the Radio Chemistry and Aquatic Biology testing are still active. The Environmental lab needs to issue Final lab result reports for the completed work and bill for those services without waiting on the other lab teams testing.
16	Please provide a test menu showing all testing that will be managed by the LIMS.	The following links can be used to access the test menus for clinical and NBS. **Clinical** https://www.tn.gov/health/health-program-areas/lab/directory-of-services.html **Newborn Screening**

		https://www.tn.gov/health/health-program-areas/lab/newborn-screening-laboratory.html **Environmental** test menu is below: **PHL Inorganic Testing** Acidity Total Alkalinity Ammonia Total Organic Carbon (TOC) Dissolved Organic Carbon (DOC) *Both TOC and DOC combined Chloride Apparent Color True Color Conductivity Fluoride Nitrate Nitrate and Nitrite Nitrite Total Kjeldahl Nitrogen Total Organic Nitrogen Orthophosphate pH Total Phosphorus Residue, Dissolved Residue, Suspended Residue, Settleable Residue, Total **PHL Metals Testing** Digestion of water and air filters Digestion of solids, waste, and biota Total Hardness (by calculation) Calcium Hardness (by calculation) Mercury, biota Mercury, air filter Mercury, solids, and waste Mercury, water Metals Analysis by ICP-OES (price per metal) Metals Analysis by ICP-MS (price per metal) **PHL Radiochemical Testing** Gamma, Air filters and swipes Gamma, Fish Gamma, Iodine cartridges Gamma, Milk Gamma, Sediments Gamma, Vegetation Gamma, Water, and sludges Gross Alpha-beta, Air filters and swipes Gross Alpha-beta, Fish Gross Alpha-beta, Sludge Gross Alpha-beta, Solids Gross Alpha-beta, Suspended and Dissolved Gross Alpha-beta, Vegetation Gross Alpha-beta, Water

		Gross Alpha-beta, Water (by Liquid Scintillation Counting) Radium 226/Radium 228 (by Gamma Counting) Radium 226 (by Alpha Counting) Radon, Water Sr-89, 90, air filters Sr-89, 90, fish Sr-89, 90, milk Sr-89, 90, solids Sr-89, 90, vegetation Sr-89, 90, water Technetium 99, air Technetium 99, solids Technetium 99, water Tritium, air Tritium, solids Tritium, water Uranium, sludge Uranium, soil Uranium, vegetation Uranium, water **PHL Aquatic Biological Testing** Macroinvertebrate-Semiquantitative Kick or Bank Macroinvertebrate-Semiquantitative (Identification ONLY) Macroinvertebrate-Semiquantitative (Sorting ONLY) Macroinvertebrate-Biorecon Diatoms Diatom Processing Stream Survey Work - Field Collection and Special Projects (varies with time and distance) Collection Fish/Turtle Processing - Fish Survey - Fish Population Study **PHL Environmental Microbiological Testing** Total coliform only - Presence/Absence E. coli only - Presence/Absence T. coliforms by MTF and E. coli by MTF Fecal coliform by MPN (Nashville Central Lab Only) Total coliform and E. coli - presence/absence without quantitation Total coliform and E. coli with quantitation Heterotrophic Plate Count **Contracted Inorganic Testing** BOD 5 day CBOD 5 day COD Cyanide, Water and Solids Hexavalent Chromium, Water Oil and Grease, Water Phenol, Water

		Sulfide, Water **Contracted Metals Testing** Mercury (methyl) in Water Mercury, (Low Level) in Solids Mercury (methyl) in Solids Mercury, (Low Level) in Biota Mercury (methyl) in Biota RCRA metals (includes leachate) in Solids **Contracted Radiochemical Testing** Americium-241 in Water, Soil, Air Filter, Biota, Sludge, Swipe, and Milk Curium Isotopic in Water, Soil, Air Filter, Biota, Sludge, Swipe, and Milk Neptunium-237 in Water, Soil, Air Filter, Biota, Sludge, Swipe, and Milk Plutonium Isotopic in Water, Soil, Air Filter, Biota, Sludge, Swipe, and Milk Strontium 89/90 in Soil, Air Filter, Biota, Sludge, Swipe, and Milk Technetium-99 in Soil, Air Filter, Biota, Sludge, Swipe, and Milk Thorium Isotopic in Water, Soil, Air Filter, Biota, Sludge, Swipe, and Milk Uranium Isotopic in Water Uranium Isotopic in Soil, Air Filter, Biota, Sludge, Swipe, and Milk **Contracted Organic Testing: Drinking Water** Alachlor Atrazine Benzene Benzo(a)pyrene (PAHs) Carbofuran Carbon tetrachloride Chlordane Chlorobenzene Dalapon 1, 2-Dibromo-3-chloropropane (DBCP) o-Dichlorobenzene p-dichlorobenzene 1,2-Dichloroethane 1,1-Dichloroethylene cis-1,2-dichloroethylene trans-1,2-dichloroethylene Dichloromethane 1,2-Dichloropropane 1,2-Dichloropropane Di (2-ethylhexyl) adipate Di (2-ethylhexyl) phthalate Dinoseb Dioxin (2, 3, 7, 8-TCDD) Diquat Endothall Endrin Epichlorohydrin

		Ethylbenzene Ethylene Dibromide Glyphosate Haloacetic acids (HAA5) Heptachlor Heptachlor Epoxide Hexachlorobenzene Hexachlorocyclopentadiene Lindane Methoxychlor Oxamyl (Vydate) Pentachlorophenol Picloram Polychlorinated Biphenyls (PCBs) Simazine Styrene Tetrachloroethylene Toluene Toxaphene 2,4,5-TP (Silvex) 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethylene Vinyl chloride Xylenes (total) **Contracted Organic Testing: Non-Potable Water** Carbamate Pesticides Chlordane Dioxins/Furans 2,3,7,8-TCDD (2 Compounds, pulp & paper industry) Dioxins/Furans 2,3,7,8-TCDD (Single Compound, other matrices) Dioxins/Furans PCB Congeners (209 PCB congeners and totals) Dioxins/Furans PCB Congeners (WHO List, 12 PCB Congeners) Dioxins/Furans Tetra-Octa (All 17 Dioxin/Furan compounds) Diquat or Paraquat Endothall Glyphosate Herbicides in Water Organochlorine Pesticides Petroleum Hydrocarbons/ UST Analyses, BTEX Petroleum Hydrocarbons/ UST Analyses, Tennessee-EPH (TN-EPH) [C12-C40] Petroleum Hydrocarbons/UST Analyses, BTEX/GRO in Water Petroleum Hydrocarbons/UST Analyses, BTEX/MTBE Petroleum Hydrocarbons/UST Analyses, BTEX/MTBE/Naphthalene Petroleum Hydrocarbons/UST Analyses, BTEX/MTBE/Naphthalene/12DCA

		Petroleum Hydrocarbons/UST Analyses, Diesel Range Organics (TPH-DRO) [C10-C28] Petroleum Hydrocarbons/UST Analyses, Extended Range Organics (TPH-ERO) [C10-C36] Petroleum Hydrocarbons/UST Analyses, Gasoline Range Organics (TPH-GRO) [C6-C10] Petroleum Hydrocarbons/UST Analyses, Methane, Ethane, Ethene PFAS/PFOA and similar compounds Polychlorinated Biphenyls (PCBs) Polynuclear Aromatic Hydrocarbons (PAH) (low level) Semivolatiles Organics (full list SVOCs) Volatile Organic Compounds (VOCs) **Contracted Organic Testing: Biota** Dioxins/Furans 2,3,7,8-TCDD (2 Compounds, pulp & paper industry) Dioxins/Furans 2,3,7,8-TCDD (Single Compound, other matrices) Dioxins/Furans PCB Congeners (209 PCB congeners and totals) Dioxins/Furans PCB Congeners (WHO List, 12 PCB Congeners) Dioxins/Furans Tetra-Octa (All 17 Dioxin/Furan compounds) Lipid Analysis Organochlorine Pesticides PAH's (GC/MS-SIM) PCB Aroclors (Standard 7 compounds) Pesticides (106 Grant List) PFAS/PFOA and similar compounds Polynuclear Aromatic Hydrocarbons (PAH) (low level) Tentatively Identified Compounds (TICs)
17	Please provide a listing of all the instrumentation that you intend to integrate with the LIMS. Please list the make, model, and quantity of each instrument.	• 3, Abbott, Architect i1000 • 2, Abbott, Architect i2000 • 3, BioRad, Geenius • 6 Hologic, Panther • 2, Dynex, Agility • 2, Cepheid, Infinity • 15, ABI, 7500DX • 2, BD, MAX • 1, Thermofisher, ARIS • 3, Bruker, sirius one CA • 2, BD, MGIT 960 • 1, ICP-MS Perkin Elmer, Nexion 2000B • 1, Analytical Balances Sartorius, Cubis II • 1, TOC Analyzer Tekmar-Dohrmann, Phoenix 8000 • 1, ICP-MS Perkin Elmer, Nexion 2200

		• 2, Autoanalyzer Seal, AA500 • 1, ICP-MS Perkin Elmer, Nexion 350D • 1, Ion Chromatograph Thermofisher, ICS-6000 • 1, ICP-OES Perkin Elmer, Optima 8300 • 1, pH Meter Thermofisher, Orionversastar • 1, UV-VIS Spectometer Thermofisher, Genesys 10 • 2, Turbidimeter Hach, 5200 • 1, Autotitrator Mettler-Toledo, G20S • 1, Mercury Analyzer Nippon, RA-4300A • 1, Low Level Mercury Analyzer Nippon, RA-4300FG+ • 1, LC-MS-MS Perkin Elmer, Qsight • 5, Waters, Aquity TQD • 2, BioRad, Variant NBS • 3, Revvity, 2021 GSP • 4, Revvity, Panthera Puncher • 2, Revvity, DBS Puncher • 3, Thermofisher, QS6 Flex • 1, Luminex, ? • (1)- Agilent 8900 ICP/QQQ Instrument • (1)- Agilent 1260 Infinity I LC with Agilent 6465 Ultivo QQQ • (2)- Agilent 6890 GC/5973 MSD with Gerstel MPS2 Multipurpose Samplers • (1)- Agilent 7890 GC/5975 MSD with Gerstel MPS Multipurpose Sampler • (1)- Agilent 8890 GC/5977 MSD with Gerstel Robotic MPS Multipurpose Sampler • (1)- Agilent 8890 GC/7000 TQ (Triple Quad) with Gerstel Robotic MPS Multipurpose Sampler • (1)- Agilent 1290 Infinity II LC with Agilent 6546 Q-TOF
18	Please list all external systems LIMS will need to interface to and intended data flow (Example: LIMS will need to receive orders from X system and send results back in HL7 v2.3 format).	We use HL7 2.5.1 standards for all messaging. NBS is using LOI/LRI 2.5.1 with the NBS Profile (which means some 2.7.1 and 2.8.1 concepts are included) Interfaces needed: LOI/LRI: LIMS and Juno Healthcare LOI/LRI: LIMS and Netsmart myInsight/Optum OrderConnect LOI/LRI: LIMS-and Greenway Intergy/Optum OrderConnect LOI/LRI: LIMS and Patagonia Health LOI/LRI: LIMS and Fusion LOI/LRI: LIMS and eClinicalWorks LOI/LRI: LIMS and Alabama PHL LOI/LRI: LIMS and iConnect/AIMS Lab Web Portal

		LOI/LRI: LIMS and iConnect Armour Lab Web Portal LOI/LRI: Hospital EMR to OZ through Iguana to Neometrics. Then demographics from Neometrics to Specimen Gate. LOI/LRI: Specimen Gate to Neometrics to Iguana to Oz and back to the hospital EMR. ELR: To TN Epidemiology via Rhapsody ELR: To Various CDC programs (LRN-C, PHLIP, DAART, etc.) via Rhapsody ELR: To Epidemiology in other states via Rhapsody EDD (CSV format) Reporting from the LIMS to Tn Dept of Conservation
19	How many concurrent users will need access to the system? We are NOT requesting how many total employees will use the system. We are asking how many people will be using the system simultaneously during your busiest time. Please list the approximate number of concurrent users for an Electronic Test Order Request Portal separately.	The answer to this question is dependent upon whether an integrated LIMS is a possibility (Clinical, Environmental and NBS all in one LIMS). Currently we have: Clinical: 60 Concurrent Environmental: 22 Concurrent NBS: 30 Concurrent Our current web portal that is used for ARLN and Flu/COVID only has over 600 registered clients. With the expansion of the portal to the entire testing catalog, this number will continually increase. However, as far as concurrent users for the portal, 50 might be a good approximation. Please describe any concurrent user licensure for portal users if a component of the LIMS.
20	Regarding RFI Question 15, could you please provide examples of where parent/child/grandchild is needed within the application.	Parent/Child Relationship is an HL7 concept. Snapshot processing is another HL7 concept to be supported by the LIMS. Parent, child, grandchildren relationships are primarily encountered in the clinical testing workflow. An example could be: 1. Sample submitted for Salmonella culture and isolate obtained. 2. Isolate sent to PCR to look for resistance gene mutations. 3. Isolate undergoes drug susceptibility testing. 4. Isolate sent to Sequencing. 1. Specimen arrives for CRE colonization and is positive for resistance genes. 2. Specimen is reflexed to culture to isolate the organism. 3. Organism is isolated and undergoes drug susceptibility testing. 4. Organism is sent for sequencing.
21	Regarding RFI Question 16, how many order records need to be transferred to the new LIMS?	All order records from the current LIMS should be transferrable to the new LIMS.

	In what format can you export the data out of STARLIMS? Can you provide examples?	Lab Informatics staff have MS SQL R/O access to both StarLIMS databases to create CSV files. State may also request DBA assistance as a project task for data migration services. For NBS, Lab Informatics staff has read only access to the Oracle DB and MS SQL (for Specimen Gate) and can create CSV exports. However, data amounts are extensive with one table alone have over 70 million entries.
22	Regarding RFI Questions 37 and 38, please provide more information regarding international clients. Will patients be international? Clients? Providers?	The NBS lab performs newborn screening testing for clients in South America. The providers and patients both would be international. The LIMS will need to be able to store the South American addresses and be able to send testing results to those international addresses. Client will also need the capability to log in and view results remotely such as via use of a secure remote viewer or lab web portal. Foreign patient name and address need to be supported. Example: Ill tourist on flight or in town is hospitalized/morgue for a reportable disease event. TB testing for persons in the immigration process.
23	Regarding RFI Question 63, what QC steps do you have along the way? Do you utilize a 3rd party bioinformatics pipeline for report generation, or is this done internally? Do you want to track any run metrics? Do you utilize a VCF file?	*What QC steps do you have along the way?* For wet lab, each run has quality metrics from the instrument but once ran through the pipeline the QC that we use to pass each sample are Q30 score, coverage, core percent. *Do you utilize a 3rd party bioinformatics pipeline for report generation, or is this done internally?* We use two bioinformatics pipelines from FL, and one pipeline, developed by CDC, is done internally. Different pipelines have different reads QC metrics along with alignment and analysis, such as total number of reads, coverage depth, read length, and GC content. *Do you want to track any run metrics?* For PulseNet TAT, it is difficult to track CIDT specimens because we only have received date to go by. If a date of isolation could be pulled from when it is sent for WGS, it would give us a more realistic figure. Also ordering each sequencing test by program, such as PulseNet, vs C. auris, etc. as we have begun to do can allow us to pull totals from LIMS. For ELC ARLN grant performance measures, there was a metric for when SRR ID was entered in LIMS, any downstream sequencing IDs could be entered into LIMS (for some tests now, we do this). A LIMS that could create/track WGS IDs and export metadata to a certain template as needed would also be desired.

		Tracking date sample moved from wet lab analysis to dry lab analysis and data imports using template files (batch sample uploads) would also be desired. *Do you utilize a VCF file?* Yes, we utilize VCF files.
24	Does the State require billing functionality to exist within the proposed LIMS, or is it acceptable to provide an interface to a third-party billing solution? We have the option to bring in a billing partner and would need to know the approximate number of insurance claims submitted annually or monthly, and the number of environmental invoices generated annually or monthly.	For clinical testing, the LIMS should be able to collect all the insurance information that can then be used to send to a 3rd party biller. So, it is acceptable to provide an interface to a third-party billing solution. However, we do currently do some billing for environmental testing in the LIMS, so some basic billing capability is needed. For Insurance Billing, we bill TennCare with approximately 15000 claims annually for 63,000 tests. For client billing to hospitals for NBS testing, we sent approximately 850 invoices annually for 95,000 tests. For Environmental testing, approximately 244 billing statements are sent annually to internal Health Department Accounts Management Office for accounting adjustments between agencies. Additionally, actual invoices are created and sent to the Revenue Contract Customers. For public water system billing to drinking water clients, approximately 820 invoices are sent annually for 5,200 tests.
25	Is it the State's desire to have a cloud-hosted solution or would you prefer it be deployed on premises?	State's preference is a cloud-hosted solution. Read-Only access to the database is required by the Informatics team.
26	If the State prefers a cloud-hosted solution, would you prefer the vendor host it or would the State house the system in their own hosting environment?	Vendor hosted is the preference. Read-Only access to the database is required by the Informatics team.
27	The State of Tennessee Department of General Services RFP Opportunities page lists the due date for this RFI as 10/25/2024. With the RFI Response Deadline listed as November 8, 2024. Can you please clarify the due date for this RFI response?	The due date as listed in the Schedule of Events is correct.
28	How many concurrent user licenses would you need?	See answer to question #19.
29	How many sites will be utilizing this application?	We have two physical site locations. One in Nashville and one in Knoxville.

30	How many laboratory staff are in each location (Nashville and Knoxville)?	See answer to question #6.
31	How many samples are processed in a year for Clinical, Environmental, and NBS?	See answer to question #7.
32	How many ETOR partners does the laboratory have and what is the volume of electronic orders?	See answer to question #8.
33	Does the laboratory scan and store paper request and other forms to attach to a sample accession number? If not, is this a desirable feature?	See answer to question #9.
34	Does the laboratory currently have an external web portal for submitters? For individual patients?	See answer to question #10.
35	How are the current LIMS systems (STARLIMS, Environmental Sciences, Neometrics, and Specimen Gate) hosted?	See answer to question #11
36	Does the laboratory have an instrument interfacing system? Who is the vendor? How many instruments are connected and how many are anticipated to be hosted?	See answer to question #12.
37	How does the laboratory currently handle billing?	See answer to question #13.
38	Please further describe this question: Can the system place pre-ordered labs, including electronic lab orders (different from HL7)?	See answer to question #14.
39	Please further describe this question: Does the system allow for teams-based testing (tests are associated with staff on those teams)?	See answer to question #15.
40	Will the RFI be released in a writeable pdf or word document? If not, is it okay to export the questions to word?	Either would be acceptable, but for your convenience a Word version of the RFI has been attached.
41	What lab areas are part of the labs infectious disease testing (e.g. Serology, micro, molecular)?	Infectious disease testing is performed in General Bacteriology, Special Microbiology, Serology, Molecular/Virology, Sequencing, ARLN (Antimicrobial Resistance Lab).
42	What would the total number of users or concurrent number of users be?	See answer to question 19.
43	What would the total number of portal users or concurrent number that need portal access be?	Our current web portal that is used for ARLN and Flu/COVID only has over 600 registered clients. With the expansion of the portal to the entire testing catalog, this number will continually

		increase. However, as far as concurrent users for the portal, 50 might be a good approximation.
44	For the demo schedule, is it expected demo's will be all day or will there be a time block within the day. If so how long is expected?	Demonstrations will be two hours in duration.
45	Is there a demo script for demo's, if so when will vendors get a copy of this? With the short turn around time to notify and demo seeing a script or expectations sooner would be helpful.	There is no script available for the RFI process.
46	Regarding RFI Question 29: "Does the system have the ability for bi-directional Interfaces between the LIMS and the instruments, (including bloodspot punch instruments)?" Can TN Dept of Health please provide an instrument list and/or clarify what instrument you use for bloodspot punch?	See question 17 for list of instruments. For Bloodspot instruments, DLS has 4 Panthera punchers, and 2 DBS Punchers. Bi-directional interfaces should be supported. DI IM middleware already in use.
47	Regarding RFI Question 36: "Can the system manage insurance claim billing, adjudication, invoicing (environmental) and discounting?" Will [supplier] be sending charge and credit billing files to the current billing system or to a 3rd party billing system? Or is the current billing system being replaced? What is the current billing system?	See answers to questions 13 and 24.
48	Could TN Department of Health Lab please provide the following information to allow [supplier] to prepare a more accurate pricing estimate? - - Microbiology: o Total Number of Workstations o Total Number of Concurrent Users: please identify how many Concurrent Users will be accessing the system at any given time? o Number of Billable Tests per year o List of instruments including Instrument Name, Vendor name, Model, and Quantity**.	Total number of workstations; Please see question # for estimate. Total number of concurrent users: Please see question #19. Number of billable tests: Please see question #24. Instruments: Please see question #17 The lab does not have a Molecular Software Module. Molecular workflow is maintained in the clinical LIMS like the rest of the clinical testing. Data Conversion is needed. See question #21 for additional information. Test compendium: Please see question #16.

	- - Molecular Diagnostic: o Total Number of Workstations o Total Number of Concurrent Users: please identify how many Concurrent Users will be accessing the system at any given time? o Number of Specimens processed Annually o List of instruments including Instrument Name, Vendor name, Model, and Quantity**. o Does the laboratory currently have a Molecular Software Module? Please provide Name of the Application / Vendor If yes, is a Data upload from existing Molecular system required? Do you need a Data Conversion? o Please also kindly provide List of Name and Type of Testing that is being processed in your Laboratory ? - Cytogenetics: o Total Number of Workstations o Total Number of Concurrent Users: please identify how many Concurrent Users will be accessing the system at any given time? o Number of Specimens processed Annually o Number of Tests performed Annually o List of instruments including Instrument Name, Vendor name, Model, and Quantity**. o Does the laboratory currently have a Cytogenetic Software Module? Please provide Name of the Application/ Vendor □ If yes, is a Data upload from existing Cytogenetic system required? Do you need a Data Conversion? o Please also kindly provide List of Name and Type	DLS does not perform cytogenetics testing. HIS Interfaces: See question #18. DLS does not have any reference lab interfaces. Our only reference lab is CDC, and we use their web portal.

	of Testing that is being processed in your Laboratory ? - HIS Interfaces: o What is the current HIS interface system? o HIS to be interfaced: □ ADT □ Order Entry □ Result Reporting □ Billing - Reference lab Interface: Please list the name of the reference Lab interface? (Mayo, Quest, LabCorp, ARUP etc…) Please specify all of them and which sites uses which Reference Lab Vendor.	

3. **RFI Amendment Effective Date.** The revisions set forth herein shall be effective upon release. All other terms and conditions of this RFI not expressly amended herein shall remain in full force and effect.