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# LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS) VERSION 2.0

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# 1. INTRODUCTION

The Department of Livestock (DoL) is pleased to inform that the Laboratory Information Management System (LIMS) database under the NCAH domain has been enhanced. LIMS, the online database system designed to manage the information of all the veterinary laboratory activities in the country was launched during 2019 and was meant for all the laboratory facilities under the Department of Livestock (DoL) viz. National Centre for Animal Health (NCAH), Regional Livestock Development Centres (RLDCs), Satellite Veterinary Laboratories (SVLs) and Dzongkhag Veterinary Laboratories (DVLs).

During the course of it's use, the need for enhancement was raised by the end users to make it more user friendly and also secure. Hence, accordingly the enhancement was carried out and also the training was provided to almost all the end users through the funding support of Fleming Fund country grant.

The program is hosted at the same sub-domain under the NCAH domain, address/URL: http://lims.ncah.gov.bt

## 2. MAIN FEATURES

The system's key features include, but not limited to

- Registration of owner
- Registration of animal/feed
- Registration of sample
- Testing of individual and pool samples
- Test verification
- Sample referral
- Proficiency testing
- Sample repository
- Laboratory consumable store management
- Data archival and reports

The system is intended for data collection of all the services rendered through veterinary laboratories in the country.

The National Centre for Animal Health (NCAH) is the system's administrator.

# 2.1 Log in page

- The system's admin shall register field users of the system based on some personal information such as CID, full name, email, designation, centre's location, etc.
- The login credential (username and password) of the registered user shall be communicated through an email from <u>lims@moaf.gov.bt</u>.
- Click on/ copy-paste in the browser, the link, https://lims.ncah.gov.bt/, to access the system. The link shall redirect the user to the login page (Figure 1).
- Enter the Username and Password provided through an email (Figure 1).

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• After the first login, change the password from the default one. On updating with the new password, it will redirect to the Dashboard.

# 2.0. USER ROLES

# 2.1 Sample manager

User	Service	Remarks
Sample Manager	Registration	Registration of the animal or feed owner
		Registration of an animal or feed against the
		registered owner
		Registration of a sample against the registered
		animal or feed
		To search for a registered owner/animal/feed/sample

Sample Repository	To refer a sample to an international referral lab upon forwarding from the centre's lab in charge for international referral without testing. A part of the sample gets archived along with international referral Archival of samples without testing and forwarded
Quality Assurance System	by the lab incharge for direct archival Receives the PT request sent by the lab incharge of the same lab and PT participation request sent by the sample manager of the conducting lab. PT sample details are filled and forwarded to the concerned lab technician of the same lab Receives the PT (samples received from the
Referral	international PT conducting lab) command from the lab incharge and assigning to the concerned lab technician of the same lab Views the list of samples referred from another lab and assigns specific lab sections for testing.
Reports	Generate all the tests reports performed by test specific or sample specific Reports about all the samples archived Generate annual stock, inventory of consumables

# 2.2 Laboratory technician

User	Service	Roles
Lab Technician	Section-specific Testing	Views the list of samples forwarded by the sample manager for routine testing. Enters the test details and findings and submission for verification to the lab incharge. If a test (routine) has been sent back by the lab incharge for re-testing, retest and submits back to lab incharge for verification. Views the list of PT samples forwarded by the lab incharge to test the given samples. Conducts test on the PT sample and submit to the lab incharge for verification. If a test (PT) has been sent back by the lab incharge for re-testing, retest and resubmit for verification.
		Views list of referred samples forwarded by the sample manager for testing and submit to the lab incharge for verification. If a test (referred sample) has been sent back by the lab incharge for re-testing, retest and submit for verification.
	Repository	View the list of tested samples forwarded by the lab incharge for repo/archival. Assign the equipment id. compartment id and store sample for future studies. Also, reposit the samples directly without testing
	Reports	Generate all the tests reports performed

Inventory Usage Record	Shows the table concerning stock of consumables and other materials received and issued by the store
	incharge

# 2.3 Laboratory in-charge

User	Service	Roles
Lab Incharge	Test Verification	View the list of test forwarded by the testing lab
		technicians. In this section, the test submitted gets
		verified or send back to the testing technician for re-
		testing. The tested PT sample also gets verified here.
	Result for PT	Has the option to upload PT results received from the
		assessing international or national lab (NEQAS and
		EQAS) after participating in the PT called by a testing
		lab.
	Sample Repo	To initiate direct archival of a sample without any
		testing.
	Sample Referral	To initiate direct referral of an untested sample to an
		international referral laboratory. It appears in the
		interface of the sample manager, from where archival
		of the sample referred in an international lab is done.
	Quality Assurance	To assign a PT sample to relevant section of a
	System	participating lab and send to the sample manager of
		the same lab to add sample details and forward to the
		participating lab.
		To participate in a PT conducted by the external
		(national/international) laboratory. Here, the PT
		samples received is being forwarded to the sample
		manager, where it appears under External PT (EQAS
		and NEQAS) and gets forwarded to the
		assigned/recommended lab section.
	Officiating	To assign an officiating person for a particular role
	Assignment	To revoke the assigned officiating role
	File Upload	To store any other relevant files such as surveillance
		report and past lab reports
	Inventory Usage	Shows the table concerning stock of consumables and
	Record	other materials received and issued by the store
		incharge
	Reports	To generate all the tests performed by specific
		sections selected
		Reports about all the samples archived

# 2.4 Store in charge

User	Service	Roles
Store In charge	Master	Listing of storage equipment, provision of unique
	Management	equipment number and mapping the equipment with
		compartments are done here.

Inventory Record	To enter new laboratory items received in the lab.
	Details such as specific storage location, equipment
	and compartment, can be entered here. List of added
	items shows on opening this page.
	From here, the store incharge issues lab items to
	other officials in the same laboratory
	To check the stock balance of an item in another
	lab's store and request for mobilization
	Shows the list of requests for lab items to be
	issues/mobilized to other laboratories. The store
	manager has the option accept or reject the request.
	List of lab items requested from another lab also
	shows here with the status.
	To generate stock report based on the filters applied

# 2.5 Administrator

User	Service	Roles
Admin	Master	To add/delete/update jurisdictions such as centers at
	Management	national, regional and dzongkhag level and also
		update the list and mapping of geographical
		jurisdictions (dzongkhag, gewog and village)
	Administration	Add/delete/update role, client type, designation,
		gender, referral, and lab sections.
		Add/delete/update purpose, animal species, type and
		breed
		Add/delete/update Sample types, subtypes and
		subclass.
		Add/delete/update test type, sub-type and section-
		specific tests and results and units
		To map result range and inference against a particular
		test and subtest
		Add/delete/update Consumable type, Item Name,
		Storage equipment, equipment Number and
		Compartments.
		Add/delete/update system users.

## **3.0 REGISTRATION**

3.1 Owner Registration

In the dashboard of sample manager, select the owner registration.



## Click on Register New Owner

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Select the client Type either individual,Private laboratory,Government farm,corporation and Royal .

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Choose the individual ,Nationality and put the owner CID number then it will fatch the name and address which is in census.

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🛛 Histopathology 🧃	*				
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We can also edite the present address of owner Dzongkhag ,Gewog and Village

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We can Search the Owner details if it was updated in system before.

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We can also check the list owner and edit the details if necessary .

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Old Registration Updates and Edit Detail,

If the Owner CID already punched in system means, then we just need to update the old details or edit the address and update.

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# 3.2 Animal Registration

Select the Animal/Feed Registration and click on Register New Animal/Feed.

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Animal/Feed Registration	¢		QSearch	
Sample Registration				
Q. Track/Search Registration	n			

Select the new owner from the dropdown and put the owner CID to fine old updates.

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## 3.3 Sample Registration



Save/Add Sample and Forward for Testing

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Acknowledgement from Sample Manager after sample forward to Technician

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## 3.4 Conducting test by technician

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#### 3.4.1 Test type

Directly click on section and select the Regular, PT or Referral based on your sample information



The information of samples which was forwarded by Sample Manager will be display in the page and you just take an action.

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After opening the page we should check all the details by clicking on Plus sign + whether the information are correct or not.

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The Important information to revisit: Owner Details, Animal Details and Sample Details.

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El monthry finant	- 20	Kample Type: Excertion Secretion	Sample Soft Type: Panen	Number of Sampley S

Select the Test type, Sub Test /Agent Type/Pathogen and Results.

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C Virology 6	Result			/	-0		
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🖵 Inventory Record 🤟 🤇	Positive Regative						
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#### 3.4.2 Result

In case the sample is positive we have to select Genus, Species, Value and Unit.

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Select the Genus and Species from dropdown.

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Microsofta Practifianters as	
Patrice	*
> Type the Value	Select the unit
	- CONTRACTOR - CON
Value*	
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Add Row if you found the different parasites eggs in the same sample.

Table Types : *		Sun Test Agent Type	(Pattingen)		
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Genux*	_	Species'		Value*	tintr*
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Para-right relations	Ψ.	Paramata management	*	8.00	100
N11-		- Select	*		-bibut-
the parament					
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We cannot save and forward the test, if we keep the row empty without adding results, that's why we have to delete the row and save test first and forward for verification.

whether the					
Castar"	Species"		Value"	Marit."	
(manual)	 ( feedback			1.11	-
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10

#### **3.4.3** Forwarding for verification

After forwarded the test to in- charge the system updated the acknowledge and the particular test data will disappear from technician Page.

niu 🔐 🛩 eritrien.		16. <sup>°</sup>				Search			
	SRN	Conducting Lab	Sample Type	Sub Type	Activity	Submitted On		Action	
	54N2022100174	Parasitology	Tissues	Brain sample (Glycerol saline)	Noutine	2022-10-25	A	Carlopen	
	SRN2022100167	Rarasitology	Ilfood	Blood smear	Routine	2022-10-25		Gengee	

# **3.4.4**Sample Repository by TechnicianDirectly click on Repository

A Sentency		scodia		Coccidiă aje	639	290
C Nonethingy		Remarks				
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and succession		Sterage Equipment:		Equipment Number/*	Equiporent Compartment	thunker."
a contraction	1.1	- Severe -	-	- factory	 - Sectors	
Children		Remarka:				
6						Sim

The New Repo Request by laboratory incharge will be listed in the page by section wise, open the particular section to archive.

Angistration	C	New Re	po Request by in	charge					≣List Reg
🗆 Direct Sample Repositor	n S	Show 21						Search:	
🖵 Quality Assurance Syste		SLØ	Labotary Secton	Test Id	Test Type	Sub Test Type	Activity	Date	Action
🖬 Referrat	्य जे	1	Parasitology	TN2022111078	Quantitative tests (para)	Sedimentation technique	Regular	2022-11-09	(? Open
1 Blochemistry	1	2	Virology	PTTN2022111059	Fluorescent Antibody Technique (FAT)	Rabies virus	PT	2022-11-04 02:52:51	CF Open
1 Hernatology 1 Histopathology	ie.	3	Toxicology	TN2022100403	Quantitative Tests(Toxicology)	Total Zearalenone Group	Regular	2022-10-25 10:45:08	17 Open
⊇ Melecular∂iology	a.	4	Toxicology	TN2022100402	Qualitative Tests(Toxicology)	Total Aflatoxins	Regular	2022-10-25	(2 Open

Check the sample details and select the Date of Archival, storage Equipment, Equipment Number and Equipment compartment Number from the dropdown list.

		Sample	Botam		
-					
BRWI SHRLINISSING					
Sample Type: Same		Sample Sult Type: Strom		Activity: Houtine	
		Test D	Actanta -		)
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		and a second second second			
ARDY LADOR MALL		Bolk Test Type Mgent Type	at Wynesdellin		
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Storage Equipments		Experiment Promitient*		Equiption per Consequents	name Recordsort"
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Remove ba					

After you selected all the details then you give remarks and save .

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±0.0	0101460	or ourre	

		E.			
-		Storage Details			
Date of Arebana:					
13/01/2022	. 63			1	
Norage Equipment:		Equipment Number:*		Equipment Compartment Number:	V
bloop Freezon - 80°C	-	NCAH/LSU/0=-07	-	Compartment B	)
Remarko:					/
surpectully archived the samples	12			/	
					1
					1000

After save your Repo detailes this acknowledgment will appear on the dasboard .

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and financial free from a state of a second state of the state of a second s	93	0	

In-charge has authority to verify all the Routine, PT, Referral and NEQAS test and also initiate for both EQAS & NEQAS.

3.4.5 Test verification by lab in charge

LIMS		LABORATO	IRY INFORM	ATION MANAGE	MENESYSTE	M			Carlower (Carlower)
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😂 Test Verification	-	-	_	_	-	-			-
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THE REPORT		Owner Registration	and the second	Annual Tread Disgust	Tableton	Sample Republic		Test Conducted	
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an Annali Incitt	41								
and Division Survival Superiory	143								
an threater terteret									

Under test Verification the section wise name was shown so, directly click on the particular section to open the test forwarded by lab technician.

LIMS	= LAB	LABORATORY INFORMATION MANAGEMENT SYSTEM						
A fullerit	#thene	- Sufficition > Realin						
Charlenbergy Charleman	Test sub Show _=	mitted by technicia	125				South	~
	SLF :	SRN	Testria	Sample Type	Sub Type	Activity	Test Sabmitted On	Action
(* Mainster Keiner (* Mainster	1	S#N2022100177	TN2022111074	Tissues	Soce marrow	Noutine	2012-11-09 16:08:39	Le ope
	2	58N2022110321	762822111671	Blood	Whele Blood	Routine	2012-11-09-10-05:14	12 op
of Sening: If Pedinister	1	S#N2022100234	1142022100654	Excretion Secretion	MBA	Routine	2012-10-26 12:29:08	ter ope
	4	SRN2022100156	1N2022100636	Water	Water-test	Routine	2012-10-26 11:54:51	LP Ope
	. 5	SRN2322100308	TN2022100701	Exerction Secretion	Faeces	Referal	2022-10-26 05:09:23	UP Ope
a silent i i	6	\$852022100307	ThQ022100696	Carcage & Organs	Carcoss.	Hiferal	2023-10-26-05-08:12	CR Ope
Const Savula Aspestary 4	7	S#N2922100298	TN2822100674	Blood	Blood smear	Referat	2022-10-24-04 15:50	Life Ope
						-		-

Check the sample details and open the test.

-	Consection of the					an ranadia adapter
	Concession of the					
al desert for the second s	Sales Links	National States	Statistic field for Secreptic Rate Ty	*******	4-11-14- <b>1-1</b> -1-1	
ad berner berner in de	-			Test Bolisks 1		
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the second s	52.0	Rent Max	haut Type	States	Submitted On	Autom
a hand a second se	.(0))	********	Direct California	Name and	and an original	(••••)

There is three option either to verify directly, verify &referral and to send back to laboratory technician for retest.

LIMS	- LABORATORY INFORMA	TION MANAGEMENT SYSTEM	2 1994
(B. Datterer	Alterna Charling Charling and	almania -	
- Text Velication	-		
of Submission	Tim Ortaila		
Transferrer	Test No: 100103333074	Test Type Rivert Collers	Mature Laboratived
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In charge will initiate either to Repo the samples for future reference during verifying time.

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	j		

# 5.0 PROFICIENCY TESTING (PT)

## 5.1 Conduct PT

For National PT NCAH conducting PT for RLDC LAB

User	Feature
Lab Incharge (NCAH)	Initiate PT
Sample manager(NCAH)	Sample Registration and forward
Sample manager( RLDC )	Forward the sample
Lab Technician (RLDC)	Conduct test
Lab Incharge (RLDC)	Verify
LAB Incharge (NCAH)	Check result through Report

Laboratory In charge of NCAH will initiate PT.

Click on Conduct PT

LIMS		= LAB	LABORATORY INFORMATION MANAGEMENT SYSTEM						🙎 Di Tiup
Salband		W Home	/ Registration / PT						
C Test Verification	15	_							
C Texitform	(e.	PT Regis	stration						
Content Sample Rephiltury	né.	290% Ti						Search	
🖾 Sample Referral	ae.	SL#	Registration Number	Conducting Lab	Activity	Type	Status	Remarks	Submitted Date
Proficiency Testing (PT)     Conduct PT	2	I	PT2022110297	Parasitology	PT	Conduct PT	Forwarded	send PT sample to DVH Paro	2022-11-17 13:49:05
OF NEOLEYTOLS		2	PT2022110296	Parasitology	PT	Conduct	Forwarded	PT	2022-11-17

e.

Select Name of lab/Section choose the national ,Region and center from the dropdown to whom going to conduct the PT ,write clear remarks and send it to manager

				PT					14:40:3	16
9	PT2022110283	Hematology	PT.	Conduct PT	Forwarded	pt			2022-1 14:17:2	1-04
10	PT2022110200	Post Mortem	19	Conduct PT	Forwarded	PT for p	ostmortem		2022-1	1-03
Showing	1 to 10 of 73 entries		10	Trendours	2	(10)				Nicit
Bacte	riology			~						
Nationa	ti -		Region:				Center:			
NCAH	6	*	RLDC T	simasham		*	Select			~
Remark	** *							/		
send P	TT ale to RLDC Lass						/			
-	+									
Servel 1	o Sample Manager									

Processing PT by sample manager

Sample manager will select the Quality Assurance System and choose internal (National & Regional) and open the PT submitted by Lab incharge.

LIMS		E LABORATORY INFORMATION MANAGEMENT SYSTEM						🙎 Mi Ter
Dashboard		<b>#</b> Home	FT Proficiency Testing					
Registration	3	_						
🗆 Direct Sample Re	spasitory (	PT requ	est sent by Lab Incharge					
Quality Assurance	e System \vee	Show 11	• entries					Search
internal (Nationa	al & Regional)	SL# .	Registration Number	Conducting Lab	Activity	Date	Remarks	Status Action
Cr Extensi (Long)		-	-					$ \land \rightarrow $
2 Refemal	\$	1	P12022110297	Parasitology	PI		send PT sample to DVH Paro	Submitter Co Open
Reporta	*	2	PT2022110287	Bacteriology	PT		PT for Bacteriology	Submitted Submitted
		3	PT2022110285	Bacteriology	PT		PT samples of Bacteriology section	Submitted Submitted
		Showing	1 to 3 of 3 entries				1	resitus 1 Next

Check the PT Details and then select the Sample type ,Sub Type and Date of PT from the dropdown and forward the sample to RLDC Sample manager

<ul> <li>Dashboard</li> </ul>		Home I PT / Profisioncy Ter	015 C		
Registration	×				
Direct Sample Repository	y e	PT Details			
🖬 Quality Assurance System	• *	PT Registration No: PT302233	10287	Date 2022-13-57 12(49:05	Remarks: send P7 sample to DVH Pare
12 Internal (National & Reg	(onal)	National: NCAR		Refered to: BLDC Tuimacham	Center name Diff Para
OF KINIMALEQASA NEQLI		Name of Lab Parasitology			
E3. Referral	35				
E Reports	÷.	Sample Type: 1		Sub Type: *	Particulai.
		Detect-	×	-Belett-	* H .
		Date Of PT: *			
		-incod/yww	12		
					+Save He Forward Sample

Process by RLDC Sample Manager.

Sample Manager will checck under quality Assurance system weather he received the new internal PT from NCAH and then he will open.

LIMS	E LABORATORY INFORMATION MANAGEMENT SYSTEM	Citizen
e talbat	Annes 17. Palcong lating	
2 Reposition ( 2 Deschargio-Repository (	PT request sent by Lab Incharge	
🛛 quanty Acquirance Systems 😁	Show 3 we entries	Search.
9 Internal (National & Regional) 9 Internal (Stational & Regional)	SL# Registration Number Conducting Lab Activity Date Remarks	Statur Artion
Sec. 1	1 PT2022120305 Bacteriology PT 2622-12-05 pt	Forwader
E Reports C	Showing1 to 10/1 entries	hereas a

Check all the details and click on assign to forward the samples to laboratory technicnian for sample testing.

egenerer e	BT Busicitantian Datable		
ierr Simple Septimer 4	FT REPAIRING DELATE		
wellty Accurate System	Registratio Details		
terrisi (Sisteral & Regional)	Registration No. #12022120.000	Date 2012 12 15 10 10 10	Namarks: pt
Reveal DESIGN AND D	Name of Lab Bachridegy		
hered /			
eens:	Samale Registration Details		
	Sample Registration No. PTSRN/022130515	Sample Type Serum	Sulk Type: Serumi
X	Activity. PT	Date of PT 2012 12 45	
	Test Conducting Details		
	Sample Manager: Mr. Temainia	Form: NCAR	Sample Hanager Remarks: Hit Tortifika
			-
	Bemarka:		

Process by RLDC Technician

The technician of RLDC directly checks the dashboard of respective section and click on PT and open the test Perform button.

LIMS	≡ 14	BORATORY INFOR	MATION MANAGEMENT :	System			() interlaps
6 Cerlbard	A inco	(FT) Policing Testing	Ē				
E factricky							
P	PT for	varded					
2 n 2 nu	2000	+ emitt				Seach	
Audersty/	SU .	PT Registration Number	Sample Registration Number	Conducting Lab	Date	Type /	Action
I tentolgy	1	PT2022126305	PTSR62022120315	Bacteriology	1022-12-05	Condice	Townson a
⊆ Hinouthology	÷				10.15.01	PT	
D Ndexia Bilog	Spirg	1 to 1 of 1 ettries				Renai	1 160

Check all the details and select test type to perform the test as usual and forward for verification to lab in charge.

E Pentadopi	National NCAN	Refered to: RLDC Trimacham	
Hittpsthology			
💷 Malecular Biology	Sample Registration No: PTSRN2022130335	Sample Type Serum	Sub Type: Serum
🕮 Myrology	activity: PT	Bate of PT: 2022-12-03	Remarks
🗆 Parelisingy	Anterned Fam		
🖴 Past mortem	Sample Manager: He Tenzinia	Forwarded From: NCAH	
🕰 Serology	C Remarks From Sample Hasappt		
III Toskalogy	Sample Manager's Remarks: sample for PT sen	d Forward Cone 2022 11 05 12:04:02	
III Wrology	yet l		
Of Repository	Test Type: *	4	
in memory locust	-Select-		
B Aports	Galifymia Mastinis Teat (DAT) Somatic Cell Caver (SEC) arbite Side Teat (BST) arbite		Sider Test. DiForward for Verification
	Starring/Harter/Islog/ Ardonicistual succeptibility test Mable Count		

Verification by Laboratory In charge of RLDC

Directly check the PT in the dashboard, check the TN/ submitted date and open the test which submitted by technician.

LIMS	≡ UAB	= LABORATORY INFORMATION MANAGEMENT SYSTEM					
B Daribouri	-	Technologie - Neuro	Ás:				
Test Verification	-						
Rossig	Test sub	mitted by technician					
Baherida .	300 11	+ ethies				Search	4
	SLA	* Sample Reg No	Test No	Activity	Sample Type	Submitted Date	Action
	1	\$95272330279	7x2022109653	Routine	Blood	3823-26-36 12:36-32	
	2	\$R10202100290	TN2022300653	Routine	Blood	2822-10-26 02-6-09	• •
	1	SRN2022090030	TN2022090300	Refertal	Blood	2022-09-06 12:35:41	-
Tenge M	Vewig 1	n la la ma				Province	
		1					

View the test, write some remarks and verify.

97 broker 27 broker	150	N.T.	-	A CRIMEN		Tens/s)		
971-000 971-00 974	Test No: 977825 Coltoral Test Re Reps:	aziti 199 salt L No Growth ⊖nus ≢ no		Test Type: Sirect	Galture			
in herde fr 2 herde herde hanner 2 herde herde	E					Dieter	-	
Statement Statement		Test Registration	Sample	Sub-Sample		Suiz Tent		
Street and	8.8	Number	7,94	Terr	Test Type	Type	Status	-
a beneficial A ben					Citize		Advent	
	SALWINE S	THE REPORT OF A					Pakat	No. of Concession, Name

PT Reports

**NCAH will check PT result through Report**: Directly click on PT-specific and select from date (Approval Date) To Date (Approval Date, choose the lab from the dropdown and generate the results.

LIMS	E LABORATORY INFO	RMATION MANAGEN	AENT SYSTEM	🛕 Dava Tibering
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A monthern	From Data: * (Approval Data)	To Date: "(Approval d	lade) Lade:	
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PT Results

Results can print it from system if the network available, from anywhere.

5.2 External Quality Assurance System (EQAS)/ National External Quality Assurance System (NEQAS)

EQAS

Sl No.	User	Feature
1	Lab Incharge (NCAH)	Initiate EQAS
2	Sample manager(NCAH)	Sample Registration and forward
3	Lab Technician (NCAH)	Conduct test
4	Lab Incharge (NCAH)	Verify and View report

NEQAS

SI		
No.	User	Feature
	Lab Incharge	
1	(NCAH)	Initiate NEQAS
	Sample	
2	manager(NCAH)	Sample Registration and forward
	Lab Technician	
3	(NCAH)	Conduct test

Lab Incharge	
4 (NCAH)	Verify and View report

## Lab In charge

# Lab In charge will initiate both the sample for EQAS & NQAS

← ⑦ ① https://	(fires.ncs	ah.gov.bt/te:	pstration/pttant/oaddo	orm/aetamul_ph					A <sup>b</sup>	666	
LIMS		≡ LAI	ORATORY INFO	DRMATION MAN	IAGEMENT	SYSTEM			🧝 Dr.Thapi		
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D Realition PT	•	PT Regis	tration								
LL Direct Sample Republicity	1.40	Show 10	v estres						568701:	U	
🛋 Sample Milleral	4	SL#	Registration Number	Conducting Lab	Activity	Туре	Status	Remarks		Submitted Date	
A Proficiency Testing (PT)	3 <b>7</b> 0	1	PT2022110295	Bacteriology	PT	Esternal	Assigned	pt		2022-13-08	
Corduct PT						ΡŢ.				14:40:18	
C NEONSTEONS	S# .		PT2022110292	Toxicology	PT	External PT	Assigned	Feed 1		2023-11-04 14:59:06	

Manager will select the Name of Lab section which is going to send the sample for EQAS/NEQAS , give a reference number clearly .

w.	T TRUBE LANAUT	www.uennaury	4.4	PT	erailinen.	diarithu.		14:39	35
9	PT2022110281	Bacteriology	PT	External PT	Assigned	1234		2022-09:58	11-04 30
10	PT2022110280	Biochemistry	PT	External PT O	Assigned	for ecqas bio		2022-	11-03 102
owing	1 to 10 of 108 entries		President	1	2	3 4	5	11	Next
-Selo	Clab: *			~					
Dacter Binch Histor Histor Mulec	nology emistry tulogy sathology uler filology				Reference Nur	iber:			
Mycoli Parasi Post k Serolo Toxico	ogy tology tortem itby itugy								
(majo				_					

Selected the level from the dropdown NEQAS/EQAS, write the remarks and forward to sample manager.

14	a i lansaatiana mysenegy		PT PT		Perignen.	construction of Annual Construction			14:45:56			
0	PT3033130384	Biochemistry	PT	External PT	Assigned	down	dweet hig			2022-11-04 14:39:35		
10	PT2022110281	Bacteriology	РТ	External PT	Assigned	1234	1234				2022-11-04 09:58:30	
Showing Name of	I to 18 of 189 entries		Prev	ims 1	2	3	4	3			Next	
-Sale	u-			~	Reference Num	iber:						
-Sele	a			×								
EQAS	)											
Served	o Sample Manager											

## Sample Manager

Sample Manager will directly select the quality assurance system, chose the External (EQAS & NEQAS) and open the PT sample which was submitted by lab In charge.

LIMS	= UA	DOBATORY INFORMAT	NON MANAGEMEN	97 SYSTE	6				() = herei
*		and the second							
	Parista	and savel by Lab Includy.							
- Cuality Passance System	Per a	emiler						Secola	
A course below a bear of	304.1	Registration Number	DesturningLate	tevel	amony.	Date	Herbacks	30404	Action
	10	PT29428338982	Hernandogy	HEGHD	25		NEGAS	. Submitted	a term
N- / ·	1	#T202253.0094	Voslagy	HEQAS	11		NODAL	Selected.	-
$\sim$		P138223.00301	Post Marture	HEDAL	10		Set	Estrotted	
		PERMIT	Psycalization	1000	17		100	LANDER	
	3	#1064223001.94	Biodseniatry	interes.	.et		with.	Sebutted	
		P71822100149	Budamistry	HEIDAG	ie .		remarks	Salorited	1000

The important information to revisit of PT Details by sample manager and select the sample type, sub type, chose date of PT to register the sample and save and forward to lab Technician.

## Lab Technician

Select your own section, choose PT and check the sample which was submitted by sample Manager carefully and click on perform test.

Charles of MY - Desired Training				
PT Details				
PT Registration No. P72022220302		Onto 2022-11-24 12.14.02	Remarkai HEQAS	
Name of Lab Hematology				/
Level: NEQAS	_	Reference Number TILLS		
Lavel: NEQAS		Sub Type: *	Activity; *	
Lavel: NEQAS Sample Type: *		Sub Type: *	Activity: *	
Level: NEQAS Sample Type: * Bland Date Of PT: *	v	Sub Type: * Bood smear	w activity; *	

Select your own section, choose PT and check the sample which was submitted by sample Manager carefully and click on perform test.

						02:42:21	PT	~
T Hematology	v	3	PT2022110238	PTSRN2022110250	Hematology	2022-11-03	Fyternal	R Perform Text
诸 Regular						02:42:21	PT 1	/\
🛛 PT <		4	PT2022110198	PTSRN2022110210	Hematology	2022-11-02	External	241.4
B Reternal				1.00000000000	TREASURE J	11:40:19	PT	Id Penom les
Histopathology	3 <b>4</b>	5	PT2022100123	PSRN2022100131	Hematology	2022-10-27	External	Perform Test
💷 Molecular Biology	×					12:51:25	PT	_
		6	PT2022100169	PSRN2022100155	Hematology	2022-10-27	External	To be down Test

Technician will check the PT registration details and conduct the test same as normal routine samples and forward to lab Incharge for verification.

LABORATORY INFORMAT	FION MAN	AGEMENT SYST	TEIM	🧟) Yuhummu Dome				
-								
PT Registration Details	_							
Product ation Details								
Type: Esternal PT								
PT Registration No: PT2022110303		Turin 2022-33-24 32:54:02			marker megas			
Level BEQAX		frame of Lab Hemsteings		-	foremen Humber TBLLL			
Sample Registration No. PT2NM20221	60383	dample Type House		24	ik Type: Illead errors			
According: 112		Date of PT1 2028 11 20	0	-				
ut Type: *		Buls Test /Agent Type/P	athegen					
-Serlect-	× .	-theirect-		~				
maadda *	Honold Links		Banghi-*		Tester essent."			
	-		0					

## Lab In charge

Click on PT, check the details of test and then verify & refer /verify the PT samples.

LIMS	= LABORATORY INFORM/	TION MANAGEMENT SYSTEM	( <u>2</u> )	to There
· Dealthough	Attene mellogian - September	shorth ration		
I fantierfinklar -				
OF Receivings	Test Details			
the annihilation and	Yest But Thataasaaaa	Your Type: Direct Collary	Status: Summittee	
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IF Million and Million				
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# 6.0 REPORTS Four Types of Reports



Test Result	Section-wise	Repository	Inventory

## Test results.

Test-Specific: Directly click on test –specific to view your results by checking your test type.



Option to search the particular section results by using your TN.

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🚯 Dashboard	e Hori	e   Approved Tests				Type TN to	search par	ticular		
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□ Registration	< pproved	i iesi								
Direct Sample Repository	< Stow	in A learnes						eores Taggin		
교 Quality Assurance System	•	Lab		Sample	Sample Sub		Test Sub	Action		
🕮 Referral	< SL#	(Section)	Test No	Туре	Туре	Test Type	Туре	Date	Action	
Bacteriology	6 5	Serology	TN2022121218	Swab and Smear	Cloacal	Rapid antigen test	Avian Leukosis Complex virus	2022-12- 05	• View	
D Biochemistry	8							07:46:58		
😐 Hematology	Showing	; 1 to 1 of 1 entries (fi	itered from 246 total ent	ries)			Previou	s I	Next	

#### Sample-Specific

Click on sample -specific to view the results by checking SRN and Date.

T AMAGE AND A STATE OF								00.01.00	
Repository     Store Inventory	€	7	Serology		57 1202212041	Serum	Serum	2022-12- 01	@ Yew
D Inventory Record		8	Molecular Biology		SRN2022110413	Bood	Whole	2022-11-	• Vew
Traffesult	~	9	Serology		SRN2022110408	Serum	Serum	08:23:29	© Vew
Sample specific 4     Simple specific 4	}					/		28 04:16:40	
* Retenting	1	10	Serology		RN2022110409	Serum	Serum	2022-11- 29 04:16:02	@Vew
		Showing	( 1 to 10 of 149 entries	Provinsi	1 2 3	4	5		Net
		0							_

## Repository

Click on Repository to check the record of repo samples.

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Section wile	endlaffare ruesee discrete ter
P Republy	

Select the repo from the dropdown, tested sample repo or direct sample repo put from date, to date and select activity PT, regular or referral samples and generate the records.

LIMB	- LABOR	ATORY INFORMATIO	ON MANA	GEMENT SYSTE	Min				۲	falsan ng Desa
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## **Records for repository**

We can also export the records to excel

									1
				Sub	alaan ( In: [		Equipment		
sistration No	Sample Type	Test No	fest Type	Test Type	Storage Equipment	Equipment No.	Compartment number	Remarks	Center
02022090001	Non- Formulated				Chuidha Maha Storage	Chuka middle maha storage	Chukha Storage	teste	NCAH
PCISRN2022090003)	Parasitic Sample				Deep Frenzen -40°C	NCAH/LSU/DF- 07	Comportment A	dtsadf	NCAH
Hi2022090002	Tissues				Alaria	60	464	adigadig	NCAH
H02022090004	Others				Admin	ok	39	test.	NCAH
62022100007	Soil				Shelf1	EQ101	Lower left	ok	DVH Burnthar
02022100008	Tissues				DVH Funakba_Shelf	One	Top	00	PLDC 2hemgar
w2022100009	Swab and Smear				Alaria	no	464	ok	NCAH

# **Inventory reports**

Click on inventory to check the record of inventory chemicals and equipment.



Put from date, to date and select the dzongkhag, gewog and goegraphic from the dropdown either national, regional or center and generate.

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a Dashbeard	Witerie Pilipert 14	esterativ <u>e house a serv</u> er			
🛢 Master Management 🛛					
🖴 Inglemetion 🖉	Presi Date: *	To Date: *	Ozongkhag:	Gewog:	
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E Quality Assurance System	Geographic:	±0erente	_		
🕮 Referat					
E Bacteriology	All				
E Biochemilitry	Regional				
	Center				
and Production (1990)(3)					
- Mycology					

Financial						Sinch	Esport to
51.4	Item Name	Manufacture Date	Expiry Date	Presentation	Initial Quantity	Quantity Issued	Quantity balance
L	Cefotaxime	2022-10-01	2024-07-21	any	120	144	-24
2	Qaacillin (OKA)	2022-07-27	2023-02-07	30mi/30 mi vial	10	4	6
8	Persicillin 6 (PEN)	2022-13-01	2022-11-30	bol	20000	9900	10100
4	Vancomycin (VAN)	2022-10-04	2022-12-04	10 mt viat	100	10	90
5	Bacto Agar	2022-10-19	2022-10-29	500gm	10	7	3
6	Blood Agar Base	2022-07-01	2022-11-26	500g	100	51	49
7	Benzone	2022-10-08	2022-10-31	presentation	50	9	41
8, C	Rabies rapid Antigen test kit	2021-09-01	2023-09-04	Kits	5	3	2
9	Eosin yellow	2022-10-01		500g	500	100	400

Records of Inventory, we can also export the records to excel.

# Finally results for laboratory finds

	<b>द्रध्य क्षेत्र व्युवा योक्टा</b> बें'त्र का न्द्र न प्रवाशित्र व्यवस्थिता ROYAL GOVERNMENT OF BILUTAN Ministry of Agriculture and Forents Department of Livenstock Thisophu	BOL
	LAB NAME: NCAH	
Sample Registration Number : 580(2021)20428	Date Generated 12633-13-06	
Owner Details		
Name: NRPBC/Waigshutaba	C10 1	Contact No : 17928949
Village :	Gewag : Chang	Drongkhag : Thimpho
Animel details/Faud details		
Sample Category : Animal		
Species : Swine	Animal Type   Fig	Brond (Local
Age: Uninown	Ses : Unknown	Animal Name :
Individual/Pool: Pool	No. of samples : 12	

Age : Unknown		Sex : Uni	mown		Animal N	ame :	
Individual/Pool: Pool		No. of sa	mples : 12				
Sample Details							
Sample Type : Excretion	Secretion	Sample 5	iub Type : Fae	CPS	Number	of Sample : 10	
LAB SECTION: Parasitolo	gy						
Test No: TN2022121223							
Test Type	Sub-Test	Result	Species	Value	Unit	Tested By	Verification Date
Quantitative tests (para)	Sedimentation technique	Ascaris	Ascaris suum	all animals effected with Ascaris	Nos.	Tshewang Dema	2022-12-06 11:52:53
		Verified	by: Dr Nirmal I	Kumar Thapa			
This is an electronically generic (see or otability of the	and Leboratory information Mar	sagement System ()	UMS) twist report.	To verify the suthersticity of this report,	please contac	tNational Centre for	Animal Health, Serbithang
- Print							

While printing the results, there is option to save the report in PDF.

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🛋 She	Send To OneNote 2013 Ready		LAB NAME: NCAH	
52 in	OneNote for Windows 10 Ready	Sample Registration Number : 5882022330439 Date Generated : 2522-13-04		
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	Microsoft Print to PDF Ready	CD : Centart No 127620100		
, 16	O eg.1-5.6.11.13	Gewog : Charg Danogkhag : Thireptu		
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C	Print Crincel	Species : Suring Animal Type : Pig		

# 7.0 OFFICIATING ASSESSMENT

Assigning Officiating- Whenever the concerned officials are on tour or leave, the lab In charge will assign someone in his/her absence.

LIMS		RY INFORMATION MANA	GEMENT SYS
🚯 Dashboard	Assign Officiating		
E Test Verstanden			
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ED. Sample tiefensit 4	Action: *	Assign Officiating	
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🗈 Officieting Assessment 🖂	To Date: *	dd - yyyy	
Assign Officiating	Remarks: *		
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DAMANNY			
E Trpotta			_
			Close Au
	-		

Revoke officiating- When the officials on tour or leave re-joins the office, the officiating role is to be revoked through this interface.

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Benoke officiating     Entra Archive	5	All Role	2022-12-07	2022-12-29	Officiating	(B) View
	6	DVH MONGAR	2022-12-14	2022-12-30	Officiating	· View
E Reports 🔹 🔹	7	Jamitsho	2022-12-13	2022-12-17	Revoked	(B) (inv
	Showing 1 t	o 7 of 7 antries			Previous	1 Hore
	31					
	Copyright #1	LIMS All rights reserved.				

# 8.0 DATA ARCHIVE

Other data like PT results/reports or surveillance reports can be uploaded by adding in this feature and can be downloaded when required.

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# 9.0 STORE MANAGEMENT

#### 9.1 Stock management (store in-charge)

As we login as a Store In-charge, two services will be accessible, namely Master Management and Store Inventory (Figure 1).

Master Management is for the development of virtual store aligning with the physical store for laboratory consumables and reagents maintained at a Centre, whereas Store Inventory is for the purpose of stock management, where one can enter, issue, request and mobilize the laboratory items.

LIMS	= LABORATORY INFORMAT	ION MANAGEMENT	SYSTEM
🏚 Dashboard	B Home / Centre-specific Dashboard		
Master Management 4	-		-
드 Store Inventory <	0	0	
	Total Stock	Stock issued	
	×		

Figure 1: Services available for Store In-charge.

#### 9.1.1 Master management

This service for the purpose of building a virtual store where one can assign identification name and number to the storage equipment and its compartments.

#### Stock

LIMS		ION MANAGEMENT	SYSTEM
e Dashboard ■ Master Management ~	Home / Centre-specific Dashboard		
Stock Storage Equipment Equipment Number Sequipment Compartment	O Total Stock	O Stock Issued	Ä
Store Inventory C			

Figure 2. Services to provide ID for storage equipment.

#### Storage Equipment

This service must be used for giving a categorical name to different storage equipment available in a Centre's storeroom or laboratory.

- Click on Storage Equipment to view the list of equipment available and to add new equipment to your store (Figure 3).
- Click on Add New (Figure 3) to open a page where name of the new equipment can be entered and saved (Figure 4).

LIMS	= LABO	🔔 HCA	et Reco			
B Restored	Storage Eq Show 10	ulpment List			+un Searth	-
Monage Equipervisit	51.9	* Name	Description	2 Status	Action	
* Epideministrements	4	Refrigerator: 2°C to 6°C	Refrigerator	Active		
C Sevenivering 1	1	Deep Freezon: -80°C	Deep Freezer	Active		
	3	Deep Freisen: -40°C	Deep Freezer	Active	10	
	4.	Deep Freezer: -30°C	Deep Frenzer	Active	12	
		Shelf	shelf	Active	2	
	. 6	NCAH	beaker.	Active	2	
	1	bicchern shelve 1	parvo Rapid Test kos	Active	2	
		).f		Active	20	
	9	abetae DNNs	Distemper kit	Active	2	

*Figure 3. View and add equipment to the store.* 

- In the Details page, enter the name of the equipment, description (optional) and keep the status as active (Figure 4).

I MM3:	- LABORATORY	NEONWATION MANAGEMENT SECTEM.				-010
(B) (Contraction	Monte laugement.	Details				-
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+ Manage Raisson www.	SLA - Nor	Percription		Status	Action	
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S. Sectors 1	(# (PH	Status: * * Active () in satisfy		- Batters		
	3 30			Adde		
	.a. an		Come Serve			
	14. (1864	54		Attain	100	

Figure 4. Add new equipment and save.

- Upon saving the details, the new equipment added to your store will show in the list of equipment as shown in Figure 5.
- To search the specific equipment if the list is long, enter the name of the equipment in the Search field at the top right corner (Figure 5).

LIMS		LABORATORY INFORMATION MANAGEMENT SYSTEM					
🔿 Deritorett	Storage Ed	gulpment List			E	PASSING STR	
B Stock *	Show a	* Name	Description	Status	Action		
<ul> <li>Applyment Marchae</li> <li>Applyment Comparison</li> </ul>	44.	gasa lah shelve 1 almara	reagents.	Active			
C Stare (Wester)	12	NVH/KINZA	starive: 1	Active			
	13	Steel Rack_NGAH	Steel Rack_NCAH	Active			

Figure 5. List of equipment added to the store.

#### **Equipment Number**

Once the equipment name has been added, equipment numbering can be done through this service. For example, if there are more than one cupboard in a store, all these cupboards can be assigned a unique identification such a cupboard A, B, C, etc.

- Click on Equipment Number to view the list of equipment and its number (Figure 6).
- To add a new Equipment Number, click on Add New on the top right corner (Figure 6) to open the page where relevant details can be entered and saved (Figure 7).

LIMS		ORATORY INFORMATION	AANAGEMENT SYSTEM				<b>COH</b> 110
🚯 Derhitseri 🛢 Marter Hanagement —	Equipmen	ent lid Llat			2		ald hime
<ul> <li>Bened to server</li> <li>Standard Manber</li> </ul>	SL#	* Storage Equipment Refrigerator: 2*C to 3*C	Name NCAH/LSU/R21	2 Description	Status	Action	
The meeting 1	1	Deep Freezer: -80°C	NCAH(ILSU/OF-07		Active		
	4	Refrigerator: 2°C to 8°C	NCAH/LSU/HZZ		Active		

*Figure 6. View or add equipment number.* 

- To give a number or name to the existing equipment, first select the name of the Storage Equipment from the dropdown and then enter the name or number to be assigned against the selected equipment (Figure 7).

LIMS	= LA	BORATORY	NEORMATION MANAGEMENT SUSTEM			<b>0</b> - 100-
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	385	: SAR FLO	and a second second		vachie.	
	22	-		_	Attive	12
	1.75	Janet Ra		and all all all all all all all all all al	Athe	12

*Figure 7. Enter details for numbering an equipment.* 

- Click on the Save button the save the name or number entered (Figure 7). Once saved, it will be viewable in the Storage Equipment page as shown below.

LIMS		ORATORY INFORMATION	MANAGEMENT SYSTEM			🐊 sclesto
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🗃 Marter Management 🔍						a sea tour
🖶 Stock 🗸 🗸	Shew in	- andrine			Search.	
A Distance in the second	SLF	* Storage Equipment	Name	Description	Status	Action
N CALOMIN LOCATIONS	п	Shelf	Shelf C	Shelf C	Activo	100
El Startherthor	22	Shaff	triachem shelfve 1	Rapid box Kit parve-	Activo	100
	23	biochem shelve 1	rapid let parvo	Parvo kito	Active	12
	24	LAS FLOOR	NOOM 1	Heorn1	Active	10
	25	NVHONZA	rapid kit parvo	10kits	Active	2
	28	Steel Rack_NCAH	Steel Rack_NCAH_1	3	Activa	

*Figure 8: View the list of added name or number against the equipment selected.* 

#### **Equipment Compartment**

For every storage equipment, there will be multiple compartments where the laboratory items could be kept segregated. This service must be used to assign compartment number to the specific equipment selected.

- Click on Equipment Compartment to view the list equipment with unique identification name or number and its compartments (Figure 9).
- To add a new compartment to a storage equipment, click on Add New on the top right corner of the page (Figure 9).

LIMS		RATORY INFORMATION	MANAGEMENT SYSTEM			(2) 1154	HINNY
Colbort	Comparte	nent Mapped List					-
Auster Management -					0.00000	100	1.12
🖨 Stock 👘	Show 30	entries			Seattle		
Things Inderven	SLA -	Equipment Id	Name	Description	Status	Action	
P. Balanen Conpartment	3	NCAH/LSU/R21	Compartment A	Compartment A	Active		
III There in working 5	2	NCAH/LSU/DF-07	Compartment A	Compartment A	Active	10	
	3	NCAH/LSU(923	Compartment A	Compartment A	Active	12	
	4	Test Equipment Number	Test Equipment Compartment	Test Equipment Compartment number	inactive	127	
	5	NCAH/LSU(921	Compartment B	Compartment B	Active	12	
	6	NCAH/LSU/R21	Compartment C	Compartment C	Active	100	

Figure 9. View equipment details and add new equipment's compartment.

- In the Details page, select the equipment of interest from the Equipment ID list and enter the compartment name to be assigned (Figure 10).
- Description field is non-mandatory; however, the status button must be selected to Active to show in the list of compartments later (Figure 10).

QMC:		TORY HEDRINATION MANAGEMENT SYSTEM		😥 state-
R. Palacet	Compartment	Details		(THE OWNER )
E Natio Versament		Equipment Id		BARACO .
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R. Balancet Description	1	Description		Alle 🚺
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	3	CANTER	-	A214 100
		of Topolog	Internet researchers	Hallet 127
	3 8	CANADA		ALLA MORE
		CHIRDAN	- Cinil	ATHY IZ

*Figure 10. Page to enter equipment's compartment name.* 

- Upon clicking on Save button (Figure 10), the compartment name will be added and shown in the list of equipment under the Equipment Compartment page (Figure 11).
- To search for a specific compartment, enter the name in the search bar on the top right of the page below the Add New button (Figure 11).

UMS	. LABO	RATORY INFORMATIO	ON MANAGEMENT SYSTE	M		() MCAH SLO
Datitional     Matter Management	Compartm Shew 12	nent Mapped List			Search	+ approve
<ul> <li>Durings Equipment</li> </ul>	SLA -	Equipment Id	Name	Description	Status	Action
Couprient Competiment	41	Shelf A	Comp 1	Comp 1	Active	
E Maximethry 4	42	ShelfA	Camp 2	Comp 2	Active	2
	43	Shelf A	Comp 3	Comp 3	Active	
	44	biochem shelve 1	rapid kit parwo	percikit	Active	2
	45	RODM 1	FLOOR	FLOOR	Active	
	46	rapid kit parvo	rapid kill parve		Active	2
	47	Steel Rack_NCAH_1	Top_Hight	Top_Right	Active	12

Figure 11. View the list of equipment and its compartments.

#### 9.2 Store inventory

This service is for the purpose of stock management, and it has the following sub-services:

- a. Stock Entry to enter new stock.
- b. Stock Issue/Balance to issue laboratory equipment to the concerned lab technicians.
- c. View Other Store's Stock to view and request items for other stores.
- d. Stock Verification List to verify and issue items as per the request received from other stores.
- e. View Annual Stock Details to view the stock reports based on the timeframe selected.

LIMS		ON MANAGEMENT SY	STEM		🧕 ucu	H Blove
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Of Inachines a malarest	-	0				
GP New Other Street Hock						
17. Voie-broad black Setally						
<ul> <li>(P. Body in Figure 1);</li> <li>(P. Van broad bink brink);</li> </ul>						

Figure 12. Sub-services under Store Inventory.

#### Stock Entry

- Click on Stock Entry to open a page where the list of available stock can be viewed and also to add new item to the existing stock (Figure 13).
- To check the stock details against a particular item, enter the name of the item in the search bar to filter. Details such as name, batch, presentation, quantities and dates can be viewed (Figure 13).
- The details recorded against a consumable can be updated or deleted by clicking on the relevant action button on the right end of each row under the column name Action (Figure 13)

LIMS	= LAB	ORATORY INF	ORMATION N	ANAGEM	ENT SYSTEM					(2) CON 2010
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Of Incontrary		Commission	Dam	Batch		Receive	Initial	Coantity	Date of	
GP. Bach Ineer / Believe	514	Туре	Name	No	Presentation	Date	Quantity	Balance	Record	Action
The Association States	4	Culture Media	Blood Ager Duse	BAID2	500 gm	2922-13-02	10	а.	2022-12-13 09:13:20	-
	Showing )	in Islation							Project	1 Aug

Figure 13. View and add stock details.

- To add a new stock detail, click on Add New Item to open a pop-up page where all the required details can be recorded and saved (Figure 14).
- Select name of the item from the list of Consumables Type, which will be added by the system' admin, and enter all the fields as required.
- Select the storage equipment name, number and compartment where the item would be stored (Figure 14).
- Enter the quantity received in the field named Initial Quantity (Figure 14).

Add Item   Censoredia Type*   Censoredia Type*   Censoredia Type*   Censoredia Type*   Section Not*   Section No	LIMS		and of the second	ERMANENT SYSTEM	r				<b>1</b>
Conservation Conservation   Conservation Taxes Names*   Conservation Taxes number   Conservation Taxes number   Restrictions Taxes number		Add Item					5		
Second loss Second loss   Second loss Recond loss   Second loss Recond loss   Mini 2000 More part loss   Mini 2000 More part loss   Mini 2000 More part loss   Mendiature Rate: Repire data   State Allow More part loss   Mendiature Rate: Repire data   State Allow More part loss   State Allow More part loss   State Allow State Allow   Minitial Quantities: State Rack, SCAN_1   State Rack, SCAN_1 Itom Right   State Rack, SCAN_1 Itom Right		Consumable Type *		them Name: *		Hansfacturer *			Sector of the
Ratch No.*     Presentation:*     Receive Date:*       104.25875     5001 per bos     2003-04-05     1       Manufacture Rate:     Rapity Date:     2003-04-05     1       Manufacture Rate:     Rapity Date:     1     1       2005-02.02     3000 per bos     1000 Per bos     1       2005-02.02     3000 per bos     1000 Per bos     1       2005-02.02     3000 per bos     1000 Per bos     1       2005-02.02     3000 Per bos     1     1       Stendy Rate:     Stendy Rate:     Stendy Rate:     1       Stendy Rate:     Stendy Rate:     1     1       Initial Quantity:     1     1     1		Desamables	-	Face much (Cer lenge)		Safernesk		100	
184. 2552     Manufacture Rate:     Expiry Date:     Rate (Wa.)     Rate (Wa.)       2023 42 02     3000 mm.dl     707     1000 State of an anti-anti-anti-anti-anti-anti-anti-anti-		Battch Net: *		Presentation:*		Receive Date: *		100	
Manufacture Rate:     Expiry Date:     Rate (Na.)       2023 42 02     ID     3339 100 000       Biorage Equipment*     Equipment Humber.*     Equipment Comparison Number.*       3661 Rock, MCAH     V       100     100		MM-23453		More per bas		2023-04-01		Case of	1444
2015 45 02     D     3939 45 02     D     3939 46 02     01     01       Bitrage Equipment*     Equipment Number.*     Equipment Compartment Number.*     Equipment Compartment Number.*       Sized Rack, MCAbi     Sized Rack, MCAbi, 3     V     Inc. FigA     V       Initial Quantity:     Size     Sized Rack, MCAbi, 3     V     Inc. FigA     V		Manufacture Bate:		Expiry Date:		Rate (Na.):			-
Bitungs Equipment."         Equipment Number."         Equipment Compartment Number."           Steel Rack, NCAH         -         Steel Rack, NCAH         -         Texame         T		2023-02-02		yony remained	=	787		01123-20	
Image: State Rack, MCAN         V         State Rack, MCAN         V         Tage Right         V<		Storage Equipment."		Equipment Number:*		Bayaipment Comportment N	Kamber:*		
Initial Quantity:		Sheel Rack, MCAbi		Steel Rack_RCArd_1		hard and	÷.	Same :	1 1 100
50		Initial Quantity:							
		50							
							Chine State		
						0.	and the second second		

Figure 14. Page to add new stock details.

- Upon saving the details by clicking on the Save button, the details can be viewed in the Stock Entry page (Figure 15).

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🖂 Stare Inventory 🚽	1 march	ided Successfully.								_
OF Stock Litry		20							2 (5-10-11)	_
17 New Other States Birch	Show =	- immies							Search	
CP. Back we fination 110 CP. New Accord Mark Denals	518	Consumable Type	item Name	Retch No	Presentation	Receive Date	Initial Quantity	Quantity Salance	Date of Record	Action
	1	Culture Hedia	Blood Agar Base	84/02	500 gm	2122-12-02	10	ĩ	2022-12-13 09:13:20	
	2	Convenables	Face mask (Ear toop)	RN-25453	SEpes per bee	2123-04-01	50	50	2023-04-03 04:01-14	
	Showing	I to 2 of 2 withins							Perint	Final

Figure 15. Showing the list of added stock to a store.

#### Stock Issue/Balance

This is service shall be used when issuing the items requested by the lab technician of the same Centre.

- Click on Stock Issue/Balance to view the details of the stock available in the store (Figure 16).
- Search filter can be used to find the specific lab item (Figure 16).
- Action buttons, namely Add Issue and View are to issue the requested items and view the details after issuing respectively (Figure 16).

LIMS		BORATORY IN	FORMATION	MANAGEI	HENT SYSTEM	R İ				<u>e</u> 1	ican terr
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E Hannelberagenetti F.	Record	Stock Usage									
🖂 Stars Inventory 🚽 🚽	Show at	- millies							9	monte	
GP makking GP makking / televis	540 *	Consumable Type	Item Name	Batch No	Presentation	Receive Date	initial Quantity	Quantity Balance	Date of Record	Action	
<ul> <li>Year Other Second Back</li> <li>That Workshort Set</li> </ul>	1	Culture Netlia	Blood Ager Dase	6A/02	500 gm	2022-12-02	10	T	2022-13-13 09:13:20	+ Address	2
17 New Average Versch Designs	2	Consumables	Faor mask (Ear isop)	8N - 23453	50pts per box	2023-04-01	30	50	2023-04-03 04:01_14	-	L.
	Showing	to 2 of 2 entries							Prinkers		these

Figure 16. Stock issue/balance page.

- To issue an item to the concerned lab technician, click the Add Issue button against the item of interest. It will open a pop-up page where necessary details must be entered (Figure 17).

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		Desumable	Sugmas on	Silper per box	2015-01-01	R.	50	2003-04-05	TAXABLE INC.
			314 1022	a l				9900.24	

Figure 17. Item issue details.

- Enter the quantity to be issues and select the name of the lab technician to whom the item is being issued (Figure 17).
- Upon clicking Update Issue button (Figure 17), the current stock will be updated accordingly, and it can be viewed in the Stock Issue/Balance page (Figure 18)

LIMS		BORATORY IN		🤶 неливи						
• Painter#	Rock User									
E Horse Hangement 5	Record	Stock Usage								
🖴 Store mentory -	Shire is	i avetrica							3	earch
		Consumable		Batch		Receive	Initial	Quantity	Date of	
@ litocu toure / Itelance	51#	Туре	Here Name	No	Presentation	Date	Quantity	Balance	Record	Action
OF New Other Titles Stock OF Stack Well Labor Unit OF New Arrian Titles America	1	Culture Media	Blood Agar Base	8A/02	530 gm	2622-12-02	10	1	2922-12-13 09:13:20	Add Inner Strike
	2	Consumables	Face mesh (Earloop)	8% - 23453	Sõpca per bus	2023-64-01	50	45	2023-04-03 04:92/24	Addition and the second
	Showing	1 10 2 of 2 million							Province	1 Int

Figure 18. Updated details after issuing an item.

- To view the transaction details after issuing at item, click on the View button (Figure 18). It will open a page where the details such as name of item, issued quantity and date can be viewed,

LING	IN A BORATORY INFORMATION MANAGEMENT SYSTEM	B
A month	Stock Issue List	
E sussessment 1	B Show III - instruct	Search
Distant existing	Sis 1 Item Name Quantity Issued Issued To Region	Issue Date
17 men i lan 17 hert Hand	1 Face mask (Ear 5 His Tobewang Dema NCAH loop)	2023-04-02 22:64:09
<ul> <li>G. Anno Star Street Starter</li> <li>G. Anno Andreas Street St</li></ul>	Showing Dits 5 of Dempine	Photos line data
Contrastations		2000 - 20
	a Cammades Incomes de Sayrapertes ambienti le . Richieut 2003	· Alternation

Figure 19: View details of issue against a selected item.

#### View Other Store's Stock

This service enables a Store In-charge to view other store's stock details and send request to the concerned Store In-charge to issue them from their stock. This service can facilitate mobilization of near-expiry laboratory reagents to other labs where it is required.

 Click on the View Other Store's Stock to check if the lab item of one's interest is available in other veterinary laboratory stores of the country and click on Search button to view the details (Figure 20).

LIMS	= LABORATORY INFORMATION MANAGEMENT SY		😭 Dert Part Terre	
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E Martin Balagerietti I	View Others Stock			
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W Birkhter/Menu	Nam Kame: *			
Of New Other Stores Storik	Fata mask (Larloog)	+		
			100	
CP, Mean Administration Streets		- 14	and the second sec	

Figure 20. Page to view other store's stock.

- Based on the lab and item name selected, details against the item will show in the table as shown in Figure 21.
- Inspect the details from the table and if the quantity balance is enough for the request to be sent, click on the Request button to enter the quantity to be requested (Figure 22).
- The Request to field will be auto filled based on the target lab selected in Figure 20.
- Click on the Update Request to send the request to the selected lab's Store In-charge (Figure 22).

LIMS	LABORATORY INFORMATION MANAGEM	IENT SYSTEM				(2) 54	(Rein Dinne
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	Sile 1 Item Name Expiry Date	Initial Quantity	Quantity Balance	Region	User Name	Action	
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	Showing 1 to 1 of L entries				Period	1	Net:



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#### Stock Verification List

## **Requesting Lab**

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E. Master Management	Rem L	ist							
Store Inventory -	Show 1	a - antrica						Saarch	
CP Main Long CP Stock Inner / Marker	ste *	Itam Name	Quantity Balance	Quantity Requested	Quantity Accepted	Requested By	Requested From	Status	Action
OF Southle Streetlink OF SockVettationUs	3	Face mask (Ear loop)	45	-16	D	DVH Pare Store	Diret Parto	REQUESTED	
🖉 Ver Mast Dash Deeli	Shawing	(1.16.) of Leadvies						Arrested 1	And

Figure 23. Stock verification list at requesting lab's page.

- Once the request has been sent to a lab to issue an item, the status against the selected item will show as REQUESTED in the Stock Verification List's page (Figure 23).

#### **Request Receiving Lab**

Once the request for a lab item has been sent from a lab, the lab item with a REQUESTED status will show in the Stock Verification List's page of the request receiving lab's Store In-charge.

- To take action against the request received, click on the Accept Request button (Figure 24).
- It will open a page Quantity Accepted field can be updated accordingly. If even a single item cannot be issued to the requesting lab, the Quantity Accepted field can entered with 0 (zero) figure with some remarks if necessary (Figure 25).
- Once the details are filled and Accept Request button is clicked on, acknowledgement message of successfully accepted request will be shown (Figure 26).
- The status will then get updated to ACCEPTED and quantity will be updated accordingly as per the quantity accepted and issued.

LIMS		BORATORY IN	FORMATION	MANAGEMENT S	YSTEM				🙁 scenso		
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E Hanna Hanagements	ttern Li	st									
E Store Investory -	Show 1	z – entries						50	write		
CP. Disch.Collin CP. Disch.Sone / Mainese	500 <sup>1</sup>	Item Name	Quantity Balance	Quantity Requested	Quantity Accepted	Requested By	Requested From	Status	Action		
CP The Oter Torre Tools CP Stack Verification Unit	a.	Face mask (Ear loop)	45	8		DVH Pero Store	DVH Parts	REQUESTED	🗸 Asarah Berganik		
OF Yow Writes Stock (Mildle	Shawing	1 is ] of 1 ontries						Previous	A. Not		

Figure 24.Stock verification list at the request receiving lab's end.

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Station .	Requested Fram:	Quantility Accept: "		
P. British Contract	DVH Parts	1		Action
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IF Sectorizations	Cauld spare only 3 Seves			
<ol> <li>We share believed press (which yes)</li> </ol>	1		Com	ment 🖬 (mail)

Figure 25. To act against the item requested.

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<ul> <li>F. Dee Other Store Took</li> <li>Second Wetterstore List</li> <li>M. Store Association List</li> </ul>	st# *	Hem Name	Quantity Balance	Quantity Requested	Quantity Accepted	Requested By	Requested From	Status	Action
	1	Face mask (Ear loop)	42	3	з	DVH Pare Store	DVH Paro	ACCEPTED	
	Shearing	L to 3 of 3 million					1	nitan 🚺	Beat

Figure 26: Item with accepted status at the request receiving lab.

#### **Requesting Lab**

Once the request has been accepted by the target lab, requested item and quantity accepted and issued by the target lab must be received through the Stock Verification List service.

- Click on the Stock Verification List to view the list of items requested. Once accepted, the status will get updated to ACCEPTED against the item of interest (Figure 27).
- Click on the Receive Request button to receive and update the stock. It will open a page where quantity received field must be updated as issued from the other lab (Figure 28).

LIMS	= 14	BORATORY IN	FORMATION	MANAGEMENTS	YSTEM				🗶 toʻti Paro Mer
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🗅 Stars Inventory 🚽	Show 1	- entres							urith)
			Quantity	Quantity	Quantity	Requested	Requested		
	SIX	item Name	Balance	Requested	Accepted	By	From	Status	Action
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Gr. Stock Vertification List.		(oop)							
	-								-
	scowerg	1 to 1 or 1 officient						Prevenue	A. Net

Figure 27. Updated status of the request made.

Figure 28. Updating after receiving the items requested.

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· Destinet	Block Bergs	er st								
E Harne Hanagement, S.	Item Lis	8								
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C.C. Vers Server March Territor.	1	Face mask (Ear loop)	43	\$	5	DVH Parb Store	DVH Paro	RECEIVED	W Completed Region	
	Showing	in 1 of Lettrics						Posta	- •	

*Figure 29. Updated stock after receiving the requested items.* 

- After filling the details as required, click on the Receive Request button to update the stock (Figure 28).
- The updated stock after receiving the items requested from another lab will get updated and it can be viewed in the Stock Verification List page with the status getting updated to RECEIVED and Action to Completed Request.

#### 9.3 Stock management (lab technician)

Once the Store In-charge issues laboratory consumables and other items from the Centre's store, the concerned lab technician can manage its stock using the service called Inventory Record (Figure 30).

LIMS	E LABORATORY INFORMAT	ION MANAGEMENT SYSTEM		🤶 Ma Talena ang Dema
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Or Injectory				
Li Investory Neural				
B. INVES	6 - C			

Figure 30: Inventory record for lab technician.

#### Stock Usage/ Balance

It is the sub-service under Inventory Record where laboratory items issued by the Store In-charge can be received, updated and viewed by the concerned lab technician.

LIMS		BORATORY IN	FORMATIO	N MANAG	GEMENT SYST	EM :				۹	Mil Tahwarang Darma
Carboard	Stock Usa										
C Networks	Record	Record Stock Usage Show a values									
C reating 1	50 *	Consumable Type	item Name	Batch No	Presentation	Receive Date	Quantity issued	Quantity Received	Quantity Balance	Date of Record	Action
D Inventory Record		Culture Media	Blood Ager Base	04822	500 gm	2022-12-02	-4		0	2022-12-13 09.15-12	-
C Aspen	2	Consumables	Face mask (Earloop)	BN - 23453	Söpca per box	2023-04-01	3		Q	2023-04-03 04:04:09	
	Rowie	1 for 2 of 2 entropy.								Perios	liot

Figure 31. Stock usage/balance page of lab technician.

- Click on Stock Usage/Balance sub-service under Inventory Record. The List of all the lab items issued or received will be shown (Figure 31).
- On the right end of each item, action buttons are available for stock usage, receiving stock and view stock details.

Add Usage Stock	Update Received Stock	View Usage Stock Details
+		

Figure 32. Action buttons for stock management.

- Click on Update Received Stock to receive the lab items and update the stock of the lab. The popup page will appear where quantity issued, quantity received, and remarks field will show. Enter the quantity received and update the stock (Figure 33).

Receive Item						×		
Quantity issued: *	5							
Quantity Receive: *	ś.						Search	
Remarks: *	Necelived					e	Date of Record	Action
							2022-13-11	
					Cine	Update	010112	
Lonsumatores	(Barloop)	23453	where been box	2013-04-01		9	2023-04-03	

*Figure 33. Receiving and updating stock by the lab technician.* 

- To issue the items for utilization within the lab, click on Add Usage Stock button.
- Enter the quantity to be used in the Quantity Used field and click on Update Usage button to update the stock (Figure 34.

Sto	ck Usage	.n=						×		
Iten	n Marrie:	Face mask (Ear )	oop)							
Qua	ntity Used: *	1		3						
								and the second second	Search	
L	1324	PLAINE.	(1)	Presentation	vale.	ILLING V		Benning	Date of Record	Action
1	Culture Media	Blood Agor Base	BA/D2	593 gm	2022-12-02	1		đ	2022-12-13 00:15:12	
2	Consumables	Fore mask (Ear trop)	894.+ 23452	Silpcs per boa	2023-04-01	\$	5	â	3033-04-03 04:04:09	0.0

*Figure 34: Stock issue and utilization by lab technician.* 



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#### 9.3 Annual stock details

This service is the generate the report concerning stock management of a store, view or export for various purpose.

- Click on View Annual Stock Details to generate the stock management information.
- Select From Date and To Date to filter the report.
- Click on Search button the generate the report.
- Use the Search field to filter and show the lab items of interest.
- The report can be export in excel format by clicking on the Excel button on the left top corner of the report page.

LIMS		BORATORY IN	FORMA	TION MANAGE	MENT S	ISTEM						A MARTINE
e Derburd	View Annu	al Stock Details										
E Parter Nanegement 1	Report											
Stantonitoy -	From Dat	en.*				2	Ta Dette: *					
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OF Transformer (1971) OF Transformer Stores Block	_					-	*					
Of Van Arrian Dock Betalk	Deat										Joseph	
	50	Consumable : Type	ltem Name	Manufacturer	Ratch No	Presentation	Receive Date	Manufacture : Date	Espiry Date	Rate	Storage Equipment	Equipmes No
	1	Culture Media	Blood Agar Base	Hinoda	BAN2	500 gm	2072-12- 62	2022-12-09	2925-62 23	990.99	Shelf	Stell
	2	Consumatries	Foce mask (Ear koop)	Salemask	8N- 23453	50pcs.per box	2023-04 01	2023-02-02		787.00	Steel Back_NCAH	Steel Rack_NCA
	Showing	t us 3 of 3 entries								Presi	un I	hest

Figure 35. Stock details report.

#### **10 ADMINISTRATIVE FUNCTIONS**

Dashboard displays master management, administration and reports:

PABX: +975-2-351083/351093; Fax: +975-2-351095; Post box: 155 Website: <u>www.ncah.gov.bt</u>; Email: <u>ncah@moaf.gov.bt</u>



Toll free number 1244 for any queries/reporting on livestock and poultry diseases



ଶ୍ରୁମ୍ୟଂଧିଁର୍ଦ୍ଧେଂ ଗ୍ସିଁ ବିଁନ୍ ସ୍ବାର୍ଷିଂ ସର୍ନି 'ବ୍ରାର୍ ROYAL GOVERNMENT OF BHUTAN Ministry of Agriculture and Livestock Department of Livestock NATIONAL CENTRE FOR ANIMAL HEALTH Serbithang: Thimphu



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E hopets in	Aber Registrations Destendi	
	Copyright #2 LINES All rights amonuntil.	

Master management:

It has features for mapping of various parameter as below:



## Administration:

PABX: +975-2-351083/351093; Fax: +975-2-351095; Post box: 155 Website: <u>www.ncah.gov.bt</u>; Email: <u>ncah@moaf.gov.bt</u>



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It has just feature for user management v.i.z details of users as below

LIMS	E LABORATORY INFORMATION MANAGEMENT SYSTEM	😩 Administrator
<ul> <li>Geshbsard</li> </ul>	🛱 Harmer - Comme specific Dasthaurri	
Bilatter Menagement 4		
Administration -	138 8 5	
🖬 Sher Hanagement	Unar Regittention (Instance) Tabl System Holes	
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	Controlight & Links All rights renormed.	

Reports:

It has features for test result, section- wise, repository, inventory.

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<ul> <li>Settimular</li> <li>Settimular</li> </ul>		
	Conscients in 1987 and contract and	

PABX: +975-2-351083/351093; Fax: +975-2-351095; Post box: 155 Website: <u>www.ncah.gov.bt</u>; Email: <u>ncah@moaf.gov.bt</u>



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