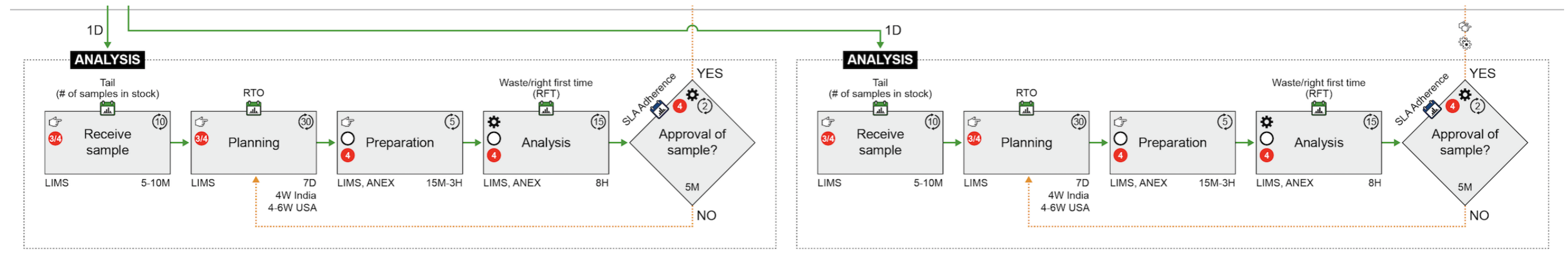


## EAL, EKL (QC) Overview

EAL, EKL is in the Global QC functional group are in the QES Business Area. The illustration below provides an overview of the End-to-End EAL, EKL workflow. This document aims to describe all the tasks involved in the EAL, EKL function.

### Solid/Liquid's Workflow:



### Receive Sample (Fermentation FU) - Description

The objective of this task is to **sample registration**.

It consists of the following Measurement(s):

- **Tail (number of samples in stock)**

It delivers the following Service(s):

- **Sample sorting**
- **Registration**

The task has a maturity of **3.5**.

The task consumes process flow from:

- **"Fermentation FU"**

It provides process flow to:

- “Planning”

The time used on the task is estimated at “5-10 minutes” with an estimated rework of “10%”.

The following are the issues or problems that the task has:

- “..”

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (Fermentation FU) - Description

The objective of this task is SLA Adherence.

It consists of the following Measurement(s):

- RTO

It delivers the following Service(s):

- Daily plan

The task has a maturity of 3.5.

The task consumes process/information flow from:

- “Receive sample (Fermentation FU)”
- “Approval of Sample (Fermentation FU) (No)”

It provides process flow to:

- “Preparation (Fermentation FU)”

The time used on the task is estimated at “7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)” with an estimated rework of “30%”.

The following are the issues or problems that the task has:

- Lack of information (notice of samples)
- Too many SLA's that have little impact but spend resources and time.
- Conflicting priorities to CSL.
- Lack of forecast and control results in high test sample time

- Too many requirements for quality.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Planner
- Group Leader
- Internal Customers

### Preparation (Fermentation FU) - Description

The objective of this task is to prepare sample for analysis. This task in an event.

It consists of the following Measurement(s):

- “ ... ”

It delivers the following Service(s):

- Preparation of sample

The task has a maturity of 4.

The task consumes service flow from:

- “Planning (Fermentation FU)”

It provides process flow to:

- “Analysis (Fermentation FU)”

The time used on the task is estimated at “15 minutes – 3 hours” with an estimated rework of “5%”.

The following are the issues or problems that the task has:

- Too many requirements for quality

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

### Analysis (Fermentation FU) - Description

The objective of this task is to approve samples. This task in an event.

It consists of the following Measurement(s):

- Waste/right first time (RFT)

It delivers the following Service(s):

- Test results

The task has a maturity of 4.

The task consumes process flow from:

- "Preparation (Fermentation FU)"

It provides process flow to:

- "Approval of Sample (Fermentation FU)"

The time used on the task is estimated at "8 hours" with an estimated rework of "15%".

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

## **Approval of Sample (Fermentation FU) - Description**

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- "Analysis (Fermentation FU)"

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- "UD Decision Fermentation"

The no variant provides service flow to:

- "Planning (Fermentation)"

The time used on the task is estimated at "... " with an estimated rework of "... ".

The following are the issues or problems that the task has:

- "... "

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician

## Receive Sample (Recovery FU) - Description

The objective of this task is to sample registration.

It consists of the following Measurement(s):

- Tail (number of samples in stock)

It delivers the following Service(s):

- Sample sorting
- Registration

The task has a maturity of 3.5.

The task consumes process flow from:

- "Recovery FU"

It provides process flow to:

- "Planning (Recovery FU)"

The time used on the task is estimated at "5-10 minutes" with an estimated rework of "10%".

The following are the issues or problems that the task has:

- " . . . "

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (Recovery FU) - Description

The objective of this task is SLA Adherence.

It consists of the following Measurement(s):

- RTO

It delivers the following Service(s):

- Daily plan

The task has a maturity of 3.5.

The task consumes process/information flow from:

- "Receive sample (Recovery FU)"
- "Approval of Sample (Recovery FU) (No)"

It provides process flow to:

- "Preparation (Recovery FU)"

The time used on the task is estimated at "7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)" with an estimated rework of "30%".

The following are the issues or problems that the task has:

- Lack of information (notice of samples)
- Too many SLA's that have little impact but spend resources and time.
- Conflicting priorities to CSL.
- Lack of forecast and control results in high test sample time
- Too many requirements for quality.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Planner
- Group Leader

- Internal Customers

## Preparation (Recovery FU) - Description

The objective of this task is to prepare sample for analysis. This task in an event.

It consists of the following Measurement(s):

- “...”

It delivers the following Service(s):

- Preparation of sample

The task has a maturity of 4.

The task consumes service flow from:

- “Planning (Recovery FU)”

It provides process flow to:

- “Analysis (Recovery FU)”

The time used on the task is estimated at “15 minutes – 3 hours” with an estimated rework of “5%”.

The following are the issues or problems that the task has:

- Too many requirements for quality

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Analysis (Recovery FU) - Description

The objective of this task is to approve samples. This task in an event.

It consists of the following Measurement(s):

- Waste/right first time (RFT)

It delivers the following Service(s):

- Test results

The task has a maturity of 4.

The task consumes process flow from:

- "Preparation (Recovery FU)"

It provides process flow to:

- "Approval of Sample (Recovery FU)"

The time used on the task is estimated at "8 hours" with an estimated rework of "15%".

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

## **Approval of Sample (Recovery FU) - Description**

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- "Analysis (Recovery FU)"

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- "UD Decision Recovery"

The no variant provides service flow to:



- “Planning (Recovery FU)”

The time used on the task is estimated at “...” with an estimated rework of “...”.

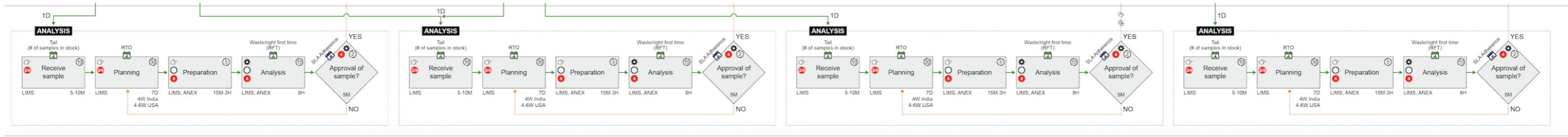
The following are the issues or problems that the task has:

- “...”

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician

## Solid’s Workflow:



## Receive Sample (Spray) - Description

The objective of this task is to **sample registration**.

It consists of the following Measurement(s):

- Tail (number of samples in stock)

It delivers the following Service(s):

- Sample sorting
- Registration

The task has a maturity of **3.5**.

The task consumes **process** flow from:

- “Spray”

It provides process flow to:

- “Planning (Recovery FU)”

The time used on the task is estimated at “5-10 minutes” with an estimated rework of “10%”.

The following are the issues or problems that the task has:

- “ ”

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (Spray) - Description

The objective of this task is SLA Adherence.

It consists of the following Measurement(s):

- RTO

It delivers the following Service(s):

- Daily plan

The task has a maturity of 3.5.

The task consumes process/information flow from:

- “Receive sample (Spray)”
- “Approval of Sample (Spray) (No)”

It provides process flow to:

- “Preparation (Spray)”

The time used on the task is estimated at “7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)” with an estimated rework of “30%”.

The following are the issues or problems that the task has:

- Lack of information (notice of samples)
- Too many SLA's that have little impact but spend resources and time.
- Conflicting priorities to CSL.
- Lack of forecast and control results in high test sample time
- Too many requirements for quality.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Planner
- Group Leader
- Internal Customers

## Preparation (Spray) - Description

The objective of this task is to prepare sample for analysis. This task in an event.

It consists of the following Measurement(s):

- “..”

It delivers the following Service(s):

- Preparation of sample

The task has a maturity of 4.

The task consumes service flow from:

- “Planning (Spray)”

It provides process flow to:

- “Analysis (Spray)”

The time used on the task is estimated at “15 minutes – 3 hours” with an estimated rework of “5%”.

The following are the issues or problems that the task has:

- Too many requirements for quality

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Analysis (Spray) - Description

The objective of this task is to approve samples. This task in an event.

It consists of the following Measurement(s):

- Waste/right first time (RFT)

It delivers the following Service(s):

- Test results

The task has a maturity of 4.

The task consumes process flow from:

- "Preparation (Spray)"

It provides process flow to:

- "Approval of Sample (Spray)"

The time used on the task is estimated at "8 hours" with an estimated rework of "15%".

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

## **Approval of Sample (Spray) - Description**

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- "Analysis (Spray)"

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- "UD Decision Recovery"

The no variant provides service flow to:

- "Planning (Spray)"

The time used on the task is estimated at "... " with an estimated rework of "... ".

The following are the issues or problems that the task has:

- "... "

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician

## Receive Sample (Granulation) - Description

The objective of this task is to sample registration.

It consists of the following Measurement(s):

- Tail (number of samples in stock)

It delivers the following Service(s):

- Sample sorting
- Registration

The task has a maturity of 3.5.

The task consumes process flow from:

- "Granulation KA"
- "Granulation BA"

It provides process flow to:

- "Planning (Granulation)"

The time used on the task is estimated at "5-10 minutes" with an estimated rework of "10%".

The following are the issues or problems that the task has:

- "... "

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (Granulation) - Description

The objective of this task is SLA Adherence.

It consists of the following Measurement(s):

- RTO

It delivers the following Service(s):

- Daily plan

The task has a maturity of 3.5.

The task consumes process/information flow from:

- "Receive sample (Granulation)"
- "Approval of Sample (Granulation) (No)"

It provides process flow to:

- "Preparation (Granulation)"

The time used on the task is estimated at "7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)" with an estimated rework of "30%".

The following are the issues or problems that the task has:

- Lack of information (notice of samples)
- Too many SLA's that have little impact but spend resources and time.
- Conflicting priorities to CSL.
- Lack of forecast and control results in high test sample time
- Too many requirements for quality.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Planner
- Group Leader
- Internal Customers

## Preparation (Granulation) - Description

The objective of this task is to **prepare sample for analysis**. This task is an event.

It consists of the following Measurement(s):

- **"..."**

It delivers the following Service(s):

- **Preparation of sample**

The task has a maturity of **4**.

The task consumes service flow from:

- **"Planning (Granulation)"**

It provides process flow to:

- **"Analysis (Granulation)"**

The time used on the task is estimated at **"15 minutes – 3 hours"** with an estimated rework of **"5%"**.

The following are the issues or problems that the task has:

- **Too many requirements for quality**

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- **Lab technician**

## Analysis (Granulation) - Description

The objective of this task is to **approve samples**. This task is an event.

It consists of the following Measurement(s):

- **Waste/right first time (RFT)**

It delivers the following Service(s):

- **Test results**

The task has a maturity of **4**.

The task consumes process flow from:

- “Preparation (Granulation)”

It provides process flow to:

- “Approval of Sample (Granulation)”

The time used on the task is estimated at “8 hours” with an estimated rework of “15%”.

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

### **Approval of Sample (Granulation) - Description**

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- “Analysis (Granulation)”

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- “UD Decision Recovery”

The no variant provides service flow to:

- “Planning (Granulation)”

The time used on the task is estimated at “...” with an estimated rework of “...”.



The following are the issues or problems that the task has:

- "..."

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician

## Receive Sample (Glat) - Description

The objective of this task is to sample registration.

It consists of the following Measurement(s):

- Tail (number of samples in stock)

It delivers the following Service(s):

- Sample sorting
- Registration

The task has a maturity of 3.5.

The task consumes process flow from:

- "Glat"

It provides process flow to:

- "Planning (Glat)"

The time used on the task is estimated at "5-10 minutes" with an estimated rework of "10%".

The following are the issues or problems that the task has:

- "..."

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (Glat) - Description

The objective of this task is **SLA Adherence**.

It consists of the following Measurement(s):

- **RTO**

It delivers the following Service(s):

- **Daily plan**

The task has a maturity of **3.5**.

The task consumes process/information flow from:

- **"Receive sample (Glat)"**
- **"Approval of Sample (Glat) (No)"**

It provides process flow to:

- **"Preparation (Glat)"**

The time used on the task is estimated at **"7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)"** with an estimated rework of **"30%"**.

The following are the issues or problems that the task has:

- **Lack of information (notice of samples)**
- **Too many SLA's that have little impact but spend resources and time.**
- **Conflicting priorities to CSL.**
- **Lack of forecast and control results in high test sample time**
- **Too many requirements for quality.**

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- **Planner**
- **Group Leader**
- **Internal Customers**

## Preparation (Glat) - Description

The objective of this task is to **prepare sample for analysis**. This task in an event.

It consists of the following Measurement(s):

- “..”

It delivers the following Service(s):

- Preparation of sample

The task has a maturity of 4.

The task consumes service flow from:

- “Planning (Glat)”

It provides process flow to:

- “Analysis (Glat)”

The time used on the task is estimated at “15 minutes – 3 hours” with an estimated rework of “5%”.

The following are the issues or problems that the task has:

- Too many requirements for quality

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## **Analysis (Glat) - Description**

The objective of this task is to approve samples. This task in an event.

It consists of the following Measurement(s):

- Waste/right first time (RFT)

It delivers the following Service(s):

- Test results

The task has a maturity of 4.

The task consumes process flow from:

- “Preparation (Glat)”

It provides process flow to:

- “Approval of Sample (Glat)”

The time used on the task is estimated at “8 hours” with an estimated rework of “15%”.

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

## Approval of Sample (Glat) - Description

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- “Analysis (Glat)”

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- “UD Decision Recovery”

The no variant provides service flow to:

- “Planning (Glat)”

The time used on the task is estimated at “...” with an estimated rework of “...”.

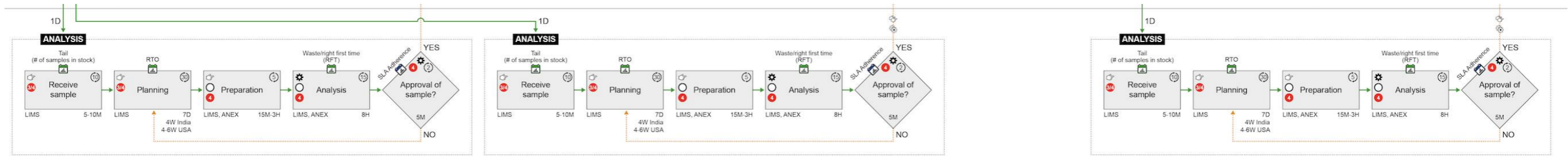
The following are the issues or problems that the task has:

- “...”

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician

## Liquid's Workflow:



## Receive Sample (HT Sampling) - Description

The objective of this task is to **sample registration**.

It consists of the following Measurement(s):

- Tail (number of samples in stock)

It delivers the following Service(s):

- Sample sorting
- Registration

The task has a maturity of **3.5**.

The task consumes **process** flow from:

- "Homogeneity in HT Sampling"

It provides process flow to:

- "Planning (HT Sampling)"

The time used on the task is estimated at "**5-10 minutes**" with an estimated rework of "**10%**".

The following are the issues or problems that the task has:

- "..."

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab technician

## Planning (HT Sampling) - Description

The objective of this task is SLA Adherence.

It consists of the following Measurement(s):

- RTO

It delivers the following Service(s):

- Daily plan

The task has a maturity of 3.5.

The task consumes process/information flow from:

- "Receive sample (HT Sampling)"
- "Approval of Sample (HT Sampling) (No)"

It provides process flow to:

- "Preparation (HT Sampling)"

The time used on the task is estimated at "7 days (80%), continuously ongoing, 4 weeks in India (1 product 2%), 4-6 weeks in USA (2 products 2-3%)" with an estimated rework of "30%".

The following are the issues or problems that the task has:

- Lack of information (notice of samples)
- Too many SLA's that have little impact but spend resources and time.
- Conflicting priorities to CSL.
- Lack of forecast and control results in high test sample time
- Too many requirements for quality.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Planner
- Group Leader
- Internal Customers

## Preparation (HT Sampling) - Description

The objective of this task is to **prepare sample for analysis**. This task is an event.

It consists of the following Measurement(s):

- **"..."**

It delivers the following Service(s):

- **Preparation of sample**

The task has a maturity of **4**.

The task consumes process flow from:

- **"Planning (HT Sampling)"**

It provides process flow to:

- **"Analysis (HT Sampling)"**

The time used on the task is estimated at **"15 minutes – 3 hours"** with an estimated rework of **"5%"**.

The following are the issues or problems that the task has:

- **Too many requirements for quality**

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- **Lab technician**

## Analysis (HT Sampling) - Description

The objective of this task is to **approve samples**. This task is an event.

It consists of the following Measurement(s):

- **Waste/right first time (RFT)**

It delivers the following Service(s):

- **Test results**

The task has a maturity of **4**.

The task consumes process flow from:

- “Preparation (HT Sampling)”

It provides process flow to:

- “Approval of Sample (HT Sampling)”

The time used on the task is estimated at “8 hours” with an estimated rework of “15%”.

The following are the issues or problems that the task has:

- More tests (samples) than resources and capacity.

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- QC Chemist

### **Approval of Sample (HT Sampling) - Description**

The objective of this task is to adhere to the SLA about getting results on time.

It consists of the following Measurement(s):

- SLA Adherence

It delivers the following Service(s):

- Provide results to internal customer

The task has a maturity of 4.

The task consumes information flow from:

- “Analysis (HT Sampling)”

The task is a gateway and has two variants, Yes and No.

The yes variant provides information flow to:

- “UD Decision HT Sampling”

The no variant provides service flow to:

- “Planning (HT Sampling)”

The time used on the task is estimated at “...” with an estimated rework of “...”.



The following are the issues or problems that the task has:

- “...”

If you have any questions, comments, changes or need to interact with the accountable of the task, these are the responsible (Novozymes contact acronyms are applied):

- Lab Technician