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1 Introduction

1.1 Background

Harrisons Malayalam Limited (HML) is part of The RPG Enterprises, one of the largest business conglomerates in India with business interests ranging from tyres, cables, power transmission, telecommunications, pharmaceuticals ,specialty chemicals to retail and consumer marketing, hotel, tourism and entertainment .

An integrated agriculture operation giant HML is India's largest producer of rubber, South India's largest cultivator of Tea and perhaps the largest farmer of Pineapple in the region. It is also a major processor of other agricultural produce from neighboring farmlands.

The company also produces smaller quantities of a variety of other exotic horticultural crops like Areca nut, Banana, Cardamom, Cocoa, Coffee, Coconut, Pepper and Vanilla as well as limited quantities of Organic tea and Spices.

Microsoft Dynamics AX 2012 system would help HML to integrate functionalities of all business lines with Finance to progress to a upgraded system environment with its Head Office in Cochin.

As a part of Implementation Project, PricewaterhouseCoopers (PwC) has been appointed by HML to review their current processes and existing system (AX 4.0) in the following areas and help in streamlining them keeping in line with their current vision and strategy:

- Trade and Logistics
- Inventory
- Production
- Payroll and Budgeting
- Finance

The key focus of the assignment is to understand the existing business processes and finalizing the To-be processes with regard to the AX 2012 system. Main area to be studied is the direct fitment of the existing customizations into base features of AX2012 and incorporate as much of base features as possible & feasible and the rest to be migrated into the new system. This would be followed by the upgradation of AX 4.0 to AX 2012 to meet the identified requirements

In this document, **Production** processes are explained in line with the functional requirements.

1.2 Purpose of the Document

The Functional Requirements Document (FRD) lays out the functional requirements of HML, which will be used as a reference in the implementation of the Microsoft Dynamics AX system. This document refers to the processes of Production, both for Tea and Rubber. The purpose of the document is to freeze and finalize the requirements specification based on which the modules and granules of Microsoft Dynamics AX system will be configured, upgraded, tested and implemented. The FRD contains the following details:

- Envisaged functionalities and business processes related to HML
- To-Be process flows with respect to Microsoft Dynamics AX 2012
- Gap fitment for these processes in Microsoft Dynamics AX 2012

1.3 Sources of Inputs

The processes in this document have been envisaged based on the following inputs:

- Interviews conducted with the key users of HML
- As-Is documentation
- Issues and Expectation list Consideration

1.4 Scope of the Document

It will be assumed that the entire Fitment is applicable on MS Dynamics AX 2012. Anything which might be available in AX 2012 is considered as a standard fitment. Also related customizations already done in AX 4.0 would be studied and will be migrated if required accordingly keeping AX 2012 architecture and new requirement in mind.

Any customization will be applicable only on AX 2012.

1.5 List of Abbreviations:

- Harrison's Malayalam Ltd. - HML

1.6 **Fitment Types Notation**

- C : Customization
- SF: Standard Feature
- E: External
- W: Workaround

1.7 **Flowchart Notations & Shapes**

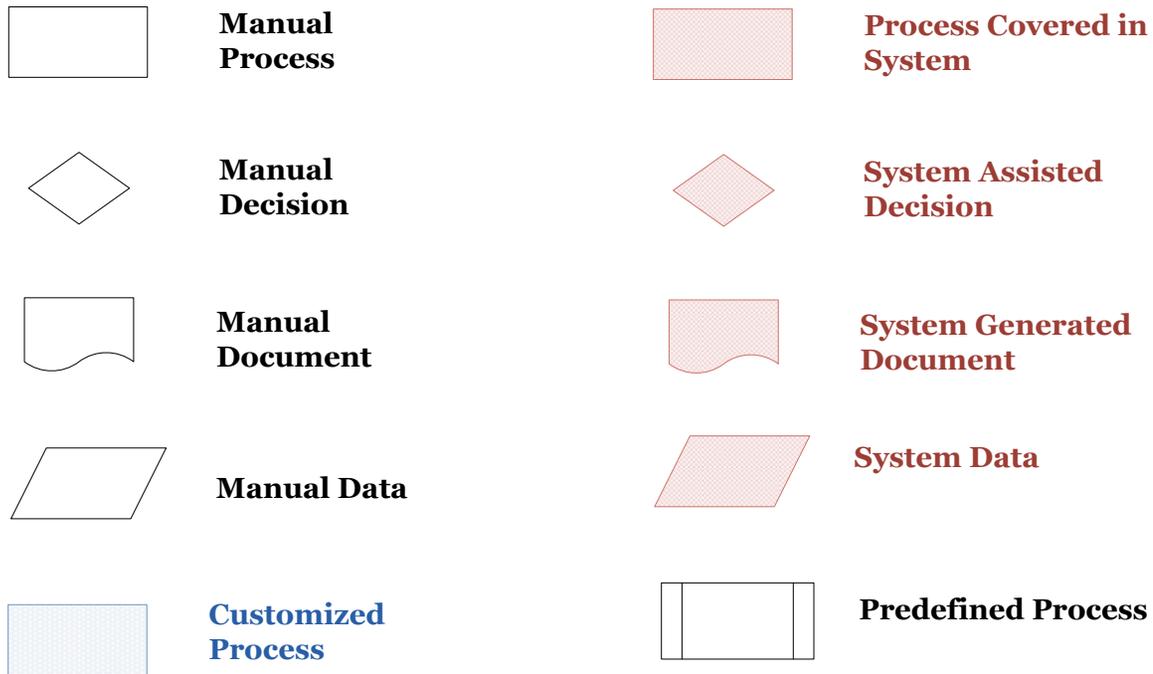


FIGURE 1 – Flow chart Conventions

1.8 Assumptions

- i. HML has agreed to use Core Production Module in AX 2012 after due diligence it would involve a lot of process change from the existing systems. Only minimum customizations will be made in core production module per se and things will be handled manually or outside the system if so the need arises.
- ii. Batch Orders will be made in the system after they have been actually and physically executed on the shop floor so that user knows for how much and which output item the order has to be created.
- iii. Each garden invoice # contains only one line of Item Code with specific grade and brand. No two grades will take one garden invoice #.
- iv. HML has agreed to using one number sequence only across all estates, factories, HO for the Purchase orders, Sales orders, Service Orders, Transfer orders, Batch Orders, etc.
- v. Batch attributes can only be used if attributes are defined at item level. Set of attributes, their target values would need to be defined for each item, then those values can differ from batch to batch of the same item. Item/Product attributes would have to defined at master level.
- vi. Anything not mentioned in the FRD related to Production will be considered outside the system by default.

1.9 Points discussed and Changes Made

- i. Own Green Leaf and Own Latex costing will not be done in the system as already discussed with HML. Own crop will be taken at zero cost only. Their costing will be handled out of the system as being done currently.
- ii. No machine costing will be done in the system. The only cost prices available in the system will be the purchase prices of the procured material. For some finished goods like Bulk Tea, Rubber Products, Reconditioned Barrels, etc. standard costing will be used where FG items will be set to some standard cost (could also be zero) on the item card itself and the variance between actual cost from production and standard will be booked to different variance accounts based on the Item Groups setup. Some finished goods for which standard costing is not used like mixed fertilizers, manure, etc. will be by default valued according to the input materials cost.
- iii. Stock Status of Tea like Unsold, Unutilized, Undelivered, etc. is for reporting purpose only. In inventory, data will be captured in standard manner, only while reporting, logic would be given to shortlist those garden invoices falling in the given criteria. For example, for undelivered invoices, report will be customized to give garden invoices for all the sales invoices which still has some "undelivered" quantity against them. This way, for every status, reporting will be customized with no changes in inventory. It will be taken up further in reporting discussion.
- iv. Blending process will be handled in Production FRD where made tea would be consumed to produce blend tea. Blended tea will be managed as a separate item code.
- v. All the processes where users would have to give batch numbers manually to the system since they must have been physically given to the products, in all those cases, first the "batches" table would have to be updated by the user regarding all the produced batches. Then those batch numbers can be selected from the drop down to allot to the reported output. Automatically allotted batch number can be overwritten if so required.
- vi. Quality mentioned in the process flow diagram means that a decision needs to be taken for every batch order whether quality check is required or not. If yes, a quality order is created manually or automatically in the system and WIP/FG inspection is done which is followed by ending

the batch order or if the quality check is not required after the batch order, then no quality order will be generated for that order, and it can be ended by default.

- vii. As decided by HML team, Quality control would be made mandatory for all finished goods and raw materials.
- viii. If at any point of time, stock report is required for WIP items as well, HML would need to create those WIP items as separate item codes or variants and then generate separate production/batch orders for each variant to get stock details during production.

1.10 Data Migration

No historical data would be migrated from AX.40 to AX2012 environment.

The new ERP version would adopt masters & setups only to the extent supported by the new table structures. Opening balances would be posted into the system for going live. Cut off date for migrating opening balance would be decided jointly for this purpose. The opening balances would not carry any transaction specific details.

Reference to history data would be available from the archived database of the AX4.0.

2 Company Setup & Configuration: An Overview

A company with the name of Harrison's Malayalam Limited will be created in Microsoft Dynamics AX 2012 and all the set up will be done in the same company for facilitating transactions in the system. All company related information has to be entered in the created company database. Once all the set up are done then the masters need to be created or uploaded and then transactions can begin in the system.

The following Configuration needs to be done in the system:

i. **Company Related Information:**

In the Organization and Administration module, a new company needs to be created and all company related information needs to be entered for the new company created. The Information that needs to be entered is Company name, address, telephone number, email id. The company logo can be attached in the set up.

ii. **Tax Registration Numbers:**

The tax registration numbers for the various kinds of taxes that is applicable on the company and for which the company has registered itself needs to be entered in the system. In the Enterprise Tax Registration Numbers set up, all kinds of tax registration number needs to be created for the company and then it needs to be attached in the company tax information table.

iii. **Number Sequence:**

Number Sequence for various kinds of transaction and journal entries as well as for purchase order and sales order, etc. needs to be created in the system. The system provides the facility to automatically create the number sequences or different number sequences can be created in the system manually depending upon the requirements of the company.

iv. **Journal Names:**

For passing various kinds of Journal entries, different journal names have to be created in the system in the General Ledger module, set up. Journal Names have to be created for General Journal Entries, Vendor Invoicing, Vendor Disbursements, Customer Receipts, etc. Unless these names are created in the system, no entries can be passed in the system.

v. **Dimensions:**

Financial Dimensions are required to be set up for facilitating the identification of transactions according to the dimensions to which they pertain. Any number of financial dimensions can be created and then they are needed to be attached to the Main Accounts (Chart of Accounts) in the Configure Account Structure Form. Once the dimensions are activated, dimensions have to be mentioned during the transactions or the system won't allow any transactions to get posted.

vi. **Fiscal Year:**

New Fiscal year needs to be created for each financial year. The fiscal year can be divided into months or days as the requirement may be. The system creates multiple periods according to the selection. If months are selected and divided into period lengths of 1 month then 12 periods are created. Similarly, if periods are created day wise and the period length of 365 then the fiscal year is divided into 365 periods. Once the fiscal year is created that needs to be attached in the Ledger set up in the General Ledger module.

vii. **Currency Set up:**

The Currency in which the company will do the transactions or report the transactions needs to be set up in the system. In the Ledger set up in the General Ledger Module Set up, the transaction currency and the reporting currency needs to be set up. The currency can be selected from the drop down list which shows all the world currency in the currency master.

viii. **Main Accounts:**

Before any ledger accounts are created or uploaded in the Main Accounts (Chart of Accounts) first a name has be given to the Main Accounts for differentiating it from other available main accounts created. Once the Main Accounts are created it needs to be attached in the Ledger set up in the General Ledger Module.

3 Business Processes

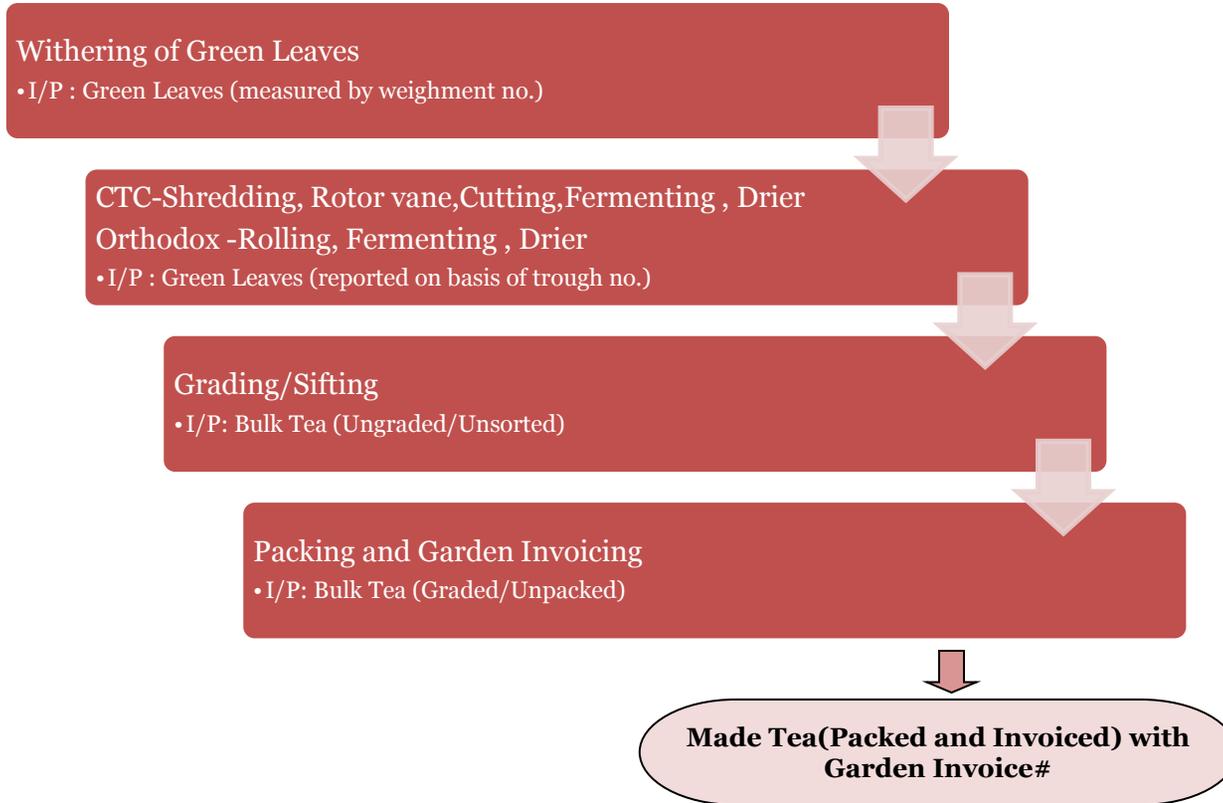
3.1 Production Process for Tea : Business Process Description

Tea Production starts with the arrival of green leaf in the factory. Green leaf arrival will be managed through inventory process of Managing Material receipt. Green Leaf Arrival will be captured through GRN(in case of bought leaves) or movement journal (in case of own leaf).

The green leaf arrival is followed by quality testing where its attributes are updated like Internal Moisture percentage, Coarse percentage, Bruce percentage, Blister Count and Black Leaf percentage. The (dry matter content) DMC is derived from the Internal Moisture percentage. Bad quality might result in different grades of made tea, however it does not matter because different leaves are mixed and the finished product is made, then through grading process different grades are separated. The quality parameters mentioned above has a bearing on the Bought Leaf pricing.

Production will start from consumption of green leaves lying in the inventory. Their quality parameters can be accessed as their batch attributes during production.

Further processing activities and respective I/P are shown in the flow chart.



As shown in the above diagram, tea Batch Order can be divided into four stages to arrive at the final packed tea.

1. Withering
2. Cutting, Grinding and Drying
3. Sifting
4. Packing and Garden Invoicing

Withering and Sifting processes can be managed through transfer journals as they involve same item codes as both input and output with the changes in location and item dimension respectively.

Firstly, arrived green leaf weighment wise will be transferred to Withering Troughs which will be configured as locations in the system.

Secondly, one will make a batch order of Cutting, Grinding and Drying. This batch order will consume green leaves from Withering trough locations and report output of bulk tea (ungraded) on the basis of trough locations only.

Third step will be to post a transfer journal for changing the grade of bulk tea from ungraded to the pre-determined grade.

Last step will be to make a Batch Order for Packing and Garden Invoicing in which graded Bulk Tea will be consumed and Packed Tea will be reported for particular brand with the Garden Invoice Number as batch number.

Separate product codes will be maintained for Green Leaf, Bulk Tea and Packed Tea. Different brand names will be identified through separate product codes. For e.g.: Achoor Packed Tea, Achoor Bulk Tea will be different product codes. Withering trough allocation will be managed by changing location of green leaf through transfer journals. Grading will be maintained through product dimensions and hence can be changed easily through transfer journals.

3.1.1 Transfer Journal for Withering Trough Allocation of Green leaves

Withering trough allocation of green leaves will be managed through a transfer journal. The only reason to manage it through a separate transfer journal is that item code remains same in the system, only the location change is happening in this case. Moreover, the quantity remains same for both input and output. Hence, it will be easier to use transfer journals instead of batch orders in this case. This is a standard feature in the ERP, hence no customization will be required for this.

To capture the trough allotment in the system, one transfer journal will be created. Each line of journal will correspond to one green leaf weighment. Their location will be changed from Green Leaf Arrival location to Withering Troughs location for the entire weighment quantity. But these inputs,

- From batch number(weighment number)
- From location(to be selected from on-hand available)
- To batch number
- To location
- Quantity

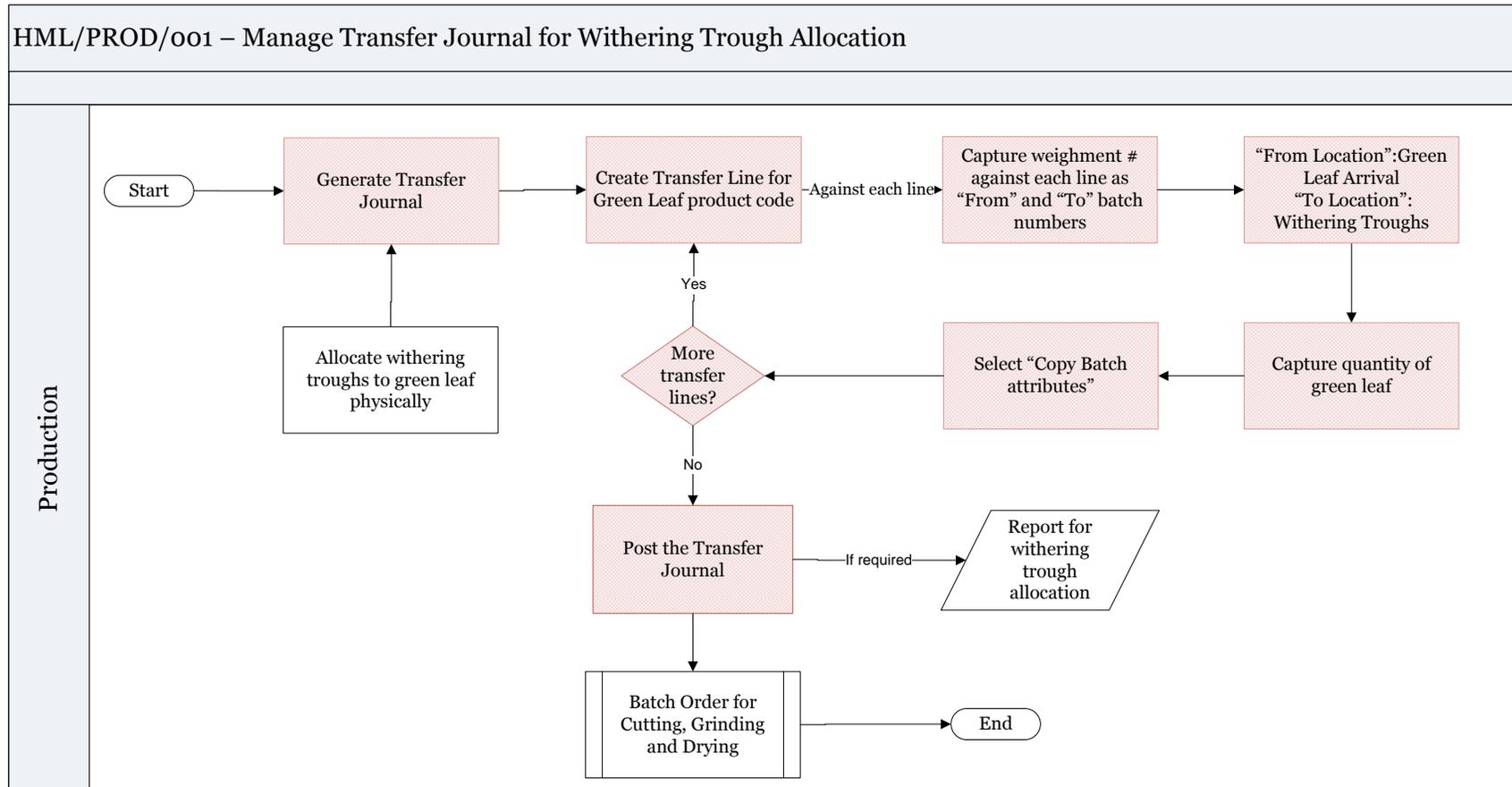
would have to be provided manually by the user. The batch attributes like coarse percentage, moisture, etc. are carried along-with the weighment # only for green leaves to withering troughs.

As soon as the journal is posted, the green leaves location will change to withering troughs. To track the withered leaves quantity in the factory, one can generate a report of green leaves location wise where the withering troughs location can be analyzed.

The transfer journal will also provide tracking as to which all weighment # were posted in withering troughs for a particular date which can be useful for back-tracking from packed tea output to green leaf input.

After withering is finished, Batch order for **Cutting, Grinding and Drying** will be generated and executed.

3.1.1.1 Business Process Flow -Business Process Map



3.1.1.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/oo 1-01	Allocate withering troughs to green leaf physically	Withering trough allocation is carried out physically on the shop-floor. This is done before creating the transfer journal in the system at the day end.	Y		E
2	HML/PROD/oo 1-02	Generate Transfer Journal	Transfer Journal is generated of the name, "Withering Troughs Allocation" in the system.	N		SF
3	HML/PROD/oo 1-03	Create Transfer Line for Green Leaf product code	Transfer Lines are created in the journal one by one.	N		SF
4	HML/PROD/oo 1-04	Capture weighment # against each line as "From" and "To" batch numbers	Against each line, "from batch number" and "to batch number" remain same since only location is changing here. These are the weighment number of green leaf to be selected by the user from drop-down.	N		SF
5	HML/PROD/oo 1-05	"From Location" : Green Leaf Arrival "To Location": Withering Troughs	For each line, "from location" is chosen as the green leaf arrival location where currently the green leaf weighment is lying, and the "to location" is chosen as the pre-allocated withering troughs.	N		SF
6	HML/PROD/oo 1-06	Capture quantity of green leaf	Against each line, the quantity of the green leaf to be transferred is chosen against the selected batch (weighment)number.	N		SF
7	HML/PROD/oo 1-07	Select "Copy Batch attributes"	Also, the user can tick "Copy Batch Attributes from batch number to batch number" to ensure that the batch attributes of green leaf remain intact while	N		SF

			it is in withering troughs also.			
8	HML/PROD/oo 1-08	Post the Transfer Journal	The above mentioned processes are repeated for each line in withering trough allocation journal. If no more lines are created, then the journal is posted to transfer the green leaf weighments to withering troughs in the system.	N		SF
9	HML/PROD/oo 1-09	Report for withering trough allocation	User can always access the journals to track which weighments were allocated to withering troughs with how much qty and at which date.	Y		E
10	HML/PROD/oo 1-10	Batch Order for Cutting, Fermenting and Grinding	Next the user moves forward to execute batch order for Cutting, Grinding and Fermenting in the system.	N		SF

3.1.2 Batch Order for Cutting, Grinding and Fermenting

Cutting, Grinding and Fermenting of withered green leaves will be managed through a Batch Order. This order is important since it will report the bulk tea output that is required to be reported as discussed with HML.

Batch Order will be generated for Bulk Tea (ungraded) in the system only after it has been carried out physically in the factory. It will be created for the actual quantity produced in the day for particular product code.

Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the batch order, material requisition are generated to stores for Production through the picking list journal. Here the green leaves present in withering troughs(locations) will be consumed in the system. If actual consumption of the green leaves in withering troughs differs from the system proposed, then the user would have to manually provide the actual consumption there. The actual consumption quantity provided will be consumed as soon as picking list journal is posted or if the quantity is not changed, proposal qty will only be consumed and posted to inventory.

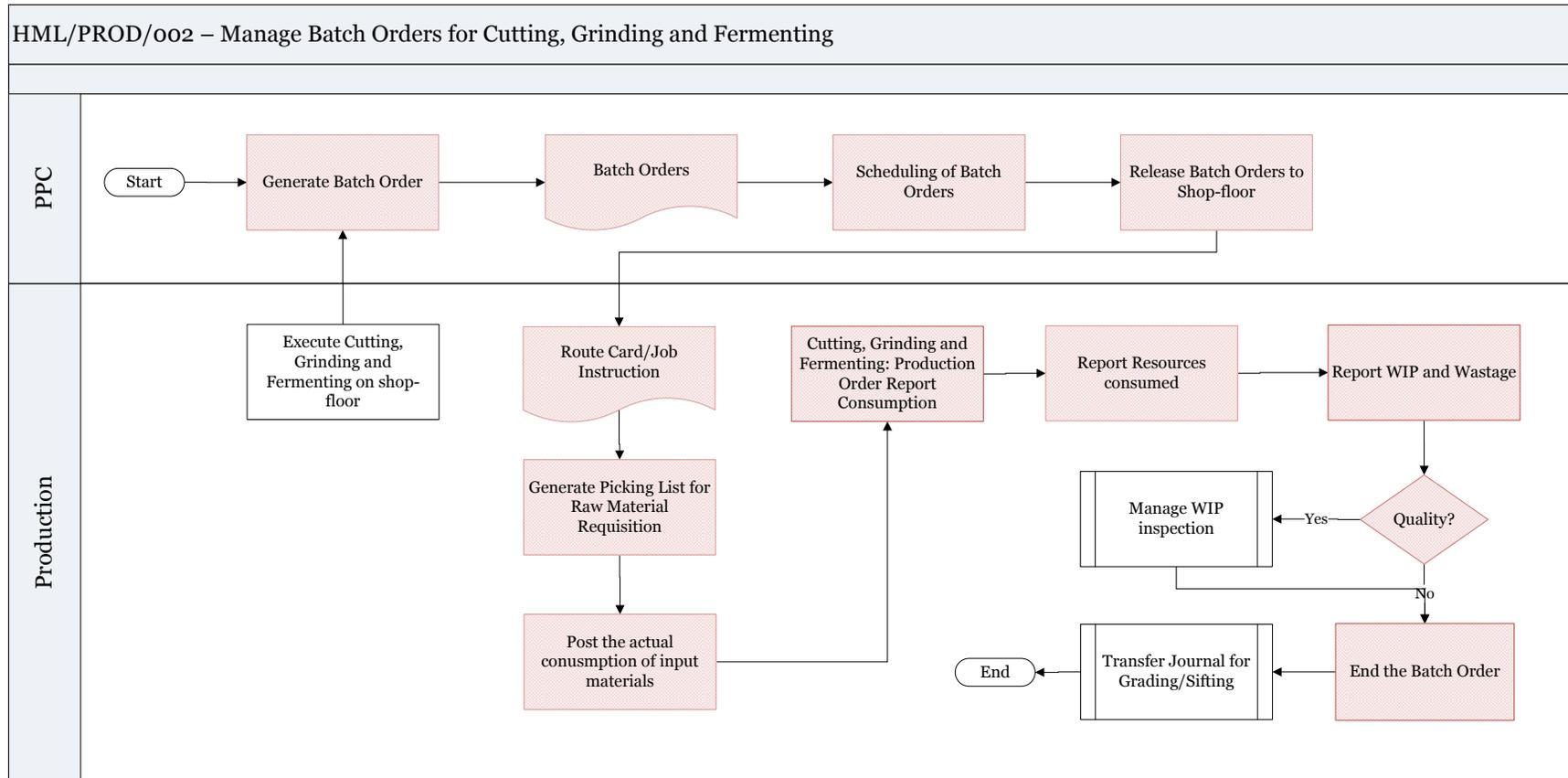
The cutting, grinding and fermenting of withered leaves will be mapped as separate operations on the route of the product code of bulk tea. These activities must have been carried out sequentially on the green leaves in withering troughs location in the factory physically before the batch order was created. Subsequently, material and hour consumption are reported if needed against specific or all operations. Then, the actual output that was produced during the day of the bulk tea (ungraded) is reported on different trough location now by posting the Report as finished journal along with the wastage incurred.

Also a batch number is assigned to the produced output automatically.

Also, this product, Bulk Tea will have some specific attributes to be captured against the Batch Order like moisture content, Tea fiber content, etc. These attributes will be updated at the time of reporting the output for the produced batch as "Batch Attributes" in the system.

After cutting, grinding and Fermenting operations are finished, transfer journal for **Sifting/Grading** is executed.

3.1.2.1 Business Process Flow -Business Process Map



3.1.2.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/oo 2-01	Execute the Batch Order in factory	Production is carried out physically in the factory before creating the batch order in the system for this process.	Y		E
2	HML/PROD/oo 2-02	Generate Batch Orders	The Batch Orders for cutting, grinding and Fermenting will be generated manually by production supervisor for the actual quantity produced on shop-floor.	N		SF
3	HML/PROD/oo 2-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/oo 2-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report(Job Instruction) will not be needed here since the production would have been completed physically on the shop-floor	SF
5	HML/PROD/oo 2-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. System will suggest the input quantity to be consumed basis on the formula and quantity of output for which the order is created.	N	Locations can be used in place of troughs for this process. Actual Consumption will be posted in case the actual is different from system proposal	SF

			<p>Against the picking list, order will consume green leaves on the basis of withering trough locations.</p> <p>The attributes like outturn%, coarse percentage, moisture content, etc. will be captured as batch attributes of green leaves during the quality only. Here they can be accessed and tracked.</p>			
6	HML/PROD/oo 2-06	Green Leaf Processing	Cutting, grinding and Fermenting process stage is captured in the system through Production Order report consumption.	N		SF
7	HML/PROD/oo 2-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/oo 2-08	Report WIP and Wastage	<p>Report as Finished Journal is posted to report following quantities:</p> <ul style="list-style-type: none"> WIP quantity i.e. the quantity of Bulk Tea reported trough wise. It is reported against the specific product code of bulk tea with the grade dimension value as "ungraded". Quantity reported will be actual quantity of output reported physically for the day. Batch number will be allotted automatically based on some logic like production order no and trough no combination. <p>Moreover the output will be reported along-with the set of quality attributes required like tea fiber quantity, etc.</p>	N	<p>Troughs can be configured as locations where the bulk output can be reported to be used further for grading and packing.</p> <p>Batch number will be allotted based on some pre-defined number sequence in the system. This batch number will be used for the purpose of mapping batch attributes to bulk tea like tea fiber content, moisture%, etc. HML can manage these batch numbers physically also some way if possible on the bulk</p>	SF

			<p>These attributes will be captured as "Batch Attributes".</p> <ul style="list-style-type: none"> The waste quantity of leaves or the dust is reported as error quantity in the journal. 		<p>tea. That would ensure accurate tracking of bulk tea stock in the system and physically.</p> <p>The actual output quantity of bulk tea(ungraded) needs to be reported first physically so that there is no change in the output. System will not provide any validation or control on the output based on any criteria. It will suggest the same qty for which the order was made initially.</p>	
9	HML/PROD/oo 2-09	Manage Material Inspection	The produced bulk tea can be sent for quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/oo 2-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF
11	HML/PROD/oo 2-11	Grading/Siftin g	Next, the Transfer Journal for Grading/Sifting is created.	N		SF

3.1.3 Transfer Journal for Sifting/Grading

Sifting of ungraded bulk tea will be managed through a Transfer Journal. This is a salvaging order where the grade dimension of bulk tea product code will be changed by grading process. To manage this, a standard transfer journal will be posted to change the dimension of bulk tea from "Ungraded" to one of the pre-determined grade.

Transfer Journal will be generated for Bulk Tea (Ungraded) to Bulk Tea (Grade) for specific quantity along-with batch number, location, etc.

While creating the journal, following details should be known before creating journal and given as inputs manually:

- From Grade(size)
- To Grade (size)
- From Batch Number
- To Batch Number
- From Location
- To Location

The quantity of bulk tea will always be the Net Qty that will be given to the system. The batch attributes like tea fiber content, black tea, moisture, etc. are carried along-with the batch number only for bulk tea. "To Location" can also be specified different from "From Location".

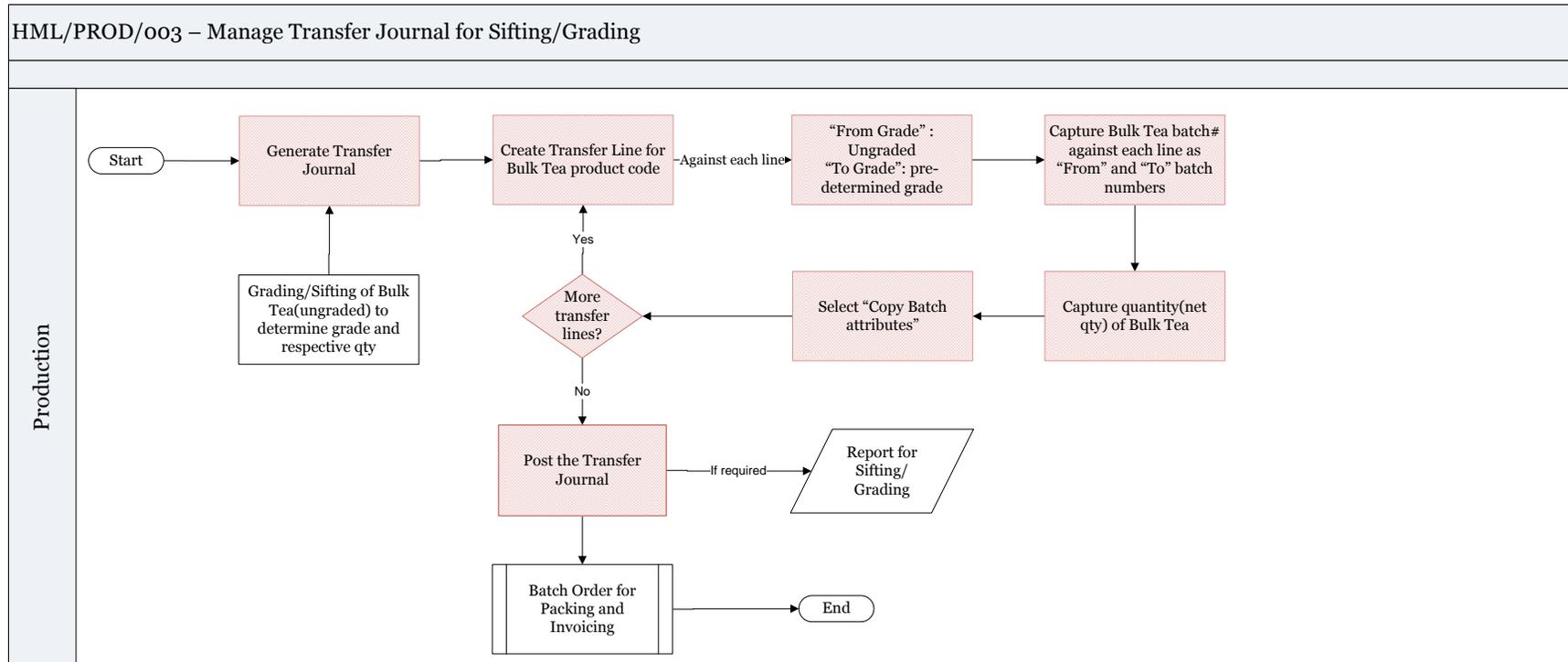
As soon as the journal is posted, the grade of bulk tea will change as specified. The transfer journal will change the grade dimension of the bulk tea for the quantity specified.

The transfer journal will also provide tracking as to how much qty of which batch number got transferred to which grade for a particular date which can be useful for back-tracking from packed tea output to bulk tea input.

Also after posting this transfer journal, if required, a quality order can be created manually for the graded bulk tea batch number wise. Quality would then update the batch attributes for the checked batch number.

After Grading/Sifting is finished, Batch order for **Packing and Invoicing** will be generated and executed.

3.1.3.1 Business Process Flow -Business Process Map



3.1.3.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/003-01	Grading/Sifting of Bulk Tea(ungraded) to determine grade and respective qty	Grading/Sifting of bulk tea produced is carried out physically on the shop-floor. This is done to determine the grade of bulk tea before creating the transfer journal in the system at the day end.	Y		E
2	HML/PROD/003-02	Generate Transfer Journal	Transfer Journal is generated of the name, Bulk Tea Grading in the system.	N		SF
3	HML/PROD/003-03	Create Transfer Line for Bulk Tea product code	Transfer Lines are created in the journal one by one for bulk tea product code.	N		SF
4	HML/PROD/003-04	“From Grade” : Ungraded “To Grade”: pre-determined grade	For each line, "From Size(Grade)" is chosen as "Ungraded" and "To Size(Grade)" is chosen as the pre determined grade on shop-floor by the user	N		SF
5	HML/PROD/003-05	Capture Bulk Tea batch# against each line as “From” and “To” batch numbers	Against each line, "from batch number" and "to batch number" remain same since only grade (dimension) is changing here. These batch numbers will be the one allotted to ungraded bulk tea produced in the system.	N		SF
6	HML/PROD/003-06	Capture quantity(net qty) of Bulk Tea	Against each line, the net quantity of the bulk tea to be transferred to another grade is chosen against the selected batch number.	N		SF
7	HML/PROD/003-07	Select “Copy Batch attributes”	Also, the user can tick "Copy Batch Attributes from batch number to batch number" to ensure that the batch	N		SF

			attributes of bulk tea remain intact for graded bulk tea also.			
8	HML/PROD/003-08	Post the Transfer Journal	The above mentioned processes are repeated for each line in bulk tea grading journal. If no more lines are created, then the journal is posted to transfer the bulk tea batch numbers from Ungraded to Graded in system.	N		SF
9	HML/PROD/003-09	Report for Sifting/Grading	User can always access the journals to track which Bulk tea batch# were transferred to another grade with how much qty and at which date.	Y		E
10	HML/PROD/003-10	Batch Order for Packing and Invoicing	Next the user moves forward to execute batch order for Packing and Invoicing in the system.	N		SF

3.1.4 Batch Order for Packing and Garden Invoicing

Packing and Garden Invoicing of Graded Bulk Tea will be managed through a Batch Order. This order is important since it will report the final Packed Tea and consume the graded bulk tea.

Batch Order will be generated for Packed Tea (Graded) in the system only after it has been carried out physically in the factory. It will be created for the actual quantity packed in the day for particular product code.

Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. If actual consumption of the bulk tea (graded) in bins or troughs differs from the system proposed, then the user would have to manually provide the actual consumption there. The actual consumption quantity provided will be consumed as soon as picking list journal is posted or if the quantity is not changed, proposal qty will only be consumed and posted to inventory.

The Packing and Garden Invoicing of graded bulk tea will be mapped as separate operations on the route of the product code of Packed Tea. These activities must have been carried out sequentially on the graded bulk tea troughs location in the factory physically before the batch order was created. Subsequently, material and hour consumption are reported if needed against specific or all operations.

Then, the actual output (Kgs) packed during the day of the Packed Tea (Graded) is reported on different trough location now by posting the Report as finished journal along with the wastage incurred. Also a separate tab will be provided on Report as Finished form called Tea Garden Invoice details, where the user would provide No. of bags, Qty per bag, Weight of the Bag, From Bag# and To Bag#.

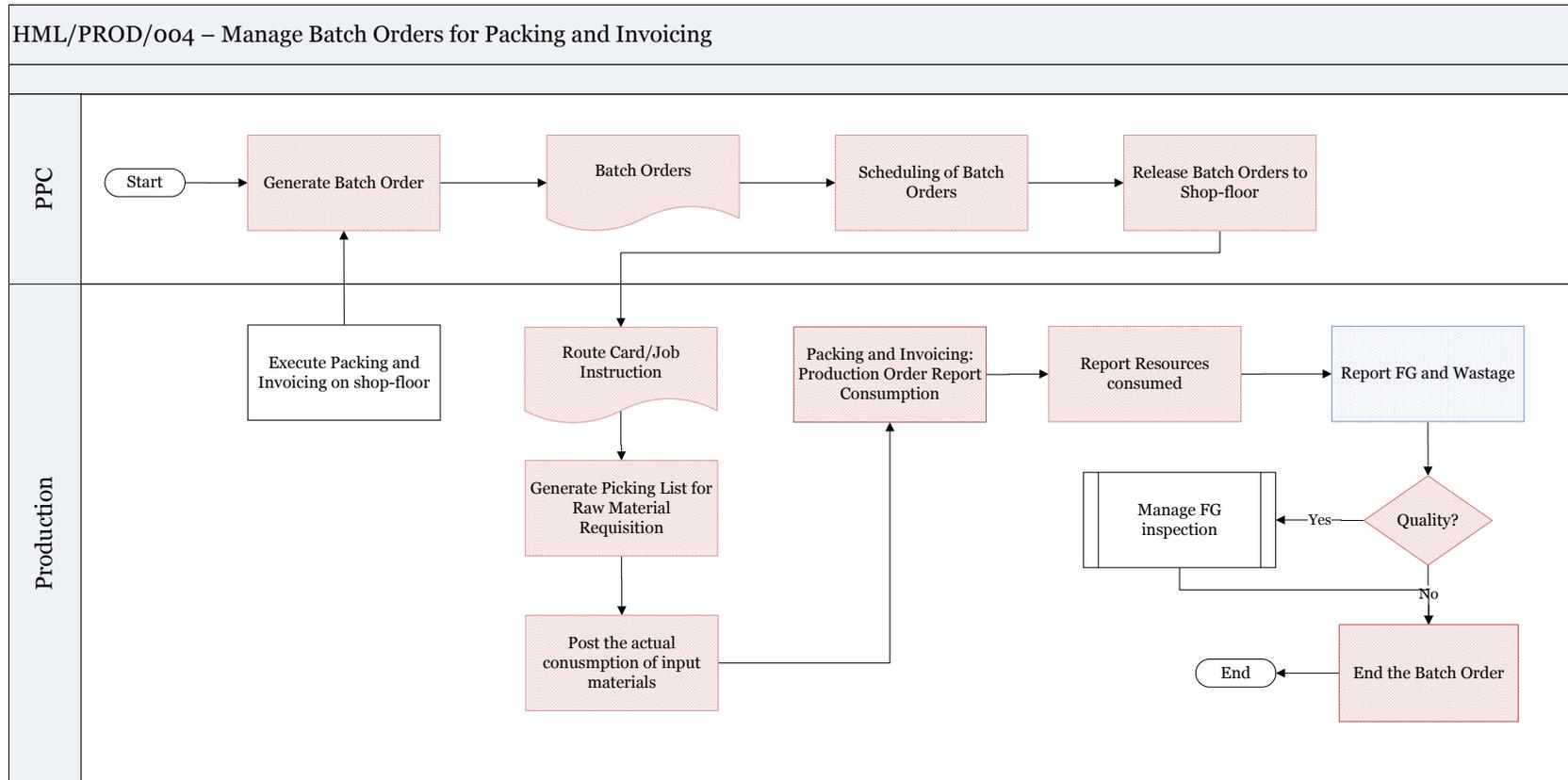
Also a batch number or here known as Garden Invoice Number is assigned to the produced output manually since it is already allotted and stamped physically on the bags.

Also, this product, Packed Tea (graded) will have some specific attributes to be captured against the Batch Order like Size, Appearance, Infusion, Liquor, Volume, etc. These attributes will be updated at the time of reporting the output for the produced batch as "Batch Attributes" in the system.

After Packing and Garden Invoicing, Quality Order will be created automatically against each Garden Invoice Number. Quality parameters will be defined for every item but not every variant. Hence if CTC or Orthodox quality parameters are to be maintained separately, one would have to create separate item codes for CTC or Orthodox Tea.

Once received at Warehouse, another round of testing will be conducted against the same Garden Invoice Number. Once that is done, a report can be customized for comparing the two Quality Parameters against each Garden Invoice. This can be done using the quality order results since quality orders will be different at different locations.

3.1.4.1 Business Process Flow -Business Process Map



3.1.4.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD /004-01	Execute the Batch Order in factory	Packing and Invoicing is carried out physically in the factory before creating the batch order in the system for this process.	Y		E
2	HML/PROD /004-02	Generate Batch Orders	The Batch Orders for Packing and Garden Invoicing will be generated manually by production supervisor for the number of bags actually produced on the shop-floor along-with the unit as bag type.	N		SF
3	HML/PROD /004-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD /004-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report(Job Instruction) will not be needed here since the production would have been completed physically on the shop-floor	SF
5	HML/PROD /004-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. System will suggest the input quantity to be consumed basis on the formula and quantity of output for which the order is	N	Locations can be used in place of troughs for this process. Actual Consumption will be posted in case the actual is different from system proposal	SF

			<p>created.</p> <p>Against the picking list, order will consume unpacked bulk tea (graded) on the basis of trough locations.</p> <p>The attributes like Tea fiber content, net black tea, moisture content, etc. will be captured as batch attributes of unpacked bulk tea (graded) during the quality only. Here they can be accessed and tracked.</p>			
6	HML/PROD /004-06	Packing and Garden Invoicing	Packing and Garden Invoicing process stage is captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD /004-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD /004-08	Report FG and Wastage	<p>Report as Finished Journal is posted to report following quantities:</p> <ul style="list-style-type: none"> • FG quantity i.e. the quantity of Packed Tea batch number wise. • Batch Number would be allotted manually since garden invoice number must have been physically stamped on the packed tea bags. Moreover, quality attributes are reported along-with each batch # of the output. • 	Y	<p>Batch number will be allotted manually only since in this process, garden invoice number which will be treated as batch number in the system would have been stamped physically on batches during the day only. The batch order will be created after physically packing and invoicing has been done. Hence batch number would have to be registered manually in this case and batch attributes have to be updated. Also a separate tab will be</p>	C

					provided to store no. of bags, qty per bag, weight of the bag, from bag no. and to bag no. against each batch number of packed tea reported as finished. These values will be used at the time of tea transfer, allotment to sales channels.	
9	HML/PROD/004-09	Manage Material Inspection	The packed and invoiced tea can be sent for quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/004-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.1.5 Blending Operation

Tea blending operation for the purpose of exports will be managed through batch orders only.

Blend Tea will be a separate product code in the system. Its formula will contain packed tea as input lines only. The formula will be created for every blend to be prepared based on the draft Blend sheet. Hence blending batch order will be created before carrying it out on shop-floor. Based on the formula given the input quantities of packed tea will be moved to shop-floor for blending.

After this the Blending process is done. There will be additions/reduction in the output quantity which is called Blend Gain/Loss.

Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor. Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the system will suggest the quantity of packed tea to be consumed on the basis of formula. If actual consumption of the packed tea differs from the system proposed, then the user would have to manually provide the actual consumption there.

Also, as a general case, more than one garden invoices are used for making a blend, so the user can add lines in the journal for more packed tea to be consumed and select the batch number(garden invoice number) against each line. The actual consumption quantity provided will be consumed as soon as picking list journal is posted or if the quantity is not changed, proposal qty will only be consumed and posted to inventory.

The Blending of packed tea will be mapped as an operation on the route of the product code of Blend Tea. Subsequently, material and hour consumption are reported if needed against specific operation.

Then, the actual output quantity produced during the day of the Blended Tea is reported on different trough location now by posting the Report as finished journal along with the wastage incurred. Blend loss will be mapped to Error qty. Blend Gain would have to be reported manually while starting the batch order only since if excess qty is not started with, then system does not allow excess to be posted during report as finished.

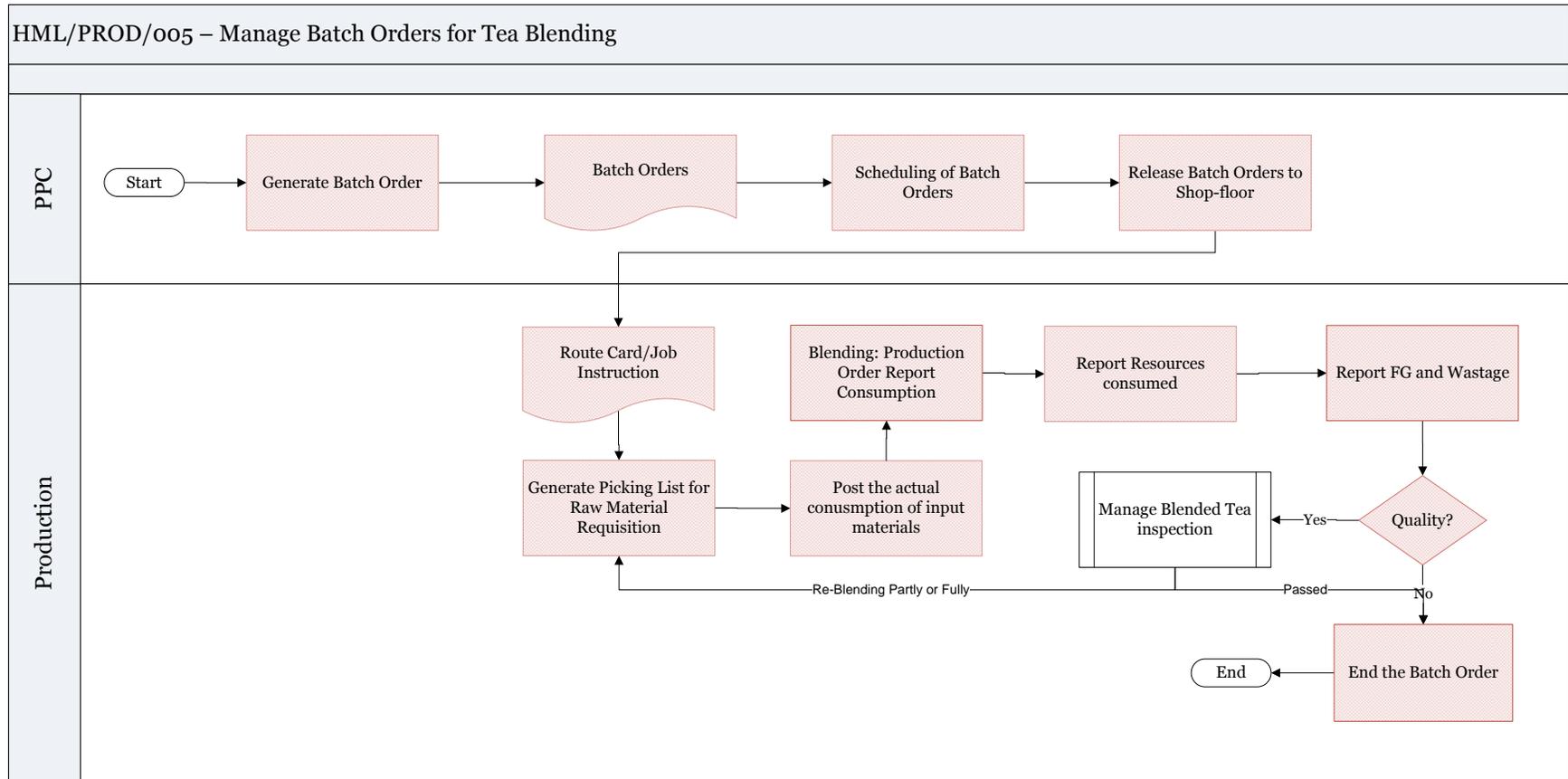
Also a batch number or here known as Blend ID is assigned automatically by the system.

If the balance quantities of blended tea lying in stock will be included in another Blend Sheet (Blend Id), it can be easily done while choosing the input lines in the formulae. This process is called re-blending. The Blended Tea will be re-blended along with Garden Invoices with a new Blend-Id.

Also, this product, Blend Tea will have some specific attributes to be captured against the Batch Order. These attributes will be updated at the time of reporting the output for the produced batch as "Batch Attributes" in the system. One can easily track through these batch orders, which blend ID was produced and which all invoice numbers were consumed for that.

Blended Tea can be sent for quality check after report as finished if required.

3.1.5.1 Business Process Flow -Business Process Map



3.1.5.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/005-01	Create Formula for the draft blend sheet	Formula version is created for Blended Tea product code as per the draft blend sheet for every blend to be prepared.	N		SF
2	HML/PROD/005-02	Generate Batch Orders	The Batch Orders for Blending will be generated manually by production supervisor for the quantity to be produced.	N		SF
3	HML/PROD/005-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/005-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N		SF
5	HML/PROD/005-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. System will suggest the input quantity to be consumed basis on the formula and quantity of output for which the order is created. Against the picking list, order will	N	Actual Consumption will be posted in case the actual is different from system proposal.	SF

			consume packed tea on the basis of batch numbers.			
6	HML/PROD/00 5-06	Packing and Garden Invoicing	Blending process stage is captured in the system through Production Order report consumption.	N		SF
7	HML/PROD/00 5-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/00 5-08	Report FG and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> • FG quantity i.e. the quantity of Blended Tea batch number wise. • Batch number will be allotted automatically to the blended tea which will be the Blend ID that will be stamped physically on blended tea. • The waste quantity of tea, leaves or the dust is reported as error quantity in the journal. 	N	Batch number will be allotted automatically to the blended tea which will be the Blend ID that will be stamped physically on blended tea.	SF
9	HML/PROD/00 5-09	Manage Material Inspection	The blended tea can be sent for quality check if required. Batch attributes have to be updated by quality department before closing the quality order. If the quality passes, batch order is ended. If the quality fails, then re-bending is done partly or fully.	N		SF
10	HML/PROD/00 5-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.2 Production Process for Rubber : Business Process Description

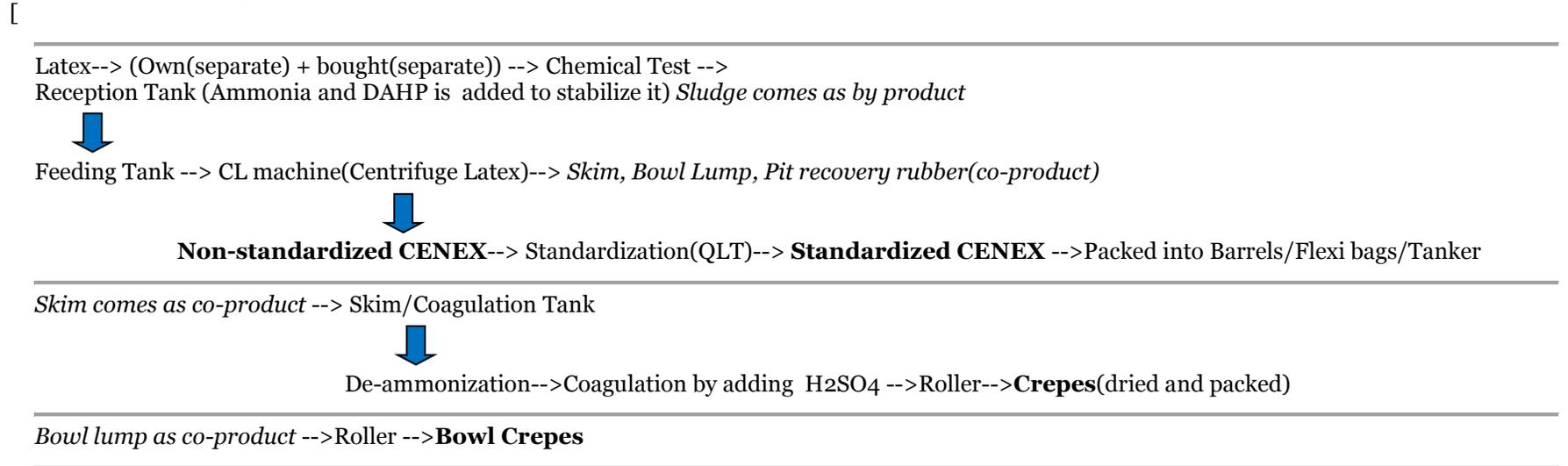
Rubber processing starts from Latex receipt process where DRC % is captured (in terms of dry wt kg of rubber). During processing the finished goods and co-products/by-products are as follows:

- CENEX --> FG (almost 88% of O/P)
- Skim (9%)
- BOWL LUMP (.25%)
- PRR (PIT RECOVERY RUBBER) (.75%)

and some loss(around 2%) including Sludge

These co-products can be converted to inferior rubber variants without any purchase cost.

The CENEX processing of latex takes place in the following manner



Latex is received in the factory after weighment. sample is drawn and chemical analysis is done. After QLT acceptance, latex is unloaded to the chemical mixing tank. Based on the Mg content, Di-ammonium Hydrogen phosphate is added and stirred. After 10 minutes the latex is transferred to reception tank. Keep latex for 24 hours for DESLUDGING. The latex from different reception tanks are transferred to service/feeding tanks and standardized. This is called standardization of latex.

The latex is now fed to centrifuging machine for processing. The cenex separated and collected in cenex storage tanks, where it is standardized to the required quality parameters by adding water, ammonia and other chemicals.

After standardization, cenex is packed into barrels/flexi-bags/packets of various sizes. While packing Batch number is assigned each lot, based on the Type of product (own/bought/traded), month of packing, factory, running number . Then it is sealed and dispatch to the customer as per the DO from RUBBER SALES department at HO.

Sometimes double centrifuging is carried out. To do so the DRC of CENEX is reduced from 60% to 30% and taken back to the feeding tank and then centrifuged again and then standardized. This is called as Double centrifuged CENEX.

Rubber Processing will consist of following Batch Orders:

- 1. Standardization of latex**
- 2. Processing of Latex** where latex in feeding tanks is consumed and Non-standardized Cenex is produced. In this process, Skim, Bowl Lumps and Pit Recovery Rubber are reported as the co-products.
- 3. Ammoniating and standardization of CENEX:** After quality acceptance, ammonia is added to Non standardized cenex in the cenex storage tanks and ammonia/Lauric acid is added on the basis of the QLT parameter values. Non standardized cenex is standardized and is reported as standardized cenex output in cenex storage tanks. This will consume non-standardized cenex and report standardized cenex.
- 4. Packing of Cenex:** Packing can be made as a separate Batch Order or can be combined with this order to directly give packed standardized cenex in barrels/Flexi bags etc that will be reported barrel number wise.
- 5. Skim Coagulation** where skim(co-product) is de-ammoniated and then treated with H_2SO_4 that results in the co-product output of coagulated skim. Unrecovered skim is filtered in the various pits and is reported as Pit Recovery Rubber(PRR). De-ammonization is done followed by coagulation and the mixture is then sent through rollers and dried crepes are reported and packed.
- 6. Production of Bowl Crepes** will consume the bowl lumps reported as co-product of cenex is then sent through rollers and dried bowl crepes are reported and packed.
- 7. Double centrifuging** can be tracked as a separate Batch Order whenever needed which will include one Non-standardization order of cenex and followed by orders of Centrifuging and Standardization of Cenex.

Note: Similarly, Batch Orders for PLC, RSS, Sole Crepe, etc, can also be generated manually as and when required. They can be explained in detail and covered in FRD if required or can be modeled based on the scenarios already explained.

3.2.1 Batch Order for Standardization of Latex

Standardization of Latex will be managed through a Batch Order. Latex is received in the factory after weighment. sample is drawn and chemical analysis is done. After QLT acceptance, latex is unloaded to the chemical mixing tank. . Based on the Mg content, Di-ammonium Hydrogen phosphate is added and stirred. After 10 minutes the latex is transferred to reception tank. Keep latex for 24 hours for DESLUDGING. The latex from different reception tanks are transferred to service/feeding tanks and standardized. This is called standardization of latex.

Latex will be consumed from Chemical Mixing tanks and reported in Reception tanks. Di-ammonium Hydrogen phosphate can also be tracked as input material if required. The consumption of various chemicals can be captured in the picking list journal itself by the user.

The batch order for Standardization of Latex must have been physically carried out on the shop-floor to know the actual quantity of output for which the batch order is created in the system. Hence there will be no variation in the output quantity while reporting.

Order will be first created by PPC (Production Planning control)department or directly production supervisor. It will be created for Latex product code only since here both input and output item codes are same, only location will change. After scheduling the order, the order is released to factory shop-floor. If only location needs to be changed then transfer journal can also be used but here in case of standardization of latex, consumption of input materials and chemicals needs to be tracked for each order, hence here we will use batch order.

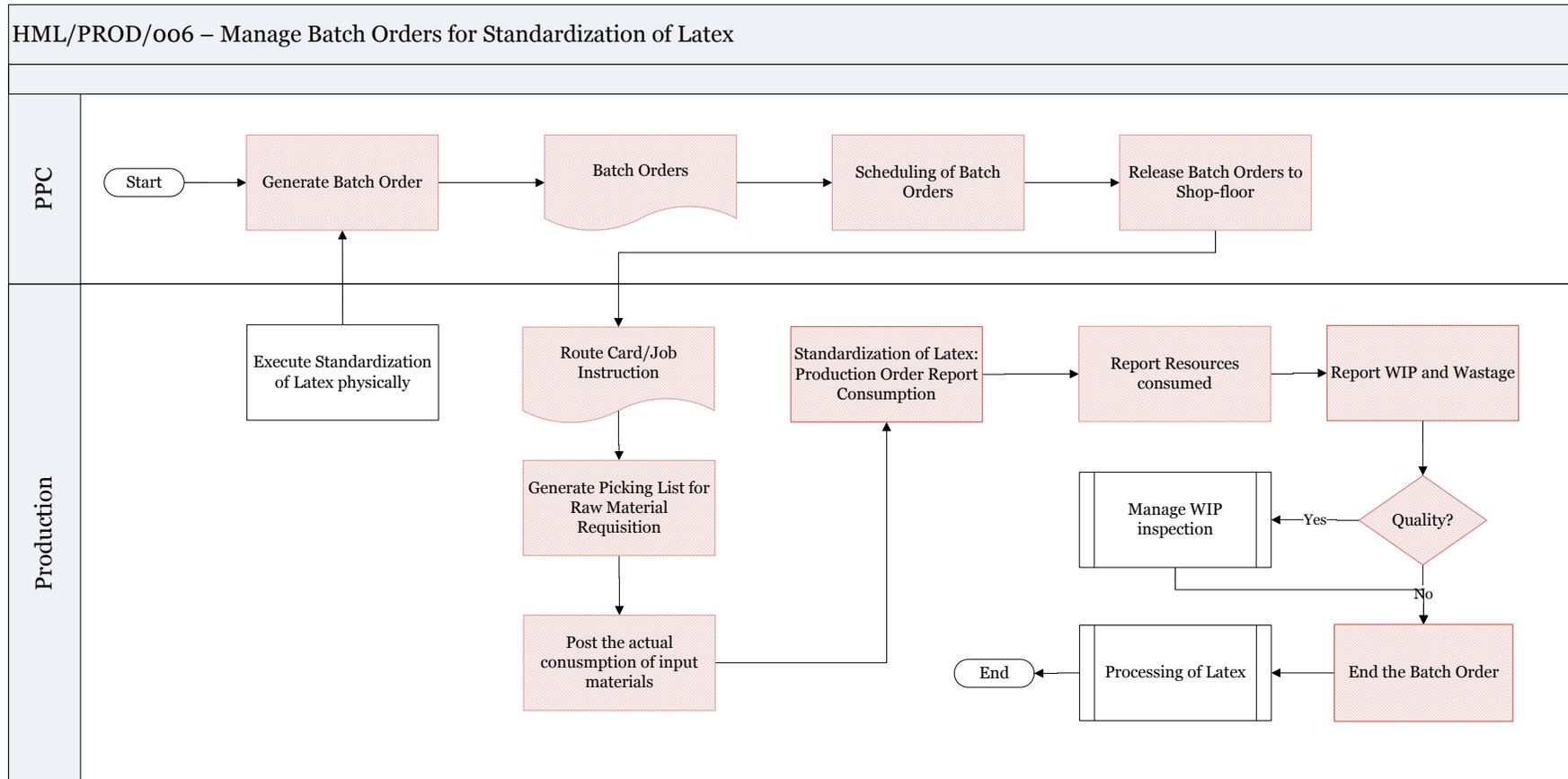
Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the latex arrived will be consumed on basis of reception tanks (locations) in the system. System will propose consumption based on the formula chosen for the production order. Actual qty if specified will be consumed as soon as picking list journal is posted. Latex will be consumed along-with its batch attributes like DRC%, wet weight, etc that were captured at the time of incoming quality inspection.

Subsequently, material and hour consumption are reported if needed against Standardization operation. After the latex are transferred to Feeding tanks, they are reported on different location specified at the time of creating batch order(feeding tanks) by posting the Report as finished journal along with the wastage incurred.

Also while reporting latex, batch number will be allotted automatically to the load. Also for this batch, attribute values can be updated like wet weight, DRC%, etc but only dry weight will be posted to inventory always. Wet weight, volume, DRC% will be captured as batch attributes only.

After Standardization of Latex is finished, Batch Order for **Processing of Latex** is executed.

3.2.1.1 Business Process Flow -Business Process Map



3.2.1.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/oo 6-01	Execute Standardization of Latex physically	In the shop-floor, Standardization of latex is done before creating the batch order for it in the system.	Y		E
2	HML/PROD/oo 6-02	Generate Batch Orders	The Batch Orders for Standardization will be generated manually by production supervisor for the actual quantity of latex reported in feeding tanks on the shop-floor.	N		SF
3	HML/PROD/oo 6-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/oo 6-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically Standardization must have been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/oo 6-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will	N	Location (Dimension) in the system can be used for reception tanks to manage Latex consumption.	SF

			consume latex on the basis of mixing tanks location. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		Actual consumption would have to provided and validated by the user manually. Batch attributes of latex consumed can be tracked from the journal also.	
6	HML/PROD/oo 6-06	Standardization of Latex	Standardization process stage is captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD/oo 6-07	Report Resources consumed	Actual work-center consumption (in hours) against the Standardization process is reported by the user.	N		SF
8	HML/PROD/oo 6-08	Report WIP and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> • WIP quantity i.e. the quantity of Standardized latex reported feeding tank wise. It is reported against the product code of latex only but on feeding tanks location. • Batch number will be allotted automatically based on some pre-defined number sequence. Various attributes reported along-with the output like DRC%, wet weight, etc. will be captured as batch attributes against this batch number. • Sludge is reported as by-product from the report as 	N	Tanks can be configured as locations where the Standardized latex output can be reported to be used further for rubber production. Batch number allotted here is just for the system purpose to capture batch attributes. But it would have no physical significance since latex cannot be stamped with	SF

			<p>finished journal only(if it has been specified as by-product for formula of latex).</p> <ul style="list-style-type: none"> The waste quantity of latex if any is reported as error quantity in the journal. 		physical numbers.	
9	HML/PROD/oo 6-09	Manage Material Inspection	The latex in feeding tanks can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/oo 6-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF
11	HML/PROD/oo 6-11	Processing of Latex	Next, the Batch Order for Processing of Latex is generated and executed where these Standardized latex output can be used.	N		SF

3.2.2 Batch Order for Processing of Latex

Processing of Standardized latex will be managed through a Batch Order. Here the latex will be converted to Cenex through centrifugal machine. The cenex reported will be non-standardized. Also through this order only, Skim, Bowl lump and PRR will be reported as co-products that will be used for further processing.

Processing must be done on the shop-floor physically before creating the order in the system to ensure no variation in the output reported. Batch Order will be generated for Non-standardized Cenex in the system for actual quantity.

Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

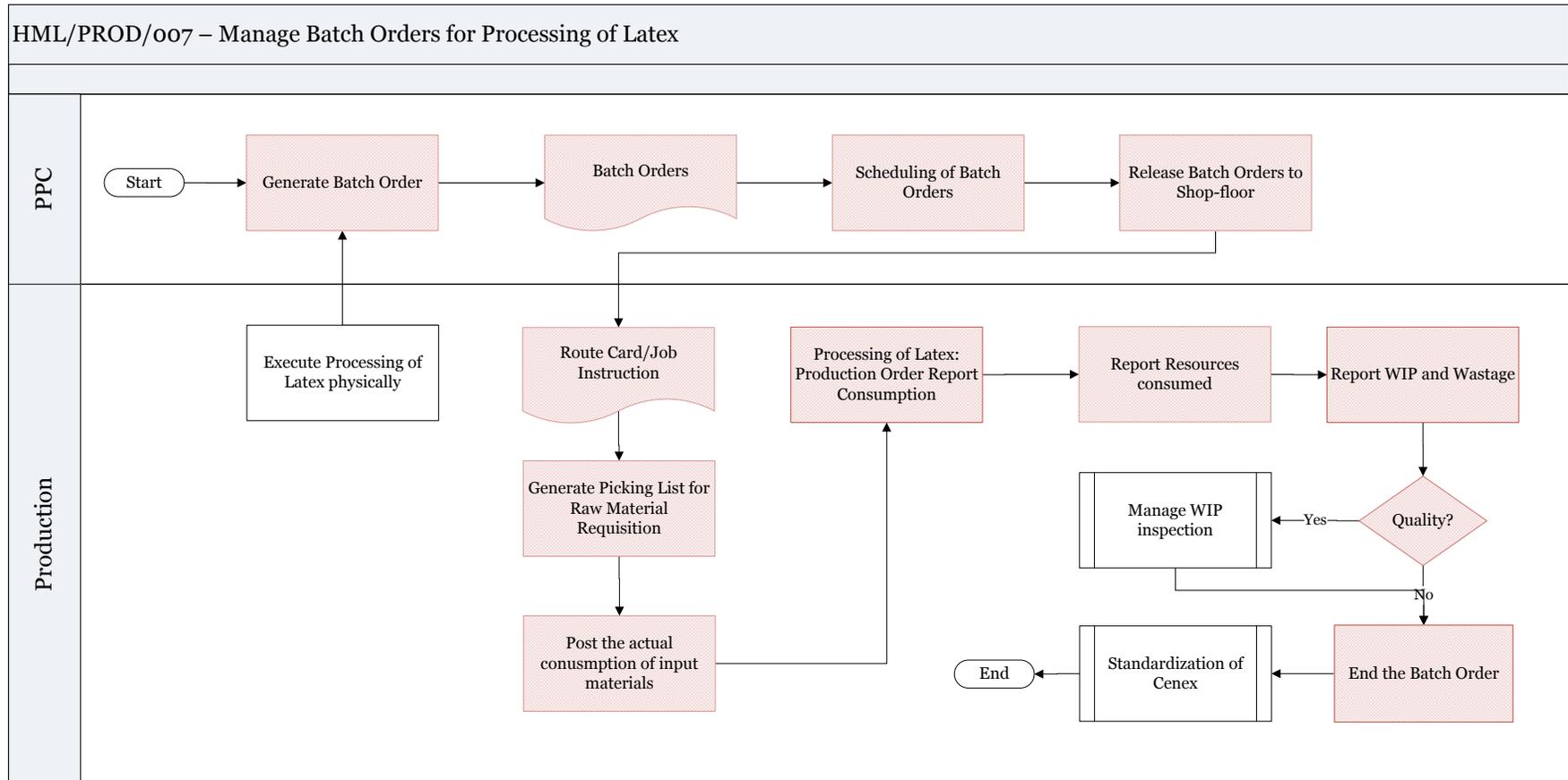
Against the Batch Order, material requisitions are generated to stores for Production through the picking list journal. Here the Standardized latex(variant of latex) present in feeding tanks will be consumed on basis of location dimension in the system. Actual consumption can be provided by user here in case it differs from the system proposed consumption. Also the user would have to select location and batch number against each line. In case more qty is required, new lines can be created in picking list journal and posted. Actual qty will be consumed as soon as picking list journal is posted.

Subsequently, material and hour consumption are reported if needed against Processing operation. After the non-standardized cenex(with variants own/bought) (separate item code) is produced, it is reported in a different location now by posting the Report as finished journal along with the wastage incurred. Batch number will be allotted automatically to the load produced of non-standardized Cenex. One can then update the batch attributes like volume, wet weight, DRC%, etc.

Also, through report as finished journal only, Skim, Bowl Lump and PRR are reported as co-products provided they have been defined as co-products in the product master and also specified in the formula for non-standardized cenex product code.

After Processing operations are finished, Batch Order for **Standardization of Cenex** is executed.

3.2.2.1 Business Process Flow -Business Process Map



3.2.2.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/007-01	Execute Processing of Latex on shop-floor	Processing of latex is done on the shop-floor physically before creating the batch order in the system to determine the actual output qty.	N		SF
2	HML/PROD/007-02	Generate Batch Orders	The Batch Orders for Processing of Latex will be generated manually by production supervisor for the actual qty.	N		SF
3	HML/PROD/007-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/007-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically Processing must have been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/007-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate	N	Location (Dimension) in the system can be used for feeding tanks to manage Latex consumption.	SF

			<p>picking list from the Batch Order. Against the picking list, order will consume standardized latex on the basis of feeding tanks location. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.</p>		<p>Actual consumption would have to provided and validated by the user manually.</p> <p>Batch attributes of latex consumed can be tracked from the journal also.</p>	
6	HML/PROD/007-06	Processing of Latex	<p>Processing of Latex is captured in the system through Batch Order report consumption.</p>	N		SF
7	HML/PROD/007-07	Report Resources consumed	<p>Actual work-center consumption (in hours) against the process is reported by the user.</p>	N		SF
8	HML/PROD/007-08	Report WIP and Wastage	<p>Report as Finished Journal is posted to report following quantities:</p> <ul style="list-style-type: none"> WIP quantity i.e. the quantity of non-standardized cenex reported in cenex storage tanks. It is reported against the specific product code of non-standardized cenex. Batch number will be allotted automatically to the produced load. Moreover, quality attributes required like DRC%, wet weight, 	N	<p>Tanks can be configured as locations where the non-standardized cenex output can be reported to be used further for standardization.</p> <p>Batch number allotted here is just for the system purpose to capture batch attributes. But it would have no physical significance since cenex lying in</p>	SF

			<p>volume, etc. can be reported as that batch attributes for that batch number.</p> <ul style="list-style-type: none"> • Skim, Bowl lumps and PRR are reported as co-products from the report as finished journal only(if they have been specified as co-products for formula of non-standardized cenex). • The waste quantity of latex if any is reported as error quantity in the journal. 		tanks cannot be stamped with physical numbers.	
9	HML/PROD/007-09	Manage Material Inspection	The cenex in tanks can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/007-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF
11	HML/PROD/007-08	Standardization of Cenex	Next, the Batch Order for Ammonization and Standardization of Cenex is generated and executed where this cenex is consumed and standardized.	N		SF

3.2.3 Batch Order for Ammonization and Standardization of CENEX

Ammonization and Standardization of Cenex will be managed through a Batch Order. This order is basically a quality testing and upgradation order where Cenex will be converted from non-standardized to standardized. Non-standardized and standardized Cenex will have same product codes with different variant. This order is important since it will be reporting the main FG product of cenex standardized and packed into barrels.

Batch Order will be generated for Cenex (Standardized) in the system only after it has been executed physically on the shop-floor. Since the actual output is known after that, order will be created for that qty only to avoid any changes in output.

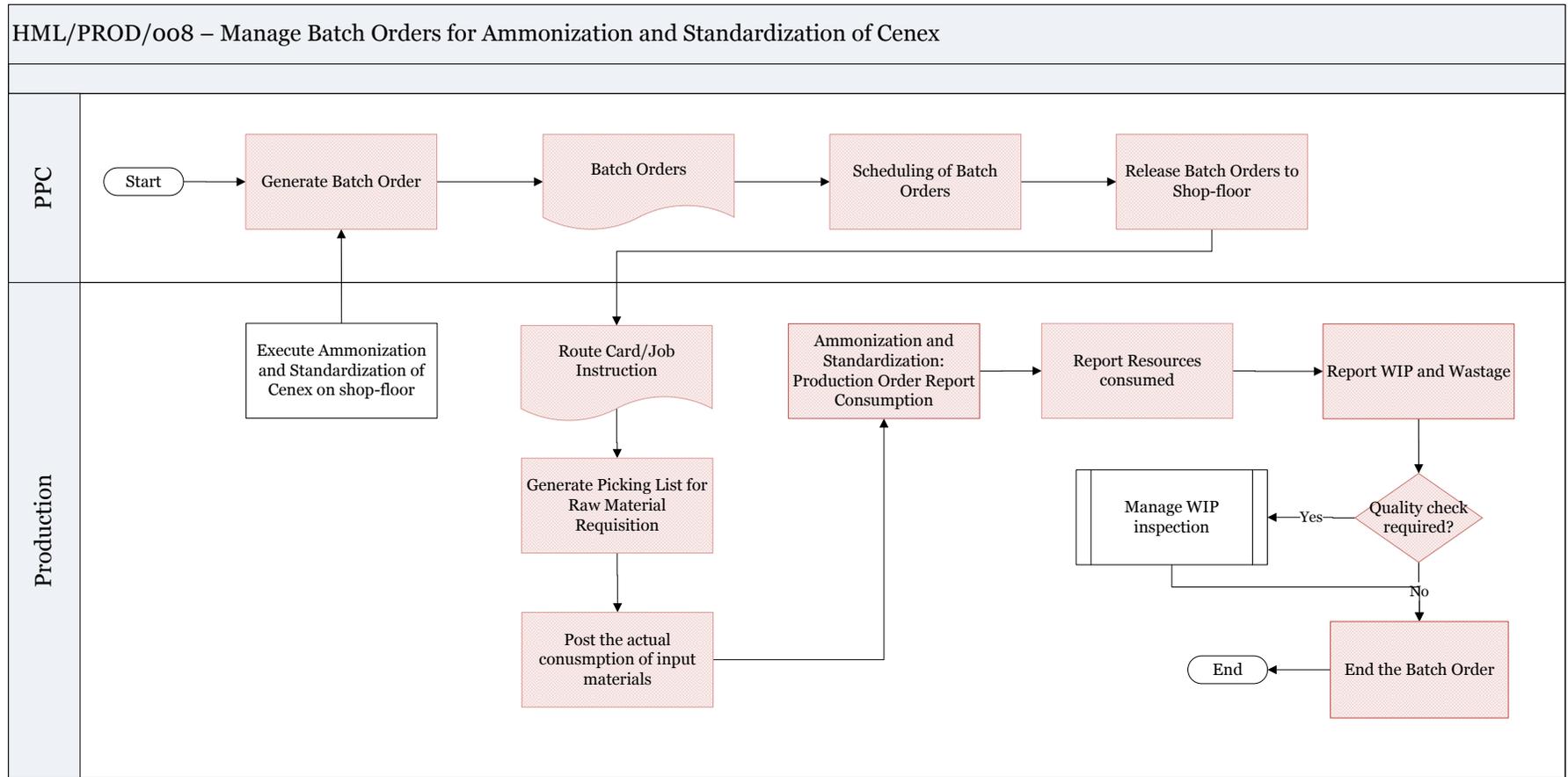
Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the non-standardized cenex with variants own/bought) present in tanks will be consumed on basis of location dimension in the system. Actual consumption can be provided as inputs by the user here in case it differs from proposed consumption. Actual qty will be consumed as soon as picking list journal is posted.

The Standardization will be mapped as operation on the route for standardized cenex. Subsequently, material and hour consumption are reported against both the operations. After the cenex is standardized by posting the Report as finished journal along with the wastage incurred. Wastage is captured as Error Quantity on the report as finished form.

Batch number will be allotted automatically but will bear no physical significance. Against this batch number, user can update the batch attributes like DRC%, wet weight, volume, etc.

3.2.3.1 Business Process Flow -Business Process Map



3.2.3.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/o08-01	Execute Ammonization and Standardization of Cenex on shop-floor	Ammonization and Standardization is carried out on the shop-floor physically before creating its batch order in the system.	Y		E
2	HML/PROD/o08-02	Generate Batch Orders	The Batch Orders for Ammonization and Standardization will be generated manually by production supervisor for the actual quantity produced on the shop-floor to avoid any variations in the output.	N		SF
3	HML/PROD/o08-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/o08-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically Ammonization and Standardization must have been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/o08-05	Generate Picking List for Raw Material	Based on the Production Order report and Batch Orders, production supervisor starts the	N	Location (Dimension) in the system can be used for feeding tanks to	SF

		Requisition	Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will consume non-standardized cenex on the basis of tank locations. Also ammonia and water can be added as input lines if required to monitor the quantity added. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		manage non-standardized cenex consumption. Actual consumption would have to provided and validated by the user manually. Batch attributes of non-standardized cenex consumed can be tracked from the journal also.	
6	HML/PROD/o 08-06	Ammonization and Standardization	Ammonization and Standardization process stage is captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD/o 08-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/o 08-08	Report WIP and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> WIP quantity i.e. the quantity of standardized reported in storage tanks. It is reported against the specific product code of standardized cenex Batch number will be allotted automatically by 	N	Tanks can be configured as locations where the standardized cenex output can be reported to be used further. Batch number allotted here is just for the system purpose to capture batch attributes. But it would have no	SF

			<p>the system. Also, against this batch#, specific attributes to be captured with the output like DRC%, volume, wet weight, etc. can be updated as "batch attributes".</p> <ul style="list-style-type: none"> The waste quantity of cenex or latex if any is reported as error quantity in the journal. 		physical significance since cenex lying in tanks cannot be stamped with physical numbers.	
9	HML/PROD/o08-09	Manage Material Inspection	The standardized cenex in storage tanks is subjected to quality check Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/o08-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.2.4 Packing of Cenex

Packing of Cenex will be managed through a Batch Order. This order is important since it will be reporting the main FG product of cenex standardized and packed into barrels.

Batch Order will be generated for Cenex (Packed) in the system only after it has been executed physically on the shop-floor. Since the actual output is known after that, order will be created for that qty only to avoid any changes in output.

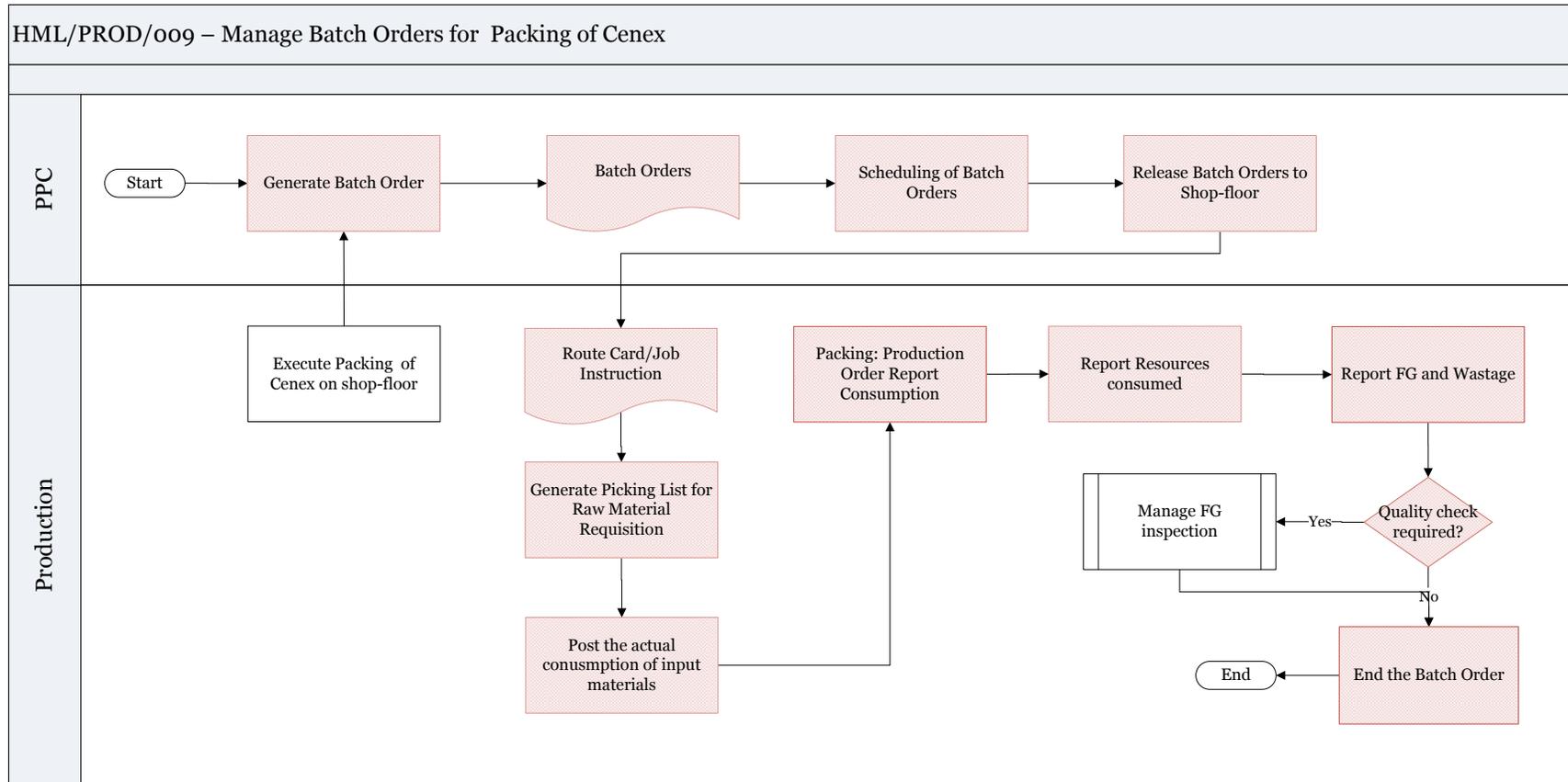
Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the non-standardized cenex (with variants own/bought) present in tanks will be consumed on basis of location dimension in the system. Actual consumption can be provided as inputs by the user here in case it differs from proposed consumption. Actual qty will be consumed as soon as picking list journal is posted.

The packing of cenex will be mapped as operations on the route for Packed cenex. Subsequently, material and hour consumption are reported if needed against the packing operation. After the cenex is packed, it is reported in barrels based on some barrel number(can be taken as batch number in system) by posting the Report as finished journal .

This barrel number or batch number here will be allotted manually by the user to the packed cenex since barrel number must have been stamped during the physical production only. To provide accurate tracking, that number should only be given as manual batch number to the produced load. Against this batch number, user can update the batch attributes like DRC%, wet weight, volume, etc.

3.2.4.1 Business Process Flow -Business Process Map



3.2.4.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/o 09-01	Execute Packing of Cenex on shop-floor	Packing is carried out on the shop-floor physically before creating its batch order in the system.	Y		E
2	HML/PROD/o 09-02	Generate Batch Orders	The Batch Orders for Packing will be generated manually by production supervisor for the actual quantity produced on the shop-floor to avoid any variations in the output.	N		SF
3	HML/PROD/o 09-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/o 09-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically Packing must have been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/o 09-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will consume standardized cenex on the	N	Location (Dimension) in the system can be used for feeding tanks to manage non-standardized cenex consumption. Actual consumption would	SF

			basis of tank locations. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		have to provided and validated by the user manually. Batch attributes of standardized cenex consumed can be tracked from the journal also.	
6	HML/PROD/09-06	Packing	Packing process stage is captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD/09-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/09-08	Report FG and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> • FG quantity i.e. the quantity of standardized Cenex reported batch number wise. It is reported against the specific product code of standardized cenex. • Batch number will be allotted manually by the user since it will be the batch number already given to packed cenex. Also, against this batch#, specific attributes to be captured with the output like DRC%, volume, wet weight, etc. can be updated as "batch attributes". • The waste quantity of cenex or latex if any is reported as 	N	Any logic can be used to give manual batch numbers to the packed cenex. Since packing will be done on shop-floor before doing it in the system, batch numbers would have to be given manually only otherwise system-generated batch numbers and actual batch numbers on packed cenex will differ.	SF

			error quantity in the journal.			
9	HML/PROD/o 09-09	Manage Material Inspection	The standardized cenex in barrels can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/o 09-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.2.5 Batch Order for Skim Coagulation

Skim Coagulation will be managed through a Batch Order. This order will be used for producing and packing crepes and also Pit Recovery Rubber will be reported as co-product.

Batch Order will be generated for Packed Crepes after they have been produced physically on the shop-floor on that day. Then the order will be created in the system for the actual output reported on shop-floor.

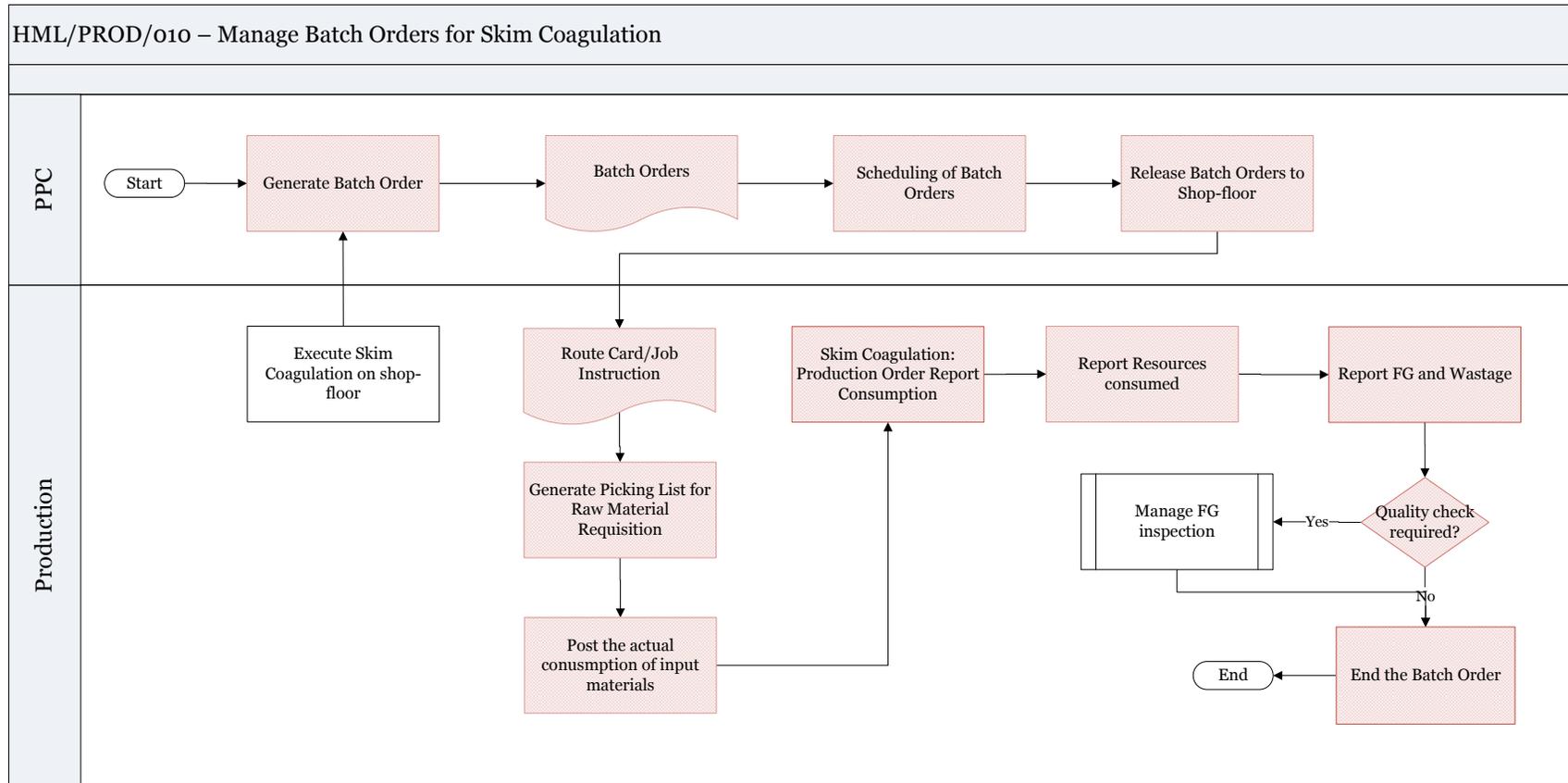
Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the skim Serum with variants own/bought, (reported as co-product before) lying in specific location will be primarily de-ammoniated and then consumed on basis of location dimension in the system. Then H_2SO_4 will be used to coagulate skim serum in the coagulation tank. System will suggest consumption based on the formula but the user can post actual consumption here. Actual qty will be consumed as soon as picking list journal is posted.

The adding H_2SO_4 , drying and packing of crepes will be mapped as separate operations on the route of the product code of Crepes. Subsequently, material and hour consumption are reported if needed against all the operations. The operations consumed on the route card can be seen from the route card journal. The quantity given against each operation is the stock of crepes processed at each stage. Other than this, one will not get any stock status of crepes at the three levels such as un-milled, in the loft kept for drying and packed & graded is required. If such report is required, we would need to use different item codes for the crepes at three levels and make three child production orders of one parent production order of Skim Coagulation.

After the crepes are dried and packed, they will be reported batch number wise by posting the Report as finished journal along with the wastage incurred. Batch number will be allotted manually here since batch number must have been already allotted physically to the crepes while packing. To ensure accurate tracking, both batch numbers should be same hence user can manually provide the batch number given to the crepes. Also user can update the batch attributes if required against this batch of crepes.

3.2.5.1 Business Process Flow -Business Process Map



3.2.5.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/010-01	Execute Skim Coagulation on the shop-floor	Skim Coagulation is carried out on the shop-floor physically before creating the batch order in the system.	Y		E
2	HML/PROD/010-02	Generate Batch Orders	The Batch Orders for Skim Coagulation will be generated manually by production supervisor for the actual reported output on the shop-floor.	N		SF
3	HML/PROD/010-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/010-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically skim coagulation been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/010-05	Generate Picking List for Raw Material Requisition	Based on the Production Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will consume skim serum on the basis of tank locations. System will suggest the consumption based on formula used but user can manually change the actual input	N	Location (Dimension) in the system can be used for skim coagulation tank to manage skim serum consumption. Actual consumption would have to provided and validated by the user	SF

			qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		manually. Batch attributes of skim serum consumed can be tracked from the journal also.	
6	HML/PROD/010-06	Skim Coagulation	Skim Coagulation, Drying and Packing of crepes is captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD/010-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/010-08	Report FG and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> • FG quantity i.e. the quantity of Packed Crepes batch number wise. • Batch number will be allotted manually by the user because it must have been already allotted physically to packed crepes. Moreover, quality attributes are reported along-with each batch # of the output. • The waste quantity of skim or the crepes is reported as error quantity in the journal. 	N		SF
9	HML/PROD/010-09	Manage Material Inspection	The packed crepes can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/010-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.2.6 Batch Order for Bowl Crepes

Production of bowl crepes will be managed through a Batch Order. This order will be used for rolling of bowl lumps and producing and packing crepe.

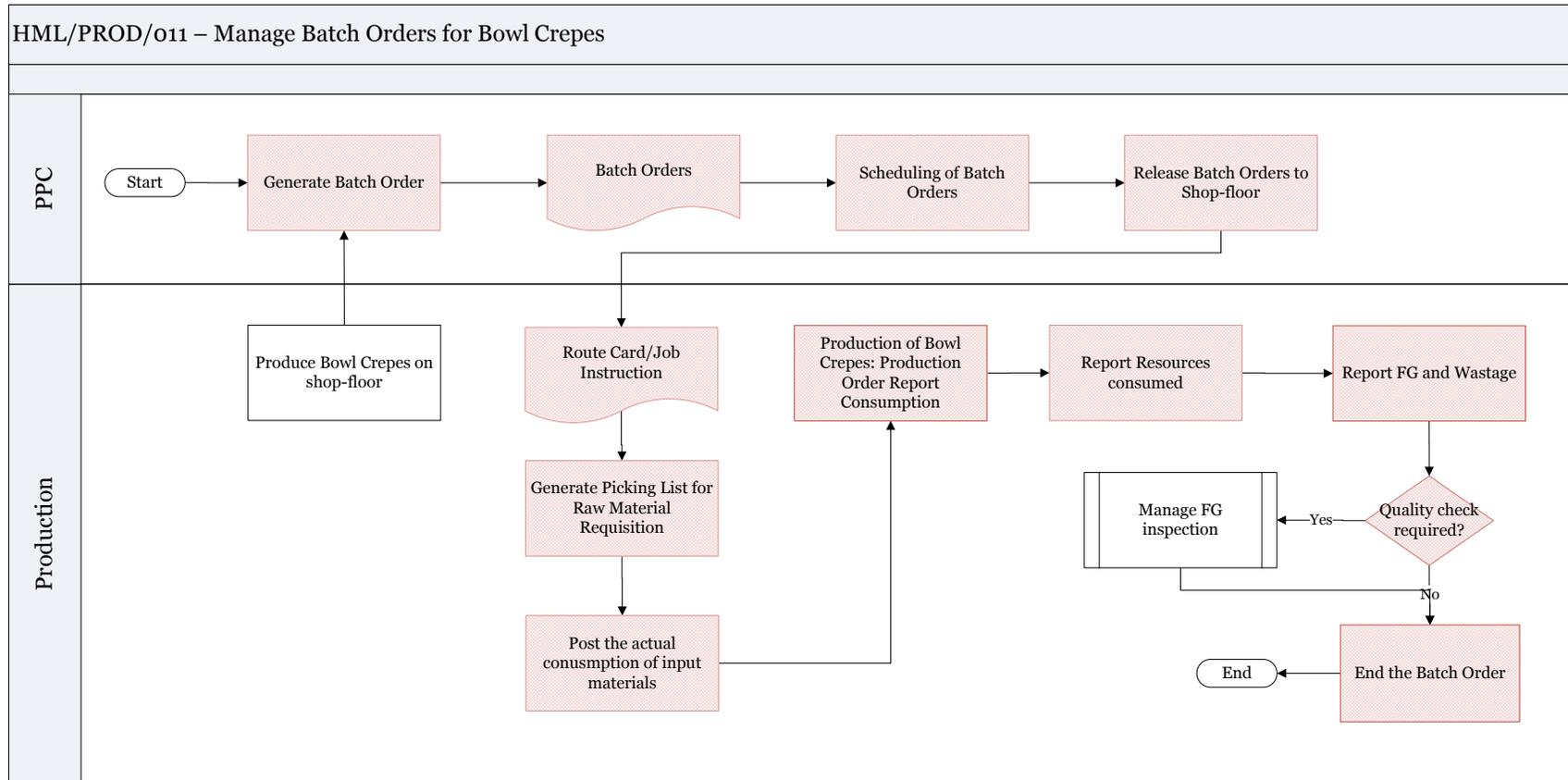
Batch Order will be generated for Bowl Crepes in the system after it has been already executed physically on the shop-floor. Then the order will be created for actual reported output to avoid any variations in output qty.

Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the bowl lumps (with variants own/bought (reported as co-product before) lying in specific location will be consumed on basis of location dimension in the system. System will propose consumption based on the formula used for the batch order. Actual qty can be changed by the user manually and this will be consumed as soon as picking list journal is posted.

The rolling of bowl lumps and packing of crepes will be mapped as separate operations on the route of the product code of Bowl Crepes. Subsequently, material and hour consumption are reported if needed against all the operations. After the bowl crepes are produced and packed, they will be reported batch number wise by posting the Report as finished journal along with the wastage incurred. Batch number will be allotted manually by the user as the same batch number allotted physically to bowl crepes while packing. Also, user can update batch attributes against it like DRC%, etc.

3.2.6.1 Business Process Flow -Business Process Map



3.2.6.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/o 11-01	Produce Bowl Crepes physically on the shop-floor	Bowl crepes are first produced on the shop-floor physically before creating the batch order in the system	Y		E
2	HML/PROD/o 11-02	Generate Batch Orders	The Batch Orders for Bowl Crepes will be generated manually by production supervisor.	N		SF
3	HML/PROD/o 11-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/o 11-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically bowl crepes must have been produced on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/o 11-05	Generate Picking List for Raw Material Requisition	Based on the Batch Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will consume bowl lumps lying in	N	Locations can be used in place of tanks for this process. Also at the time of consuming input, the	SF

			some specified tank location. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		quality attributes of bowl lumps batch number selected can be tracked Actual consumption would have to provided and validated by the user manually.	
6	HML/PROD/o 11-06	Production of bowl crepes	Rolling of lumps, Producing and Packing of crepes is executed and captured in the system through Batch Order report consumption.	N		SF
7	HML/PROD/o 11-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/o 11-08	Report FG and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> • FG quantity i.e. the quantity of Bowl Crepes batch number wise. • Batch number will be allotted manually by the user as the same number allotted physically while packing crepes on shop-floor. Moreover, quality attributes are reported along-with each batch # of the output. • The waste quantity of lumps or the crepes is reported as error quantity in the journal. 	N		SF
9	HML/PROD/o 11-09	Manage Material Inspection	The packed crepes can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/o 11-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

3.2.7 Batch Order for Non-Standardization of Cenex

Double Centrifuging of Cenex will consist of three Batch Orders:

1. Non-standardizing Cenex : This will be managed through a salvaging Batch Order of consuming Standardized Cenex at higher DRC% and reporting Non-standardized Cenex at lower DRC%.
2. Centrifuging of Cenex: For this, the centrifuging process will be executed but non standardized cenex taken back in feeding tanks. This can be managed by maintaining different formula versions for non-standardized Cenex.
3. Standardization of Cenex: Here, the non-standardized Cenex will be consumed and standardized will be reported as output. Steps similar to above.

Centrifuging and Standardization processes have been explained before hence, here only Non-Standardization of Cenex will be discussed in detail. In case some co-products are also generated during centrifuging or standardization of cenex, one may use different formula versions to manage that.

Batch Order will be generated for Non-standardized Cenex product code in the system for the actual quantity of Non-standardization output produced physically on the shop-floor.

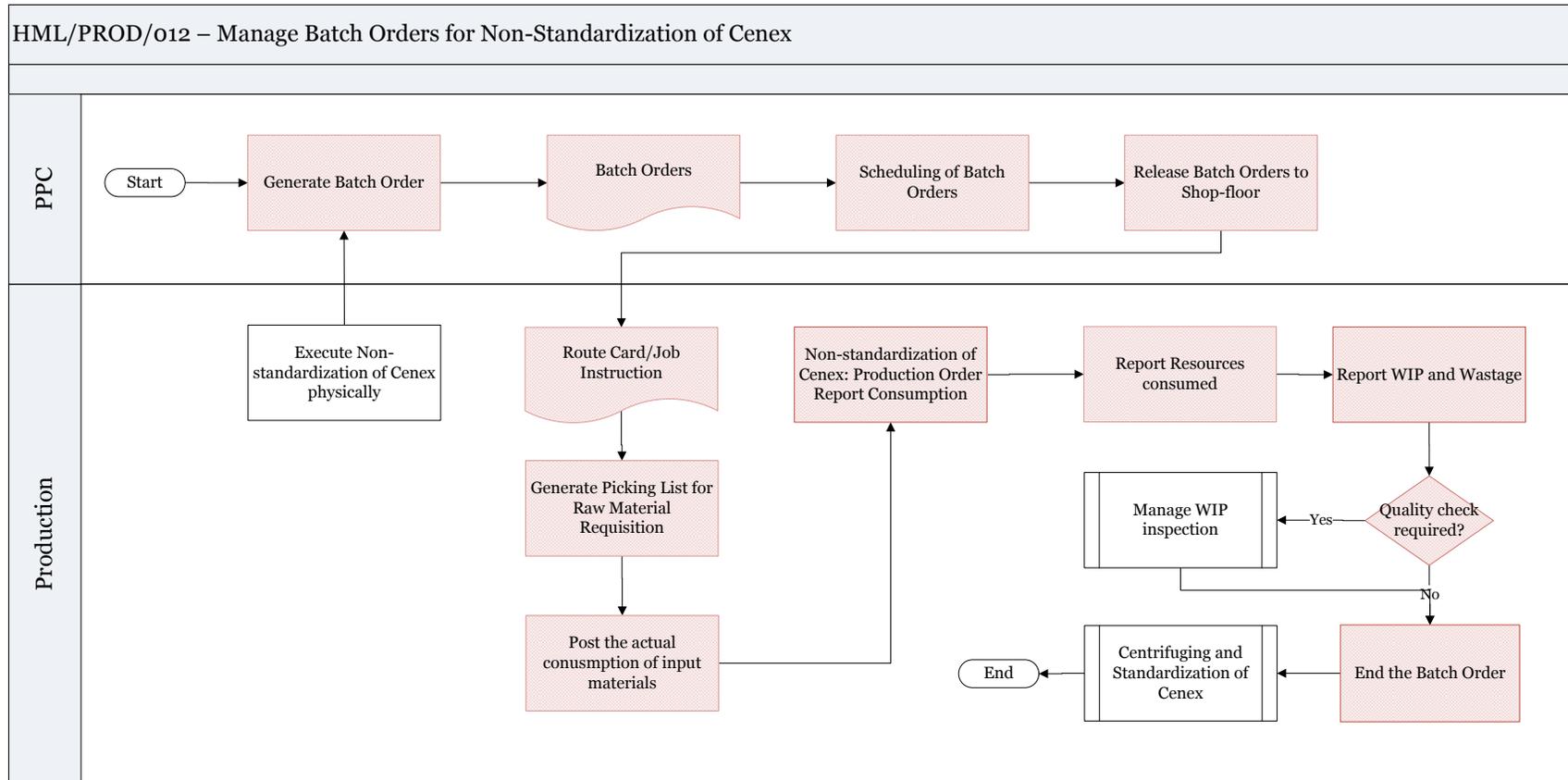
Order will be first created by PPC department or directly production supervisor. After scheduling the order, the order is released to factory shop-floor.

Against the Batch Order, material requisition are generated to stores for Production through the picking list journal. Here the Standardized Cenex (of higher DRC%) Cenex Tank is pumped up to latex tank and will be consumed on basis of batch number in the system. System will propose consumption on the basis of formula used for production. Actual qty if different can be provided by the user manually and this qty will be consumed as soon as picking list journal is posted. The DRC% of standardized cenex can be checked from the batch attributes of the batch number selected.

Subsequently, material and hour consumption are reported if needed against this operation. After the non-standardized Cenex at lower DRC% is produced, it is reported in feeding tanks location only for centrifuging operation to be carried out. This is done by posting the Report as finished journal along with the wastage incurred. Batch number is allotted automatically by the system for the purpose of mapping batch attributes like DRC%, wet weight, volume, etc.

After this operations is finished, Batch Orders for **Centrifuging and Standardization of Cenex** are executed.

3.2.7.1 Business Process Flow -Business Process Map



3.2.7.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/PROD/o 12-01	Execute non-standardization of cenex on shop-floor	Non-Standardization of cenex is carried out on shop-floor physically before creating the batch order in the system	Y		E
2	HML/PROD/o 12-02	Generate Batch Orders	The Batch Orders for Non-standardization of Cenex will be generated manually by production supervisor for the actual quantity of non-standardized cenex reported on shop-floor.	N		SF
3	HML/PROD/o 12-03	Scheduling of Batch Orders	After the generation of Batch Orders, supervisor can schedule them as per the need.	N		SF
4	HML/PROD/o 12-04	Release Batch Orders to Shop floor	After reviewing the scheduling results, Batch Orders are released to the shop floor. Production Order report can also be printed which work as the Job Instruction to guide shop floor activities.	N	Production Order report will not be needed here since physically non-standardization must have been carried out on the shop-floor much before the batch order hence no need for job instruction.	SF
5	HML/PROD/o 12-05	Generate Picking List for Raw Material Requisition	Based on the Batch Order report and Batch Orders, production supervisor starts the Batch Orders. For material requisition generate picking list from the Batch Order. Against the picking list, order will consume standardized cenex lying in	N	Barrel# can be used as batch numbers here. Also at the time of consuming input, the quality attributes of	SF

			barrels in some specified tank location. System will suggest the consumption based on formula used but user can manually change the actual input qty to be posted. User would also have to select the batch number which is being consumed and from which location for every line.		standardized cenex batch number selected can be tracked. Actual consumption would have to be provided and validated by the user manually.	
6	HML/PROD/o 12-06	Non-standardization of Cenex	Non-standardization of Cenex is captured in the system through Production Order report consumption.	N		SF
7	HML/PROD/o 12-07	Report Resources consumed	Actual work-center consumption (in hours) against the process is reported by the user.	N		SF
8	HML/PROD/o 12-08	Report WIP and Wastage	Report as Finished Journal is posted to report following quantities: <ul style="list-style-type: none"> WIP quantity i.e. the quantity of non-standardized cenex (lower DRC%) reported in feeding tanks location. Batch number will be allotted automatically based on some system number sequence so that attributes like DRC%, wet weight, etc. can be mapped against the batch number. 	N	Tanks can be configured as locations where the non-standardized cenex output can be reported to be used further for centrifuging. Batch numbers will be allotted automatically only for system purpose, not for any physical significance to ensure tracking in the system.	SF
9	HML/PROD/o 12-09	Manage Material Inspection	The non-standardized cenex can be subjected to quality check if required. Batch attributes have to be updated by quality department before closing the quality order.	N		SF
10	HML/PROD/o 12-10	End the Batch Order	Batch Order is ended after finalizing the Production cost.	N		SF

11	HML/PROD/o 12-1	Centrifuging and Standardization of Cenex	Next, the Batch Orders for Centrifuging and Standardization are generated and executed where this cenex is consumed.	N		SF
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3.2.8 Batch Order for ISNR Processing

The ISNR grades will be produced from Field coagulum (FC grades) and from Field latex (Latex grades).

Latex is received directly from own estates or after coagulation in the crepe form, from other estates in the factory. It will be weighed and samples are taken for QLT checking(DRC etc). Chemicals such as Sodium bi-sulphite and HAS are added to latex based on the grades to be obtained. The latex is then standardized and coagulated by adding formic/acetic acid and kept overnight. The coagulum is then fed to pre breaker for processing and then creped by passing through rollers(to convert to crepe form).

FC is received in the factory will be weighed and samples are taken at random from various portions of the load for QLT checking(DRC etc) and then unloaded into soaking tanks. It will soaked in water for approx. 8 hours and then taken for processing. It will be passed through pre breaker and then creped by passing through rollers (to convert to the crepe form).

The crepes are then fed to hammer mill, for crumbing. Small quantities of castor oil is added in the hammer mill to prevent sticking of crumbs together. The wet crumbs are then loaded into drying boxes (drying capacity per day is 7000kg) . After allowing the water to drip, oxalic acid solution is sprayed on the crumbs. The boxes are loaded into the tunnel drier. The drier is set at 105 -112 degrees and dried for approx. 5 hours. The dried crumbs are then cooled and then weighed and packed Polythene covers in bales of various sizes (currently 25 Kg). Each bale is numbered manually with a and samples is drawn from every 10th bale (Normally ONE lot is 10 bales). These bales will be reported against ungraded item code for ISNR against which no batch number tracking or automatic batch number(for dummy batch number purpose) tracking will be activated since physically batch numbers will be given after grading only.

Grading is done based on the test results(based on the test results different FG item code has to be created, Graded ISNR). After grading only, batch numbers are given for each grade of bales. But in the system, all these bales will be considered as one batch with one batch number only which will be given manually by the user. Batch number will be assigned manually in the system since physically they must have been already assigned to the graded bales on shop-floor. Batch attributes will be have to be updated manually by the user along with the batch like No. of Bales, Bale Size, From Bale No. and To Bale No.

No serial number control will be configured in the system to save the complications in future.

The stock to be monitored at receipt stage will be done through taking FC and Latex as a separate item code with own/bought/traded dimensions. For rest stock monitoring purpose, ungraded and graded ISNR will be separate item codes since batch tracking will be activated only on graded items, not on ungraded items. For grading of ISNR, one would have to make a separate batch order in the system since a different item code needs to be reported. Hence processing of ISNR will consist of two batch orders:

- **Producing ISNR Bales (Ungraded)** which will consume FC & Latex and report ungraded item code of ISNR bales. All the operations involved in this like pre-beaker processing, hammer mill crumbing, drying, packing, etc. will be configured as sequence of operations on the route for Ungraded ISNR Bales.

- **Grading of ISNR Bales** which will consume ungraded ISNR Bales and produce different Graded item code of ISNR Bales. For this order, only one operation of Grading will be mapped on the route.

Both these batch order must have been completed physically on shop-floor before creating order in the system to ensure that the batch order is made for actual quantity of output only.

Rest of the steps in the system like generating, releasing, starting the batch order, consuming the operations on route card and reporting the output have been already explained for each cenex process. Process flows also remains the same. Hence only the case scenario for ISNR Processing has been explained here in details.

3.2.9 Batch order for PLC & SOLE CREPE Processing

For this order, LATEX received in the factory will be weighed and samples are taken for QLT checking(DRC etc) and unloaded to fractionalization tank. Then, sodium sulphate is added in the tank the latex is stirred till the yellow matter is creamed. Then the latex is fed into the coagulation tank. Bleaching Agent (Cureo Bleach) and Oxalic acid is added and stirred after which partition plates are inserted. The following day, the partitions are removed and the coagulated white lump rubber is passed through milling rollers several times to get appropriate laces of desired thickness. These laces are hung in the loft and dried. After 12 days these laces are removed from the loft, graded (visual grading) and packed in bales of 25 (currently) Kgs. Each bale is numbered manually with a batch number and serial number. But in the system, all these bales will be considered as one batch with one batch number which will be given manually by the user. Batch attributes will be have to be updated manually by the user along with the batch like No. of Bales, Bale Size, From Bale No. and To Bale No.

No serial number control will be configured in the system to save the complications in future.

In the case of sole crepe after drying it is rolled again and packed in wooden boxes. Whole lot of boxes will be given one batch number in the system manually and similarly like bales, batch attributes like No. of Boxes, From Box No., To Box No., Box Size, etc.

Grading is done based on the Visual grading results(based on the test results different FG has to be created). After grading batch numbers are given for each grade. Batch number will be assigned manually in the system since physically they must have been already assigned to the graded bales on shop-floor.

The stock to be monitored at receipt stage will be done through taking Latex as a separate item code with own/bought/traded dimensions. For rest stock monitoring purpose, PLC and Sole Crepes Graded and Ungraded will be individual item codes. For their grading, one would have to make a separate batch order in the system in the system since a different item code needs to be reported. Hence processing of PLC and Sole Crepes will consist of two batch orders:

- **Producing PLC Bales and Sole Crepes (Ungraded)** and which will consume Latex and report ungraded item code of bales and crepes. All the operations involved in this like latex coagulation, partitioning, milling, drying and packing, etc. will be configured as sequence of operations on the route for Ungraded Bales and Crepes.
- **Grading of Bales and Sole Crepes** which will consume ungraded PLC Bales and Sole Crepes and produce different Graded item code of Bales and Crepes. For this order, only one operation of Grading will be mapped on the route.

Both these batch order must have been completed physically on shop-floor before creating order in the system to ensure that the batch order is made for actual quantity of output only.

Rest of the steps in the system like generating, releasing, starting the batch order, consuming the operations on route card and reporting the output have been already explained for each cenex process. Process flows also remains the same. Hence only the case scenario for PLC and Sole Crepes Processing has been explained here in details.

3.2.10 Batch Order for RSS Processing

LATEX is received in the factory will be weighed and samples are taken for QLT checking (DRC etc) and unloaded to the collection tank. The latex is then transferred to the coagulation tanks and standardized to 12.5% DRC. Then, sodium bi-sulphite is added followed by formic acid for coagulation. Then, standardized to required DRC 12.5 % and then acetic acid is added in the tank and the latex is stirred after which partition plates are inserted. The following day, the partitions are removed and the coagulated rubber is passed through Hutten back rollers. The output is ribbed sheets, these are loaded on to trolleys and kept in smoke house where the temperature is maintained between 45 to 60 C for drying and the color of the sheets becomes honey brown color. After this the sheets are graded visually and packed in bales of 50(currently) Kgs. Each bale is numbered manually with a batch number and serial number. But in the system, all these bales will be considered as one batch with one batch number which will be given manually by the user. Batch attributes will be have to be updated manually by the user along with the batch like No. of Bales, Bale Size, From Bale No. and To Bale No.

No serial number control will be configured in the system to save the complications in future.

The stock to be monitored at receipt stage will be done through taking Latex as a separate item code with own/bought/traded dimensions. For rest stock monitoring purpose, RSS Bales Ungraded and Graded will be individual item codes. For their grading, one would have to make a separate batch order in the system in the system since a different item code needs to be reported. Hence processing of RSS will consist of two batch orders:

- **Producing RSS (Ungraded)** and which will consume Latex and report ungraded item code of bales. All the operations involved in this like latex partitioning, Hutten back rollers, drying, etc. will be configured as sequence of operations on the route for Ungraded RSS.
- **Grading of RSS** which will consume ungraded RSS and produce different Graded item code of RSS. For this order, only operations of Grading and Packing will be mapped on the route.

Both these batch order must have been completed physically on shop-floor before creating order in the system to ensure that the batch order is made for actual quantity of output only.

Rest of the steps in the system like generating, releasing, starting the batch order, consuming the operations on route card and reporting the output have been already explained for each cenex process. Process flows also remains the same. Hence only the case scenario for RSS Processing has been explained here in details.

3.2.11 Process for CENEX Trading

Cenex of 60% DRC is procured (SPOT/PERIOD rate) from various vendors and received at the factory and weighed. Then the samples are taken for QLT and if the parameters are high, cenex is standardized and then packed into barrels.

For this process, if it has been executed already on the shop-floor, it is pretty simple order in the system afterwards. One would have to create two orders, one for Standardization of Cenex and other for Packing of Cenex batch orders as already explained above. Hence it will take place in two steps:

- First, a Standardization batch order will be made in the system which would consume Cenex (traded) variant directly. This would be done by configuring and using one more formula version of Standardized Cenex. This order will report Standardized Cenex as already explained above. Rest of the steps remain same.
- Secondly, a Packing batch order will be made in the system to consume the standardized cenex reported above and produce packed cenex to which the batch numbers (barrel numbers) will be allotted manually. Rest of the steps remain the same.

3.3 Other Processes - Business Description

These are the processes covered as part of changes suggested by HML which they carry out on shop-floor other than Tea and Rubber Production.

3.3.1 Batch Order for Stock Mixture

In AX4, HML is using the customised module for Mixing of two items to create a new item. These are used for the following options:

- Mixing Fertilisers : UREA (N46%) & MURIATE OF POTASH (K₂O-60%) are mixed to get the item UREA (N.K. 60:60)
- Mixing Lime : INDUSTRIAL SULPHUR POWDER & SHELL BURNT LIME are mixed to get LIME SULPHUR. Water is also added to this mixture.
- Mixing Fuel : PETROL & OIL are mixed to get PETROL/2T MIXTURE.

For these processes, standard batch order can be created in the system for the actual output quantity. Here the fertilizers to be mixed will be consumed as input items and the mixed item like UREA will be reported as final output. For these processes, formulas will be configured in the system as per the inputs and output ratio.

The main concern of HML that the output material should be loaded with the sum of input materials cost is catered to by the system by default only. In all cases, the sum of raw material cost will get loaded on the FG item. Even if input quantity or output quantity varies, always the output cost is same as the input items total cost by default provided we are not loading any machine cost or overheads and not allocating any cost to the co-products.

In these cases, standard costing will not be used. Production costing will be done, hence FG cost is equal to sum of RM cost.

3.3.2 Batch order for Barrels Reconditioning

As proposed by HML team, Barrel reconditioning will be managed through batch order where medium quality barrels will be consumed (at the running inventory cost) and ordinary quality barrels will be reported as finished goods on the standard cost described on the item card.

HML has agreed that whatever the actual cost of medium barrels be, but the ordinary barrels will be valued at the standard cost only. The variance between actual and standard cost of the ordinary barrels will be booked to a separate variance account as per the item group setup.

This process will solve the concern of HML for Barrels reconditioning process and costing.

4 FRD Sign-off

Client Name

Name:
Designation:
Date:

Client Name

Name:
Designation:
Date:

