Automatic certification process for chemical system, solid motors and Energy Systems

MODEL STRUCTURE

USER MODEL

Name	Type	Description
User id	textfield	Id of the user
Desired salutation	Choice field	Salutation of the user
name	textfield	Name of the user.
Password	textfield	Password of the user
First name	textfield	First Name of the user
Last name	textfield	Last Name of the user
email	textfield	Email of the user
Role id	textfield	Role id of the user
Usertype	dropdown	Type of user
Centre	dropdown	Centre of ISRO
Division	dropdown	Division of the user

Phone	textfield	Phone number of the user
Date joined	datefield	Join date of the user
Is active	Boolean	user is active or not

Comments:

- The divisions are applicable to ISRO users only.
- Put specific conditions for password such as at least one 1 number and one special char and 8 characters minimum.
- Role need not be an input field during user registration.As we discussed earlier it will be assigned by ADMIN.
- ADMIN shall manage user roles to handle cases such as transfer or change of duty or retirements.

USER TYPE

Name	**Type**	**Description**
Id	textfield	Id of the usertype
Name	textfield	Name of the usertype

Doubts: can you tell me full user type and which all centre each user type connected to Example we have VSSC user and it will connected to VSSC centre

Comments:

DIVISION

Name	Type	Description
Id	textfield	Id of the division
Name	textfield	Name of the division

Comments:
Should be saved as division/centre in the DB. There may be divisions with the same name in two different centres.

Comments:

CENTRE

Name	Type	Description
Id	textfield	Id of the division
Name	textfield	Name of the division

Comments:

Looks ok

ROLES

Name	Type	Description
Id	textfield	Id of the roles
Name	textfield	Name of the role
Description	textfield	Description of the role

Comments:
Looks ok

INDUSTRY

Name	Type	Description
Id	textfield	Id of the Industry
Name	textfield	Name of the industry
Description	textfield	Description of the industry
Address	textfield	Address of the industry
Phone number	textfield	Phone number of the industry

Comments:
Looks ok

GOCO

Name	Type	Description
Id	textfield	Id of the GOCO
Name	textfield	Name of the GOCO
Description	textfield	Description of the GOCO
Address	textfield	Address of the GOCO
Phone number	textfield	Phone number of the GOCO

Comments:

ROLES

- **Guest (Default)**

Roles- In house process

- **DPD Project**
- **Engineer Project**
- **Division Head SDA**
- **Section Head SDA**
- **Engineer SDA**
- **Technical/Scientific staff SDA**
- **Operator/Technicians SDA**
- **Division Head QA**
- **Technical/Scientific staff QA**
- **Division Head QC**
- **Section Head QC**

- **Engineer QC**
- **Technical/Scientific staff QC**
- **Division Head Testing agency**
- **Section Head Testing agency**
- **Engineer Testing agency**
- **Technical/Scientific staff Testing agency**
- **Member secretary, LSC**
- **Chairman, LSC**
- **Member secretary, NCRB**
- **Chairman, NCRB**

Roles- Industry process

- **Operator/Technician industry**
- **Process Manager industry**
- **QC Manager industry**
- **QA Manager industry**

Roles- GOCO

- **GOCO operator**
- **GOCO supervisor**

Roles- System administrator

- **Master Administrator**
- **System Administrator-1**
- **System Administrator-2**
- **System Administrator-3**

Comments :
The system administrator shall assign, approve or reject the role of each user.

You can add the following roles also

1. **Designer**
2. **User**
3. **Chairman, PRRC**
4. **Member secretary,PRRC**
5. **Chairman, NDT committee**
6. **Member Secretary,NDT committee**

Sometimes one user may have multiple roles. Like the chairman of the committee may be the division head of SDA. There has to be provision to toggle the role. Like certain parts in the workflow are to be performed as per the power of that role only, even though the user may have access to multiple roles.

PRODUCT

Name	**Type**	**Description**
Id	textfield	Id of the product
Name	textfield	Name of the product
Category	Dropdown	Category of the product
Owner	Division in ISRO	Owner of the product
End Uses	Dropdown	End uses of the product
Use	textfield	Specific use of the product

Shelf life type	Integer	Shelf life type of the product
Processing Agencies	Division	Processing agencies of the Product
Name of Processing Agency	Division name	Processing agencies of the product
Testing agencies	dropdown	Testing agencies of the product
Components	dropdown	Components of Product
Drawing	textfield	Product drawing
Method of identification	textfield	
Batch size	textfield	Batch size of the Product
Prefix	textfield	Prefix of the product
Suffix	textfield	Suffix of the product
Batch identification	textfield	Batch

Comments:

- **Product owner will be a division in ISRO**
- **Shelf life will be a duration in days or months and will be an integer. It will be required for calculating expiry date/use by date**
- **Processing agencies can be a division of ISRO or an industry or GOCO or combination of any two or all three**
- **Components will be a drop-down**

- **Batch identification will be an integer . It may have some suffix or/and prefix. If it suffix or prefix it has to be represented with those. Products will be processed in batches**
  1`

Product Category

Name	**Type**	**Description**
Id	textfield	Id of the product category
Name	textfield	Name of the product category

Comments:
This has to be selectable text from a dropdown

Processing Agencies

Name	Type	Description
Id	textfield	Id of the processing agency
Name	textfield	Name of the processing agency
Type	textfield	Type of the processing agency

Comments:
This has to be a selectable text from a dropdown
Can be multiples values
Such as combination of a division and a industry
Or division and industry and GOCO
Like a product can be processed through multiple agencies which contribute part wise for the product
Based on the this initial selection user has to select the name all the processing agencies applicable
Testing agency

Name	Type	Description
Id	textfield	Id of the testing agency
Name	textfield	Name of the testing agency

Comments:
This will be a selectable text; can be a division or industry or GOCO.Logic similar to that of a processing agency.

Component

Name	Type	Description
Id	textfield	Id of the component
Name	textfield	Name of the component
Type	textfield	Type of the component

Comments:
Will be used to make the product.
It has to be selected from a list of components.

Component type

Name	Type	Description
Id	textfield	Id of the component type
Name	textfield	Name of the component type

Comments:
Division

Name	Type	Description
Id	textfield	Id of the division
Name	textfield	Name of the division

Comments:
This will be a list to maintain the name of the divisions.

End uses

Name	Type	Description
Id	textfield	Id of the end uses
Name	textfield	Name of the end uses

Comments:
This will be a selectable text field from a drop down

Doubt ??
Who can be the end users?
End users will be various divisions of ISRO. However, this table is to define the end use of the product like in whether it will be used for a satellite or R & D or a rocket. The user has to select it from a list.

Manufacturing Red paint

Red paint batch no: VSSC/Red paint/05/2024

Raw Material details :

Raw Material	Batch Number	Acceptance Test	Specification	Test results
Red Pigment (Iron Oxide)	RP-20240806-001	Color Consistency	Matches standard (ΔE < 1)	ΔE = 0.7

		Particle Size	95% < 10 µm	96% < 10 µm
		Moisture Content	< 0.5%	0.4%
		Purity	> 98% Iron Oxide	98.5% Iron Oxide
Binder (Acrylic Resin)	AR-20240806-001	Viscosity	3,500 cP	3,400 cP
		Solid Content	48% ± 2%	47.8%
		pH Level	8.0	8.1
		Clarity and Color	Clear, no discoloration	Clear, no discoloration
Solvent (Water)	WS-20240806-001	Purity	Conductivity < 10 µS/cm	8 µS/cm
		pH Level	7.2	7.3

		Odor	None	None
Solvent (Mineral Spirits)	MS-20240806-001	Purity	>99%	No impurities detected
		Evaporation Rate	40-60 minutes	55 minutes
		Odor	Mild	Mild
Additive (Dispersing Agent)	AD-20240806-001	Appearance	No separation or contamination	No separation observed
		pH Level	7.5	7.4
		Density	1.05 g/cm³	1.06 g/cm³
		Performance Test	Passes dispersion test	Passes dispersion test

Additive (Anti-foaming Agent)	AD-20240806-002	Appearance	No separation or contamination	No separation observed
		pH Level	6.8	6.9
		Density	0.95 g/cm³	0.94 g/cm³
		Performance Test	Passes foaming test	Passes foaming test
Additive (Thickener)	AD-20240806-003	Appearance	No separation or contamination	No separation observed
		pH Level	8.2	8.3
		Density	1.10 g/cm³	1.09 g/cm³
		Performance Test	Viscosity adjustment achieved	Viscosity adjustment achieved

Additive (Preservative)	AD-20240806-004	Appearance	No separation or contamination	No separation observed
		pH Level	7.0	6.9
		Density	1.02 g/cm³	1.03 g/cm³
		Performance Test	Passes preservation test	Passes preservation test

Equipment Needed:

- **Mixing Vessel: A large container suitable for mixing the components.**
- **High-Speed Disperser or Mixer: To ensure even distribution of pigment in the binder.**
- **Grinding Mill: For fine dispersion of pigments.**
- **Measuring Tools: Scales, graduated cylinders,**

Manufacturing Process:

1. Pigment Dispersion:

- Measure Pigment: Weigh the appropriate amount of red pigment based on the desired color intensity.
- Wet Out the Pigment: Gradually add the pigment to the solvent (water or mineral spirits) while stirring to prevent clumping.

- Disperse: Use a high-speed disperser to mix the pigment and solvent. Continue mixing until the pigment is evenly dispersed and there are no clumps.

2. Binder Preparation:

- Prepare the Binder: Measure and prepare the binder (e.g., acrylic or alkyd resin).
- Add to Pigment Mixture: Slowly add the binder to the pigment dispersion while continuously stirring.

3. Grinding (Optional but Recommended):

- Grind the Mixture: Pass the mixture through a grinding mill to achieve a finer dispersion of the pigment. This step improves the color quality and consistency.

4. Incorporate Additives:

- Add Dispersing Agents: To maintain pigment suspension and prevent settling.
- Anti-foaming Agents: Add to reduce foam during mixing.
- Thickeners: Adjust the viscosity to the desired level.
- Preservatives: Add to extend the shelf life of the paint.

5. Final Mixing:

- Homogenize the Paint: Ensure that all components are thoroughly mixed.
- Adjust Viscosity: Test the paint's viscosity and adjust with more solvent or thickener as needed.

6. Packaging:

- Package the Paint: Once the paint meets quality standards, package it into containers suitable for storage and distribution.
- Labeling: Properly label the paint with relevant information such as color, type, safety precautions, etc.

Acceptance tests for the product:

Acceptance Test	Specification	
Color Consistency	Matches standard color sample (ΔE < 1)	ΔE = 0.5
Viscosity	2,500 - 3,000 cP	2,750 cP
Drying Time	Touch dry within 30 minutes	28 minutes
Gloss Level	85-90 GU at 60°	87 GU
Opacity (Hiding Power)	Achieves complete coverage at 100 µm DFT	Complete coverage at 95 µm DFT
Adhesion	Passes cross-cut test, no peeling	No peeling observed

pH Level (for water-based paint)	7.5 - 8.5	7.8
Solids Content	55% ± 2%	54.5%
Shelf Life Stability	No separation or settling for 6 months	No separation after 6 months
Scratch Resistance	> 3 kg load without visible damage	Withstood 3.5 kg load
Weather Resistance (Optional)	No color fading after 500 hours of UV exposure	No significant fading observed

Doubt : These Acceptance tests for the product,data will vary for each product right

Yes, the acceptance tests will vary for each product as well as raw materials.

In the requirement document I have mentioned about creating a separate database for acceptance tests. We will select the acceptance from this database as per product requirement. Please go through the acceptance test configuration part in the requirement document.

Raw material

Name	Type	Description
Batch Id	textfield	Id of the raw material
Name	textfield	Name of the raw material
Sources	dropdown	Sources of raw material
Suppliers	dropdown	Suppliers of raw material
Grade	textfield	Grade of raw material
Shelf life	Numeric value (with choice field selection)	Shelf life of raw material
Sampling plan	textfield	Sampling plan of raw material
Acceptance Test	Text field	Acceptance test of raw material
Packing details	Text field	Packing details of raw materials

Comments:
One raw material may have multiple suppliers/sources (sources can be thought of as manufacturers and suppliers can be thought of as an intermediary between manufacturer and the consumer i.e. VSSC in this case)

Such as in the previous example iron oxide may be two different sources or may be single source exist but different suppliers are there
Suppliers are like intermediary between
Acceptance test will be a drop down field.For each raw material the acceptance tests are to be chosen from the acceptance test database.
Once a new raw material is defined with appropriate input the same has to be approved by Section Head, QA.

The batch size field need not be added here.
It can be added as a field when the user is entering the details of a particular batch.
Batch size will take input as (a float value+a unit) like 5.00 kg or 10.5 litre
The unit shall be selected from the database for units.
The packaging details also can be moved there. This can be a text field.
The batch of a raw material will have a procurement data, expiry date. The expiry date will be procurement date+shelf life duration.
The details of a particular batch of a raw material need not be approved. The user entering the details should be simply able to save the details.

Acceptance Test

Name	Type	Description
Id	textfield	Id of the raw_material properties
Name	textfield	Name of the raw material properties
specification	textfield	Specification of the raw material used
Test result	textfile	Test results of raw material
Result file	File upload multiple	Used to upload test result
Revaluation frequency	Text field	Revaluation frequency

Comments:
The database for acceptance tests will be common to raw materials as well as products.That should be provision to add unit against acceptance tests as applicable like
weight in kg, gram
volume in litre, m^3
The user should be able to select the units from the database for units
The acceptance test results are basically taken from a test report or test certificate. So the test report or certificate will have validity. So naturally the test results will also have a validity period(for example the pollution certificate of a car has a validity of 1 year).
So when the validity period expires the raw materials are retested. The retesting of raw materials is allowed within its shelf life.
For example , the raw material iron oxide has a shelf life of 5 years and density as one of its acceptance test.The validity of the test result for density is 1 year from the date of testing. So for a maximum of five times density can be re-evaluated. After completion of shelf life of a batch of retesting of an acceptance test is not allowed. Different acceptance tests of a raw material can have different validity periods.For example the density may have a reevaluation frequency of one year but particle size may have a re-evaluation frequency of 6 months.
The re-evaluation frequency of a particular acceptance test of a raw material depends upon the product it is being used for. For example if the same iron oxide is being used for another (other than red paint) very critical product the density may have a re-evaluation frequency of six months.

When the existing value is an acceptance test is replaced with a new value after re-evaluation the old value is to be stored with an appropriate time stamp and label/serial no. This can be done like if one value of an acceptance test is updated the total set can be assigned a time stamp and a label.

Raw materials sources

Name	Type	Description
Id	textfield	Id of the Sources
Name	textfield	Name of the sources

Comments:

Raw material Suppliers

Name	Type	Description
Id	textfield	Id of the raw material suppliers
Name	textfield	Name of the raw material suppliers

Comments:

Test Results

Name	Type	Description
Id	textfield	Id of the test result
Name	textfield	Name of the test result
Test file	filefield(pdf)	Pdf File of the test results
Test image	Image filed	Image of the test results

UPDATED RAW MATERIAL

Raw material

Field name	Type	Constraints	Description
id	AutoField (automatic added)	Primary Key, Auto Increment	Unique identifier for each raw material
Name	CharField	max_length=255	Name of the raw material
sources	ManyToManyField (dropdown)	related_name='raw_materials'	Sources from where the raw material is obtained
suppliers	ManyToManyField (drop down)	related_name='raw_materials	Suppliers providing the raw material

Grade	CharField	max_length=50	Grade of the raw material
Shelf life value	FloatField		Numeric value for shelf life
shelf_life_unit	dropdown	max_length=10, choices=[('days', 'Days'), ('months', 'Months')]	Unit for shelf life (days or months)
sampling_plan	TextField		Sampling plan for the raw material

acceptance_tests	ManyToManyFie ld (drop down)	related_name='ra w_materials'	Acceptance tests associated with the raw material

Comments :
Looks ok for now.
Once we have to see the implementation.
The raw material definition should be as follows:

- **When a user tries to add a new raw material the uses should be asked whether it's a pre certified material in the form of a 'yes or no' question**
- **If the user chooses the option as 'no' then the existing raw material definition is applicable**
- **if the user chooses the option as 'yes' then the following fields should be presented to the user, while adding a new batch of the raw material**
    - **Certified by (a drop down menu, a division of ISRO or a industry industry)**
    - **Certificate reference no.: Text field**
    - **Certificate issue date : Date field**
    - **Certificate valid till : Date field**
    - **Upload Certificate: (file upload as pdf/image file)**
    - **Certificate disposition:(To be selected from these options given below)**
        - **Cleared for use**
        - **Cleared for use subject to completion of pending action**
            - **If this option is applicable, then a text box should be presented to user to enter details**
            - **The user should be able to list each pending actions, addition of pending will be one by one , like a "add next" or "plus" button can be given**

        - **Not cleared**
    - **Other remarks**
        - **If others, then a text box should be presented to user to enter details**
        - **The user should be able to list the remarks one by one , like a “add next” or “plus” button can be given**

Rawmaterial batch

Name	Type	Constraints	Description

Id	AutoField	Primary Key, Auto Increment	Unique identifier for each raw material batch
raw_material	ForeignKey (drop down)	references RawMaterial(id), on_delete=CASCADE, related_name='batches'	Reference to the raw material associated with the batch
batch_id	CharField	max_length=100, unique=True	Unique identifier for the batch
procurement_date	DateField		Date when the batch was procured

expiry_date	DateField	blank=True, null=True	Expiry date of the batch
batch_size_value	FloatField		Size of the batch
batch_size_unit	ForeignKey (drop down)	references Unit(id), on_delete=CASCADE, related_name='batch_sizes'	Reference to the unit of measurement for the batch size

packing_details	TextField		Details about the packing of the batch

Comments :
Looks ok for now.
Let us see the implementation.

AcceptanceTestResult

pre-

Name	Type	Constraints	Description
Id	AutoField	Primary Key, Auto Increment	Unique identifier for each acceptance test result

rawmaterial_batch	ForeignKey	references RawMaterialBatch (id), on_delete=CASCADE, related_name='test_results'	Reference to the raw material batch associated with this test result
acceptance_test	ForeignKey	references AcceptanceTest(id), on_delete=CASCADE	Reference to the acceptance test performed
specification	Text Field		Details about the specification of raw material
test_value	Float Field		The result value of acceptance test
Unit	dropdown		Unit of the test value

Test Upload	File Upload		Test result document upload
test_date	DateField	default=timezone.now	Date when the test was performed
validity_date	DateField	blank=True, null=True	Validity date of the test result
timestamp	DateTimeField	auto_now_add=True	Timestamp when the record was created
label	CharField	max_length=100, blank=True, null=True	Optional label for the test result

Comments :

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Similar to the list of raw materials, one list for components is to be maintained.
Here just the name will change and other things are exactly the same.

Similar to the list of raw materials, one list for consumables is to be maintained.
Here just the name will change and other things are exactly the same.

Like the list of raw materials, one list for pre-certified items is to be made.
A Pre-certified item can be pre-certified component or pre-certified raw material.

Add Product page Design

Section-1:

- **Name**
- **Category**
- **Owner**

Section-2:

- **End use**
- **Specific use**

Section-3:

- **Processing agencies**
- **Testing agencies**

Section-4:

- **Shelf life value**
- **Shelf life unit**

Section-4:

- **Drawing applicable , Yes or no**
- **Drawing number**
- **Drawing status**

Section-5:

- **Components**
- **Raw materials**
- **Consumable**
- **Equipment used**

Section-6:

- **Method of identification**
- **Prefix**
- **Suffix**

Section-7

- **Add documents**

Process workflow

Process title
Process description
Raw material,consumables, components and equipment used

Process step	Description	Process start date & Process end date & Process duration	RM batches) used	RM batch status	Equipment(s) used	Equipment status	Process step spec.	Measured value/ Observation	Remarks
1	xyx	12.08.2024	RM1 RM2 etc	Valid / material expired / Test certificate expired	Eq 1 Eq 2 etc	Calibration valid/ Calibration expired	Can be qualitative or quantitative Multiple specs can be there	To be Auto compared for quantitative specs and alert sign/msg to be shown incase of non-conformance	

Raw material batches used (This selection will be limited to the raw materials that are bound to the respective product. While selecting a batch of raw material in a process, its validity(expiry date) is to be compared with process date. Also the validity of its acceptance tests are to be compared with the process date.
Two more field are to be added for including consumable batch and component identification.

Changes to shelf life (for all cases raw material, consumables, components):

Under shelf life 3 options are to be added

- Not applicable
- TBD(to be decided)
- add duration

If the user chooses add duration, the currently applicable inputs are to be enabled

- The user has to the duration (numeric input)
- Select the duration either in days/months/years

You keep a section for shelf life like what you have done for the product addition page.

Product batch workflow:

1. Add batch number/identification number manually
2. Two fields are to be provide to enter the manufacturing start date and manufacturing end date
3. Add raw material batches : to be selected from the pre-defined list (Check validity of acceptance tests, validity of shelf life while adding)
    a. If it is pre-certified raw material show the certificate reference no, validity and certificate disposition
4. Add components batches/units:to be selected from the pre-defined list (Check validity of acceptance tests, validity of shelf life while adding)
    a. If it is pre-certified component show the certificate reference no, validity and certificate disposition
5. Add consumables batches: to be selected from the pre-defined list (Check validity of acceptance tests, validity of shelf life while adding
    a. If it is pre-certified consumables show the certificate reference no, validity and certificate disposition
6. Add processes from the list of predefined processes
    a. The user has to populate the data against each process step
7. The product acceptance test details are to be populated as defined during product definition
8. The user has to enter the test results of the acceptance tests as well as upload the test reports in PDF format or any image format
9. Non-conformance management workflow (This is available in the main document)
10. Review and approval workflow
11. Generating the quality assurance report

This is a simplistic case and mostly applicable for all the products. As you design the page with this workflow some more complexities we can add in 2-3 iterations.

In some products there are multiple stages of review and approval process, the interim steps before final review and approval are called stage clearance steps. We have to find a way to incorporate that also, so that the user can add these stage clearance steps as and when required to create a workflow for a particular product. I guess this we can incorporate in a similar logic that we applied for process definition.

Report generation module:

1. **Generate process log sheet**
2. **Generate Test report**
3. **Generate Stage Clearance**
4. **Generate QAR**

These reports should only be generated only when the approval process is complete for the respective batch of product.

Non Conformance management workflow:

Please see the PDF file for the details(System requirement document)

Notifications:

- **Provision for sending the notifications to the registered mail of the users to be implemented**
- **Notifications are required in the following cases:**

1. **Changes in user roles (Specific to the user)**
2. **In the workflow for product batch,**
    a. **like when the SDAs submits something to QA for verification and approval**
    b. **QA returns or rejects or accepts any steps in the workflow of product batch, the related SDAs should receive the notifications**
    c. **After approval steps in product batch workflow**
    d. **When QA registers a non-conformance in the product batch workflow**
    e. **When QAR are generated for a product batch(only for the owner's of the product)**

Explaining dimensional inspection

1. Preparation

- **Object**: A small metal bracket.
- **Specification**: The bracket needs to be 50mm long, 30mm wide, 5mm thick, and have two holes (each 8mm in diameter) 10mm apart.

2. Inspection Process

- **Measurement Tool**: A caliper or micrometer is used to measure the length, width, and thickness of the bracket. A gauge or coordinate measuring machine (CMM) might be used to check hole diameters and distances between holes.
- **Measuring Conditions**: The part is placed on a flat surface, ensuring that the measurements are taken at the correct position and under controlled conditions (e.g., temperature, lighting).

3. Recording Dimensions

- **Measured Values**: After measurement, the following data is recorded:
    - **Length**: 50.05mm
    - **Width**: 30.02mm
    - **Thickness**: 5.00mm
    - **Hole Diameter 1**: 8.01mm
    - **Hole Diameter 2**: 8.00mm
    - **Distance Between Holes**: 10.05mm

4. Documentation

- **Inspection Report**: A standardized form or report is created to document the inspection process. This document includes:
    - **Part ID**: Unique identifier for the bracket.
    - **Specification Values**: The tolerances and ideal dimensions from the design specification.
    - **Measured Values**: Actual values from the inspection.
    - **Pass/Fail Status**: Each dimension is compared with the tolerance range defined in the specifications. For example, if the length of the bracket is supposed to be 50mm ±0.1mm, the measured value of 50.05mm would pass, but a value of 50.2mm would fail.
    - **Deviation/Comments**: If any dimensions are out of specification, the report would document the deviation and potentially the cause, such as "hole diameter too large by 0.02mm."

Example of Documenting Dimensional Inspection

Part ID	Length (mm)	Width (mm)	Thickness (mm)	Hole 1 Dia. (mm)	Hole 2 Dia. (mm)	Distance Between Holes (mm)	Remarks
BRKT001	50.05	30.02	5.00	8.01	8.00	10.05	(text field)
BRKT002	50.15	30.00	5.10	8.05	8.00	10.10	(text field)

In our case if dimensional inspection is added to a raw material or product or component
Initially we only need to define the dimensional inspection parameters such as length, width, thickness etc. and the corresponding specification. The actual measured value of an individual unit will come into picture when we are unit wise data.

Product batch page design

Product identification :

Batch ID	**As per initial definition in product**	**Unit ID**	**As per initial definition in product**
Manufacturing start		**Manufacturing end**	
Applicable Drawing(s)	**The user should be shown all the applicable drawings along with their titles with a checkbox on the left . The user has to check the applicable drawing(s)**		

Raw materials:

Raw material	Raw material Batch	Expiry date	Source name	Supplier name	Status
Rm1	User has to select all the batches that he wants to use of that raw material	To be shown as per the defined shelf life of raw material	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired
Rm2	User has to select all the batches that he wants to use of that raw material	To be shown as per the defined shelf life of raw material	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired

Components:

Components	Component batch Batch	Unit ID	Expiry date	Source name	Supplier name	Status
C1	User has to select all the batches that he wants to use of that components	User has to select all the applicable unit IDs that he wants to use of that components (Can be grayed if there is no unit ID)	To be shown as per the defined shelf life for that unit	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired
C2	User has to select all the batches that he wants to use of that components	User has to select all the applicable unit IDs that he wants to use of that components (Can be grayed if there is no unit ID)	To be shown as per the defined shelf life for that unit	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired

Consumables:

Consumable	Raw material Batch	Expiry date	Source name	Supplier name	Status
Con1	User has to select all the batches that he wants to use of that	To be shown as per the defined shelf life for that batch	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired

	consumable				
Con2	User has to select all the batches that he wants to use of that consumable	To be shown as per the defined shelf life for that batch	To be fetched from DB and Shown	To be fetched from DB and Shown	Valid/Expired

Raw material batch acceptance tests:

The following table is to be shown for raw materials which are not pre-certified :

Raw material name : RM1					
Batch: RM1-B1	Grade: Grade 2		Source: Source 2		Supplier: Supplier 2
Acceptance tests	Specification	Results	Date of test	Remarks	View test Report
Test-1 To be fetched from DB and Shown	Spec-1 To be fetched from DB and Shown	Test 1 result To be fetched from DB and Shown	To be fetched from DB and Shown	Meeting spec/Deviation Test results valid/Expired Both details To be fetched from DB and Shown	Link1 (view button)
Test-2 To be fetched from DB and Shown	Spec-2 To be fetched from DB and Shown	Test 2 result To be fetched from DB and Shown	To be fetched from DB and Shown	Meeting spec/Deviation Test results	Link2 (view button)

				valid/Expired **Both details To be fetched from DB and Shown**	
Test-3 **To be fetched from DB and Shown**	**Spec-3** **To be fetched from DB and Shown**	**Test 3 result** **To be fetched from DB and Shown**	**To be fetched from DB and Shown**	**Meeting spec/Deviation** **Test results valid/Expired** **Both details To be fetched from DB and Shown**	**Link3 (view button)**
Raw material name : RM2					
Batch: RM2-B1	**Grade: Grade 2**	**Source: Source 2**		**Supplier: Supplier 2**	
Test-1 **To be fetched from DB and Shown**	**Spec-1** **To be fetched from DB and Shown**	**Test 1 result** **To be fetched from DB and Shown**	**To be fetched from DB and Shown**	**Meeting spec/Deviation** **Test results valid/Expired** **Both details To be fetched from DB and Shown**	**Link1 (view button)**
Test-2 **To be fetched from DB and Shown**	**Spec-2** **To be fetched from DB and Shown**	**Test 2 result** **To be fetched from DB and Shown**	**To be fetched from DB and Shown**	**Meeting spec/Deviation** **Test results valid/Expired**	**Link2 (view button)**

				Both details To be fetched from DB and Shown	
Test-3 To be fetched from DB and Shown	**Spec-3 To be fetched from DB and Shown**	**Test 3 result To be fetched from DB and Shown**	**To be fetched from DB and Shown**	**Meeting spec/Deviation Test results valid/Expired Both details To be fetched from DB and Shown**	**Link3 (view button)**

If the raw material is a pre-certified item, the following table is to be shown :

Raw material name : Rm1 (Pre-certified)			
Batch: RM2-B1	**Grade: Grade 2**	**Source: Source 2**	**Supplier: Supplier 2**
Raw material Batch		**View Material Certificates**	
RM1-B1		**View button**	
RM2- B1		**View button**	

This same logic and design is applicable for Raw material, Components and consumables

Equipment details

Equipment details are to be fetched from the DB and shown here as per the current product definition

Equipment name	Equipment ID	Calibration due date	Show calibration certificate
Equipment-1	123356AB	10-05-2026	View button
Equipment-2	12486SD23	25-06-2025	View button
Equipment-3	ONFIC236HJ	24-01-2026	View button

Process details

Next section is about adding details for processes for that product batch as per definition of product (which are selected for the product). The process should be shown with their process titles.
If multiple processes are selected for a product those processes are to be shown as per their respective order of selection according to the product definition. The user should fill up applicable details

Product acceptance tests

Acceptance tests	Specification	Results	Date of test	Remarks	Upload test Report	View test report
Test-1 To be shown are per product definition	Spec-1 To be shown as definition of product	Test 2 result To be provided by the user	To be entered by the user	Meeting spec/Deviation	Upload button	View button
Test-2 To be shown	Spec-2 To be shown as	Test 2 result To be fetched	To be entered by the user	Meeting spec/Deviatio	Upload button	View button

are per product definition	definition of product	from DB and Shown		n		

Non Conformance Management(expandable table): (If there are no NCs raised by the QA, they should able mark as NO NCs and this section table should stay disabled, this table should only get enabled only if QA tries raise an NC)

Sl. No.	NC description	NC status	QA remarks	Upload document
		Resolved/Not resolved		

Review(expandable table)

Sl. No.	Reviewer/Reviewing forum	QA remarks	Upload document

QA observations and remarks(expandable table)

Sl. No.	QA Observations/remarks	Upload document

QA recommendations (expandable table)

Sl. No.	Recommendation
1	
2	

3	
4	

Actions to be completed (expandable table)

Sl. No.	Action type	Description
1	Pending/Parallel/Planned (3 options as a drop down menu)	
2	Pending/Parallel/Planned (3 options as a drop down menu)	

Disposition