

---

---

# Synergi Plant Training

## Inspection planning

# Inspection Management Flow Chart

## Inspection Management Flow Chart

### ➤ Create Inspection Plan

Time based Inspection

Condition based Inspection / RBI Inspection

### ➤ Generate Inspection

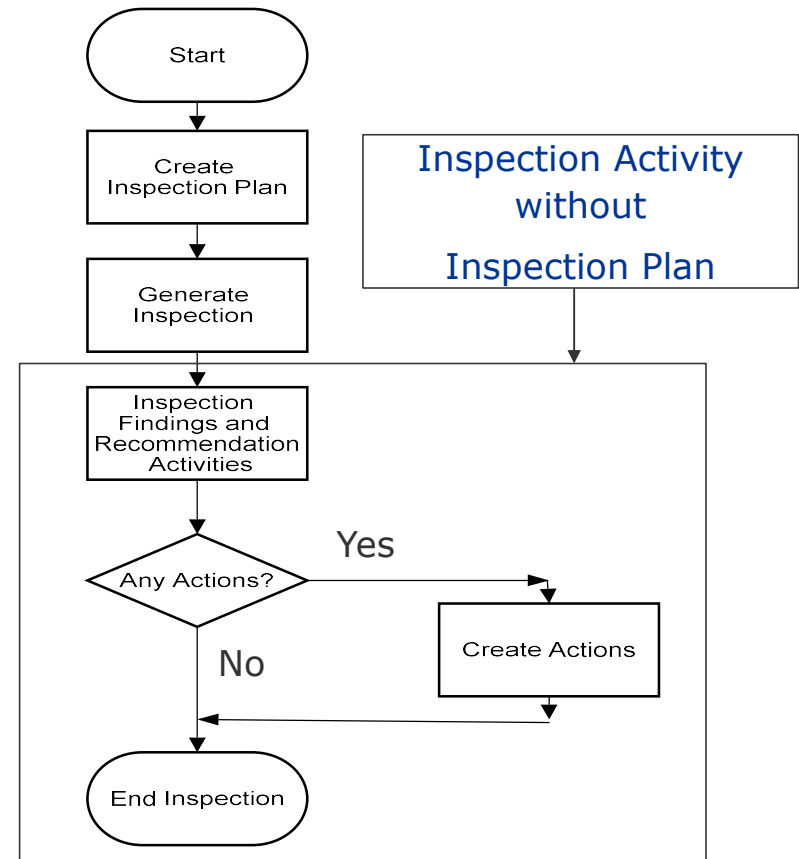
Creates Inspection Activities based on Inspection Plan both Time based and Condition based, Rbi Inspection.

### ➤ Inspection Activity

Enter Inspection Findings and Recommendation details

Any Actions? required or not check.

### ➤ Create Action and enter details



## Inspection Plan

---

- Inspection Plan is to create different Maintenance schedules either Condition based, or Time based
  
- **Condition Based Inspection Schedules**
  - Condition based Inspection Planning is based on RBI assessment recommendation
  - Inspection Plans are generated based on RBI assessment risk calculation results
  
- **Time Based Inspection Schedules**
  - Time based Inspection Schedules are routine Inspections
  - Daily, Weekly, Monthly, Quarterly, Half Yearly, Yearly or ADHOC are some example of Time based Inspection schedules






# Inspection Plan

Template	Schedule Description	Active	Schedule Driver	Schedule Type	Seq.	Elements	Prev. Inspection Date	Inspection Interval	Uom	Next scheduled date	Recurring	Inspection locations
<input type="checkbox"/>	Inspection Risk-based...	Y	Condition ...	Major insp...	1	8-HM-13-01...		36	MONTH	2023/07/04	Y	General
<input type="checkbox"/>	Inspection Time-based...	Y	Jurisdicti...	Periodic i...	2			12	MONTH	2023/07/15	Y	Head Botto...

Select Asset Details menu and Tag from Facility Tree to create Inspection Plan

Select Inspection Plan page

Inspection Plan can create and maintain using four options in the Inspection Plan Screen

- New – To create New Inspection Plan,  → 
- Modify – Make changes in the selected, existing Inspection Plan 
- Delete - Delete selected Inspection Plan 
- Copy – Copy selected Inspection Plan to same or other Tags in the same Process Unit 

# Create Inspection Plan

## ➤ Inspection Plan Creation

Click Inspection Plan, New button

New Inspection Plan page opened

Enter Mandatory values Schedule Driver, Schedule Description, Scope, Inspection Interval and UOM, Creation Lead Time and UOM and Click Save

All Inspection Plan property details are listed in the table

SNo.	Property Name	Details
1	Program Type	Default Value: INSPECTION. New Program Type will be added as per requirement.
<b>General Information</b>		
2	Schedule Driver	Mandatory column, Jurisdiction, Condition Assessment, Corrosion
3	Schedule Type	Major inspection or Periodic inspection
4	Intrusive	Yes / No, Check Box
5	Seq.	Sorting order in the inspection plan list
6	Schedule Description	Description representing this plan shown in the inspection plan list
7	Recurring	Yes / No, Check Box
<b>Scope Details</b>		
8	Scope	Mandatory column, Entry Field, Long Text
9	Task List Description	Entry Field, Long Text
10	Scope Drawing/Doc/Photo	Document list to be selected
11	Inspection Locations	Selectable location identifiers
12	Link to RBI	Yes/No, Check Box, if this plan is collecting RBI recommended plan
13	Elements	Selectable elements to collect RBI recommended plan
14	Damage Mechanisms	Selectable damage mechanisms to collect RBI recommended plan
15	Scope drawing/doc/photo	Selectable asset documents
16	Inspection Methods	Refer Inspection Plan.xlsx for lookup values
17	Work Pack Required	Yes / No, Check Box
18	Work Pack Category	Work pack category such as Wall Thickness Campaign
19	Anomaly	Selectable asset anomaly if defined
<b>Scheduling Details</b>		
20	Inspection Interval	Mandatory column, Entry
21	Inspection Interval UOM	Mandatory column, lookup selection, (Day, Month, Year)
22	User Inspection Date	New Next Inspection Date user entry
23	Creation Lead Time	Mandatory column, Entry
24	Creation Lead Time UOM	Mandatory column, lookup selection, (Day, Month, Year)

# Modify Inspection Plan

**Modify**

**General Information**

Template: Inspection  
Schedule Driver: Jurisdiction  
Active:   
Schedule Type: Periodic inspection  
Intrusive:   
Seq.: 2  
Recurring:   
Schedule Description: Time-based 12 Months Inspection Plan

**Scope Details**

Scope: Time-based 12 Month Inspection Plan  
Task List Description: 1. Preparation, 2. Visual inspection, 3. Determine if UT is required, 4. Perform UT and record monitored data when necessary  
Inspection locations: Head Bottom / Right, Head Top / Left, Shell  
Link to RBI:   
Elements:   
Damage Mechanisms:   
Anomaly:   
Work Pack Required:   
Work Pack Category: Wall Thickness Monitoring Campaign  
Inspection Methods: Ultrasonic testing, Visual inspection  
Scope drawing / doc / photo:   
Prev. Inspection Date:   
Scheduled inspection number:   
Schedule Creation Date: 2023/06/15

**Scheduling Details**

Previous Inspection No.:   
Schedule created:   
Inspection Interval: 12  
User inspection date: 2023/07/15  
Creation lead time: 1  
Previous Inspection Description:   
Scheduled inspection description:   
Uom:   
Calc. Next Scheduled Date: 2023/07/15  
Next scheduled date: 2023/07/15  
Uom:   
Schedule Creation Date: 2023/06/15

## ➤ Modify Inspection Plan

Open Inspection Plan and Click Modify

Modify Inspection Plan page displayed

Enter all required values and click Save

Next Schedule Date = User Inspection Date

Schedule Creation Date

= User Inspection Date – Inspection Interval

## ➤ Time-based Sample Task List Description

1. Preparation.

2. Visual inspection.

3. Determine if UT is required.

4. Perform UT and record monitored data when necessary

5. Record findings and recommendations

# Delete Inspection Plan

The screenshot displays a software interface for managing equipment inspection plans. On the left, a treeview shows a hierarchy starting with 'DNV' and 'Plant A', leading to 'Prod Unit 01' and 'Unit X01'. The main panel is titled '8-HM-13-0143-N-A2-1: Equipment details' and contains various input fields for equipment information. Below this, there are tabs for 'Inspection plan', 'Activities', 'Documents', etc. A table lists inspection records, with one record selected. A 'Delete Inspection Plan' dialog box is overlaid on the table, asking for confirmation to delete the selected record(s).

Template	Schedule Description	Active	Schedule Driver	Schedule Type	Con	Elements	Draw	Inspection Data	Inspection Interval	Uom	Next scheduled date	Recurring	Inspection locations
<input type="checkbox"/>	Inspection	Risk-based...	Y							MONTH	2023/07/20	Y	
<input checked="" type="checkbox"/>	Inspection	Time-based...	Y							MONTH	2023/07/20	Y	General

## ➤ Delete Inspection Plan

Open Inspection Plan Page

Select Inspection Plan to be deleted

Click Delete button

Do you want to delete the selected records? , Click Delete

Inspection Plan deleted successfully

## Copy Inspection Plant to another Tag

Copy Inspection Plan(s) To

Facility Unit X01

Show 200 entries

<input type="checkbox"/>	Asset Type ^	Name ^	Updated By ^	Updated On ^	Created By ^	Created On ^
<input checked="" type="checkbox"/>	Tag	8-HM-13-0179-N-A2-1	MGR	2023/06/16	MGR	2023/06/15
<input checked="" type="checkbox"/>	Tag	X-27	MGR	2023/06/16	MGR	2023/06/15
<input checked="" type="checkbox"/>	Tag	2-WW-13-0140-S-A2-1	MGR	2023/06/16	MGR	2023/06/15
<input checked="" type="checkbox"/>	Tag	D-211	MGR	2023/06/16	MGR	2023/06/15
<input checked="" type="checkbox"/>	Tag	X-171	MGR	2023/06/16	MGR	2023/06/15
<input type="checkbox"/>	Tag	00.PRDs	MGR	2023/06/15	MGR	2023/06/15

Showing 1 to 6 of 6 entries

First Previous 1 Next Last

OK Cancel

### ➤ Copy Inspection Plan to Tag

Open Inspection Plan and Click Copy button

Copy Screen displayed

Can Copy Inspection Plan to One tag or Multiple tags in the Process Unit

Can Copy to all Tags in the Process Unit

Can Copy Inspection Plan to same Tag



# Create Risk-based and Time-based Inspection Plans

The screenshot shows the 'D-211: Equipment details' form. The 'Inspection plan' tab is active, displaying a table with the following data:

Template	Schedule Description	Active	Schedule Driver	Schedule Type	Seq.	Elements	Prev. Inspection Date	Inspection Interval	Uom	Next scheduled date
<input type="checkbox"/>	Inspection Risk-based...	Y	Condition ...	Major insp...	1	D-211 Head...		36	MONTH	2023/07/04
<input type="checkbox"/>	Inspection Time-based...	Y	Jurisdicti...	Periodic i...	2			12	MONTH	

## ➤ Create Risk-based Inspection Plan

Schedule Driver = Condition Assessment

Schedule Type = Major Inspection

Link to RBI = Yes

Elements = Select all elements

Damage Mechanisms = Select all damages

Use RBI Inspection Task Descriptions = Yes

## ➤ Create Time-based Inspection Plan

Schedule Driver = Jurisdiction

Schedule Type = Period Inspection

Link to RBI = No

Elements = Empty

Damage Mechanisms = Empty

Use RBI Inspection Task Descriptions = No

Inspection Interval = Fixed Interval

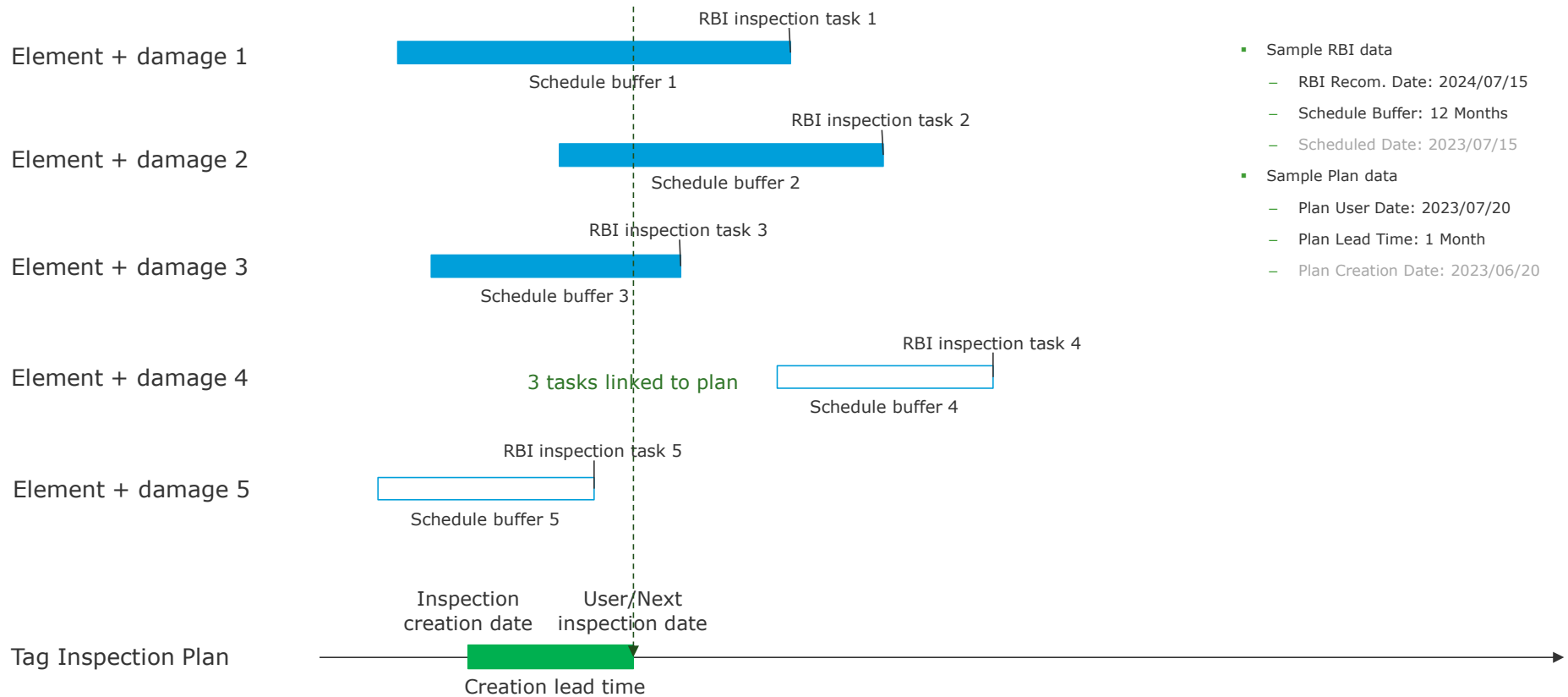
User Inspection Date = First or Revised date

Creation Lead Time = Job Preparation time

### Sample Task List Description

1. Preparation.
2. Visual inspection.
3. Determine if UT is required.
4. Perform UT and record monitored data when necessary
5. Record findings and recommendations

# Linking RBI Recommended Inspections to Tag Inspection Plan



# Automatic synchronize RBI approved inspections to inspection plan

The screenshot shows the Synergj Plant AIRMS software interface. The main window displays the 'Assessment Unit X01 RBI' screen. On the left, there is a tree view showing the hierarchy: DNV > Plant A > 01. Inventory Groups > Prod Unit 01 > 01. Corrosion Circuits > Unit X01 > 00.PRDs > D-211. The main area shows a search bar and a table of inspection tasks. The table has the following columns: Inspection Task, Inspection Task Description, Damage Factor After Inspection, Category After Inspection, RBI Target Met, Intrusive, RBI assessor comments, Earliest possible date, Latest possible date, Scheduled Date, Inspection date, and System status. Three inspection tasks are listed, all with a system status of 'Linked to a plan'.

Inspection Task	Inspection Task Description	Damage Factor After Inspection	Category After Inspection	RBI Target Met	Intrusive	RBI assessor comments	Earliest possible date	Latest possible date	Scheduled Date	Inspection date	System status
NonIntr+100UTS/PR	For the total suspect area:100% coverage of the...	36.14352	3	Y	N		2023/07/15	2024/07/15	2023/07/20		Linked to a plan
NonIntr+60VT+UT/RT follow-up	Visual inspection of >60% of the exposed surfac...	58.33528	3	Y	N		2023/07/15	2024/07/15	2023/07/20		Linked to a plan
NonIntr+30VT+UT/RT follow-up	Visual inspection of >30% of the exposed surfac...	65.96405	3	Y	N		2023/07/15	2024/07/15	2023/07/20		Linked to a plan

Automatic synchronization will happen if

- Inspection plan is created on Tag and Link to RBI is checked

- RBI recommended inspections are approved or rejected

After synchronization the approved inspections will has its system status as 'Linked to a plan'

# Synchronization from RBI approved dates to inspection plan on Tag

Transaction Id	Type	User	Parent asset	Start time	End time	Status	Message	Updated By	Updated On
1	Forced	MGR	DNV	29/09/2022 00:40:07	29/09/2022 00:40:07	Completed	RBI Plans synchronised: 0	MGR	2022/09/29
2	Forced	MGR	DNV	01/10/2022 02:03:44	01/10/2022 02:03:45	Completed	RBI Plans synchronised: 0	MGR	2022/10/01
3	Forced	MGR	DNV	11/10/2022 00:40:08	11/10/2022 00:40:08	Completed	RBI Plans synchronised: 0	MGR	2022/10/11
4	Forced	MGR	DNV	26/10/2022 09:48:32		In process	Started	MGR	2022/10/26
5	Forced	MGR	DNV	26/10/2022 09:49:21	26/10/2022 09:49:22	Completed	RBI Plans synchronised: 0	MGR	2022/10/26
6	Forced	MGR	DNV	30/11/2022 00:40:13	30/11/2022 00:40:13	Completed	RBI Plans synchronised: 0	MGR	2022/11/30
7	Forced	MGR	DNV	07/12/2022 00:40:10	07/12/2022 00:40:10	Completed	RBI Plans synchronised: 0	MGR	2022/12/07
8	Forced	MGR	DNV	09/12/2022 00:40:13	09/12/2022 00:40:14	Completed	RBI Plans synchronised: 0	MGR	2022/12/09
9	Forced	MGR	DNV	18/12/2022 00:40:06	18/12/2022 00:40:06	Completed	RBI Plans synchronised: 0	MGR	2022/12/18
10	Forced	MGR	DNV	18/12/2022 00:40:10	18/12/2022 00:40:10	Completed	RBI Plans synchronised: 0	MGR	2022/12/18
11	Auto	MGR		19/12/2022 14:11:50	19/12/2022 14:11:50	Completed	RBI Plans synchronised: 0	MGR	2022/12/19
12	Auto	MGR		19/12/2022 14:11:59	19/12/2022 14:11:59	Completed	RBI Plans synchronised: 0	MGR	2022/12/19
13	Forced	MGR	DNV	21/12/2022 00:40:01	21/12/2022 00:40:01	Completed	RBI Plans synchronised: 0	MGR	2022/12/21
14	Forced	MGR	DNV	23/12/2022 00:40:04	23/12/2022 00:40:05	Completed	RBI Plans synchronised: 0	MGR	2022/12/23
15	Forced	MGR	DNV	27/12/2022 00:40:04	27/12/2022 00:40:04	Completed	RBI Plans synchronised: 0	MGR	2022/12/27
16	Forced	MGR	DNV	28/12/2022 00:40:08	28/12/2022 00:40:08	Completed	RBI Plans synchronised: 0	MGR	2022/12/28

## ➤ RBI to Tag Inspection Plan Synchronization

Automatic synchronization when RBI recommended inspection dates are approved or rejected (Auto)

Manual synchronization can be triggered when asset inspection plan is created after RBI approval (Forced)

Database job synchronization can be setup daily (Forced)

# Synergi Plant Training

## **Tommy Tang**

Tommy.Tang@dnv.com

+65-8699-5620, +886-983-007388

**[www.dnv.com](http://www.dnv.com)**

**SAFER, SMARTER, GREENER**

The trademarks DNV®, the Horizon Graphic and Det Norske Veritas® are the properties of companies in the Det Norske Veritas group. All rights reserved.