Assessments & Observations

Planon Software Suite

Version: L126

Planon
Building Connections

About this Document

Intended Audience

This document is intended for *Planon Software Suite* users.

Contacting us

If you have any comments or questions regarding this document, please send them to: support@planonsoftware.com.

Document Conventions

Bold
Names of menus, options, tabs, fields and buttons are displayed in bold type.

Italic text
Application names are displayed in italics.

CAPITALS
Names of keys are displayed in upper case.

Special symbols

	Text preceded by this symbol references additional information or a tip.
	Text preceded by this symbol is intended to alert users about consequences if they carry out a particular action in Planon.

Table of Contents

About Assessments and observations

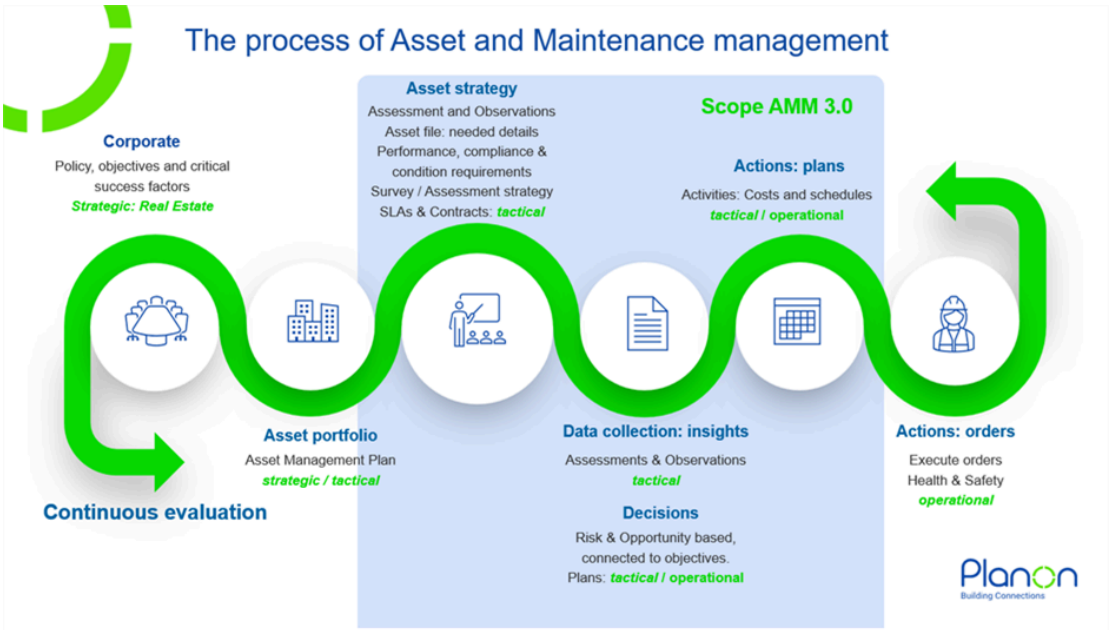
The **Assessments and observations** solution is designed to support the *continuous evaluation* of your corporate asset portfolio. Think of it as a toolbox that can help you set goals and make value-based decisions. By registering crucial observations and performing targeted assessments you will be able to meet your performance requirements, seize opportunities, enforce your risk assessment strategy and comply with international standards, laws and regulations.

Asset managers are responsible for the assets in their company, ensuring that these assets are well-maintained to remain in optimal technical condition. Maintaining a good technical condition, however, is not the sole objective companies have for their assets. Increasingly, companies are also emphasizing additional aspects such as compliance, sustainability and safety in their corporate strategy.

A corporate strategy outlines the goals that an organization wants to achieve. Derived from this corporate strategy, the *asset strategy* specifies how to utilize and maintain the corporate assets in a way that supports and contributes to the broader corporate objectives.

With Planon ProCenter's **Assessments and observations** you can:

1. Define *topics* that are important to achieve or maintain your asset strategy.
2. Register *observations* and *scores* for assets, regarding these topics.
3. Define *follow-up actions* that will resolve issues coming from the observations and improve the current scores.

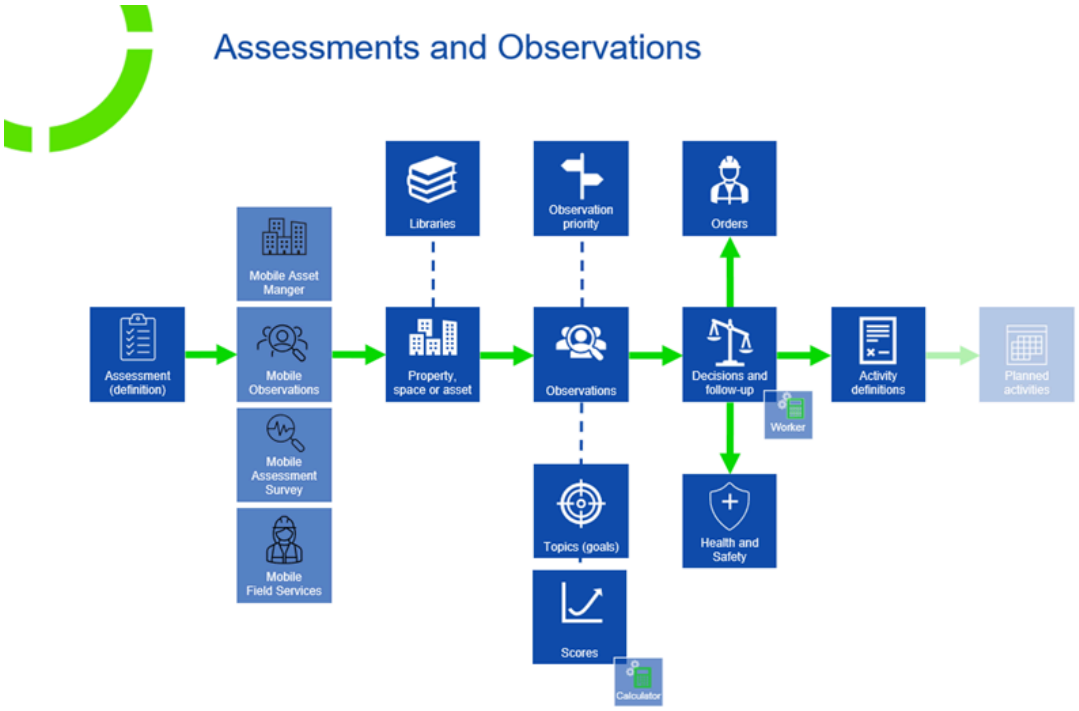


In Planon ProCenter , the solution's focus is currently on making informed decisions about the core of the corporate asset portfolio, which includes the following Planon elements: **Properties**, **Spaces** and **Assets** (i.e. assets registered in Planon, such as FM inventory, M&E installations and building elements).

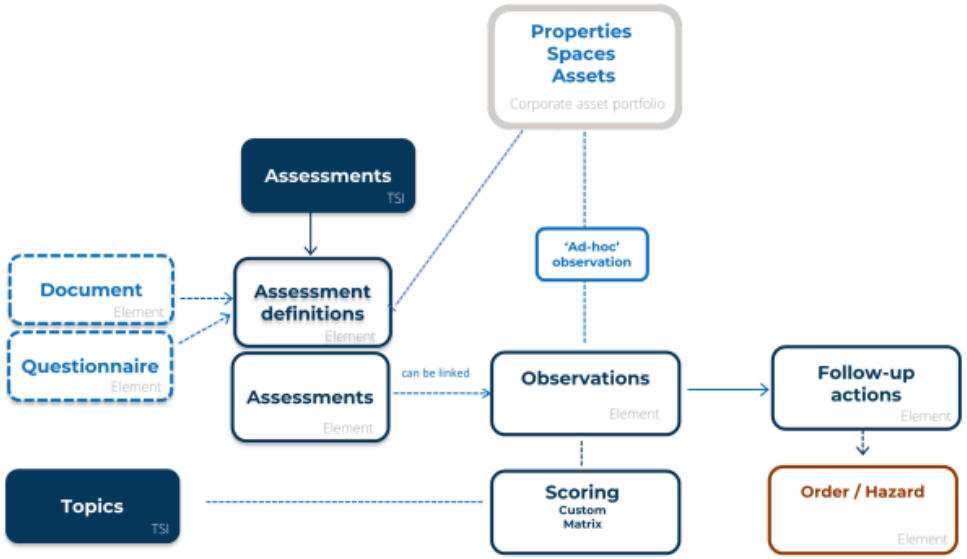
Assessments & observations in Planon

Assessments and Observations is based on the following principles:

- In Planon, asset maintenance is an optional elaboration of strategic objectives into a *tactical approach*. Therefore, you must first determine on which topics your organization wants to steer. This can be done using the **Topics** feature from the **Assessments & observations** TSI. Relevant topics may include: security, compliance with laws and regulations, sustainability, technical quality, etc. Some organizations consider the topics to be the starting point, without elaborating objectives at a higher level.
- You can define an **assessment strategy** for each topic. Think of using questionnaires, asset-driven assessments or document-driven assessments. The strategy can include scoring methods such as risk matrices, manual scoring, or technical scoring. Scoring methods are user-definable. An assessment results in observations with scores per topic (in addition to answers, scores, etc.). Optionally, you can add follow-up actions to the observations, in the form of activities, orders or hazards.
- The combination of observations, scores and follow-up actions will provide insights in the opportunities and risks across topics. This is the starting point for making integral decisions, as input for further plans. The process can be (partly) automated and customized using a decision model. It is possible to configure decision models specifically for your organization. A decision model allows you to directly process urgent observations either into:
- orders (Orders TSI)
- planned activities (Activity planner TSI)
- hazards (Hazard registry TSI)



The relations between Planon elements such as **Assessments**, **Observations**, **Topics**, **Topic scoring** and other elements are visualized in the following image:



Concepts

The following topics describe the concepts that are key to understanding the functionality.

Assessment definitions

Assessments of corporate assets can provide insights into the risks and opportunities for your enterprise and help you make value-based decisions.

If you want to start using assessments in Planon ProCenter , the first step is to define what type of assessment you want to perform, by creating **Assessment definitions**. See Adding an assessment definition.

The following types of assessment definition can be added:

- document driven
- questionnaire driven

For each type of assessment, the results (answers and/or observations) can be stored in the **Assessments and observations** TSI. If you use questionnaires, the assessment itself can be scored and compared to previous assessments.

After you have created assessment definitions you can make them more specific, by linking them to the relevant **Properties**, **Spaces** or **Assets**. You can also add documents to them via communication logs. The next step is to add the actual Assessments to the definition.

- The use of **Assessment definitions** and **Assessments** is optional. Observations and Topic scoring for observations can be part of an assessment, but they can also be used *independently*.
- In the back-office (**Orders** and **Maintenance planner** TSIs), assessment definitions can be linked to either an order or to a maintenance activity definition. This makes it possible to schedule assessments for field engineers / inspectors in the form of orders / maintenance activities. The field staff will be prompted to perform the assessment via their app. In case of a questionnaire driven assessment, the **Assessment definition** reference field can also be used to create the actual assessment in an external mobile application. See: Planning and performing (mobile) assessments via a work order and Planning and performing (mobile) assessments via a maintenance plan.

Assessments

Assessments of corporate assets can provide insights into the risks and opportunities for your enterprise and help you make value-based decisions.

Currently, there are 4 types of assessment you can add to an assessment definition; 1 generic type and 3 specific types:

- General assessment
- Property assessment
- Space assessment
- Asset assessment

All types can either be 'document driven' or 'questionnaire driven'. This depends on your assessment definition.

Assessments can have two configurable statuses: **New** and **Completed**. The status determines when you can save results and complete the assessment. **Mandatory** questions in the questionnaire are checked against the assessment status when saving the assessment. As long as the status is **New**, the answers can be saved intermediately. You cannot set the assessment to **Completed** if there still are unanswered **Mandatory** or **Mandatory on condition** questions.

In the **Assessments and observations** TSI, you can add assessments to an assessment definition at the **Assessments** selection step. Additionally, an **Assessments** step can be configured for specific assessment types in related TSIs, such as the **Assets Pro** TSI (at the **Maintenance** level). Similarly, you can add this step in the **Property details** TSI, at **Property details** for property assessments. The **Assessments** selection steps in related TSIs show the assessment results registered for an asset or property. For further assessment details you can navigate to the **Assessments and observations** TSI.

Decision model (for Observations)

You can use the **Decision model** component available in Planon ProCenter to create additional functionality for observations. This functionality mainly concerns automating certain processes, like the creation of follow-up actions or scoring.

A decision model is a container component for which you can create *decision rules*. A decision rule determines if and what action needs to be taken when specific criteria are met. The decision model consists of one or more rules that are executed in a defined order. For each rule the conditions are evaluated and, if met, the specified action for the rule is executed. See Decision model and Business event for more information.

The above links refer to the Planon **Event connector** documentation. However, the event connector itself is not required for observations. You only need the associated **Decision model** and **Business events** to extend the observations' functionality.

In the Assessments and observations TSI you might for example want to:

- automatically create a follow-up action with an order when a high risk score is added for the topic *Security*.
- automatically create a follow-up action with a hazard, if a high risk score is added for the topic *Safety*.
- automatically create a score for a topic when a specific observation is added.
- automatically create a follow-up action if an answer is added via a questionnaire.
- automatically create an observation from an IoT business event (sensors and similar technology). If so configured, this observation may in turn automatically create orders or hazards.

  Also see: Configuring a decision model - automating topic scoring / follow-up actions, Configuring business events for topic scoring and Configuring business events for answer lines.

Follow-up actions

When you have made an observation, 'ad hoc' or as part of an assessment, you might also want to register one or more actions, to actually follow up on your findings.

The following types of follow-up actions can be added in the **Assessments and observations** TSI:

- **General follow-up actions**,
- **Hazard follow-up actions**,
- **Order follow-up actions**,
- **Activity follow-up actions**.

General follow-up actions can exist in their own right. However, they can also be converted to a specific type: either into **Hazard follow-up actions** , **Order follow-up actions** or **Activity follow-up actions**. To change the type of the general follow-up action, you can use the **Change to 'order'**, **Change to activity definition** and **Change to 'hazard'** actions on the action panel. Please note that these conversions are irreversible!

If you intend to use the new Activity planner solution, you will also be able to create follow-up actions for the new type of activity definition. Please note that follow-up actions cannot be created for (any subtype of) maintenance activity definitions that are available in the *current* **Planned maintenance** solution.

Follow-up actions (can) have the following characteristics:

- a *workflow* based on status transitions (does not apply to general follow-up actions). This workflow co-depends on the workflow of the related order / hazard / activity;

- an **Evaluation required?** setting, to specify if an evaluation by a third party is required (only applies to order-based, activity-based or hazard-based follow-up actions)
- a link with one or more observations.
- a **Due date**.

> Good to know: when you create a new order or an activity definition for the follow-up action, this date is taken over to the **Requested completion date-time** of the related order and the start date of the activity definition.

- a **Priority**.

> Good to know: when you create an order for the follow-up action, the order's priority is determined. In the event that the order's priority cannot be determined from the linked **Standard order**, the applicable **SLA** or the related **Asset**, the order's priority will be determined by the **Priority** of the related **Observation**. See Observation priority for more information.

- **Expected costs**.

> Good to know: when you create a new order or activity definition for the follow-up action, the expected costs from the follow-up action (if any) are taken over to the order's **Estimated costs** or to the Activity costs of the Activity definition.

See also: Adding follow-up actions.

Follow-up action specifications

If you want to add more details to a follow-up action, for example about the required number of people or the number of hours to execute the follow-up action, you can configure additional specifications.

You can configure the specifications for follow-up actions by using free fields. See Configuring follow-up action specifications for more information.

Once configured, you can link the specification(s) to a relevant follow-up action via a reference field. See Adding follow-up action specifications for more information.

Observations

An observation is the objective registration of *risks* and *opportunities* arising for an enterprise.

In Planon, observations can relate to things of corporate value such as:

- properties (buildings or wings / annexes),
- spaces (offices, meeting rooms, technical spaces etc.)

- assets (such as office furniture and other inventory items, mechanical and electrical installations and building elements like tiles or frames).

Observations can be part of an assessment, but can also be added independently, without using assessments. See the diagram in Assessments & observations in Planon.

In the **Assessments and observations** TSI, on the Results > Observations selection level, you can register your observations.

One selection level lower, you can add a score (at **Topic** level) to the observation, add a relevant follow-up action, and link photos and documents.

When you add an observation you can select one of the following types:

- **General observation**: generic type
- **Asset observation**: subtype focused on assets
- **Space observation**: subtype focused on spaces
- **Property observation**: subtype focused on properties

- In addition to the **Assessments and observations** TSI, you can also add observations in related Planon TSIs. For example: in the **Assets Pro** TSI, at Maintenance > Observations, or in the **Properties and Property details** TSI, at Property details > Observations. The **Observations** steps in related TSIs behave 'smartly'. They display all observations that are directly related to the selected record, for example a property, but they also display the observations on items that are indirectly related to the selected record, for example the spaces and assets in the selected property.
- If configured in Planon's Decision Model, **Asset observations** can also be added by IoT business events (like sensor data for example). The Decision Model will process the events and create asset observations. For more information *Processing messages*, *Qualified diagnostics*, *Summarized diagnostics* and *Mapping between Planon Business Event and the Planon AssetObservations BO*, see Planon Connect for SE Ecostruxure Building Advisor documentation in the Planon Marketplace.
- If a space that is related to one or more observations is **Ended**, these observations will also be ended, by giving them an end date. If the space is subsequently **Resumed**, the observations' end dates will be cleared, making them valid to use again.
- If an asset that is related to one or more observations is **Disposed**, these observations will be ended. When the asset is put back to **In use**, the observations' end dates are cleared, making them valid to use again. See, Observation fields.

Observation groups

It is possible to group observations and standard observations to make them easier to find.

An observation can be scored across various topics, so it is likely not restricted to a single topic. This can make finding an observation a bit complicated.

To make observations easier to find in Planon ProCenter , you can create **Observation groups** that allow you to group observations by rather general criteria. Observation groups are hierarchical elements with a maximum of 3 levels. Users of the Assessments and observations TSI can use the observation groups to drill down to a relevant set of observations.

Observation priority

You can use the separate **Observation priorities** TSI to define *default priorities* for observations, standard observations or survey observations. The priority determines when the observed issue should be resolved. The **Priority** value on the (standard / survey) observation is subsequently taken over to the order that is created by the observation's follow-up action.

In general, **Priority** values that are populated on an order can come from various sources in Planon. With regard to follow-up actions and their related orders: the order's priority will initially be sought in either the **Standard order**, the **SLA** or the **Asset** that is related to the observation. If no priority is filled in on either of these three, the value from the observation's **Priority** field is filled in on the order.

- For more information about configuring **Priorities** see **Supporting data** > Priorities.
- For information on configuring **Observation priorities** see Adding observation priorities and Observation priority fields.
- For more information about working with **Observations**, see **Assessments and observations** > Observations and Follow-up actions.

It is possible to automate the 'calculation' of observation priorities. You can use the Planon system calculator **Priority calculator**. This system calculator can be registered in Field definer . See Settings for the observations business object for more information. You can also create your own custom calculator, using Platform apps > App builder TSI. See Apps Development for general information on building apps on the Planon platform.

Standard observations

When you add a new observation, it is possible to apply a 'template observation' that pre-populates several data. This template is called a **Standard observation**.

Standard observations can be defined in **Assessments and observations** > Filters > Standard observations.

If relevant to your requirements, you can configure the following additional 'links' for standard observations:

- link a **Standard topic score** method, via the **Standard observation** reference field on the **Standard topic score** selection level.
- link a **Priority** to the standard observation, via a link on the **Standard observation** action panel. This priority can eventually be taken over to the order that is created for the observation.

See Standard topic scoring and Observation priority for more information.

Topics

Topics allow you to categorize and search the Observations (*risks* and *opportunities*) that are registered by various stakeholders for assets, spaces and properties.

Examples of topics concerning risks / opportunities:

- **Operational** - how can downtimes be reduced?
- **Maintenance** - how can maintenance costs be reduced?
- **Safety** - what are the risks / opportunities for safety in the workplace?
- **Energy management** - how can energy costs be reduced?
- **Fire safety** - what / where are the fire risks in a property?
- **Sustainability** - how can the workplace be made more sustainable?
- etc.

In both the **Assessments** TSI or in the **Topics** TSI you can define the topics that are relevant in your organization.

You can define a scoring method for each topic which will help you identify where the risks and opportunities are and to prioritize any Follow-up actions that may be required. See Topic scoring for observations.

Once a topic is defined and a scoring method is selected, it is ready for use in the **Assessments and observations** TSI.

Topic levels

A **Topic level** enables you to classify topics and topic scores by their level of importance, or their impact.

You can define different topic levels as required. By giving the topic level a sequence number, you make sure that it reflects the linked topic scoring, for example: *Low*, *Medium*, *High*, *Extreme*, *Catastrophic* etc.

Topic range

In the **Topics** TSI, you can define *scoring ranges* for each topic. Per topic level, you can define a **Topic range**. The topic range defines scoring ranges with minimum and maximum values for either risks or opportunities.

Good to know:

- If topic ranges are defined for a topic, it is not possible to add topic scores that fall outside these ranges.
- If **Topic ranges** have been defined for a topic and you add a score, the **Topic level** pop-up will only show those topic levels that are relevant for that specific topic.

Examples

Risk levels:

- 0-3 = Low risk
- 4-7 = Medium risk
- 8-10 = High risk

Opportunity levels:

- 0-20 = Small opportunity
- 21-40 = Medium opportunity
- 41-60 = Great opportunity

The topic ranges are applied in the scoring methods *Basic* and *Matrix*.

You can also ***aggregate*** the topic scores that are registered. In that case you also need to define aggregated topic ranges.

Aggregated topic range

It is possible to aggregate topic scores (per topic) for a property, space or asset, to get a realistic view of the scores over time. However, before you can aggregate topic scores, you must define ranges that give meaning to the aggregated scores.

Good to know:

- If aggregated topic ranges are defined for a topic, it is not possible to add aggregated topic scores that fall outside these ranges.

- If aggregated topic ranges have been defined for a topic and you add an aggregated score, the **Topic level** pop-up will only show those topic levels that are relevant for that specific topic.

Example of Aggregated topic range

You want to apply aggregated topic scores to track whether an asset, for example an air conditioning unit, meets the conditions you set for your energy goals. The aggregated topic scores that are registered will reflect potential energy risks for an asset, space or property. Poor insulation or single glazing might score as high risks for the *Energy risks* topic.

(Property = *14, Columbus Square*; Topic = *Energy risks*)

- Topic levels: *Low*, *Medium* and *High*
- Minimum and maximum values: *1-5* (low); *6-10* (medium); *11-15* (high)

Aggregated topic ranges can be defined in the **Topics** TSI at Topic scoring > Aggregated topic ranges. See Adding topic ranges and Topic range (aggregated) - fields for information on the configuration of the ranges. The minimum and maximum values you define should depend entirely on the selected calculation method and the topic itself.

Topic scoring for observations

Observations can be scored on multiple topics. A formal scoring method provides observations with an objective value.

When inspectors or engineers make an observation, they can give it additional weight or priority by scoring it on one or more topics. For example one observation with scoring on the topics *Fire safety* or *Operational*. To formalize the scores, the following scoring methods for topics are available:

- **Basic scoring** (based on levels and ranges) - can be set up in the **Topics** TSI.
- **Topic matrix** - a risk matrix, based on severity and likelihood scores. It can be defined in the **Topic matrix** TSI.
- **Technical condition scoring** - scores added to an observation during a condition survey. The scores are added in the **Condition Surveys** TSI and processed into the **Assessments and observations** TSI.

See Defining a basic scoring method and Defining a matrix scoring method for information about adding a scoring method.

If you intend to configure and use *standards* for observations and topic scoring, see Standard observations and Standard topic scoring for more information.

In the elements lists of **Topic scoring** selection steps, there is a toggle button that you can use to show / hide former scoring records:

By default, only the latest topic score of an **Observation** is displayed.

The scoring methods shown above can also be used in the implementation of a custom platform app called **Topic score calculator**, which can auto-calculate the topic scores for observations or answers. With the *ITopicScoreCalculator* calculator API, which can be obtained from Planon, you will be able create a topic calculator app that has access to the relevant business objects and corresponding fields in Planon ProCenter . Next, you add it in the Planon ProCenter **Topics** TSI at Topic scoring > Topic score calculator. Finally, you can link it to a relevant topic at the **Topics** selection step. See Configuring topic score calculator for observations for more information.

It is also possible to aggregate topic scores per topic for a **Property**, **Space** or **Asset**. See Topic scoring for assets, spaces and properties and Manually adding topic scores for assets, spaces and properties for more information.

Standard topic scoring

Standard topic scores are used to define default scores for **Standard observations**. If you create an observation that is based on a standard observation, topic scores are automatically created based on the linked standard topic scores.

There are three types of standard topic scoring:

- Basic scoring
- Technical condition scoring
- Matrix scoring

See Topic scoring for observations for general information on topic scoring and the various methods.

The selection step for **Standard topic scores** can be configured in the **Assessments and observations** TSI, on the **Topics** selection level.

Topic scoring for assets, spaces and properties

To get a realistic view of topic scoring over time, it is possible to award scores (per topic) for a specific property, space or asset. It depends on the topic and the meaning you give to the topic scores, at which point you want to take action for the property, space or asset.

To be able to use topic scoring you must first define relevant topics, topic levels and topic ranges.

Methods

- You can *manually* enter scores per topic, for a property, space, asset. Every time new topic scores are entered for the property, space or asset, you can recalculate and add the new score with a new date-time stamp. See Manually adding topic scores for assets, spaces and properties for more information.

- You can also have the aggregated topic score calculated *automatically*, for example by using the **Topic score calculator** available from Planon. For more information, see Configuring a topic score calculator for assets, spaces and properties.

If you prefer a different calculation method for aggregation than weighted average, you can create your own calculator app via **Planon Platform apps** > **AppBuilder**. See Apps Development for more information.

Example

In this example the calculation of the topic scores is based on a weighted average. The aggregated score can be calculated both manually or by using the Planon system calculator.

Topic = *Energy risks*

Topic ranges for *Energy risks*:

- *Low* (Scores 1-3; Weighting factor = 1),
- *Medium* (Scores 4-6; Weighting factor = 2)
- *High* (Scores 7-9; Weighting factor = 5)

Asset = *Airco unit 000244*

Number of observations for this asset: *3*

Observation 1 ->	**Observation 2 ->**	**Observation 3 ….> etc.**
Asset = Airco unit 000244	Asset = Airco unit 000244	Asset = Airco unit 000244
Topic = Energy risks	Topic = Energy risks	Topic = Energy risks
Score = 8 (high)	Score = 3 (low)	Score = 6 (medium)
Weighting = 5	Weighting = 1	Weighting = 2
8 x 5 = 40 points	3 x 1 = 3 points	6 x 2 = 12 points

After 3 observations, this is the aggregated calculation score:

Weighted score = 40 + 3 + 12 = 55 points

Weighting factors: 5 +1 + 2 = 8

Weighted average = (8x5) + (3x1) + (6x2) = 55 / (5+1+2=8) => 6.875

Aggregated score for topic *Energy risks* and asset *Airco unit 000244* = 7 (score is rounded to an integer value). Each time a new score is added the aggregated score is updated by the calculator.

- The most recent aggregated score can be displayed on the property's / space's / asset's layout, in the **Topic score** details field.
- You can also find a full list of aggregated topic scores on the **Topic scores** selection steps that are available in the following TSIs: Assessments and observations , Assets , Assets Pro , Properties and Property details . By default, only the latest topic score of an observation or latest aggregated topic score of a Property / Space / Asset is displayed. A step action above the list allows you to switch between displaying all aggregated topic scores or just the latest  .

Working with...

This section describes the various functions available.

Defining topics and topic levels

Start with defining various topics and topic levels, as required. See Topics and Topic levels for more information about these concepts.

Precondition: If you want to apply matrix scoring method to a topic, define the relevant matrix first. See Defining a matrix scoring method.

Procedure

1. Go to the Topics TSI > Topics selection level.
2. On the action panel, click Add.
3. On the data panel, fill in the Code and Description fields.
4. If multilingualism applies to this record, enter the translations in the Translated name field, in the applicable language(s).
5. In the Scoring method field, select a relevant scoring method from the dialog: *Basic* or *Matrix*.
6. If you selected matrix scoring, select the appropriate matrix in the Matrix field.
7. Click Save.

   The topic is added. Proceed with adding Topic levels.
8. Select the Scoring > Levels selection step.
9. On the action panel, click Add.
10. On the data panel, fill in the Code and Description fields.
11. If multilingualism applies to this record, enter the translations in the Translated name field, in the applicable language(s).
12. In the Sequence field, enter a number, indicating the position the topic level should have in the set of levels you are defining.
13. Click Save.
14. Optional: configure a topic score calculator for a topic, to have the final topic score calculated automatically by a platform app, based on your own calculation requirements. See Topic scoring for observations.
15. Optional: configure an aggregated score calculator for a topic, to automate the calculation of aggregated topic scores. See Configuring

a topic score calculator for assets, spaces and properties for more information.

Topics and topic levels can be used to find relevant assessment(s) more quickly when you drill down via the Filters or Topics selection levels in the Assessments TSI.

If you want to apply a basic scoring method to the topics you added, proceed with defining the topic ranges. See Defining a basic scoring method.

Defining scoring methods

If you add a topic, you must select a scoring method. Therefore, you must define relevant scoring methods for each topic first.

There are three scoring methods available:

- Basic
- Matrix
- Technical condition

The following sections describe how to configure these scoring methods.

Defining a basic scoring method

If you add a topic, you must select a scoring method. Therefore, you must define relevant scoring methods for each topic first.

This task is about defining a basic scoring method.

See also: Topic scoring for observations.

Procedure

1. Go to the Topics TSI.
2. Select the topic and set the **Scoring method** field to **Basic scoring**.
3. Go to Topic scoring > Topic levels.
4. On the action panel, click Add.
5. On the data panel, fill in a Code, Description and Sequence for the first level.

Example: code = L, description = Low, sequence = 1.

6. Add more levels as required.

Examples: *M, Medium, 2* and *H, High, 3*.

7. Click Save.

The topic levels are defined. You can proceed with adding topic scoring ranges.

8. Go to Scoring > Range.
9. On the action panel, click Add.
10. On the data panel, fill in a Minimum value, Maximum value, Topic level and Topic for the range.
11. Click Save.
12. Add more ranges as required.

    Topic levels and ranges are defined, linked to a topic and ready for use as a manual, basic scoring method.

Defining a matrix scoring method

If you add a topic, you must select a scoring method. Therefore, you must define relevant scoring methods for each topic first.

This task is about defining a matrix scoring method to assess the risks for an observation.

See also: Topic scoring for observations and Topic range.

You can, of course, reuse a matrix for other topics. In that case, you only have to define the topic ranges for a specific topic, per topic level. The topic levels are only displayed if a topic range has been defined for them.

Procedure

1. Go to the Topics TSI.
2. Go to Topic scoring > Topic matrixes.
3. On the action panel, click Add.
4. On the data panel, fill in a Code and Description for the matrix.
5. Click Save.
6. Go to Details > Severity.
7. On the action panel, click Add.

   The Matrix field is filled with the matrix you added.
8. On the data panel, fill in a Code, Description, Translated names and Score for the severity record.

Example: code = 1, description = Slightly harmful, score = 1.

9. Click Save.
10. Add more severity records as required.

Example:

code = 2, description = Harmful, score = 2

code = 3, description = Very harmful, score = 3

11. Go to the Likelihood selection step.
12. On the action panel, click Add.

    The Matrix field is filled with the matrix you added.
13. On the data panel, fill in a Code, Description, Translated names and Score for the likelihood record and add a Comment as required.

Example:

Example: code = 1, description = Highly unlikely, score = 1.

14. Add more likelihood records as required.

Example:

code = 2, description = Unlikely, score = 2

code = 3, description = Likely, score = 3

15. Click Save.

    The matrix is ready to be used for topic scoring on an observation.
16. Go to **Topics** and select **Scoring method**: **Matrix scoring**.

    The Matrix field appears.
17. In the **Matrix** field, select the appropriate matrix.

> You can, of course, reuse this matrix for other topics.

Example of the risk calculation of a topic level, based on a matrix:

Formula:*severity score * likelihood score = score*

This score is searched in the topic range to determine the topic level:

Severity = Very harmful (score 3)

Likelihood = Likely (score 3)

Score = 3 * 3 = 9.

9 in the range => High risk.

Defining a technical condition scoring method

If you add a topic, you must select a scoring method. Therefore, you must define relevant scoring methods for each topic first.

This task is about defining a scoring method to support the technical condition of the asset using the survey standards for extent, intensity and severity (NEN2767).

Procedure

1. Go to the Topics TSI.

2. Select the topic and set the **Scoring method** field to **Technical condition scoring.**

You can configure the extent, intensity and severity in the Survey standard (Supporting data).

Adding an observation

Before you start: make sure that relevant **Topics** are configured. If you want to apply scoring to your topics, also make sure that a scoring method has been configured in the **Topics** TSI (basic or matrix).

If applicable, configure **Standard observations** and **Observation groups**.

You can add observations to an assessment, but it is also possible to register single observations on a property, space or asset, without a linked assessment. These single observations can later be used as input to set up a library of **Standard observations** and to set up **Observation groups**.

Ad-hoc observations can be added in the **Assessments** TSI, and also in other TSIs:

- to a property, in the **Property details** TSI
- to an asset, in the **Assets** TSI

Procedure

1. In Assessments, skip the levels prior to Results to add an ad-hoc observation or - if you want to add the observation to an assessment - select a relevant assessment definition and a relevant assessment first.
2. Go to the Results > Observations selection step.
3. On the action panel click Add [type of observation].

There are various types of observations you can add: General observations, Asset observations, Space observations and Property observations.

4. On the data panel, enter the relevant data. See Observation fields for the field descriptions.
5. Click Save.
6. If applicable, link the follow-up action to one or more observations, by clicking Link follow-up actions on the action panel.

   To add topic scores to the observation, you can either click the Add topic scores action on the action panel and enter the relevant data, or proceed on the Details level > Scoring step. You can also add follow-up actions to the observation on the Details level > Follow-up actions step.

Ending observations

An observation can be ended if it is no longer relevant. This could be because the observed issue was resolved by a follow-up action, or because the related asset, space or property is disposed / ended. There are two types of ended observations:

- Observations whose end date-time is filled in manually or by a custom app.
- Observations whose related property, space or asset is disposed or ended. As a result, the system populates the **End date-time** and **End by** fields of the observation.

  Ended observations are by default hidden from the elements list. You can display them by selecting the **Show ended observations** toggle button.

To make this toggle button available, your Planon administrator can go to **TSIs** and configure the **Show ended observations** toggle button as a *step action* on the relevant **Observations** selection step(s). See: Step actions.

Adding basic scores to an observation / answer line

You can add scoring directly to an observation or answer line. The scoring is based on a topic and a scoring method. If you selected basic scoring as method, proceed as follows:

Procedure

1. In Assessments, go to Results > Observations or to Results > Answer lines.

It is not necessary to pre-filter data by selecting records on the previous selection levels / steps. You can go directly to the relevant selection level and step.

2. Select the observation / answer line to which you want to add a score.
3. Go to Details > Scoring.
4. On the action panel, click Add Basic scoring.
5. If no topic is filled in yet, select a relevant topic in the Topic field.
6. On the data panel enter more relevant data for the basic scoring.

When you select a Topic level for the first time, the system automatically fills in the Score field. The reverse is also true: when you enter the Score first, the Topic level is calculated. Calculation is based on the ranges that are defined on the Topic.

7. Click Save.

You can add multiple scoring records per topic, provided that they have different time stamps. All the scores of a topic can be aggregated, either manually, or automatically via a calculator app. See Manually adding topic scores for assets, spaces and properties and Configuring a topic score calculator for assets, spaces and properties.

The added score is displayed in the Scoring details field on the observation / answer line. It is also displayed at Details > Scoring, in the Score column on the elements list.

Adding matrix scores to an observation / answer line

You can add scoring directly to an observation or answer line. The scoring is based on a topic and a scoring method. If you selected matrix scoring as method, proceed as follows:

Procedure

1. Go to the Assessments TSI.
2. Go to Results > Observations or to Results > Answer lines.

There is no need to pre-filter data by selecting records on the previous selection levels / steps. You can go directly to the relevant selection level and step.

3. Select the observation / answer line to which you want to add scoring.
4. Go to Details > Scoring.
5. On the action panel, click Add matrix scores.
6. If no topic is filled in yet, select a relevant topic in the Topic field.
7. On the data panel enter more relevant data for the matrix scoring.
8. Click Save.

You can add multiple scoring records per topic, provided that they have different time stamps. All the scores of a topic can be aggregated, either manually, or automatically via a calculator app. See Manually adding topic scores for assets, spaces and properties and Configuring a topic score calculator for assets, spaces and properties.

The added score is displayed in the Scoring details field on the observation / answer line. It is also displayed at Details > Scoring, in the Score column on the elements list.

Configuring topic score calculator for observations

Planon provides an option to implement a custom topic score calculator that will automatically calculate a score. The system will create the topic score record and fill in the **Topic score** field on that record for a single observation or answer line (in a questionnaire).

The solution consists of an API that you can use to develop your own specific topic score calculator(s) via **Platform apps** > **App builder** TSI, by implementing the interface *ITopicScoreCalculator* in a custom calculator app. See Apps Development for general information on building apps on the Planon platform.

The **Scoring method** defines which fields will be available for the calculator.

Useful facts:

- It is possible to use free fields for all types of scoring methods, to calculate a score.
- Based on the **Matrix scoring** method, Planon provides a 'system calculator', which can calculate a topic score based on severity and likelihood, but you can also implement a custom matrix-based calculator.
- For the **Technical condition** scoring method, you can chose to implement a calculator that add a score based on the severity, intensity and extent percentage.

For the *configuration* of a custom topic score calculator in Planon ProCenter, follow these steps.

Precondition: relevant topics, topic levels and topic ranges are already configured.

Procedure

1. Go to the Topic scoring > Observation score calculator step.
2. On the action panel, click Add to add a score calculator.
3. On the data panel fill in the relevant fields. Refer to Topic score calculator fields for more information.
4. Click Save.
5. Navigate to the Topics selection level and link the topic calculator to the relevant topic(s) , via the Observation topic score calculator reference field.
6. Click Save.

   Every time a scoring record is added or changed, the calculator will calculate the topic score value and update the Topic score field.

Adding topic ranges

Precondition: Relevant topics and topic levels are already configured in your Planon environment.

Procedure

1. Go to the Topics TSI.
2. Go to Topic scoring and select the Topic ranges selection step.
3. On the action panel, click Add.
4. On the data panel, fill in the relevant fields for the range, such as a Minimum value and Maximum value and references to a Topic and a Topic level. See Topic range (aggregated) - fields.

5. Click Save.
6. Repeat this procedure to create more ranges, until you have added the number of ranges you need.

Example of an Topic range:

- A range refers to a relevant topic, for example: *Energy risks*;
- A range refers to a specific topic level, for example: *Low*, *Medium* or *High*;
- Minimum and maximum values are defined per range: *1-5* (low); *6-10* (medium); *11-15* (high).

Manually adding topic scores for assets, spaces and properties

You can add **topic scores** manually in Planon ProCenter, for assets, spaces and properties, based on your own calculations. Each record is date-time stamped, so you can monitor the scores over time.

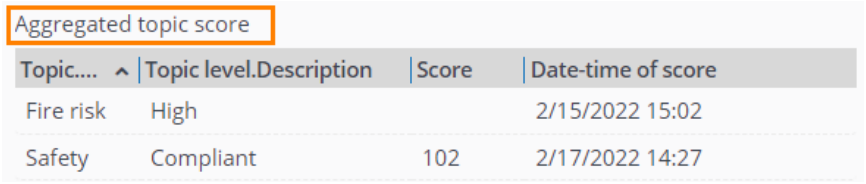
Planon also provides a default system app to automatically add new aggregated topic scores: **Aggregated topic score calculator**. These 'automatically' aggregated scores are created by the system app every time new scores are added for a topic. They are calculated to a rounded, weighted average (decimal values are not supported). See Configuring a topic score calculator for assets, spaces and properties for more information.

Procedure

1. In the Assessments TSI, select the property (Properties level), space or asset (Filters level) for which you want to add aggregated topic scores.
2. Go to Details > Topic scores.
3. On the action panel, click Add Topic scores, either for a property, space or asset.
4. On the data panel, fill in the relevant fields. Refer to Topic score (aggregated) - fields for detailed information.
5. Click Save.

   The value that is entered in the Topic score field can update the Topic level field. This happens when the new score falls under a different range. Vice versa, if you select a Topic level, the system will determine the score value. Calculation is based on the ranges that are defined on the Topic.

The most recent aggregated topic score can also be displayed on the layout of a **Property** / **Space** / **Asset**, if the **Topic score** details field is configured there. This read-only field shows the details of the aggregated topic score, such as the description of the **Topic** and **Topic level**, the actual latest aggregated **Score** and the latest time stamp, **Date-time of score**.



Configuring a topic score calculator for assets, spaces and properties

For your convenience, Planon provides a system calculator to automatically add new aggregated topic scores for properties, assets and spaces: **Aggregated topic score calculator** (system name *AggregatedTopicScoreWeightedAverageCalculator*).

The system app recalculates topic scores every time new topic scores are entered for an asset, space or property and then adds a new time-stamped record. The scores from the system calculator are based on a *weighted average* calculation method and rounded (decimal values are not supported). If you decide to use Planon's system calculator, you can enter the relevant weighting factors to the appropriate topic ranges.

Follow these steps to *configure* an existing calculator for the automatic aggregation of topic scores.

Procedure

1. Make sure you have configured relevant topics, topic levels and aggregated topic ranges.
2. Add the Topic score details field to the layout(s) of the Property / Space / Asset business objects that you are using for **Assessments and observations** .

This read-only field will show the latest information on the aggregated topic scores (gathered manually or automatically), such as the description of the Topic and Topic level, the actual latest aggregated score and the latest time stamp, Date-time of score.

3. If you use the Planon system calculator: go to the Topics TSI and select the relevant topic(s).
4. Navigate to Topic scoring > Topic ranges.
5. Go to the Topic score calculators step.
6. In the elements list, select the default system calculator *AggregatedTopicScoreWeightedAverageCalculator*.
7. Or, on the action panel, click Add to add another calculator provided by Planon or a custom-built one, and select it.

You can choose to build your own calculator(s) via **Platform apps** > **App builder** TSI by implementing the interface *IAggregatedTopicScoreCalculator*. See Apps Development for more information.

8. On the data panel fill in the relevant fields. Refer to Aggregated topic score calculator - fields for more information.
9. Click Save.
10. Navigate to the Topics selection level and link the calculator to the relevant topic(s) , via the Topic score calculator reference field.

    The topic scores will be calculated automatically for the configured topics every time new scores are added for an observation on a property, space or asset. After ending the last observation, the Aggregated topic score calculator will be triggered to calculate a new score. These scores will be displayed in the Assessments and observations TSI at Details > Aggregated topic scores and in the Aggregated topic score details field on the layout(s) of Property / Space / Asset.

Adding follow-up actions

For many observations that are made, it is likely that one or more follow-up actions are required to solve a problem, or to seize an opportunity. You can register these follow-up actions in the **Assessments** TSI.

You can manually add various types of Follow-up actions.

Examples:

- General follow-up action: for example to write a procedure/guideline in a document or on a web page (manual action, not related to a Planon record)
- Order follow-up actions: to create an order to solve a problem immediately;
- Hazard follow-up actions: to register a hazard in the **Hazard registry** to inform field engineers;
- Activity follow-up actions: to add an activity definition to your planning (**Activity planner** TSI).

Follow-up actions can also be *generated* by a business event on an observation. See Configuring business events for observations for more information.

Procedure

1. Go to the **Assessments and observations** TSI.
2. Drill down to Results > Observations and select the observation to which you want to add a follow-up action.
3. Go to Details > Follow-up actions.
4. On the action panel either click Add General follow-up actions, Add Order follow-up actions, **Add Activity follow-up actions** or Add Hazard follow-up actions.
5. On the data panel fill in the relevant fields.

See Follow-up action fields for more information on these fields.

6. Click Save.

   The follow-up action is added with status Reported.

7. On the action panel, click Link observations to link the follow-up action to one or more observations.

   When navigating from Results > Observations to Details > Follow-up actions, the element list will display all follow-up actions that are linked to the selected observation.

8. If you added a specific type of follow-up action, and you want to create an order, an activity definition or a hazard, either click Create order, **Create activity definition** or Register hazard on the action panel.

If you initially created a **General follow-up action**, but want to create an order, activity definition or hazard for it, you can convert it to a specific type: either to a **Order follow-up action**, **Activity follow-up action** or to **Hazard follow-up action**. To change the type of the general follow-up action, you can use the **Change to [...]** actions on the action panel. Please note that these conversions are irreversible! After the conversion, the corresponding **Create [...]** action becomes available on the action panel.

As the linked order, activity or hazard is progressing, the status of the follow-up action will be updated automatically to **In progress**, **Completed** or **Canceled**. When the related order is set to **Technically completed**, or the activity is **Completed**, or if the related hazard is ended, the status of the follow-up action is changed to **Completed**. Any linked observations will be resolved and ended, by setting an end date-time.

Configuring follow-up action specifications

You can enrich your follow-up actions with additional **specifications**. These specifications can be configured to your requirements, using a set of free fields.

For more information about free fields see Field types.

Examples of the type of information you can add in the specifications are:

- Products from the product catalog and their quantity
- Number of people required to complete the action
- Number of hours required to complete the action

Procedure

1. On the navigation panel, go to **ProCenter modules** > **TSIs** and make sure that the **Follow-up details** selection level and the **Specifications-follow-up actions** selection step are added to the **Assessments** TSI

(or to a relevant TSI that is derived from **Assessments**). See TSIs > Configuring selection levels and selection steps for more information.

2. In the Field definer TSI, select the **Specifications-follow-up actions** business object and change the status to **Under construction**.
3. On the **Details** level, set the required free fields to **In use** = **Yes** and click **Save**.
4. Enter a relevant **User-defined system name** for each of the free fields and select and save any other relevant field settings. For example **Field type**, **In selection** and **Translated names**. See Field definer > Setting field attributes for more information.
5. Go back to the **Business objects** level and change the status to **Completed**.
6. Navigate to the **Layouts** TSI and select the **Specifications - follow-up actions** business object.
7. Go to the **Layouts** step and set the **Specifications - follow-up actions** business object under construction.
8. On the **Layout** data panel, click on a random spot between the currently available fields.
9. On the **TSI fields** tab > **Unused fields** section, select the free fields you have just configured and drag them to the required spot on the layout.
10. Click **Save**.
11. Set the layout status to **Completed** by clicking the padlock icon.
12. Log out of Planon ProCenter and log in again.
13. Proceed with Adding follow-up action specifications.

Adding follow-up action specifications

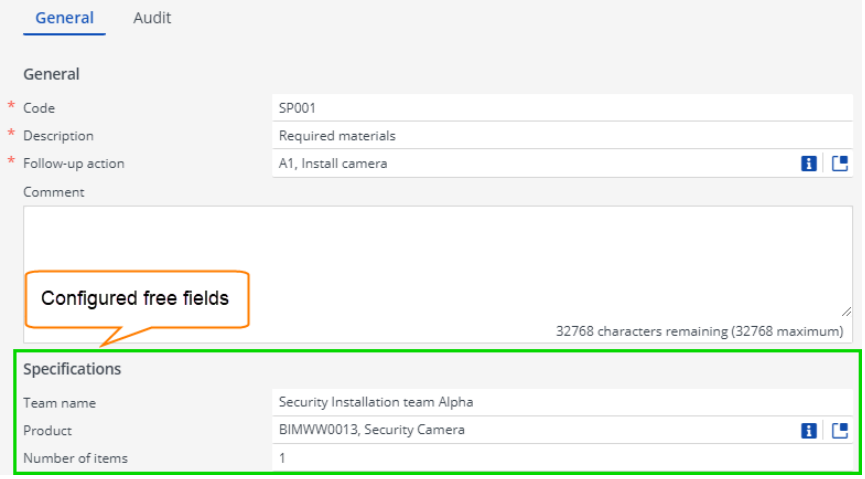
You can add additional specifications to a follow-up action, for example about the required number of people or the number of hours to execute the follow-up action. These additional details are called **Specifications - follow-up actions**. For information on how to configure this, see Configuring follow-up action specifications. Once configured, you can link the specifications to a follow-up action by following this procedure.

Procedure

1. Go to the **Assessments** TSI > **Details** level > **Follow-up actions** step.
2. Select the follow-up action to which you want to add specifications.
3. Go to the **Follow-up details** level > **Specifications - follow-up actions** step.
4. On the action panel click **Add**.

5. Enter a **Code** and a **Description**.
6. In the **Follow-up** action field, select the relevant follow-up action.
7. Fill in the configured free fields as required.

Example of a layout:



8. Click **Save**.

Finalizing follow-up actions

After you have added and implemented the action specifications related to a follow-up action, and completed the follow-up action itself, you *finalize* the follow-up action. The field **Finalized?** is automatically set to **Yes** in Planon ProCenter .

If configured, a business event is sent to the decision model. The **Finalized?** field can be used as an **Attribute** in the decision rules. **For example:** a decision rule on Expected costs > 5000 and Finalized=T.

Procedure

1. Go to the **Assessments** TSI > **Details** level > **Follow-up actions** step.
2. Select the follow-up action you want to finalize.

This action is also available for Action on selection.

3. On the action panel click **Finalize**.

   The field Finalized? is automatically set to Yes and - if configured - a business event is sent to the decision model.

Adding an assessment definition

Define what type of assessment(s) you want to perform and create one or more **Assessment definitions**. See also: Assessment definitions.

Procedure

1. Go to the Assessments TSI and select the Assessments definitions selection level.

> If you 'drill down' from the **Assessments definitions** selection level to **Properties**, **Spaces** or **Assets**, the Planon application applies smart filtering. Each selection step will only show data that is linked to the selected assessment definition(s). However, if a definition has no links to an asset, space or property, the full lists will be shown on these selection steps.

2. On the action panel, click Add.
3. On the data panel, fill in the fields. See Assessment definition fields for the field descriptions.
4. Click Save.

   The definition is added. Proceed with adding Assessments.

Adding an assessment

Make sure that relevant **Topics** and **Assessment definitions** are configured. If you want to apply scoring to your topics, also make sure that a scoring method has been configured in the **Topics** TSI (basic or matrix).

Procedure

1. In Assessments, select the relevant assessment definition.
2. Drill down to the Assessments selection level, if required via selected records on the Properties, Filters and Topics selection levels.
3. On the action panel click Add [type of assessment].

There are various types of assessments you can add: General assessments, Asset assessments, Space assessments and Property assessments.

4. On the data panel, enter the relevant data. See Assessment fields for the field descriptions.
5. Click Save.

   The assessment is added with status New. Users can now proceed with carrying out the actual assessment by:

   - filling in the *assessment results* on applicable forms such as a questionnaire, other types of assessment forms / documents / apps
   - adding *observations* to the assessment on the **Results** selection level
   - adding / processing the *scores* made during the assessment on the **Results** selection level

When the assessment is finished, its status can be changed to **Completed**. If a linked questionnaire contains **Mandatory on condition** questions, these are validated upon completing the assessment. Regular **Mandatory** questions are validated when the assessment is added or updated.

Assessments (all subtypes) can be added in the **Assessments** TSI, but you can also add specific types of assessment in related TSIs or apps:

- property assessments in the **Property details** TSI
- asset assessments in the **Assets** TSI. The corresponding selection steps must be added to the appropriate selection levels in these TSIs: **Property details** and **Asset details**
- assessments of various types in the **Planon app** > **Mobile Observations** module. See Adding an assessment to a Property, Space or Asset.

Fine-tuning the observations registration

As the number of single observations will undoubtedly be very numerous very quickly it is recommended to apply some grouping and standardization. You can use:

- **Observation groups** to streamline the search for observations. They are used to filter out the relevant observations.
- **Standard observations** to streamline the creation of observations and by creating 'template' observations.

Adding observation groups

Observations can be continuously added to Planon:

- as single observations about an asset or a property,
- as feedback on an assessment,
- as a standard observation in an observations library.

The (standard) observations may grow very fast in number, so it is recommended to group them in **Observation groups**. That will help users find them more easily. Observation groups are hierarchical elements with a maximum of *3* levels.

The reference to a topic may also be helpful as search criterion, but observations are not restricted to a single topic. That is where the observation groups will help users find the observation they are looking for. However, there may be some overlap between topics and observation groups.

Procedure

1. Go the Assessments TSI.
2. Select Filters > Observation groups.
3. On the action panel, click Add.
4. On the data panel, enter a Hierarchical code (if it is not auto-generated), a Code, a Description and any relevant Translated names for the new record.
5. Click Save.

   The observation group(s) can now be used as filter criterion when drilling down in the TSI. Proceed with adding sub observation groups as required.

Setting up an observations library - standard observations

You can set up a library of 'templates' for observations, to facilitate and standardize the registration of observations.

Standard observations are added in the **Assessments** TSI.

1. In Assessments, go to Filters > Standard observations.
2. On the action panel, click Add.
3. On the data panel, enter a Code and a Description.
4. Optional: enter a reference to an Observation group, a Comment or a Recommendation.
5. Click Save.

   The standard observation can now be used when adding a new observation, via the Standard observation reference field. It will auto-populate several fields with values from the library.

Adding observation priorities

Preconditions for using observation priorities:

- On the **Priorities** selection step, the field **Observation sequence** must be available on the layout. This field must be filled in for the priorities you want to use for the calculation of observation priorities.
- You can also link a relevant period in the **Period** field.

The first selection level of the **Observation priorities** TSI is **Quality levels**. Quality levels are standards used to categorize the levels of maintenance required for properties, spaces, assets, or rentable units. This level can only be used in the Objective-based maintenance solution, which is not yet released.

Procedure

1. In the **Observation priorities** TSI, go to the **Priorities** selection level / step.
2. On the elements list, select an existing priority you want to use for an observations priority, or add a new one.
3. In the **Observation sequence** field, enter a relevant sequence number.

In a logical configuration, the lowest sequence numbers will denote the highest priorities.

4. Repeat this for all relevant priorities.
5. Go to the **Observation priorities** selection level.
6. On the action panel, click **Add**.
7. Complete the fields on the data panel and click **Save**.

See Observation priority fields for field information.

8. If you intend to use a **Priority calculator** (system or custom calculator) to automate the calculation of observation priorities, go to the action panel and create relevant links via the **Link standard observations**, **Link observation groups** and /or **Link topic ranges** actions.

See Field definer > Settings for the observations business object for more information on registering a Priority calculator for the Observations business object.

The new observation priority will be applied to observations in accordance with the specified criteria.

Planning and performing (mobile) assessments via a maintenance plan

You can choose to perform your assessments as part of a maintenance plan. With the right configuration, the recurring maintenance activities in your maintenance plan will represent instructions to perform mobile assessments.

Maintenance plans are typically created and managed in the **Maintenance planner** TSI. By linking an assessment definition to an *activity definition* in the plan, the back-office can make sure that the ensuing maintenance activities can be used to plan and perform recurring mobile assessments. All subtypes of **Activitity definitions** are supported for this feature. The link between maintenance activities and an assessment definition becomes effective after a maintenance plan has been compiled and PPM orders have been generated.

For more information about **Maintenance planner** and linking the field, see the following links to the *Planned maintenance* webhelp: Maintenance plans, Executing maintenance plans, PPM orders, Generating maintenance orders and Activity definition fields.

When a maintenance activity with a reference to an assessment definition is assigned to a field engineer / inspector (**Internal tradesperson** field) the work can be picked up in Planon AppSuite (PMFS). The engineer / inspector will conduct the mobile assessment using a third-party mobile app, endorsed by Planon.

The connection between the maintenance activities in the Planon app and the assessment in the third-party app is only established if both the maintenance activity definition and the assessment have a reference to the same assessment definition. The **Assessment definition** reference field can be added to the layouts of all subtypes of **activity definition** and to the **Maintenance activity** layout.

When the maintenance activities (assessments) are completed and the PPM order is set to **Technically completed**, the results (answer lines, observations and communication logs) that were obtained with the third-party app can be returned to the back-office for further processing.

Planning and performing (mobile) assessments via a work order

You can choose to plan and assign your assessments via work orders. This is especially useful when conducting mobile assessments.

Planners can create, plan and assign a work order that basically just holds the *instruction to perform an assessment*. The assessment itself is subsequently assigned to an internal tradesperson (field engineer or inspector), who can conduct the assessment using a third-party mobile app, endorsed by Planon. The connection between the work order (in the Planon app) and the assessment in the third-party app is established if both work order and assessment have a reference to the same assessment definition. See also: Order fields.

The connection between work order data in Planon ProCenter and the external mobile app used to conduct the assessment, will require some additional configuration in the mobile application.

When the engineer / inspector completes the job and sets the order to **Technically completed**, the results (answer lines, observations and communication logs) that were obtained with the third-party app can be returned to the back-office for further processing.

Configuring a decision model - automating topic scoring / follow-up actions

In this section it is explained how you can automate topic scoring and the creation of follow-up actions, by configuring a *decision model* and *business events*.

For example:

- Automatically create a topic score for a registered observation
- Automatically create a topic score for an answer given in an assessment's questionnaire
- Automatically create a follow-up action for a registered topic score

- Automatically create a follow-up action for an answer given in an assessment's questionnaire

You need the following TSIs to configure a Decision model for Observations:

- **Field definer** - to create user-defined business objects for **Business events** and to configure the business object settings for **Observations**, **Assessment answer lines** and **Topic scores**.
- **Attributes** TSI - to define attribute sets and attributes.
- **Decision model** TSI - to define the model and the rules.

For Planon **Connect for Building Advisor**, you can also configure a decision model to create asset observations from an IoT business event, for example an event that is generated by a sensor. For more information about this, see the **Connect for Building Advisor** documentation in the Planon Marketplace.

Configuring business events for observations

The following procedure explains how you can create a business event and decision model for observations:

Procedure

1. In **Field definer** , select the **Business events** business object and create a user-defined business object: **Observation event**.

For more information on what to configure, see Configuring user-defined business objects.

2. In the **Attributes** TSI, create an attribute set: **Observation event**.
3. Create the following attributes and link them to the set:

When specifying attribute definitions, make sure to copy the exact names and enter these in the **Code** field - the system will use these as look-up value. Most of the attributes listed below are optional, so you do not need to add them all. If you forget to add a mandatory attribute, or if you made a configuration error, this is indicated in the **Error log** and **Failed** fields of the business event.

For a comprehensive overview of the attributes used in the *Decision model for observations* and the related business events see: Attributes overview.

- Answerline - integer
- AssessmentResultCode - single line
- Comment - multi lines
- ObservationCode - single line
- ObservationGroupCode - single line
- SpaceCode - single line
- StdObservationCode - single line

- ObsPriorityCode - single line

> The Property code and Asset code do not require an attribute as they are available as regular fields.

4. In the **Decision models** TSI, create a decision model: **Observation model**.
5. Define decision rules for this model.

Each rule must have a *condition* and an *action worker*. If the worker requires additional information, you must link the correct attribute set for the worker to the decision rule. See Configuring action workers for a decision rule. If the decision rule also creates a follow-up action, the observation is automatically linked to the follow-up action, so that the observation can be marked as 'resolved' (ended) later.

6. In **Field definer** , configure the relevant business object settings on the **Observations** business object.

   Business object definition => Select user-defined business object **Observation event**.

   Attribute definition set => Select attribute set **Observation event**

   Decision model => Select the **Observation model**

   The business event and decision model for observations are configured. You can also configure other business events, to automate for example:

   - the creation of follow-up actions based on topic scoring;
   - the creation of follow-up actions based on answers given in an assessment.

   See: Configuring business events for topic scoring and Configuring business events for answer lines.

Configuring business events for topic scoring

If you want to automate the creation of a follow-up action based on a topic score, you must configure a decision model and business event for the **Topic scores** business object.

Procedure

1. In **Field definer** , select the Business events business object and create a user-defined business object: Scoring event.

For more information on what to configure, see Configuring user-defined business objects.

2. In the Attributes TSI, create an attribute set: Scoring event.
3. Create the following attributes and link them to the set:

When specifying attribute definitions, make sure to copy the exact names and enter these in the **Code** field - the system will use these as look-up value. Most of the attributes listed below are optional, so you do not need to add them all. If you forget to add a mandatory attribute, or if you made a configuration error, this is indicated in the **Error log** and **Failed** fields of the business event.

For a comprehensive overview of the attributes used in the *Decision model for observations* and the related business events see: Attributes overview.

- Answerline - integer
- AssessmentResultCode - single line
- Comment - multi lines
- ObservationCode - single line
- SpaceCode - single line
- ScoreDateTime - date time

SelectAnswer - single line

- TCEffectCode - single line
- TCExtentCode - single line
- TCExtentPercentage - decimal
- TCSeverityCode - single line
- TopicCode - single line
- TopicLevelCode - single line
- TopicScore - integer
- TopicSeverityCode - single line
- TopicLikelihoodCode - single line

The Property code and Asset code do not require an attribute as they are available as regular fields.

4. In the **Decision models** TSI, create a decision model: **Scoring model**.
5. Define decision rules for this model.

Each rule must have a *condition* and an *action worker*. If the worker requires additional information, you must link the correct attribute set for the worker to the decision rule. See Configuring action workers for a decision rule.

In case no decision rule applies, add an **Ignore** rule, and provide it with a high sequence number, for example *999*. Set the **Triggering status** of the **Ignore** rule to *Reported*, the **Resulting status** to *Rejected* and do not specify a condition or an action worker.

6. In **Field definer** , configure the relevant business object settings on the **Topic scores** business object.

   Business object definition => Select user-defined business object **Scoring event**.

Attribute definition set => Select attribute set **Scoring event**

Decision model => Select the **Scoring model**

The business event for topic scoring is configured.

Configuring business events for answer lines

If you want to automate follow-up actions based on the answers entered in the answer lines of an assessment, you must configure a decision model and business event for the **Assessment answer lines** business object.

Procedure

1. In **Field definer** , select the Business events business object and create a user-defined business object: Answer event.

For more information on what to configure, see Configuring user-defined business objects.

2. In the Attributes TSI, create an attribute set: Answer event.
3. Create the following attributes and link them to the set:

When specifying attribute definitions, make sure to copy the exact names and enter these in the **Code** field - the system will use these as look-up value. Most of the attributes listed below are optional, so you do not need to add them all. If you forget to add a mandatory attribute, or if you made a configuration error, this is indicated in the **Error log** and **Failed** fields of the business event.

For a comprehensive overview of the attributes used in the *Decision model for observations* and the related business events see: Attributes overview.

- Answer - single line text (max. 250)

The answer can contain a single line text (string) or the name of the answer option. If you want to use the answer option in the decision rule, you should use the **Name** field of the answer option. The default value is 50 characters, but it is recommended to increase the value to 250.

- Answerline - integer
- AssessmentResultCode - single line
- Comment - multi lines
- DateAnswer - date
- DateTimeAnswer - date-time
- DecimalAnswer- big decimal
- IntegerAnswer - integer
- MemoAnswer - multi-lines (2000)

A question of type 'multi-lines' supports 500,000 characters. However, the *attribute* multi-lines is limited to 2,000 characters. If the answer to this question contains more than 2,000 characters the answer event will fail.

- MultiSelectAnswer - multi-lines (2000)

This answer contains the names of all selected answer options, comma-separated. If you want to use an answer option in the decision rule, you should use the **Name** field of the answer option as condition value.

- ObservationCode - single line
- QuestionAlias - single line (100)
- QuestionnaireAlias - single line
- QuestionCode - single line
- QuestionnaireCode - single line
- SelectAnswer - single line (250)

This answer contains the name of the selected answer option, with a maximum of 250 characters. If you want to use an answer option in the decision rule, you should use the **Name** field of the answer option as condition value.

- SpaceCode - single line
- TimeAnswer - time

The Property (code) and Asset (code) do not require an attribute as they are available as regular fields.

4. In the **Decision models** TSI, create a decision model: **Answer model**.
5. Define decision rules for this model.

Each rule must have a *condition* and an *action worker*. If the worker requires additional information, you must link the correct attribute set for the worker to the decision rule. See Configuring action workers for a decision rule.

You are advised to use *macros* as filter criteria for date, time and date-time attributes that are related to answer lines. For example: An answer contains a date that is '7 days ago' from the current date (&DATE &D-7) and you want the worker to respond to this value. The answer (a *date*) will be stored in the **DateAnswer** attribute of the business event.

In case no decision rule applies, add an **Ignore** rule, and provide it with a high sequence number, for example *999*. Set the **Triggering status** of the **Ignore** rule to *Reported*, the **Resulting status** to *Rejected* and do not specify a condition or an action worker.

6. In **Field definer** , configure the relevant business object settings on the **Assessment answer lines** business object.

   Business object definition => Select user-defined business object **Answer event**.

   Attribute definition set => Select attribute set **Answer event**

Decision model => Select the **Answer model**

The business event for answer lines is configured.

Configuring business events for follow-up actions

The following procedure explains how you can create a business event and decision model for follow-up actions:

Procedure

1. In **Field definer** , select the **Business events** business object and create a user-defined business object: **Follow-up action event**.

For more information on what to configure, see Configuring user-defined business objects.

2. In the **Attributes** TSI, create an attribute set: **Follow-up action event**.
3. Create the following attributes and link them to the set:

> When specifying attribute definitions, make sure to copy the exact names and enter these in the **Code** field - the system will use these as look-up value. If you forget to add a mandatory attribute, or if you made a configuration error, this is indicated in the **Error log** and **Failed** fields of the business event.
>
> For a comprehensive overview of the attributes used in the *Decision model for follow-up actions* and the related business events see: Attributes overview.

- FollowUpActionCode - single line [mandatory]
- Comment - multi line
- DueDateTime - date-time
- ExpectedCost - decimal
- Finalized - single line [string "T" or "F"]
- ObsPriorityCode - single line
- StdObservationCode - single line
- ObservationGroupCode - single line
- SpaceCode - single line

4. In the **Decision models** TSI, create a decision model: **Follow-up action model**.
5. Define decision rules for this model.

Each rule must have a *condition* and an *action worker*. If the worker requires additional information, you must link the correct attribute set for the worker to the decision rule. See Configuring action workers for a decision rule.

6. In **Field definer** , configure the relevant business object settings on the **Follow-up actions (base)** business object.

Business object definition => Select user-defined business object **Follow-up action event**.

Attribute definition set => Select attribute set **Follow-up action event**

Decision model => Select the **Follow-up action model**

The business event and decision model for follow-up actions are configured. You can also configure other business events, to automate:

- the creation of observations;
- the creation of follow-up actions based on topic scoring;
- the creation of follow-up actions based on answers given in an assessment.

See: Configuring business events for observations, Configuring business events for topic scoring and Configuring business events for answer lines.

Configuring user-defined business objects

For **Business events**, a number of user-defined business objects (UDBOs) must be created and configured:

- Observation event
- Scoring event
- Answer event
- Follow-up action event

The following steps must be completed for all UDBOs you want to use!

1. In **Field definer** , under **Business events**, create a user-defined business object (use the names specified above).
2. Create user-defined statuses.

a. Select the main BO and go to **Details** level.
b. Click **Add user status** on the action panel.
c. Define the following user-defined statuses

- Approved
- Rejected
- Reported

3. Go back to **Business objects** level, select the UDBO and specify the **Default status** (1. Reported).
4. Again, go to Details > Status transitions and specify the transitions:

From	To
-	Reported
*Approved	Reported
*Rejected	Reported
Reported	Rejected
Reported	Approved

The status transitions preceded by an asterisk (*) are optional and are meant to provide an option for fixing or reassessing events.

5. Go to Details > Fields, select the **Code** field and as **Default value**, specify &CODEGEN(########,F,1) - this will ensure that a code will automatically be generated.

Configuring action workers for a decision rule

The system provides action workers that can be used in a decision rule to create a follow-up action or a topic score. Each action worker might require additional attribute sets to process the business event. You must configure an attribute set for each action worker you need and link this attribute set to the decision rule.

If you need a *custom* action worker, it is possible to extend the action workers via **Planon Apps**. In the **App** you can create a new action worker by implementing the interface: *IDecisionRuleAction*. After the **App** is installed and activated you can select the new action worker in the decision rule.

If you want to use the action workers *provided by the system* you must create one or more of the following additional attribute sets, for use in the decision rules:

Action worker: Create basic topic score

System name = CreateBasicTopicScore; implements IDecisionRuleAction

This action worker creates a new basic topic score based on the business event.

Create an attribute set with the following attributes:

- TopicCode - single line
- TopicScore - integer
- TopicLevelCode - single line

Action worker: Create matrix topic score

System name = CreateMatrixTopicScore; implements IDecisionRuleAction

This action worker creates a new matrix topic score based on the business event.

Create an attribute set with the following attributes:

- TopicCode - single line
- TopicSeverityCode - single line
- TopicLikelihoodCode - single line

Action Worker: Create basic follow-up action

System name = CreateBasicFollowupAction; implements IDecisionRuleAction

This action worker creates a new basic follow-up action based on the business event.

Create an attribute set with the following attributes:

- Description - single line

Action Worker: Create hazard follow-up action

System name = CreateHazardFollowupAction; implements IDecisionRuleAction

This action worker will create a new hazard follow-up action based on the business event. The follow-up action will create a hazard for a hazard type.

Create an attribute set with the following attributes:

- Description - single line
- HazardTypeCode - single line
- ObservationCode / AssessmentResultCode - single line [mandatory]

Action Worker: Create order follow-up action

System name = CreateOrderFollowupAction; implements IDecisionRuleAction

This action worker will create a new follow-up action based on the business event. The follow-up action will create an order based on a standard order. The new order's **Comment** field will be populated with information about the observation or, if applicable, the assessment.

Create an attribute set with the following mandatory attributes:

- Description - single line
- StdOrderCode: - single line
- ObservationCode / AssessmentResultCode - single line [mandatory]

Action Worker: Create activity follow-up action

This action worker is exclusively intended for the new type of activity definition from the Activity Planner TSI, which will be released in the second half of 2024. The worker is not intended for maintenance activity definitions from the Maintenance Planner TSI.

System name = CreateActivityFollowupAction; implements IDecisionRuleAction

This action worker will create a new follow-up action based on the business event. The follow-up action will create an activity definition the Activity Planner TSI in based on a standard activity definition. The new activity definition's **Comment** field will be populated with information about the observation or, if applicable, the assessment.

Create an attribute set with the following mandatory attributes:

- Description: Single line text [mandatory]
- StdActivityDefCode: Single line text [mandatory]
- ObservationCode / AssessmentResultCode - single line [mandatory]

Action Worker: Create observation for answer

System name = CreateObservationForAnswer; implements IDecisionRuleAction

This action worker will create a new observation. The type of observation is based on the assessment's result in the answer line and will either be *general*-, *property*-, *space*- or *asset*-based.

Create an attribute set with the following mandatory attributes:

- AnswerLine - single line
- AssessmentResultCode: - single line
- StdObservationCode - single line

Action Worker: Change subtype of generic follow-up action

System name = ChangeSubTypeOfBasicFollowUpAction; implements IDecisionRuleAction

This action worker will convert a generic follow-up action into a specific subtype of follow-up action (Subtypes are: Order, Hazard or Activity).

Create an attribute set with the following mandatory attributes:

- Description - single line [mandatory]
- StdOrderCode - single line; this attribute changes the type of follow-up action from generic into an Order follow-up action, and it will create an order based on the standard order linked to the follow-up action.

  Or

- StdActivityDefCode- single line; this attribute changes the type of follow-up action from generic into an Activity follow-up action and it will create an activity definition, based on the information from the standard activity definition.

  Or

- HazardTypeCode - single line; this attribute changes the type of follow-up action from generic into a Hazard follow-up action and it will create a new hazard based on the hazard type.

It is mandatory to define one of the attributes listed above: **StdOrderCode** or **StdActivityDefCode** or **HazardTypeCode**.

For a comprehensive overview of the attributes used in the *Decision model for observations* and the related business events see: Attributes overview.

Action Worker: Create technical condition score

System name = CreateTechnicalConditionTopicScore

This action worker creates a new technical condition score for a survey observation, based on the business event.

Create an attribute set with the following attributes:

- TopicCode: Single line text [mandatory]
- TCSeverityCode: Single line text [mandatory]
- TCEffectCode: Single line text [mandatory]
- TCExtentCode: Single line text [mandatory]
- TCExtentPercentage: Decimal

Attributes overview

This table shows an overview of all attributes, events and workers that are used in the *Decision model for observations*.

Attributes, events and workers

- The first column gives the name and type of the attribute. The various types include: *Single line*, *Multi-lines*, *Integer*, *Big decimal*, *Date*, *Time*, *Date-time* and *Single select / drop-down*.
- The second column shows the business events for which the attribute is used, such as *Observation event*, *Answer event* and *Scoring event*.
- The third column shows the workers for which the attribute is used, such as *Create basic follow-up action*, *Create hazard follow-up action*, *Create order follow-up action*, *Create basic topic score*, *Create matrix topic score*.

Attribute definition:	Used for business event:	Used for worker:
Answer (Single line; 250)	• Answer event	
AnswerLine (Integer)	• Observation event • Scoring event • Answer event	
AssessmentResultCode (Single line)	• Observation event • Scoring event	

Attribute definition:	Used for business event:	Used for worker:
	• Answer event	
Comment (Multi-lines)	• Observation event • Scoring event • Answer event • Follow-up action event	
DateAnswer (Date)	• Answer event	
DateTimeAnswer (Date-time)	• Answer event	
DecimalAnswer (Big decimal)	• Answer event	
Description (Single line)		• **CBFA** - Create basic follow-up action • **CHFA** - Create hazard follow-up action • **COFA** - Create order follow-up action

Attribute definition:	Used for business event:	Used for worker:
		• **CSBFA** - Change subtype of basic follow-up action
DueDateTime (Date-time)	• Follow-up action event	
ExpectedCost (Decimal)	• Follow-up action event	
Finalized (Single line; string "T" or "F")	• Follow-up action event	
FollowUpActionCode (Single line)	• Follow-up action event	
HazardTypeCode (Single line)		• **CHFA** - Create hazard follow-up action • **CSBFA** - Change subtype of basic follow-up action

Attribute definition:	Used for business event:	Used for worker:
IntegerAnswer (Integer)	• Answer event	
MemoAnswer (Multi-lines; 2000)	• Answer event	
MultiSelectAnswer (Multi-lines; 2000)	• Answer event	
ObservationCode (Single line)	• Observation event • Scoring event • Answer event	
ObservationGroupCode (Single line)	• Observation event • Follow-up action event	
ObsPriorityCode (Single line)	• Follow-up action event	
QuestionAlias (Single line)	• Answer event	
QuestionnaireAlias (Single line)	• Answer event	
QuestionCode (Single line)	• Answer event	
QuestionnaireCode (Single line)	• Answer event	
ScoreDateTime (Date-time)	• Scoring event	
SelectAnswer (Single select / drop-down)	• Answer event	

Attribute definition:	Used for business event:	Used for worker:
SpaceCode (Single line)	• Observation event • Scoring event • Answer event • Follow-up action event	
StdObservationCode (Single line)	• Observation event • Follow-up action event	
StdOrderCode (Single line)		• **COFA** - Create order follow-up action • **CSBFA** - Change subtype of basic follow-up action
TCEffectCode (Single line)	• Scoring event	• **CTTS** - Create technical condition topic score (action worker)

Attribute definition:	Used for business event:	Used for worker:
TCExtentCode (Single line)	• Scoring event	• **CTTS** - Create technical condition topic score (action worker)
TCExtentPercentage (Integer)	• Scoring event	• **CTTS** - Create technical condition topic score (action worker)
TCSeverityCode (Single line)	• Scoring event	• **CTTS** - Create technical condition topic score (action worker)
TimeAnswer (Time)	• Answer event	
TopicCode (Single line)	• Scoring event	• **CBTS** - Create basic topic score (action worker) • **CMTS** - Create matrix topic score

Attribute definition:	Used for business event:	Used for worker:
		(action worker)
TopicLevelCode (Single line)	• Scoring event	• **CBTS** - Create basic topic score (action worker)
TopicLikelihoodCode (Single line)	• Scoring event	• **CMTS** - Create matrix topic score (action worker)
TopicScore (Integer)	• Scoring event	• **CBTS** - Create basic topic score (action worker)
TopicSeverityCode (Single line)	• Scoring event	• **CMTS** - Create matrix topic score (action worker)

Field descriptions

The following section(s) describe(s) the fields, their purpose and meaning.

Assessment definition fields

Fields	Description
Code	Enter a relevant code for the assessment definition.
Description	Enter a relevant description of the assessment definition.
Translated name	If multilingualism applies to this record, enter the translations in the applicable language(s).
Questionnaire	If you want to perform an assessment by using a questionnaire, select the relevant questionnaire here.
Property details	Displays the properties linked to this assessment definition.
Space details	Displays the spaces linked to this assessment definition.
Asset details	Displays the assets linked to this assessment definition.
Comment	Enter a comment on this definition, as required.

Assessment fields

Fields	Description
Assessment definition	Displays the selected assessment definition.
Asset (Asset assessments only)	Select the asset (e.g. the FM asset, M&E asset or building element) to which the assessment applies.
Space (Space assessments only)	Select the room / space to which the assessment applies.

Fields	Description
Property (Property assessments only)	Select the building / property to which the assessment applies.
Code	Enter a relevant code for the assessment.
Description	Enter a relevant description of the assessment.
Assessment date-time	By default, a system macro (&DATETIME) automatically fills this mandatory field with the current date-time, upon adding a new record, but users can select a different date-time for the start of the assessment. This applies to all assessment types.
Person	Select the person responsible for carrying out the assessment.
Questionnaire	If you want to perform an assessment using a questionnaire, select the relevant questionnaire. Regarding mandatory questions: it is possible to save an assessment with an incomplete questionnaire intermediately, as long as it still has the status **New**. You can only set an assessment to **Completed** if all **Mandatory** and **Mandatory on condition** questions are answered.
Comment	Enter a comment on this definition, as required.

Topic range (aggregated) - fields

Fields	Description
Minimum value	Enter a minimum value for the aggregated topic range. The best value to choose here depends on the calculation method used and the topic to which the value applies.
Maximum value	Enter a maximum value for the aggregated topic range. The best value to choose here depends on the calculation method used and the topic to which the value applies.
Topic	Select a topic to which the aggregated range applies.

Fields	Description
Topic level	Select a topic level to which the aggregated range applies.

Topic score (aggregated) - fields

Fields	Description
Topic score subtype	Displays the subtype of the aggregated topic score. The score is either property-related, space-related or asset-related.
Asset	If the subtype is *asset topic score*, select the asset to which the aggregated score applies, for the selected topic (see **Topic** field).
Code	Auto-populated with a code. The field can be edited.
Date-time of score	Enter the date-time for which the aggregated topic score must be registered. The date-time of the score must be unique per topic and per asset, space or property.
Topic	Select the relevant topic for the aggregated topic score.
Property	If the subtype is *property topic score*, select the property to which the aggregated score applies, for the selected topic (see **Topic** field).
Space	If the subtype is *space topic score*, select the space to which the aggregated score applies, for the selected topic (see **Topic** field).
Topic level	Auto-populated with the topic level that matches the score that you entered in the **Score** field. You can also add a topic level manually.
Score	Enter the aggregated topic score that you have calculated. If the score is automatically calculated, this field is populated by the selected calculator. This field can also update the **Topic level** field.
Condition percentage 1-5	5 fields to provide information by percentage about the condition of the asset, space or property. The minimum value is 0 and the maximum value is 100.

Fields	Description
Remaining life 1-5	5 fields to provide information about the remaining life of the asset, space or property. The minimum value is 0.

Aggregated topic score calculator - fields

Fields available for aggregated topic score calculator (for assets, spaces and properties). Planon provides one system calculator that aggregates topic scores based on a *weighted average* calculation method. You can also implement a custom-built calculator that is created via Planon as a Platform > AppBuilder.

Fields	Description
App module name	The name of the module that is used to select and find the class in a decision rule.
App name	The name of the app that is used to select and find the class in a decision rule.
Class name	Select the class that implements the calculator. The system calculator provided by Planon has the following class name: ***AggregatedTopicScoreWeightedAverageCalculator***.
Class name settings	The settings that apply to the decision rule (JSON format). The user has to define the values of the various settings in this field. When the app is upgraded (introducing new or changing settings), this field is not automatically changed. When this happens, you must manually update this field.
Code	Enter a code for the calculator.
Description	Enter a description for the calculator.
Partner identifier	The partner ID that is used to select and find the class in a decision rule.
Settings example	A calculated field with an example of the settings, in JSON format. This is intended to help define the correct settings in the Settings field. When the app is upgraded (introducing new or changing settings), this field is updated according to the new settings.
Settings schema	A calculated field with the type/format and constraints that apply to the settings, in JSON

Fields	Description
	format. When the app is upgraded (introducing new or changing settings), this field is updated according to the new settings.

Follow-up action fields

Fields	Description
Follow-up action subtype	Displays the type of the selected follow-up action: General follow-up action, Order follow-up action, hazard follow-up action or Activity follow-up action (**Activity planner** TSI).
Code	Enter / edit the code for the follow-up action.
Description	Enter a relevant description of the follow-up action.
Observation	If you linked this follow-up action when you added an observation, the reference to this observation is displayed here. If this field is not filled in, it is mandatory to select a value in the **Assessment** field.
Assessment	If applicable, select the assessment for which the follow-up action is created. Leave this field empty in case you make an ad-hoc observation, unrelated to an assessment. If this field is not filled in, it is mandatory to select a value in the **Observation** field.
Linked observations	If you have linked observations to a follow-up action via the corresponding action on the **Link** action panel, this field displays all linked observation(s). You can use the linked observations to monitor which observations are going to be resolved by the selected follow-up action.
Activity definition	This field is populated if you click **Create activity definition** on the action panel. It links the follow-up action to the activity definition in the **Activity planner** TSI.

Good to know: when creating an **Activity definition** from a follow-up action, the start date of the activity definition is set to today's date, while the **Planned activity**'s start date is set to the **Due date** of the follow-up action. This allows you to

Fields	Description
	move the planned activity forward on the planboard without needing to adjust the start date of the related **Activity definition**, **Planning details** and **Activity costs**.
Order	This field is populated if you click **Create order** on the action panel. It links the follow-up action to the order. You can only create an order when this field is still blank.
Hazard	This field is populated if you click **Register hazard** on the action panel. It links the follow-up action to the hazard. You can only register a hazard when this field is still blank.
Due date-time	From the date picker, select the date when the follow-up action is due.
	Good to know: when you create a new order or an activity definition for the follow-up action, this date is taken over to the **Requested completion date-time** of the related order and the start date of the activity definition.
Evaluation required?	Indicate if the follow-up action must be evaluated or not.
Expected costs	Enter any expected costs for this action, if applicable.
	Good to know: when you create a new order or activity definition for the follow-up action, the expected costs from the follow-up action (if any) are taken over to the order's **Estimated costs** or to the Activity costs of the Activity definition.
Finalized?	Indicates if the follow-up action is finalized or not.
System status	Displays the current system status of the selected follow-up action. The initial **Reported** status of the follow-up action is updated automatically to **In progress**, **Completed** or **Canceled** as the linked order, activity or hazard is progressing.
Approved by	This field is populated with the name of the logged in user when the action's status is set to approved.

Fields	Description
Approved on	This field is populated with the date-time when the action's status is set to approved. The field is editable.
Assigned to	Select the person to assign the action to.
Started on	This field is auto-populated with the current date-time when the action is set to **In progress**. This happens when the related order's status is set to **In progress**. The field is editable.
Completed on	This field is auto-populated with the current date-time when the action is set to **Completed**. This happens when the related order's status is set to **Technically completed**. The field is editable.

Observation fields

Fields	Description
Asset	If the observation is made about an asset, this field displays the asset.
Assessment	Select the assessment to which the observation relates.
Assessment answer line	If the observation is related to a specific question in a questionnaire, select the answer line here.
Code	Displays the generated code of the observation.
Comment	Enter a comment on the observation as required.
Description	Enter a relevant description of the observation.
End date-time	Specify the date when the observation ends, because it has been acted upon.
Ended by	This field shows which related business object ended the observation. This can be a **Disposed** asset or an **Ended** space, for example. If the business object is resumed / put back in use, this field will be cleared.

Fields	Description
Follow-up actions	Displays all follow-up actions that are linked to the observation.
Maintenance activity	Select the maintenance activity to which the observation relates. While working on the maintenance activity, you can report observations, and they will be linked to the maintenance activity accordingly. See Order fields.
Observation group	Select a relevant observation group as required.
Order	Select the order to which the observation relates. While working on an order, you can report observations, and they will be linked to the order accordingly. See Order fields.
Priority	If you want to enable taking over a priority from an observation to the follow-up action's order, select a relevant priority here. For follow-up actions, the order's priority is initially searched in the either the **Standard order**, the **SLA** or the **Asset** that is related to the observation. If no priority is found there, the value from this field is used.
Property	If the observation is made about a property, this field displays the property.
Recommendation	Enter recommendations that relate to your observation.
Scoring	If scoring applies to the observation, the scores are displayed here.
Space	If the observation is made about a space, this field displays the space.
Standard observation	If applicable, select a standard observation from the dialog. Data will be auto-populated in some fields.
Start date-time	Specify the date when the observation was first made.

Observation priority fields

Fields	Description
Code	Enter a code for the observation priority.
Priority	Select a relevant priority from the list. See **Supporting data** > Priorities for information on configuring priorities.
Quality level (this field is only applicable in **Objective-based maintenance**; this solution is not released)	Select a relevant quality level from the list. This will also be used to determine the observation priority.
Linked standard observations Linked observation groups Linked topic ranges	The values in these fields are only relevant if you use the **Priority calculator** to automate the calculation of priorities for orders ensuing from observations. The fields show the standard observations, observation groups and / or topic ranges linked to the observation priority via the respective **Link** actions on the action panel. The displayed values are used as priority criteria by the Planon system app **Priority calculator**. This calculator can be registered in Field definer > Settings for the observations business object. When activated, it will automatically calculate observation priorities based on the value in the **Priority** field and the values from these links.

Topic fields

Fields	Users selection step
Code	Enter a code for the topic.
Description	Enter a description of the topic.
Translated name	Enter translations in the relevant languages for the topic.
Comment	Enter a comment on the topic as required.

Fields	Users selection step
Scoring method	Select a scoring method for this topic. The scoring methods must be configured in advance. Choose from the following methods: • Basic scoring • Matrix scoring • Technical condition scoring For more information see Topic scoring for observations.
Topic score calculator	If applicable, select the custom topic score calculator that you want to use for the *automatic* calculation of topic scores for this topic. See Configuring topic score calculator for observations for more information.
Aggregated topic score calculator	If applicable, select the calculator that you want to use for the *automatic* calculation of aggregated topic scores for this topic. Planon offers a system calculator, called **Aggregated topic score calculator** (system name: *IAggregatedTopicScoreCalculator*). This calculator applies a weighted average calculation method. The weighting factor to be used must be entered at **Topic ranges**. See Topic range - fields. You can also fill in a reference to another, custom-built calculator.
Matrix	If the scoring method is **Matrix scoring**, select the relevant matrix.
Questionnaire	If the scoring method is **Questionnaire scoring**, select the relevant questionnaire.
Sequence	Enter the value that must be applied when sorting the topics. 1 is the highest level, 2 is the level below that, and so on.

Topic range - fields

Fields	Description
Minimum value	Enter a minimum value for the topic range.
Maximum value	Enter a maximum value for the topic range.

Fields	Description
Topic	Select a topic to which the topic range applies.
Topic level	Select a topic level to which the topic range applies.
Weighting factor	Enter the weighting factor that should be used by the **Aggregated topic score calculator** (Planon system app) to calculate the weighted average for aggregated topic scores that fall within this range. If the weighting factor is not filled in or is 0, the observation that falls within the corresponding topic range is not included in the calculation of the **Aggregated topic score**. For an observation to be part of the **Aggregated topic score** it must have a minimum value of 1. A weighting factor can increase or decrease aggregated topic scores proportionally, to give a more realistic meaning to the scores of a topic or an observation. For example: Range *1-3* Low risk => Weighting factor is 1. Low risk scoring within range *1-3* remains unchanged. Range *4-7* Medium risk => Weighting factor is 2. Medium risk scoring within range *4-7* is multiplied 2 times. Range *8-10* High risk => Weighting factor is 5. High risk scoring within range *8-10* is multiplied 5 times.

Topic score calculator - fields

Fields available for a **Topic score calculator**, which is a custom-built calculator that can be created via Planon as a Platform > AppBuilder.

Fields	Description
App module name	The name of the module that is used to select and find the class in a decision rule.
App name	The name of the app that is used to select and find the class in a decision rule.

Fields	Description
Class name	Select the class that implements the calculator. Planon offers the **MatrixScoreCalculator** class for your convenience.
Class name settings	The settings that apply to the decision rule (JSON format). The user has to define the values of the various settings in this field. When the app is upgraded (introducing new or changing settings), this field is not automatically changed. When this happens, you must manually update this field.
Code	Enter the code of the topic score calculator.
Description	Enter the description of the topic score calculator.
Partner identifier	The partner ID that is used to select and find the class in a decision rule.
Settings example	A calculated field with an example of the settings, in JSON format. This is intended to help define the correct settings in the **Settings** field. When the app is upgraded (introducing new or changing settings), this field is updated according to the new settings.
Settings schema	A calculated field with the type/format and constraints that apply to the settings, in JSON format. When the app is upgraded (introducing new or changing settings), this field is updated according to the new settings.

Index

U

W