SupplyOn
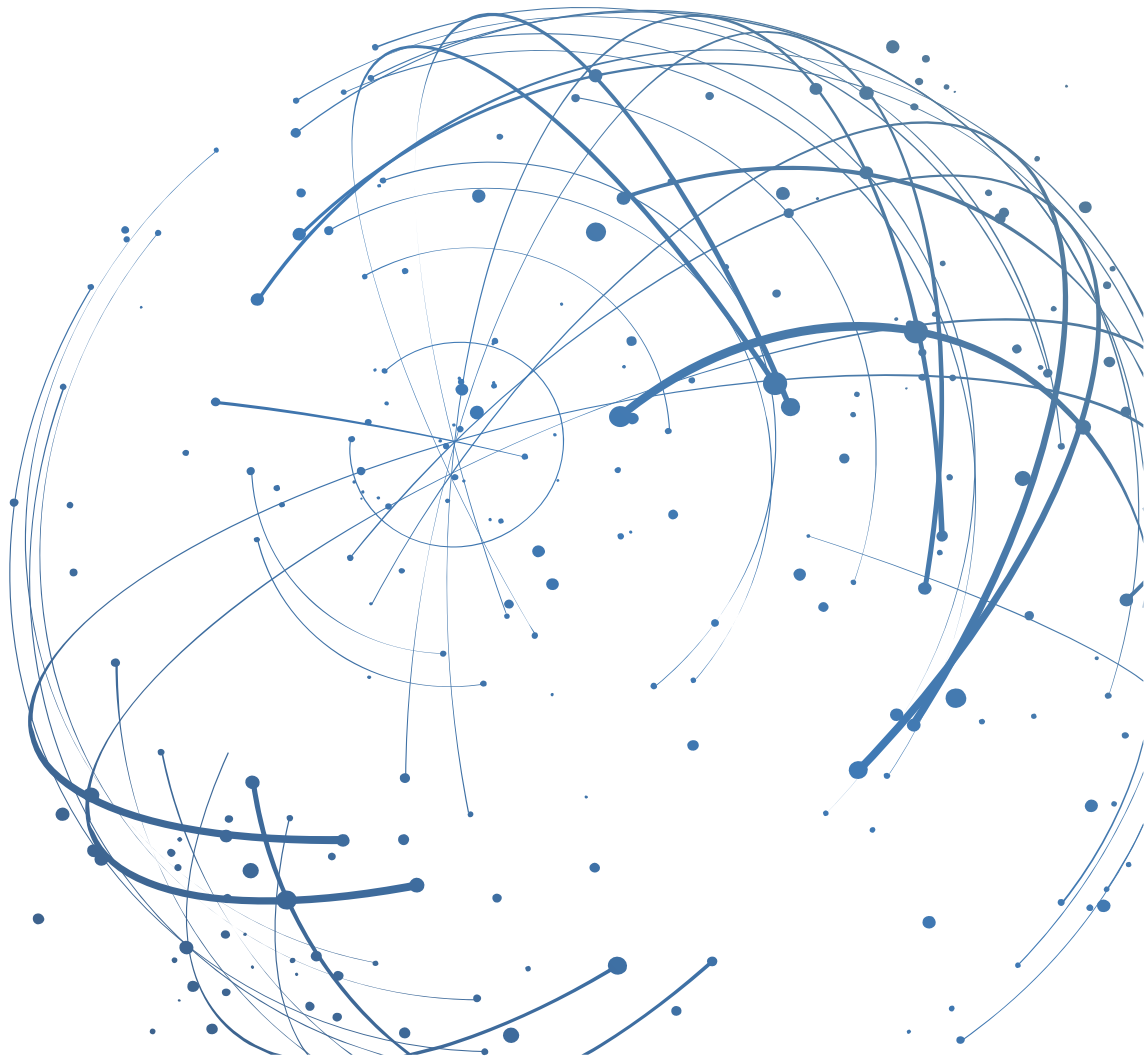
9S - Practical problem solving

04.07.2024 / PI-II-2024

SUPPLYON

Table of contents

1 About this manual

9S - Practical problem solving is a method of performing a root cause analysis to solve a significant or recurring problem.

This manual describes, how a supplier and customer can collaborate on a complaint using the 9S methodology in AirSupply.

1.1 Intended audience

This manual is intended for customers and suppliers who have a working knowledge of AirSupply.

1.2 Typographical and graphical conventions

The following typographical conventions are used throughout the manual:

Example	Meaning
command	Text, which you are required to type at a command line, is identified by Courier font.
Reference	Reference material is in *italics*.
Screen text	Text, which is visible in the user interface, is **bold**.

The graphical convention is used throughout the manual:

Figure: Red borders are used to indicate special areas.

Red borders indicate areas of interest on the screenshot. They are *not* part of the user interface.

2 Overview

A supplier regularly delivers goods to the customer. If a deviation, is detected at customer level, the customer starts a complaint, that is, a non-quality, in his ERP system. In the event of a variance, the customer asks the vendor to correct the cause.

The work on fixing a problem is based in AirSupply on the 9S methodology. It is a method to contain and resolve a problem by performing a root cause analysis.

The goal of root cause analysis and problem resolution is not only to reduce the number of problems, but also to minimize their impact on quality, performance, costs and ultimately on the customer.

Supplier and customer collaborate all along 9S steps within a 9S document to fix a problem:

> 9S step 0 – Start Immediate containment action s
>
> 9S step 1 – Build the team
>
> 9S step 2 – Define problem
>
> 9S step 3 – Complete and optimize containment action
>
> 9S step 4 – Identify root cause(s)
>
> 9S step 5 – Define and select permanent corrective actions
>
> 9S step 6 – Implement permanent corrective actions and check effectiveness
>
> 9S step 7 – Standardize and transfer the knowledge across the business
>
> 9S step 8 – Recognize and close the team

DIN EN 9136 and DIN EN 9131

The data to be entered and the workflow are specified by DIN EN 9136.
In addition, 18 mandatory fields are taken from DIN EN 9131.

2.1 Non-qualities, analysis, and the creation of 9S documents

The 9S workflow is covered in SupplyOn by the following three areas:

- **Non Quality**
- **Analytics**
- **Problem solving (9S)**

The following figure shows how the workflow and the data flow for the 9S process is organized.
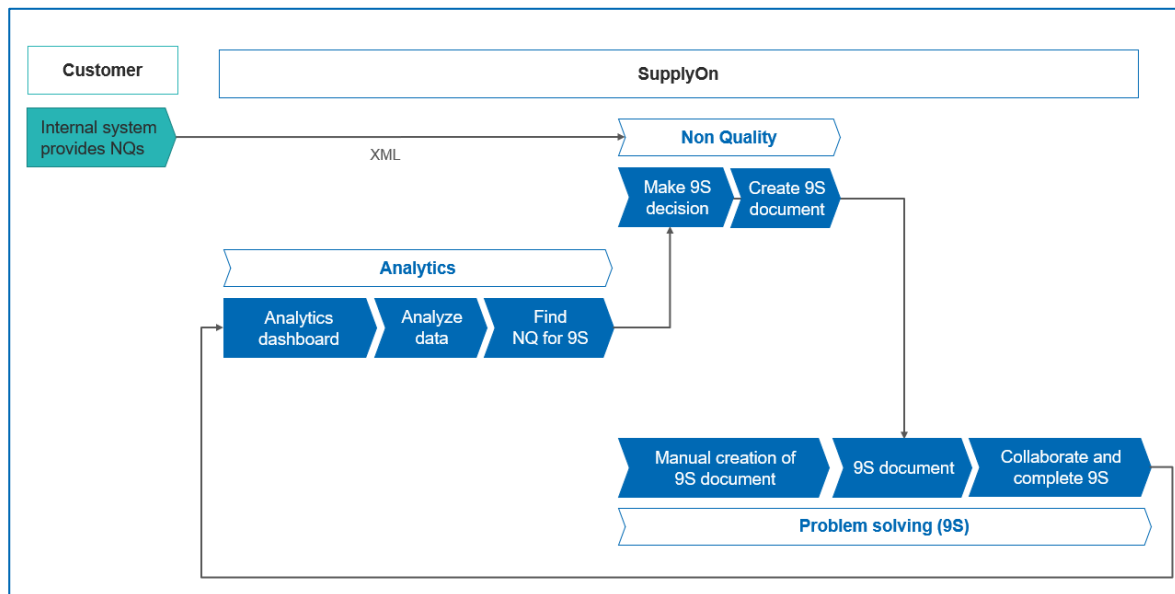
Figure: **Analytics**, **Non Quality**, and **Problem solving (9S).**

The non-quality objects are created in the customer's system and imported every night into SupplyOn.

Analytics

The starting point of the workflow is the **Analytics** dashboard, → see *Analytics* on page *91*.

The non-quality data can be analyzed in the **Analytics** dashboard. As a result of the analysis, it can be determined for which non-quality objects a 9S document is to be created.
In the **NQ Operational Management** tab, the non-quality objects can be accessed via a link, → see *Accessing non-quality details* on page *93*.

A 9S decision, that is, whether a 9S document should be created for a non-quality object can then be made directly here, → see *Linking to 9S decision* on page *95*.

Non Quality

The **Non Quality** page provides an overview of all non-quality objects that have been created by the customer and were imported to SupplyOn, → see *Non Quality* on page *104*.

A 9S decision can be made on the **Non Quality** page → see *9S decision* on page *106*.
9S documents can be created immediately from the non-quality objects, → see *Creating 9S documents and 9S bundles* on page *108*.

Identified non-qualities could be included, that is, referenced, in already created 9S documents, → see *Adding a 9S reference to a 9S document* on page *111*.

Once a 9S document has been created on the basis of a non-quality object, collaboration can start, → see *General data, Quality wall and 9S steps*, on page *48*.

Problem solving (9S)

A 9S document can also be created manually, not based on a non-quality object, → see *Creating a 9S document* on page *34*.
The starting point is here the **Problem solving (9S)** page, → see *Dashboard and 9S documents* on page *14*.

If the 9S document was created manually, the user can still add non-qualities to this 9S document, → see *Adding a 9S reference to a 9S document* on page *111*.

The data resulting from the collaboration on 9S documents, and the import of non-quality objects is updated every night so that the latest 9S data is available in the **Analytics** dashboard every day.

2.2 Lifecycle and statuses

The work on a complaint is done in 9S steps in a 9S document.
The 9S document goes through a life cycle and can have different statuses, that is, the 9S document statuses.
Each individual 9S step within the 9S document also passes through different statuses, that is, the 9S step statuses.

2.2.1 9S document types

There are two document types for 9S documents, depending on the number of 9S steps in which the collaboration is to take place:

- **PPS Light**: The 9S document only needs to be completed to 9S step 6.

- **PPS Full**: The 9S document only needs to be completed to 9S step 8.

The available document types depend on the customer's settings.

The document type is set when the 9S document is created. Under certain conditions it is possible to switch from **PPS Light** to **PPS Full**. The reverse way from **PPS Full** to **PPS Light** is not possible.

2.2.2 9S document statuses

The following figure illustrates the life cycle and the corresponding statuses of a 9S document.
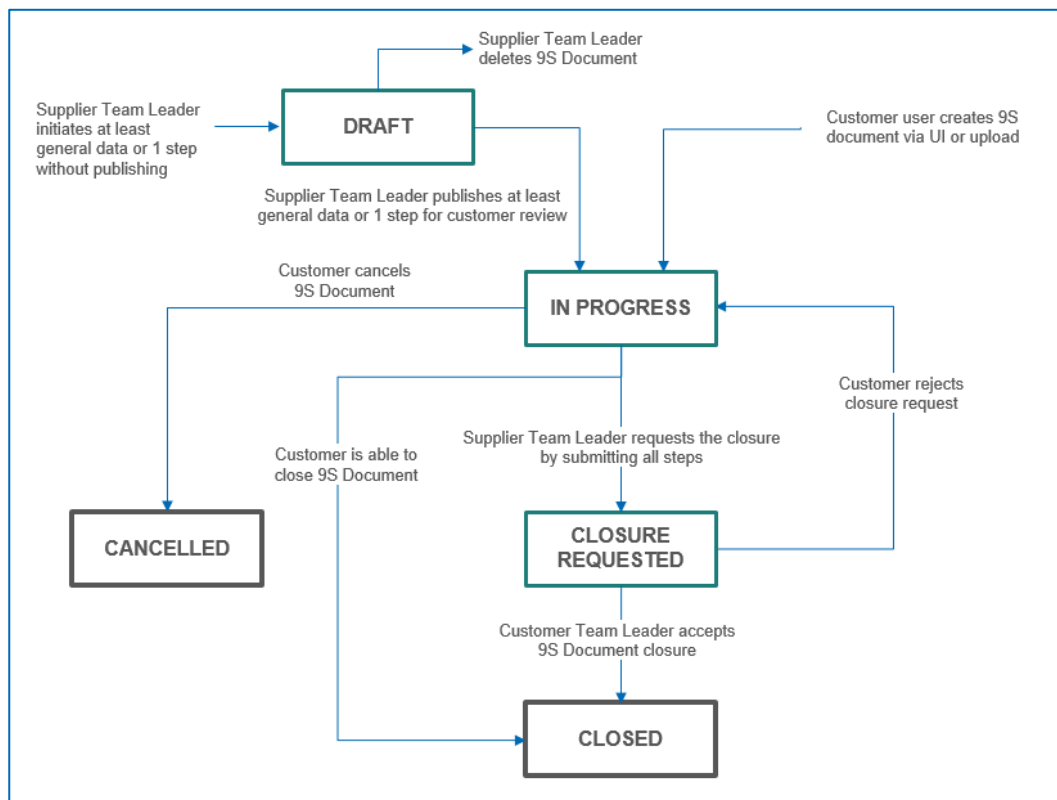
Figure: Lifecycle and statuses of a 9S document.

The statuses are:

DRAFT: Data are not yet published.

IN PROGRESS: Data are published.

CLOSURE REQUESTED: The supplier requests the closure of the 9S document if all information is provided within the underlying 9S steps.

CLOSED: The customer can close the 9S document at any time. The customer typically closes a 9S document when the supplier response fulfills the expectations of the customer.

CANCELLED: After the supplier has requested a cancellation of the 9S document, the customer can cancel it. A cancelled 9S document cannot be edited anymore.

2.2.3 9S step statuses

The following figure illustrates the statuses of a 9S step within a 9S document.
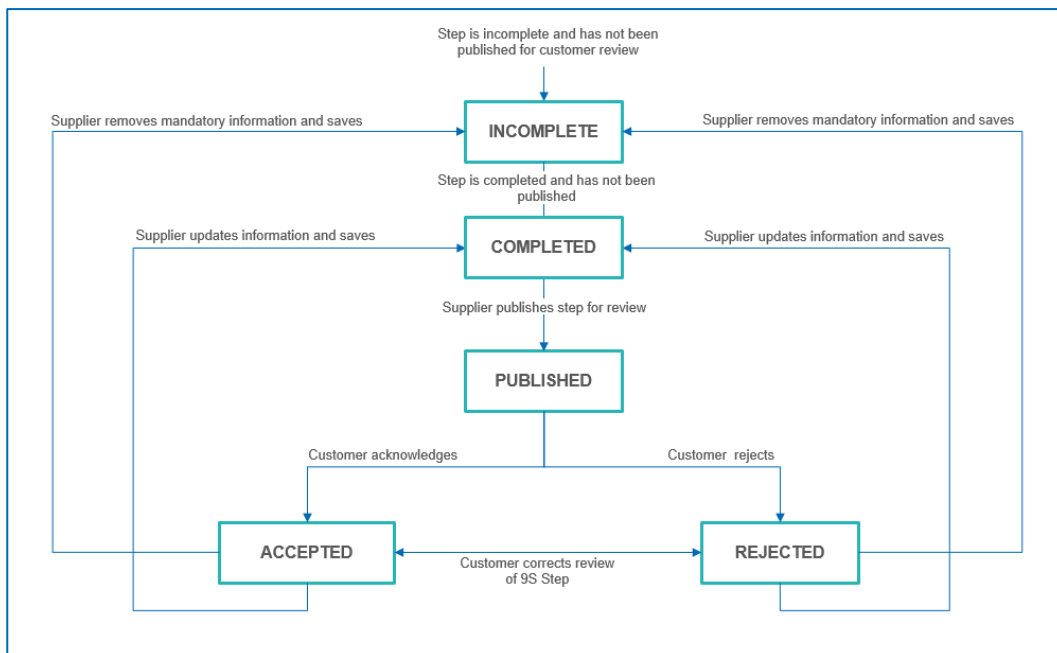
Figure: 9S step statuses.

The statuses are:

Status	Icon	Description	Required next step
INCOMPLETE	○	Not all mandatory data were entered.	Supplier must fill in the complete data.
COMPLETED	✓	All required data are filled in. The 9S step is not published.	Supplier must publish the 9S step.
PUBLISHED	❚❚	The 9S step was published and it waits to be accepted by the customer **team leader**.	The customer **team leader** *must* accept the 9S step.
ACCEPTED	✓	The 9S step was accepted by the customer **team leader.**	Supplier and customer can still update the 9S step
REJECTED	✕	The 9S step was not accepted by the customer **team leader** and needs to be revised.	Supplier must rework and publish the 9S step again.

Note

The customer can correct an already made decision during a review. The status of a 9S step can be changed afterwards from **ACCEPTED** to **REJECTED** or vice versa.

2.2.4 Action statuses

The following figure illustrates the statuses of an action within a 9S step.
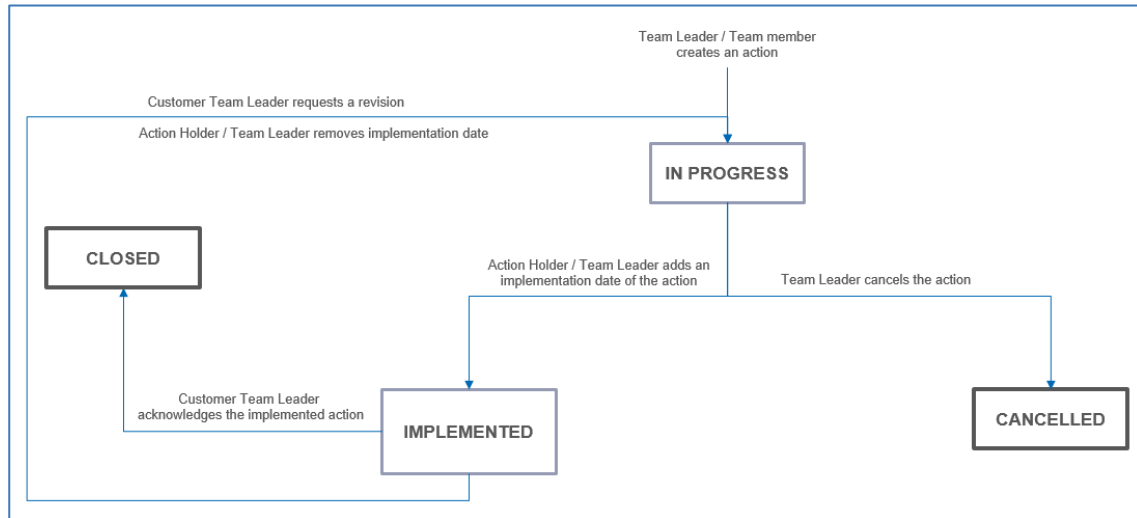
Figure: Action statuses.

The statuses are:

IN PROGRESS: A necessary action was defined, but not yet implemented.

IMPLEMENTED: The action holder/**team leader** confirmed the implementation of the action.

CANCELLED: The **team leader** canceled a defined action.

CLOSED: The **customer team leader** acknowledged an implemented action.

3 Dashboard and 9S documents

The **Dashboard** is the starting point for creating and collaborating on 9S documents.

The **Problem solving (9S)** page lists all available 9S documents the logged in user has access to.

To open the Dashboard for the 'Practical Problem Solver (9S)':

1. On the main menu, point to **SupplyOn Services,** and then click **AirSupply**.

   The AirSupply **Dashboard** displayed.

Figure: AirSupply **Dashboard** with the **Practical Problem Solver (9S)** link.

2. Click **Practical Problem Solver (9S)**.

   The **Dashboard** is displayed.

Figure: **Dashboard** for a supplier.

The **Dashboard** provides an overview of the statuses of the 9S documents that the logged in user has access to. The following information is displayed in detail:

- **My alerts**
  Displays the 9S documents created in the last 24 hours and the 9S documents where a 9S step needs to be revised. 9S documents created by the customer and the supplier are counted.
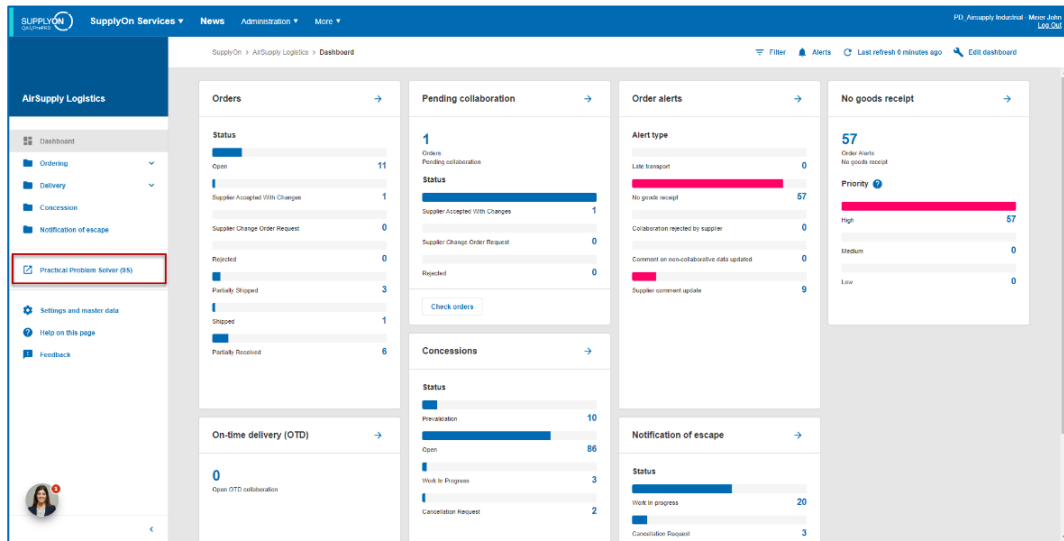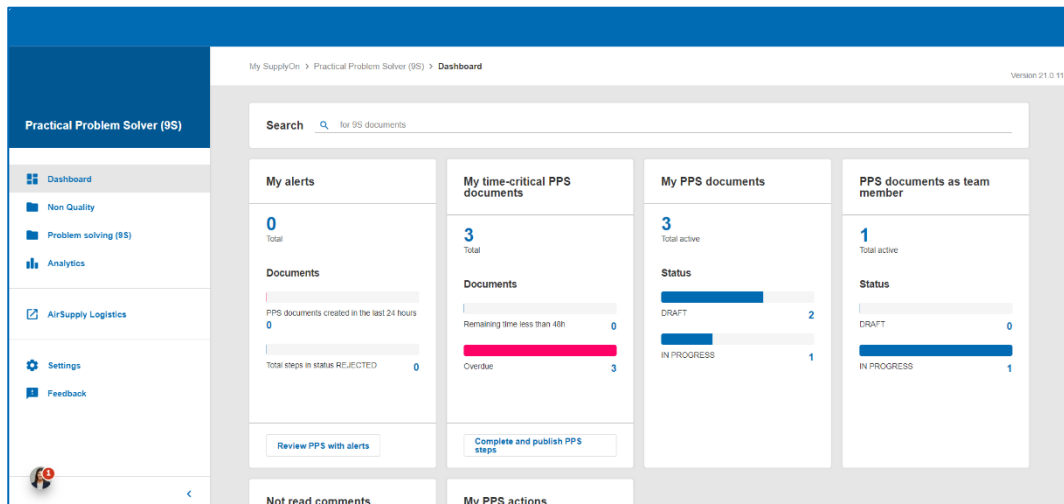
- **My time-critical PPS documents**
  Displays the number of time critical and overdue 9S documents.

- **My PPS documents**
  Displays the number of active 9S documents (in status **DRAFT** and **IN PROGRESS**) for the logged in user (here the **team leader**).

- **My PPS documents as team member**
  Displays the number of active 9S documents (in status **DRAFT** and **IN PROGRESS**) to which the logged-on user is assigned as **team member**.

- **Not read comments**
  Displays the number of unread comments.

- **My PPS actions**
  Displays the number of open actions for the logged in user.

The **Dashboard** provides a **Search**. Here you can search for example for the title or the reference number (originator or customer) of a 9S document, the affected part number (supplier, customer, tier-2) or the serial number of a part.

3. On the **Dashboard**, click **Problem solving (9S)**.
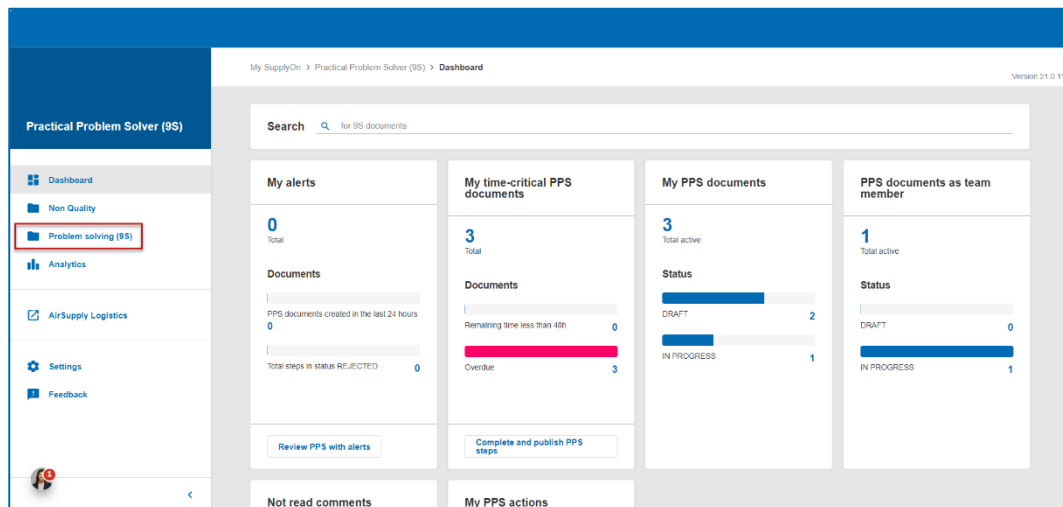
Figure: **Problem solving (9S)** link on the **Dashboard**.

The **Problem solving (9S)** page is displayed.
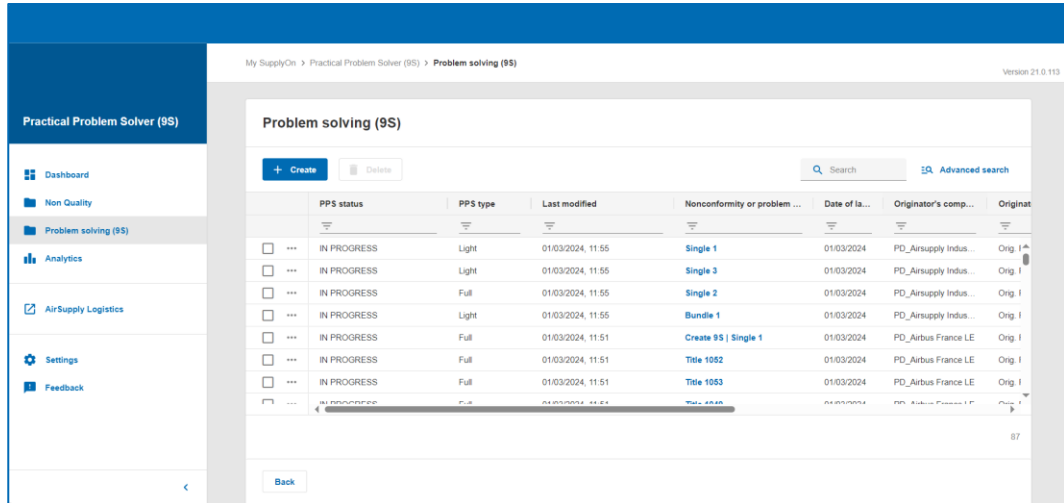
Figure: **Problem solving (9S)** page.

The **Problem solving (9S)** page lists all available 9S documents.

New 9S documents can be created here or existing documents can be selected for further editing.

The **Problem solving (9S)** page provides a **Search** and an **Advanced search.**

Note

With the **Last modified** column, you can sort the 9S documents according to the last modifications. The changes include field changes, 9S document status transitions, and action changes.

Figure: **Last modified** column.

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4 Basic functions

Several functions are available for 9S documents.

4.1 Actions

For some 9S steps, actions must be defined.

After an action is created by a supplier **team leader** or by a **team member**, it is in status **IN PROGRESS**.

> **Note**
>
> A customer also can create actions. An action created by the customer cannot be edited by the supplier.

After the work is done for an action, the action must be edited, and the **Actual implementation** date must be set. Then the status of the action changes to **IMPLEMENTED**.
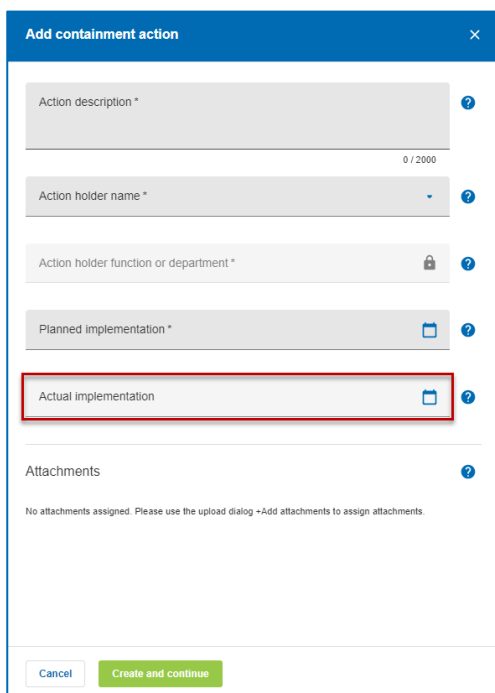
Figure: **Actual implementation** date field for an action**.**

The customer can acknowledge or reject an action in status **IMPLEMENTED.**
If the customer acknowledges an implemented action it changes to the status **CLOSED**.
If the customer rejects an implemented action it changes to the status **IN PROGRESS** again.
Then the supplier must work on the action again.

> **Note**
>
> One of the prerequisites for closing a 9S document is that *all* actions of 9S document must be in the status **IMPLEMENTED**.

For creating an action, → see for example *Adding an immediate containment action* on page *55*.

4.1.1 Deleting actions

Created actions in 9S step 0, 3, 6 and 7 can also be deleted again if, for example, an action was created by mistake.
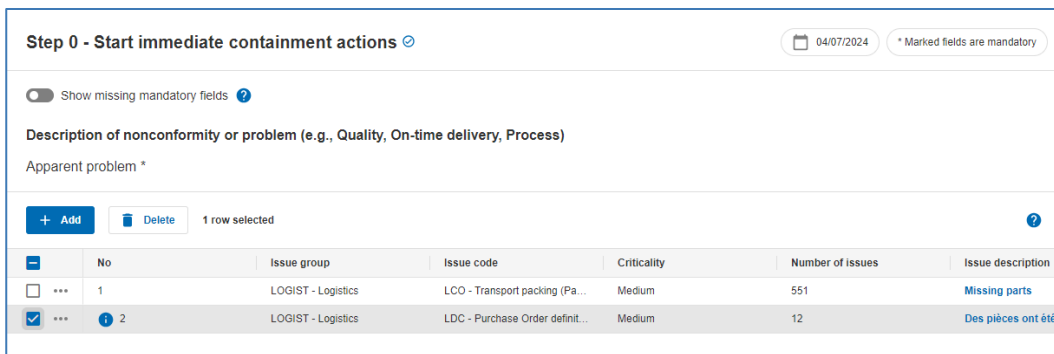
A **team leader** can delete the **team member**'s actions, while a **team member** can only delete its own actions.

A supplier can only delete the supplier's actions. The same applies to customers.

Actions cannot be deleted if the 9S document is in status **CLOSURE REQUESTED**, **REQUESTED, CANCELLED** or **CLOSED**.

To delete one or more actions:

1. Select the action(s) and click **Delete**.

Figure: Selected action that can be deleted.

If an attachment is linked to an action, only the link to the attachment is deleted.

The deletion of an action is logged in the history of the 9S document.

4.2 Adding attachments

For some 9S steps you can add attachments. When you upload an attachment, it is automatically assigned to the corresponding 9S step. However, you can also assign the attachment to a special action within the 9S step.

The following rules apply to the attachments to be added:

- The maximum file size is 20 MB.

- The file name must be unique per 9S document.

- The maximum length for the file name is 45 characters (including file type).

- Special characters like minus, space and underscore are allowed.

- Special characters like ä, ü, é and ß are not allowed.

- The following file types are not supported: bat, com, dmg, exe, sh.

To add attachments:

1. Click **Add** in the corresponding 9S step.
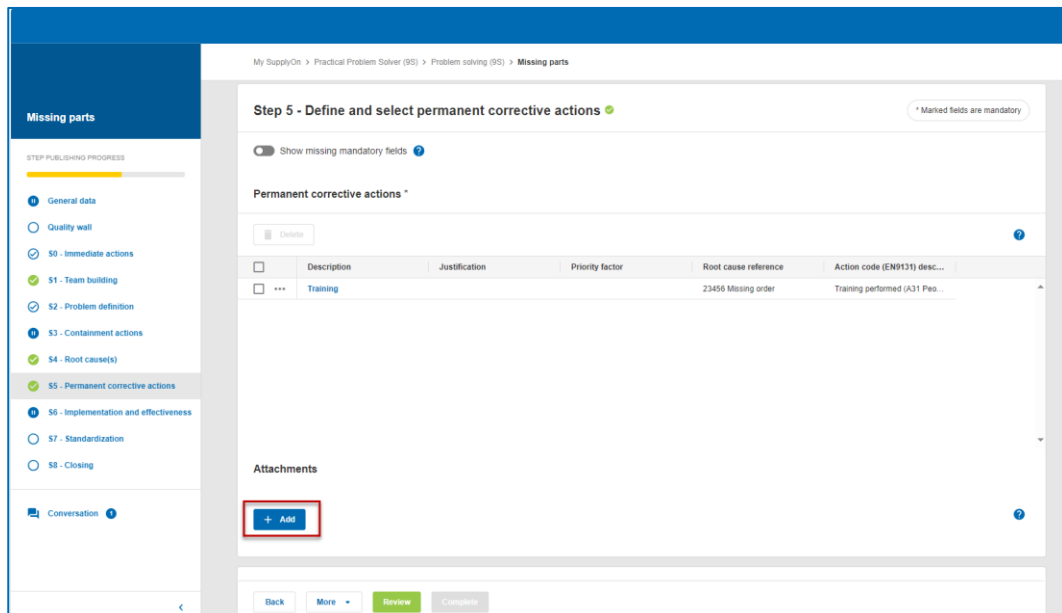
Figure: **Add** for 9S step 5.

The **Add attachments** dialog window is displayed.
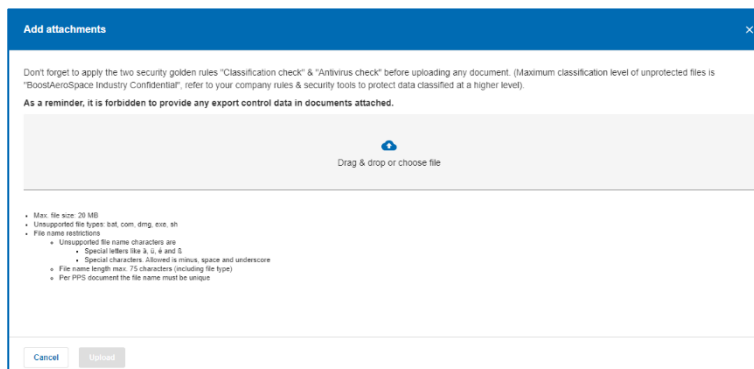
Figure: **Add attachments** dialog window.

2. Click **Browse** to select the attachments.

The uploaded attachment is listed in the **Add attachments** window.

Here you can assign the attachment to an action.
If you do not assign an attachment to an action, the attachment is automatically assigned to the corresponding 9S step.
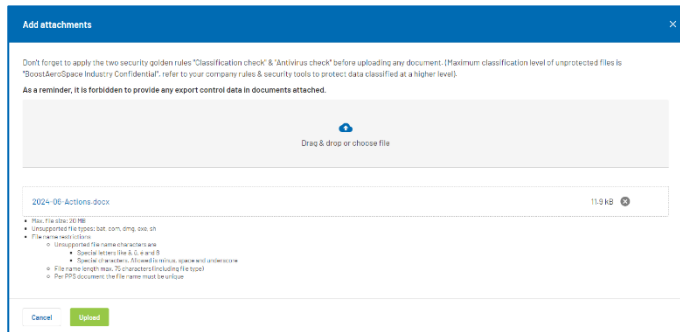
Figure: **Add attachments** dialog window.

3. Click **Assign** 🔗 to assign the attachment to an action.

A list of already created actions is displayed.
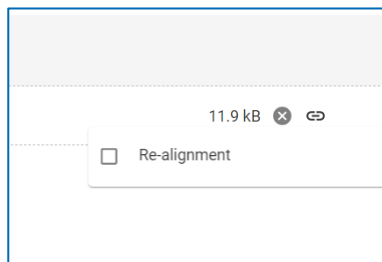
Figure: Action that can be assigned.

4. Select the action(s).

Assign 🔗 is marked blue.

5. Click **Upload**.

The attachment is listed in the corresponding section and is marked the action list.
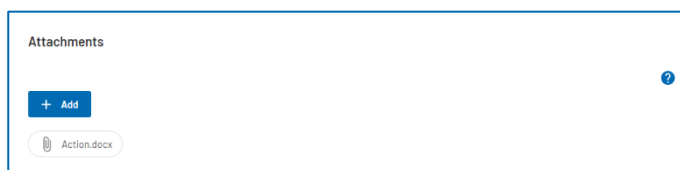
Figure: Added attachment.

Figure: Assigned attachment in the action list.

4.3 Conversations

You can add comments to a 9S document. The comments refer to the entire 9S document, not to individual 9S steps. If you want to refer to a single 9S step, you must mention this explicitly in the comment.
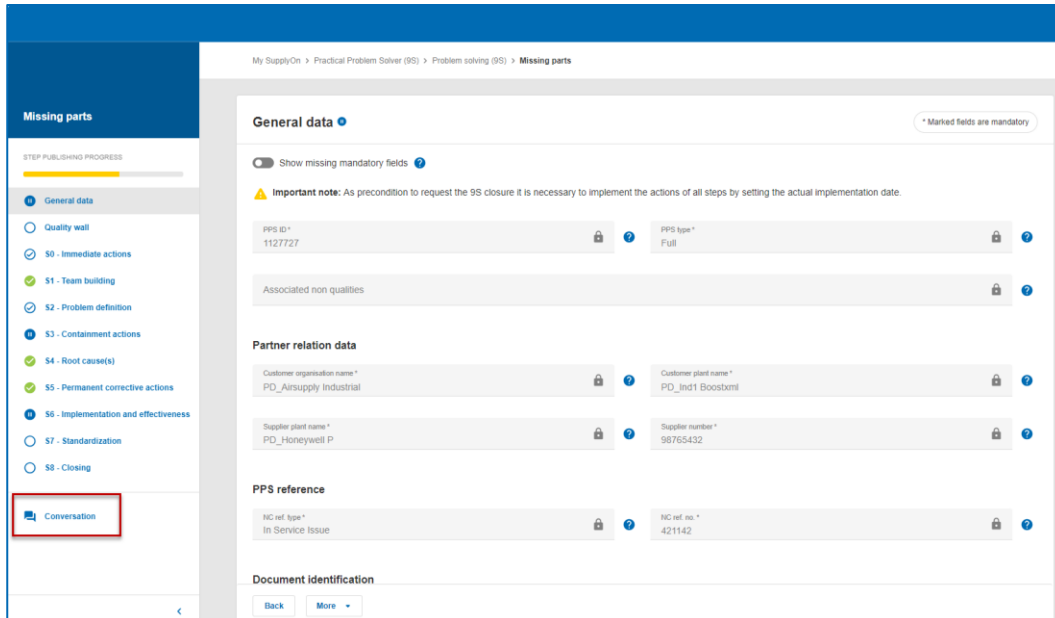
Figure: **Conversation**.

To add a comment:

1. Click **Conversation**.

   The **Conversation** dialog window is displayed.
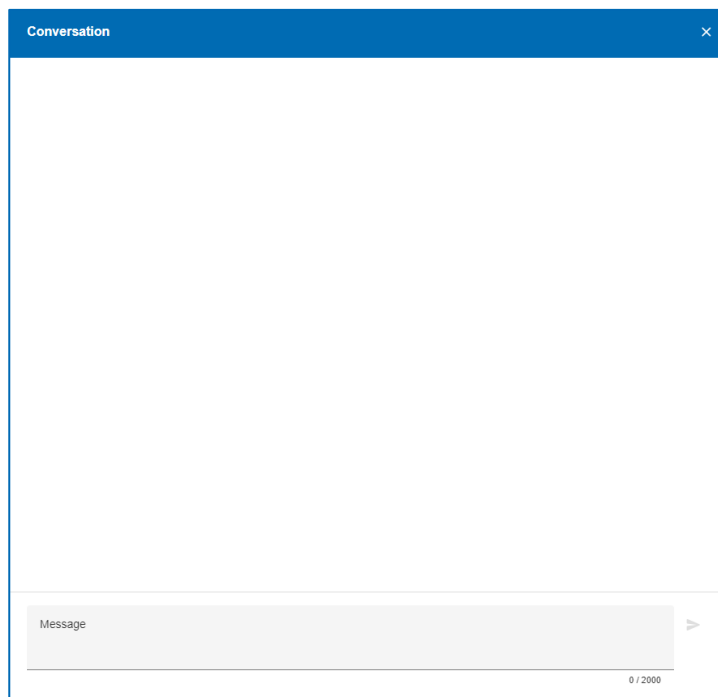
Figure: **Conversation** dialog window.

2. In the **Message** field, type in a comment and click ➤

    The comment is displayed.
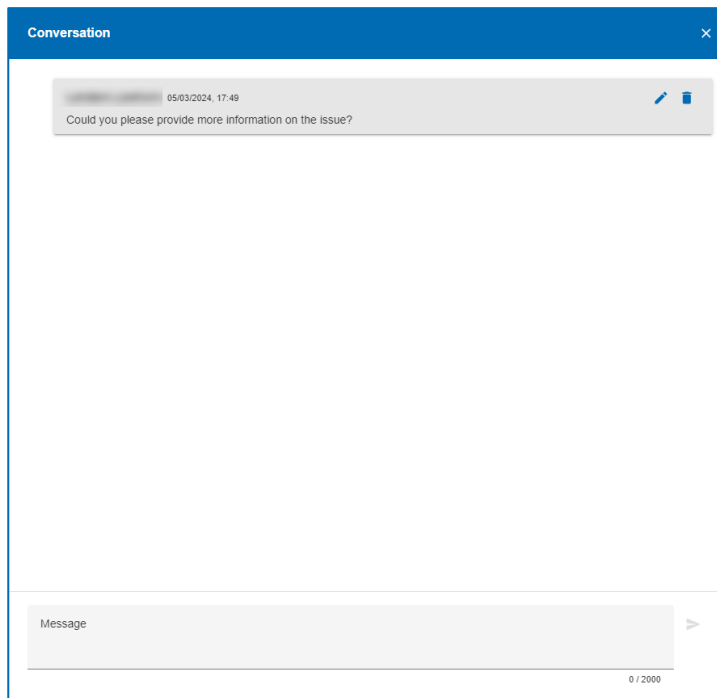
Figure: New comment.

As long as the comment has not yet been read, it can be edited or deleted.

The recipient of the comment is shown that a new comment has been created.
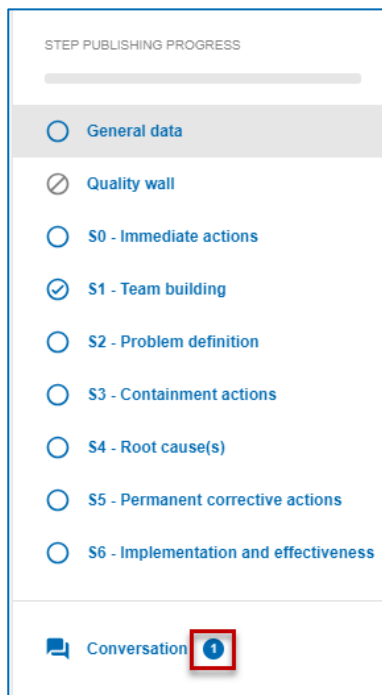
Figure: A new comment is indicated.

4.4 Downloading a 9S document

You can download a 9S document, this is, generating a PDF file. The PDF file contains the complete data of the 9S document. You can select whether the 9S document's attachments should be included in the download file.

Note

Whether the attachments can be downloaded depends on the application logic used:
With the **Customer- and Supplier Ownership Logic** used, attachments can be downloaded if the user has a 9S role to see a 9S document.
With the **Shared Field Logic** used, attachments can be downloaded if the user has a 9S role to see a 9S document and the user is a **team member** or **team leader** on a 9S document.

To download a 9S document:

1. Open a 9S document.

2. Click **More**, and then click **Download PDF.**
   Only the data of the 9S document are downloaded as a PDF file.

   – or –

2. Click **Download PDF with attachments**.

   The data of the 9S document and the attachments are downloaded.
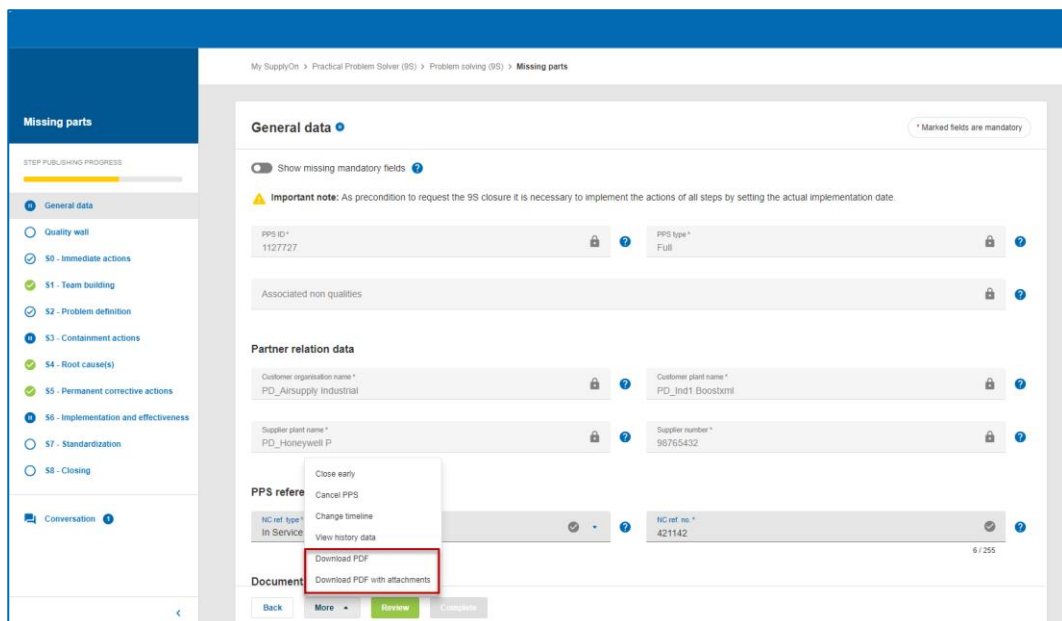
Figure: Download options for a 9S document.

A PDF file is generated and downloaded to your local PC. If the attachments are to be downloaded, they are provided in a zip file.

4.5 Exporting the list of 9S documents

You can export the list of 9S documents as CSV or Excel file.

To export the list of 9S documents:
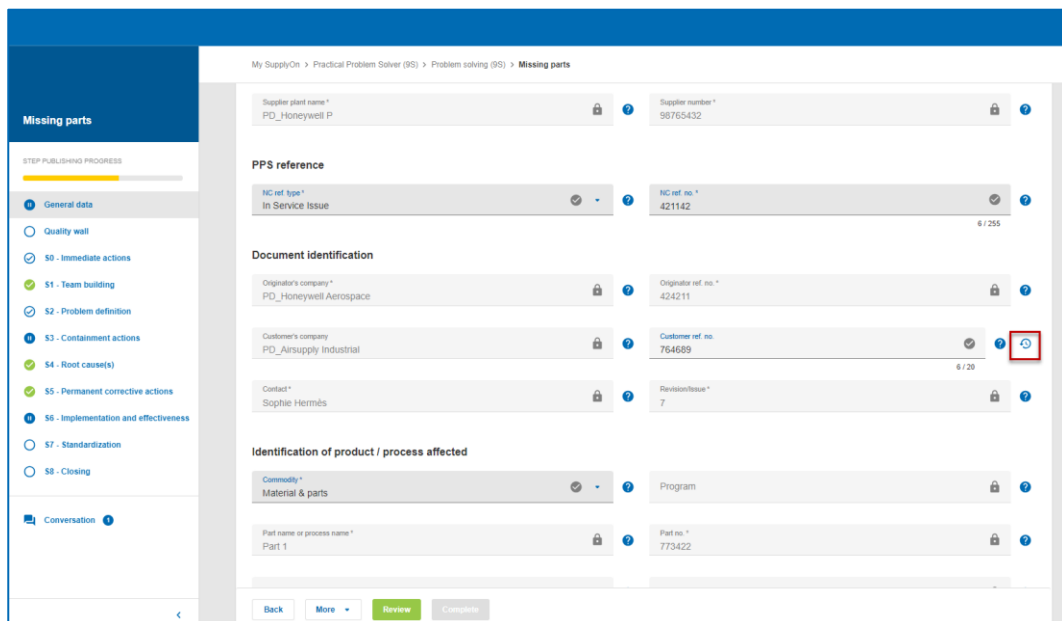
1. On the **Problem solving (9S)** page, right-click on the list of 9S documents and select **Export CSV** or **Export Excel**.

Figure: Export of 9S documents.

4.6 Viewing the history of a 9S document

If the content of a field was changed (by editing it again), it is indicated by ⟲ .
Clicking ⟲ displays the last reviewed value in a dialog window.

Figure: Changes of a field.

The history lists all changes concerning the current 9S document. The status changes of 9S steps, up to 9S step 8, are also displayed as soon as a 9S document in status **IN PROGRESS**.

To view the history data:

1. Open a 9S document.

2. Click **More**, and then click **View history data**.

   The **Document history** dialog window is displayed.
   All changes are listed here.

C... 1 ↓	St... 2 ↑	Type 3 ↑	Identifier	Field/attachment name	Old value	New value	Timestamp	User name	User ID	User organization	Action	Source
CL-1140643	Step 0	Action	Des pièce...	---	---	---	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Deleted	PPS 9S
CL-1140642	Step 2	Entry field	---	Problem description	For every ...	For every ...	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140642	Step 2	Entry field	---	Step status	REJECTED	COMPLETE	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 0	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 0	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 1	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 1	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 2	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 2	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 3	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 3	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 4	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 4	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 5	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 5	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 6	Entry field	---	Due date	31/01/2024	04/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1140641	Step 6	Entry field	---	Upcoming due date	29/01/2024	02/07/2024	05/03/202...	Sophie Hermès	Trainingsmaterial_BY	PD_Airsupply Indus...	Modified	PPS 9S
CL-1138763	Step 3	Entry field	---	Potential consequences	Data loss...	jpj	29/11/202...	Landers Lawhorn	TST_SE_HY_IN_P...	PD_Honeywell Aer...	Modified	PPS 9S
CL-1138760	General d...	Entry field	---	Step status	COMPLETE	PUBLISH...	29/11/202...	Landers Lawhorn	TST_SE_HY_IN_P...	PD_Honeywell Aer...	Modified	PPS 9S
CL-1138760	Step 0	Entry field	---	Step status	ACCEPTED	PUBLISH...	29/11/202...	Landers Lawhorn	TST_SE_HY_IN_P...	PD_Honeywell Aer...	Modified	PPS 9S
CL-1138760	Step 3	Entry field	---	Step status	COMPLETE	PUBLISH...	29/11/202...	Landers Lawhorn	TST_SE_HY_IN_P...	PD_Honeywell Aer...	Modified	PPS 9S

Close

Figure: **Download history** dialog window.

4.7 Configuring e-mail notifications

A supplier can configure an e-mail notification for the following events:

- 9S document(s) is(are) due soon.
- 9S document(s) is(are) overdue.
- 9S step(s) need(s) revision.
- 9S document(s) created in the last 24 hours.

A customer can configure an e-mail notification for the following events:

- 9S document(s) is(are) due soon.
- 9S documents(s) is(are) overdue.
- 9S steps published.
- Actions implemented.
- Closure requests.

Both can define on which day(s) at which time the e-mail notification(s) should be sent.

To configure e-mail notifications:

1. On the **Dashboard**, click **Settings**.
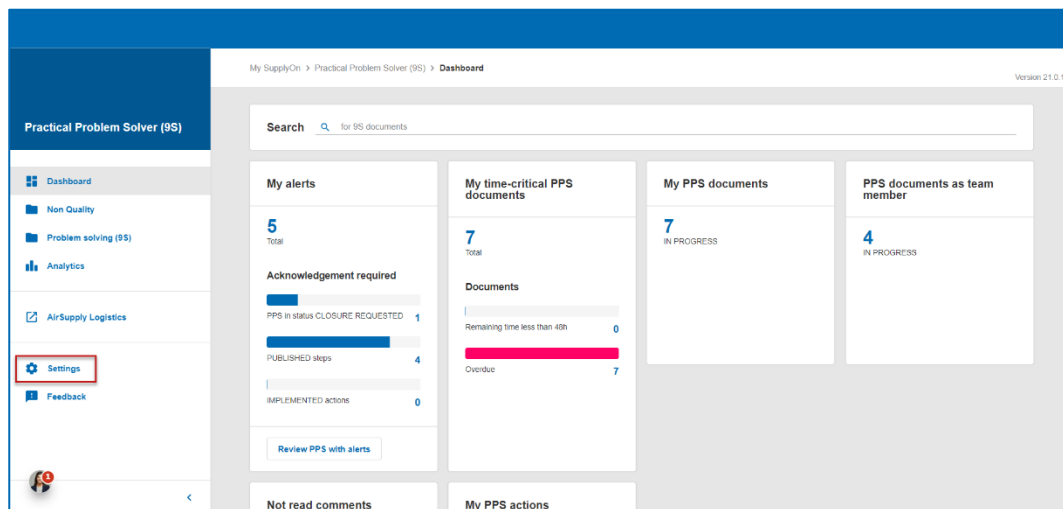
Figure: **Settings** link on the **Dashboard**.

The **Settings** page is displayed.
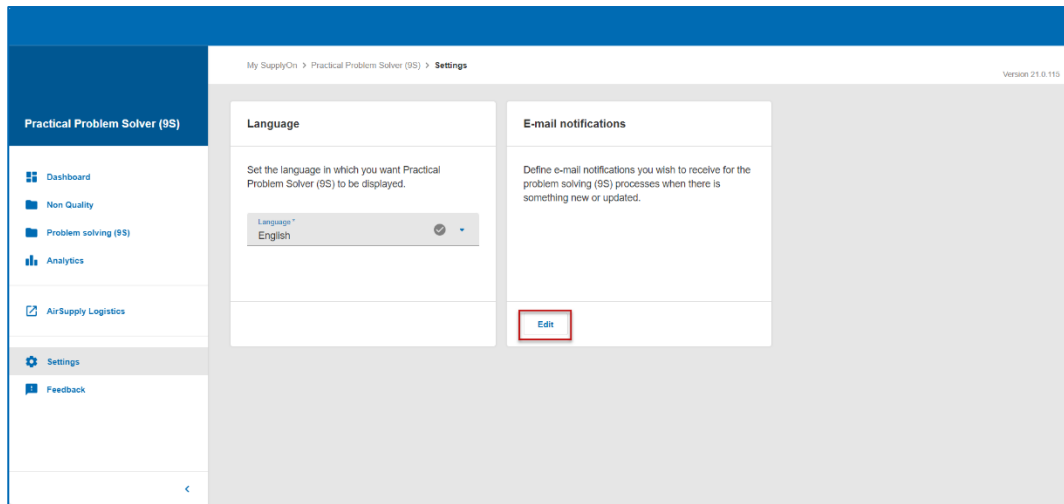
Figure: **Settings** page.

2. In the **E-mail notifications** card, click **Edit**.

The **E-mail notifications** dialog window is displayed.
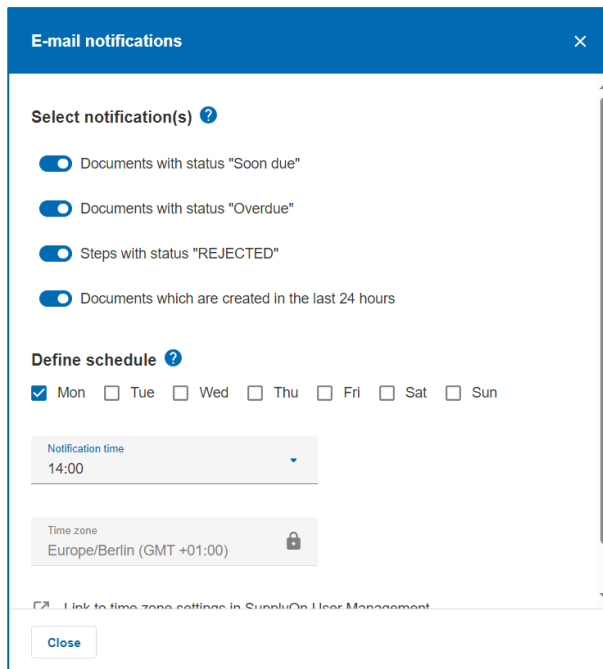
Figure: **E-mail notifications** dialog window (supplier).

Figure: **E-mail notifications** dialog window (customer).

Here you can configure:

- for which event an e-mail notification should be triggered,

- on which days at which time a notification should be sent on which time.

3. Configure the e-mail notifications.

4. Click **Close**.

   The settings are saved.

4.8 Advanced search

The **Problem solving (9S)** page provides an **Advanced search**.
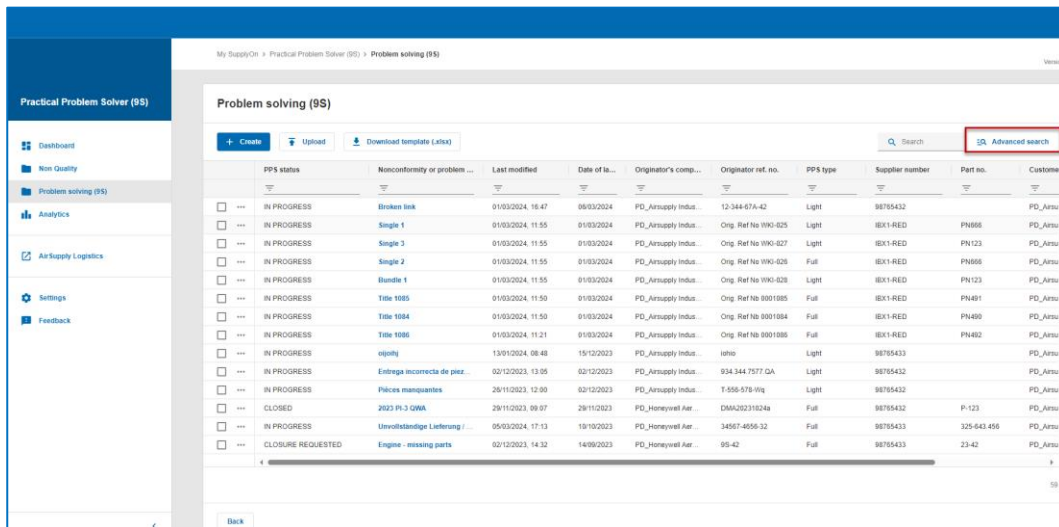
Figure: **Advanced search**.

Search criteria can be defined in the **Advanced search** and saved in a search profile. The search profile can be used to perform queries as often as required.

Several search profiles can be created. Existing search profiles can be copied and edited.

1. Click **Advanced search** to create search profile.
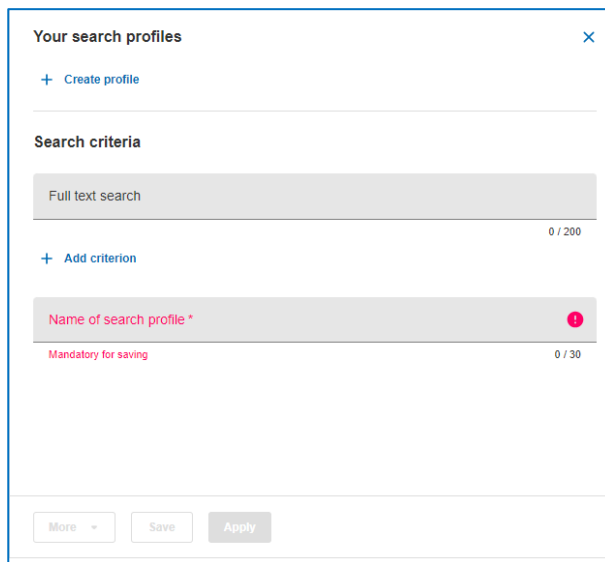
Figure: **Your search profiles**.

2. Enter a name for the search profile.

   For the search profile you can define a full-text search and/or define search criteria.

3. Enter your search terms in the **Full text search** field if you want to perform full text search.

– or/and –

3. Click **Add criterion** if you want to add a search criterion to your search.

A selection for search criteria is displayed.
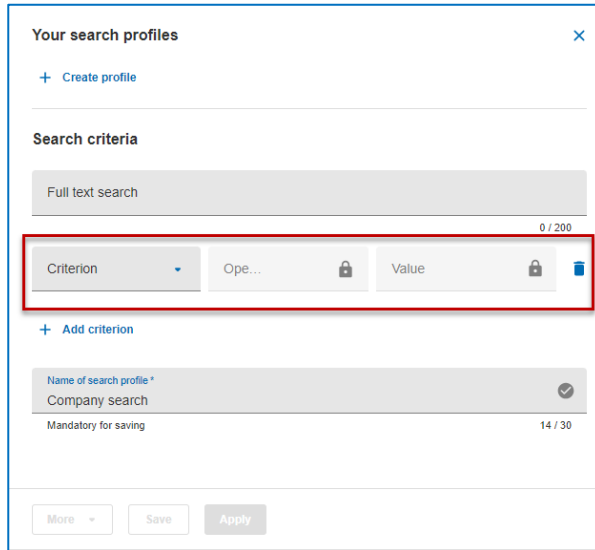
Figure: Search criterion.

4. Select a search criterion.
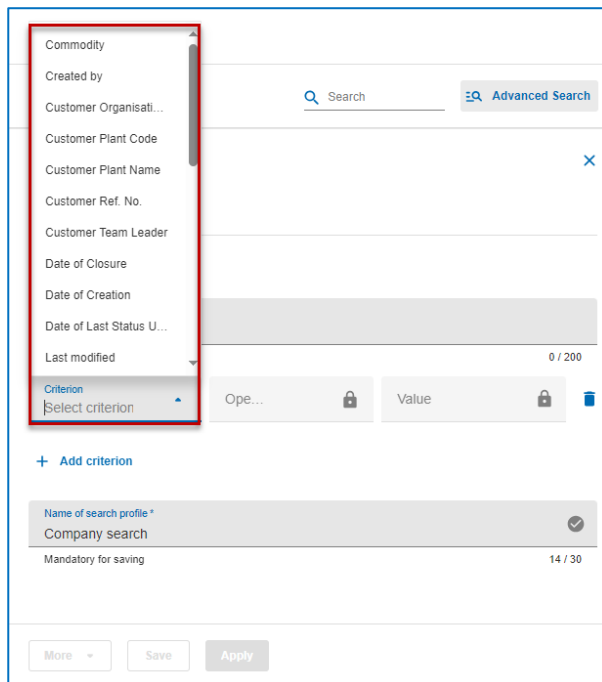
Figure: Selecting a search criterion.

Depending on the selected criterion, corresponding operators are available.

5. Select an operator and enter a value.

You can add further search criteria.

6.   Click **Save** if you want to save the search profile.

– or –

6.   Click **Apply** if you want to perform the search.

The search is performed, and it is indicated that the list on the **Problem solving (9S)** page is provided by a search.

Figure: Applied search on the **Problem solving (9S)** page.

5 Access and assignment of users to 9S documents

The administration, creation, editing and reading of 9S documents is performed by the following user groups:

- **team administrator**

- **team leader**

- **team member**

A **team administrator** is determined directly via an AirSupply role, → see *Roles and rights* on page *114.*
A **team administrator** can define which **team leaders** and **team members** can work on a 9S document, → see *Team administrator* on page *32*.
A **team administrator** usually does not work on 9S documents.

Team leader and **team member** are 9S document-specific roles. They both work on 9S documents, → see *Team leader* and *Team member* on page *33*.

5.1 Team administrator

The role of the **team administrator** is assigned by the administrator of supplier/customer company.
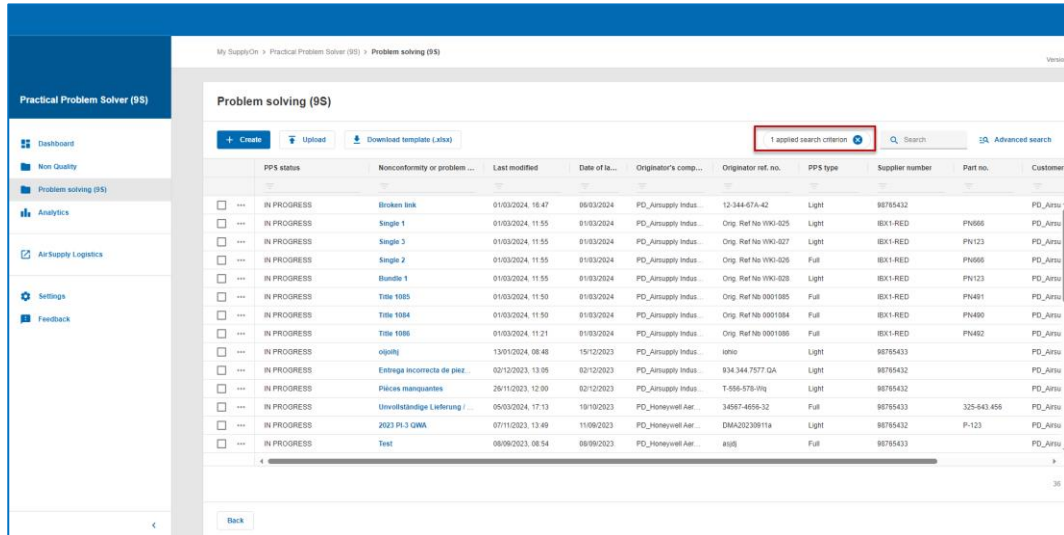
A **team administrator** can:

- as a supplier user, add supplier **team leaders** and **team members**, and customer **team leaders** and **team members** to a 9S document

- as a customer user, add customer **team leaders** and **team members**, and supplier **team leaders** and **team members** to a 9S document

Note

A supplier **team administrator** cannot remove customer **team leaders** and customer **team members.**

A customer **team administrator** cannot remove supplier **team leaders** and supplier **team members**.

Note

If a 9S document no longer has a **team leader** (for example, they are on vacation, were added incorrectly, or are no longer with the company), a **team administrator** can assign a new **team leader** to the 9S document.

The **team administrator** can only edit 9S step 1, → see *9S step 1 – Build the team* on page *57*.

The **team administrator** cannot publish a 9S document and cannot edit any fields outside of 9S step 1.

The **team administrator can** edit at any status of the 9S document, except the statuses **CLOSED** and **CANCELLED**.

5.2 Team leader

A supplier **team leader** can publish a 9S document, → see *Publishing a 9S step/9S document* on page *43*.

A customer **team leader** can review and close a 9S document, → see *Reviewing a 9S step/9S document (Customer)* on page *83*.

A supplier **team leader** can add supplier **team leaders** and supplier **team members** to a 9S document → see *Adding a supplier team member* on page *58*.
Only a supplier **team leader** can publish a 9S document.

A customer **team leader** can add customer **team leaders** and customer **team members** to a 9S document**,** → see *Adding a customer team member* on page *59*.

5.3 Team member

A **team member** can edit the 9S steps of a 9S document.

6 Creating a 9S document

A 9S document can be created in the **Problem solving (9S)** module in AirSupply.

There are two ways to create a 9S document:

- via a dialog window (customer and supplier)
- via upload of an Excel template file (customer)

Note on the Internet browser

It is recommended to use **Google Chrome** or **Firefox** as Internet browser.
The **Microsoft Internet Explorer** does not work correctly with the application.

Prerequisites:

- ✓ Appropriate roles and rights, → see *Roles and rights* on page *114*.
- ✓ Logged on to AirSupply.
- ✓ The **Problem solving (9S)** page is displayed.

6.1 Uniqueness of 9S documents

According to DIN EN 9136 and DIN EN 9131, a 9S document must be unique, that is, only one 9S document is allowed to be created per **NC reference number**.

The **NC reference number** is unique and mandatory for the following triplet:

Customer plant name: Organizational sub-unit of the customer, → see *Creating a 9S document via a dialog window (Supplier)* on page *35*.

Supplier plant name: Organizational sub-unit of the supplier, → see *Creating a 9S document via a dialog window (Supplier)* on page *35*.

Originator ref. no: Unique reference number assigned by the originator in accordance with customer instructions, → see *Creating a 9S document via uploading an Excel template file (Customer)* on page *39.*

When a new 9S document is created, either by the customer or the supplier, it is checked and verified that the **NC reference number** and that the data of the triplet, that is **Customer plant name**, **Supplier plant name**, and **Originator ref. no** are unique.

If the **NC reference number** is already assigned for a specified triplet, it is not possible to create a 9S document.

After the 9S document is created, the **NC reference number** can no longer be edited.

If a 9S document has been canceled, the **NC reference number** cannot be reused.

Example

A supplier creates a 9S document with the status **DRAFT** and the customer creates a 9S document with the same **NC reference number** in parallel in the meantime, then the publishing fails on the supplier's side.

6.2 Creating a 9S document via a dialog window (Supplier)

A supplier can create a 9S document via a dialog window.

If a 9S document is created via the window box, it is of document type **PPS Full**.

To create a 9S document via a dialog window:
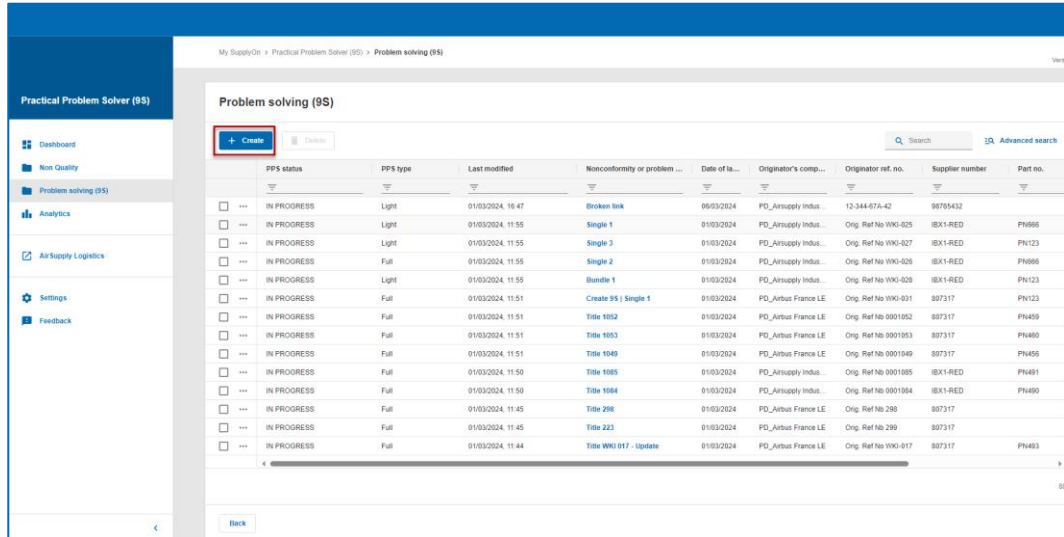
1. Click **Create**.

Figure: **Problem solving (9S)** page with the **Create** link.

The **Create PPS** dialog window is displayed.
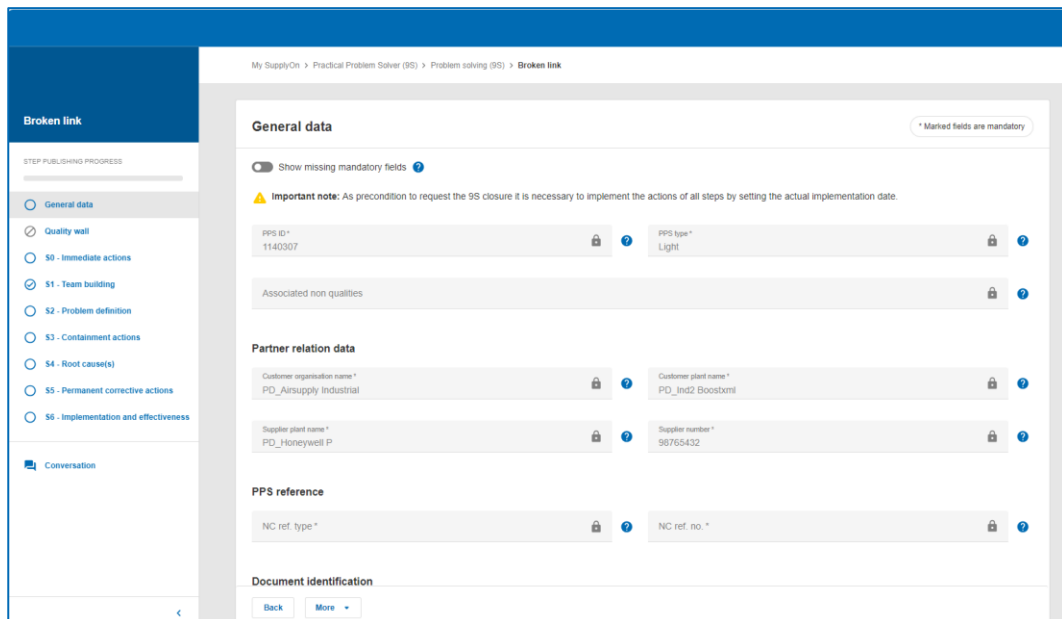

Figure: **Create PPS** dialog window.

Editable mandatory fields are dark grey and marked with an asterisk (*).

2. Fill in the following mandatory fields:

- **Nonconformity or problem title**
  Enter a short description that can be used to identify the problem.

- **Originator ref. no**
  Unique reference number assigned by the originator in accordance with customer instructions [EN9136-2].

- **Customer organisation name**
  Select the organization with which the 9S process will be performed.

- **Customer plant Name**
  Select the customer lowest organizational level (sub-unit of "Customer Organization").

- **Supplier plant name**
  Select the supplier lowest organizational level (sub-unit of "Supplier Organization").

- **Supplier number**
  Select a supplier number.

- **Customer contact**
  Select a customer contact. This is the customer **team leader.**
  The selection can no longer be changed by the supplier.

3. Click **Create and confirm**.

    The 9S document page is displayed.

Figure: 9S document page with the **General data** section.

The 9S document is in status **DRAFT**.

6.3 Creating a 9S document via a dialog window (Customer)

Depending on the settings, a customer can create a 9S document via a dialog window.

If a 9S document is created via the window box, it is of document type **PPS Full**.

To create a 9S document via a dialog window:
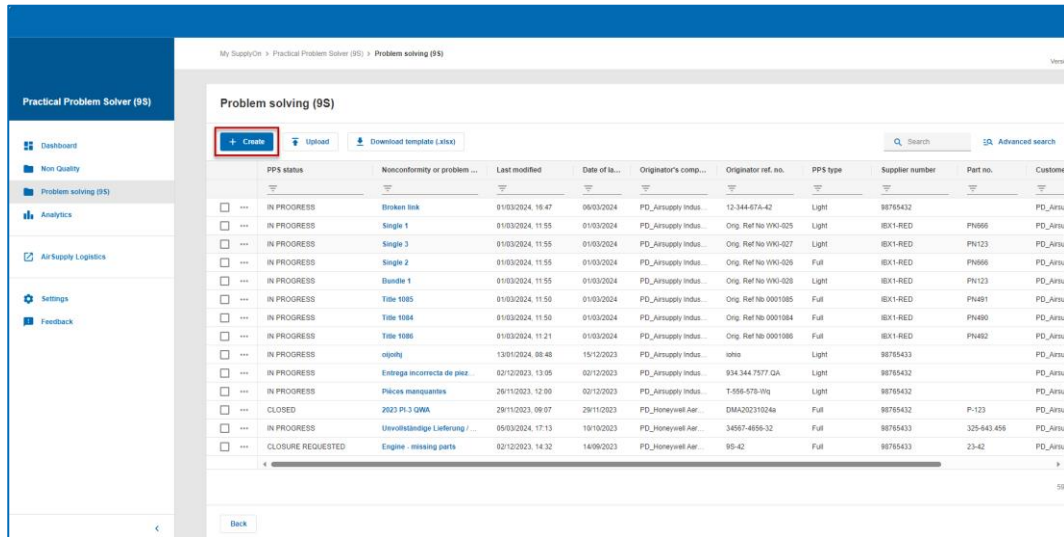
1. Click **Create**.

Figure: **Problem solving (9S)** page with the **Create** link.
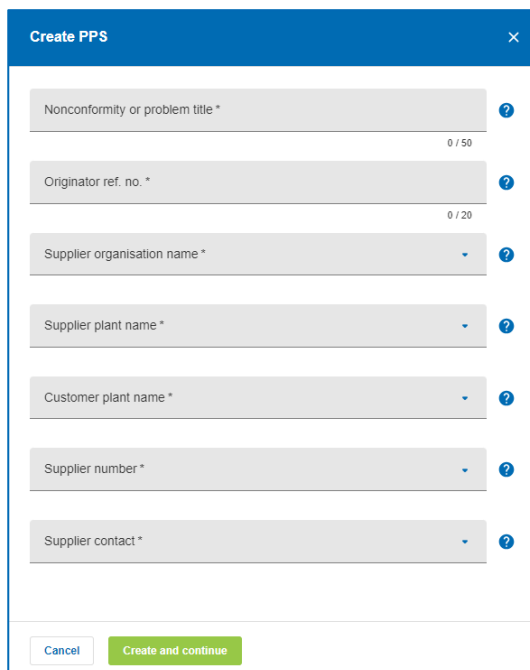
The **Create PPS** dialog window is displayed.

Figure: **Create PPS** dialog window.

Editable mandatory fields are dark grey and marked with an asterisk (*).

2. Fill in the following mandatory fields:

- **Nonconformity or problem title**
  Enter a short description that can be used to identify the problem.

- **Originator ref. no**
  Unique reference number assigned by the originator in accordance with customer instructions [EN9136-2].

- **Supplier organisation name**
  Select the organization with which the 9S process will be performed.

- **Supplier plant name**
  Select the supplier lowest organizational level (sub-unit of "Supplier Organization").

- **Customer plant name**
  Select the customer lowest organizational level (sub-unit of "Customer Organization").

- **Supplier number**
  Select a supplier number.

- **Supplier contact**
  Select a supplier contact. This is the supplier **team leader.**
  The selection can no longer be changed by the customer.

3. Click **Create and confirm**.

The 9S document page is displayed.

The 9S document is in status **IN PROGRESS**.

Figure: 9S document page with the **General data** section.

6.4 Creating a 9S document via uploading an Excel template file (Customer)

Customers can create 9S documents by uploading an Excel template file. With the help of an Excel template file, up to 100 9S documents can be created at once.

The Excel template file can be downloaded from the **Problem solving (9S)** page.

To download the Excel template file:

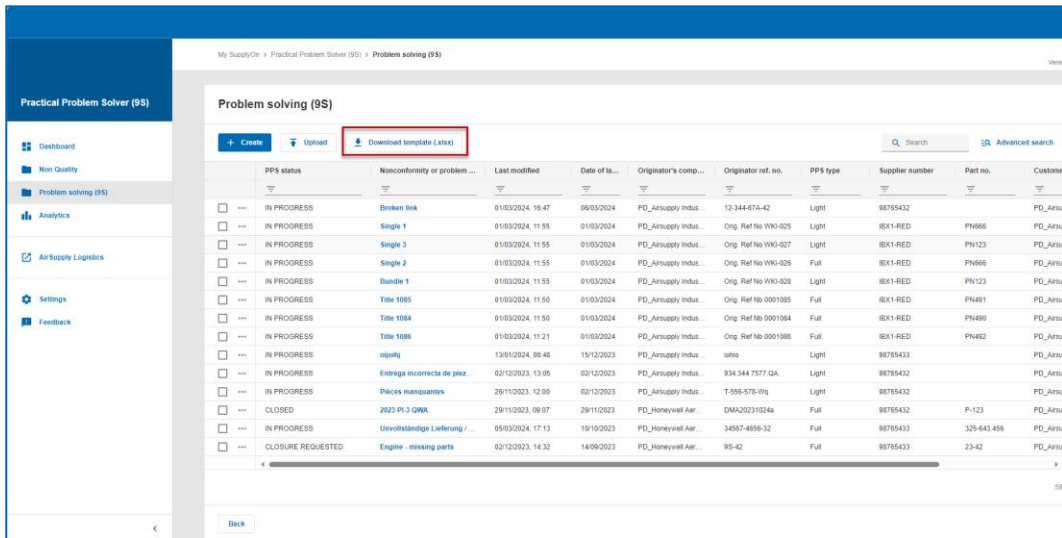1. On the **Problem solving (9S)** page, click **Download template (*.xlsx)**.

Figure: **Problem solving (9S)** page with the **Download template (*.xlsx)** link.

2. Save the Excel-Template file on the disk.

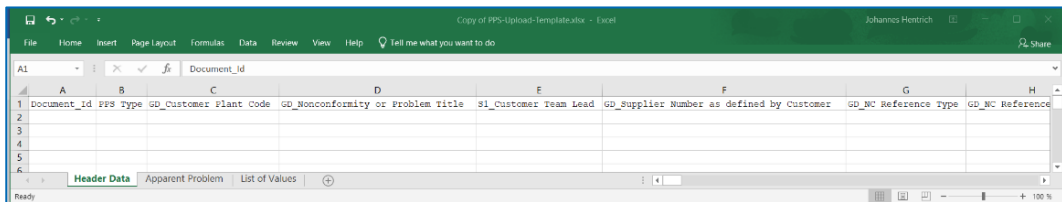   Next, fill in the Excel template file and save it under a new file name.

Figure: Excel template file**.**

Each row corresponds to one 9S document.

The **Document_Id** must be unique.

PPS Type defines the document type of the 9S document. Possible values are **Full** and **Light**.

Mandatory fields are:

- **GD_Customer Plant Code**

- **GD_Nonconformity or Problem Title**

- **GD_Supplier Number as defined by Customer**

- **GD_NC Reference Type**

- **GD_NC Reference Number**

- **GD_Commodity**

- **GD_Originator Ref. No.**

- **GD_Part Name or Process Name**

- **GD_Part No.**

- **GD_Disposition**

- **GD_NC Qty**

- **S0_Apparent Consequences**

- **S0_S/N or ID No. Of primary part numbers Impacted by the Issue (quantity of parts if not serialized)**

The **List of Values** tab contains additional information about the fields to be filled in.

3. After filling in all required fields, upload the Excel template file again.

4. Click **Upload**.

   The **Upload** dialog window is displayed.

5. Select the edited Excel template file and click **Submit**.

   The Excel template file is uploaded, verified, and the 9S document(s) is/are created.

   The newly created 9S documents are in status **IN PROGRESS**.

6.5 Deleting a 9S document in status DRAFT

A supplier can only delete a 9S document if it is in status **DRAFT**.

To delete a 9S document in status DRAFT:

1. On the **Problem solving (9S)** page, select the 9S document in status **DRAFT** that you want to delete.
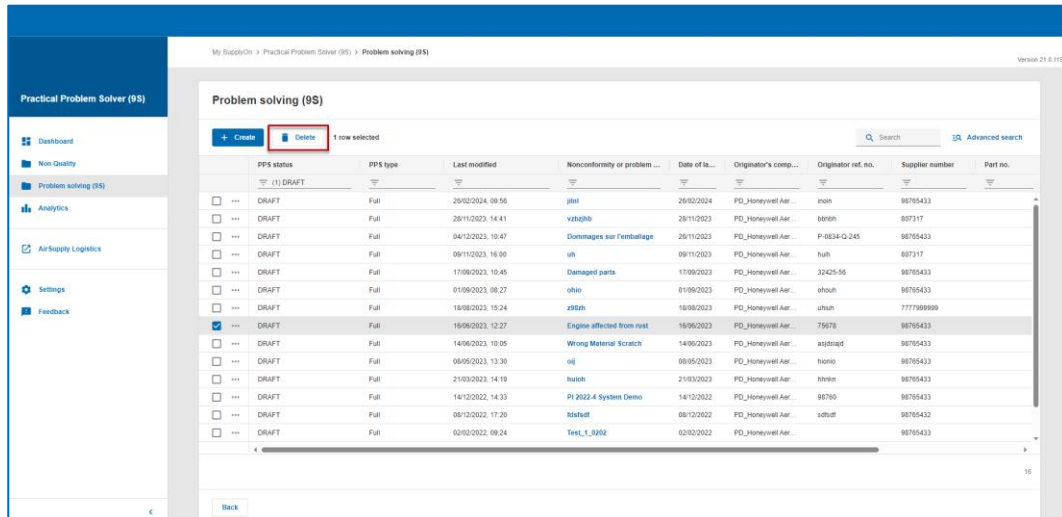

Figure: **Problem solving (9S)** page with selected 9S document in status **DRAFT**.

2. Click **Delete**.

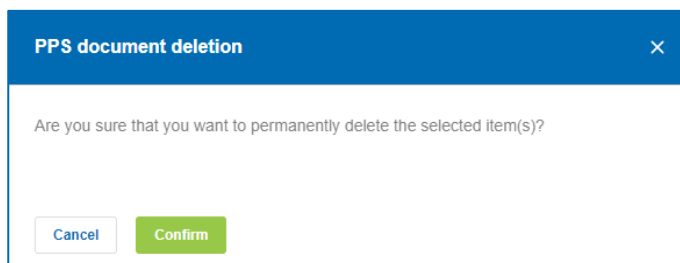   The **PPS document deletion** dialog window is displayed.

Figure: **PPS document deletion** dialog window.

3. Click **Confirm.**

    The 9S document is deleted and not displayed anymore.

7 Collaborating on the 9S steps

A 9S document consists of the **General data,** the **Quality wall**, and the following 9S steps in which the collaboration takes place.

9S step 0 – Start Immediate containment action s

9S step 1 – Build the team

9S step 2 – Define problem

9S step 3 – Complete and optimize containment action

9S step 4 – Identify root cause(s)

9S step 5 – Define and select permanent corrective actions

9S step 6 – Implement permanent corrective actions and check effectiveness

9S step 7 – Standardize and transfer the knowledge across the business

9S step 8 – Recognize and close the team

The document type for the 9S documents defines how many 9S steps are used for collaboration.
With the **PPS Light** document type, a 9S document only needs to be completed to 9S step 6.
9S step 7 and 9S step 8 are optional for a **PPS Light** 9S document.
With the **PPS Full** document type, a 9S document needs to be completed to 9S step 8.

7.1 Publishing a 9S step/9S document

After all mandatory information on a 9S step were entered, a supplier can publish a 9S step.
Only a supplier **team leader** can publish a 9S step/9S document.

During the work on a 9S document, the entered data is saved automatically. The 9S document is only visible to the supplier until it is published the first time.

After a 9S document is published, it changes to the status **IN PROGRESS** (→ see *9S document statuses* on page *10*).

Note

Once a 9S document has been published by the supplier, it is visible for the customer.
This allows the customer to keep track of all changes in the 9S document after it has been published for the first time.

After a supplier has published a 9S step, the customer must review it.

Publishing all 9S steps at once

A supplier can publish all 9S steps at once if:

   – all mandatory fields are filled in

   – all actions are in status **IMPLEMENTED**

The customer can also accept all 9S steps at once to close the 9S document.

To publish a 9S step/9S document:

1. Fill in all mandatory and required data.

   Select **Show missing mandatory fields** to mark all missing mandatory fields red.

Figure: **Show missing mandatory fields.**

The entered data is saved automatically.
The 9S document remains in the discretion of the supplier (and in the status **DRAFT**) until it is published for the first time.

2. Click **Publish**.

The **Publish PPS** dialog window is displayed.

	Step Name	Step Description
☑		
☐	General Data	
☐	Step 0	Start immediate containment actions
☑	Step 1	Build the team
☐	Step 2	Define problem
☐	Step 3	Complete and optimize containment actions
☐	Step 4	Identify root cause(s)
☐	Step 5	Define and select permanent corrective actions
☐	Step 6	Implement permanent corrective actions and check effectiveness
☐	Step 7	Standardize and transfer the knowledge across the business
☐	Step 8	Recognize and close the team

Figure: **Publish PPS** dialog window.

3. Select the 9S step name(s) you want publish.

You can only publish 9S steps where all mandatory data were filled in.

4. Click **Confirm and publish**.

The 9S document is shared with the customer.
From now on, all entered information is visible to the customer (even for the not yet published 9S steps).
The customer needs to review the published 9S steps.
The status of the 9S document is now **IN PROGRESS** (→ see *9S document statuses* on page *10*).

Cancellation of a 9S document

A supplier can request a cancelation of a 9S document. In this case the supplier must contact the customer **team leader** (by e-mail, phone, etc.) who then can cancel the 9S document.

→ See *Canceling a 9S document* on page *90*.

7.2 Editing an already published 9S step

After a supplier has published a 9S step, he can still edit the fields of the published 9S step and publish it again.

Figure: Already published **General data**.

1. Click the field(s) you want to edit and make your changes.

Figure: A field was changed in the **General data**.

The entered data is saved automatically.

The 9S step changes its status.

Then the supplier can publish the 9S step again.

7.3 Switching from PPS Light to PPS Full

Depending on the customer settings, it is possible to create a 9S document of the document type **PPS Light** via Excel upload from customer side. This means that collaboration is only required in six of the eight 9S steps. 9S step 7 and 8 are not displayed in a **PPS Light** 9S document.
Please note that **PPS Light** 9S documents are not available for every customer.

If it turns out that 9S step 7 and 8 should also be worked on, the customer **team leader** can switch the document type from **PPS Light** to **PPS Full**.

Switching back from **PPS Full** to **PPS Light** is not possible.

Prerequisites:

✓ The **PPS Light** 9S document is in status **IN PROGRESS**.

✓ The customer uses the **Customer- and Supplier Ownership Logic.**

✓ The 9S document with the document type **PPS Light** is displayed.

To switch from PPS Light to PPS Full:

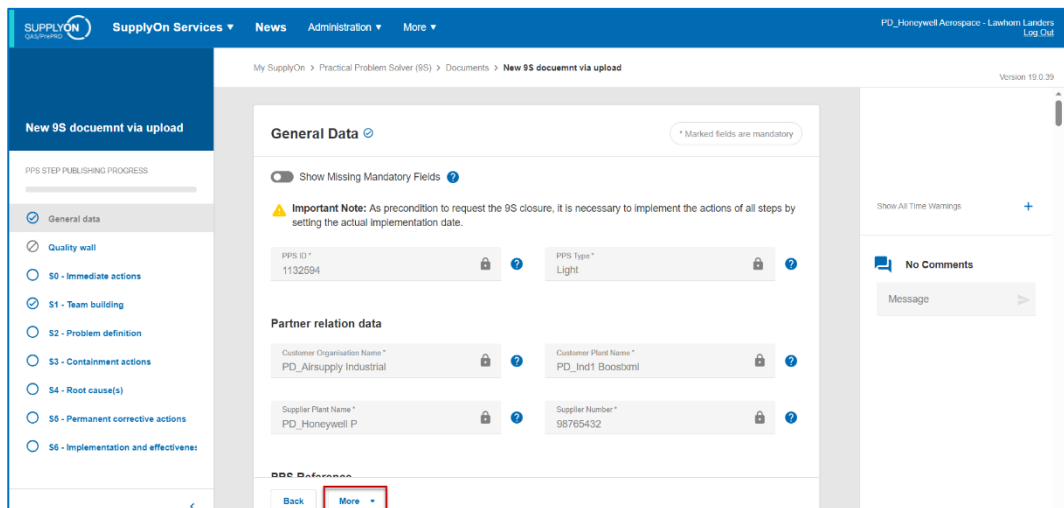1. Click **More**, and then click **Switch to PPS Full**.

Figure: **PSS Light** 9S document.

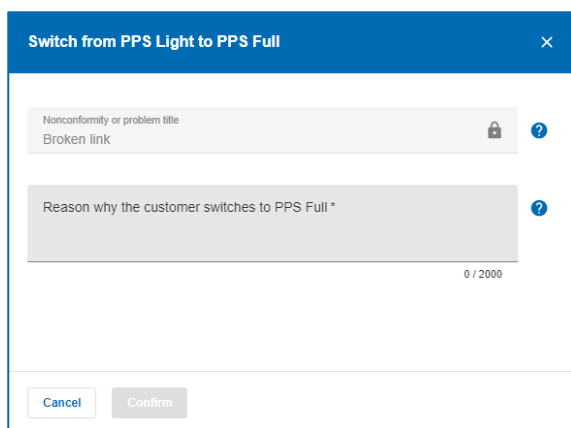The **Switch from PPS Light to PPS Full dialog** window is displayed.

Figure: **Switch from PPS Light to PPS Full** dialog window.

A reason must be specified why the switch was done. After the switch, the reason for the switch is displayed in the **Comments** area.

2. Enter a reason for the switch in the **Reason why the customer switches to PPS Full** field.

3. Click **Confirm**.

The 9S document switches to **PPS Full**, which is displayed in the **PPS type** field in the **General data**.

As a result of the switch, the status of certain 9S steps revert to **INCOMPLETE**. Missing mandatory data must be filled in.

History entry due to the switch

An entry in the document history (→ see *Viewing the history of a 9S document* on page *24*) of the 9S document about a change of the document type is made *only* if **General data** has been published by the supplier before.

8 General data, Quality wall and 9S steps

A 9S document consists of:

- General data
- Quality wall
- 9S steps

The **General data** and the individual 9S steps consist of both mandatory fields and optional data.

There are the following ownerships for the fields to be filled in:

- Supplier owned fields
- Customer owned fields
- Shared fields

Depending on the ownership, the respective fields could be filled or updated by the responsible party. For shared fields, the fields could be filled or updated by both parties.

Due to different profiles, the ownership of the fields can be different for different customers.

8.1 General data

In the **General data** section, the master data, and the metadata of the 9S document are entered.

Figure: **General data**.

The **PPS ID** is the unique document ID of the 9S document.

The **PPS type** shows the document type (**Full** or **Light**) for the 9S document
(→ see *9S document types* on page *10*).

In the **General data** section, you can enter the following data:

- **Partner relation data**
  Contains the data of the partners involved.

- **PPS reference**
  Contains information about the non-conformance type (**Concession**, **Notification of Escape, SARI** etc.) for which the 9S process is done.

- **Document identification**
  Contains information of the originator of the 9S process.

- **Identification of product/process affected**
  Contains details about the parts that are affected.

- **Description of nonconformity or problem**
  Contains a short description that can be used to identify the problem and specifies whether the non-conformity is safety related (**Safety Related**).

- **Administrative data**
  Contains data and function of the 9S document originator.

- **Details from referenced nonconformity**
  Contains detailed information about the non-conformity referenced in the **PPS reference** section.

The following fields in the **General data** and in **Step 0 – Start immediate containment actions** (→ see *9S step 0 – Start immediate containment actions* on page *53*) can be filled or edited both by the supplier and the customer (**Customer- and Supplier Ownership Logic** is used).
In this case, the "ownership" of the fields is shared between the supplier and the customer.
However, the mandatory fields must first be filled in by the supplier.

General data (shared owned fields)

- NC reference type
- NC reference number
- NC Qty
- Return Qty
- Commodity
- Nonconformity or problem title
- Safety related
- Disposition
- Customer quality approbator name
- Customer quality approbator function/department
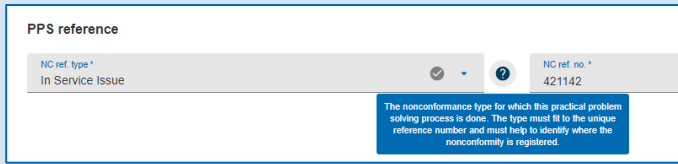- Date of quality approval

> **Note**
>
> The **NC reference number** must be unique in combination with the **Customer plant name**, the **Supplier plant name**, and the **Originator ref. no**, → see *Uniqueness of 9S documents* on page *34*.

Step 0 – Start Immediate containment action s (shared owned fields)

- Apparent problem
- Apparent consequences
- Comments
- Replacement parts
- Personnel

Note

Clicking displays an info text for the field.

Figure: Info text for the **NC ref. type** field.

8.2 Quality wall

A customer can activate the **Quality wall** that causes additional actions (in 9S step 6 and 7) to be performed by the supplier. Activating the **Quality wall** signals that the problems with the deliveries need to be fixed urgently.
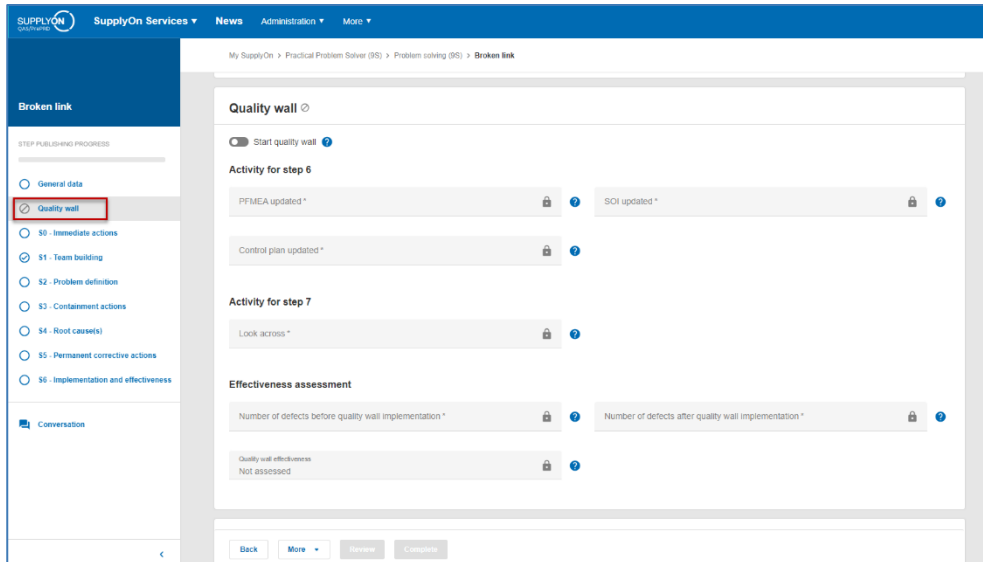

Figure: The **Quality wall** in a 9S document.

To get an overview of the effectiveness of the **Quality wall**, → see *Analytics* on page *91*.

8.2.1 Activating the Quality wall

Only the customer **team leader** and customer **team members** can activate and modify the **Quality wall**. The **Quality wall** can be activated at any time when the 9S document is in status **IN PROGRESS**.

1. Activate **Start quality wall**.
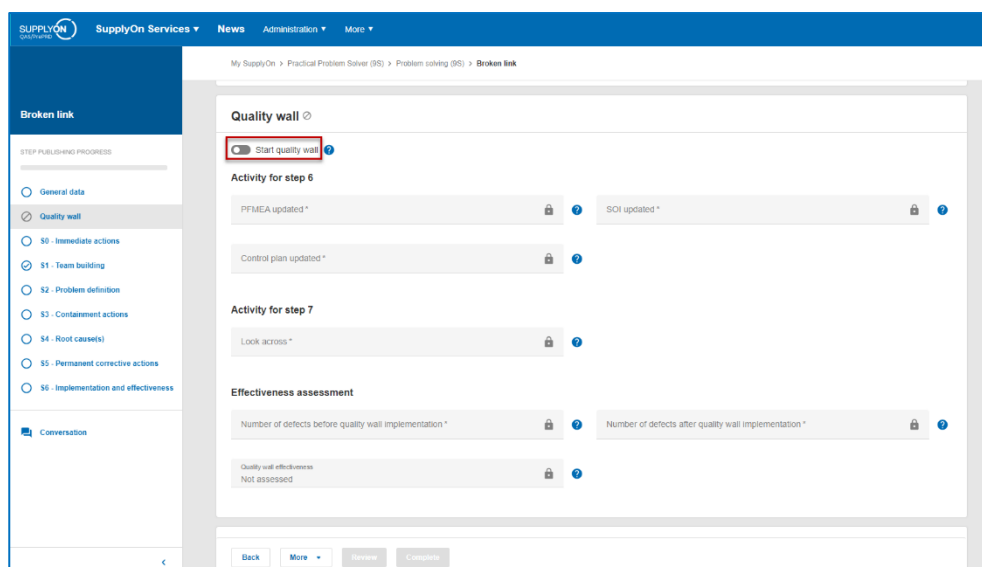
Figure: **Start quality wall**.

The following fields must be filled in for 9S step 6:

PFMEA updated: Indicates the status of the PFMEA (Process failure mode effects analysis). This document enables early identification of potential failure points that are critical to performance and customer satisfaction.

SOI updated: Indicates the status of the SOI (Standard operating instructions). SOIs, also known as instruction sheets or work instructions, are written standards that detail the sequence of process steps to be followed by operators.

Control plan updated: Indicates the status of the control plan. This document is a description of key inspection and control activities of design characteristics and process variables to ensure product quality.

The following field must be filled in for 9S step 7:

Look across: Indicates the status of the look across. An activity that is part of 9S step 7, where a check is done for similar undesirable conditions, situations, non-conformities, or failures occurring on other products, production lines or factories.

In the **Effectiveness assessment** section, the following fields are optional:

Number of defects before implementation: Number of defects occurred before the **Quality wall** was activated. The number is used for the quality wall effectiveness calculation (denominator), → see *Analytics* on page *91*.

Number of defects after implementation: Number of defects occurred after the **Quality wall** was activated. The number is used for the quality wall effectiveness calculation (numerator), → see *Analytics* on page *91*.

Quality wall effectiveness: Calculated effectiveness from the values **Number of defects before implementation** and **Number of defects after implementation.** For the evaluation of effectiveness, → see *9S Performance* on page *98*.

8.3 9S step 0 – Start immediate containment actions

In 9S step 0, the problem is specified. Here the following questions must be answered:

- How was the problem detected?
- When was the problem detected?
- Where was the problem detected?
- Who detected the problem?

A supplier must define at least one issue.

A supplier must define at least one immediate containment action.

You can add attachments to the 9S step 0 and assign it to an action, → see *Adding attachments* on page *19.*

> **Note**
>
> The following fields are automatically copied from 9S step 0 and 9S step 2:
>
> - **How was it detected?**
> - **When was it detected?**
> - **Where was it detected?**
> - **By whom was it detected?**
>
> The corresponding fields in 9S step 2 can be changed or expanded without overwriting the fields in 9S step 0.

Figure: **Step 0 – Start immediate containment actions**.

8.3.1 Adding an issue

With an issue additional information for the description of the nonconformity problem can be provided.

An issue is described by the following fields:

- **Issue group**
- **Issue code**
- **Criticality**
- **Number of issue**
- **Issue description**

> **Note**
>
> In 9S step 4, issues created in 9S step 0 can be linked to root causes so that a connection can be made between the issues and the root causes, → see *Adding a root cause* on page *65*.

To add an issue:

1. Click **Add**.

   The **Add issue** dialog window is displayed.
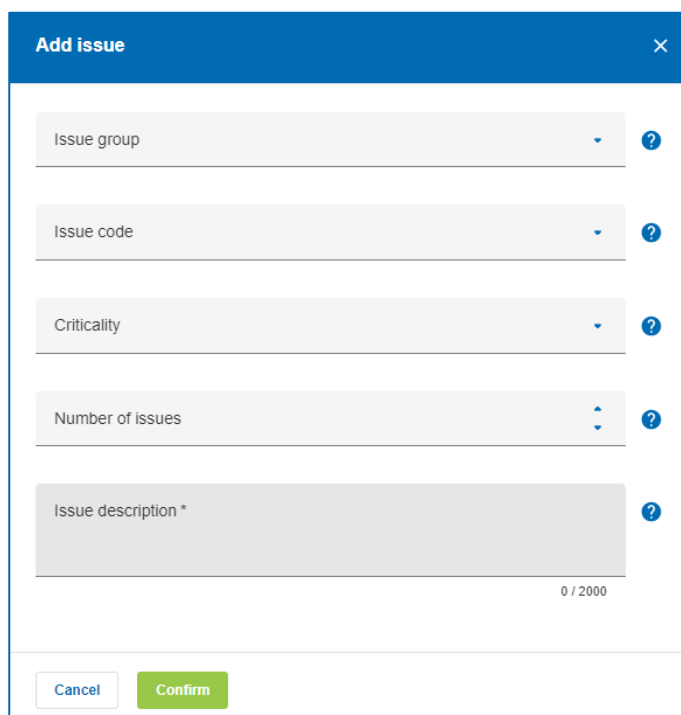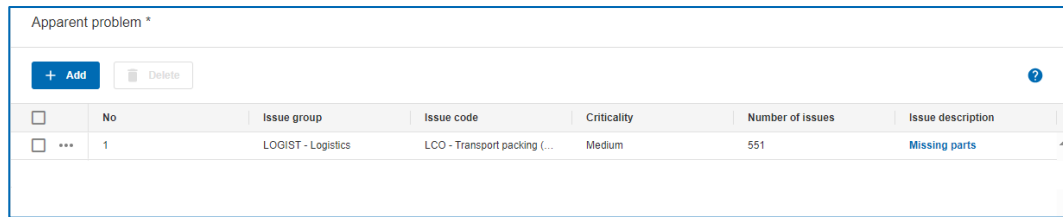
Figure: **Add Issue** dialog window.

2. Fill in the fields and the mandatory **Issue description** field.

3. Click **Confirm**.

   The issue is listed in the **Apparent problem** section.

Figure: Added issue.

8.3.2 Adding an immediate containment action

Immediate containment actions contain the following information:

- Description of the containment action.
- Responsible for ensuring that the problem is solved.
- Which department/function the responsible belongs to.
- Planned implementation date.
- Actual implementation date.

Note

Adding an immediate containment action is mandatory, so a supplier must define at least one immediate containment action.

Since the immediate containment actions in 9S step 0 are often needed in the same form in 9S step 3, the immediate containment actions from 9S step 0 can be copied in 9S step 3, → see *Copying immediate containment actions from 9S step 0* on page *63*.

For an action, a **Planned implementation** time is defined. When the action is completed, the action owner or the **team leader** needs to specify the **Actual implementation** time.

You can also assign attachments to an immediate containment action, → see *Adding attachments* on page *19*.

To add an immediate containment action:

1. Click **Add**.

   The **Add immediate containment action** dialog window is displayed.

Figure: **Add immediate containment action** dialog window.

2. Fill in the mandatory fields and the date for the **Planned implementation**.

3. Click **Create and continue**.

   The containment action is listed in the **Step 0 – Start immediate containment actions** section.

Figure: Added immediate containment action.

The status of the immediate containment action is **IN PROGRESS**.

After a supplier has worked on the immediate containment action, he must edit it and set the **actual implementation** date. Then the immediate containment action changes to the status **IMPLEMENTED**, → see *Actions* on page *17*.

An immediate containment action can be deleted again, → see *Deleting actions* on page *18*.

8.4 9S step 1 – Build the team

In 9S step 1, the supplier and the customer put together their teams.
The creator of the 9S document is automatically the supplier **team leader**.

A supplier **team leader** can add supplier **team leaders** and supplier **team members**
(→ see *Adding a supplier team member* on page *58*).
Only a supplier **team leader** can publish a 9S document.

A customer **team leader** can add customer **team leaders** and customer **team members**
(→ see *Adding a customer team member* on page *59*).
Only a customer **team leader** can review and close a 9S document.

> **Note**
>
> At least one member of the supplier team must be a supplier **team leader**.
> Otherwise, no member of the supplier team can publish the current 9S document.
> If there is no **team leader** available anymore, a **team administrator** can determine a new one,
> → see *Access and assignment of users to 9S documents* on page *32.*

> **Note**
>
> At least one member of the customer team must be a customer **team leader**.
> Otherwise, no member of the customer team can review or close the current 9S document.
> If there is no **team leader** available anymore, a **team administrator** can determine a new one,
> → see *Access and assignment of users to 9S documents* on page *32.*

A supplier **team administrator** can add supplier **team leaders** and **team members**, *and* customer
team leaders and **team members** to a 9S document, and vice versa (→ see *Access and
assignment of users to 9S documents* on page *32*).

Note that the **team administrator** role is not available for selection in **9S step 1 – Build the team**.
Thus, the **team administrator** is not a direct member of the team.

		Name	Function	Phone	E-mail	Role
☐	⋯			247		Team leader
☐	⋯			123455		Team leader

Figure: **Step 1 – Build the team,** the **Supplier** team section**.**

8.4.1 Adding a supplier team member

To add a supplier team member:

1. Click **Add**.
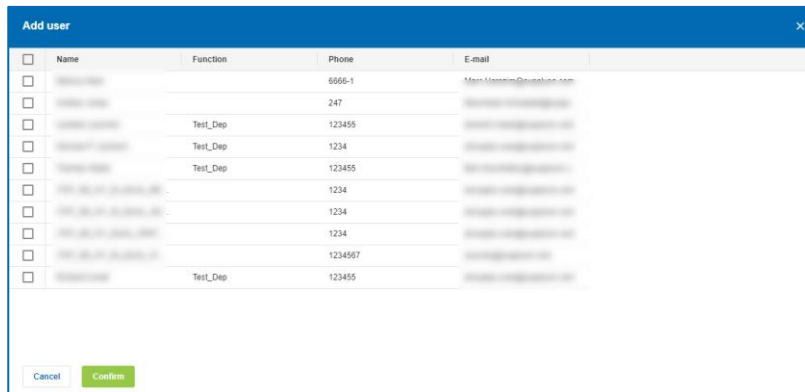
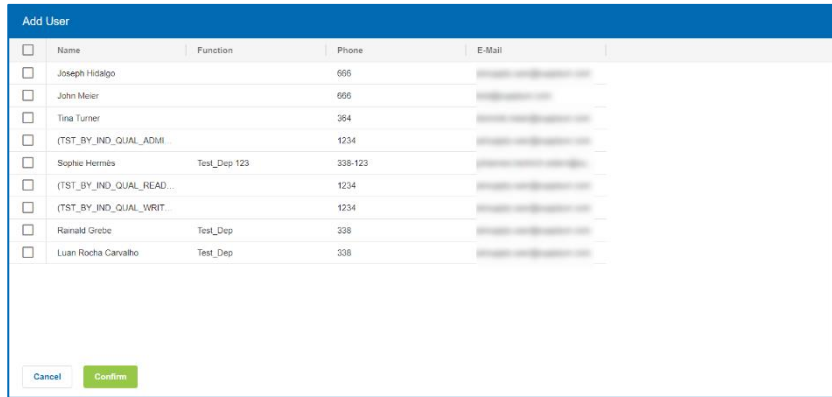   The **Add user** dialog window is displayed.

Figure: **Add user** dialog window.

2. Select a user you want to add to the team and click **Confirm**.

   The selected user is added to the supplier team.

   In the **Role** column you can define the role of the user.
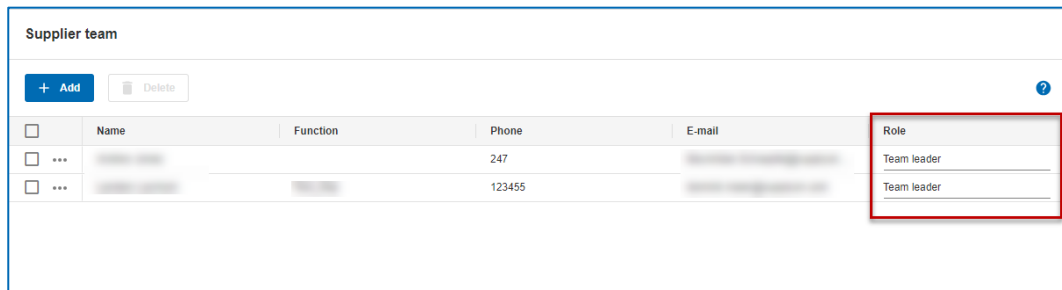
Figure: **Role** of a user.

Note

If you are a supplier **team leader** and assign yourself the supplier **team member** role, you can no longer assign yourself the supplier **team leader** role after the next log in.

8.4.2 Adding a customer team member

To add a customer team member:

1. Click **Add**.

    The **Add user** dialog window is displayed.

Figure: **Add user** dialog window.

2. Select a user you want to add to the team and click **Confirm**.

    The selected user is added to the supplier team.

    In the **Role** column, you can define the role of the user.
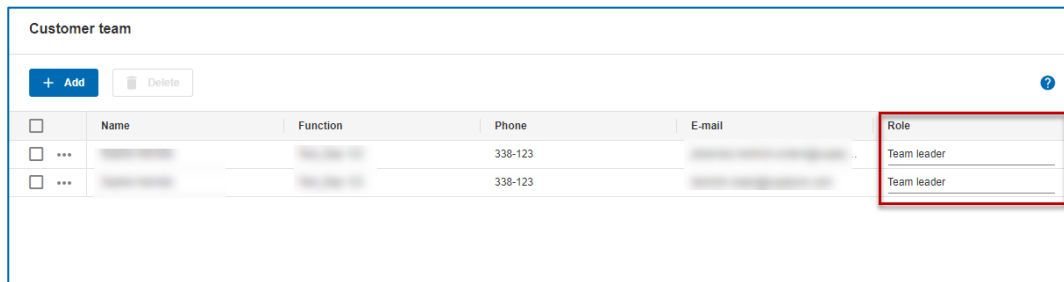
Figure: **Role** of a user.

Note

If you are a customer **team leader** and assign yourself the customer **team member** role, you can no longer assign yourself the customer **team leader** role after the next log in.

8.5 9S step 2 – Define problem

In 9S step 2, the problem should be defined as precisely as possible, identifying and quantifying the cause of the problem. Here the following questions must be answered:

- What consequences can arise as a result?
- Do further participants need to be informed?
- Which areas are affected?
- How was the problem or nonconformity discovered?
- When was the problem or non-conformity discovered?
- etc.

The following fields are automatically copied from 9S step 0 and 9S step 2:

- **How was it detected?**
- **When was it detected?**
- **Where was it detected?**
- **By whom was it detected?**

This fields in 9S step 2 can be changed or expanded without overwriting the corresponding fields in 9S step 0.

In the optional **Reception Date** field, the supplier can specify when he actually received the non-conforming goods or parts. This information can be used, for example, to adjust the timeline for the 9S document.

You can add attachments to the 9S step 2, → see *Adding attachments* on page *19*.

Figure: **Step 2 – Define problem**.

8.6 9S step 3 – Complete and optimize containment action

In 9S step 3, containment actions are defined that should limit the damage.

A supplier must define at least one containment action.

You can add attachments to the 9S step 3 and assign it to an action, → see *Adding attachments* on page *19*.

Figure: **Step 3 – Complete and optimize containment actions**.

8.6.1 Adding a containment action

Containment actions contain the following information:

- Description of the containment action.
- Responsible of the action described.
- Which department/function the responsible belongs to.
- Planned implementation date.
- Actual implementation date.

> **Note**
>
> Adding a containment action is mandatory, so a supplier must define at least one containment action.

For an action, a **planned Implementation** time is defined. When the action is completed, the **actual implementation** time is specified.

You can also assign attachments to the containment action, → see *Adding attachments* on page *19*.

To add a containment action:

1. Click **Add**.

   The **Add containment action** dialog window is displayed.

Figure: **Add containment action** dialog window.

2. Fill in the mandatory fields.

3. Click **Create and continue**.

   The added containment action is listed in the **Step 3 – Complete and optimize containment actions** section.

   The containment action is in status **IN PROGRESS**.

Figure: Added containment actions.

After a supplier has worked on the containment action, he must edit it and set the **actual implementation** date. Then the containment action changes to the status **IMPLEMENTED**, → see *Actions* on page *17*.

A containment action can be deleted again, → see *Deleting actions* on page *18*.

8.6.2 Copying immediate containment actions from 9S step 0

Immediate containment actions already created and defined in 9S step 0 can be copied to 9S step 3 if they are also needed here.

To copy an immediate containment action form 9S step 0:

1. Click **Copy from step 0**.

   The **Copy immediate containment action(s) from step0** dialog window is displayed.

2. Click the **Immediate containment action** field.

   The immediate containment actions defined in 9S step 0 are displayed in a drop-down list.

Figure: Drop-down list with Immediate containment actions defined in 9S step 0.

3. Select the immediate containment actions that you want to copy to the 9S step 3.

4. Click **Confirm**.

   The copied immediate containment actions are listed in the **Step 3 – Complete and optimize containment actions** section.

   The immediate containment actions are in status **IN PROGRESS**.
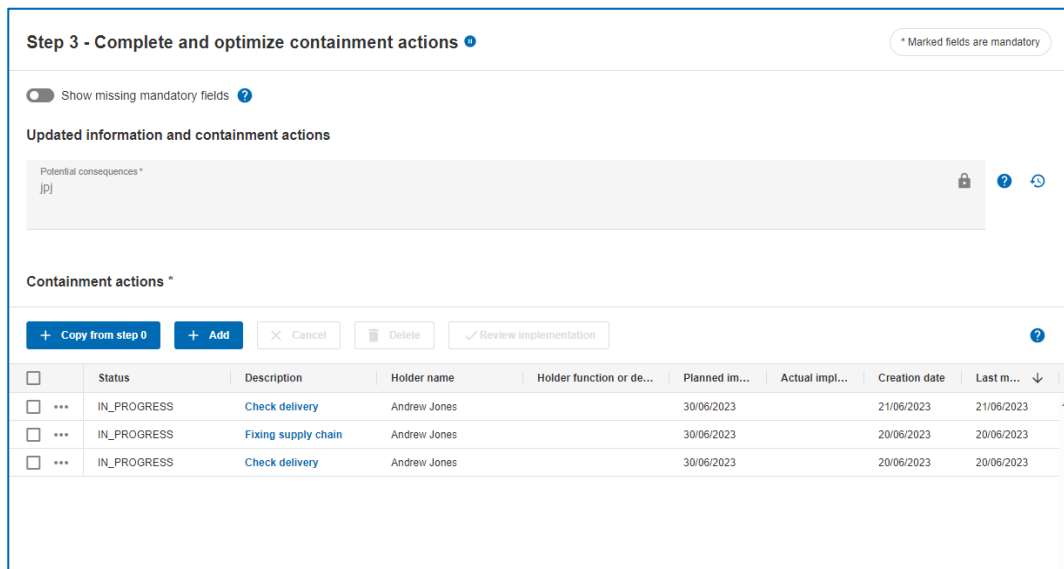
Figure: Copied immediate containment actions.

8.7 9S step 4 – Identify root cause(s)

In 9S step 4, the root causes of errors of the identified problem or non-conformity is to be determined.

A supplier must define at least one root cause.

A supplier can add attachments, specifying the root causes in more detail, → see *Adding attachments* on page *19*. The attachments can also be assigned to specific root causes.

Figure: **Step 4 – Identify root cause(s)**.

8.7.1 Adding a root cause

Note

Adding a root cause is mandatory, so a supplier must define at least one root cause.

To add a root cause:

1. Click **Add**.

    The **Add root cause** dialog window is displayed.
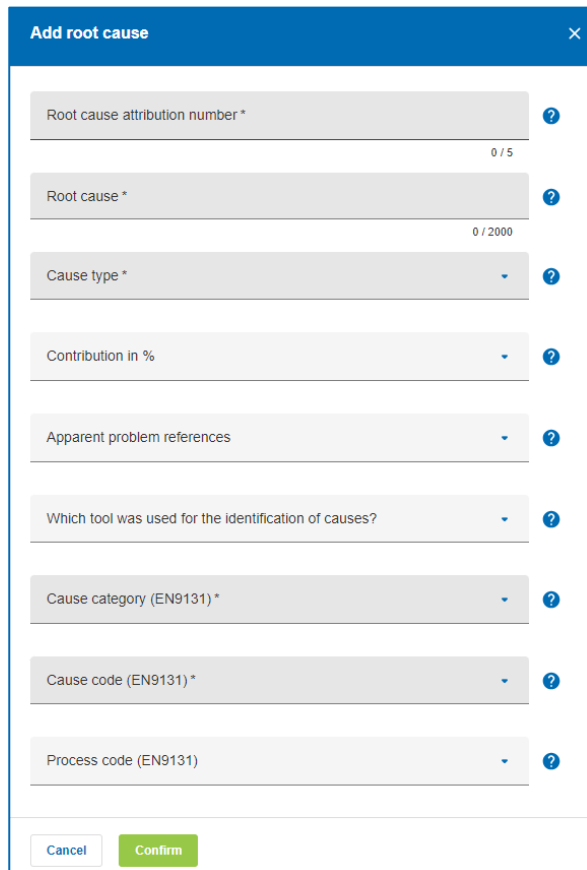
Figure: **Add root cause** dialog window.

2. Fill in the following mandatory fields:

    Root cause attribution number
    Each root cause should have a clear attribution short text or number (for example, 1, 2, A, B) to ensure traceability of actions in 9S step 5 and 9S step 6.

    Root cause
    Description of the cause that when addressed by appropriate corrective action(s), will durably resolve the issue.

    Cause type
    Select whether the described root cause is related to the occurrence or a non-detection of the non-conformity.

    Cause category (EN9131)
    Conformance cause category that corresponds to the described root cause.
    The conformance cause category is based on EN9131.

Cause code (EN9131)
Conformance cause code that corresponds to the described root cause.
The conformance cause code is based on EN9131.

3. Fill in the following optional fields:

Apparent problem references
Selection list for linking to the issues defined in 9S step 0. In this way, a link can be made between the issues defined in 9S step 0 and the root causes identified in 9S step 4.
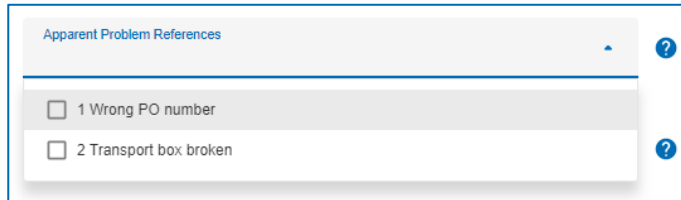
Figure: Selection list with the issues defined in 9S step 0.

The selected issues are displayed in the **Root causes** table. In the PDF file generated when downloading a 9S document, the numbers of the linked issues are displayed.

Note

Before a root cause can be deleted, all links to the issues must have been removed first.

Contribution in %
Contribution of a root cause to the non-conformity in percent.

Which tool was used for the identification of causes?
The main tool that has been used to enable root causes to be identified, data to be collected, and analyzed.

Process code (EN9131)
Provides a standard list of process codes.

Symptoms associated to root cause
Descriptions of the consequence(s) of the root cause.

4. Click **Confirm**.

The added root cause is listed in the **Step 4 – Identify root cause(s)** section.
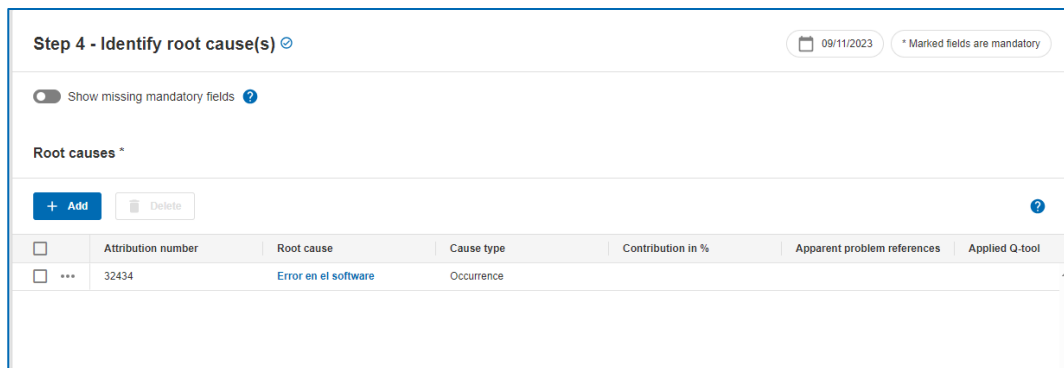
Figure: **Root causes** table with added root cause.

8.8 9S step 5 – Define and select permanent corrective actions

In 9S step 5, the measures that can eliminate the causes are determined. When defining the permanent corrective actions, the focus is on error avoidance rather than error detection.

The supplier must define at least one permanent corrective action.

The supplier can add attachments, specifying the permanent corrective actions in more detail, → see *Adding attachments* on page *19*.

Figure: **Step 5 – Define and select permanent corrective actions**.

8.8.1 Adding a permanent corrective action

Note

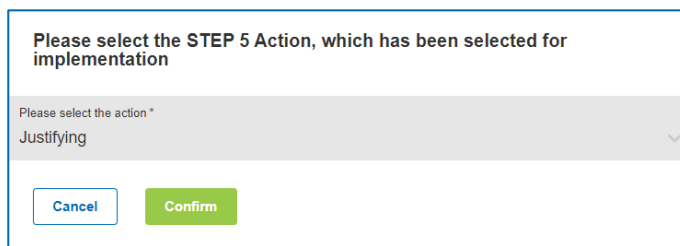Adding a permanent corrective action is mandatory, so a supplier must define at least one permanent corrective action.

You can also assign attachments to a permanent corrective action, → see *Adding attachments* on page *19*.

To add a permanent corrective action:

1. Click **Add**.

   The **Add permanent corrective action** dialog window is displayed.

Figure: **Add permanent corrective action** dialog window.

2. Fill in the following mandatory fields:

   Action description
   Description of the corrective actions directly associated to the root cause. Clarify whether the action is internal/external to the organization.

   Justification for the permanent corrective action
   Description explaining why this action has been selected and how it is expected resolve and/or reduce the impact of this issue.

Root cause attribution number and root cause
Relation between the action and the root cause addresses should be clearly identified by selecting the related root cause from this list of root causes taken from 9S step 4.

Corrective action description and code (EN9131)
Corrective action code that corresponds to the described permanent corrective action. The codes are based on EN9131.

3. Fill in the optional field:

   Priority factor
   Priority of the action (high, medium, low).

4. Click **Confirm**.

   The added permanent corrective action is listed in the **Step 5 – Define and select permanent corrective actions** section.

Figure: Added permanent corrective action.

After the supplier has worked on the permanent corrective action, he must edit it and set the **actual implementation** date. Then the permanent corrective action changes to the status **IMPLEMENTED**. → See *Actions* on page *17*.

8.9 9S step 6 – Implement permanent corrective actions and check effectiveness

In 9S step 6, the supplier can implement the permanent corrective action(s) that were defined in 9S step 5.

A supplier must implement at least one permanent corrective action.

A supplier can add attachments, specifying the implementation in detail, → see *Adding attachments* on page *19*.

Figure: **Step 6 – Implement permanent corrective actions and check effectiveness.**

8.9.1 Implementing permanent corrective actions

Note

Implementing a permanent corrective action is mandatory, so a supplier must implement at least one permanent corrective action.

You can also assign attachments to the permanent corrective action, → see *Adding attachments* on page *19*.

To implement a permanent corrective action:

1. Click **Copy permanent corrective actions from step 5*.**
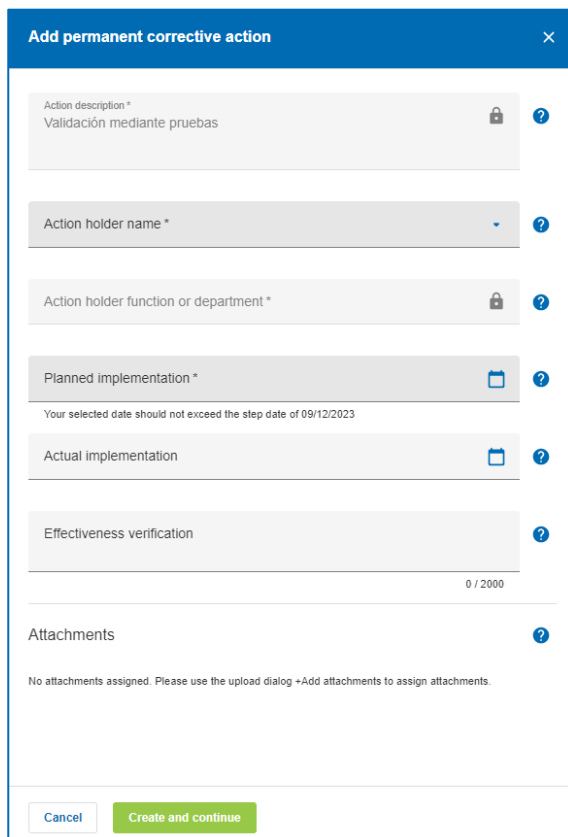
   A dialog window is displayed, listing the permanent corrective actions defined in 9S step 5.

   Figure: Dialog window listing the permanent corrective actions defined in 9S step 5.

2. Select the permanent corrective actions you want to implement and click **Confirm**.

   Figure: **Add permanent corrective action** dialog window.

3. Select the **Action holder name**.

4. Select the **Planned implementation** date.

5. Click **Create and confirm**.

   The added permanent corrective action is listed in the **Step 6 – Implement permanent corrective actions and check effectiveness** section.

   The permanent corrective action is in status **IN PROGRESS**.

Figure: Added permanent corrective action.

After the supplier has worked on the permanent corrective action, he must edit it and set the **actual implementation** date. Then the permanent corrective action changes to the status **IMPLEMENTED**, → see *Actions* on page *17*.

Note

A permanent corrective action created in 9S step 5 and linked to a permanent corrective action in 9S step 6 cannot be deleted if it has the status **IMPLEMENTED** or **IN PROGRESS**.
An error message is displayed when trying to delete such a permanent corrective action.

Only a permanent corrective action in 9S step 6 with status **CANCELLED** can be deleted.

A permanent corrective action can be deleted again, → see *Deleting actions* on page *18*.

8.10 9S step 7 – Standardize and transfer the knowledge across the business

In 9S step 7, standardizing and preventive actions must be defined to ensure that the same or similar defects are excluded in the future.

A supplier must define at least one standardizing action.

A supplier must define at least one preventive action.

A supplier can add attachments, → see *Adding attachments* on page *19*.

Figure: **Step 7 – Standardize and transfer of knowledge across the business.**

8.10.1 Adding a standardizing action

> **Note**
>
> Adding a standardizing action is mandatory, so a supplier must define at least one standardizing action.

You can also assign attachments to a standardizing action, → see *Adding attachments* on page *19*.

To add a standardizing action:

1. Click **Add**.

   The **Add standardizing action** dialog window is displayed.

Figure: **Add standardizing action** dialog window.

2. Fill in the mandatory fields.

3. Click **Create and continue**.

   The added standardizing action is listed in the **Step 7 – Standardize and transfer of knowledge across business** section.

Figure: Added standardizing action.

After the supplier has worked on the standardizing action, he must edit it and set the **actual implementation** date. Then the standardizing action changes to the status **IMPLEMENTED**. → See *Actions* on page *17*.

8.10.2 Adding a preventive action

> **Note**
>
> Adding a preventive action is mandatory, so a supplier must define at least one preventive action.

You can also assign attachments to a preventive action, → see *Adding attachments* on page *19*.

To add a preventive action:

1. Click **Add**.

   The **Add preventive action** dialog window is displayed.

Figure: **Add preventive action** dialog window.

2. Fill in the mandatory fields.
3. Click **Create and continue**.

The added preventive action is listed in the **Step 7 – Standardize and transfer of knowledge across business** section.

Figure: Added preventive action.

After the supplier has worked on the preventive action, he must edit it and set the **actual implementation** date. Then the preventive action changes to the status **IMPLEMENTED**, → see *Actions* on page *17*.

A preventive action can be deleted again, → see *Deleting actions* on page *18*.

8.11 9S step 8 – Recognize and close the team

The last 9S step 8 is used to specify where the information accumulated during the root cause analysis is stored. In addition, transferred actions can be defined that help to further communicate the lessons learnt or the result.

Figure: **Step 8 – Recognize and close the team.**

Database update: Indicates where information related to the root cause analysis (for example, knowledge capture, lessons learned) is stored. If a "Root cause analysis and problem solving" database exists, provide its name or reference, its location, and how to the find relevant information.

A supplier can add transferred actions.

A supplier can add attachments, → see *Adding attachments* on page *19*.

8.11.1 Adding a transferred action

You can also assign attachments to a transferred action, → see *Adding attachments* on page *19*.

To add a transferred action:

1. Click **Add**.

   The **Add transferred action** dialog window is displayed.

Figure: **Add transferred action** dialog window.

2. Fill in the mandatory fields.

3. Click **Confirm**.

   The added transferred action is listed in the **Step 8 – Recognize and close team** section.

Figure: Added transferred action.

9 Requesting the closure of a 9S document (Supplier)

A supplier **team leader** can request the closure of a 9S document if:

- ✓ all required fields are filled in,

- ✓ all available 9S steps are published (or accepted already),

- ✓ all actions are in status **IMPLEMENTED.**
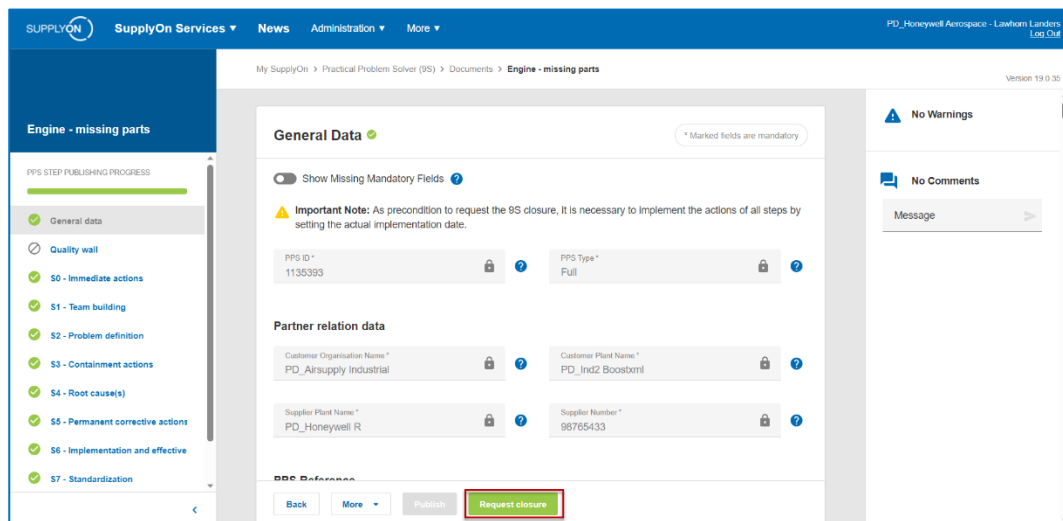
To request the closure of a 9S document:

Figure: **Request closure**.

1. Click **Request closure**.

   The closure request is sent to the customer.

   The 9S document status changes from **IN PROGRESS** to **CLOSURE REQUESTED**.

   The customer can now close the 9S document.

10 Changing the timeline of a 9S document (Customer)

A customer can change the due times for the individual 9S steps of a 9S document.

To change the timeline of a 9S document:

1. On the **Dashboard**, select a 9S document for that you want to change the timeline.
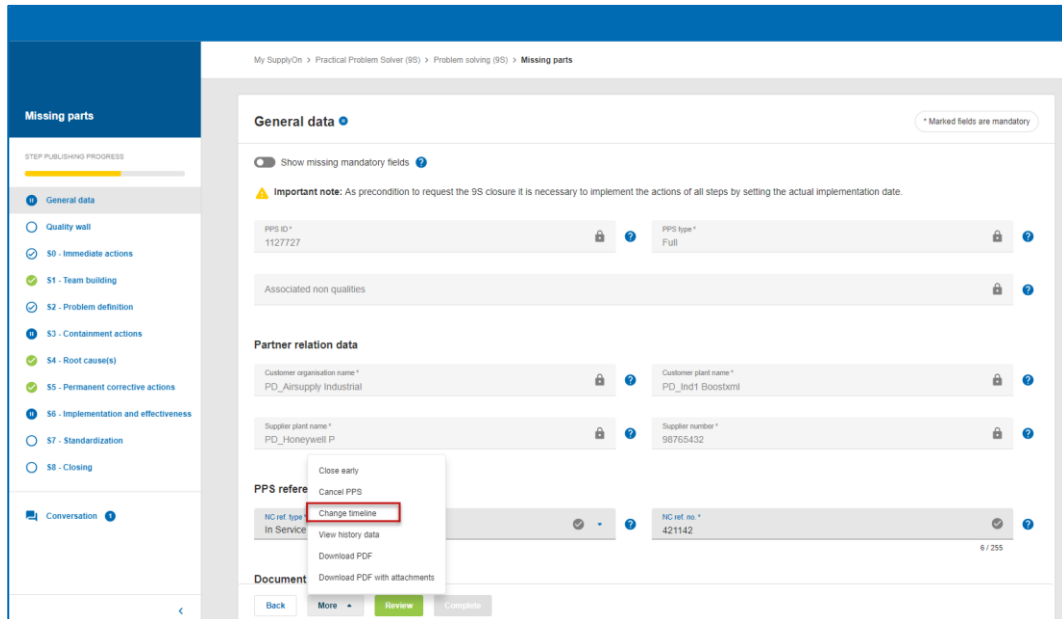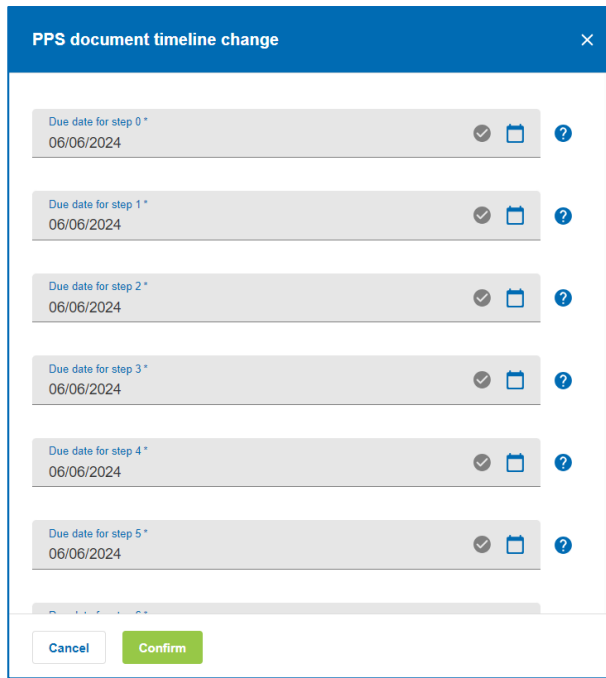
   The 9S document is displayed.

Figure: **Change timeline** for a 9S document.

2. Click **More**, and then click **Change timeline**.

   The **PPS document timeline change** dialog window is displayed.

Figure: **PPS document timeline change**.

Due dates are mandatory for the following 9S steps:

- 9S step 0
- 9S step 3
- 9S step 5
- 9S step 6
- 9S step 8

A 9S step must be published by the due date.

3. Select a date for the mandatory and optional 9S steps.

4. Click **Confirm**.

The due dates of the 9S steps are changed.

11 Reviewing a 9S step/9S document (Customer)

While the work on a 9S document, a customer can collaborate on it.

All customer **team members** can update a 9S step/9S document.

Only a customer **team leader** can review or close a 9S step/9S document.
A customer **team leader** can also make a correction of an already reviewed 9S step.
For more information on adding **team members** to a 9S document, → see *Adding a customer team member* on page *59*.

In addition, a customer can comment a 9S document, → see *Conversations* on page *21*.

Note on the Internet browser

It is recommended to use **Google Chrome** or **Firefox** as Internet browser.
The **Microsoft Internet Explorer** does not work correctly with the application.

Prerequisites:

- ✓ Appropriate roles and rights, → see *Roles and rights* on page *114*.
- ✓ Logged on to AirSupply.

To work on 9S documents:

1. On the main menu, point to **SupplyOn Services,** and then click **AirSupply**.
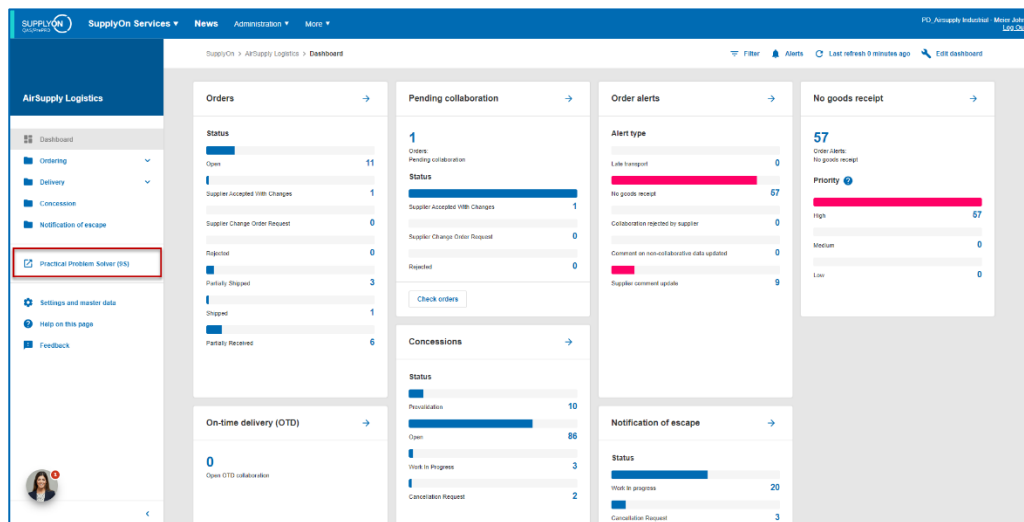
   The AirSupply **Dashboard** is displayed.

Figure: AirSupply **Dashboard** with **Practical Problem Solver (9S)** link.

2. Click **Practical Problem Solver (9S)**.
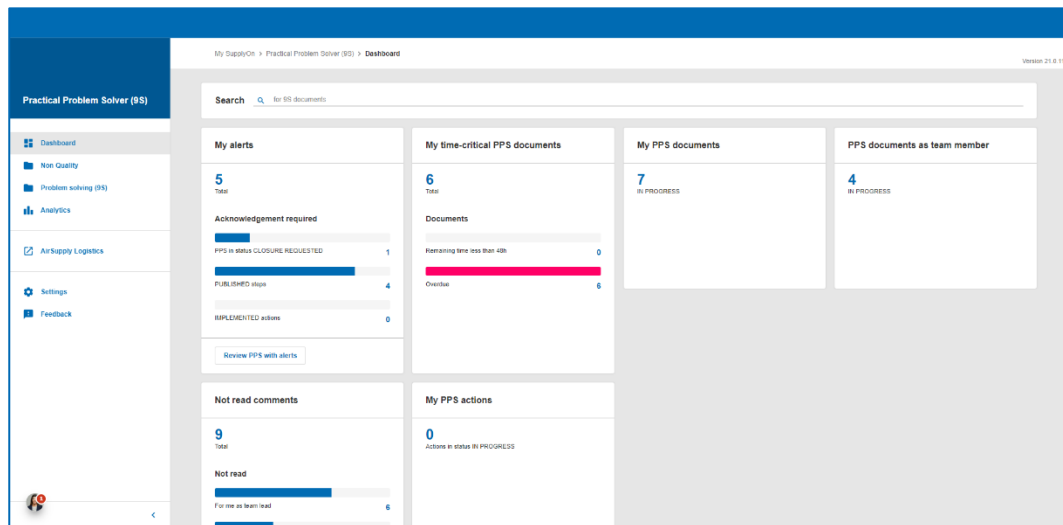
The **Dashboard** is displayed.

Figure: **Dashboard** for a customer.

The **Dashboard** provides an overview of the statuses of the 9S documents that the logged in user has access to. The following information is displayed in detail:

- **My alerts**
  Displays the 9S documents created in the last 24 hours and the 9S documents where a 9S step needs to be revised. 9S documents created by the customer and the supplier are counted.

- **My time-critical PPS documents**
  Displays the number of time critical and overdue 9S documents.

- **My PPS documents**
  Displays the number of 9S documents to which the logged-on user is assigned as **team leader**.

- **My PPS documents as team member**
  Displays the number of active 9S documents to which the logged-on user is assigned as **team member**.

- **Not read comments**
  Displays the number of unread comments.

- **My PPS actions**
  Displays the number of open actions for the logged in user.

The **Dashboard** is the starting point for reviewing and closing 9S documents.

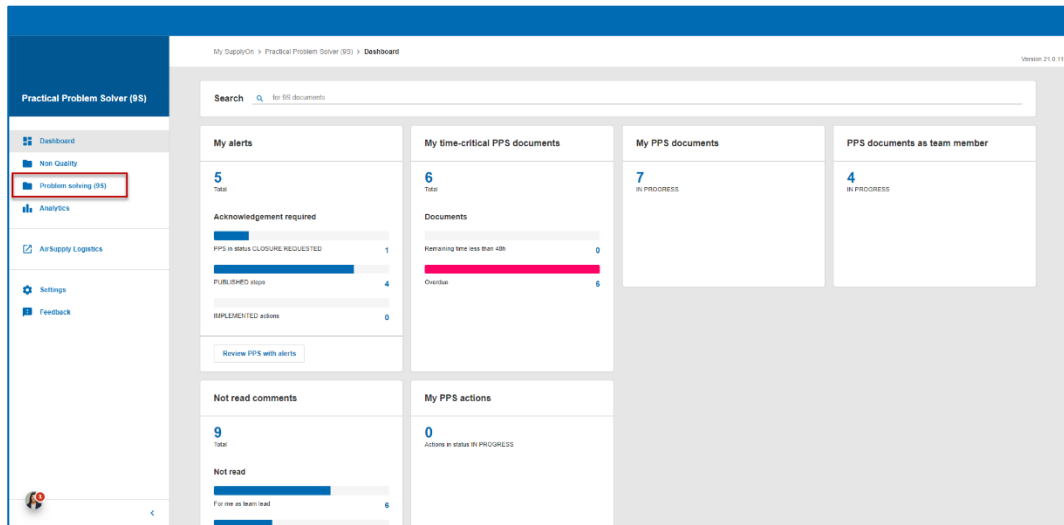3. On the **Dashboard**, click **Problem solving (9S)**.

Figure: **Problem solving (9S)** link on the **Dashboard**.

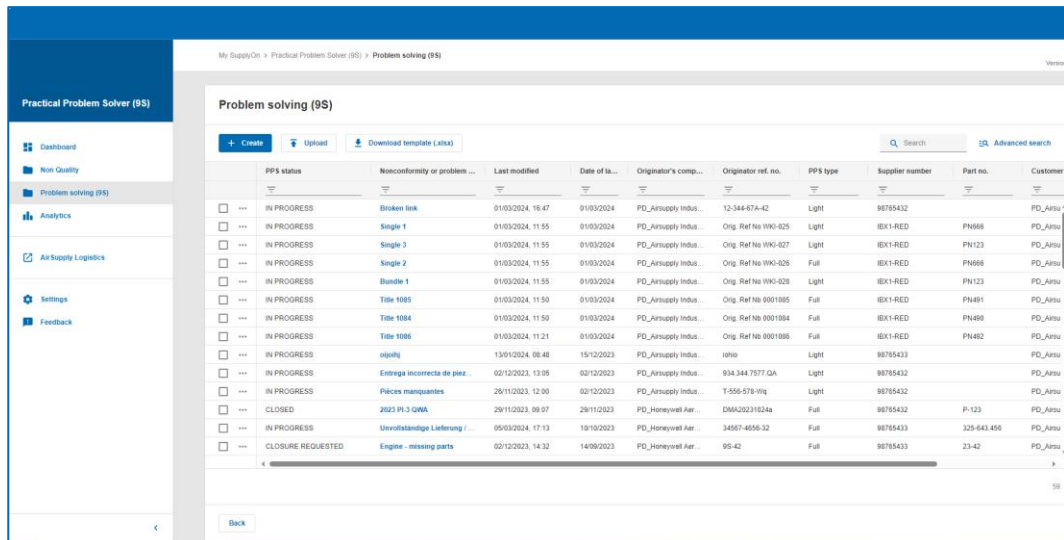The **Problem solving (9S)** page is displayed.

Figure: **Problem solving (9S)** page.

The **Problem solving (9S)** page lists all available 9S documents.

Here the customer can select the 9S document that he wants to review.

To review a 9S document:

After the supplier publishes one or more 9S steps, the customer must review it.

A customer can also make a correction of an already reviewed 9S step.

1. On the **Problem solving (9S)** page, select a 9S document and click it.
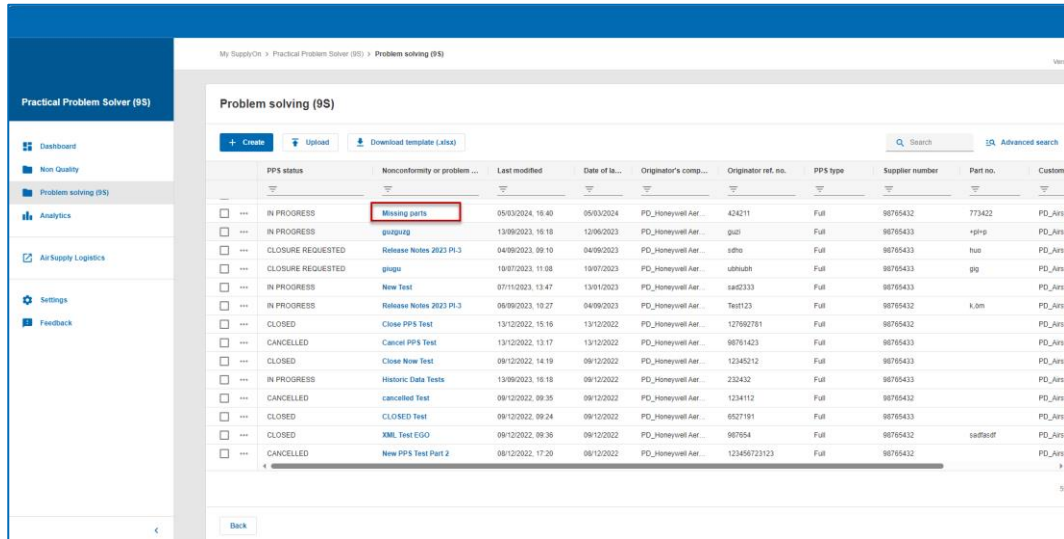
Figure: Link to a 9S document.

The selected 9S document is displayed.
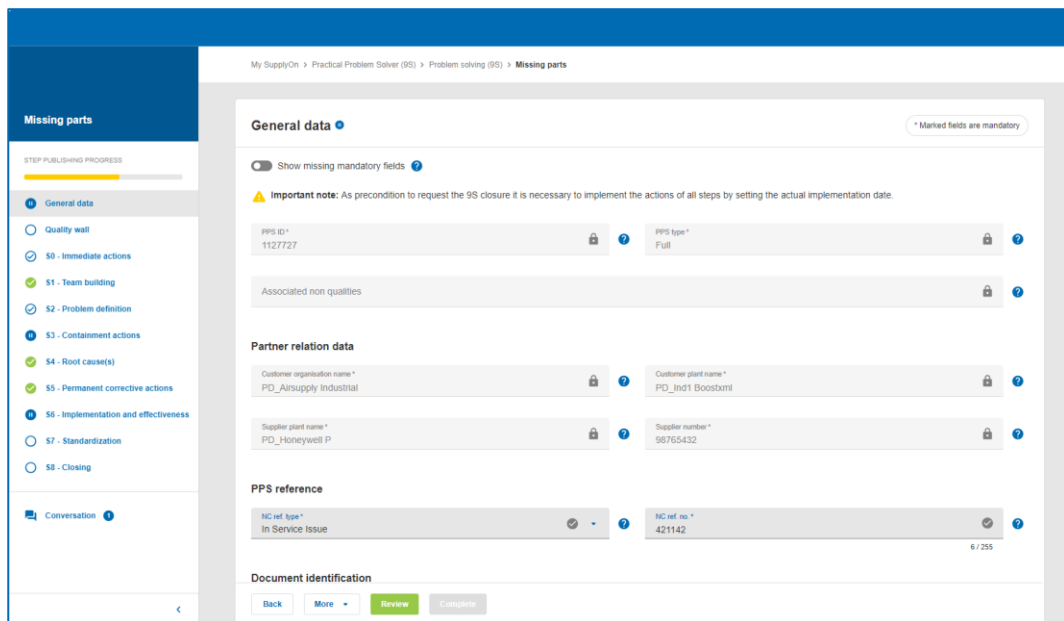
Figure: **9S document**.

A customer can review all 9S steps at once.

All updates are automatically saved.
The modifications are visible to the supplier.

2. Click **Review**.

The **Review PPS** dialog window is displayed.

Figure: **Review PPS** dialog window.

Here the customer can accept or reject 9S steps.

In addition, a customer can make a correction of an already reviewed 9S step.

3. Select **Rejected**, if a 9S step needs a revision.
    Add a **Comment**, specifying the reason for the needed rework.

    – or –

3. Select **Accepted**, if a 9S step is accepted.

    – or –

3. Activate **Correction of already reviewed PPS steps**, if you want to correct an already reviewed 9S step.
    Then change the status (from **ACCEPTED** to **INCOMPLETE** or vice versa) and add a **Comment** for the reason why the review was changed.

4. Click **Confirm**.

    After a 9S document has been reviewed, the status remains **IN PROGRESS** (→ see *9S document statuses* on page *10*).

12 Closing and canceling a 9S document (Customer)

A customer can close a 9S document in two ways:

- ✓ After a supplier has sent a closure request, the customer closes the 9S document.
  For more information on closing a 9S document, → see *Closing a 9S document* on page *88*.

- ✓ The 9S document is closed prematurely because the subject matter of the 9S document has been clarified or has now become irrelevant.
  For more information on closing a 9S document prematurely, → see *Premature closing of a 9S documents on page 89.*

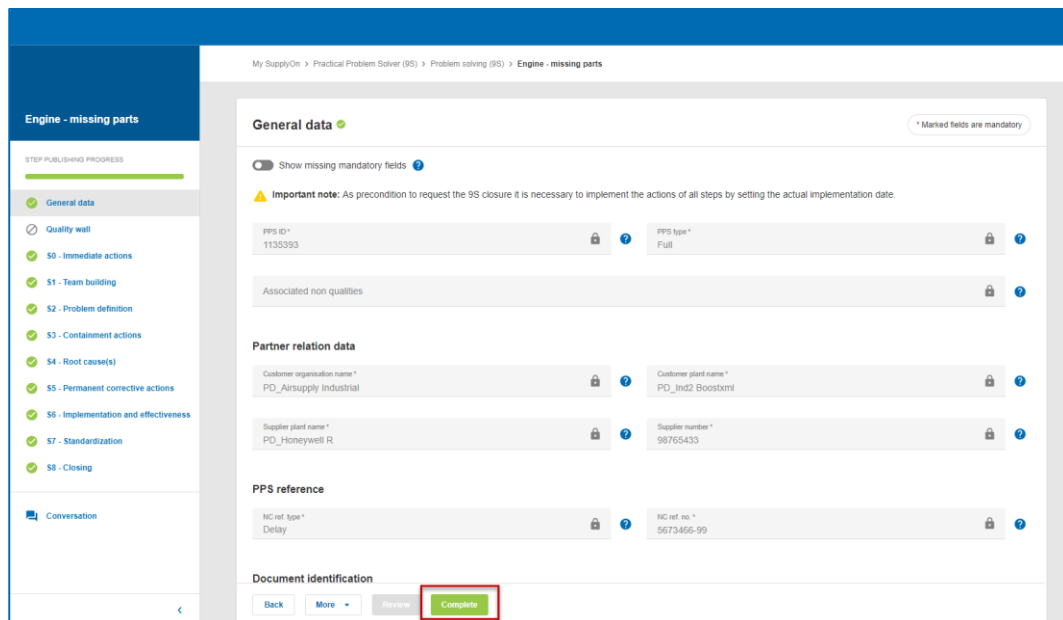If the 9S document is closed, it cannot be edited any more.

A customer can cancel an already published 9S document. This may happen when a supplier requested a cancelation. → See *Canceling a 9S document* on page *90*.

12.1 Closing a 9S document

After a supplier has sent a closure request for a 9S document, a customer can close the 9S document. Only a customer **team leader** can close a 9S document.

To close a 9S document:

1. On the **Dashboard**, select a 9S document that you want to close and click it.

   The 9S document is displayed.

Figure: **Complete** a 9S document.

2. Click **Complete**.

   The 9S document status changes from **CLOSURE REQUESTED** to **CLOSED.**

12.2 Premature closing of a 9S documents

A customer can close a 9S document at any time, that is, before the 9S process is completed.

To close a 9S document prematurely:

1. On the **Dashboard**, select a 9S document that you want to close and click it.
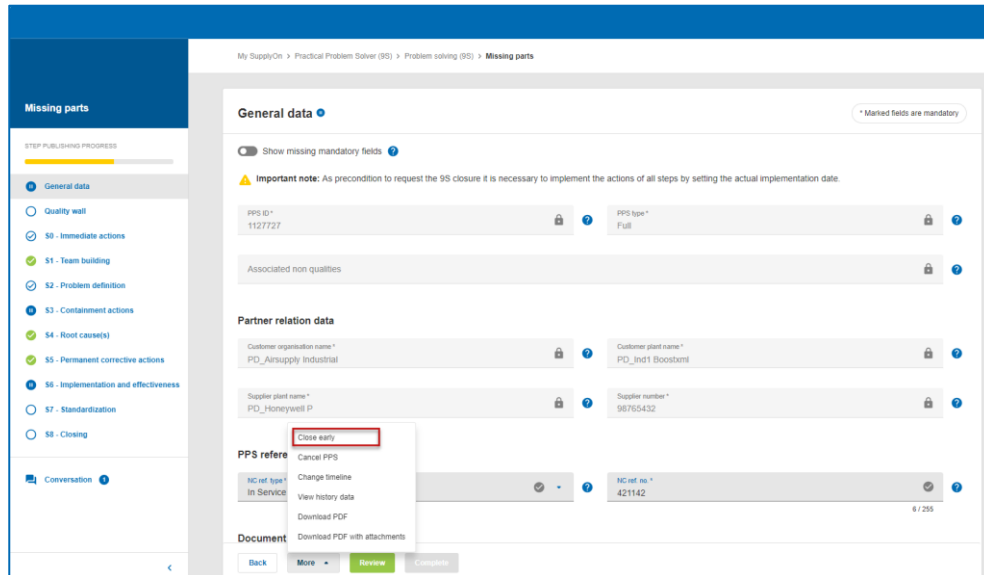
   The 9S document is displayed.

Figure: **Close early** a 9S document.

2. Click **More**, and then click **Close early**.

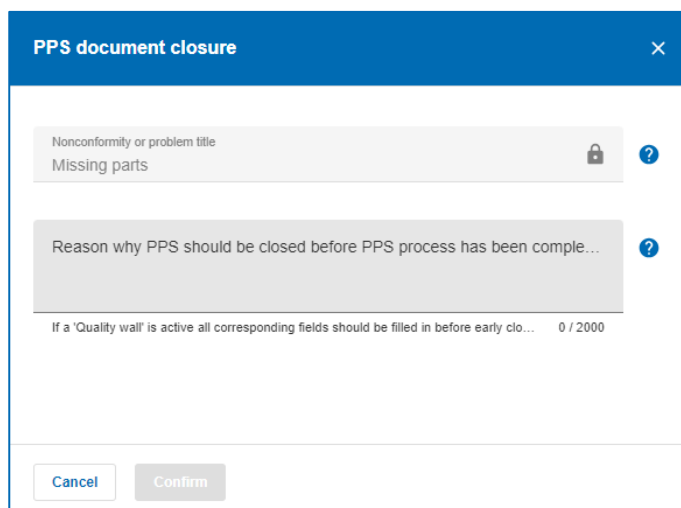   The **PPS document closure** dialog window is displayed.

Figure: **PPS document closure** dialog window.

3. Enter the reason why the 9S document is closed before the 9S process has been completed.

4. Click **Confirm**.

   After a 9S document has been closed, the status changes to **CLOSED** (→ see *9S document statuses* on page *10*).

12.3 Canceling a 9S document

A customer can cancel an already published 9S document. If a supplier wants to cancel a 9S document, he needs to contact the customer's **team leader** (for example, by e-mail, telephone) to request the cancelation.

To cancel a 9S document:

1. On the **Dashboard**, select a 9S document that you want to cancel and click it.
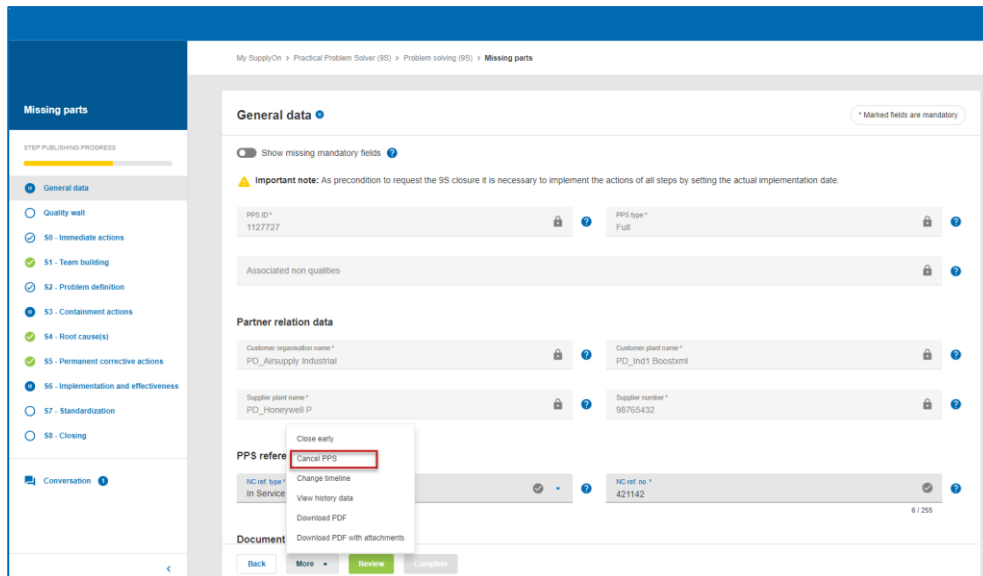
    The 9S document is displayed.

Figure: **Cancel PPS** for a 9S document.

2. Click **More**, and then click **Cancel PPS**.

    The **PPS document cancellation** dialog window is displayed.
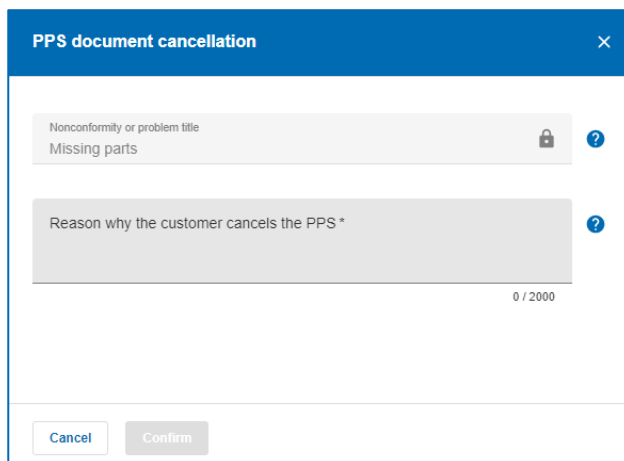

Figure: **PPS document cancellation** dialog window.

3. Enter the reason for canceling the 9S document.

4. Click **Confirm**.

After a 9S document has been canceled, the status changes to **CANCELLED**
(→ see *9S document statuses* on page *10*).

13 Analytics

The **Analytics** section provides an overview of the effectiveness and responsiveness of 9S activities via the **Analytics** dashboard.

> **Note**
>
> The **Analytics** dashboard is available only in English.
> Only customers who have booked the **Analytics** service have access to the **Analytics** dashboard. Therefore, only the data of the customers who have booked the **Analytics** service are considered and displayed on the **Analytics** dashboard.

For the **Analytics** dashboard, the following tabs are available:

- **NQ Operational Management**

- **9S Operational Management**

- **9S Performance**
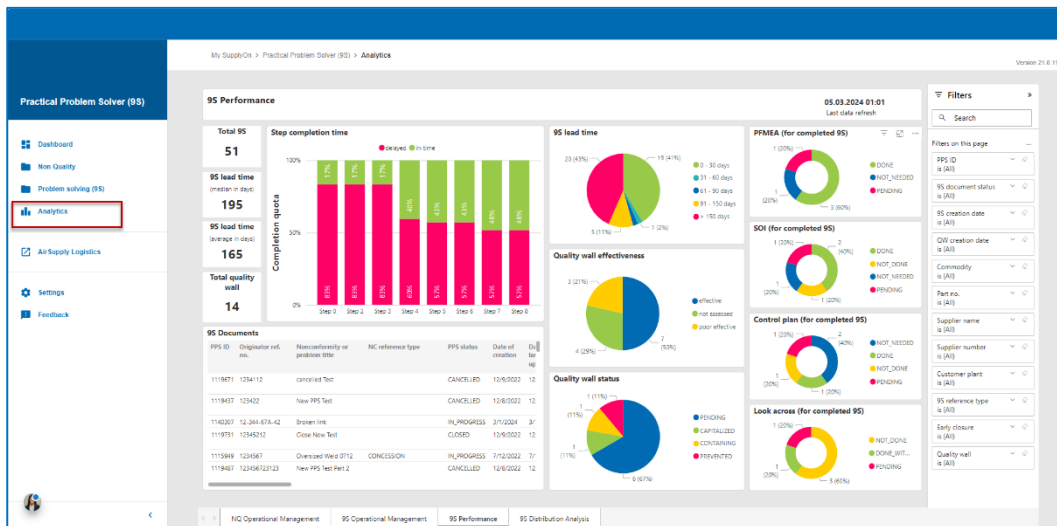
- **9S Distribution Analysis**

Figure: **9S Performance** tab on the **Analytics** dashboard.

> **Data refresh**
>
> The data extract from the PPS database (9S) into the **Analytics** dashboard is performed once a day. This means that a created 9S document is not displayed directly in the **Analytics** dashboard.
>
> The data of the past two years are displayed in the **Analytics** dashboard.

13.1 NQ Operational Management

The **NQ Operational Management** tab displays how many non-quality objects were created in which month, grouped by **NC Reference Types**.
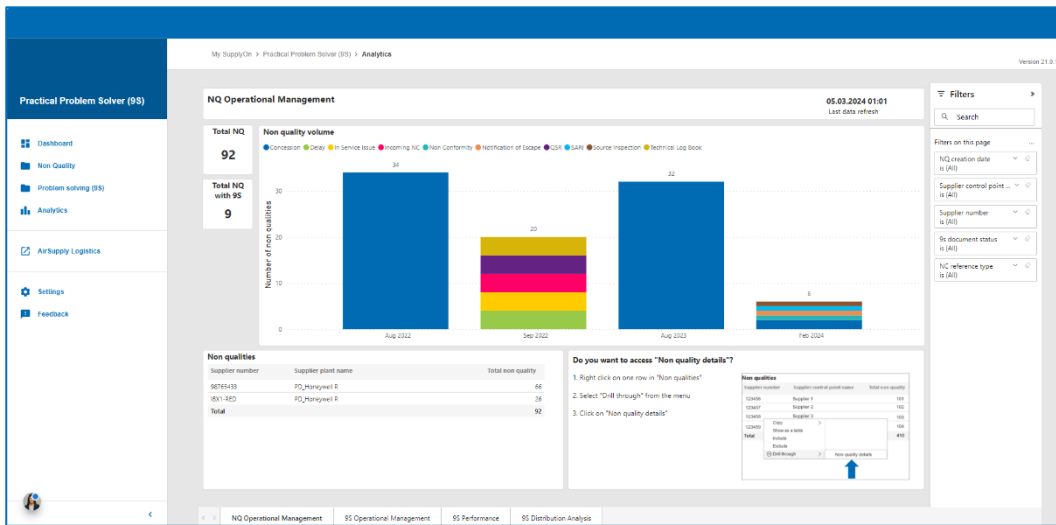

Figure: **NQ Operational Management** tab on the **Analytics** dashboard.

The following data are displayed on the **NQ Operational Management** tab on the **Analytics** dashboard:

Name	Description	Chart
Total NQ	Displays the total number of non-quality objects.	Total NQ 126 — Figure: **Total NQ**
Total NQ with 9S	Displays the total number of non-qualities with a 9S reference.	Total NQ with 9S (Blank) — Figure: **Total NQ with 9S**
Non quality volume	Displays the volume of non-quality objects on a monthly basis depending on KPIs.	Figure: **Non quality volume**

Via the **Non qualities** table you can access the non-quality details.

13.1.1 Accessing non-quality details

You can display the non-quality objects for a supplier.

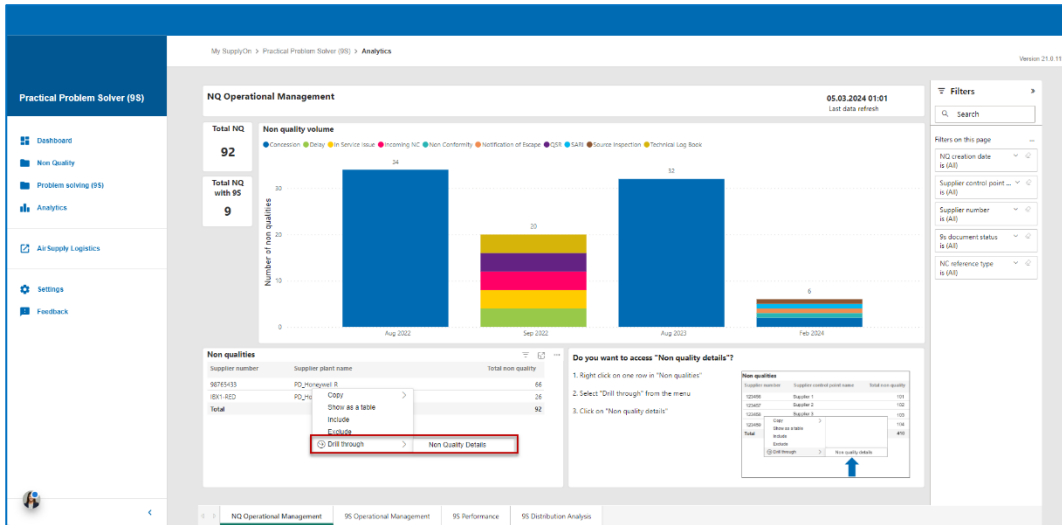1. In the **Non qualities** table, right-click a supplier.

Figure: Right-click on a supplier in the **Non qualities** table.

2. Click **Drill through,** and then click **Non Quality Details**.

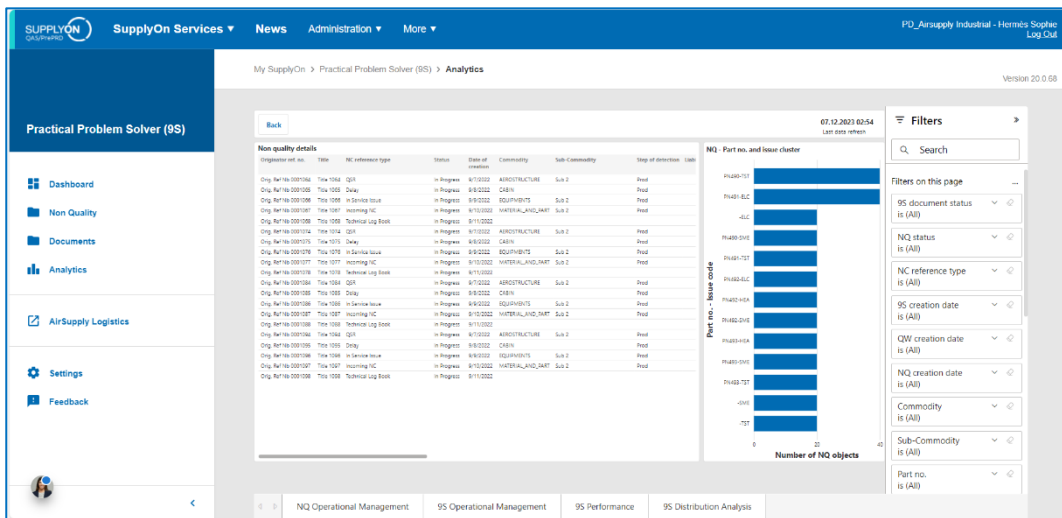   The **Non quality details** table is displayed.

Figure: **Non quality details** table.

The **Non quality details** table lists the non-quality objects related to the selected supplier.

The **NQ – Part no. and issue cluster** panel shows the issues depending on the material numbers.

You can export and sort the data of the **Non quality details** table.

Figure: Exporting and sorting data.

13.1.2 Linking to 9S decision

From the **Non quality details** table, a link leads directly to the 9S decision for the selected non-quality object, which can be used to determine whether a 9S process should be initiated.

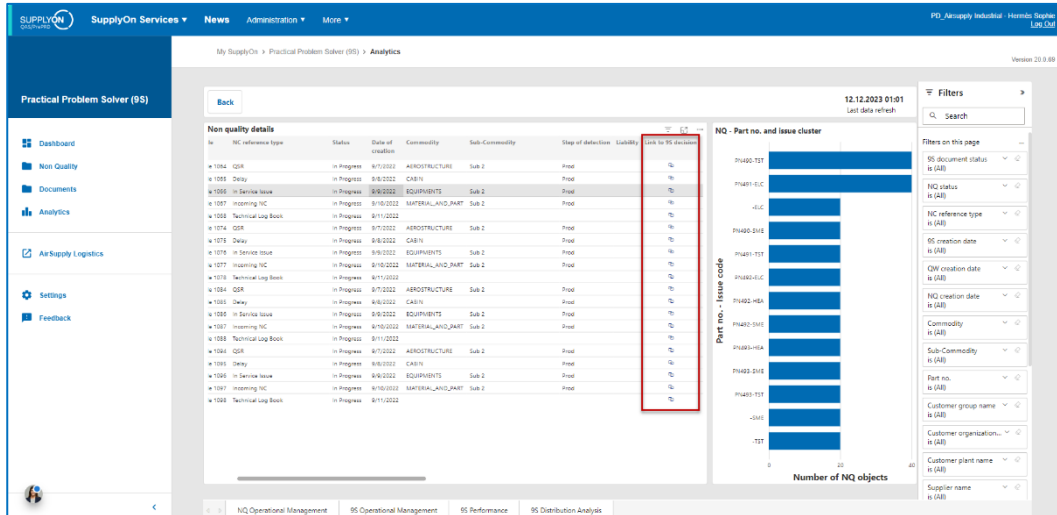For information on the 9S decision, → see *9S decision* on page *106*.

Figure: Links to 9S Decision.

Clicking a link opens a new tab in the browser with the selected non-quality object.
The **9S information** section is displayed, where the 9S decision can be made.
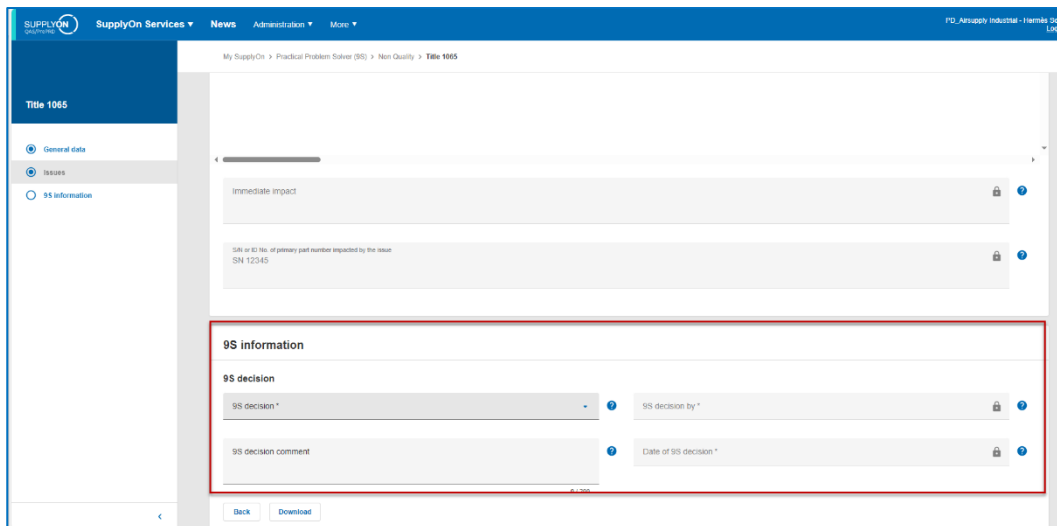

Figure: Non-quality object with **9S information** section.

13.2 9S Operational Management

The **9S Operational Management** tab displays by default the data from all 9S documents (except those in status **DRAFT**).
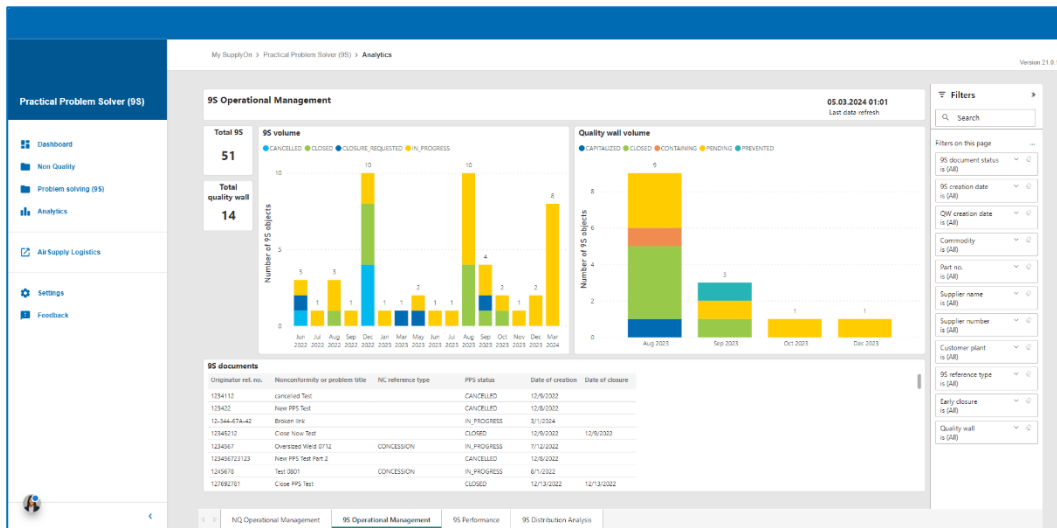

Figure: **9S Operational Management** tab on the **Analytics** dashboard.

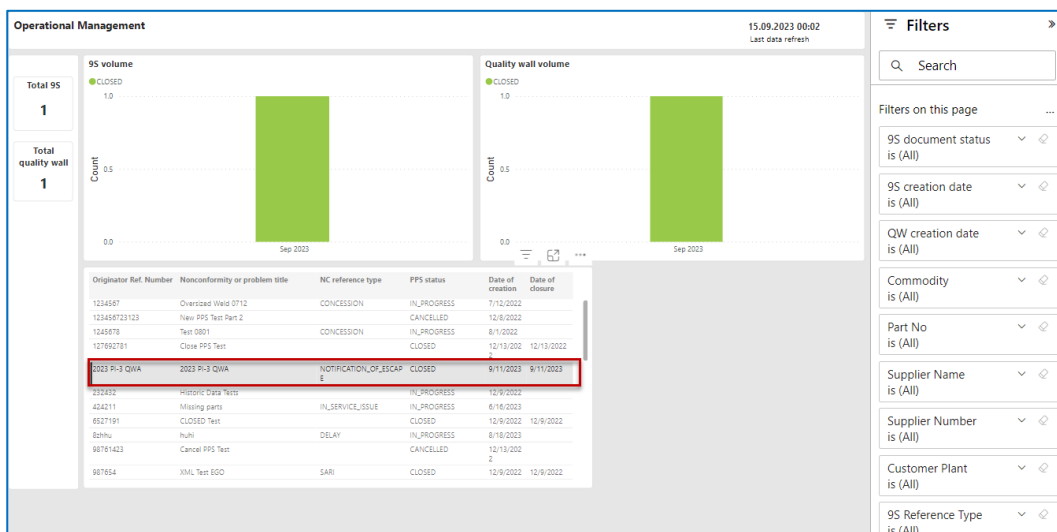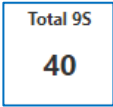You can also display the data for each individual 9S document.

Figure: Displaying the data of a selected 9S document.

In addition, you can also use filters to limit the data displayed.

The following data are displayed on the **Operational Management** tab on the **Analytics** dashboard:

Name	Description	Chart
Total 9S	Number of all 9S documents (except those in status **DRAFT**).	Total 9S **40** Figure: **Total 9S**
Total quality wall	Number of 9S documents with an activated **Quality wall**.	Total quality wall **14** Figure: **9S lead time**
9S volume	Displays the 9S documents (and their status by month), depending on the creation date in the respective month. For information on 9S document statuses, → see *9S document statuses* on page *10*.	 Figure: **9S volume**.
Quality wall volume	Displays the number of 9S documents with an active **Quality wall** (their status, depending on the month), depending on the creation date (by month) of the **Quality wall**.	 Figure: **Quality wall volume**.

13.3 9S Performance

The **9S Performance** tab displays by default the data from all 9S documents (except those in status **DRAFT**).

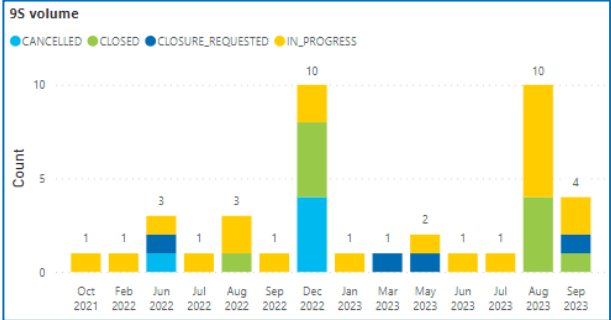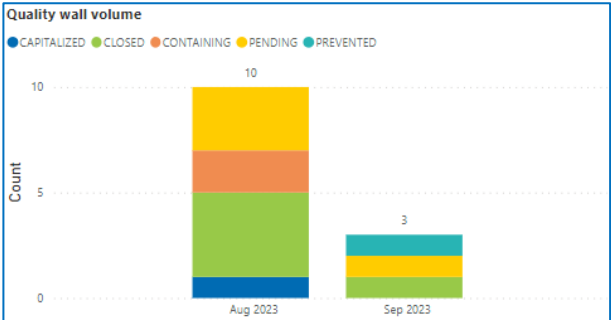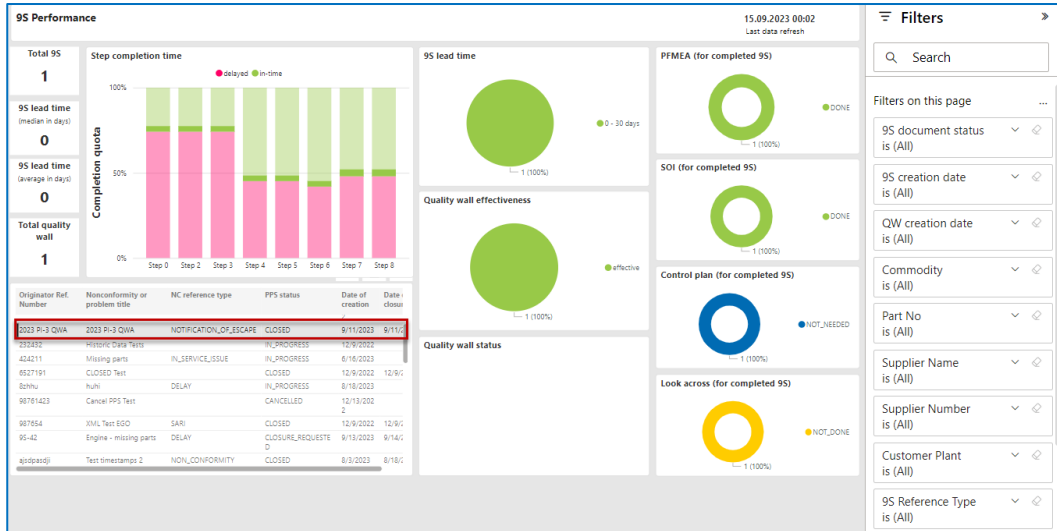You can also display the data for each individual 9S document.
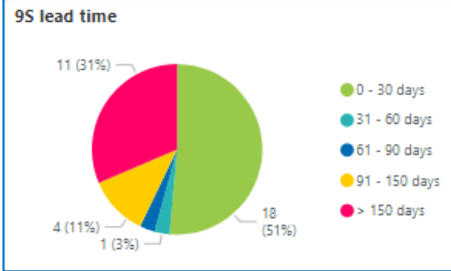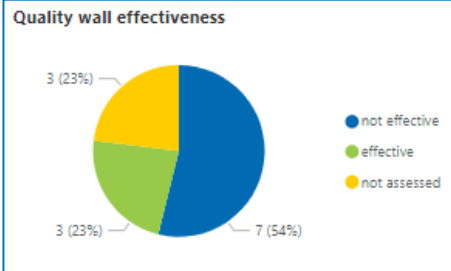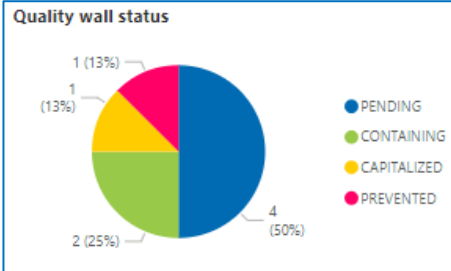

Figure: Displaying the data of a selected 9S document.

In addition, you can also use filters to limit the data displayed.

The following data are displayed on the **9S Performance** tab on the **Analytics** dashboard:

Name	Description	Chart
Total 9S	Number of all 9S documents (except those in status **DRAFT**).	Total 9S 40 Figure: **Total 9S**
9S lead time	Overall lead time of all 9S documents (median in days). The lead time depends on the defined length for the individual 9S steps. The lead time varies depending on the customer but can also be adjusted by the customer within each 9S document.	9S lead time (median in days) 15 Figure: **9S lead time**
9S lead time	Overall lead time of all 9S documents (median in days)/total number of 9S documents.	9S lead time (average in days) 77 Figure: **9S lead time**
Total quality wall	Number of 9S documents with an activated **Quality wall**.	Total quality wall 14 Figure: **Total quality wall**

Step completion time	Percentage of delayed (red) or in-time (green) 9S steps (except 9S step 1 – team building). With in-time, the current day is counted. In case of a delay, counting starts from the next day.	 Figure: **Step completion time.**
9S lead time	Lead time of all 9S documents grouped by days.	 Figure: **9S lead time**.
Quality wall effectiveness	Calculated effectiveness from the values **Number of defects before implementation** and **Number of defects after implementation**, → see *Activating the Quality wall* on page *51*. The effectiveness is evaluated as follows: **not effective**: effectiveness >= 20% **poor effective**: 10% <= effectiveness < 20% **effective:** effectiveness < 10% **not assessed:** No values available for **Number of defects before implementation** or **Number of defects after implementation**.	 Figure: **Quality wall effectiveness**.
Quality wall status	Displays the number of 9S documents per **Quality wall** status. Possible values are: **INACTIVE:** Quality wall is deactivated. **PENDING**: Quality wall is activated, and no 9S step is published. **CONTAINING:** 9S step 0 is published or accepted. **CORRECTING:** 9S step 0, 1, 2, 3 are published or accepted.	 Figure: **Quality wall status**.

	CAPITALIZED: 9S step 0, 1, 2, 3, 4, 5, 6, 7 are published or accepted. PREVENTED: A closure request was sent by the supplier. CANCELLED: The 9S document was canceled. CLOSED: The 9S document was closed.	
PFMEA (for completed 9S)	Displays the number of values for PFMEA (Process failure mode effects analysis) of completed 9S documents. Possible values are: • **DONE** • **PENDING** • **NOT DONE** • **NOT NEEDED**	Figure: **PFMEA (for completed 9S).**
SOI (for completed 9S)	Displays the number of values for SOI (Standard operating instructions) of completed 9S documents. Possible values are: • **DONE** • **PENDING** • **NOT DONE** • **NOT NEEDED**	Figure: **SOI (for completed 9S**).
Control plan (for completed 9S)	Displays the number of values for the control plan of completed 9S documents. Possible values are: • **DONE** • **PENDING** • **NOT DONE** • **NOT NEEDED**	Figure: **Control plan (for completed 9S).**
Look across (for completed 9S)	Displays the number of values for the look across of completed 9S documents. Possible values are: • **DONE** • **PENDING** • **NOT DONE** • **NOT NEEDED**	Figure: **Look across (for completed 9S).**

13.4 9S Distribution Analysis

The **9S Distribution Analysis** tab displays the issues, root causes and the corrective actions and their percentage ratios.
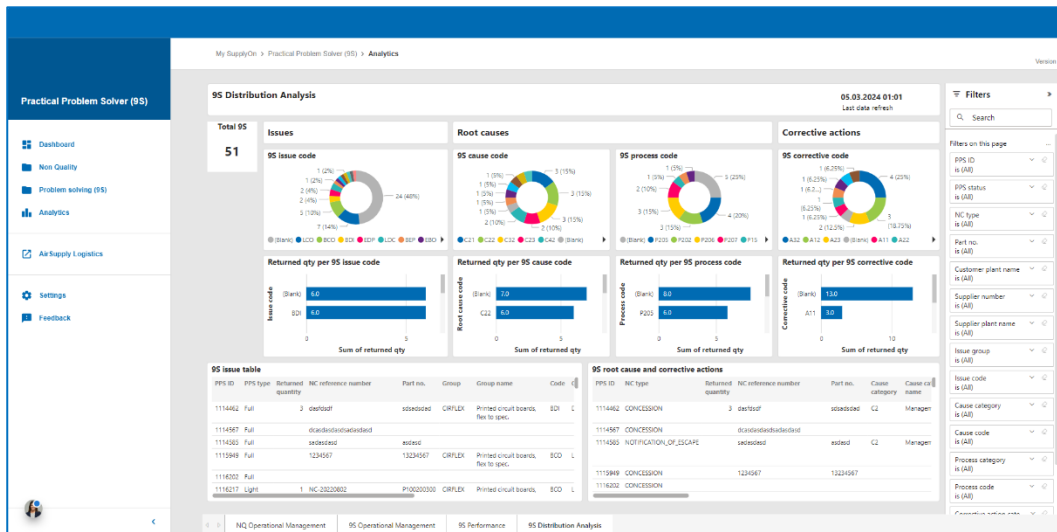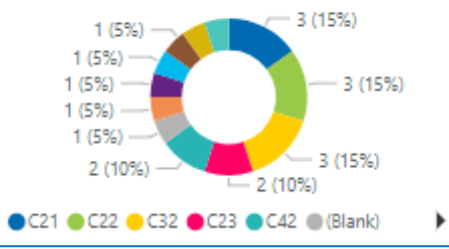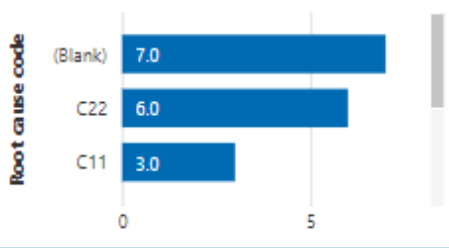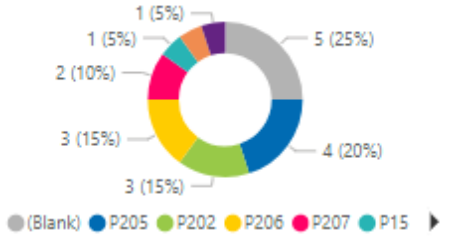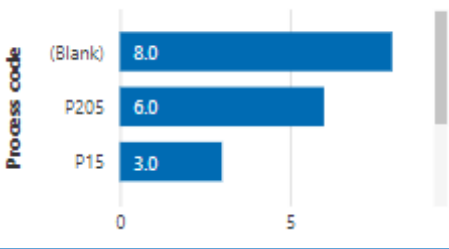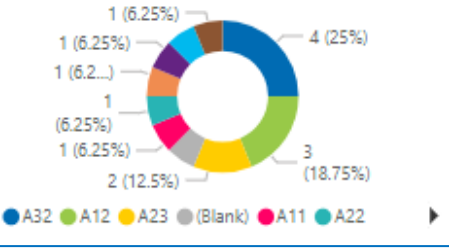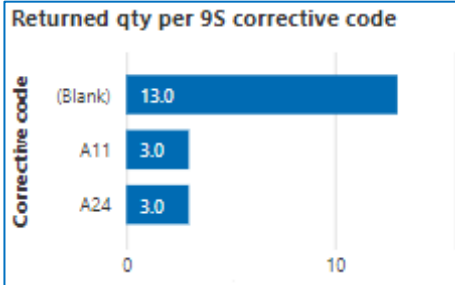

Figure: **9S Distribution Analysis** tab on the **Analytics** dashboard.

The following data are displayed on the **9S Distribution Analysis** tab on the **Analytics** dashboard:

Name	Description	Chart
Total 9S	Number of all 9S documents (except those in status **DRAFT**).	 Figure: **Total 9S**
9S issue code	Displays the number of issues and the percentage of the corresponding issue codes. Pointing on an issue code displays a tooltip with further information to the issue code.	 Figure: **9S issue code**
Returned qty per 9S issue code	Displays the returned quantities depending on the issue codes.	 Figure: **Returned qty per 9S issue code**

9S cause code	Displays the number of root causes and the percentage of the corresponding root causes. Pointing on a root cause code displays a tooltip with further information to the root cause code.	 Figure: **9S cause code**
Returned qty per 9S cause code	Displays the returned quantities depending on the root causes.	 Figure: **Returned qty per 9S cause code**
9S process code	Displays the number of processes and the percentage of the corresponding process codes. Pointing on a process code displays a tooltip with further information to the process code.	 Figure: **9S process code**
Returned qty per 9S process code	Displays the returned quantities depending on the process codes.	 Figure: **Returned qty per 9S process code**
9S corrective code	Displays the number of corrective actions and the percentage of the corresponding corrective actions.	 Figure: **9S corrective code**

Returned qty per 9S corrective code	Displays the returned quantities depending on the corrective actions.	Figure: **Returned qty per 9S corrective code**

The **9S issue table** lists all issues. Clicking an entry updates the data for the selected issue on the **9S Distribution Analysis** tab.

The **9S root cause and corrective actions** table lists all corrective actions that have been created for a root cause. Clicking an entry updates the data for the selected corrective action/root cause on the **9S Distribution Analysis** tab.

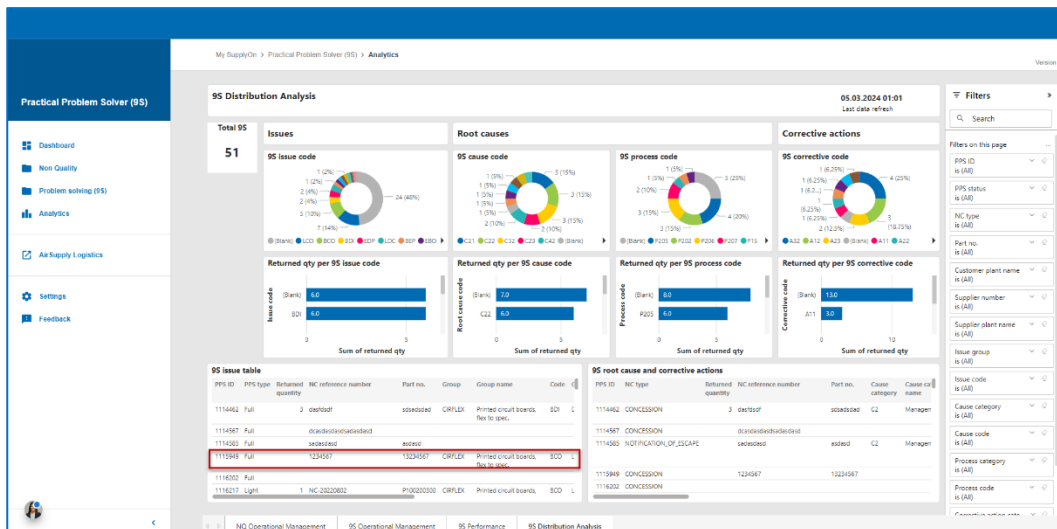Clicking an entry in one of the tables filters the data.

Figure: An entry selected in the **9S issue table**.

14 Non Quality

The **Non Quality** page displays all non-quality objects from the customer that have been imported into the Practical Problem Solver (9S) application.

To access non-quality objects, the corresponding role is required, → see *Roles and rights* on page *114*.

On the **Non Quality** page it can be decided whether a non-quality object, that is a defect, should be the subject of a 9S document, → see *9S decision* on page *106*.
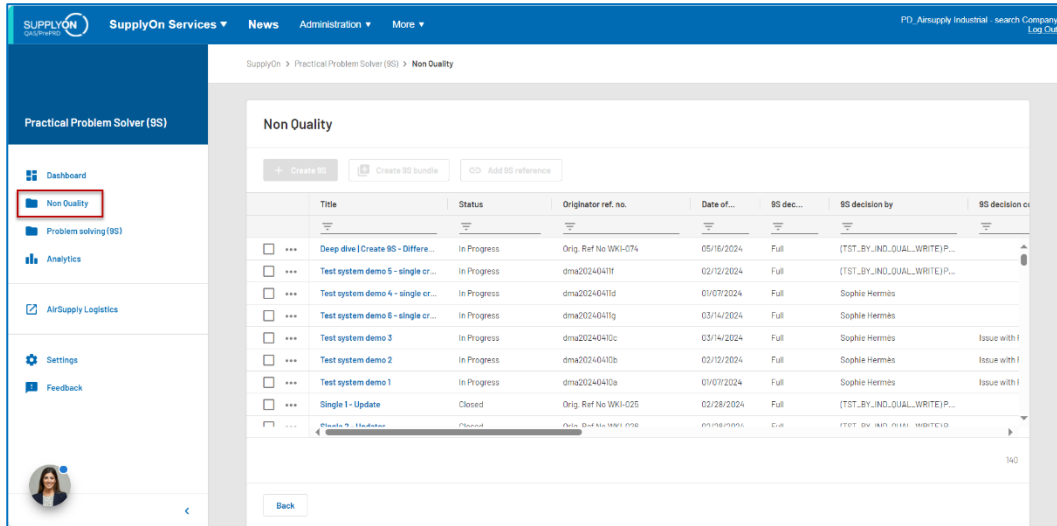

Figure: **Non Quality** page.

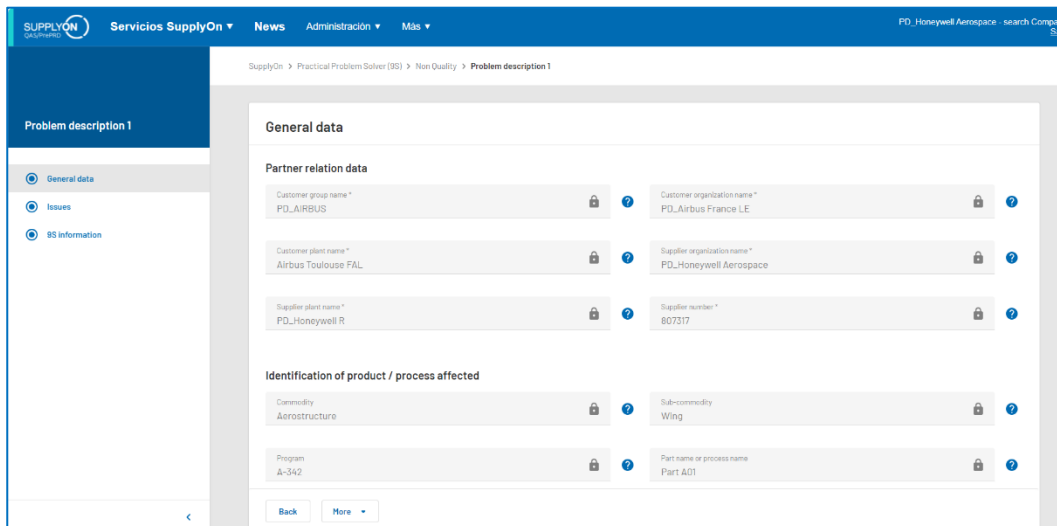Clicking the title of a non-quality object displays the details of the non-quality object.

Figure: Details of a non-quality object.

If a problem description is available, it can be shown in the **General data** section.
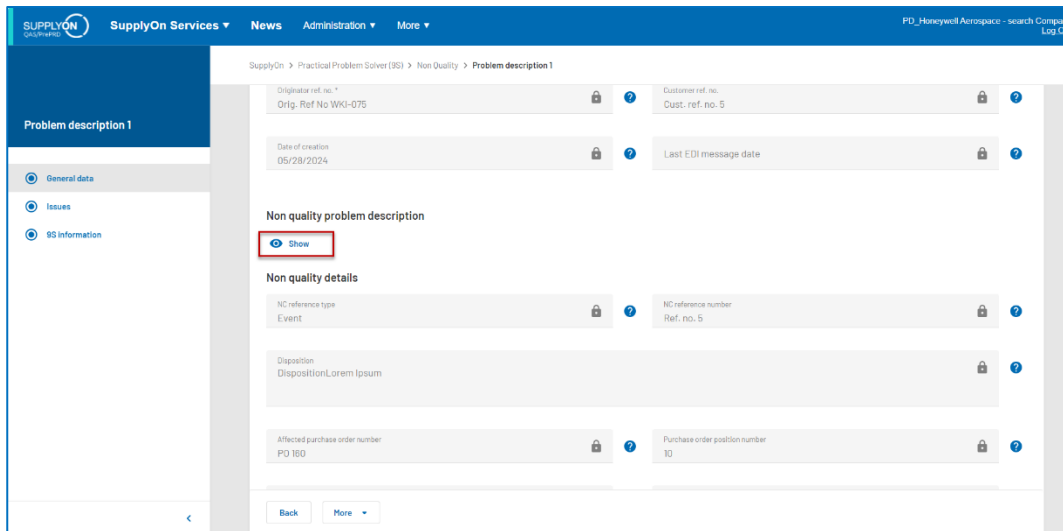
Figure: **Show** the problem description of the non-quality object.

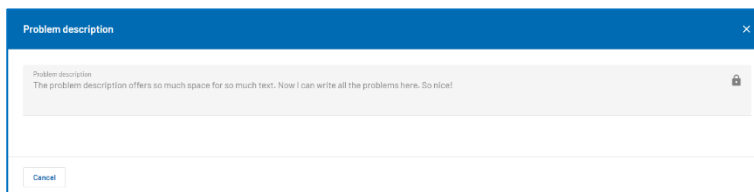Click **Show** to display the problem description in the **Problem description** dialog window.

Figure: **Problem description** dialog window.

Also in the non-quality object can be decided whether the described issue should be subject of a 9S document, → see *9S decision* on page *106*.

14.1 9S decision

For each non-quality object, it can be decided whether it should be addressed in a 9S document.

The following options are available for a 9S decision:

Full: The 9S process is to be performed with a 9S document with the document type **PSS Full**, → see *9S document* types on page *10*.

Light: The 9S process is to be performed with a 9S document with the document type **PSS Light**, → see *9S document* types on page *10*.

Not required: No 9S process is required.

9S decision on the Non Quality page

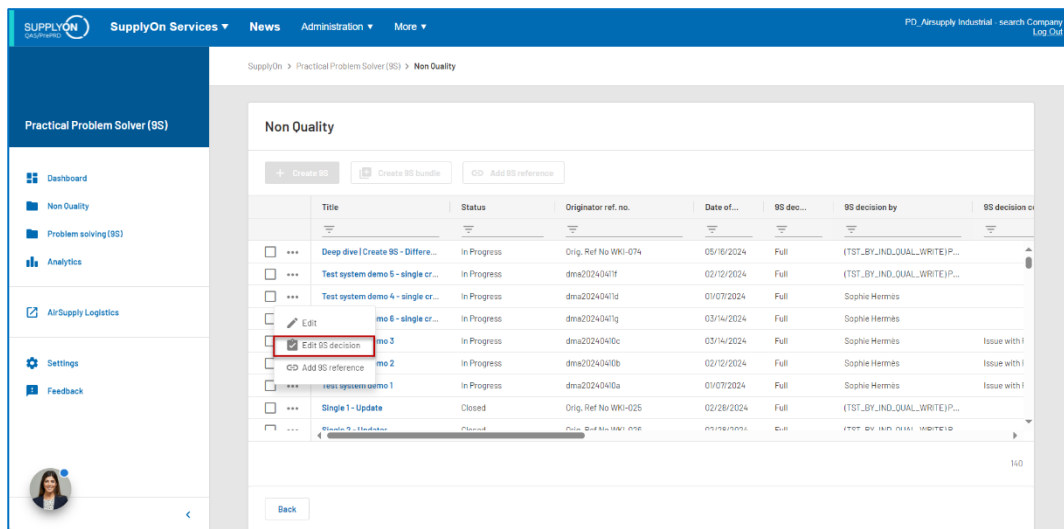1. On the **Non Quality** page, click ••• and then **Edit 9S decision**.

Figure: **Edit 9S decision**.

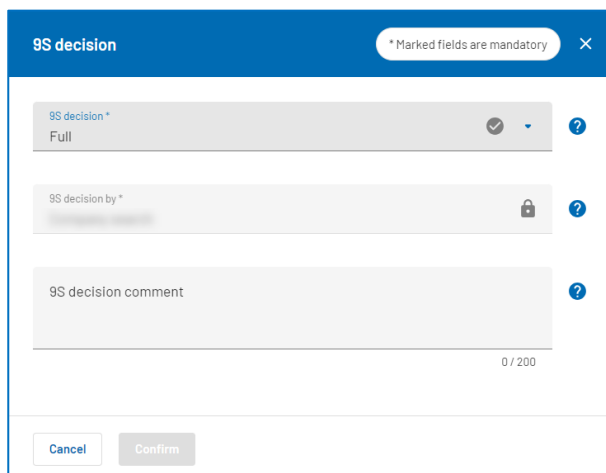The **9S decision** dialog window is displayed.

Figure: **9S decision** dialog window.

2. For the **9S decision,** select one of the following options: **Full**, **Light**, or **Not required**.

3. Enter a **9S decision comment** why the decision was made.

4. Click **Confirm**.

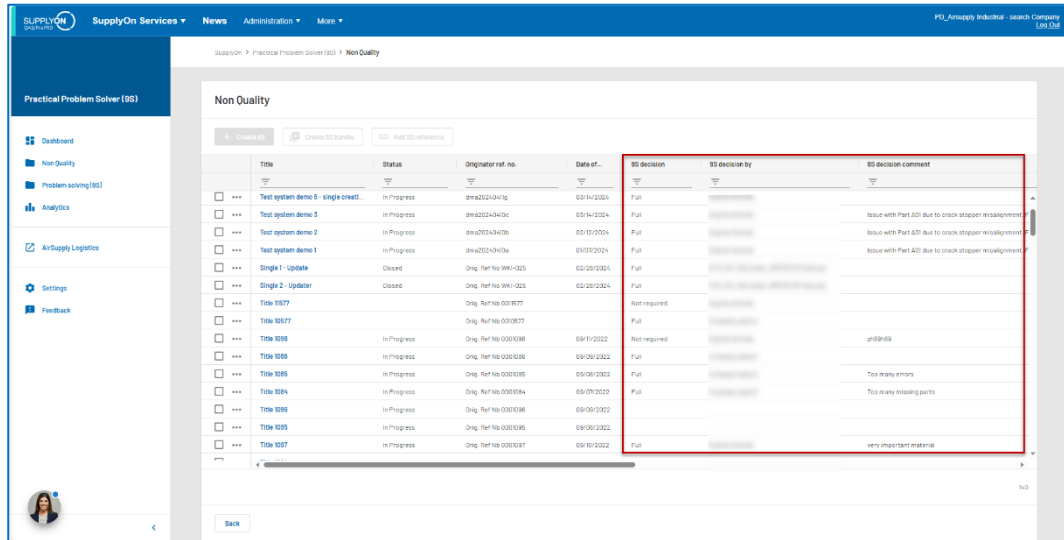   The 9S decision is listed on the **Non Quality** page.

Figure: 9S decisions.

9S decision for a non-quality object

1. On the **Non Quality** page, click the title of a non-quality object.

   The details of the non-quality object are displayed.

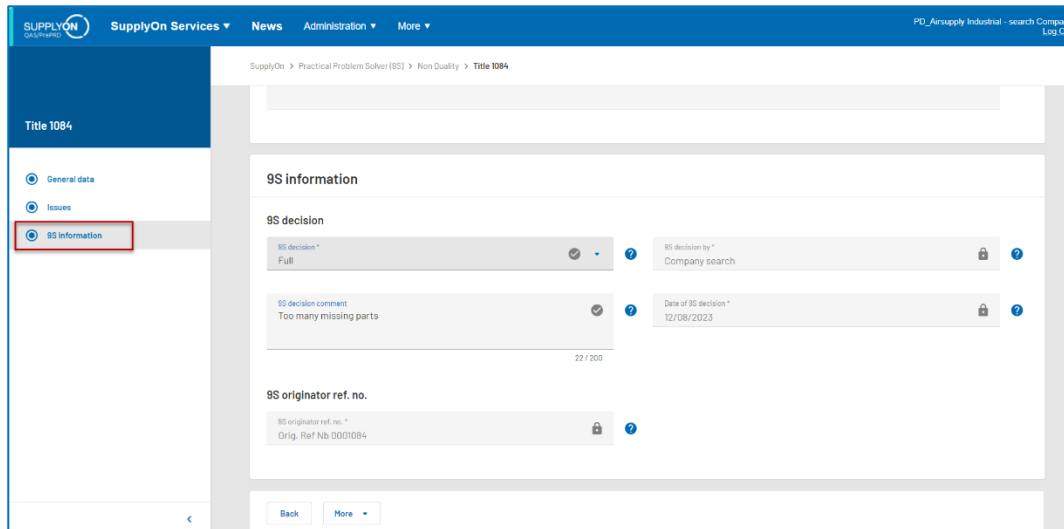2. Click the **9S information** section.

Figure: **9S information**.

3. For the **9S decision,** select one of the following options: **Full**, **Light**, or **Not required**.

4. Enter a **9S decision comment** why the decision was made.

   The changes are saved automatically.

   The 9S decision is listed on the **Non Quality** page.

14.2 Creating 9S documents and 9S bundles

On the **Non Quality** page, you can create 9S documents directly once a 9S decision has been made for an non-quality object.

Several non-quality objects can also be grouped together in a 9S bundle, for example if the non-quality objects all indicate a similar error, and then a single 9S document can be created from the 9S bundle.
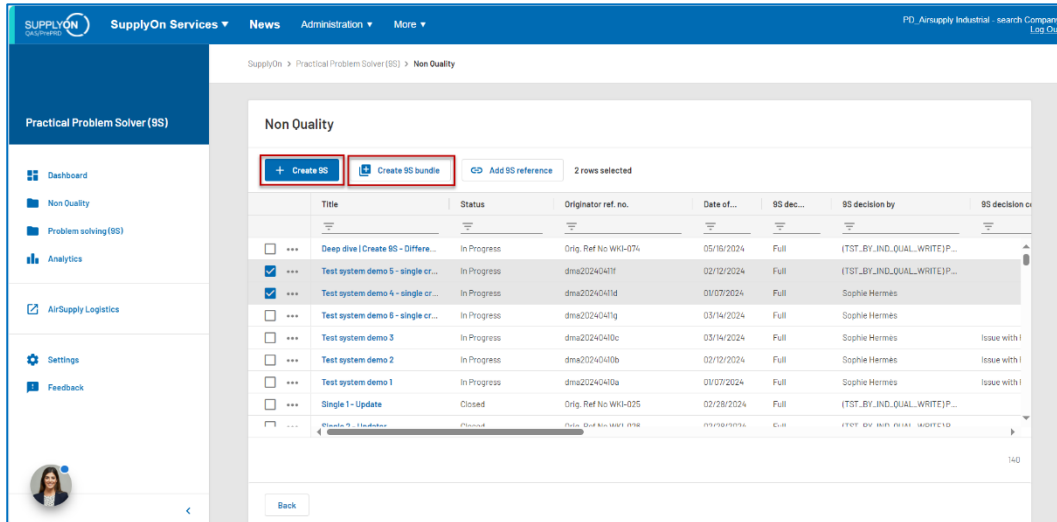

Figure: Creating 9S documents and 9S bundles.

To create 9S documents or 9S bundles, a 9S decision must already have been made for the relevant non-quality objects. In addition, no 9S document must have been already created for the relevant non-quality objects, that is, no **9S originator ref. no** must have been already assigned to a non-quality object.

Creating 9S documents

1. Select the non-quality objects for which you want to create 9S documents.
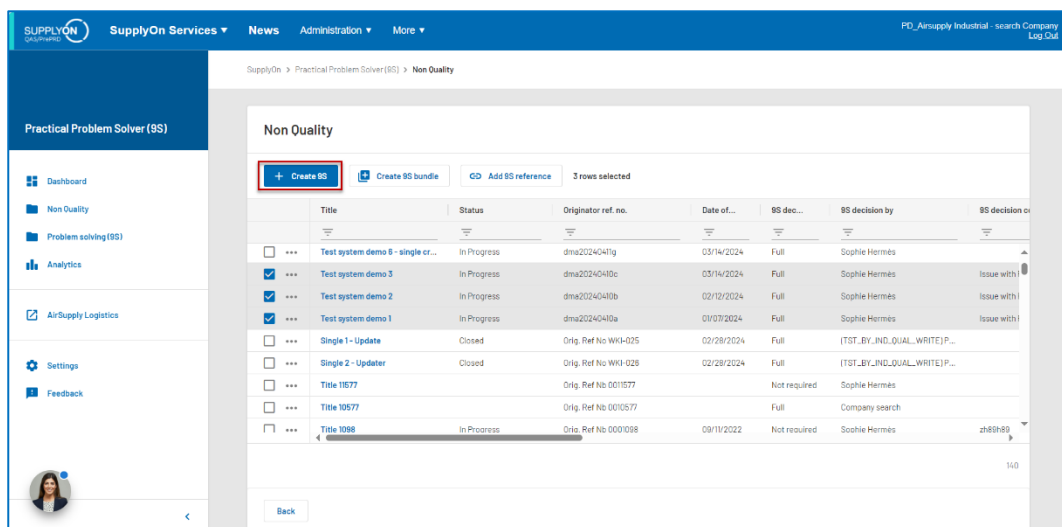

Figure: Three selected non-quality objects.

2. Click **Create 9S**.

   The **Create 9S** dialog window is displayed.
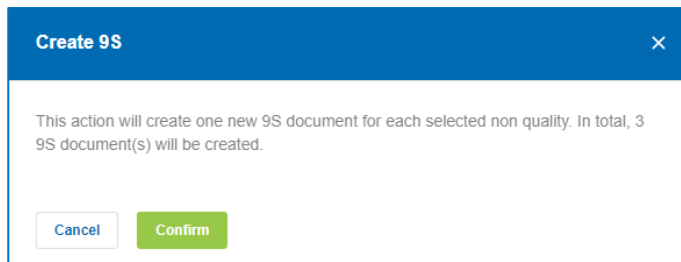   The number of 9S documents created is displayed.

Figure: **Create 9S** dialog window.

If a 9S document has already been created for the selected non-quality objects, an **Error report** dialog window is displayed.

3. Click **Confirm**.

   The 9S documents are created and the non-quality objects are assigned
   a **9S originator ref no.**
   The data from the non-quality objects is transferred to the 9S documents.

Creating a 9S bundle

1. Select the non-quality objects for which you want to create a 9S bundle.
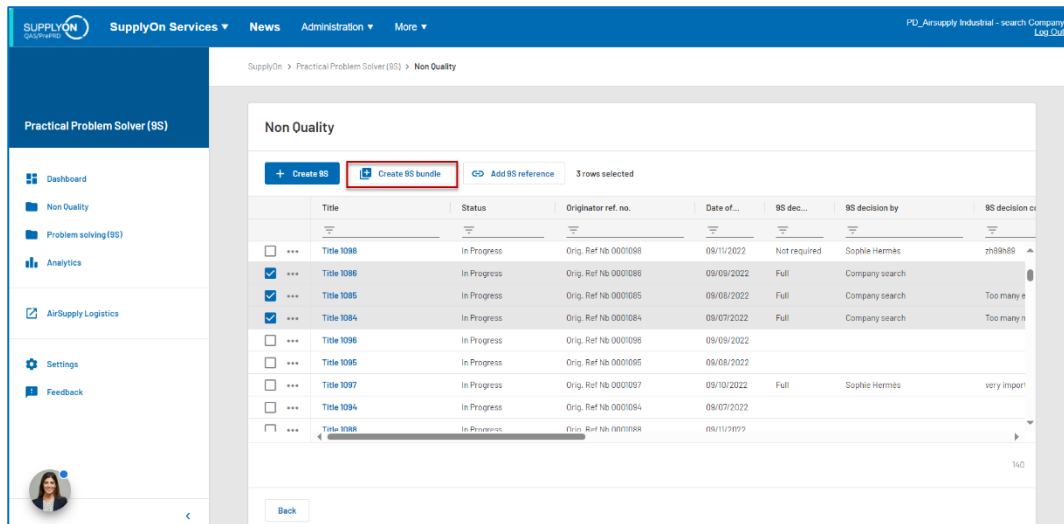

Figure: Three selected non-quality objects.

2. Click **Create 9S bundle**.

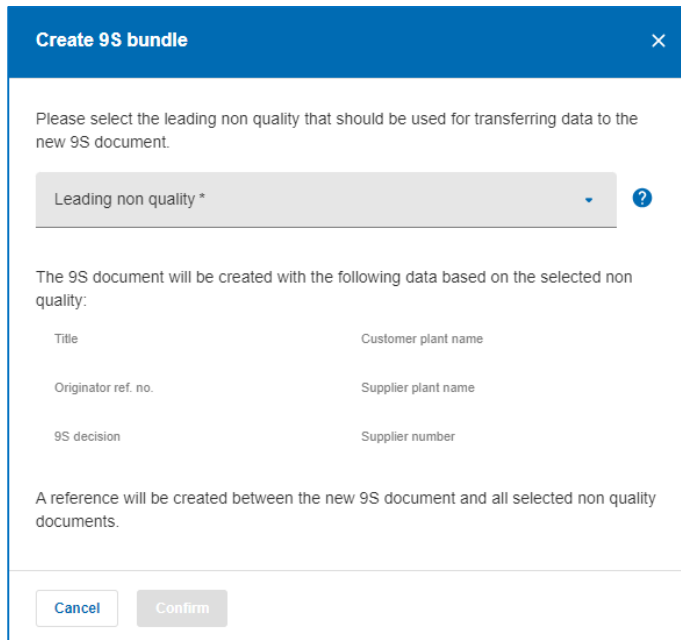   The **Create 9S bundle** dialog window is displayed.

Figure: **Create 9S bundle** dialog window.

If a 9S bundle has already been created for the selected non-quality objects, an **Error report** dialog window is displayed.

3. Enter a name for the leading non quality in the **Leading non quality** field.

4. Click **Confirm**.

   A 9S document is created. The three non-quality objects from which the 9S document was created are referenced in the **NC ref. no.** field.
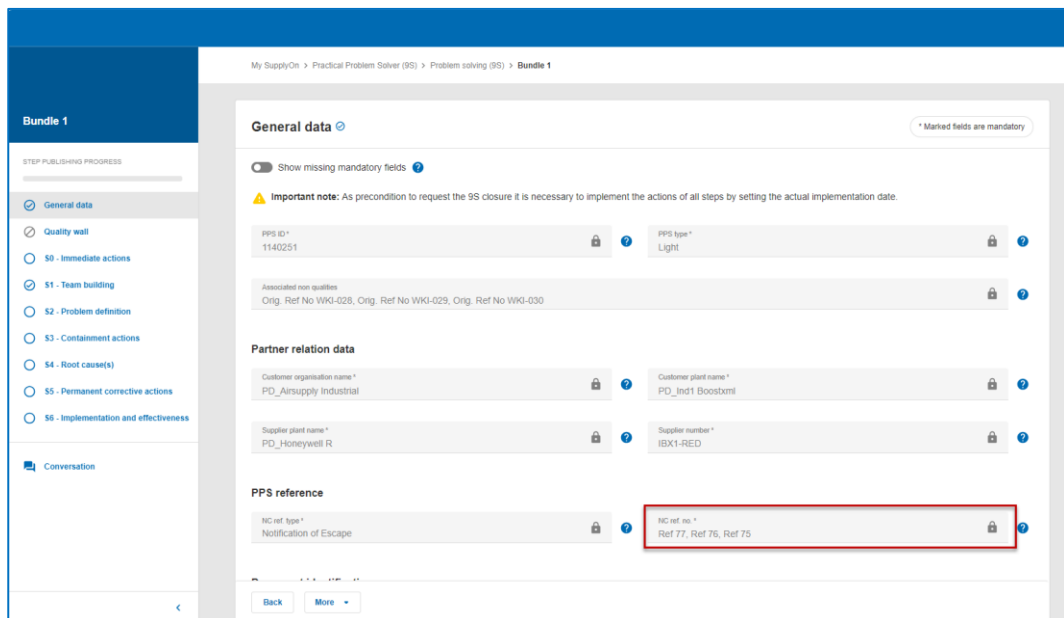

Figure: References non-quality objects in the **NC ref. no.** field in the 9S document.

14.3 Adding a 9S reference to a 9S document

On the **Non Quality** page, you can reference one or more non-quality objects to an already existing 9S document.

A 9S reference of non-quality objects to a 9S document is possible if all selected non-quality objects:

- have the same supplier plant,

- have the same customer corporate group,

- do not have an already existing reference.

You can create a 9S reference from a non-quality object to a 9S document on the **Non Quality** page or in the non-quality object itself.

Creating a 9S reference to a 9S document

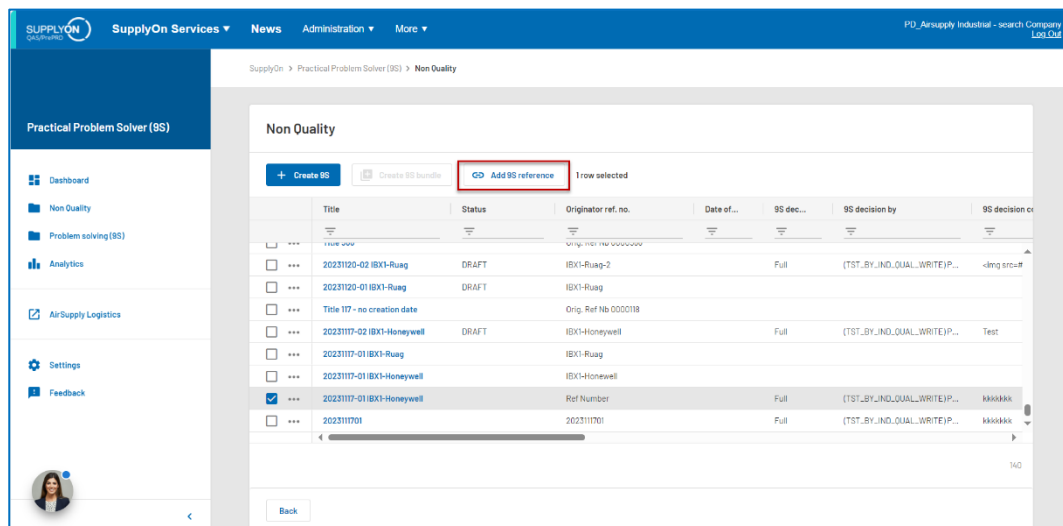1. Select the non-quality objects for which you want to create a 9S reference to a 9S document.

Figure: A selected non-quality object.

2. Click **Add 9S reference**.

   – or –

2. Click ••• and then **Add 9S reference**.

   The **Add 9S reference** dialog window is displayed.

   If a 9S document has already been referenced for the selected non-quality objects, an **Error report** dialog window is displayed.
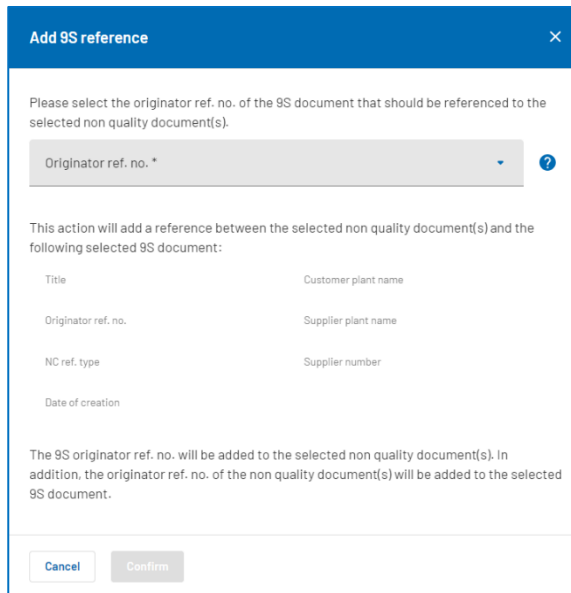
Figure: **Add 9S reference** dialog window.

3. Select an **Originator ref. no** of the 9S document to which the non-quality object is to be referenced.
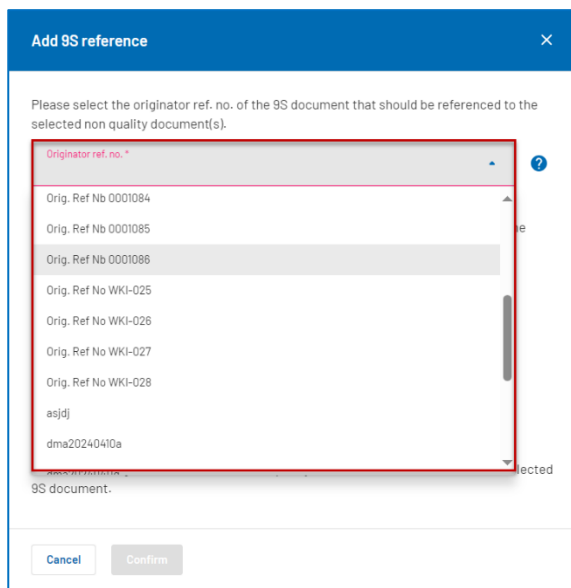

Figure: Selecting an **Originator ref. no**.

4. Click **Confirm**.

A 9S reference is added to the selected non-quality object(s) and the selected 9S document.

The **9S originator ref. no.** is added to the selected non-quality object(s).

14.4 Downloading a non-quality object

The content of a non-quality object can be downloaded as an Excel file.
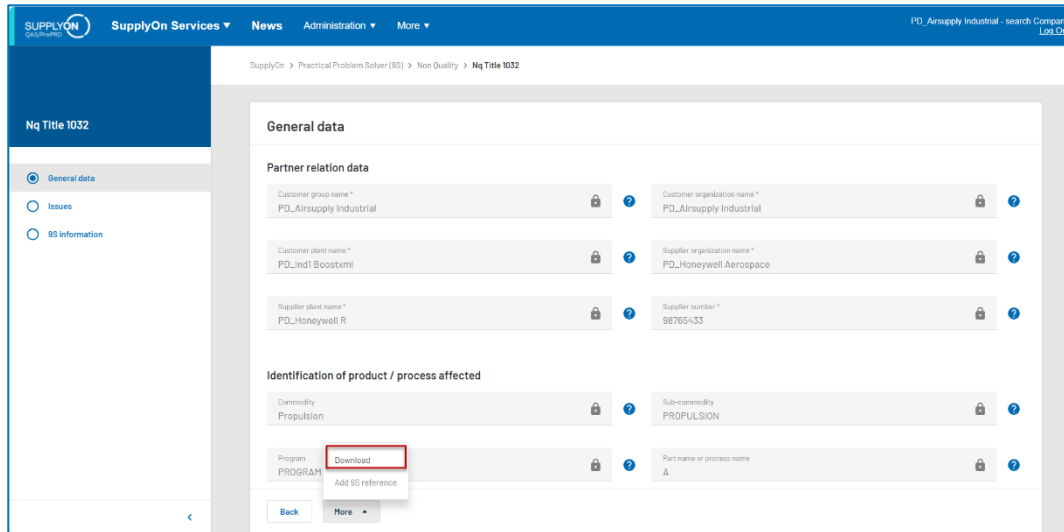
1. Click **More**, and then click **Download**.

Figure: **Download** a non-quality object.

2. Click **Download** and save the Excel file.

Figure: Excel file for a non-quality object.

Every row contains a separate issue.

15 Roles and rights

To be able to work with 9S documents in AirSupply, at least one of the following AirSupply roles is required:

Customer roles

IndBuyer9S-Admin

✓ Admin access to all 9S documents. Can initiate new 9S documents. Can display 9S documents.
The **team administrator** is given this role.

IndBuyer9S-Create, AirbBuyer9S-Create

✓ Can create new 9S documents from Customer side via uploading an Excel template file or via a dialog window. Contains all rights of **AirbBuyer9S-Read/IndBuyer9S-Read**.

AirbBuyer9S-Read, IndBuyer9S-Read

✓ Can display 9S documents. Can also work on 9S documents if selected by the supplier as a customer focal point or assigned as a team member.

AirbBuyer9S-NQ-Analytics, IndBuyer9S-NQ-Analytics

✓ Displays the **Analytics** dashboard with KPIs for 9S documents and non-quality objects. Only visible if the **Analytics** service has been booked.

IndBuyerNonQuality-Write

✓ Can display non-quality objects. Can make 9S decisions.

IndBuyerNonQuality-Read

✓ Can display non-quality objects.

Supplier roles

IndSeller9S-Admin

✓ Admin access to all 9S documents. Can initiate new 9S documents. Can display 9S documents.
The **team administrator** is given this role.

IndSeller9S-Create

✓ Can display 9S documents. Can initiate new 9S documents.

IndSeller9S-Read

✓ Can display 9S documents.

IndSeller9S-AssignedTL-CustomerUpload

✓ When a 9S document is created by upload from the customer, a supplier with this role is assigned as **team leader** by default.
Assign this role to selected users only! If no supplier user is assigned this role, all users with the **IndSeller9S-Create** role are added as **team leaders**.

IndBuyer9S-NQ-Analytics

✓ The **Analytics** dashboard with KPIs for 9S documents and non-quality objects.
Only visible if the **Analytics** service has been booked.

Roles in SupplyOn

1. Log on to → **SupplyOn**.

2. On the main menu, point to **Administration**, and then click **User Management**.

3. Click the **User Accounts** tab.

4. Click a user**.**

5. Click the **Roles** tab.

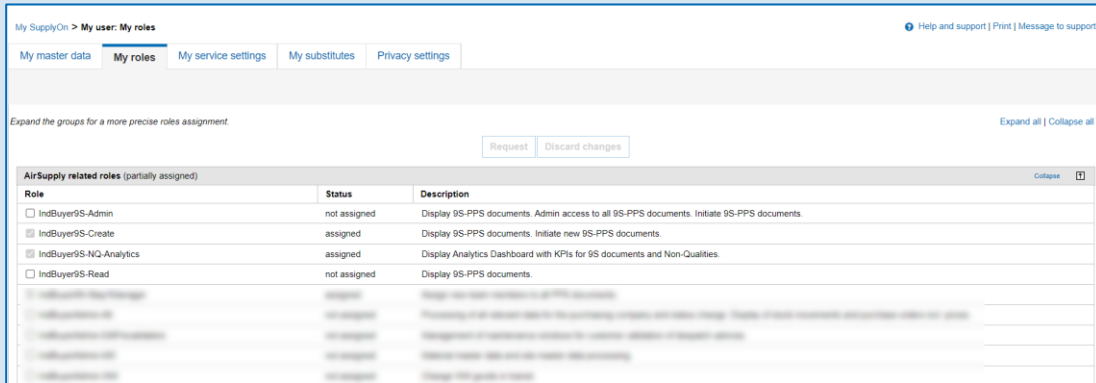The roles are defined in the **AirSupply related roles** section.

Figure: Customer roles for the '9S - Practical Problem Solver' in the **User Management**.

Note

The AirSupply roles control the general access to the '9S - Practical Problem Solver' application and, if possible, the creation of 9S documents.

Within the '9S - Practical Problem Solver' application, the **team leader** and **team member** roles control the editing, reviewing, and publishing of 9S documents.