Handover for SupplyOn Service

Problem Solver

Table of Contents

Table of Figures

1 Purpose of this document

This handout contains the SupplyOn Module Problem Solver, which is trained online. The document serves as a reminder and does not claim to be complete.

1.1 Target group

The document serves the training participants for individual training on site.

1.2 Abbreviations

Abkürzung	Bedeutung
XML	Extensible Markup Language
ERP	Enterprice-Resource-Planning
BI	Business Integration
SO	SupplyOn
VDA	Association of the German automotive industry
PDF	Portable Document Format

2 Complaint Creation with SupplyOn Problem Solver for Buying Companies

2.1 General Purpose and Business Case

A buying company sends a complaint to its suppliers to indicate that a goods or service delivered by the supplier does not conform to the agreed specifications. In most cases, this is done in case of defect parts provided by the supplier.

The defect might be detected:

- during goods receipt

- during assembly

- by a customer of the buying company. In this case, the buying company's customer issues a complaint to the buying company, which itself would send a complaint to its supplier, if the defective part or component was sourced externally or the problem caused by the supplier in any other way.

However, a complaint might also refer to logistical problems (late delivery, wrong bar-coding) or general problems within the processes between buying and selling company.

Therefore, the term "complaint" is used in a general sense in this document. It may or may not have commercial, legal and logistical implications, as it would be the case with a reclamation, which typically includes refunds and parts returned.

Focus of SupplyOn Problem Solver is communication of the problem to the supplier with the aim to resolve the problem and avoid it in the future. Particularly for problems with no obvious cause, the 8D methodology is frequently used. SupplyOn Problem Solver supports the complaint process between buying and selling companies, with special consideration of – but not restricted to - the 8D methodology. SupplyOn Problem Solver is a product that supports collaboration between Buy- and Sell-side customers when a problem with the delivered goods from a sell-side occurs. The goal is to efficiently communicate problems occurred, decide on immediate action steps to solve the problem, and improve the process, prevent, and avoid same or similar situations in the future by using, but not restricted to, 8D methodology is commonly and frequently used in automotive industry.

In case of a problem, the buying company issues a complaint. In this procedure, the quality notification is sent to the SupplyOn Problem Solver as a complaint containing a description of the problem, including any attached documents and information on the response required from the supplier, i.e. whether an 8D report is required and within what timeframe. If an 8D report is requested from the supplier, the buying company typically demands to report back the containment actions (step 3) within a certain period (usually 24 hours) and to close the 8D-report within a certain time frame.

A complaint in SupplyOn is structured according to the 8D principle:

1. D1 – Building a cross-functional team

2. D2 – Problem Description

3. D3 – Immediate Actions to quickly resolve the impacts of the problem (D3)

4. D4 – Root cause analysis to find the root cause of the problem (D4)

5. D5 – Choosing corrective actions (D5)

6. D6 – Implementing chosen corrective actions (D6)

7. D7 – Defining preventive actions in order to avoid the occurrence of the same of similar problem in the future (D7)

8. D8 – Closure/ 8D Report Evaluation – actions are implemented, and their effectiveness is confirmed

SupplyOn Problem Solver offers different request types for the complaint to a supplier:

- 8D Report
- 8D Report with general actions
- 8D Report with 8D report evaluation
- 8D Report Plus
- 8D Report Plus with 8D report evaluation
- Short Confirmation
- Short Confirmation with general actions

The SupplyOn Problem Solver supports the complaint process by making the steps transparent and uniformly documented for both sides and aims at recognizing the root causes and solve the problems sustainable.

The benefits include the following:

- Achieving a high closure rate for 8D reports and – due in part to the higher 8D content quality – ensure quality improvements and a lower rate of recurring errors.
- Higher process reliability and transparency on both sides.
- Standard company-wide process with shorter lead times.
- Reduce the amount of manual processing and can control the process from within your internal system.
- Information of a uniform structure forms the basis for a corporate knowledge database.

This handout serves as a reminder and does not claim to be complete. Therefore, not all steps are described in detail, but only individual points are highlighted.

2.2 Initial creation and general handling of complaints

2.2.1 Customer tab "Complaints" and Complaint List

As a buy-side user has chosen the Problem Solver service from the dropping menu, at first they are navigated to the starting page which shows a list of all complaints (in the Tab 'Complaints'). This complaint list includes all complaints that have been provided from the buying company. Further on, a user has access to the complaint, if the user is assigned to a group, which the complaint is assigned to. User groups are used to differentiate between different customer plants.

Figure 1 Initiating the 8D process

The complaint is the information from the buying company provided to the supplier and comprises three main sections:

- Complaint
- Details
- Customer Contacts (Figure 2)

The "complaint" section provides the essential information about the supplier and describes the complaint in a few sentences. The customer can choose between response types 8D Report, 8D Report with 8D report evaluation and 8D Plus with or without report evaluation. Further customer specific detail can be provided in the "Details" section. The information provided in both areas can be read by the supplier, but not changed. In the "customer contacts" area, the person responsible for the complaint can be added. You can also decide whether the contact person should receive reminders or notifications. The last section 'History' is in the right upper corner, where all changes regarding the complaint, including the supplier response can be viewed.

Figure 2: Customer complaint tab

2.2.2 Customer tab "Status and Timeline"

The "Status and timeline" tab displays the current status and timeline of each 8D-step. The user can do further maintenance of data, if the complaint is active (not closed, cancelled, or waiting for review).

This tab comprises two subsections:

- Status

- Dates of Responses

The most important information about the current progress of the complaint is summarized in the "Status" area. In addition, the status can be changed.

Figure 3: Status and timeline tab

In a "Dates for responses" section there is an indicator next to each Step (shown in the table below) that indicates the status of the respective step.

⬤	Inactive
🟢	Section Submitted
🔺	24 hours before deadline is reached
🟥	Section deadline overdue

Status changes can be done by supplier and customer.

Available Customer complaint status

- "Open by Customer"

This is the initial status set automatically by Problem Solver, when the complaint is created by the customer. The customer can also reset a complaint from another status to "Open", e.g. in order to re-open a complaint already closed, if rework is necessary.

- "Closed by Customer"

No additional activities are required regarding this item from the customer's perspective. The item cannot be changed by the supplier.

- "Cancelled"

Status "Cancelled" has similar functionality as "Closed by Customer". However, it carries a different meaning. (Cancelled would be used, for example, if a complaint has been sent by error.)

- "Rejected by Customer"

The customer did not agree to the supplier response. The supplier can edit further information and change already provided information on item level.

Supplier complaint status

- "Rejected by Supplier"

In minor cases the supplier does not agree with the customer notification in general. If supported by the customer the supplier can indicate this by rejecting the complaint. No changes are allowed by the supplier after setting the status. To do changes, the buying company needs to set the status to "Open" first.

- "Complete by Supplier"

The supplier sets status "Complete by Supplier" after he has entered all required information (steps D1 – D7, including basic information). He cannot make any more changes. The actual implementation or validation of actions are exceptions here. The supplier can add attachments and change the people involved.

- "Closed by Supplier"

The supplier can set this status when the 8D report has been completed and all actions set up have been implemented and validated. He can no longer change anything on the complaint.

After pressing the "Save and send to supplier"-Button on the customer side the supplier (Customer Responsible) is notified via e-mail. The Customer Responsible can be found by clicking on the supplier search button (Figure 4). They will be selected by the supplier side and are responsible for the complaint.
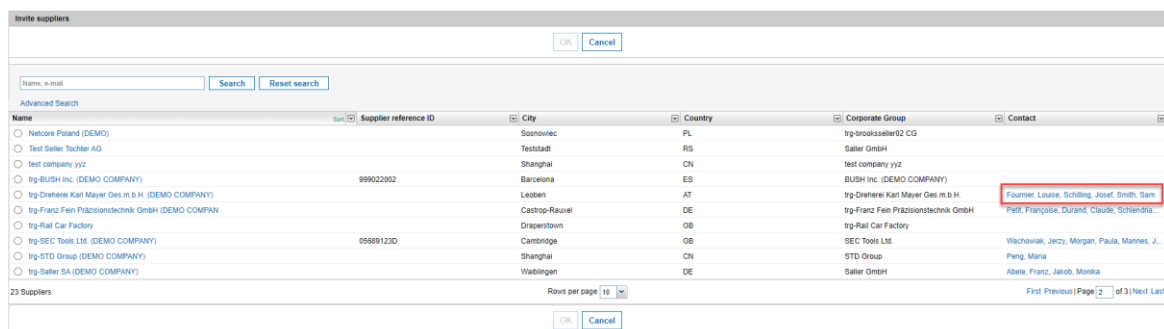
Figure 4: Find customer responsible

3 Supplier 8D-Problem Solving Process in SupplyOn ProSo Service

Once a supplier has logged in on the SupplyOn Platform and navigated to the ProblemSolver service via the direct link on the starting page or by simply selecting it from the *"SupplyOn Services"* menu list, they will be taken to the complaint Inbox (Figure 5).
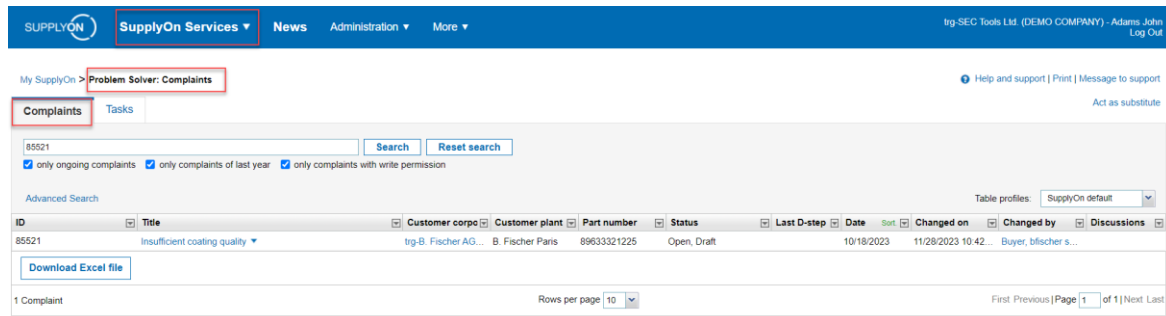
Figure 5 Landing Tab "Complaint Inbox"

The second tab on the ProblemSolver landing page is the "*Tasks*" overview (Figure 6) and aids in the identification of open and pending actions.

This overview displays **two information clusters:**

- task-specific information in the left columns (Figure 6 in blue)

- complaint-related information in the columns on the right (Figure 6 in yellow).

The **task-specific** information include:

- "*Task type*": which identifies the category of the essential actions that must be completed in the 8D process.

- explicit "*Task name*": which indicates which component of the 8D it belongs to.

- "*Task status*": Closed, waiting, Open.

- "*Due date*": which indicates the date when this task is due.

- "*End date*": Explicit for this action.

- "*Responsible*": Responsible for this action.

The **complaint information** displays the necessary matching information to clearly identify which complaint the action is about. Such as the:

- "*Complaint Title*": Shows the title of the respective complaint.

- "*ID*": Identifies the correct matching ID of the respective complaint.

- "*Customer*": Clarifies the customer who sends the complaint.

Figure 6 "Tasks" Tab

By simply clicking on the task name, the corresponding complaint opens and directs to this task.

3.1 Customer Complaint Tab

The first tab, "*Customer Complaint"* (Figure 7), displays the customer's details. This tab contains three expandable sections. In addition to basic details about the customer, site or contacts, you will also find information about the complaint. The "*Customer Contacts*" section lists the contacts on the customer's site. You will also see any additional email recipients selected by the customer.

Figure 7 Content Overview "Customer Complaint" Tab

In the complaint details you can find a "*title"*, "*description*", what kind of response the customer expects, as well as a "*processing note*" for the complaint (Figure 8). The "*details*" area below gives more information about the specific defective part including "*complaint date*" and "*appearance dates"*, "*part information*" and "*quantities*". It is also possible to attach files to clarify the problem (Figure 8).

My SupplyOn > Problem Solver: Complaints > **Insufficient coating quality (85521): Customer complaint**

Insufficient coating quality (85521) (Draft)

Save and submit to customer | Save as draft | Cancel | More ▼

Customer complaint | Supplier response | Status and timeline

Complaint   Collapse ⊤

Customer corporate group:	trg-B. Fischer AG (DEMO COMPANY)
Customer plant:	B. Fischer Paris
Supplier:	trg-SEC Tools Ltd. (DEMO COMPANY)
Title:	Insufficient coating quality
Description:	Engine cover coating quality is insufficient due to inclusions and skip-plating on the surface.
	Part number: 89633321225
	Part number description: Engine cover, Model 6Xs, Sport ed., black
Response type:	8D Plus
Processing Note:	Expand
	1. Immediate spare parts delivery to ensure raw material stocks and production capability
	2. Correcting of defective part as soon as possible
	3. If there are any parts currently in transit you shall:
	- Inform Fischer Supplier Quality Engineering Department about the quantity of parts in transit

Details   Collapse ⊤

ID:	85521	Type:	0 km
System ID:	664522	Complaint date:	10/18/2023
Item number:	98	Appearance date:	10/18/2023
Non-conf. report no.:	11719866646	Severity:	6
Recurrence indicator:	Yes		

Part information

Part number:	89633321225	Part name:	Engine cover, Model 6Xs, Sport ed.
Part index:		Production date (cust.):	10/11/2023
Serial number:	982331	Batch number:	99841
Commodity:		Commodity descr.:	

Quantities

Complaint quantity:	1 each	PPM relevant qty.:	1 each
Delivery quantity:	2 each	Delivery note:	7748
Return delivery quantity:	1 each		
Attachments:	Skip-plating-without-NiAg-activation.png (187 KB);		
	Details		

Figure 8 "Customer Complaint" Tab: Complaint and Details

The last section contains "*customer contact*" information (Figure 9). Responsible staff and additional email recipients selected by the customer are displayed in this section.

Customer contacts   Collapse ⊤

| Customer corporate group: | Buyer, bfischer schuster | demo-scenario@supplyon.com | 258 |
| | Gabel, Elke | regina.schmitz@supplyon.com | 258 |

Figure 9 "Customer contacts"

After sending the complaint to the customer a new tab "*Supplier response*" will appear (Figure 3). All 8D steps can be implemented here by the supplier.

PrSo (81673)   TI Fluid Systems

Save and submit to customer | Save as draft | Cancel | More ▼

Customer complaint | **Supplier response** | Status and timeline

		History
Basic data	Expand ⊞	Customer corporate group (11/03/2022 08:37 CET): Sent with status "Open"
Supplier-internal data	Expand ⊞	Roman Aprin (11/03/2022 08:36 CET): Sent with status "Rejected by supplier"
D1 Team	Expand ⊞	Customer corporate group (11/03/2022 08:32 CET): Sent with status "Rejected by customer"
D2: Problem description	Expand ⊞	Customer corporate group (08/03/2022 07:39 CET): Complaint created with status "Open"
D3: Containment actions	Expand ⊞	
D4: Root causes	Expand ⊞	
D5: Chosen corrective actions	Expand ⊞	
D6 Implemented Corrective Actions	Expand ⊞	
D7 Preventive Actions	Expand ⊞	
D8: Closure	Collapse ⊤	
The 8D report has not been closed yet.		

Figure 10: Overview of supplier view tab

3.2 Supplier Response Tab

The second tab, "*Supplier Response*", is the main tab as this is where suppliers complete the 8D process steps (Figure 11Figure 1). It consists of 10 sub-sections, two superordinate, more general ones and the 8 sections containing each one steps of the 8D-problem solving method. The individual components are described in more detail below.
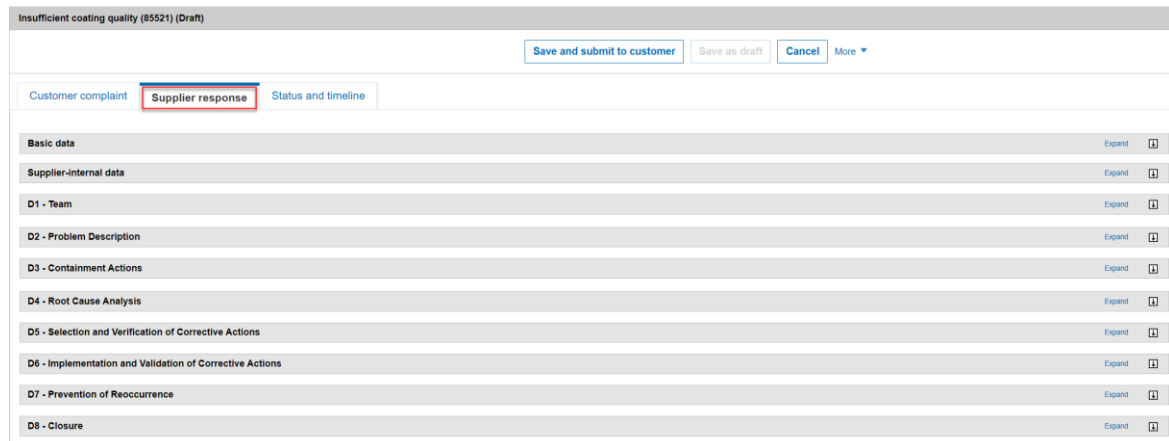

Figure 11 Overview "Supplier Response" Tab

Further functions can be opened by clicking on the "*More*" link found at the top of the "*Supplier Response*" tab (Figure 12).
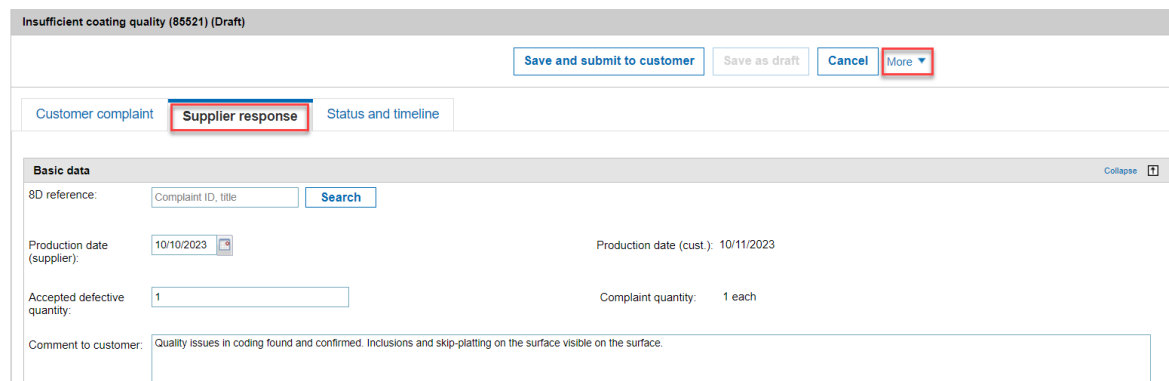

Figure 12 Further Functions "More"

The menu shows four further options including "*Download PDF file*", "*Reject complaint*", "*Download complaint as XML file*" and "*Upload 8D report as XML file*" (Figure 13). Table 1 provides a more detailed explanation of the other options that are available in more detail.
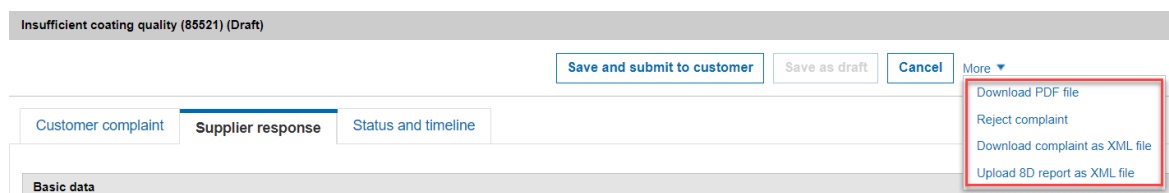

Figure 13 Further Options

Option	Description
Download PDF file	Generate PDF file from the current complaint/supplier response (8D report). Selection of which information the PDF file must contain via the menu.
Reject complaint	Enter the reason for rejecting in the following window. If "Save and reject complaint" is send to the buyer the complaint is stored in the "Rejected by supplier" status but it is not closed until customer´s review and feedback. A D3 containment action is automatically generated with the rejection by the supplier. You can no longer process rejected complaints. If the customer does not work with the "Rejected by supplier" status (e.g. Bosch), the status is **not** set.
Download complaint as XML file	Suppliers can download their customers´ complaint data as an XML file and save it on their computer.
Download 8D report as XML file	The download only contains the last data sent to the customer.
Upload 8D report as XML file	Selection of the file from your computer.

Table 1 Download Options

3.2.1 Basic Data

The subsection "*Basic data*" allows supplier to provide information, like production date and a comment to the customer (Figure 14).

Figure 14 Basic Data

The first field of this area is the "*8D reference*". This is used to select and refer to other closed complaints. A complaint ID or title can be entered in the search bar and a new screen will open showing matching complaints (Figure 15). It is also possible to click on the search button without entering anything, which will display all the complaints that may be relevant.

Figure 15 List of referable 8D-Complaints

If one complaint is selected, there is a hyperlink which refers to the specific complaint (Figure 16). You can click on it and the complaint opens.

Figure 16 "8D-Reference"

Referencing an 8D Report

Your customer might allow the referencing of an existing 8D report instead of creating a new 8D report. A requirement for this is that an 8D report is available for the same complaint. In this case you can either enter the complaint number or select process from a list.

It is only possible to reference an 8D report if it

- refers to a complaint of the same customer,
- has been edited up to at least step D4 and has been sent to the customer,
- is not in the "Cancelled" or "Rejected by supplier" status,
- itself does not refer to another 8D report.

1. Closing a **referenced** 8D report by the **supplier:**

   → If the supplier sets the referenced 8D report to the "Completed by supplier" status or "Closed by supplier" status, this also happens automatically for all referenced 8D reports. The customer therefore receives the response from the supplier that the referencing and the referenced reports have been closed.

2. Closing a **referenced** 8D report by the **customer:**

   → If your customer has closed ("Closed by customer") or cancelled a referenced 8D report, the status of the referencing 8D report stays unchanged. Its status must be closed (or cancelled if applicable) separately by the customer.

3. Closing a **referencing** 8D report by the **customer**

→ If your customer has closed ("Closed by customer") or cancelled an 8D report which references another 8D report, a copy of the 8D report is created. The reference is automatically removed by Problem Solver.

4. Re-opening a **referenced** 8D report by the **customer**

→ If your customer changes the status of a closed, referenced 8D report back to "Open" (re-open for re-editing), the reference is automatically removed by Problem Solver, a copy of the 8D report is inserted into referencing 8D report.

If the customer has specified the production date and quantity of the affected parts, this is displayed on the right and cannot be changed. To confirm the defective quantities, the supplier must enter the relevant data on the left (Figure 17).

Figure 17 Complaint and Accepted Quantities

The last field in the basic data is the "*comment to customer*" (Figure 18). It is used to communicate about the issue and quick comment, declaration, or additional information to the acceptance of the complaint to the customer.

Figure 18 "Comment to Customer"

The supplier can upload additional files and images that are relevant for the 8D report in the "*Attachments*" area. Please note that the customer only allows certain file formats and that you can also add attachments to individual elements of the 8D report (e.g. actions).

3.2.2 Supplier-Internal Data

The "*Supplier-internal data*" is only visible to the supplier and gives him the possibility to add e.g. internal notes (Figure 19). The internal supplier fields are standardized for all customers who use our application.

Figure 19 "Supplier-internal Data"

3.2.3 D1 – Team

In step D1, the 8D team is assembled, the key roles for solving the problem are identified and the responsibilities are assigned to the team members. The team should be cross-functional and have sufficient experience and diverse process and product knowledge to approach the problem from different angles. It is therefore important to clearly assign people and roles to the 8D members, not just functions or departments.

The team consists of the team leader, quality staff and other colleagues from different departments responsible for supporting, analyzing, and preventing the problem. It is important to select an experienced **leader** with a good understanding of the problem who is reporting to upper management. For the role of the, a person from upper management with decision authority should be identified to ensure that the team has all the resources it needs and to act as an intermediary between the team and management. To appoint a "*team leader*", simply tick the team member's radio button in the corresponding column (Figure 20). Please note, that one member per 8D team must be assigned to the role of the "*team leader*" so that they can be identified when responding to the customer.

Figure 20 "Team leader"

When the link "*Add team member*" is clicked a new tab with contact opens (Figure 21):

Figure 21 "Add team member"

Team members can be added either from the list of existing (registered) contacts, or new (unregistered) contacts by clicking the "*Add unregistered team member*" link when searching for team members (Figure 22).

Figure 22: Add team registered or unregistered member

If an unregistered employee is to be assigned, clicking on the "*Add an unregistered member*" link (Figure 23) will bring up a pop-up window where you can enter relevant information about the unregistered team members and appoint them as a new member of the 8D team (Figure 23). It is used to create the opportunity to set up a cross-functional team and to involve members of other departments that do not yet use SupplyOn's quality tools. The unregistered team member will not receive access to the ProblemSolver. This is solely a documentation function to be able to include the entire problem-solving team, even if they do not have access to the platform. The Fields indicated with the asterisk in this mask are mandatory (Figure 23):

Figure 23: "Add unregistered team member"

In the "*Authorization*" column, suppliers can define the authorization of a team member and select "*Read*" or "*Write*" for this specific complaint (Figure 24). If a member only has reading access to a complaint, they will not be able to make any changes. If this is the case, please contact another member of the team who has write access, or the customer manager who handles that customer's complaints. They will be able to adjust your access options.

Figure 24: "Authorization" options
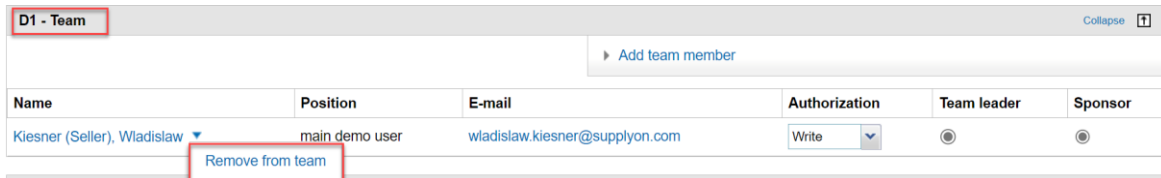
Note, however, that if a team member is not registered with SupplyOn, the entry will be "No access" (Figure 25).

Figure 25 "Authorization No Access"

To remove a person who has been assigned to a team, click on the menu icon next to their name and select "*Remove from team*" (Figure 26). Please note that you cannot delete team members if they have already been assigned to an action.
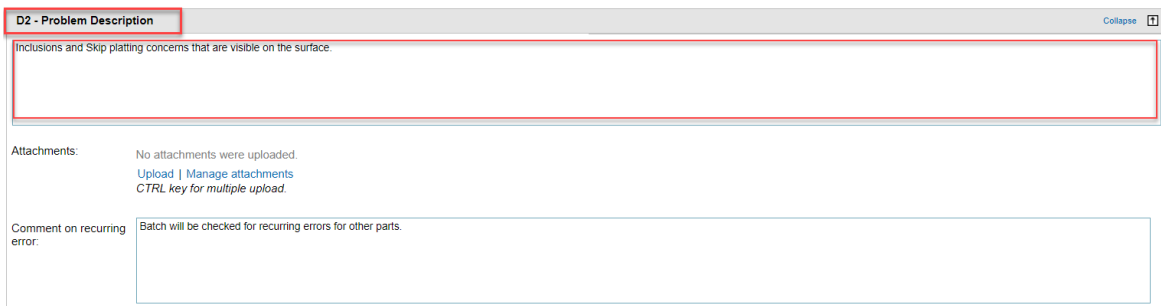

Figure 26: "Remove from team"

3.2.4 D2 – Problem Description

In Step D2, the supplier must define the problem in "*Problem Description*" as precisely as possible to identify the source of the problem (Figure 27). This is a mandatory field. The detailed description should include all relevant information and describe details in measurable terms (e.g. exact number, dimensions, part number). This is the basis for all subsequent 8D process steps, so the description must be specific and easy to understand, using terms that are understood by all participants. Therefore, the supplier should re-describe the problem in his own words and clarify the objectives and a "correct" problem description to identify root causes. This may include an Is/Is-Not-Analysis (see 3.3.1 VDA Features p.40).

Figure 27: Step D2 – "Problem description" field

In step D2 it is possible to add an "*attachment*" (Figure 28). For example, it is useful to include a flowchart of the process and identify critical process steps to make it understandable to all, so that even if not everyone is familiar with the process, they will understand the core issue. It is also possible to include a high-level project plan for better planning and overview.

Figure 28: "Attachment" Area

The purpose of the "*Comment on Recurring Error*" field is to indicate that the supplier is aware of recurring errors so that the likelihood of other problems can be checked, and an initial assessment of the situation can be made (Figure 29).

Figure 29: "Comment on Recurring Error"

3.2.5 D3 – [Interim] Containment Actions

Purpose of (Interim) Containment Actions is a temporary fix that contains the issue until a permanent solution is developed and implemented. These aim at quickly isolate the effects of the problem from affecting internal and external customers.

The user can define containment actions by clicking on "*Add action*" (Figure 30).

Figure 30: "Add Action"

When text link "*Add action*" is clicked, there is a new tab, where supplier can "*add a D3 action*" (Figure 31). The supplier here defines potential interim containment actions temporarily actions that prevent the problem from causing further harm or inconvenience while the root cause is investigated.

Add D3 action

Title*:

Description*:

Status: Draft

Responsible*: Select responsible ▾ | Define D1 team member

Effect*: ___ %

Validation description:

Planned implementation*: [___] 📅 [___ ▾]

Actual implementation: [___] 📅 [___ ▾]

Attachments: No attachments were uploaded.
Upload | Manage attachments
CTRL key for multiple upload.

☐ Internal action (not visible for customer)

Figure 31: "Add Action" Tab

All fields with an asterisk are mandatory, thus the supplier needs to provide information on the action "*title*" (max 40 Characters) and "*description*", the "*responsible*" D1-Team member, "*effectiveness*", and the "*planned implementation date*" which are mandatory fields (Figure 32).

Change D3 action

Title*: Regular examinations and quality alerts

Description*: Check parts on a regular basis for quality issues and create quality alerts in case of any irregularities or anomalies and distribute these to the production line for information and handling.

Status: Draft

Responsible*: Adams, John ▾ | Define D1 team member

Effect*: 100 %

Validation description:

Planned implementation*: 10/22/2023 📅 11:59 PM ▾

Actual implementation: 10/18/2023 📅 11:59 PM ▾

Item number: 9000

Attachments: No attachments were uploaded.
Upload | Manage attachments
CTRL key for multiple upload.

☐ Internal action (not visible for customer)

Figure 32: Mandatory Fields

It is important to verify the effectiveness of possible actions. After assessing the potential effect, the mandatory percentage value must be greater than 0 and less than or equal to 100. Please note that the "*Actual Implementation*" date must be today or in the past.

Furthermore, the supplier has an option to mark the action "*internal*" (Figure 33), which basically means that this action won't be visible to the customer (included PDF-report).

Figure 33: "Internal Action"

If there is at least one D3 action with an actual implementation date filled in, an additional link will be displayed as "*Add correct parts delivery*" (Figure 34).

Figure 34: "Add delivery of corrective parts"

Clicking on this will open a new window where the supplier can enter the "*correct parts delivery date and time"* and get "*Help and Support*" using the displayed hyperlink (Figure 35).

Figure 35: "Corrective parts delivered" window

Please note, the Complaint can only be sent to the customer once at least the Basic Data section has been completed and the team has been defined.

3.2.6 D4 – Root Cause Analysis and Escape Points

In the D4 step "*Root Cause Analysis*", several tools are available to analyze the core problem that caused the complaint, e.g. Ishikawa or 5-Why analysis (Figure 36). This detailed, data-driven process ensures that the most important root causes are identified. In addition, the structured procedures encourage the team to understand why it happened (Root Cause, SO Term: Occurrence), but also why it was not detected and contained, but slipped through (Escape point, SO Term: Non-Detection) and what needs to be fixed. Root cause analysis requires a thorough investigation to identify underlying causes. It is a long-term process that demands a deep understanding of the issue at hand.
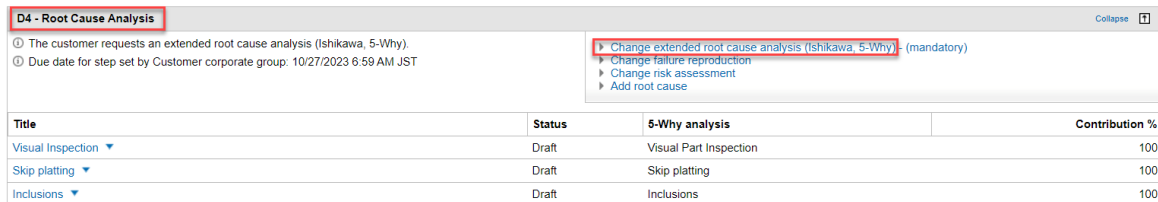
Figure 36: D4 – "Root Cause Analysis"

The **Ishikawa model** failure analysis that aims to uncover the key relationships between variables and identify potential causes to gain further insight into process behavior.

The root causes can be classified into two main types of "*Non-Detection*" and "*Occurrence*", which both have their own tab in the Ishikawa Analysis window (Figure 37). Any number of lines can be added to the six categories of "*man*", "*material*", "*machine*", "*method*", "*environment*", and "*management*", as well as a person to "*verify*" them.
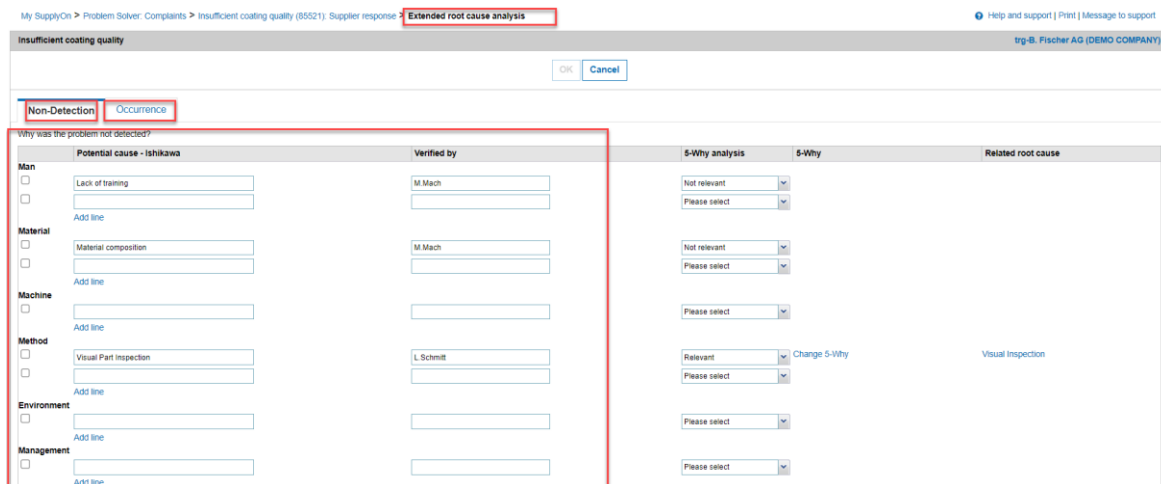

Figure 37: Ishikawa Analysis Overview

The potential causes identified by the **Ishikawa** diagram should highlight the core problem. Each root cause can be enriched with a **5-why analysis** (Figure 38). The aim of the "*5-Why-Analysis*" is to find the root cause of the problem by asking questions step by step. To do this, open the "*5-Why Analysis*" area in ProSo, enter a possible root cause and ask "Why has the problem occurred?" as many times as it makes sense.

Usually, the last why you have answered is the actual root cause, which you can copy to the root cause item. The text of the last why is automatically transferred as a description in the D4 root cause. The tools are used to collect additional data for deeper insights and to narrow down the list to a few, most likely root causes.

Figure 38: Additional "5-Why Analysis" in Ishikawa Diagram

The drop-down menu has two options which indicates whether the identified potential cause from the Ishikawa analysis is relevant as a root cause: "*relevant*" or "*not relevant*"

By marking a root cause as "*relevant*", a new hyperlink "*Change/Add 5-Why*" appears that opens a new window (Figure 39).

Figure 39: Adding a "5-Why Analysis"

The separate 5-Why window which opens is split into two sections that help in finding and documenting the process of "5-Why analysis" (Figure 40).

Figure 40: "5-Why Analysis"

The potential cause shown at the top is copied from the Ishikawa analysis. By repeatedly asking "*Why*" and entering the answer on a line, the root cause of a problem can be identified (Figure 41Figure 40Figure 42). Please note that the "*5-Why analysis*" does not always require exactly five "*Whys*". Depending on the situation, more or fewer questions may be necessary.

Figure 41: "Change 5-Why Analysis"

The final "*Why*" answer is then automatically displayed as the "*description*" for the D4 root cause item in the second sub-section (Figure 42Figure 43).

Figure 42: "Root Cause Analysis" and copied "Description".

The second sub-section starts with four lines that aim at giving a precise description, using predefined drop-down options to categorize the cause and the so-called "*Drill Deep Category*" is defined by the previous Ishikawa analysis and set automatically (Figure 42). This step also requires selecting a "*Cause Type*", which has the options "*Technical*" and "*Systemic*". "*Technical root causes*" are at the operational level and result from the description of logical and functional relationships (cause-effect relationships). "*Systemic root causes*" relate to the Quality and Manufacturing Systems that cover the product and process.

In addition to root cause analysis, section D4 provides the option of performing a "*Risk Assessment*" and a "*Failure Reproduction*" (Figure 43).

Figure 43: "Failure Reproduction" and "Risk Assessment"

Completing the optional "*Risk Assessment*" allows the supplier to provide accurate information on any potentially erroneous batches and quantities sent to the customer, along with the exact extent of the error. To conduct a "*risk assessment*", confidently provide the necessary information on "*production dates*", "*affected delivery dates*", "*quantity*", and a clear "*description*" of the issue in the "*risk assessment*" pop-up (Figure 44Figure 44).

Figure 44: "Risk Assessment"

The "*Failure Reproduction*" window (Figure 45) contains information on whether the problem has been reproduced at the supplier's end. Please note that users assigned as responsible in this step cannot be removed, as attempting to do so will result in an error message upon submission.

Figure 45: "Failure Reproduction"

If customer has requested 8D plus report, supplier must provide mandatorily an "*Ishikawa*" and "*5 Why analysis*" in D4 as well as a "*Drill-Wide analysis*" in D7. This can be seen in the D4 section of the "*supplier's preview*", where on the left-hand side there is an indication that the customer has requested 8D Plus, and on the right-hand side next to the text link to "*Enhanced Analysis*" there is a marker saying "*mandatory*" (Figure 46). The analysis becomes **optional** when a standard 8D report is requested.

Figure 46: 8D-Plus indication (Extended, mandatory)

The overview displays two statuses for each root cause. The root cause is in status *"Draft"* (Figure 47), if it is initially created but not yet submitted, or the entire 8D report is saved as a draft, or any updates have been made to a root cause that has already been submitted to the customer.

The second status is *"Submitted"*, indicating that the step has already been handed over to the customer.

Figure 47: Root Cause "Status"

Only initially created root causes, in Status "*Draft*" can be deleted. Once a root cause has been submitted to the customer, it cannot be deleted, even if the customer updates it and the root cause reverts to "*Draft*" status (Figure 48).

Figure 48: "Root Cause Status"

3.2.7 D5 – Permanent Corrective Actions

Step D5 identifies permanent corrective actions that can remove the root causes and prevent the problem from ever happening again. The goal is to select and verify long-term actions to move from diagnosis to treatment and from insight to action to remove the root cause.
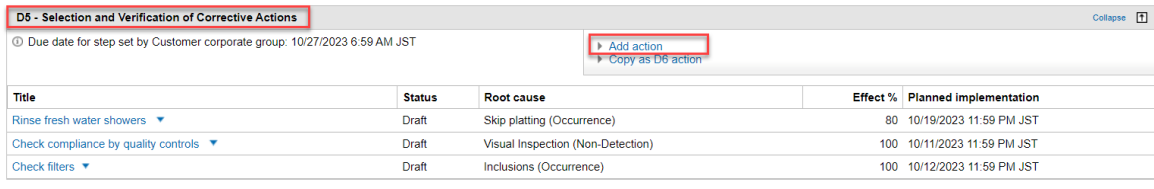
The chosen measures need to address a corresponding root cause defined in Step D4 to permanently correct the problem and eliminate the root cause (Figure 49).

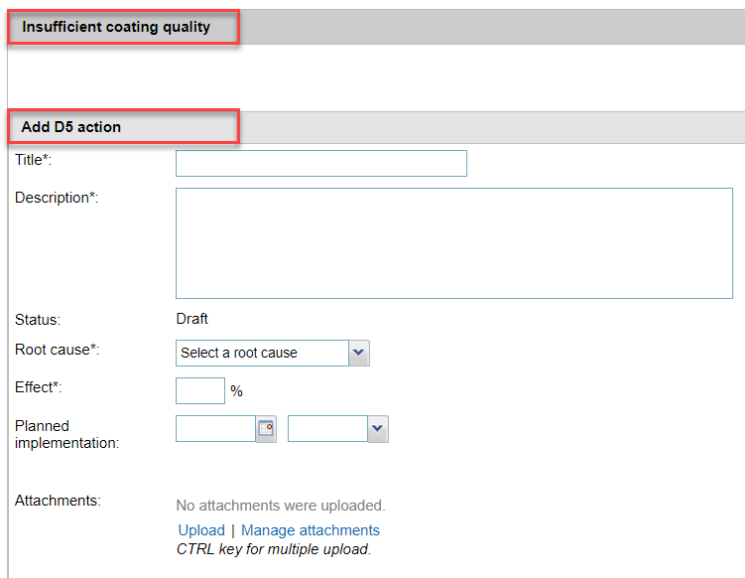Figure 49: D5 – Chosen corrective actions that directly address the "root causes" identified in Step D4

To add a new corrective action, a new window opens via the "*Add Action*" hyperlink, where all the required information can be entered (Figure 50).

Figure 50: Hyperlink to "Add Action"

While "*adding a new D5 action*", mandatory fields are marked with an * like the "*title*", "*description*", the "*root causes*" this action relates to and the expected impact ("*effect*") of this action on the root cause in % (Figure 51). It is also possible to enter a "*planned implementation date*" and add "*attachments*".
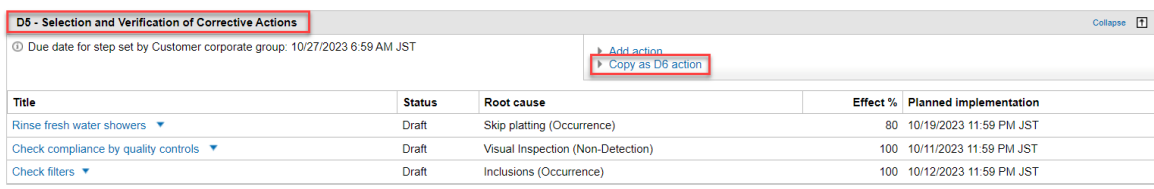
Figure 51: "Add D5 Action" to a specific root cause.

To copy the defined actions from D5 to D6 for subsequent implementation and validation activities, select the second hyperlink and choose the appropriate corrective action (Figure 52).

Figure 52: "Copy function" of corrective actions from Step D5 to D6

3.2.8 D6 – Implement Corrective Actions

Step D6 practically applies the planning and analysis conducted in the previous steps and implements the best solutions.

Tasks of this step include the roll-out of corrective measures, the validation of effectiveness of solutions also including customers perspective by collecting feedback, monitoring the long-term effectiveness of implemented changes and the removal of any interim containment action.

To simplify the 8D Process and save time, the defined actions from D5 can easily be copied to D6 (Figure 53).

Figure 53: "Copy of defined D5 actions to step D6"

To adjust an action or provide more information about the "*implementation date*" or "*validation date*", the corresponding hyperlink can be simply clicked on (Figure 54).

Figure 54: Open an action to adjust or add information

Clicking on the hyperlink will open a window where you can modify the information of the respective action and add more details (Figure 55).

Figure 55: Separate window to change action details

Figure 56: Hyperlink for defining internal actions

In the separate window, all necessary information can be entered and the checkbox on the bottom that defines "*internal actions*" is automatically checked (Figure 57).

Figure 57: Definition of "Internal Actions"

Step 6 offers the opportunity to set a "*delivery date*" of corrective parts in a separate window (Figure 58).

Figure 58 Setting a "delivery date" of corrective parts

In the separate mask a "*date*" can be entered when the first corrected parts will be delivered to the customer (Figure 59).

Figure 59: Separate window to set a "delivery date"

The "*Cancellation*" tab in D6 allows for optional information on the cancellation of containment actions (Figure 60). This feature ensures the prevention of long-term failures by enabling the documentation of when D3 containment actions can be cancelled after D6 actions have been implemented.

Figure 60: "Cancellation" documentation of containment actions set in D3

3.2.9 D7 – Prevention of Reoccurrence

Preventive actions remove causes for a potential problem and prevent it from ever happening. So, the goal of this step is to think about similar products and processes and possible applicability of the problem to other situations and its impacts.

D7 actions are proactive and aim to prevent future events. To prevent recurrence, necessary improvements in systems and processes must be identified. Preventive measures are established and decided upon as part of the tasks of step D7. To add an Activity, select "*Add Action*" hyperlink (Figure 61).

Figure 61: D7 – Add Preventive Actions

Step 7 offers the opportunity to provide an additional "*Drill-Wide Analysis*" which is mandatory if the customer has requested an 8D-Plus (Figure 62). The Drill-Wide analysis supports in tracking solutions for the original problem for other sites, products, or lines. Areas that are relevant from both supplier point of view and the customer's, such as sites or products, for which it is also relevant to implement the actions in question. Thus, the Drill-Wide analysis helps you here to "look beyond the periphery of the actual problem".

Example: Problem = Error with blue pens.

1. Ask yourself the question to whether or not an error with "blue pens" can also occur with "red pens"?

2. If this is relevant, enter the product line in question and select the status in the dropdown menu → The status refers to all D3, D6 and D7 actions that have been created for the current problem (e.g, a D6 action could be defined such as "Align Machine").

3. Now specify whether or not this action has already been implemented and validated for another site. A comment must be entered if none of the entries was identified as relevant (status "N/A").

Figure 62: Definition of a "Drill-Wide Analysis"

This analysis will address the bigger picture and transfer the lessons learned to other possibly affected areas. Any number of lines can be added to a plant, line, product and/or project. For each line one suitable status can be selected (Figure 63): "*Not applicable*", "*Completed and verified*", "*Implemented, but not validated" or* "*In progress, not implemented*".

Further it is possible to add a comment and an attachment to the analysis.

Figure 63: Separate "Drill-Wide Analysis"

3.2.10   D8 – Closure and Report Evaluation

The 8D report rating shows the quality of the content of an 8D report. Suppliers can rate and comment on the 8D steps they have performed according to predefined criteria and a customer-specific rating scheme.

You can navigate to the "*evaluation*" by clicking on the hyperlink displayed in D8 (Figure 64).

Figure 64: D8 – "Closure"

The criteria and scoring scheme are defined by the customer and are the same for all complaints, ensuring comparability and long-term quality control (Figure 65). Each step can be scored separately by selecting one of three levels, which add up to a total score.

Figure 65 8D Supplier Evaluation

The report evaluation information is also displayed in the PDF download.

3.2.11 Overview of Mandatory Supplier Fields

Legend

[L]	Separate Hyperlink to open a new window
x	NOT mandatory to submit
m	mandatory to submit
Mind. one	at least one item needed to submit
Mind. one for each tab	at least one for each tab needed to submit, tabs: "Non-detection" and "Occurence"
OE or CB	eighter Overall effectiveness (OE) or Checkbox (CB) must be filled to submit
m	mandatory to set status complete by supplier, not to submit D-step
m	mandatory to set status closed by supplier, not to submit D-step
	Difference 8D and 8D Plus

Case: Due dates set by customer

		Response Type: Requirements to Submit a D-Step	
		8D	8D Plus
Basic Data	(Submission incl. D1)		
	8D reference	x	x
	Production date (supplier)	m	m
	Comment to customer	x	x
	Attachments	x	x
Supplier internal Data	(Internal Usage only, no submission at all)		
	All	x	x
D1	(Included in Submission of Basic Data)		
	[L] Add Team Member	Mind. one	Mind. one
	Team Leader	Mind. one	Mind. one

D2	(Included in Submission of D3)		
	D2 description	m	m
	Attachments	x	x
	Comment on recurring error	x	x
D3	**(Submission incl. D2)**		
	[L] Add D3 action	Mind. one	Mind. one
	Title	m	m
	Description	m	m
	Responsible	m	m
	Effect	m	m
	Validation description:	x	x
	Planned Implementation	m	m
	Actual implementation:	m	m
	[L] Add Overall action effectiveness	OE or CB	OE or CB
	Mark Checkbox "not applicable"	OE or CB	OE or CB
D4			
	[L] Add Extended root cause analysis	Mind. one	Mind. one for each tab
	Category	Mind. one	Mind. one
	Verified by	m	m
	Relevant	Mind. one	Mind. one
	Create 5-Why analysis	Mind. one	Mind. one for each tab
	Why	Mind. one	Mind. one
	Create Root cause	Mind. one	Mind. one
	Title	m	m
	Description	m	m
	Root cause type	x	x
	Contribution	m	m
	[L] Add Failure Reproduction	x	x
	[L] Add Extended Risk Assessment	x	x
	[L] Add Root Cause	x	x
D5			
	[L] Add Action	Mind. one	Mind. one for root cause

	Title	m	m
	Description	m	m
	Root cause	m	m
	Effect	m	m
	Planned implementation	x	x
	Attachments	x	x
	[L] Add Overall action effectiveness	m	m
D6			
	[L] Add Action	Mind. one	Mind. one for root cause
	Title	m	m
	Description	m	m
	Root cause	m	m
	Responsible	m	m
	Planned implementation	m	m
	Actual implementation	m	m
	Date	m	m
	Effect	m	m
	Description	m	m
	Attachments	x	x
	[L] Add Cancellation of containment actions	x	x
	[L] Add internal D6 Action	x	x
	[L] Add Overall action effectiveness	m	m
D7			
	[L] Add Action	Mind. one	Mind. one
	Title	m	m
	Description	m	m
	Root cause	m	m
	Responsible	m	m
	Planned implementation	m	m
	Actual implementation	m	m
	[L] Add Drill-Wide Analysis	x	Mind. one
D8			

Table 2: Overview of Mandatory Supplier Fields
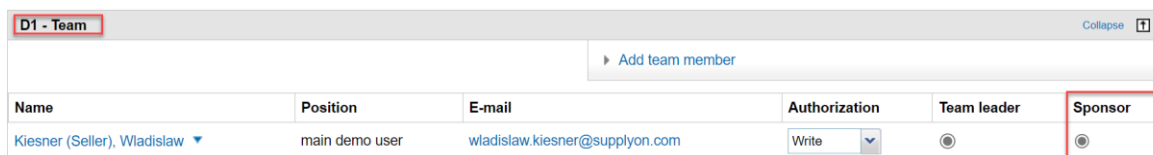
3.3 Other Features

3.3.1 VDA Features

To fulfill the requirements stated by the VDA, there are some additional features in different D-steps. All options are only available for 8D response types.

3.3.1.1 D1 – Team: Sponsor

The "*Sponsor*" is a new role that has been added to the team roles. The "*sponsor*" should be someone from senior management with decision-making authority who can ensure that the team has all the resources it needs. He should act as an intermediary between the team and management.

To select the "*sponsor*", simply tick the team member's radio button in the appropriate column (Figure 66). The "*sponsor*" can be the "*team leader*" and "*sponsor*" at the same time. But please note that only one member per 8D team can be assigned the role of the "*sponsor*".
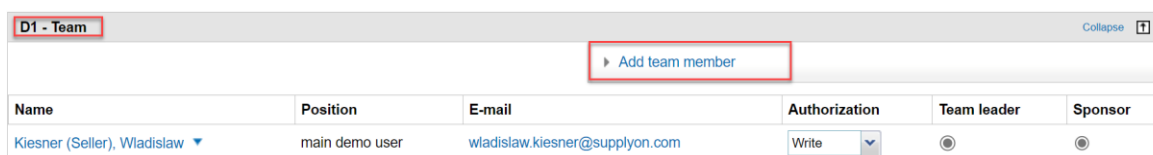

Figure 66: Additional Role "Sponsor"

Sponsor functionality only applies to 8D and 8D with GA response types. For other responses the functionality is not available.

Clicking on the "*Add a Team Member*" hyperlink will open a new contact tab (Figure 67) and, like any other team member, a "*sponsor*" can be added from the existing registered users, or an unregistered one can be added.

Figure 67: "Add team member"

3.3.1.2 D2 – Problem Description: Is/Is-Not-Analysis

The goal of the additional "*Is/Is-not Analysis*" is to analyze problem deeper. This is done through clearly identifying what is part of the problem scope, by creating an accurate problem description in suppliers own, clear words, to avoid vagueness and ensure that the problem is understood correctly, and by conducting a more detailed analysis of the problem to ensure focus on the right causes.

Category	Question	What is it?	What is it not?
Core problem	What?	Which product is affected?	Are similar products not affected?
Place	Where?	Where has the problem occurred?	Where could also occurred?
Timing	When?	When deviation occurred?	Could happened early already?
Amount	How many?	How many deviations exist?	Are further deviations expected?

Table 3: Is/Is-Not-Analyis Structure

To add an "*Is/Not analysis*", click on the hyperlink shown in step D2 and a separate window will open (Figure 68).
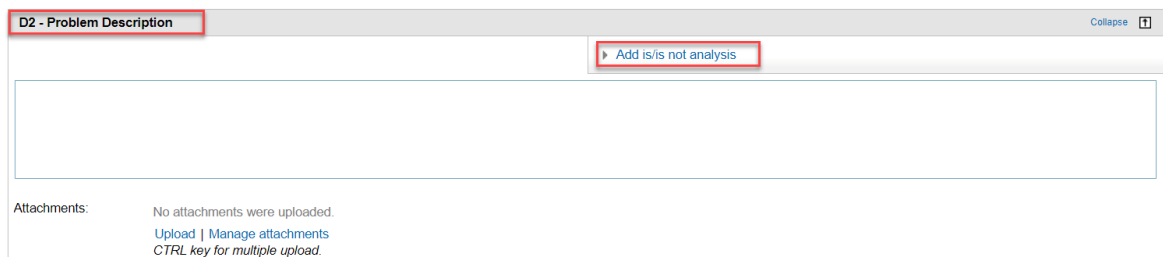

Figure 68: "Add Is/Is Not Analysis"

The four questions to be answered appear in a table in the opening window (Figure 69). Please not, that only one analysis can be submitted per complaint, and it is possible to add attachments.
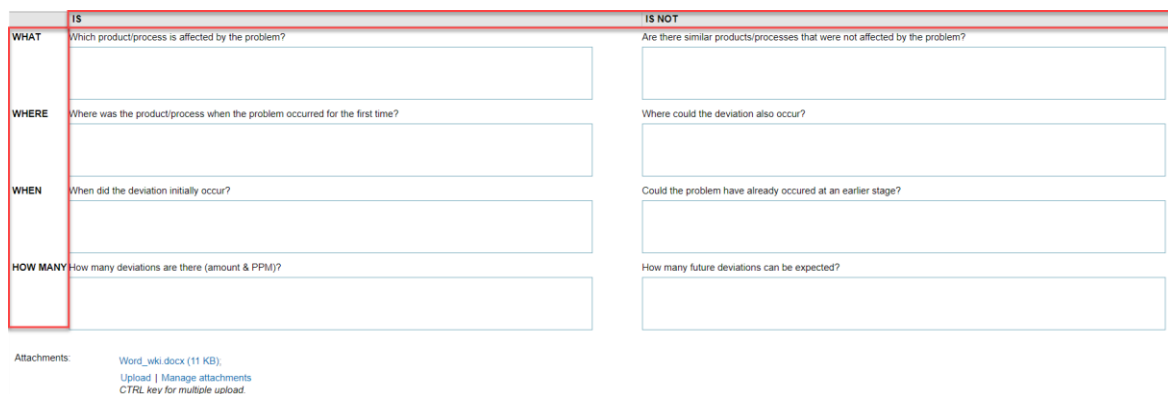

Figure 69: "Is/Is-Not-Analysis"

If the questions have been completed, it is possible to select the question category in a **D3 Step**. An additional dropdown is available to assign a containment action directly to a problem identified in the "*Is/Not analysis*" (Figure 70).

Figure 70: Drop-down assignment to a specific question of the "Is/Is-Not-Analysis"

3.3.1.3 D4 – Root Cause Analysis: Update Reminder

After a thorough investigation of the causes in step D4, new information may emerge that require a change in the previous information given in Step D2 and D3. To remind the person editing the 8D to make these necessary adjustments in the previous steps, two additional check boxes are displayed in step D4 (Figure 71). These are designed to re-think and re-evaluate the information provided at the start of the problem-solving process and to update the "*Is/Is-Not-Analysis*" and "*Risk Assessment*" based on these findings.

Figure 71: Update Reminder Checkboxes

If the update has been carried out or is not required, the box can be ticked by a person who is part of the D1 team. Also, the checkboxes can be changed after saving and sending to customer if the complaint is in Status "open". But only the name of the last person to tick the box and a timestamp will be displayed (Figure 72).

Figure 72: Ticked Checkboxes

3.3.1.4 D5 – Corrective Actions: Add Effectiveness Assessment and Negative Impact

D5 provides two additional fields. The first is the text field "*Effectiveness Assessment*" below the "*Effect: in %*" (Figure 73). This is used to explain and evaluate the effectiveness in more detail and complements the single % value of the effectiveness of a corrective action.

Figure 73: Additional text field "Effectiveness Assessment"

The second addition is a dropdown field "*Negative Impact*" with the two selection options "*Yes*" and "*No*" (Figure 74).

- If "*No*" is selected:

  This means that no negative consequences are expected from the implementation of the corrective action.

- If "*Yes*" is selected:

  Each of the invented actions can have a negative effect, i.e. it can reduce the productivity of the plant, because the speed must be reduced to document such consequences, an additional text field is provided in step D5.

Figure 74: Negative Impact "No" and "Yes"

3.3.1.5 D7 – Prevention of Reoccurrence: Independent Evaluator

The aim of the new role of the "*Independent Evaluator*", introduced in D7, is to select an independent person who will evaluate the whole of the 8D process (Figure 75). This person must fulfil a few characteristics:

- Person **must not be part** of D1-Team

- Only **one** evaluator per complaint

- Must validate **all** steps and actions taken without bias

- **Selection of Evaluator**: A D1-Team member assigns a person with a or without an existing SupplyOn Account as the evaluator role in step D7
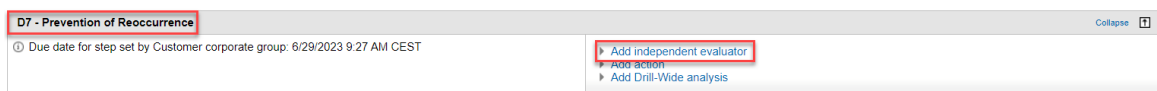

Figure 75: "Add Independent Evaluator"

The selected evaluator will be notified by email, has limited read-only access to the complaints he is assigned to. The only change he can perform is the writing permissions to tick one checkbox in Step D8 **„***Independent evaluation performed***"** (Figure 76). After his extensive evaluation of the correctness of all previous 8D-steps he can give his ok and green lights that everything has been performed properly by ticking the checkbox. The name, date and time will be displayed automatically.
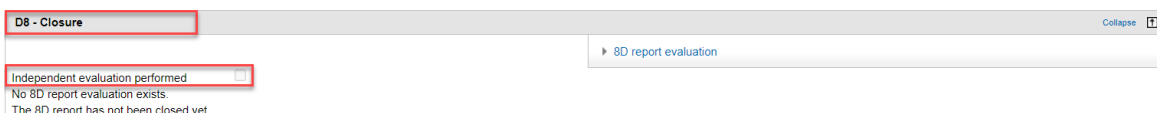

Figure 76: Checkbox „Independent evaluation performed"

3.3.2 Problem Solving Guideline

At the top of the complaint, on the right-hand side, there is a hyperlink that takes you to a "*Problem Solving Guideline*" (Figure 77). It links to the "*SupplyOn Support Center*", where you will find lots of information about the ProblemSolver and help with your questions.
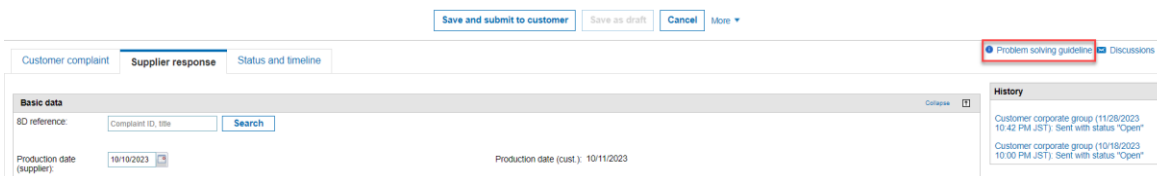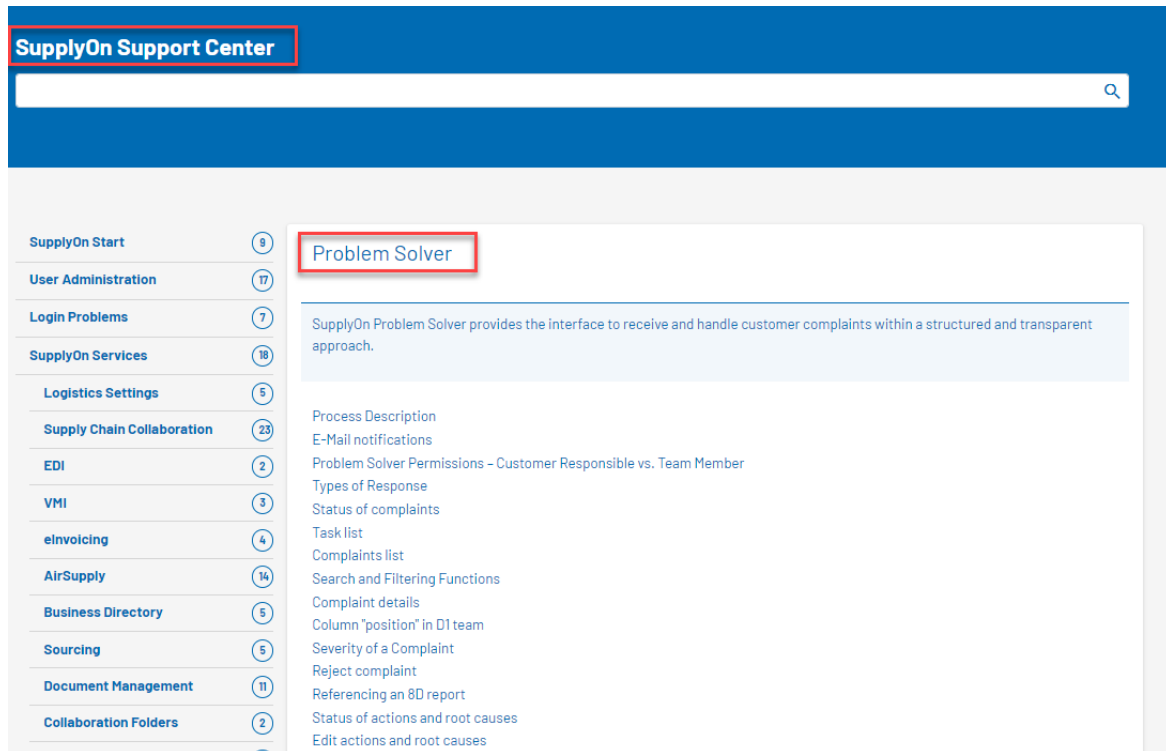

Figure 77: "Problem Solving Guideline"

Figure 78: SupplyOn Support Center

3.3.3 Discussions

To the right of the "*Problem-Solving Guideline*" is a little envelope icon called "*Discussions*" (Figure 79). There you can start a so-called object-related discussion with your customer.
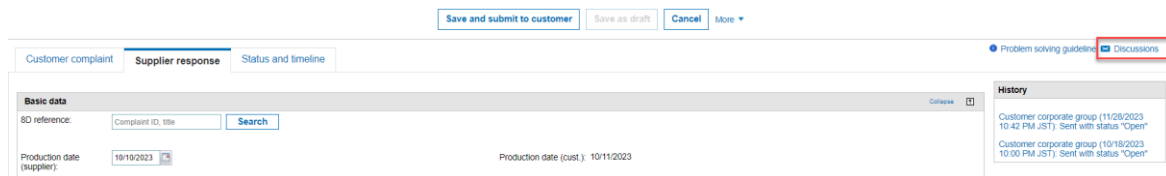

Figure 79: Start Discussion in SupplyOn

For example, if you need technical specifications from your customer, do not request them via your personal e-mail account, but start a discussion in SupplyOn. The advantage of this is that everyone can see if there has been a discussion started and has immediate access to the data, which is not disclosed in a personal e-mail account.

You can also see whether there is a new message or an open conversation on the problem solver's landing page, as the last column in the overview, "*Discussion*", also displays a small envelope icon, depending on the status of the discussion (Figure 80).

Figure 80: Opened envelope indicating comment in discussion was marked as read

The envelope switch works as follows:

The sender sends a message. The recipient can decide whether the sender should be able to see that they have read the message, i.e. whether it should be shown as an open or closed envelope. Important: Only when the recipient clicks "*mark all as read*" on conversation level will the envelope change from closed to open (Figure 81).

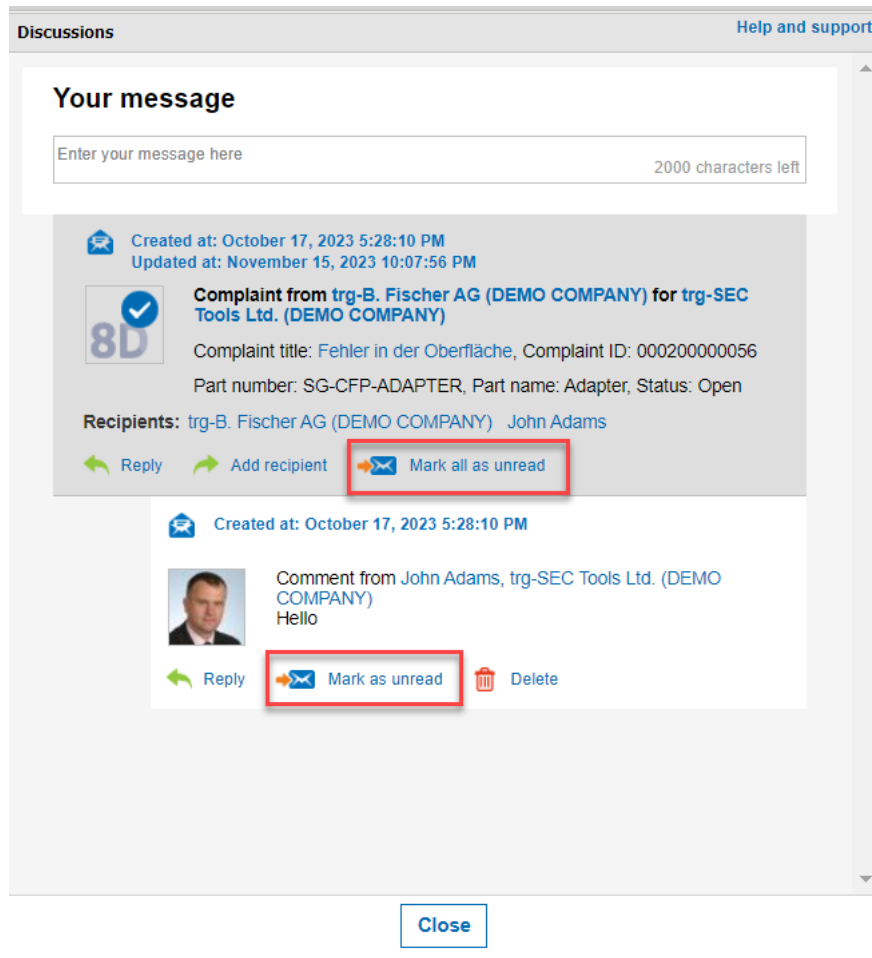Simply opening and reading the message does not result in an open envelope. "*Mark as read*" on comment level does not result in an open envelope.

Figure 81: Envelope Switch

3.3.4 History

The Complaint "*History*" is the third feature on the right-hand side (Figure 82). Each published change is automatically saved as a new record, so you can review the history of a complaint. When you click on a link, the complaint will open as a PDF document.
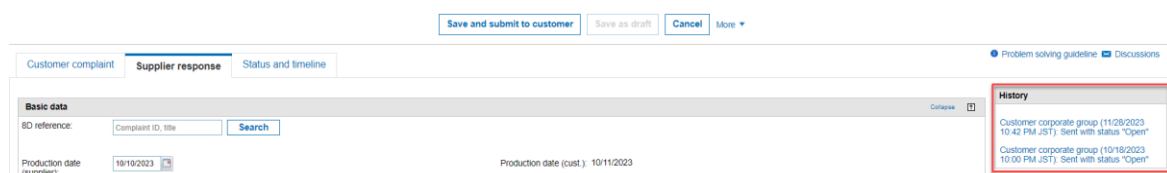
Figure 82: Automatically saved complaint editing "History"

3.4 Status and Timeline Tab

In the "*Status and Timeline*" tab, you can see which dates the customer has given you and what, who, and when has sent (Figure 83). For more detailed explanation see 2.2.2 Customer tab "Status and Timeline".

Figure 83: "Status and Timeline" Tab