Guideline for using the Questionnaire QA Infrastructure

Deutsche Bahn AG
Procurement Infrastructure
Quality Assurance
Guideline (external)
21.08.2018
Contents

1 Introduction 3
2 Applicable Documents 4
3 Excel-Settings 5
4 Assessment of the individual questions  (based on VDA 6.3 item 6.1) 11
5 List of abbreviations 19
1 Introduction

The Questionnaire has been released for quality audits at Deutsche Bahn AG, its suppliers and their subcontractors. It is based on the current DIN EN ISO 19011 and VDA 6.3.

Through the department Quality Assurance Procurement Infrastructure of the Deutsche Bahn AG, the Questionnaire is used to carry out assessments of quality capability (Q-E), monitoring audits (RU) and special audits (SoA).

The DB only carries out monitoring audits at its suppliers (AN) of products subject to quality inspection (see LgP) in accordance with the Ril. 120.0381. The contractors are responsible for conducting monitoring audits at subcontractors (UAN).

If the subcontractors have a direct contractual relationship with the DB AG, the contractors can request for the results of the DB monitoring audits in the assessment of the subcontractors.
2 Applicable Documents

- Ril 120.0381 Qualitätssicherung im System Bahn (Quality Assurance in the railway system)
- Ril 120.0381A01 Regelüberwachung (Monitoring audit)
- Ril 120.0381A04 Qualitätsfähigkeit von Lieferanten – Erstbewertung (Quality capability of suppliers – initial assessment)
- Ril 120.0381A05 Qualitätsfähigkeit von Lieferanten – Aktualisierung (Quality capability of suppliers – update)
- Ril 120.0381V12 Elektrotechnische Anlagen (electrotechnical equipment)
- Ril 120.0381V13 Leit- & Sicherungstechnik (operation’s control and signaling techniques)
- Ril 120.0381V14 Maschinenotechnische Anlagen (mechanical engineering equipment)
- Ril 120.0381V15 Oberbaumaterial (tracks superstructure material)
- Ril 120.0381V17 Bahnbetriebliche Telekommunikation (railway operating telecommunication)
- Ril 120.0381V18 Tiefbaustoffe (underground engineering materials)
- VDA 6.3 Prozessaudit (VDA 6.3 process audit 3. revised version, July 2016)

In case of doubt the German version is valid.
3 Excel-Settings

To ensure the functionality of the Questionnaire, the macros must be activated first. After opening the Questionnaire, press the button *Enable Content* as shown in Figure 1.

![Figure 1: Activating the Macro](image)

Then the activation of the automatic formula calculation should be checked. If the automatic mode is not activated, the final calculation does not output a result at the end. As shown in Figure 2, the Excel tab *File* must be opened and the Options menu must be selected.

![Figure 2: Excel-Settings](image)
As shown in Figure 3, in the category **Formulas** the **Calculation Options** must be set to **Automatic** and the selection shall be confirmed with the **OK** button.

![Automatic Calculation Options](image)

**Figure 3: Automatic Calculation Options**

**Using the Questionnaire:**
On the start page of the Questionnaire all relevant information about the audit are entered.

In Figure 4, the information is divided into four categories in color.

- Audit details (yellow):
  - **Audit date:** Day(s) the audit takes place
  - **Type of audit:** By default, monitoring audit must be conducted. In case of differences, please enter the appropriate audit type.
  - **Reason:** In case of audits due to complaints, etc. please enter the appropriate reason.
  - **Product number of the LgP:** The product numbers of the audited products according to the numbering in the LgP overviews, which are available online in the supplier portal of Deutsche Bahn.
  - **Process elements:** List of process elements (red marked area) that might be audit content.
- Supplier details (green):
  - **Supplier/ Contractor**: Information of the headquarters of the audited company
  - **Audited facility**: Location to be audited.
  - **Creditor number**: Only if available
- Person details (blue):
  - **Participants – company**: Information of persons who conduct the audit
  - **Participants – audited company**: Information on persons being audited
- Audit elements (red):
  - List of process elements which can be audited.

Figure 4: Start page of the Questionnaire
After entering the audit details and selecting the process elements which are to be audited (Yes for use in the audit / No for deselection), the *create Questionnaire* button must be clicked - see Figure 5.

**Attention:**
Later a selection of the process elements is not possible!

![Create Questionnaire button](image)

Figure 5: *Create Questionnaire* button
After pressing the button, all selected process elements are displayed as separate Excel sheets - see Figure 6.

The quality assurance Questionnaire is divided into the following process elements A, B, C, D1 – D6:

- **A**: Management system
- **B**: Staff, qualification
- **C1**: Purchasing, procurement
- **C1.2** Purchasing, subcontractor
- **D**: Production
  - **D1**: Product/process planning, customer requirements, feasibility
  - **D2**: Equipment, facilities
  - **D3**: Failure analysis, failure correction, continuous improvement
  - **D4**: Packaging, shipping, storage
  - **D5**: Environmental protection
  - **D6**: Energy and environmental management

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**Figure 6**: Depiction of the selected process elements
Each Excel sheet/process element is structured as shown in Figure 7 below.

<table>
<thead>
<tr>
<th>A</th>
<th>Management system</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Audit question</td>
</tr>
<tr>
<td>7</td>
<td>A1 Does a certified QM system exist?</td>
</tr>
<tr>
<td></td>
<td>• Does the scope correspond to the product being audited?</td>
</tr>
<tr>
<td></td>
<td>• Evidence is e.g. a certificate specific QMS or other certificates - IMS AS</td>
</tr>
<tr>
<td>7</td>
<td>A2 Are the customers and their requirements known in the company?</td>
</tr>
<tr>
<td></td>
<td>• Identification, procurement and communication of information sources</td>
</tr>
<tr>
<td></td>
<td>• Evidence is e.g. Contract with publisher (e.g., standards) DE Kommunikation or DB Netz AG (distributor TM)</td>
</tr>
<tr>
<td></td>
<td>• Control of information such as standards, guidelines, DBS, etc.</td>
</tr>
<tr>
<td></td>
<td>• Obligation of suppliers to the DB AG Code of conduct or own, adequate rules (Responsibilities and information requirements)</td>
</tr>
<tr>
<td></td>
<td>• Evidence are e.g. Process description, Current RI 1200391, Current EVB quality assurance</td>
</tr>
<tr>
<td>8</td>
<td>A3 Are methods, processes of improvement established / deployed?</td>
</tr>
<tr>
<td></td>
<td>• KVP, KAIZEN, suggestion schemes, idea management are existing and effective</td>
</tr>
<tr>
<td></td>
<td>• Cause-and-effect analyses (Ishikawa, 8 D, 5 Why) are used for errors, problems</td>
</tr>
<tr>
<td></td>
<td>• FMEA process / product are implemented</td>
</tr>
<tr>
<td></td>
<td>• Evidence is e.g. R&amp;D template / example, process FMEA (active or planning)</td>
</tr>
<tr>
<td>9</td>
<td>A4 Is the leadership actively involved in the implementation of the management system?</td>
</tr>
<tr>
<td></td>
<td>• Management evaluation and alignment of the system to meet customer requirements are documented and communicated</td>
</tr>
<tr>
<td></td>
<td>• Evidence is e.g. Management review (evaluation) report, evaluation of effectiveness of measures</td>
</tr>
<tr>
<td></td>
<td>• Appropriate performance indicators for quality data such as Complaint rate, error rate (FPY), delivery times, etc. are fixed and updated continuously</td>
</tr>
<tr>
<td></td>
<td>• Evidence is e.g. Determination of customer satisfaction (DB), determined complaint rate / actions / effectiveness check</td>
</tr>
</tbody>
</table>

Figure 7: Process element with audit questions

- Red section: Audit questions (with numbering)
- Blue section: In this column, possible documents, records, processes, etc. are listed according to the audit questions, by which the company can prove the fulfillment of the required audit elements.
- Yellow section: Here is to be assessed how far the audit requirements are fulfilled.
- Green section: Determinations or deviations are to be entered in this field.
4 Assessment of the individual questions
(based on VDA 6.3 item 6.1)

Each question is assessed regarding the consistent fulfilment of the individual requirements and the existing risk. The assessment can score 0, 4, 6, 8 and 10 points per question, whereby the proved fulfilment of the requirements is the benchmark for the scoring of points.

<table>
<thead>
<tr>
<th>Score</th>
<th>Assessment of the fulfilment of individual requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>All requirements completely fulfilled</td>
</tr>
<tr>
<td>8</td>
<td>Requirements mostly fulfilled* - minor deviations</td>
</tr>
<tr>
<td>6</td>
<td>Requirements partially fulfilled - major deviations</td>
</tr>
<tr>
<td>4</td>
<td>Requirements insufficiently fulfilled - critical deviations</td>
</tr>
<tr>
<td>0</td>
<td>Requirements not fulfilled</td>
</tr>
</tbody>
</table>

*) The term "mostly" refers to the fact that the applicable requirements were only partially not effectively fulfilled.

The following table explains the appropriate scoring for the assessment of questions:

<table>
<thead>
<tr>
<th>Score</th>
<th>Assessment of the fulfilment of individual requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk assessment from the perspective of process / process step; in detail</td>
</tr>
<tr>
<td>10</td>
<td>Technical specifications and requirements for the process are followed.</td>
</tr>
<tr>
<td>8</td>
<td>Minor deviations in the process, which do not impact the fulfillment of the requirements of the follow-up process or the customer</td>
</tr>
<tr>
<td>6</td>
<td>The process does not always meet the defined requirements with an impact on the follow-up process or the customer.</td>
</tr>
<tr>
<td>4</td>
<td>The process does not meet the defined requirements with critical impact on the follow-up process or the customer.</td>
</tr>
<tr>
<td>0</td>
<td>The process is not suitable to ensure the compliance with the defined requirements</td>
</tr>
</tbody>
</table>
If a question is not rated (nb), one of the three given possible reasons must be entered in the **Determination / deviation** column. Those with nb are not included in the calculation of the result report.

The default setting is nb. The evaluation can only be done by double-clicking the left mouse button in the appropriate assessment box. Thus, an X is placed in the appropriate box - see Figure 8. To deselect the assessment, double-click on the set X. Then the X is reset to the default nb. For assessments less than 10, reasons must always be entered in the **Determination / deviation** column. These reasons are automatically stored in the audit report.

![Figure 8: Selection of the assessment](image)

The last sheet is the **result report**. This is divided into four sections, as shown in Figure 9.

- Yellow section: Classification of deviations and, if necessary, the required corrective actions
- Green section: Automatic calculation of the degree of fulfillment
- Blue section: Information of quality rating
- Red section: Editable text fields for additional information; the determinations will be automatically imported from the individual process elements after the calculation has been run.
Figure 9: Sections of the result report
After the decision whether correctable and/or critical deviations have been determined and immediate actions must therefore be taken, the degree of fulfillment is determined using the **calculate result** button - as shown in Figure 10.

**Figure 10: Calculation of the degree of fulfillment**

Before the degree of fulfillment is calculated, a pop-up window appears. It contains the information that all sheets/process elements, that have been completed in advance, are locked. This security question is shown in Figure 11. As soon as the user confirms with **Yes (in German Ja)**, the system calculates the degree of fulfillment. **A later editing is not possible! Therefore, it is recommended to save a copy of the Questionnaire before calculating the degree of fulfillment.**

**Figure 11: Security question before calculating the degree of fulfillment**
As mentioned earlier, reasons must always be entered in the Determination/deviation column for ratings less than 10 and for unaudited questions rated with nb. If no reason is entered, a pop-up window appears with the following reminder - see Figure 12. This field content check is performed for all sheets/process elements which were selected for the audit on the start page/sheet.

Figure 12: Field content check
In the remaining part of the results report, further assessment criteria are listed - see Figure 13.

<table>
<thead>
<tr>
<th>degree of fulfillment</th>
<th>95 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Quality Classification (Q-E)</td>
<td>Q1</td>
</tr>
<tr>
<td>valid until</td>
<td>09.21.2018</td>
</tr>
<tr>
<td>Change in quality classification</td>
<td>Yes</td>
</tr>
<tr>
<td>Final decision of the quality auditor</td>
<td>Q1</td>
</tr>
</tbody>
</table>

*Here, the auditor substantiates his decision if the proposed Quality Classification deviates.*

**Determinations/deviations from the questionnaire**

D4.4: Packaging must be improved.

**Corrective actions**

*Here, the auditor notes the corrective actions.*

**Final assessment of the quality auditor**

*Here, the auditor substantiates his decision. Different decisions on the calculated value must always be substantiated on determined facts.*

**Attachments**

*If required, annexes may be attached to the report (scans, pictures, texts, reports, standard extracts, etc.)*

Figure 13: further assessment criteria
• Green section: Calculated degree of fulfillment. The total degree of fulfillment is the average of all individual assessments of the parts of the Questionnaire. Non-evaluated (nb) questions are not included in the calculation.

<table>
<thead>
<tr>
<th>Classification Q-E</th>
<th>degree of fulfillment E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>E&gt;= 90%</td>
</tr>
<tr>
<td>Q2</td>
<td>80%&lt;=E&lt;90%</td>
</tr>
<tr>
<td>Q3</td>
<td>E&lt;80%</td>
</tr>
</tbody>
</table>

• Blue section:
  o **Current quality classification**: The rating is linked to the calculated degree of fulfillment.
  o **Valid until**: Quality ratings are generally valid for 1 year.
  o **Change in quality classification**: The auditor has the possibility to change the quality rating. The following table is used for this purpose:

<table>
<thead>
<tr>
<th>Classification Q-E</th>
<th>degree of fulfillment E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>E&gt;= 85%</td>
</tr>
<tr>
<td>Q2</td>
<td>80%&lt;=E&lt;85%</td>
</tr>
<tr>
<td>Q3</td>
<td>E&lt;80%</td>
</tr>
</tbody>
</table>

  o **Final decision of the quality auditor**: Here the auditor marks his new quality rating.

• Red section:
  o **Determinations/ deviations from the Questionnaire**: The determinations are listed automatically here after calculation of the degree of fulfillment from the previous sheets / process elements.
  o **Corrective actions**: The auditor notes here the follow-up actions taken during or after the audit.
  o **Final assessment of the quality auditor**: If applicable, the auditor justifies his deviated decision on the calculated value here. This decision always has to be justified on the basis of proven facts.
  o **Attachments**: Required documents or other attachments may be added to the audit report.
After entering all necessary information, the audit report is finally converted into a PDF file. The file is converted by clicking the pdf button, as shown in Figure 14. The PDF file is automatically saved in the same folder as the EXCEL file.

Figure 14: PDF-conversion
5 List of abbreviations:

Subcontractors (UAN: in German Unterauftragnehmer)
Assessments of quality capability (Q-E: in German Qualitätsfähigkeitseinstufung),
Monitoring audit (RU: in German Regelüberwachung)
Special audit (SoA: in German Sonderaudit).
Products subject to quality inspection (in German güteprüflichtiges Produkt)
Product number of the LgP (in German Produktlistenzeile)