Matrix evaluation procedure

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Document History

Version	*Date*	*Comments*
1.0	June 2015	Initial Version

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Process Deployment	Core process > Monitoring > Monitoring Railway Activities
Owner	Head of the Safety Unit
Purpose	To establish all the activities to be carried out in Matrix evaluations, from the planning until the issuing of the final report.
Scope	This document applies to evaluations of safety performance within Ministry, National Investigation Bodies and National Safety Authorities. RUs and IMs are not evaluated but they are interviewed during the process in order to get a nuanced picture of the performance of Ministry, NSA and NIB.

The following tables are only required for processes and shall be deleted in other documents. If necessary, some items (i.e. 'related documents') could be left.

Customers	Ministries, National Investigation Body and National Safety Authority of concerned Member states. RUs and IMs are marginally involved in the process during the interview activity.
Other Stakeholders	On regular intervals the Agency will analyse several Member States' evaluations in order to get an overview of the safety maturity within the EU. This type of analysis will be shared with the EC and the collective of Member States.
Input	The only mandatory input is official request by a Member State (provided by the Ministry in charge of railway safety affairs) to be evaluated using the Matrix tool.
	The following information related to the relevant Member State may be an input to the process:
	› NSA Cross-Audits reports;
	› NIB assessment reports;
	› Annual reporting from the Member States;
	› ERA's studies and questionnaires;
	› MIN / NSA / NIB web sites;
	› Other information available or proposed by the Member State.
	The type of information to be used during the evaluation shall be agreed with the Member State before the interviews.
Output	Final Individual Matrix report and spider diagram showing at a glance the Safety maturity level of a Member State.
Constraints	There is a risk for lack of resources (2 people are needed for an evaluation). Since it is a voluntary tool, there is a risk that not enough Member States participate. Furthermore, the quality of outputs depend on the skill level of the evaluators.
Legal Basis	Agency regulation Art. 9
	Agency Regulation
	Railway Safety Directive
	Regulation (EC) 45/2001 on the protection of the individuals with regard to processing of personal data
	Policy for visits to Member States (Consolidated Version approved by the Administrative Board on 17-11-2009)

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General Process Risk

Identified Risk	Risk Level	Mitigation Plan
Not enough resources to do planned evaluations	Medium	The Agency will use MS project to have a good view of available resources. Matrix evaluations do not follow a fixed deadline and can be planned in when it best suits the Agency and the Member State.
Not enough Member States sign up to do a voluntary Matrix Evaluation	Medium	The Agency will continue to promote the benefits of Matrix Evaluations. The six pilot Member States were very positive to the tool and can be regarded as ambassadors for its effects. The Agency plans to follow-up on the proposal from the pilot Member States to meet up and discuss common issues following their evaluation reports. The Matrix is also used in the Priority Country programme. The evaluators should do all within their power to ensure that this experience is regarded as fair but positive by the Member States. In such case they could also become ambassadors for the Matrix effects.
Evaluators not skilled or secure enough to do an evaluation	High	All evaluators must be trained before they do a Member State evaluation. First-time evaluators will be teamed up with an experienced evaluator for their first assignment. There will be a Matrix Programme Team within the Safety Unit with the task to support on-going evaluations with templates and previous examples as well as help to solve upcoming issues (but all administrative tasks related to a Matrix evaluation programme – such as booking meetings etc. – rests with the two persons assigned to do the evaluation). The Matrix Programme Team will also ensure that evaluators of different Matrix evaluations meet on a regular basis to discuss common issues. In connection with this the Team will collect lessons learned to provide coming evaluations with the built-up experience from previous projects.

Performance Indications	› Timely issuing of the Matrix evaluations;
	- Actual dates for carrying out the work correspond with the planned dates. The tool for measuring is MS Project.
	› Level of agreement between evaluators and evaluatees;
	- Not more than three sub-element levels are changed during the exit meeting (although, it is acceptable to change a larger number of levels during the email exchange before the exit meeting). This information is collected by the Matrix programme team after each exit meeting.

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	› Consistency between different Member State evaluations - The same conditions in two different Member States result in the same level for that sub-element. This information is collected through analysis of sample reports carried out by the Matrix programme team. Responsible for monitoring and analysing the performance indicators is the process owner.	
Related Processes	› Monitoring railway activities: NIB Assessments and NSA Cross-Audits › Stakeholder relationship › Matrix change request register	
Related Documents	› Matrix Guide › Agency Regulation › Railway Safety Directive › Regulation (EC) 45/2001 on the protection of the individuals with regard to processing of personal data › Policy for visits to Member States (Consolidated Version approved by the Administrative Board on 17-11-2009)	
Enablers	Matrix training, Safety Portal	

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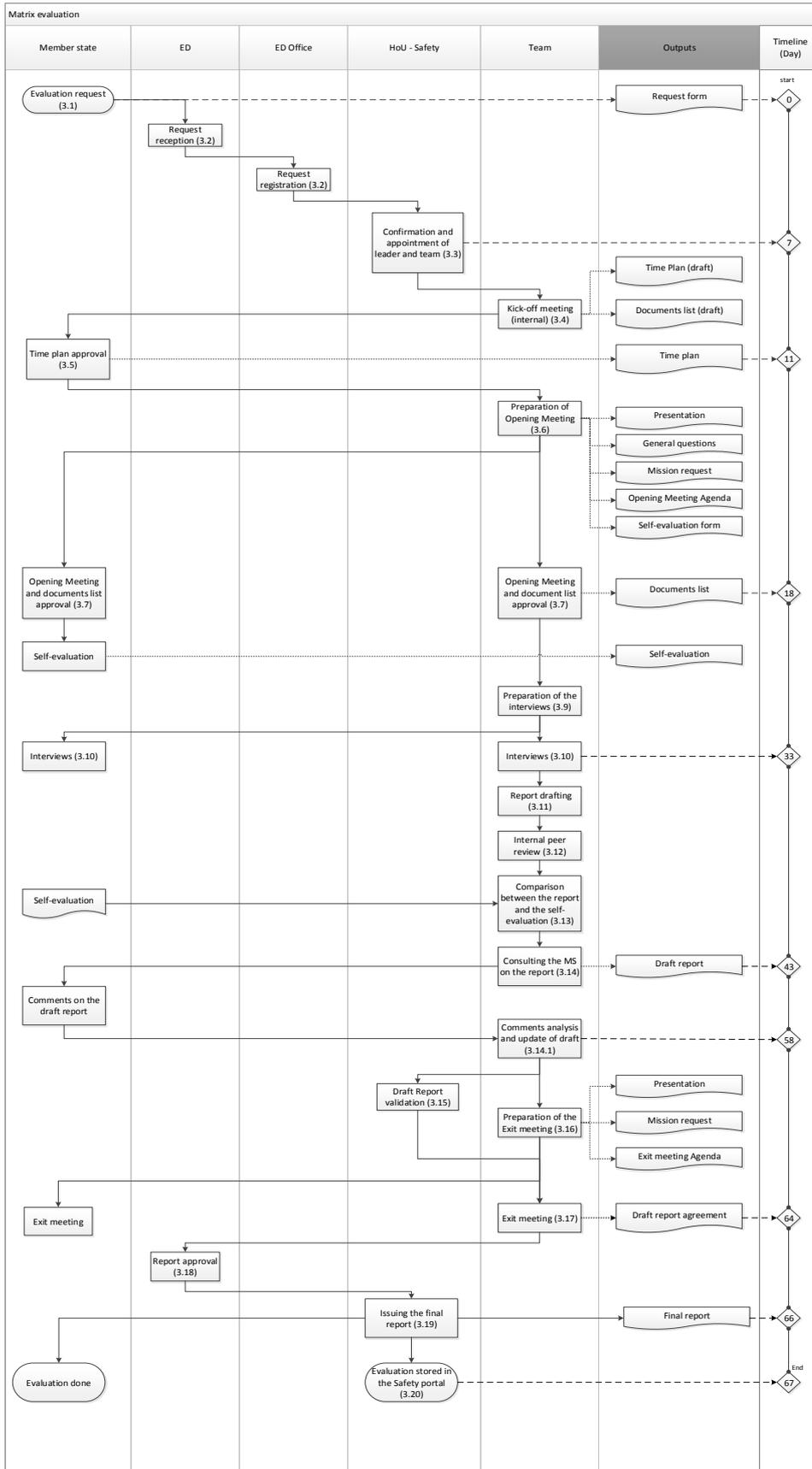
1. Definitions and Abbreviations

ED: Executive Director

HoU: Head of Unit

KOM: Kick-off meeting (internal)

IM: Infrastructure Manager

MIN: Ministry

MS: Member State

NIB: National Investigation Body

NSA: National Safety Authority

RU: Railway Undertaking

2. Flow Chart

The numbers in this flowchart match the number of the sub-chapters in chapter 3.

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Matrix evaluation

Member state	ED	ED Office	HoU - Safety	Team	Outputs	Timeline (Day)

- Evaluation request (3.1) → Request form — **start / 0**
- Request reception (3.2)
- Request registration (3.2)
- Confirmation and appointment of leader and team (3.3) — **7**
- Kick-off meeting (internal) (3.4) → Time Plan (draft); Documents list (draft)
- Time plan approval (3.5) → Time plan — **11**
- Preparation of Opening Meeting (3.6) → Presentation; General questions; Mission request; Opening Meeting Agenda; Self-evaluation form
- Opening Meeting and documents list approval (3.7) / Opening Meeting and document list approval (3.7) → Documents list — **18**
- Self-evaluation → Self-evaluation
- Preparation of the interviews (3.9)
- Interviews (3.10) / Interviews (3.10) — **33**
- Report drafting (3.11)
- Internal peer review (3.12)
- Self-evaluation / Comparison between the report and the self-evaluation (3.13)
- Consulting the MS on the report (3.14) → Draft report — **43**
- Comments on the draft report
- Comments analysis and update of draft (3.14.1) — **58**
- Draft Report validation (3.15) / Preparation of the Exit meeting (3.16) → Presentation; Mission request; Exit meeting Agenda
- Exit meeting / Exit meeting (3.17) → Draft report agreement — **64**
- Report approval (3.18)
- Issuing the final report (3.19) → Final report — **66**
- Evaluation done / Evaluation stored in the Safety portal (3.20) — **End / 67**

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3. Description

A Matrix evaluation is a joint exercise by the Ministry, NSA and NIB. From the Agency's point of view an evaluation takes approximately 3 months to carry out (67 calendar days) and involves three people; two that carry it out and one that does a peer review of the draft report. From the Member State's (hereafter MS) point of view it takes approximately 20 calendar days.

The different process steps are outlined in the following sub-chapters.

Activities	Task Duration
Phase 1	
Evaluation request (3.1)	1
Request reception and registration (3.2)	5
Confirmation and appointment of leader and team (3.3)	1
Kick-off meeting (Internal) (3.4)	1
Time plan approval (3.5)	3
Phase 2	
Preparation of Opening meeting (3.6)	4
Opening meeting (external) and documents list approval (3.7)	3
Self-evaluation (3.8)	5
Preparation of the interviews (3.9)	4
Interviews (3.10)	6
Report drafting (3.11)	4
Internal peer review (3.12)	4
Comparison between the report and the self-evaluation (3.13)	1
Consulting the MS on the report (3.14)	11
Comments analysis and update of draft (3.14.1)	5
Draft report validation (3.15)	1
Preparation of the Exit meeting (3.16)	2
Phase 3	
Exit meeting (3.17)	1
Draft report agreement (3.17.1)	2
Report approval (3.18)	1
Issuing the final report (3.19)	1
Evaluation stored in the safety portal (3.20)	1
	67

3.1. Evaluation request

The official request to get a Matrix evaluation should come from the Ministry. It should be addressed to the Executive Director of the Agency and send via e-mail at the following address:

ERA-Matrix@era.europa.eu.

The request shall be done in the form provided by the Agency on its website and shall include:

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> › the name of the person in charge of managing the interface between the MS and the Agency; the role includes : full support for the organisation of meetings, video conferences, etc. The contact person may belong to any of the organisations involved in the Matrix evaluation;
> › a suggestion of suitable RUs and IMs to involve in the process;
> › an explicit statement confirming that all the national entities involved in the Matrix evaluation are committed to it and agree to share the result among them.

3.2.   Request reception and registration

The request sent by the MS at the functional email address ERA-Matrix@era.europa.eu reaches the ED Office. The ED Office records and archives the request and sends it to the Safety Unit for confirmation to the MS.

3.3.   Confirmation and appointment of leader and team

The Safety Unit checks available resources and accepts to do the evaluation by sending an official confirmation to the Member State using the second part of the request form received from the MS. The evaluation starts officially once the request is recorded in the safety portal.

The Matrix team is appointed by the HoU and consists at least of the following roles:

> › Matrix leader, who has the responsibility of running the activity according to this process description and the Time plan (see chapter 3.4) ensuring the highest quality possible with the assigned resources;
> › Matrix evaluator, who supports the Matrix leader during the evaluation of the MS;
> › Reviewer, who has the role to ensure consistency between the final report and reports issued for other MSs.

The first two persons are fully involved in the evaluation, the reviewer participates only during the peer review.

The team should be appointed according to the following requirements:

> › Matrix leader: Full participation to the Matrix training, at least one experience as Matrix evaluator;
> › Matrix evaluator: Full participation to the Matrix training;
> › Reviewer: Full participation to the Matrix training, at least one experience as Matrix evaluator.

3.4.   Kick-off meeting (Internal)

The Matrix leader will organise an internal Kick-off meeting with the appointed team where a first draft of the Time plan will be produced. The Time plan shall include;

> › a planning of the meetings,
> › the name of the Matrix evaluation team members and their contact information,
> › the name of the persons to be interviewed and their contact information,
> › deadlines for the different milestones.

Normally, the Ministry hosts the Opening and Exit meetings while the interviews take place in each of the organisation's own premises.

The Agency will cooperate with the appointed contact person to discuss the organisation of the meetings before the Time plan is finalised. This is also the step in which the Agency decides which sector representative to interview. In general, one IM and one RU are interviewed.

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In the Kick-off meeting, a list of documents to be used during the exercise shall also be drafted. This is a list of all documents that the Agency has access to regarding the MS. It should only include the documents that the Matrix team think are relevant for the Matrix evaluation (i.e NSA Cross-Audits reports, NIB assessments reports, websites of MIN/NSA/NIB, etc.).

3.5. Time plan approval

To be adopted, the Time plan must be approved by the MS. This is done via email before the Opening meeting.

3.6. Preparation of Opening meeting

The preparation of the Opening meeting (OM) includes:

› Presentation;
› List of general interview questions;
› Mission arrangements;
› Agenda;
› Self-evaluation form.

The list of general interview questions and the self-evaluation form are templates available to the Matrix team, stored in the Safety portal. In addition, there are examples of agenda, presentations, etc. from previous Matrix evaluations in the Safety portal. A letter including the agenda, presentations and other relevant information about the OM is sent to the MS contact person in advance.

The MS is normally asked to prepare short presentations about the Ministry, NSA and NIB organisations and some general information about the railway system in their country for the OM.

3.7. Opening meeting and document list approval

In the Opening meeting, the Agency explains how the Matrix evaluation will be done and how the Ministry, NSA and NIB should carry out their self-evaluation.

The MS representatives present an overview of their organisations and the general set-up of their railway system.

The sector representatives that will be interviewed should also participate in the OM in order to get a better understanding of the evaluation process and how their input will be used to set the levels.

In the OM, the MS approves the list of documents that the Agency will base the evaluation on. Before approval, it should be ensured that any out-dated information is discarded and the relevance of the rest is clarified. Some of the information may be restricted (e.g. NSA Cross-audit report). In the case where the information is restricted the Matrix team shoud ensure that they have agreement from the organisations concerned before the information is used in the Matrix evaluation. In addition, the MS representatives may provide information/evidence in connection with the interviews, for example reports, studies, process descriptions, etc. The use of these added documents must be agreed with all parties that they concern. The MS and the Agency can refuse the use of specific documents for justified reasons.

The OM can be used to clarify small issues.

3.8. Self-evaluation

The Ministry, NSA and NIB should carry out a self-evaluation before they are interviewed and send it electronically to the Agency.

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The purpose is to make the participants in the Matrix evaluation more familiar with the method and criteria of the tool. Another benefit is that it will facilitate the discussions about the levels during the Exit meeting since it will show whether the Agency's view on the levels is shared by the MS representatives or not.

After the Ministry, NSA and NIB have filled in this form they will better understand what the Agency is trying to evaluate. This should also help the participants to prepare relevant evidence to provide during the on-site visit.

The representatives should carry out the self-evaluation following the specific form. The people involved in the self-evaluation should be the same that will later take part to the interviews.

The self-evaluation will not be used as evidence against the MS. The Agency makes an evaluation exclusively based on the facts gathered in the document review and during the interviews.

3.9.   Preparation of the interviews

The necessary evidence for the Matrix evaluation is gathered from document review and interviews. The document review is an activity where the Matrix team studies all the relevant documents mentioned in the document list and starts to draw some preliminary findings. The interviews are body-specific, therefore the questions are tailored for the NSA, NIB and MIN. There is a template with a list of general interview questions provided in the Safety portal. The questions should be adapted to the individual MS, taking into account the result of the document review. For instance if an NSA Cross-audit report is available and the NSA agrees to use it, it is possible to reduce the number of questions addressed to the NSA or it is possible to focus the questions on specific aspects of the organisation.

The evaluators should pay attention to the limited time available for the interview; therefore, they should not ask any question if the topic is sufficiently covered by available documentation. As already mentioned, the OM can be used to clarify small issues.

In some cases it might be relevant to check with the MS that the information is still valid (unless this has already been clarified during the opening meeting).

3.10.   Interviews

Interviews are carried out on-site, individually, with the Ministry, NSA and NIB. The RU and IM interviews should – if possible – be done via videoconference.

The Ministry, NSA and NIB are interviewed one day each (three days in total). The interviews with the sector representatives normally take a maximum of four hours each (one day for both).

All interviews must be carried out by two Matrix evaluators in co-operation; while one evaluator asks the question, the second one takes note of the answer.

The evaluators can ask the interviewee to provide evidence of the given answers.

3.11.   Drafting the report

As soon as possible after the interviews, the Matrix evaluators clarify and analyse their notes (from both the document review and interviews) and assign a level for each sub-element. Documents which are not included in the document list may not be used as evidence for the levels (which means that the list may be up-dated after the interviews have been concluded). The levels should be assigned comparing the documents and the results of the interviews against the evaluation criteria that are described, for each sub-element, in the Matrix Guide. Each assigned level must be justified. The report shall also indicate (where relevant) what the MS needs to do in order to move to a higher level. When the Matrix team identify that an activity of a MS could be considered has a best practice to be shared with other MS, this should be included in the report.

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The evaluation shall follow the template provided for Matrix evaluation reports available in the Safety portal.

3.12. Internal peer review

Once the Matrix evaluators agree on the content of the draft report, this is sent for a formal internal peer review to another Matrix evaluator (the reviewer). In addition, it is possible (optional) to arrange meetings with other on-going Matrix evaluation teams in which specific evaluation cases are discussed.

These activities will contribute to ensure consistency among different MS Matrix evaluations.

3.13. Comparison between the report and the self-evaluation

The self-evaluation should not influence the Matrix evaluation team when they assign the levels. They should therefore not look at the self-evaluation until after the draft report is done. Once the levels are set, the evaluators compare their assigned levels with the levels that the MS has given itself. This will help the evaluation team to prepare for the Exit meeting as it will point out where they and the MS have different views on the levels.

3.14. Consulting the Member State on the report

The draft report is sent to the Ministry, NSA and NIB for consultation so that they can confirm the correct description of the findings.

This can be done in two steps:

› findings related to the single organisations are sent to them individually without indicating any levels (NSA gets to comment on the NSA findings only, NIB on the NIB findings only etc.);
› the complete draft report, including the attributed levels, is sent to all three actors (with the individual findings updated according to the first consultation round). The complete draft report, which includes all findings and the levels, is not sent to the sector representative, unless this is agreed with the NSA/NIB/MIN. In this second round the MS should focus mostly on commenting the levels and the evaluation at MS level.

3.14.1. Comments analysis and update of draft

The comments shall be proposed by the MS using track changes. If this solution is not applicable (e.g. different software used by the MS) specific solutions can be agreed between the Matrix evaluators and the MS. In any case the Matrix evaluators are responsible for granting full traceability of the comments.

The Matrix evaluators shall provide feedback on the comments given by the MS, justifying whether suggestions/comments are rejected.

As a general rule the Matrix evaluators shall justify each attributed level which can be modified after discussion with the Member state if there is evidence to support the change. It is not possible to use documentation which is not included in the document list (e.g. minutes of meetings, records, etc.).

The result of the consultation with the MS should be a quite-definitive version of the draft report even if it is still possible to discuss minor (justified) changes during the Exit meeting.

3.15. Draft report validation

The draft report to be accepted by the MS during the Exit meeting shall be previously validated by the HoU.

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3.16. Preparation of the Exit meeting

The preparation of the Exit meeting includes:

› Presentation;
› Mission arrangements;
› Agenda;
› Draft report.

There are examples of agenda, presentations, etc. from previous Matrix evaluations in the Safety portal. A letter including the above documents is sent to the MS contact person in advance. Normally, the Exit meeting is held in the premises of the Ministry.

3.17. Exit meeting

The Exit meeting gathers the two Matrix evaluators (normally the reviewer is not needed) and the Ministry, NSA and NIB representatives that were interviewed. The main purpose of the meeting is to agree all the levels in the report, but it is equally important that the MS representatives are given the opportunity to discuss common issues among the MIN, NSA and NIB and start thinking about possible solutions to their problems.

The Executive Directors of the NSA and NIB should participate in the Exit meeting even if they were not interviewed.

The presence of the sector in the Exit meeting is not mandatory. This should be discussed with the Ministry, NSA and NIB prior to the Opening meeting and the choice should be declared during the meeting. The benefit of inviting the sector representatives to the Exit meeting is that the evaluation is very transparent for all parties. The downside is that the discussion about improvement needs for the state bodies of the railway system may be less open and constructive.

During the Exit meeting each attributed level is agreed as consequence of the consultation process. Changing levels is still possible but it must be documented in the minutes and supported by evidence.

The MS may also share some thoughts on possible next steps, for example an action plan for improvement measures and how to best disseminate their best practices to other MSs. In order to allow discussions among the MIN, NSA and NIB to take place, the Exit meeting is normally a full day meeting.

3.17.1. Draft report agreement

The final report is the output of the Exit meeting. It is possible to include an action plan, if the MS declares one.

The action plan should include:

› Type of intervention, specifying which basic elements and sub-elements are going to be improved;
› Deadline and body responsible for its implementation;
› Commitment to inform the Agency about its results.

3.18. Report approval

Once the draft report has been agreed with the MS, it goes through a quality check by the Safety unit before being approved by the ED, which gives the report an official and final status.

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3.19. Issuing the final report

The final report is issued by the HoU – Safety and it is sent via email to the Ministry, NSA and NIB including the MS contact person for the evaluation. Unless differently agreed, the sector will not receive the report but it should be informed at least on the conclusion of the exercise. The communication for the sector shall be agreed between the Agency and the MS.

3.20. Storing information in the Safety Portal

The evaluation team shall store the final Matrix evaluation report in the Safety Portal. This area is restricted only to the Agency's staff. This will allow future analysis of all finished evaluations.

This activity closes the evaluation.

4. Templates / Forms

› Request to the Agency for a Matrix evaluation (including confirmation);
› Matrix Time plan;
› Self-evaluation form;
› General interview questions;
› Report.

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5. Records and Others Outputs (Mandatory for process documents and procedures)

Record Name	Storage Responsible	Storage Location	Minimum Retention Time
Time plan	HoU - Safety	Safety Portal	5 years
Opening meeting email › Agenda › Presentation › General questions › Self-evaluation form	HoU - Safety	Safety Portal	5 years
Documents list	HoU - Safety	Safety Portal	5 years
Self-evaluation	HoU - Safety	Safety Portal	5 years
Exit meeting email › Agenda › Presentation	HoU - Safety	Safety Portal	5 years
Final report	HoU - Safety	Safety Portal	5 years

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