Memorandum of Understanding

establishing the basic principles of a common system of certification of entities in charge of maintenance for freight wagons

14 May 2009

ANNEX B
Requirements to the ECM for setting up its maintenance system

Reference documents

Ref.	Document Title	Document ref.
/1/	"SMS Assessment Criteria" published by the European Railway Agency	Version for NSA impact assessment from 31/05/2007
/2/	Document package "Safety Management System (SMS) and Vehicle Keeper Certification" drafted by UIC, UIP, ERFA, CER on behalf of the Commission Working Group "Role of the keeper"	15/01/2008
/3/	ERA Note: Safety Certification in the Railway System	Version 1.0 from 24/07/2007
/4/	MoU establishing the basic principles of a common system of certification of entities in charge of maintenance for freight wagons	Version 1.0 from 13/10/2008
/5/	MoU – ECM Cert – Annex C1 (Assessment Criteria)	Version 1.0 from 13/10/2008

Contents

1 Introduction

The herewith presented requirements are due to help an Entity in Charge of Maintenance (ECM) when setting up a maintenance system. They have no legal power; however, they aim to ensure compliance with the elements and assessment criteria proposed by the Agency for the ECM certification under the amendment of the Railway Safety Directive and during the transition period until new railway legislation is fully implemented in all Member States. The proposal is based on the structure and content of the maintenance system elements proposed by the Agency /5/ and the industry documents /2/.

The Agency recommends building the maintenance system as a process-oriented management system. This allows not only for integration with the safety management system (SMS) in case the ECM is also railway undertaking (RU) or infrastructure manager (IM), but as well with all other well-established management systems. The system needs to take into account the extent of operation and the company size of the ECM to avoid the system being bloated above the necessary level of complexity.

This Annex describes in total how the ECM fulfils its role and responsibilities and meets its obligations regarding maintenance, including overhauls, for the vehicles for which it is responsible so that they can be used by an RU in full accordance with its SMS as well as relevant standards and prescriptive conditions.

Generally speaking, the ECM has to ensure the following points to fulfil its role:

1. The ECM manages the maintenance files for every freight wagon for which it is/will be registered in the NVR as ECM and ensures its correct application.
2. The ECM ensures traceability of the maintenance operations done on every wagon in managing and keeping update the maintenance records of each individual vehicle.
3. The ECM analyses the return on experience, including data from operations and incidents or accidents, in order to update the maintenance file as appropriate (such as optimisation or restrictions decisions).
4. The ECM has to inform the carrying RU/IM of a wagon about any restrictions or specific operating conditions.

2 Maintenance System Elements

General Elements:

(taken from SMS requirements and elements and adapted to the ECM's maintenance system)

A. Organisational aspects
B. Document management
C. Safety performance monitoring
D. Supply of maintenance and material
E. Use of contractors and suppliers
F. Compliance with standards
G. Staff competence
H. Internal auditing

Specific Elements:

(additional to SMS requirements and elements)

I. Maintenance procedures
J. Monitoring of contractors

3 General Elements

A. ORGANISATIONAL ASPECTS

The ECM needs to compose a maintenance system manual, describing all organisational and technical procedures with direct or indirect safety impact on the railway system. It should also contain a description of the ECM's business activity and its organisational structure. Maintenance performance targets should be defined as well as the level of safety performance, to which both its management needs to commits itself. Traceability of the maintenance system processes and procedures should be taken into account when designing them.

Delegation of tasks and functions needs to be clearly stated.

A closed management cycle permitting continuous improvement should be visible in all processes and procedures, and for putting in place adequate measures to control and mitigate them.

The maintenance system manual should be reviewed on a regular basis and after any significant change or event.

The ECM needs to maintain the maintenance plans which ensure the required quality through periodic maintenance in order to meet the requirements laid down by the relevant regulations and the ECM's maintenance performance targets, to achieve safety and minimum vehicle failure[1].

B. DOCUMENT MANAGEMENT

The ECM needs to ensure that there are appropriate processes in place for the collation, receipt, processing and management of and secured access rights to all information relative to the management process for the maintenance and operational integrity of the rolling stock. It needs to be traceable and complete and shall include, but shall not be limited to:

- National vehicle register (NVR) and rolling stock register,
- Register of relevant maintenance workshops,
- Maintenance management information systems including records of all maintenance undertaken and maintenance due on rolling stock, which shall be subject to specified time periods for differing levels of archive storage,
- Other applicable software,
- Procedures for the receipt and processing of specific information relative to the operational integrity of rolling stock including, but not limited to operational and/or maintenance incidents with a potential to affect the safety integrity of his rolling stock,
- Procedures for the identification, generation and dissemination of specific information relative to the operational integrity of rolling stock including, but not limited to operational and/or maintenance incidents with a potential to affect the safety and integrity of rolling stock, and which are identified during any maintenance activity,
- Operational duty profiles of rolling stock for which the ECM is responsible. It may include tonne kilometres and total kilometres delivered by the carrying RU.

[1] See further explanations under point I

- A process to ensure reliable information is made available for RUs, in accordance with the relevant regulations.

In all processes it should be reflected that measures to control safety information are important to maintain and improve safety performance and also allow for corrective actions to be taken efficiently.

The ECM needs to define reporting channels to ensure that within its own organisation as well as with other organisations information is duly exchanged and submitted to the right person/role/function in a prompt and clear way.

The ECM should have an organisation able to manage and update, as soon as information is provided, the documents necessary to properly undertake the management of the maintenance of each vehicle. This should consider

- Applicable regulations,
- The maintenance plan for each type of vehicle,
- A list of spare parts, including a sufficiently detailed technical description of each part to allow replacement with an identical item having the same guarantees,
- A dossier defining the relevant safety/interoperability limits for components, which limits are not to be exceeded in operation,
- A list of components or systems which are subject to legal requirements, e.g. brake reservoirs, tanks for the transport of dangerous goods etc.,
- For each wagon, the history of the maintenance operations carried out on safety critical components, as well as the current applicable text, will be kept for a period at least equal to the useful life of the component but not less than the applicable statute of limitation.

C. SAFETY PERFORMANCE MONITORING

The ECM should implement urgent appropriate remedial actions to reduce the risk to an acceptable level. This should include fleet inspections and maintenance activity.

D. SUPPLY OF MAINTENANCE

To ensure that maintenance and material are delivered in required quality and that all necessary information is transferred from suppliers to the ECM and vice versa the ECM needs a structured system for the procurement of goods and contracted services. This system needs to comprise processes to

- derive maintenance requirements/standards/processes from safety and/or reliability data and from the assignment of rolling stock to their services, where appropriate;
- adjust/adapt maintenance intervals according to type and extent of service performed by the freight wagons, where appropriate;
- ensure that the responsibility for maintenance is clearly defined in the organisation, to identify the competencies for maintenance posts and to allocate appropriate levels of responsibility;
- to gather information on experience/feedback, maintenance malfunctions, defects and repairs and use it to learn and adopt corrective measures to improve the level of safety;

- identify, recognise and report risks linked to construction deficiencies/non-conformities or malfunctions and faulty functioning conditions throughout the lifecycle (even though fulfilling factory and other requirements and product approval and certification had been already granted);
- verify and control that performance and results of maintenance done comply with standards set by the ECM.

E. USE OF CONTRACTORS AND CONTROL OF SUPPLIERS

When the ECM makes use of (sub-)contractors procedures for procurement and contract management need to be established.

Regarding procurement the ECM should establish and maintain procedures for ensuring that purchased goods, services and products comply with specified railway safety requirements. These procedures need to ensure that:

- procurement documents contain adequately specified railway safety requirements;
- steps are taken to verify that the supplied goods or services, including those supplied from within the organisation, comply with railway safety requirements before they are accepted;
- where appropriate or specified, traceability of manufacture through batch or other identification is available.

Regarding contract management the ECM needs to ensure that its relevant procedures respect safety issues. Therefore tender or proposal invitation documents should be reviewed by the organisation to ensure that railway safety requirements are adequately defined and documented. Any conflict between the specified railway safety requirements and those contained in a tender or proposal should be resolved before a contract is awarded.

The capability of a potential contractor to comply with the specified safety requirements should be reviewed before a contract is awarded. Permission for the engagement of a subcontractor by the contractor both initially and during the course of a contract needs to be subject to a review of the capability of the proposed subcontractor to comply with the specified railway safety requirements.

F. COMPLIANCE WITH STANDARDS AND PRESCRIPTIVE CONDITIONS THROUGHOUT THE LIFECYCLE OF EQUIPMENT AND OPERATION

The maintenance system must ensure that all vehicles or components are in accordance with the requirements defined by the maintenance plan or relevant standards and prescriptive conditions, which are given by TSIs, national safety rules as defined in the Railway Safety Directive, operational and maintenance rules or authority decisions.

Therefore the ECM needs to establish processes to

- identify all necessary safety related requirements, relevant for the extent of operations and to ensure that they are updated and accordingly implemented;
- monitor implementation of all necessary safety related requirements;
- implement corrective actions, when needed, to ensure compliance of the railway system with standards and other prescriptive conditions throughout the lifecycle of equipment and operations;

- ensure that the right staff, procedures, specific documents, equipment and rolling stock is used for the purpose intended.

G. STAFF COMPETENCE

The required professional capabilities must be clearly defined and a record of the competence and training of those involved in the overall process shall be established and kept updated. Necessary knowledge, skills and aptitude (medical and psychological) of staff need to be refreshed/updated to retain the level required to safely perform each task.

The ECM needs to establish a competence management system ensuring

- the identification of posts that have responsibilities for taking operational decisions within the system;
- the identification of posts that perform safety-critical tasks;
- the allocation of staff with the appropriate competence to relevant tasks.

H. INTERNAL AUDITING

Internal audits need to be carried out by the ECM to ensure continuous improvement and the completeness of the management cycle. Therefore procedures should be established that allow for regular review of the internal procedures and the control of the (sub-)contractors' processes. The audits should follow the approach given by the industry standard /2/ as it is rather exhaustive regarding the qualification of auditors as well as the audit protocols.

Generally, to allow for sound review of the maintenance system as well as of the safety performance, the ECM should draw up, at least once year in a controlled manner, a summary of maintenance activities to review. This should include:

- Safety defect events and performance monitoring trends,
- Changes in personnel,
- Training or assessment of personnel,
- Periodic maintenance records,
- Overdue and projected periodic maintenance activities,
- Wheel bearing or axle incidents.

4 Specific Elements

I. MAINTENANCE PROCEDURES

The ECM has the information about the conditions in which the maintained vehicle and components are operating, such as kilometrage, climatic or landscaped environment. Taking into account the general maintenance specifications given by the manufacturer the ECM will define the limits of components in service in knowledge of those. It needs to ensure that the maintenance plan does not exceed those limits.

Every vehicle must be linked to a maintenance plan, which should

- be part of the maintenance file to each type of vehicle,
- at minimum comply with the requirements laid down in the rolling stock TSI as far as applicable,
- be a combination of preventive operations and based on results obtained from the safety performance monitoring,
- have rules in terms of document management that are established and written, particularly for the documentation given to the workshops
- have a justified periodicity and content on the basis of the SPM.

To be able to fulfil the maintenance plan requirements, it is necessary that the ECM

- observes the vehicles' operation in service and on feedback from maintenance operations or specific investigations by the safety performance monitoring;
- evaluates new types of vehicles or newly developed components through following a step by step progression by observing the vehicles in operation, by tests and programmed investigations to confirm the current maintenance rules or otherwise;
- takes into account the climatic conditions and the general conditions of use for the profile of the foreseen use;
- ensures the traceability of both construction and maintenance related documents: the people in charge of their conception (author and approver) must have their names and their qualifications clearly identified.

The ECM should have an organisation able to manage the maintenance and the operational integrity of the vehicles, by using a preventive maintenance programme. Therefore the ECM should be able to check

- that programmed deadlines have been properly respected;
- that there are no risks of exceeding the set deadlines;
- if there exists a risk of exceeding the set deadlines, it needs to have a procedure in place for contacting the relevant parties involved in the use of the vehicle(s) and even for further escalation measures, for example by contract, ensuring that the entities actually driving the vehicle are motivated to let it go for maintenance.

Conditioning is that the ECM must be able to manage and analyse all information linked to the operational behaviour of his vehicles, so as to be able to undertake any necessary corrective and/or preventive actions.

The ECM needs to ensure that the maintenance plan as such or related to individual types of vehicles is regularly reviewed. Therefore the ECM should maintain a list of his vehicles identifying vehicle type, maintenance plan and maintenance cycle. It should review the maintenance plan for suitability, during all types or levels of maintenance operations.

The ECM should have a maintenance review process to check regularly the suitability of the maintenance plan and to justify any change therein. The Maintenance Plans should be reviewed annually or after any of the following events:

- Analysis if safety performance monitoring shows unacceptable risk,
- Safety related change to the operational activities of the vehicles,
- Notification of risk found in vehicles of similar type,
- Any accident or incident caused by a vehicle's component failure or any known risk,
- Relevant alterations in applicable regulations and rules,
- Direct instruction from relevant bodies,
- Significant change to maintenance staff competency,
- Significant change to the maintenance facility,
- Change of maintenance contractor,
- Change in location of the maintenance facility.

Maintenance will be carried out by workshops, which therefore need to comply with certain conditions in order to contribute accordingly to the maintenance system of the ECM and its safety performance.

Where the ECM uses maintenance workshops, they should ensure their competence for example by following the management system given by the Agency's proposal for the certification of maintenance workshops[2] or – for the transitional period – national certification procedures, as far as they are applicable. Additionally, some basic requirements need to be ensured by the ECM:

- Maintenance rules in the maintenance plan are correctly applied and replaced components comply with the current regulations.
- All maintenance facilities should be assessed by the ECM or competent agents on a regular basis but not exceeding a one year interval. They will produce an assessment report which will be presented at the ECM's annual review meeting[3].
- The criteria for assessment shall weigh suitability for purpose of the workshop against what work it is expected to be undertaken in the maintenance plans.
- In case of work controlled by an RU the ECM will rely on the safety certificate of the RU that the said RU also performs the foregoing and that a vehicle returned to service has automatically received the "approval for release into service".

J. MONITORING OF CONTRACTORS

To ensure a qualified relationship with (sub-)contractors the ECM needs to establish and maintain procedures for the selection, control and ongoing review of contractors and subcontractors for safety-related tasks, including the coordination of these activities across all parts of the organisation. The type and extent of control exercises needs to be dependent upon the type of service and, where appropriate, on the records of contractors' and subcontractors' previously demonstrated capabilities and safety performance.

[2] Preliminary draft of the final report and the recommendation version 1.1 of 1 October 2008 (available on the Agency Extranet, to be published on the Agency website during first half of 2009)

[3] Confer Chapter H "Internal Auditing"