



Dissemination on CSM on monitoring , CSM on risk assessment and certification of ECMs



Agenda



- **2ND day: 09:00 to 14:00**

- ↪ 09:00 – 10:30: Practical examples of the sector preparation for ECM certification
- ↪ 10:30 – 11:00: Interface between ECM Regulation and TSIs
- ↪ 11:00 – 11:15: **Coffee Break**
- ↪ 11:15 – 11:45: Change management
- ↪ 11:45 – 12:15: ERADIS ECM certification dedicated space
- ↪ 12:15 – 12:45: CSM on monitoring
- ↪ 12:45 – 13:15: Discussion on relevant issues emerged from the presentations, general conclusions from the workshop
- ↪ **13:15 – 14:00: Lunch Break**



Practical examples of the sector preparation for ECM certification



Interface between ECM Regulation and TSIs

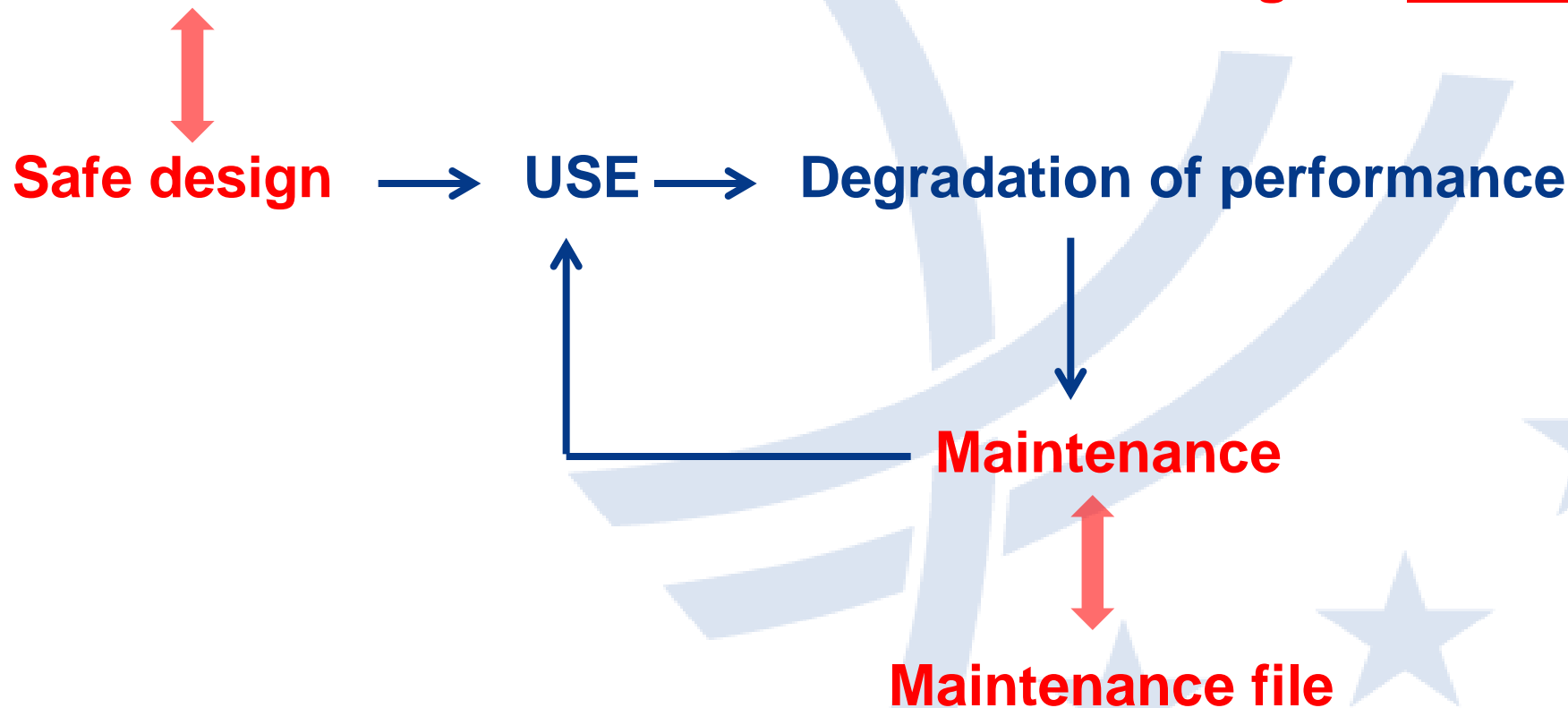


- 1. Context**
- 2. Maintenance development process**





APS : Initial technical documentation including the technical file

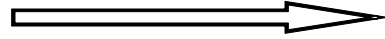




Process of establishment of the first maintenance file

INPUT

- Technical file
- Information on operation planned to be performed
- Performance targets



Maintenance development



OUTPUT

- (First) Maintenance file

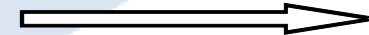
Process of continuous update/improvement of the maintenance file

INPUT

- Maintenance file
- Technical file
- Information on operation
- Records on maintenance performed and return on experience
- Technological survey
- Legislation (changes)
- Performance targets



Maintenance development

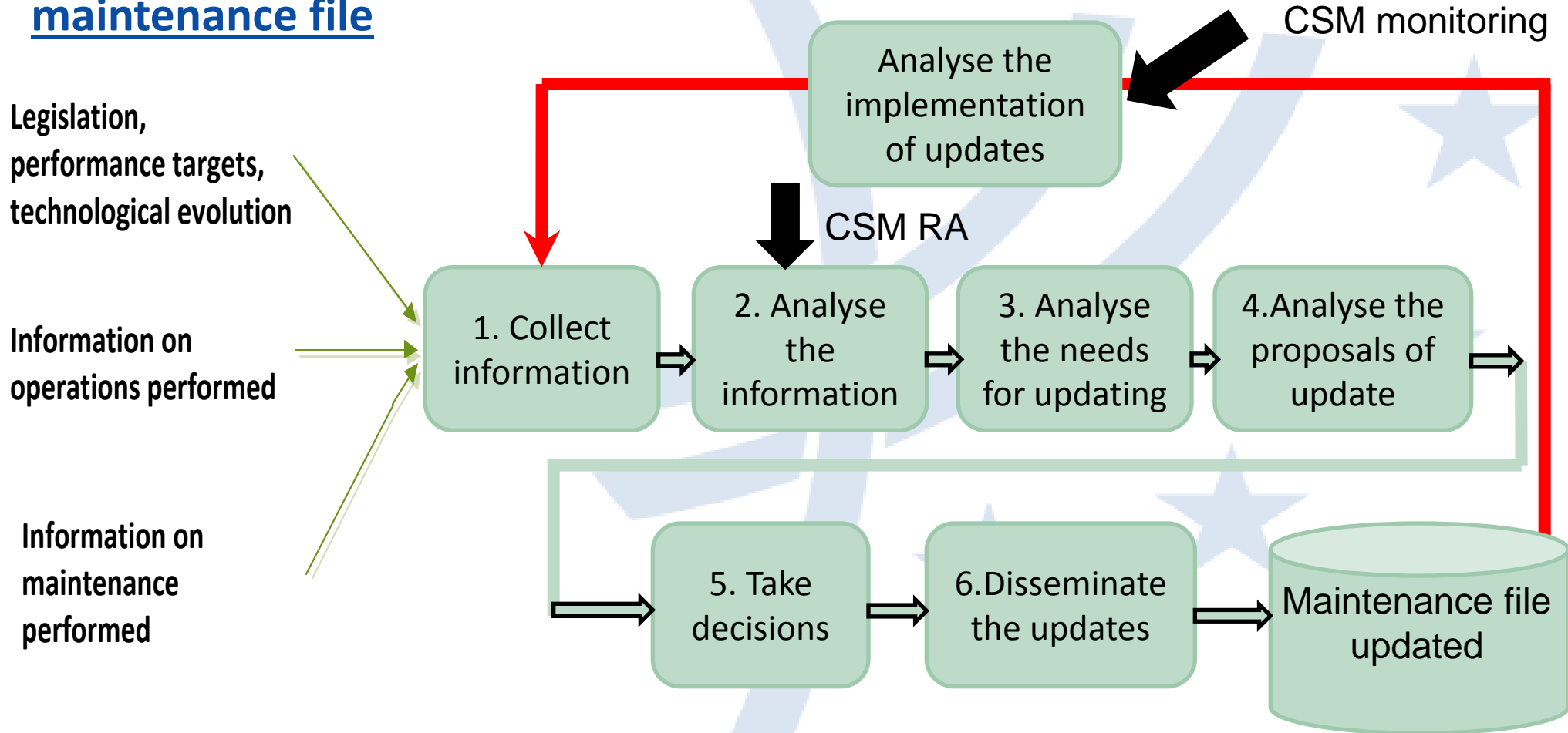


OUTPUT

- Maintenance file updated



Detailed process of continuous update/improvement of the maintenance file







Change management



1. Change of ECM

2. Technical modifications

- Substitution in the framework of maintenance
- Other technical modifications
- Pre-TSI vehicles in service



Commission Regulation 445/2011, Article 5(8)

“When there is a change of entity in charge of maintenance, the registration holder as indicated in Article 33(3) of Interoperability Directive, shall inform in due time the registration entity, as defined in Article 4(1) of Commission Decision 2007/756, so that the latter may update the national vehicle register.

The former ECM shall deliver the maintenance documentation to either the registration holder or the new ECM.

*The former ECM is relieved of its responsibilities when it is removed from the national vehicle register. If on the date of de-registration of the former ECM any new entity has not acknowledged its acceptance of ECM status, **the registration of the vehicle is suspended.**”*



The change may be motivated :

- For business purposes
- Bankruptcy
- By revocation/suspension of ECM certificate

Minimum information to be transferred to the new ECM:

- *(sufficient) information on the maintenance file including records on maintenance performed*
- *The technical documentation (technical file is not the property of ECM)*
- *The configuration files of each vehicle*
- *All additional information required by contract between keeper and 'former' ECM*



Risk

Maintenance file is strongly associated to the “know-how” of the ECM. Stakeholders (incl. the keepers) should control this risk in its contracts with the ECM.



1. ECM responsible to manage the substitutions in the framework of maintenance.

(Section II.2(c) of Annex III of Commission Regulation 445/2011)

Remark: Vehicles in service **may be TSI compliant or not.**

Interoperability Directive 2008/57, Article 2(p)

Substitution in the framework of maintenance means:

“any replacement of components by parts of identical function and performance in the framework of preventive or corrective maintenance”

Two types of parts:

- Parts with **references** in the technical file
- Parts with **(appropriate and sufficient) specifications** in the technical file



2. **ECM responsible for “verifying in all circumstances the consistency of the maintenance file with the authorisation of placing-in-service”.**

(Section II.2(b) of Annex III of Commission Regulation 445/2011)

Remark: Vehicles in service **may be TSI compliant or not.**

Then the role of ECM is to verify that the vehicle is maintained in accordance with the **design operating state with the parts** mentioned in the technical file, also when proceeding with substitutions!!



Substitutions in the field of maintenance **do not affect the technical file of the vehicle** and therefore remain within the scope of the authorisation of the vehicle.

No obligation to inform authorities according to Article 20 of Interoperability Directive 2008/57!!



STILL UNDER DISCUSSION

Situations where no possibility to strictly follow the technical file:

- *Obsolescence of the parts*
- *Replacement by parts conform to other specifications than those in technical file*

Always considered as a major change

Application of the process related to renewal and upgrading (Article 20 of the Interoperability Directive 2008/57)

Remark:

The ECM may play the role of the applicant in the sense of Interoperability Directive 2008/57 but:

- *Not mandatory*
- *This role is not taken into account in the ECM certification*



A majority of vehicles in service are not TSI compliant or have never been verified against TSIs.

- *NO authorisation and technical file in conformity with Interoperability Directive 2008/57 and TSIs.*

BUT for each of those vehicles, there is an approved design against 'ancient national rules' with a documentation similar to the (TSI) technical file.

- *Previous slides are fully consistent*



ERADIS ECM certification dedicated space



CSM on Monitoring to be used by RUs, IMs and ECMs

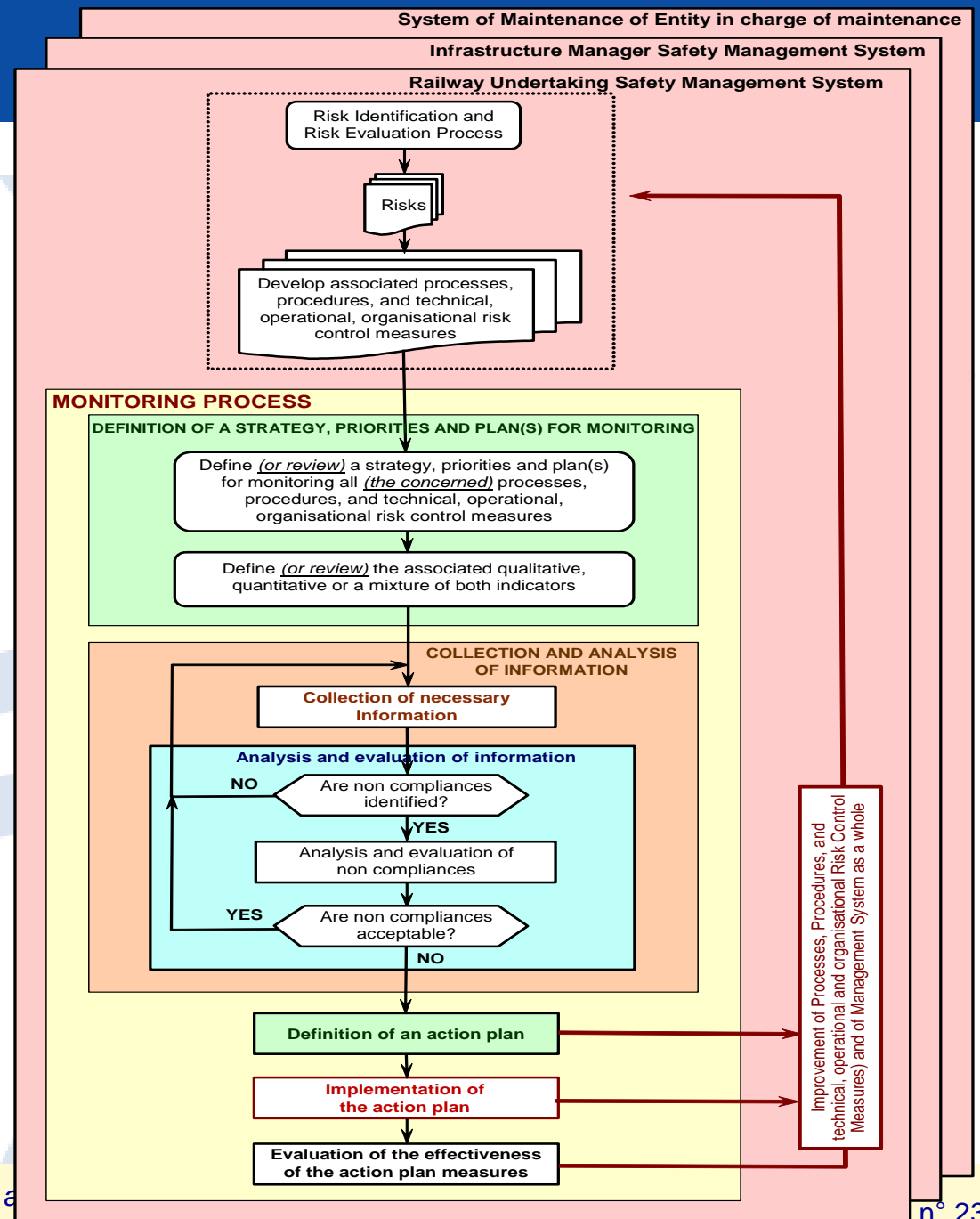


Flowchart for monitoring process

Main steps in the process:

- definition of a strategy, priorities and plan(s) for monitoring;
- collection and analysis of information;
- definition of an action plan, for the identified non-compliances that are not acceptable;
- implementation of the action plan, if such plan is defined;
- evaluation of the effectiveness of the action plan measures, if such plan is defined.

Action plan includes review of its impact on monitoring strategy, priorities and plan(s) or on RU/IM SMS [ECM system of maintenance]





Presentation of CSM on monitoring Reg1078/2012

- Set of "**whereas**" to introduce the purpose and legal background for CSM on monitoring. It should be in line with the Commission way to write legal texts
- **Whereas (5):**

*"For the purpose of this Regulation and to facilitate its reading, the terminology **"management system"** is used as a generic definition to designate*

*- either the **safety management systems of railway undertakings and infrastructure managers**, as defined in Article 3(i) of Directive 2004/49/EC and as required by Article 9 and Annex III of that Directive,*

*- or the **system of maintenance of entities in charge of maintenance (ECM)**, as required by Article 14(a)(3) of that Directive.*

*It **excludes** any other company system of management which is not meant under Article 9, Annex III and Article 14(a)(3) of that Directive"*



Article 1: Subject matter and Scope [WHAT for & WHO shall use it?]

1. The Regulation establishes a **Common Safety Method (CSM)** for **Monitoring** enabling the effective management of safety in the railway system during its operation and maintenance activities and, where appropriate, **improving** the management system;
2. It shall be used for the following:
 - (a) to **check** the correct application and the effectiveness of **all the processes and procedures** in the management system, including the technical, operational and organisational risk control measures. In case of RUs and IMs, checking will include the technical, operational and organisational elements (...);



Check



Article 1: Subject matter and Scope [WHAT for & WHO shall use it?]

2. It shall be used for the following (*continuation*):
 - (b) to **check** the correct application of the management system as a whole, and if the management system achieves the expected outcomes, and;
 - (c) to **identify and implement** appropriate preventive, corrective or both types of measures if any relevant instance of non-compliance to points (a) and (b) is detected.
3. The Regulation shall apply to **RUs**, **IMs** after receiving a Safety Certificate or Safety Authorisation and **ECMs**





● Article 2: Definitions

For the purpose of the Regulation the definitions in Article 3 of Directive 2004/49/EC shall apply. The following definitions shall also apply:

- (a) ‘management system’ means **either** the safety management systems of railway undertakings and infrastructure managers, as defined in Article 3(i) of Directive 2004/49/EC and complying with requirements laid down in Article 9 and Annex III of that Directive, **or** the system of maintenance of entities in charge of maintenance complying with requirements laid down in Article 14a(3) of that Directive;
- (b) ‘monitoring’ means the arrangements put in place by railway undertakings, infrastructure managers or entities in charge of maintenance to check their management system is correctly applied and effective;
- (c) ‘interfaces’ means interfaces as defined in Article 3(7) of Commission Regulation (EC) No 352/2009.



● **Article 3: Monitoring process [What to do?]**

1. Each railway undertaking, infrastructure manager and entity in charge of maintenance:
 - (a) shall be responsible for conducting the monitoring process set out in the Annex;
 - (b) shall ensure that risk control measures implemented by their contractors are also monitored in compliance with this Regulation. To this end, they shall apply the monitoring process set out in the Annex or require their contractors to apply this process through contractual arrangements.



● **Article 3: Monitoring process** [What to do?]

2. The monitoring process shall contain the following activities:

- (a) the definition of a strategy, priorities and plan(s) for monitoring;
- (b) the collection and analysis of information;
- (c) the drawing up of an action plan for instances of unacceptable non-compliance with requirements laid down in the management system;
- (d) the implementation of the action plan, if such a plan is drawn up;
- (e) the evaluation of the effectiveness of action plan measures, if such a plan is drawn up.



- **Article 4: Exchange of information between the involved actors [Interface management]**
 1. Railway undertakings, infrastructure managers and entities in charge of maintenance, including their contractors, shall ensure through contractual arrangements that any relevant safety-related information resulting from applying the monitoring process set out in the Annex is exchanged between them, to enable the other party to take any necessary corrective actions to ensure continuous achievement of the safety performance of the railway system.
 2. If, through the application of the monitoring process, railway undertakings, infrastructure managers and entities in charge of maintenance identify any relevant safety risk as regards defects and construction non-conformities or malfunctions of technical equipment, including those of structural sub-systems, they shall report those risks to the other parties involved to enable them to take any necessary corrective actions to ensure continuous achievement of the safety performance of the railway system.



- **Article 5: Reporting**

RUs, IMs, ECMs, NSAs shall report their experience with the application of the Regulation

The Agency shall collect all information on the experience of the application of the Regulation and, when necessary, shall make recommendations to the Commission with a view to improving this Regulation

- **Article 6: Entry into force and application [When to apply?]**

The Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

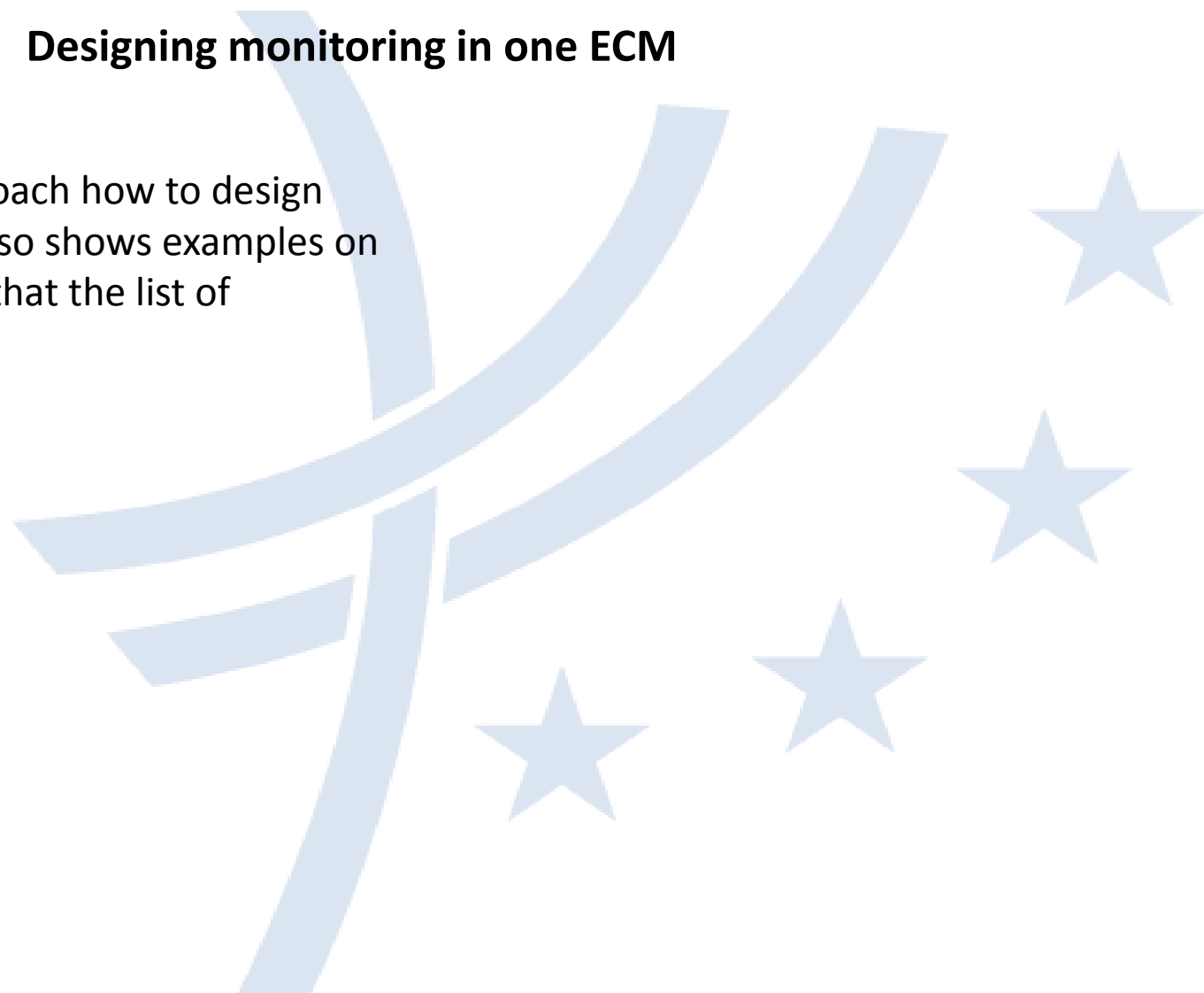
The Regulation shall apply six months after the date of entry into force.

- **Annex: gives details of CSM monitoring process**



Designing monitoring in one ECM

This example shows an approach how to design the monitoring for ECM. It also shows examples on indicators for an ECM. Note that the list of indicators is not exhaustive.





RISC MANAGEMENT IN RAILWAY SYSTEM LINKED TO MAINTENANCE ACTIVITY OF FREIGHT WAGONS : Safety targets for sub system "freight wagon"

B	C	D	E	F	G	H	I	J	K	L
Wagon feared events (Safety target for ECM)				Feared events for railway sector (Safety directive)						
Function	Event or risk of event ⁽¹⁾	Examples	Safety target	Fire Explosion of wagon	Derailment Overturn	People's injury	Collision	Infra- structure's fire	Environment's Pollution	Accident at level crossing
Information / Lettering for wagon incorporation in trains	Wrong information on braking characteristics	Brake Weight, Load sheet	W				X	X		
		Container transport loading								
Information / lettering for loading	Wrong or missing information for loading	Loading of coils								
		Dangerous goods - Information of transported material	W	X	X	X	X	X	X	X
		Gas transport wagon - Phases identification interverted								
Information / lettering for operations	Wrong information on load sheet	Regime S/ SS, Loads	W		X					
	Wrong gauge Information		W			X	X			



This is an example of how a company can design indicators to use for monitoring.

Its business core activity is freight transportation.

Processes defined within the company:

Operations;

Monitoring;

Staff Recruitment and Training;

Document management and communication;

Risk Management.



Definition of a strategy

- Identification of the processes and of the tools to be used to analyse them;
- Definition of indicators;
- Tools to implement monitoring process (audits, hierarchical checks, etc.);
- Definition of data streaming within the company;
- Definition of tools/rules for the review of the safety performances by the high level management;
- Definition of tools/rules for the definition and implementation of corrective measures included in the action plan.



Tools to be used to collect information and data

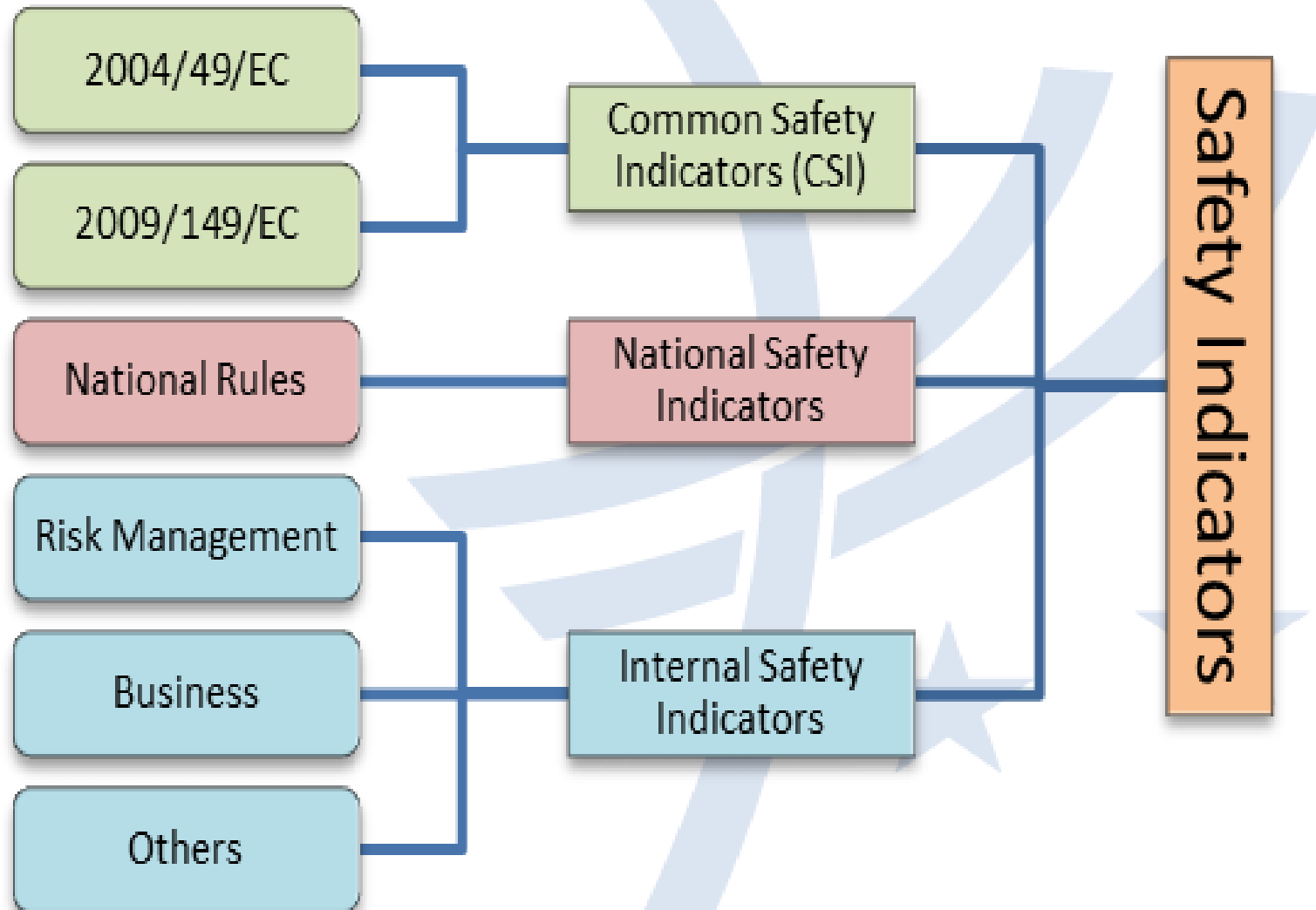
- Internal Audits; (ref: Regulation 1158/2010, Annex II, pt. S; Directive 2004/49/EC, Annex III, pt. 2.j)
- Investigations; (ref: Regulation 1158/2010, Annex II, pt. Q; Directive 2004/49/EC, Annex III, pt. 2.h)
- Hierarchical check; (ref: Regulation 1158/2010, Annex II, pt. G)
- Feedback from the staff. (ref: Regulation 1158/2010, Annex II, pt. H)

Group # 1:

This group includes Internal audits, Investigations and Hierarchical Checks.

These tools are planned with managers and employees and are the basic elements for collecting data because they are systematic and monitorable

Group # 2: This group includes Feedback from the Staff. The tool cannot be planned and its effectiveness cannot be monitored, but it's important to implement it in order to have a direct feedback from the field.





Discussion on relevant issues emerged from the presentations, general conclusions from the workshop