



ERA Task Force on wagon/axle maintenance: Results of the 1st & 2nd phase, outlook

*Joint Sector Group for ERA Task Force on wagon/axle maintenance
30th July 2010*

The Joint Sector Programme worked out in the ERA Task Force was fully adopted in Viareggio in December 2009



- **European Action Programme:**

- A **Visual Inspection** of the European wheelset/axle population (according to EVIC)
- A more in-depth **investigation of samples** of wheelsets from defined operating areas
- A European-wide implementation of **systematic traceability of wheelset maintenance**

- **Confirmation of the European standard axleload of 20 t for UIC Typ A axles**
(and of the special cases, e. g. France, Belgium, Sweden)

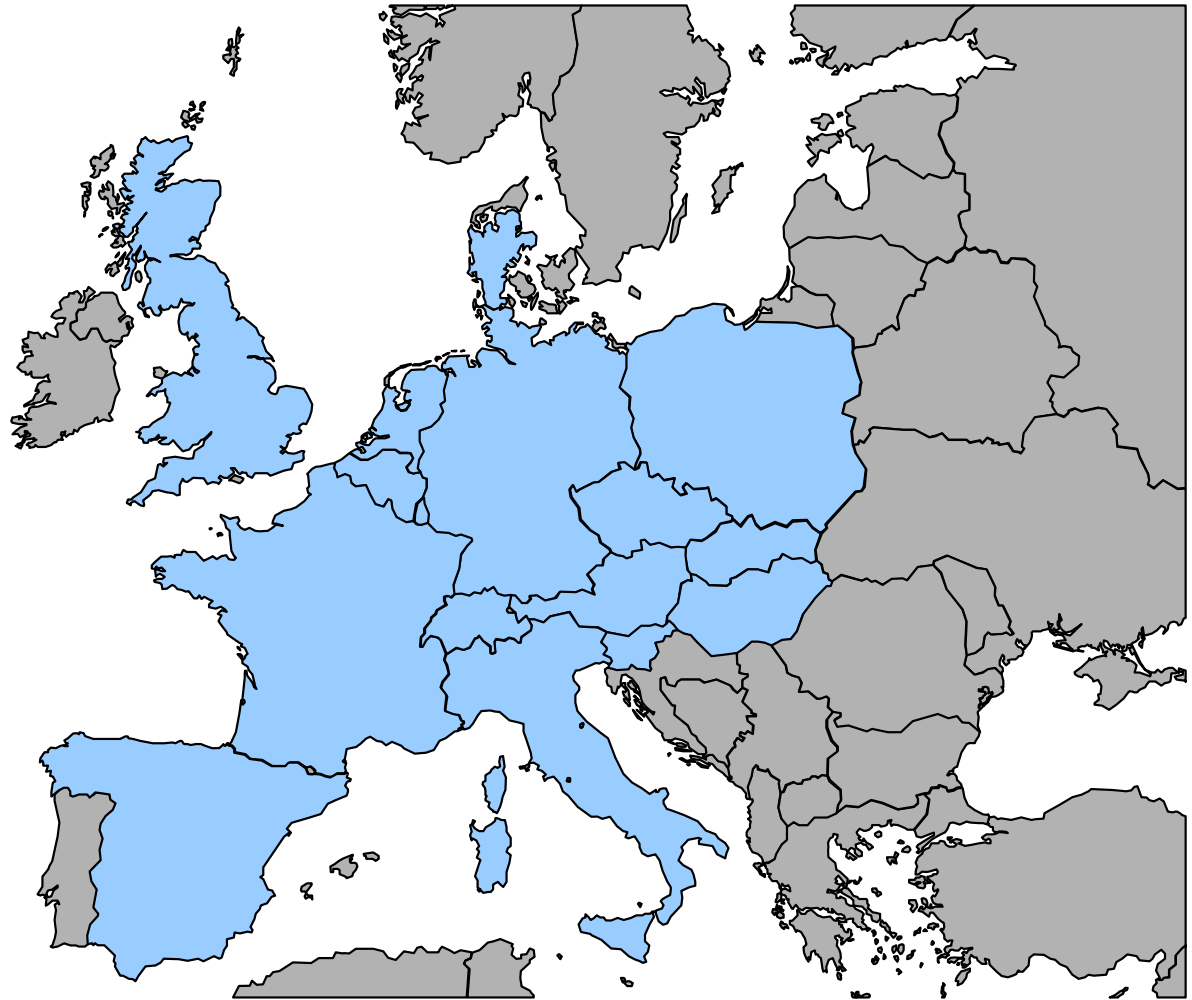
What is to be done now: the Sector must fulfil its safety responsibilities!



- The Joint Sector Programme was agreed by all EU authorities and NSAs
- **It is up to the Sector to implement now what has been decided**
- **Implementation must be done as a self-commitment in the Sector Association's companies – there is no legal obligation!**
- All results will enter soon in European Standard (EN 15313)
- NSAs to audit the decided measures

The 1st element of the European Action Programme: EVIC Visual Inspection of the European wheelset/axle population

- Joint EVIC bodies per Country
- 2 European “Train the Trainers” trainings for Joint EVIC bodies
- 16 member states integrated
- ca. 50 training sessions in member states (workshops, keepers, RUs)
- > 750 trainers and workshop staff trained up to 06/2010
- EVIC docs in 10 languages
- EVIC FAQ Catalogue V1.0 prepared
- **EVIC started from 01.04.2010**
- **More than 130.000 axles checked as per 06/2010**
- Implementation in GCU foreseen in October 2010



The 1st element of the European Action Programme: EVIC Visual Inspection of the European wheelset/axle population

EVIC docs currently available in 10 languages

<p>EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC) FOR FREIGHT WAGON AXLES</p> <p>to be applied in light maintenance of freight wagons in workshops</p> <p>Joint Sector Group for ERA Task Force on wagon/axle maintenance</p>  <p>1 / 21</p>	<p>CATALOGUE EUROPEEN D'INSPECTION VISUELLE DES ESSIEUX</p>  <p>1 / 21</p>	<p>EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC)</p> <p>CATALOGO EUROPEO di ISPEZIONE VISIVA per ASSI di CARRI MERCI</p> <p>da utilizzare negli Impianti durante le operazioni di manutenzione 1° livello su carri merci</p> <p>Documento preparato a cura di: Joint Sector Support Group della Task Force ERA "Freight Wagon Maintenance"</p>  <p>1 / 21</p>	<p>EUROPESE CATALOGUS VOOR VISUELE INSPECTIE VAN WAGENASSEN</p> <p>CATEGORIE VAN DE GEREEDEN</p>  <p>1 / 21</p>
<p>EUROPÄISCHER SICHTPRÜFUNGSKATALOG (EVIC) FÜR GÜTERWAGENRADSATZWELLEN</p> <p>Anzuwenden bei der betriebsnahen Instandhaltung von Güterwagen in Werkstätten</p> <p>Joint Sector Group für ERA Task Force über Güterwagen/ Radsatzinstandhaltung</p>  <p>1 / 21</p>	<p>EURÓPAI SZEMREVÉTELEZÉSES TENGELYVIZSGÁLATI HIBAKATALÓGUS (EVIC) VASÚTI TEHERKÖCSITENGELYEKHEZ</p> <p>teherkocsik napi karbantartása során történő alkalmazáshoz</p> <p>Joint Sector Group for ERA Task Force on wagon/axle maintenance ERA Tekerőcsi- és Tengelykarbantartási Munkacsoportja részére az Egységes Iparági Munkacsoport (JSG) Állománykezelésével</p>  <p>1 / 21</p>	<p>EURÓPSKY KATALÓG VIZUÁLNYCH KONTROL (EVIC) NÁPRAV DVOJKOLESÍ NÁKLADNÝCH VOZŇOV</p> <p>pre použitie pri bežnej údržbe nákladných vozňov v dielňach</p> <p>Spoločná skupina železničného sektoru pre pracovnú skupinu ERA - údržba nákladných vozňov/náprav.</p>  <p>1 / 21</p>	
<p>EUROPEJSKI KATALOG INSPEKCI WIZUALNEJ (EVIC) DLA OSI WAGONÓW TOWAROWYCH</p> <p>przeznaczony do stosowania w czasie "lekkich" napraw wagonów towarowych w warsztatach utrzymania</p> <p>Wspólna Grupa Sektorowa dla Grupy Zadaniowej Europejskiej Agencji Kolejowej (ERA Task Force)) do spraw utrzymania wagonów/osi</p>  <p>1 / 21</p>	<p>EVROPSKI KATALOG VIZUALNE KONTROLE (EVIC) ZA OSI TOVORNIH VAGONOV</p> <p>za uporabo v sprotnem vzdrževanju tovrnih vagonov v delavnicah</p> <p>JSG Delovna skupina ERA za vzdrževanje vagonov/osi</p>  <p>1 / 21</p>	<p>CATÁLOGO EUROPEO DE INSPECCIÓN VISUAL DE EJES EN VAGONES DE MERCANCÍAS</p> <p>aplicable durante el mantenimiento ligero de vagones de mercancías en talleres</p> <p>Joint Sector Group para el grupo de trabajo de la ERA en mantenimiento de vagones/ejes</p>  <p>1 / 21</p>	

The 1st element of the European Action Programme: Impressions of the National EVIC trainings



ASSOFERR



JSG 1st "train the trainers"



ZSSK Cargo



ASSOFERR



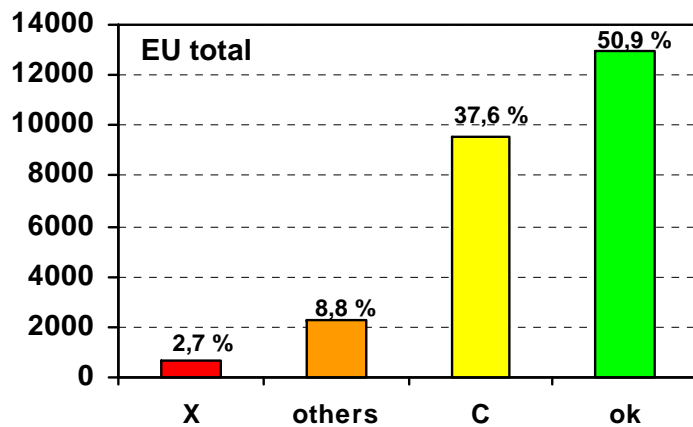
Joint EVIC
Germany

Status of the EVIC Visual Inspections

Good start in the first month (April 2010)

	No. of Wagon checks	Axles total	Others	„ok“	„X“	„C“
EU total *	6.350	25.533	2.236	13.006	701	9.590
AT	289	1.091	522	332	73	164
BE	190	804		803	1	0
CH	150	538	31	246	25	236
DE	4.529	18.685	1.372	8.449	482	8.382
FR	712	2.578	302	2.154	12	110
HU	85	317		142	1	174
IT	395	1.520	9	880	107	524

* 7 countries, 58 wagon keepers

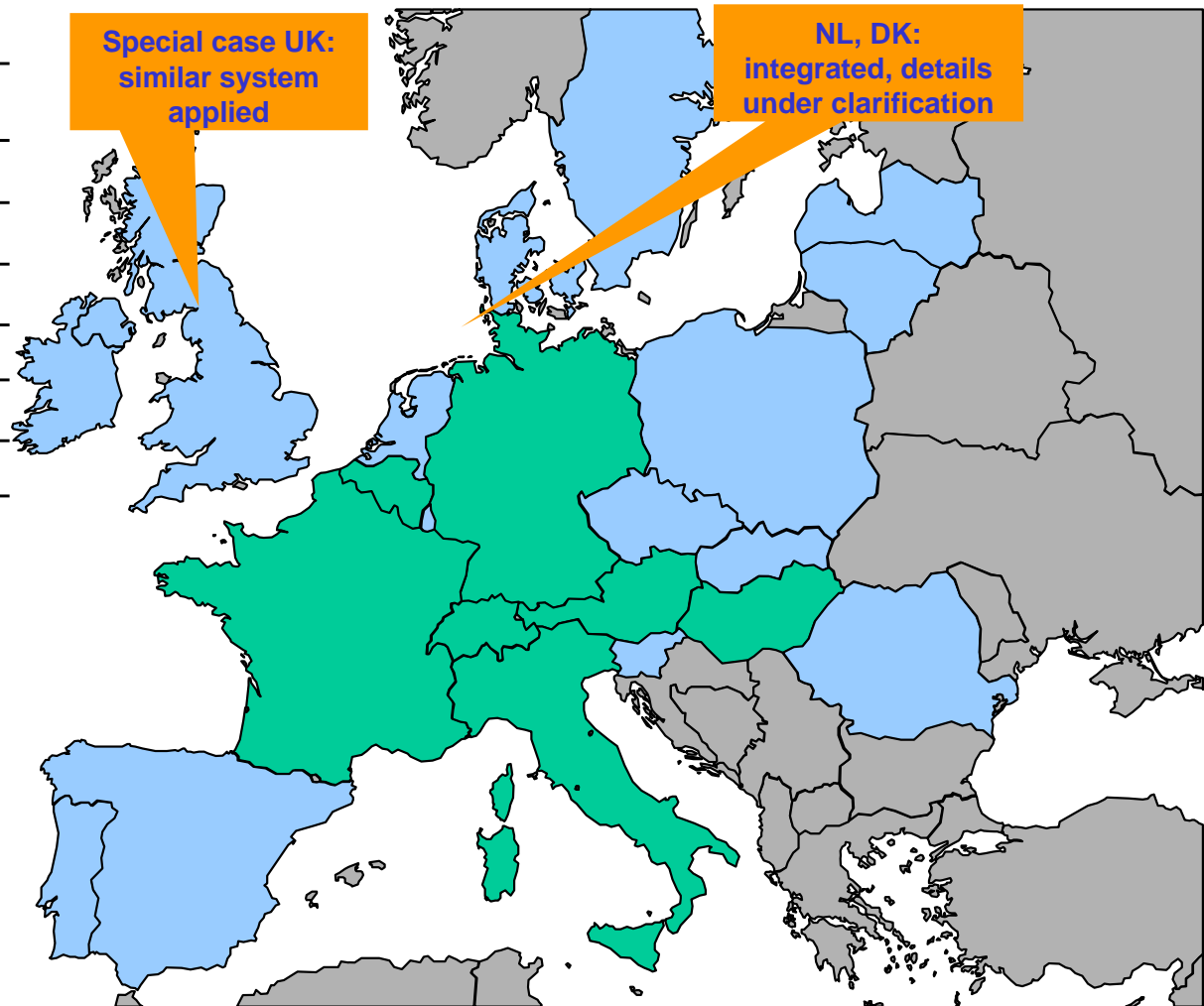


X: Remove from service without delay

others: sorted out for other reasons,

C: Leave in service until the next EVIC check

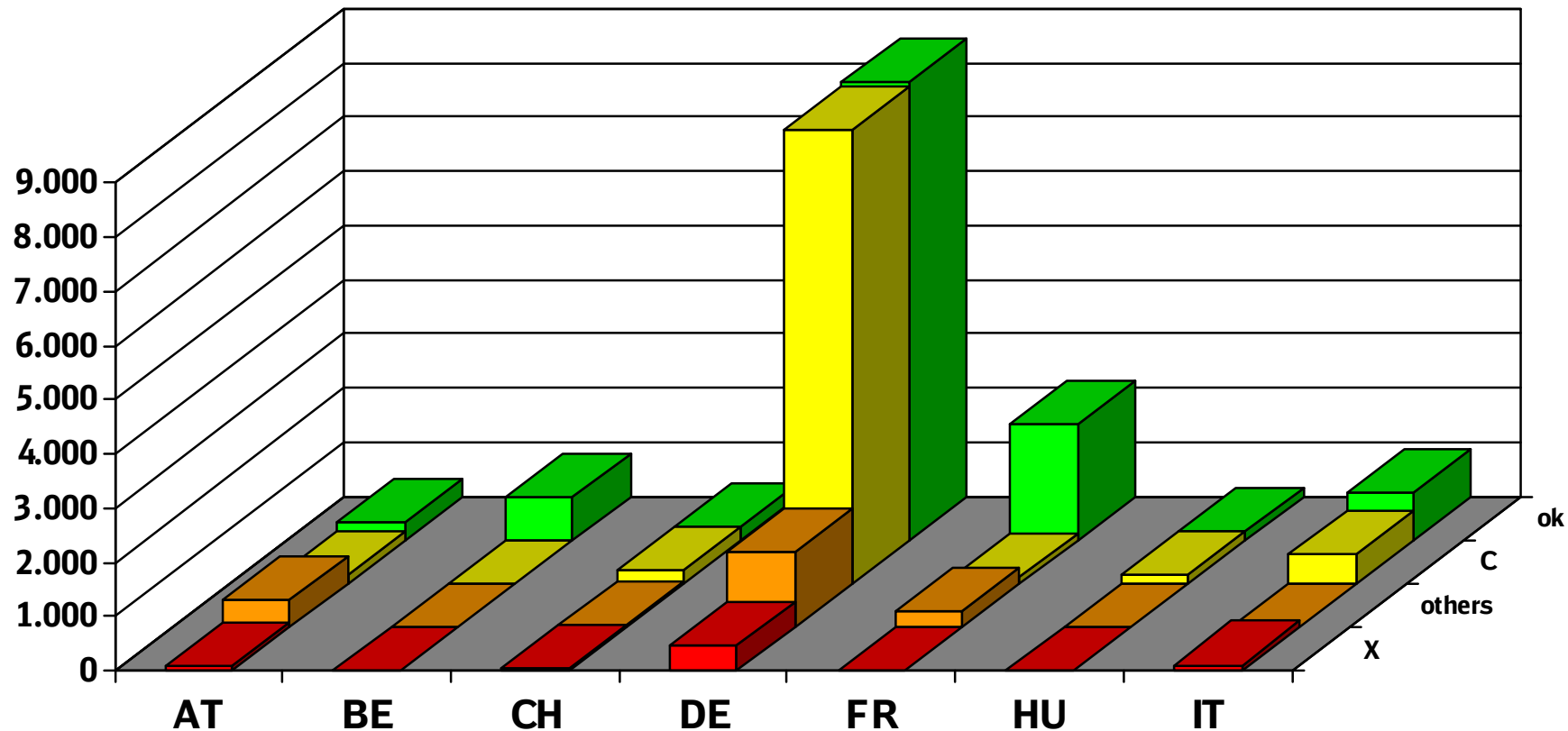
ok: no defects, leave in service



Keeper's total EVIC checks (all countries)
reported in keeper's registration country

Status of the EVIC Visual Inspections

Good start in the first month (April 2010)



X: Remove from service without delay

others: sorted out for other reasons,

Keeper's total EVIC checks (all countries)
reported in keeper's registration country

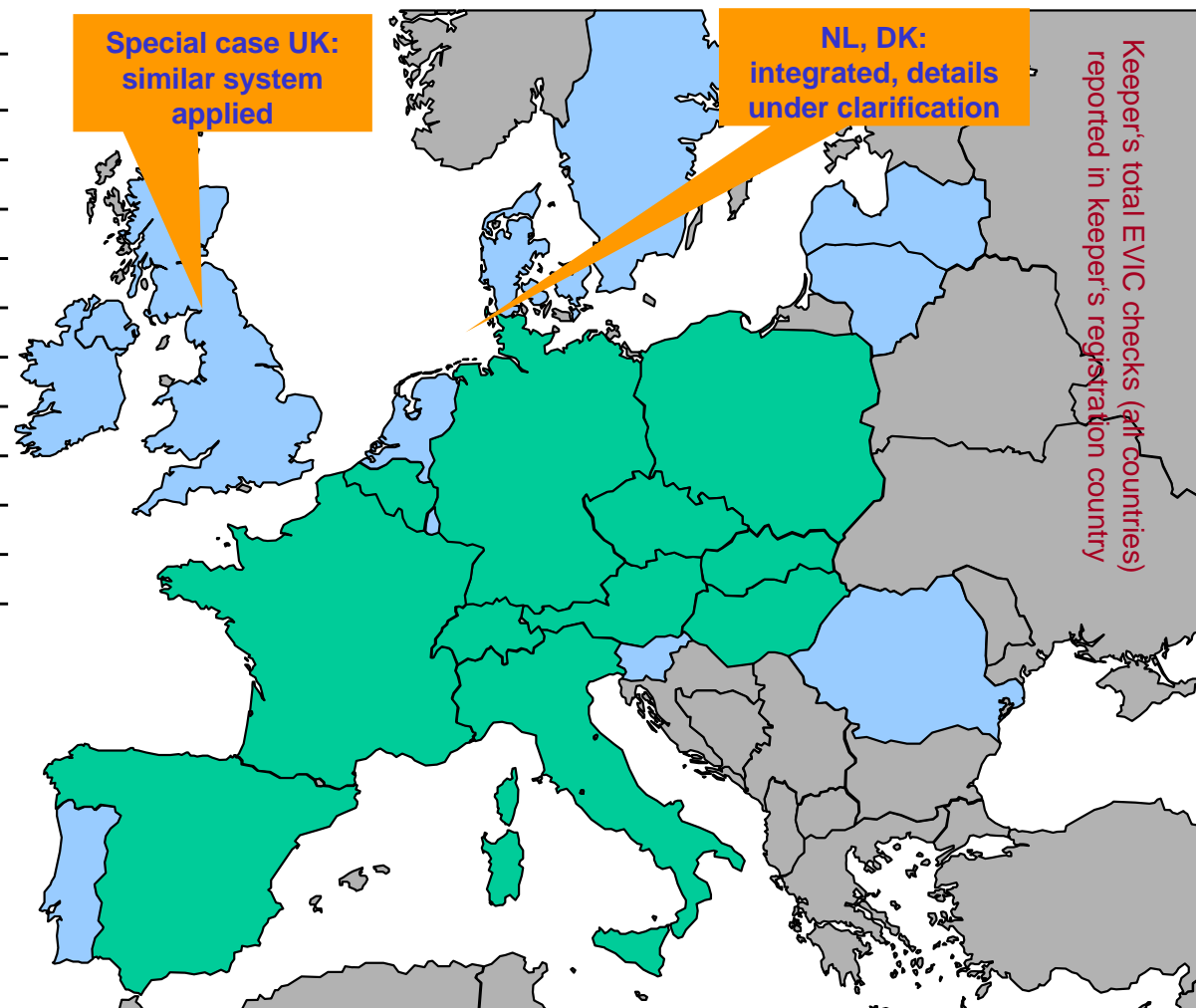
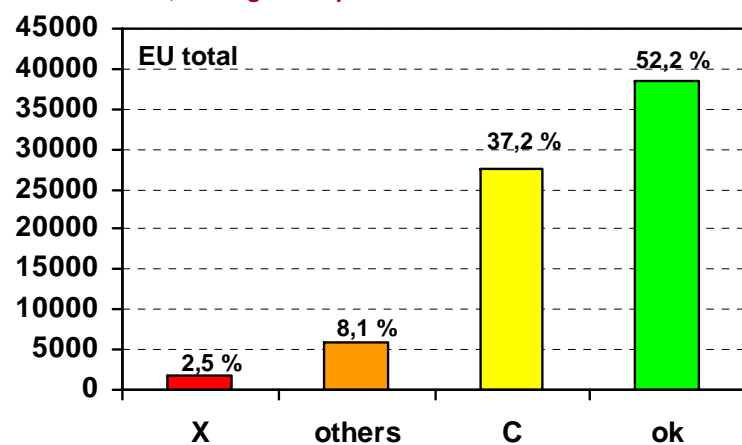
C: Leave in service until the next EVIC check

ok: no defects, leave in service

Status of the EVIC Visual Inspections total as per May 2010

	No. of Wagon checks	Axles Total	others	„ok“	„X“	„C“
EU total *	19.044	74.012	6.025	38.627	1.832	27.528
AT	597	2.065	925	682	135	323
BE	459	1.873		1.871	2	0
CH	936	3.231	153	1.407	88	1.583
CZ	7	28		28	0	0
DE	13.163	52.365	3.952	24.464	1.311	22.638
ES	10	24		19	1	4
FR	1.925	6.931	939	5.458	74	460
HU	155	559	2	265	2	290
IT	1.190	4.554	41	2.751	214	1.548
PL	265	1.048	4	931	3	110
SK	337	1.334	9	751	2	572

* 11 countries, 80 wagon keepers



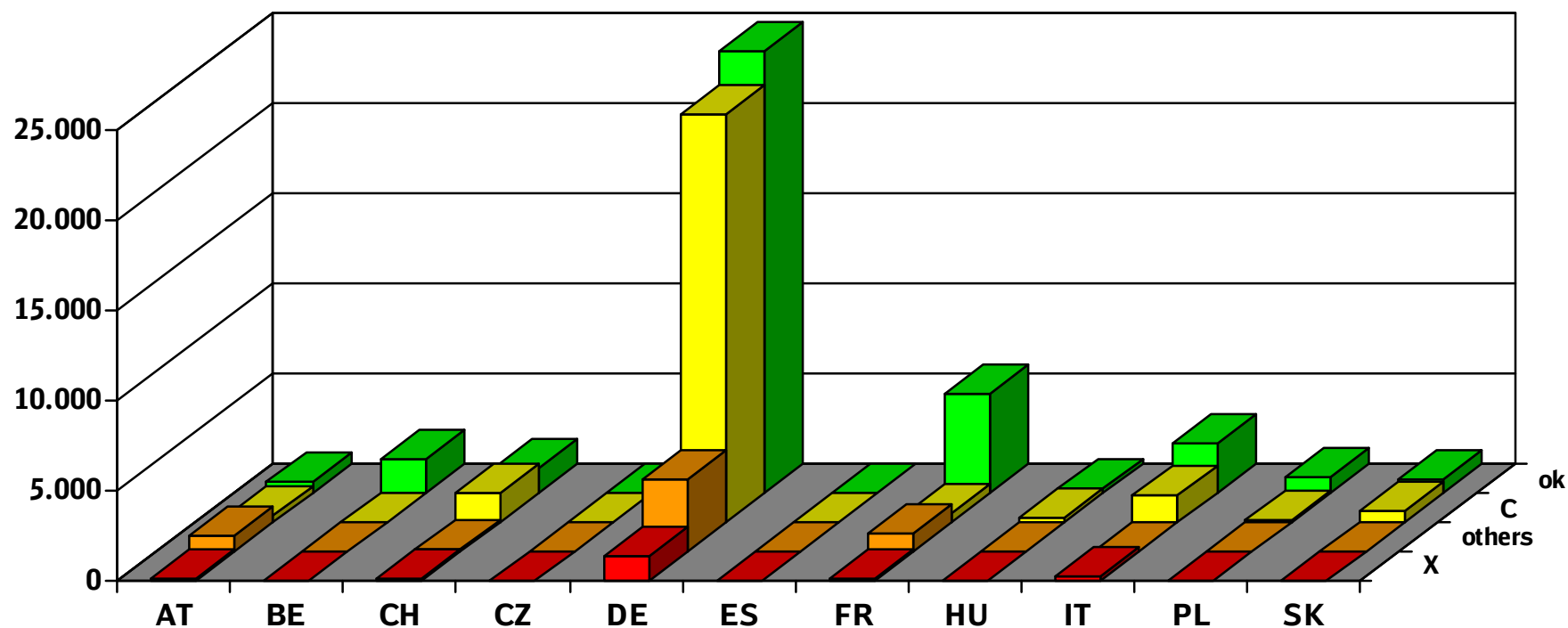
X: Remove from service without delay

others: sorted out for other reasons,

C: Leave in service until the next EVIC check

ok: no defects, leave in service

Status of the EVIC Visual Inspections total as per May 2010



X: Remove from service without delay

others: sorted out for other reasons,

Keeper's total EVIC checks (all countries)
reported in keeper's registration country

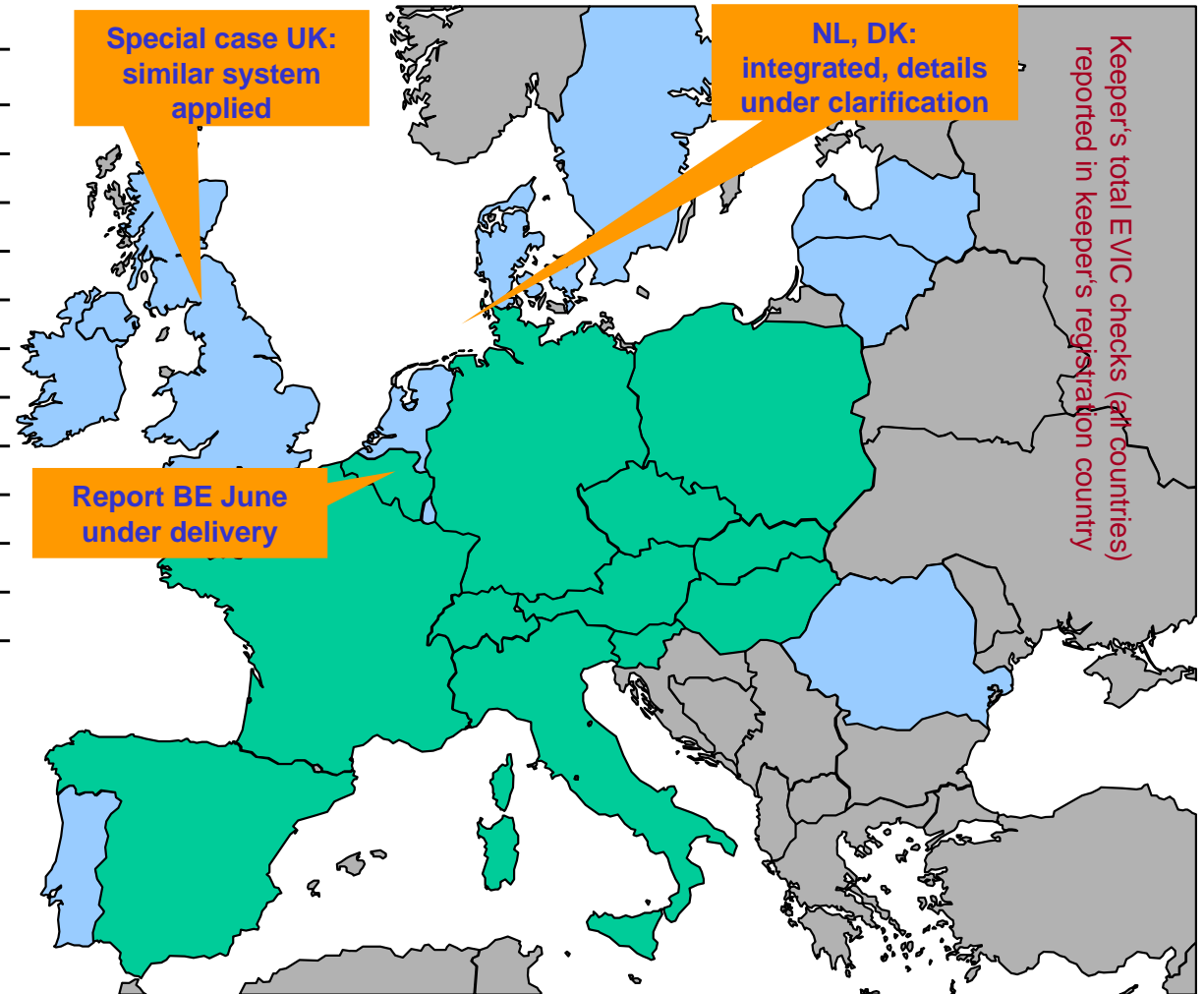
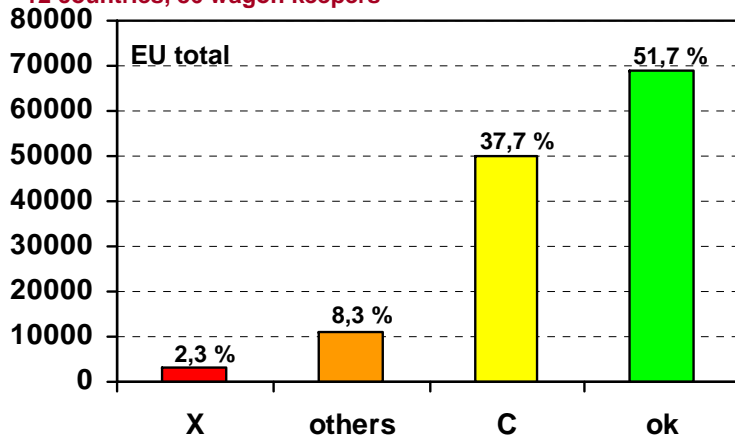
C: Leave in service until the next EVIC check

ok: no defects, leave in service

Status of the EVIC Visual Inspections total as per June 2010

	No. of Wagon checks	Axles Total	others	„ok“	„X“	„C“
EU total *	34.356	133.184	11.033	68.893	3.082	50.176
AT	980	3.713	1.582	1.301	264	566
BE	459	1.873		1.871	2	0
CH	1.976	6.639	293	2.706	192	3.448
CZ	19	76		76	0	0
DE	23.632	93.607	7.200	44.126	2.140	40.141
ES	66	161	0	90	12	59
FR	3.372	12.396	1.820	9.522	110	944
HU	271	989	2	580	2	405
IT	1.768	6.780	82	3.971	309	2.418
PL	829	3.253	35	2.723	44	451
SK	966	3.645	10	1.893	5	1.737
SI	18	52	9	34	2	7

* 12 countries, 86 wagon keepers



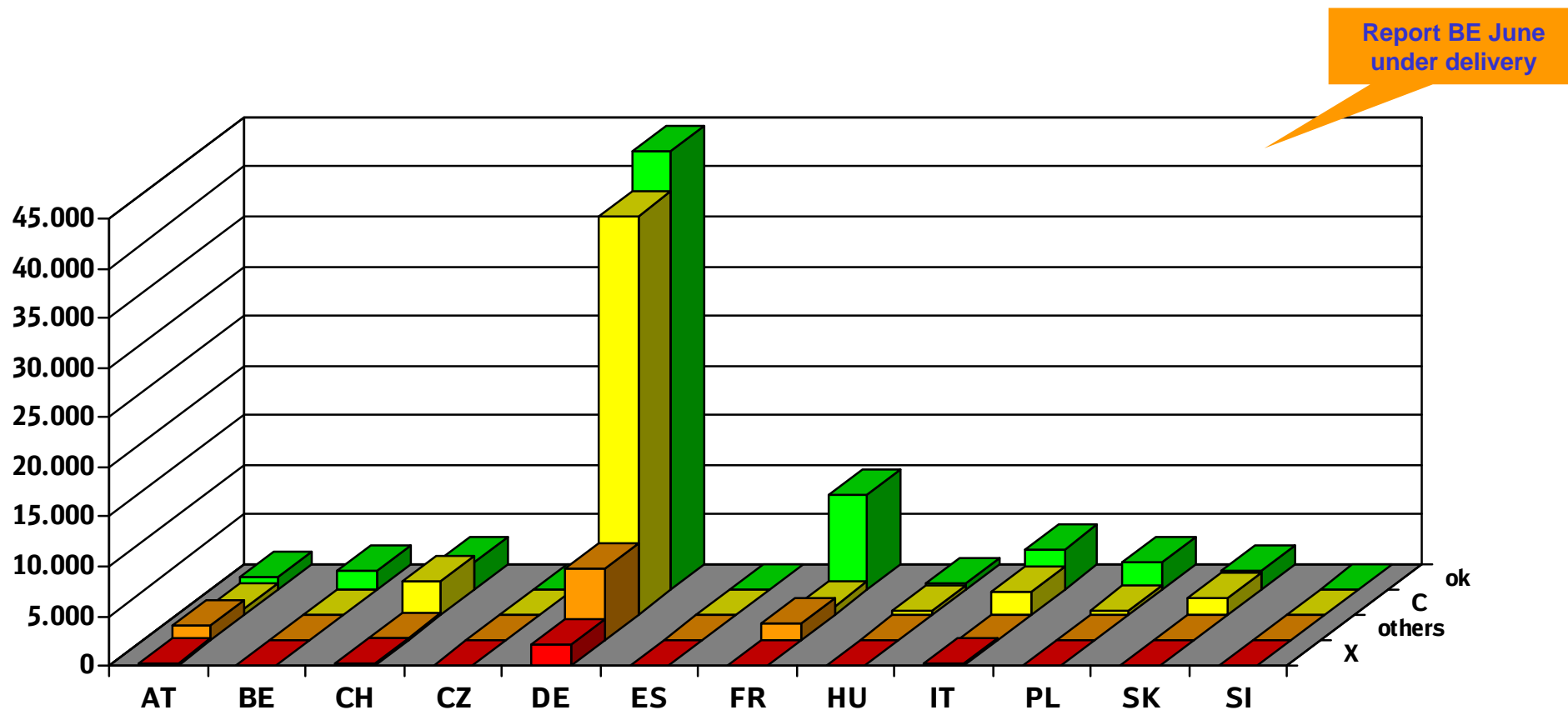
X: Remove from service without delay

others: sorted out for other reasons,

C: Leave in service until the next EVIC check

ok: no defects, leave in service

Status of the EVIC Visual Inspections total as per June 2010



X: Remove from service without delay

others: sorted out for other reasons,

Keeper's total EVIC checks (all countries)
reported in keeper's registration country

C: Leave in service until the next EVIC check

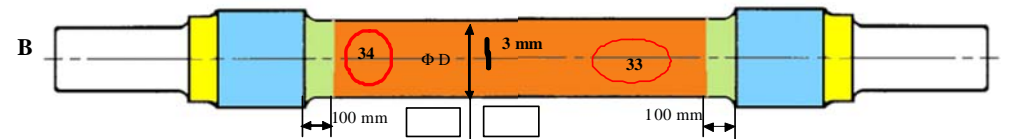
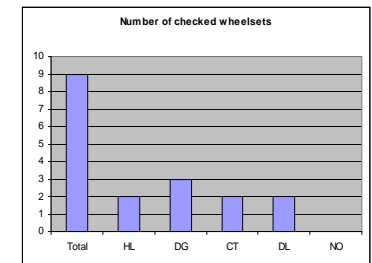
ok: no defects, leave in service

The 2nd element of the European Action Programme: Sampling and analysis programme of wheelsets from defined operating areas

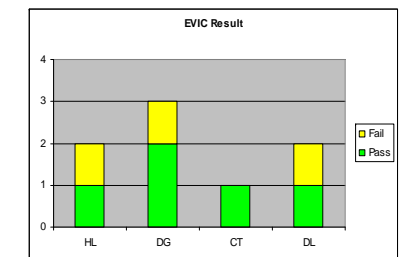
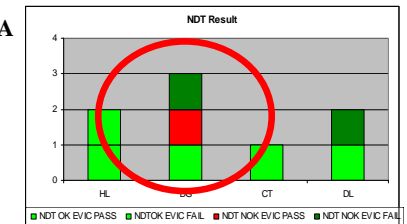


- Programme started
Mai/June 2010
- 24.000 axles
- Duration: 12 months
- Intermediate
report after
6 months
- **Critical for success!**

Workshop TERGNIER	Risk Domain DG	Wheel set type 9052	Wheel set number 12345	Date 24 / 02 / 2010	Wheel dismantled Yes / No	Bearing ring dismantled Yes / No			
Previous axle maintenance with NDT									
Date 15 / 01 / 2001	Level COP	NDT System MT	Workshop Rennes						
EVIC APPLICATION									
Zone	B journal	B abutment	B wheel seat	B transition radius (100 mm)	Shaft	A transition radius (100 mm)	A wheel seat	A abutment	A journal
EVIC defect category				33,34					
Roughness or UIC surface categories									



NDT before treatment									
Zone	B journal	B abutment	B wheel seat	B transition radius (100 mm length)	Shaft	A transition radius (100 mm length)	A wheel seat	A abutment	A journal
NDT System									
MT	No	No	No	No	Yes	No	No	No	No
Man UT									
Auto UT									
Eddy Current									
Defect in EVIC zone		Yes / No		Yes / No	Yes / No	Yes / No		Yes / No	
Treatment									
Grinding the shaft central part 0,5 mm depth.									
NDT after treatment									
MT man									
UT auto									
AXLE SCRAPPED					Yes / No				



The 3rd element of the European Action Programme: European-wide systematic traceability of wheelset maintenance data

- European Wheelset traceability (EWT) adopted
- Implementation in the Sector from 08/2010 onwards
- Self obligation (as for EVIC)
- Later integration in EN 15313
- Mainly compliant with german NSA (EBA) general order on documentation (12/09).
EBA checks potential for amending general order
- ANSF will check if national measures could be removed after in-field verification of traceability in 2010

No	timeframe	Designation	Remark
Wheelset in general			
1	a	Wheelset number	if applicable (if the keeper has changed) Data has to be stored from the last wheel change on Remark: Current keeper of the wheelset is the keeper of the wagon (see number 38)
2	a	Wheelset design type or alternative designation	
3	a	Previous keeper(s) (ECM)	
4	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant wheelsets) Homologation number and authorising or certifying body (other wheelsets)	if available
5	a	Maximum authorised axle load (of the entire wheelset)	for wheelsets from service: if available
6	a	assembler of wheels (manufacturer if first assembly)	
7	a	Date of first assembly of wheels (month/ year)	for wheelsets from service: if available
8	a	Date when wheelset is taken out of keepers' fleet (scrapped, selling, etc.)	
Wheelset axle			
9	a	Wheelset axle serial number	if available
10	a	Wheelset axle design type or alternative designation	
11	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant axles) Homologation number and authorising or certifying body (other axles)	
12	b	Manufacturer	for wheelsets from service: if available
13	b	Manufacturing date (month/ year)	for wheelsets from service: if available
14	b	Number of cast iron	for wheelsets from service: if available
15	b	grade of steel (state of heat treatment)	for wheelsets from service: if available
16	a	Maximum permissible axle load (regarding the axle)	for wheelsets from service: if available The manufacturing standard is directly related to the manufacturing date; (UIC; EN)
17	b	Manufacturing standard of the axle	
Wheels			
18	a	Design type or alternative designation	Yes/ No
19	a	Tyred wheels	
20	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant wheels) Homologation number and authorising or certifying body (other wheels)	if available
21	b	Manufacturer	for wheelsets from service: if available
22	b	Manufacturing date (month/ year)	for wheelsets from service: if available
23	b	grade of steel (state of heat treatment)	for wheelsets from service: if available
24	b	Number of cast iron	for wheelsets from service: if available
25	a	Maximum authorised axle load (regarding the wheel)	

excerpt

The integrating element: European Common Criteria for Maintenance

V1.0

European Common Criteria for Maintenance (ECCM) of freight wagon axles

to be applied in wheelset axle maintenance

Joint Sector Group for ERA Task Force on wagon/axle maintenance
Lille
22nd June 2010



1

Axle surface status
after overhaul
(in medium and heavy
maintenance)

Traceability

.....

All to be integrated in
EN 15 313

before: implementation
by self obligation

which NDT
and where?

Maintenance rules for high
performance operation

ECCM results summary (1)

EU-wide harmonised requirements for...

Light Wagon Maintenance

- Visual checks of the axle surface (EU-harmonised) according EVIC catalogue
- Corrosive environments: EVIC „short“ (4y) + more severe EVIC criteria (only cases A, B)

Heavy Wagon Maintenance (revision, major overhaul)

- Remove all axles with EVIC defect cases A, B, C

Higher axle maintenance levels (1)

- **Axle surface status**
 - Treatment of local and severe defects (according UIC category 4)
 - Treatment of large and heavily corroded areas, strongly and uniformly pitted surface
- **Non-Destructive Testing (NDT)**
 - Complete NDT on all axle sections in the „medium maintenance“ level (off-vehicle maintenance level w/o changing wheels)
 - Complete MT (MPI) on the total axle surface in the highest maintenance level

ECCM results summary (2)

EU-wide harmonised requirements for...

Higher axle maintenance levels (2)

- **Wear limits**

- Min. wheel seat diameter (all UIC Type A axles) limited to 182 mm when operated at 20t

Operation

- Unified rules for high performance axle operation (all UIC axle types)
- Continued operation of painted and unpainted axles under today's existing service and appropriate maintenance conditions (including Task Force results)

Traceability

- European EVIC logging
- European Wheelset Traceability + measures resulting from lack of traceability

ECCM decisions that require further investigations (after the ERA Task Force)

Topic	ongoing work in	results
• Final results on inadmissible “UIC surface roughnesses” in maintenance levels	UIC project	2011
• Handling of painted / unpainted situation	EURAXLES	2014
• Need for Harmonisation of NDT techniques?	EURAXLES	2014
• Effects on WS/axles caused by special events (derailments etc.)	investigation project	started by JSG

ERA, NSAs and the Joint Sector Group will continue the regular exchange



- **Further implementation and follow up of the Joint Sector Programme:**

- | | |
|--|--|
| - EVIC (Visual Inspection) | continued application and exploitation |
| - ESP (Sampling programme) | execution and exploitation |
| - EWT (Traceability) | implementation |
| - ECCM (Common Criteria for Maintenance) | implementation |

- Decisions on further measures or amendments
- Amendment of wheelset standards (maintenance EN 15313, new built EN 13103/13261)
- Regular economic and experience evaluation of the program
- **Next regular exchange meeting ERA / NSAs / Sector: 30.11.2010**

Outlook 1: European technical harmonisation for European Rail Freight



- **Further safety relevant wagon maintenance parameters to be EU-wide harmonised:**
Bearings / running gear / springs / brakes ... ➡ **who if not the Joint Sector?**
- National safety standards must disappear in perspective
- Requirements have to be
 - worked out European-wide by the Sector („one voice“)
 - agreed with the NSAs on ERA panel
 - laid down in European Standards (EN) and GCU
- **Harmonised European base for a freight wagon ECM (in consequence: for a SMS)**

Outlook 2: Continued European cooperation for European harmonisation



- For sustainable success of European Rail Freight, MS/NSAs & Sector must continue to cooperate
- Coherent opinion to be reached first on a European platform
 - for rules
 - for urgent measures
- The Sector will continue to deliver Joint Sector solutions with its full expertise support

Thank you for your attention!

