European Railway Agency

Railway Safety, Interoperability, ERTMS & Cross Acceptance

Role of the European Railway Agency

Lille Sifer May
2009

European Railway Agency

Content

1. What is the duty of the Agency ?
2. How does the Agency work ?
3. Staff & organisation of the Agency
4. Localisation and accessibility
5. Focus on current tasks

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Railway Safety

- On the basis of the Safety Directive, development of Common Safety Methods (CSM), Common Safety Targets (CST) and Common Safety Indicators (CSI)
- Facilitate cooperation among national safety authorities
- Facilitate cooperation among national investigating bodies
- Harmonise issuing and assessment procedures of Safety Certificates and Safety Authorisations
- Upon request by the Commission assessment of new national safety rules
- Monitoring of safety performances and reporting to the Commission every 2 years
- Technical opinion on specific cases in the field of railway safety

Railway Interoperability (1/2)

- Drafting the third group of TSIs for Conventional Rail
- Revise existing TSIs
- Organise and facilitate the cooperation of Notified Bodies
- Address recommendations relating to the working conditions of staff executing safety-critical tasks
- Monitor progress of interoperability in the Railway System, report every 2 years
- At the request of the Commission, examine railway infrastructure projects with EC-funding from the point of view of interoperability
- Draft recommendations for the determination of criteria for vocational competences and the assessment of the staff involved in operation and maintenance (priority : drivers & their trainers)

Railway Interoperability (2/2)

- Develop a European certification system for maintenance workshops
- Propose format of national vehicle registers

… while taking care of transverse tasks :

- Coordination with European Standards
- System-wide coordination between TSIs
- Coordination with Common Safety Targets
- Clarify conformity assessment
- And integrate relevant economic assessment

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Registers & Databases

- **Interoperability documents**
  - **(EC declarations, authorisation of putting in service, national vehicle registers, infrastructure and rolling stock registers, etc…)**
- **Safety database**
  - **(licences, safety certificates, national rules, investigation reports, statistics…)**

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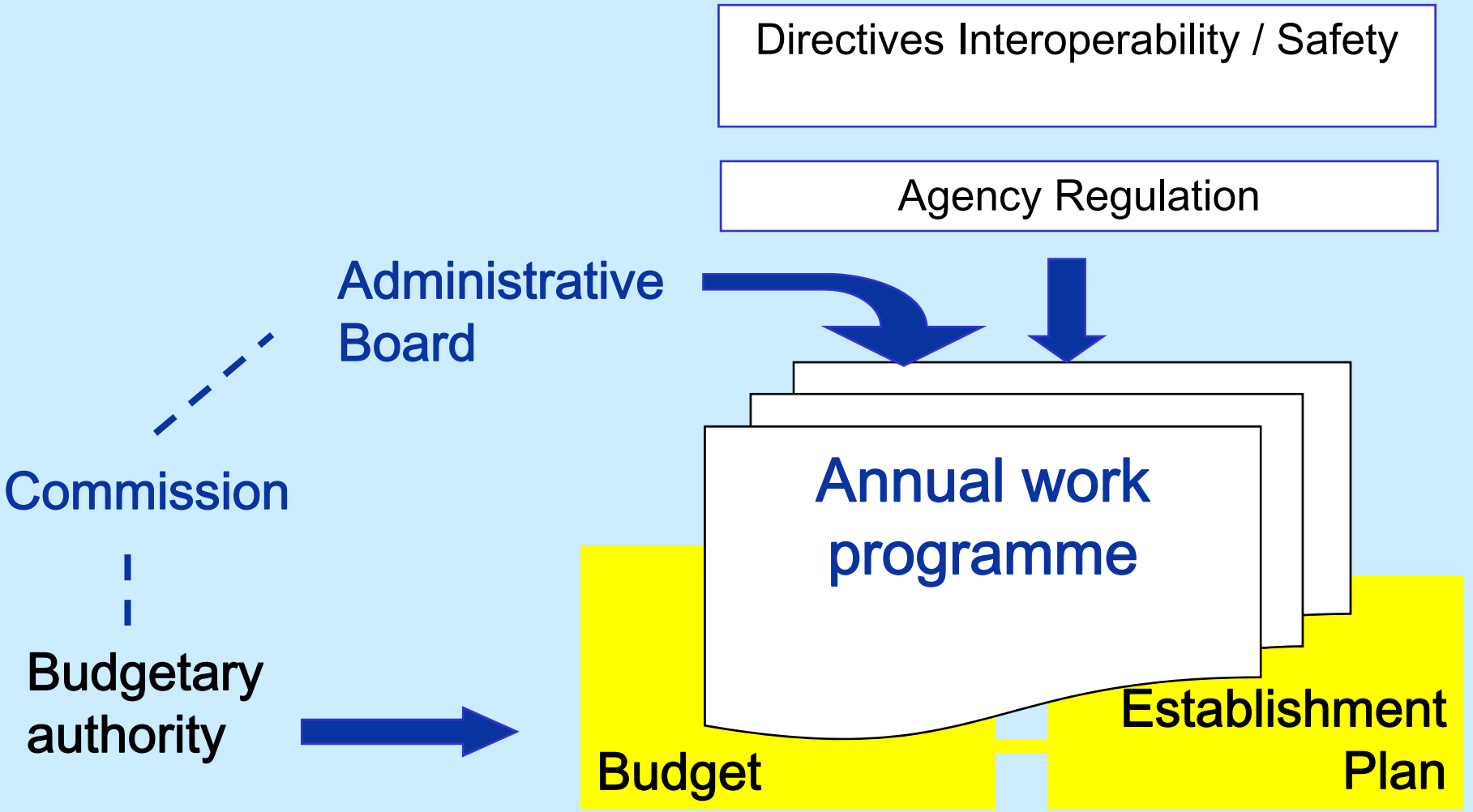
Work Programme



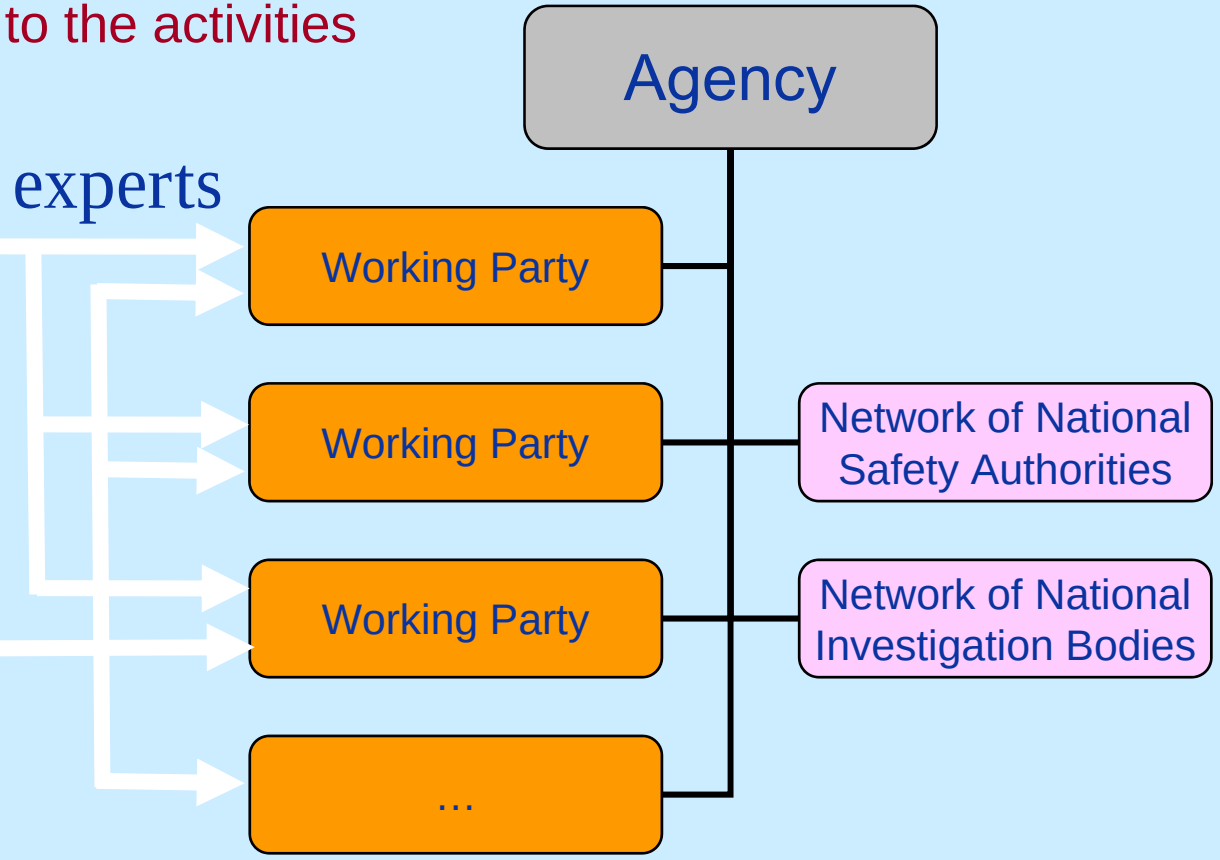
Working Parties and Networks

Working Parties are set up according to the Agency Regulation and their tasks and organisation are adapted to the activities of the Work Programme.

Sector organisations acting at European level*:

UNIFE, CER, EIM, UITP, UIP, UIRR, ERFA, ETF, ALE

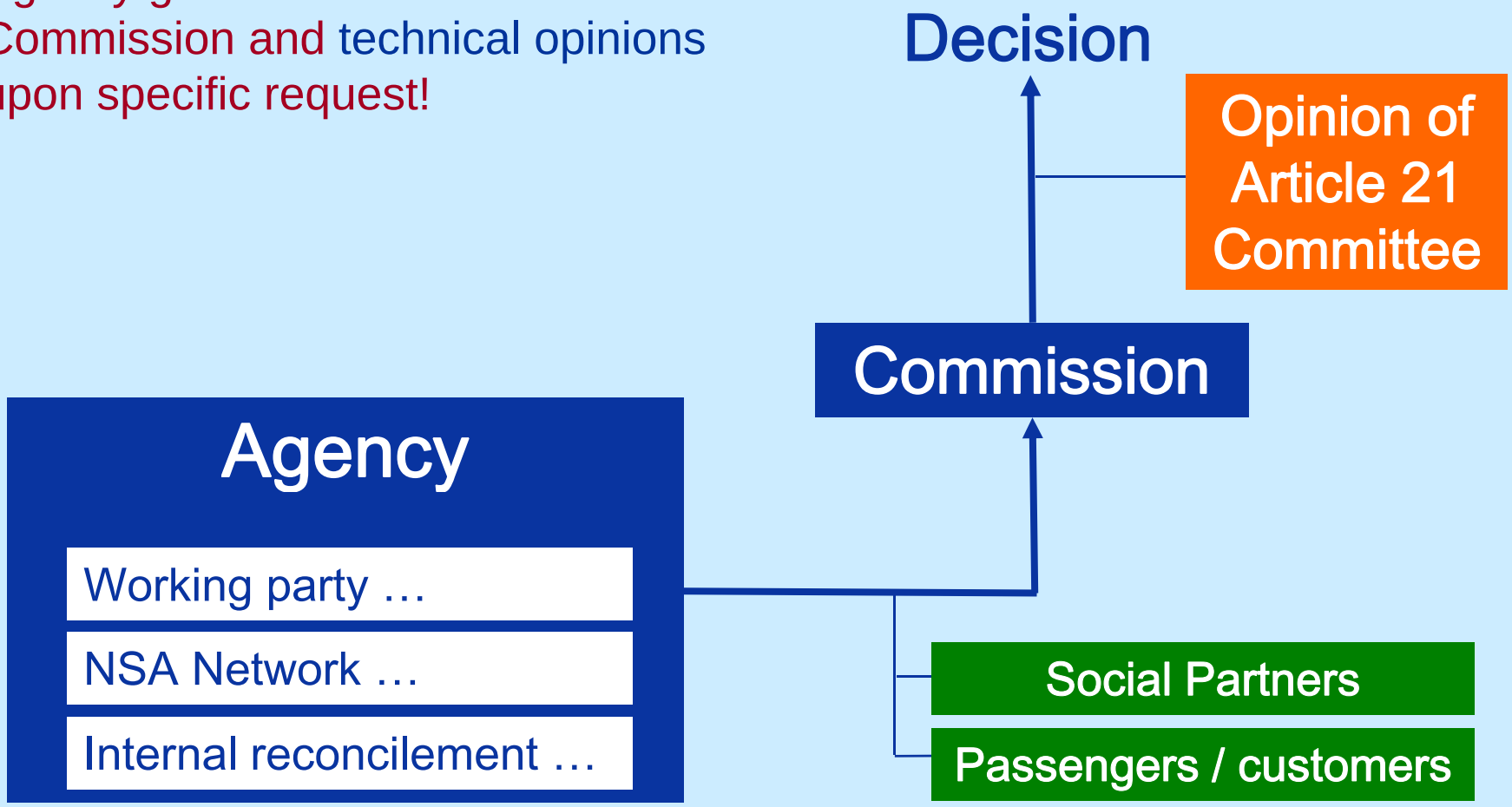
National Safety Authorities' experts



* List established by Article 21 Committee on 22 February 2005

The process to decisions

No decision power for the Agency, the Agency gives recommendations to the Commission and technical opinions upon specific request!



Governance and control

The Agency is controlled by an Administrative Board and has some binding principles for its work.

Administrative Board:

- 1 representative per Member State
- 4 Commission representatives
- 6 representatives of sector organisations (railway undertakings, infrastructure managers, railway industry, trade unions, passengers, freight customers) – *no voting rights*

working principles:

- Budgetary and financial control with regular evaluation of all work
- Transparency and public access to documents
- Neutrality and impartiality

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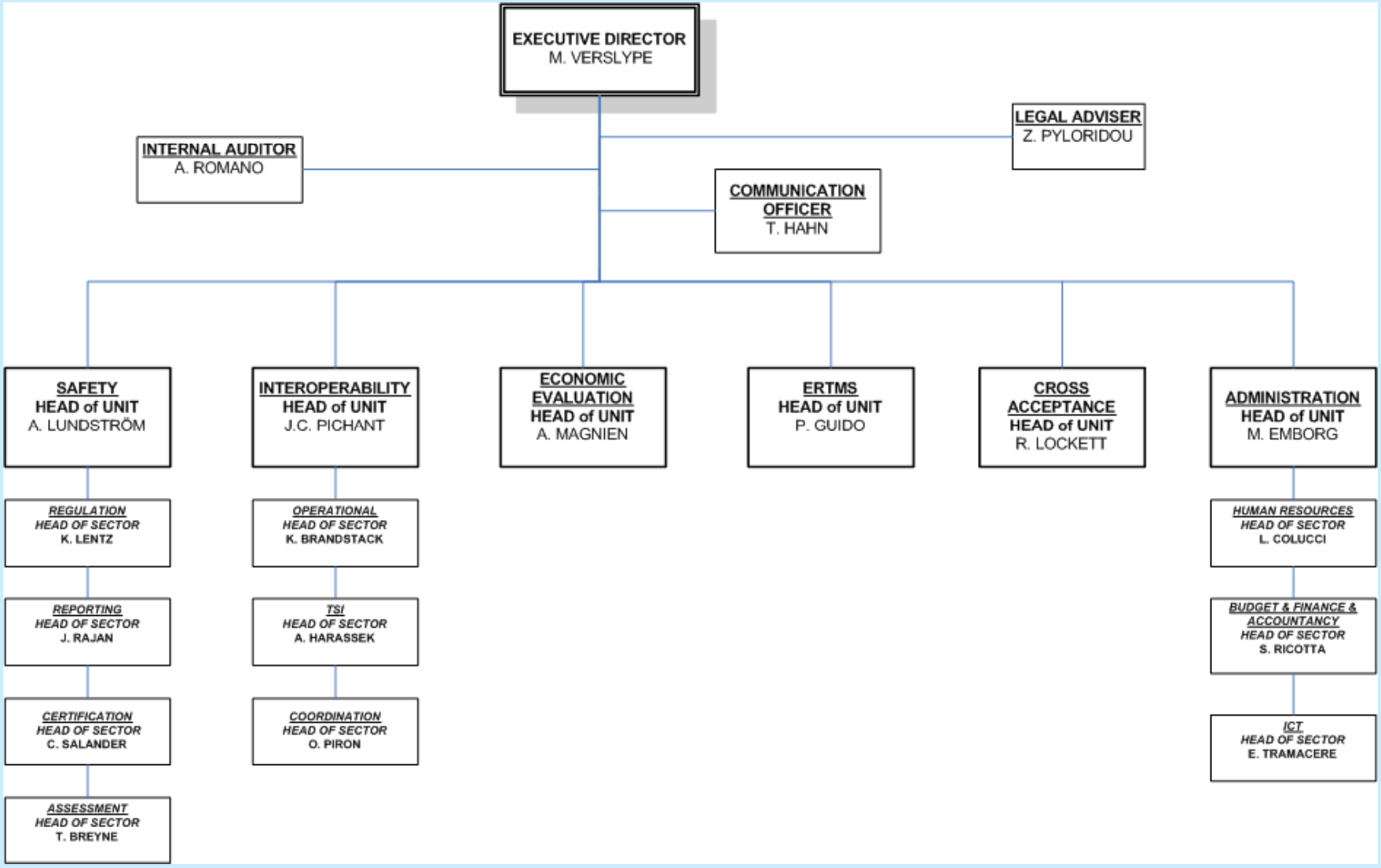
Organisation Chart of the Agency



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Localisation and accessibility

Premises:

- **Offices in Valenciennes**

  European Railway Agency
  160, Boulevard Harpignies
  BP 20932
  F – 59307 Valenciennes CEDEX

- **International meeting facilities in Lille**

  European Railway Agency
  Espace International Lille
  299, Boulevard de Leeds
  F – 59777 EURALILLE
  (just opposite of the station Lille Europe)

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From technical roots up to the end customer

Level	Topic	Legal basis	requirements …	…apply to	..checked by
6	Service quality & responsibility	EU passengers' rights reg. 1371/2007; transport contract		IM, RU, customer	Member State
5	Track access	95/19, 2001/14	Contract	IM + RU	RB, NSA
4	Safety, operations side of interoperability	2004/49, interop. directives	Safety certificate, SMS, OPE TSI	RU, IM	NSA
	Driver license & certificates	Directive 2007/59			
3	Ability to operate trains	95/18, 2001/13 91/440, 2001/12	Licence (incl. assurance)	RU	NSA
2	Structural interoperability	interop. directives (96/48, 2001/16, 2004/50)	TSI	RU, IM, Manufacturer	NSA, NoBo
1	Technical harmonization		EN standards	Manufacturer	Manufacturer, NoBo

RB = regulatory body (Art. 30 of 2001/14) ; NSA = national safety authority ; IM = infrastructure manager ; RU = railway undertaking ; NoBo = notified body ; SMS = safety management system

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Interoperability

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Community Agencies, Why ?

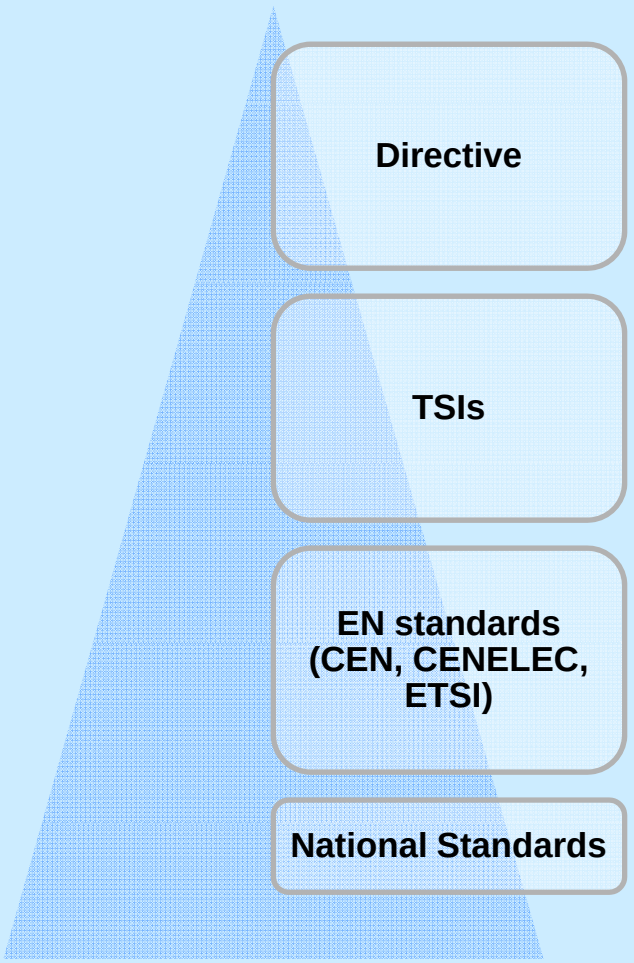
- A Community agency is a body governed by European public law
- it is distinct from the Community Institutions (Council, Parliament, Commission, etc.) and has its own legal personality
- It is set up in order to accomplish a very specific technical, scientific or managerial task
- There are other types of agencies, e.g. executive agencies
  - In charge of a time-limited program
  - Close to EU institutions (Brussels or Luxembourg)

Aims of interoperability directives

- **Ultimate goals**
  - [2004/50 Whereas (9)] Directive […] is part of the Commission's strategy to revitalise rail transport and, consequently, to shift the balance between transport modes, with the ultimate objective of reducing congestion on Europe's roads.
- **Primary means**
  - **achieve interoperability = the ability of the trans-European conventional rail system to allow the safe and uninterrupted movement of trains which accomplish the required levels of performance for these lines**
  - **create "Common market for railways supplies" = contribute to the progressive creation of the internal market in equipment and services for the construction, renewal, upgrading and operation of the trans-European conventional rail system**
- **Secondary means…**
  - **Technical specifications for interoperability (TSIs)**
  - Related susbystem / component acceptance process
- **… to be complemented by other initiatives ("outside" Directives)**
  - Ease cross-acceptance in the transition period where TSIs not fully implemented

New Approach

- Railway Interoperability Directives are « new approach » Directives
  Principles of « new approach » laid down in Council resolution, 1985:
  - legislative harmonisation is limited to essential requirements to be met if products are to benefit from free movement within the Community
  - technical specifications that would enable products to meet the essential requirements set out in new approach directives are laid down in **'harmonised' standards**
  - compliance with 'harmonised' standards remains voluntary
  - products manufactured in compliance with 'harmonised' standards benefit from a **presumption of conformity** with the corresponding essential requirements
- **Interoperability Directives add an intermediate mandatory « layer »** : Technical Specifications for Interoperability (TSIs)



Global Approach

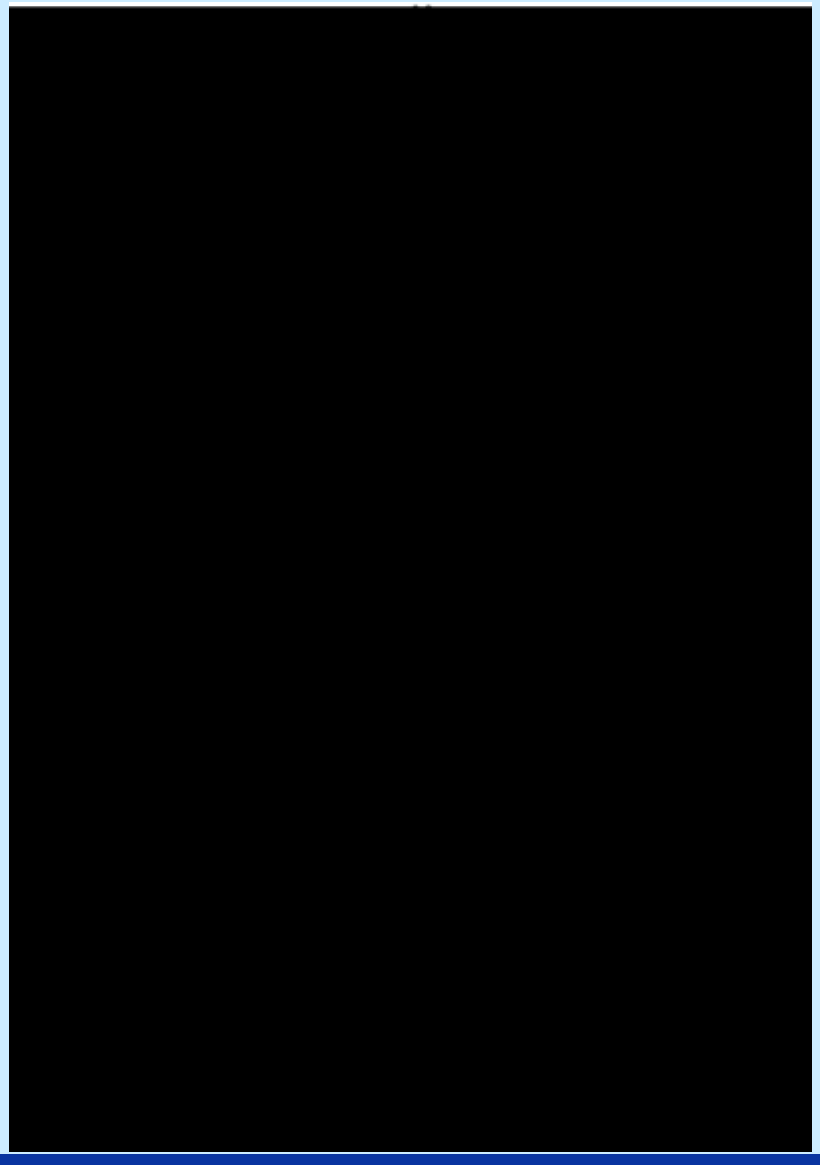
- In addition, it was necessary to establish uniform conditions for **product conformity assessment**.

- The 1989 Council resolution on the '**global approach**' to certification and testing set out guiding principles

- Community legislation describes
  - **modules** for the various phases of the conformity assessment procedures
  - **criteria** for the use of these procedures
  - **criteria** for the designation of bodies carrying out these procedures. (See *Guide to the implementation of directives based on the new approach and the global approach,* ISBN 92-828-7500-8,, 2000.)

TSI.1 - Geographic Scope

- Currently :
  - Infrastructure :
    Railway part of the TEN-T
    (about ¼ of lines length)
  - Rolling stock : whatever runs on the above
- TEN-T defined by Decision 1692/96, revised by Decision 884/2004
- Few « natural » exceptions :
  - Telematics for freight TSI
  - Operations TSI
- Revised Interoperability Directive 2004/50 :
  - scope extension (whole network) to be studied by Agency
  - conclusion of **study** expected by 2009



TSI.2 - Subsystems concerned

High Speed Rail Directive
Subsystems (Annex II) :

Structural (to be checked by Notified Bodies before being put into service)

- Infrastructures
- Energy
- Control & command & signalling
- Rolling stock

Operational

- Maintenance
- Environment
- Operation
- Users

Conventional Rail Directive
Subsystems (Annex II) :

Structural

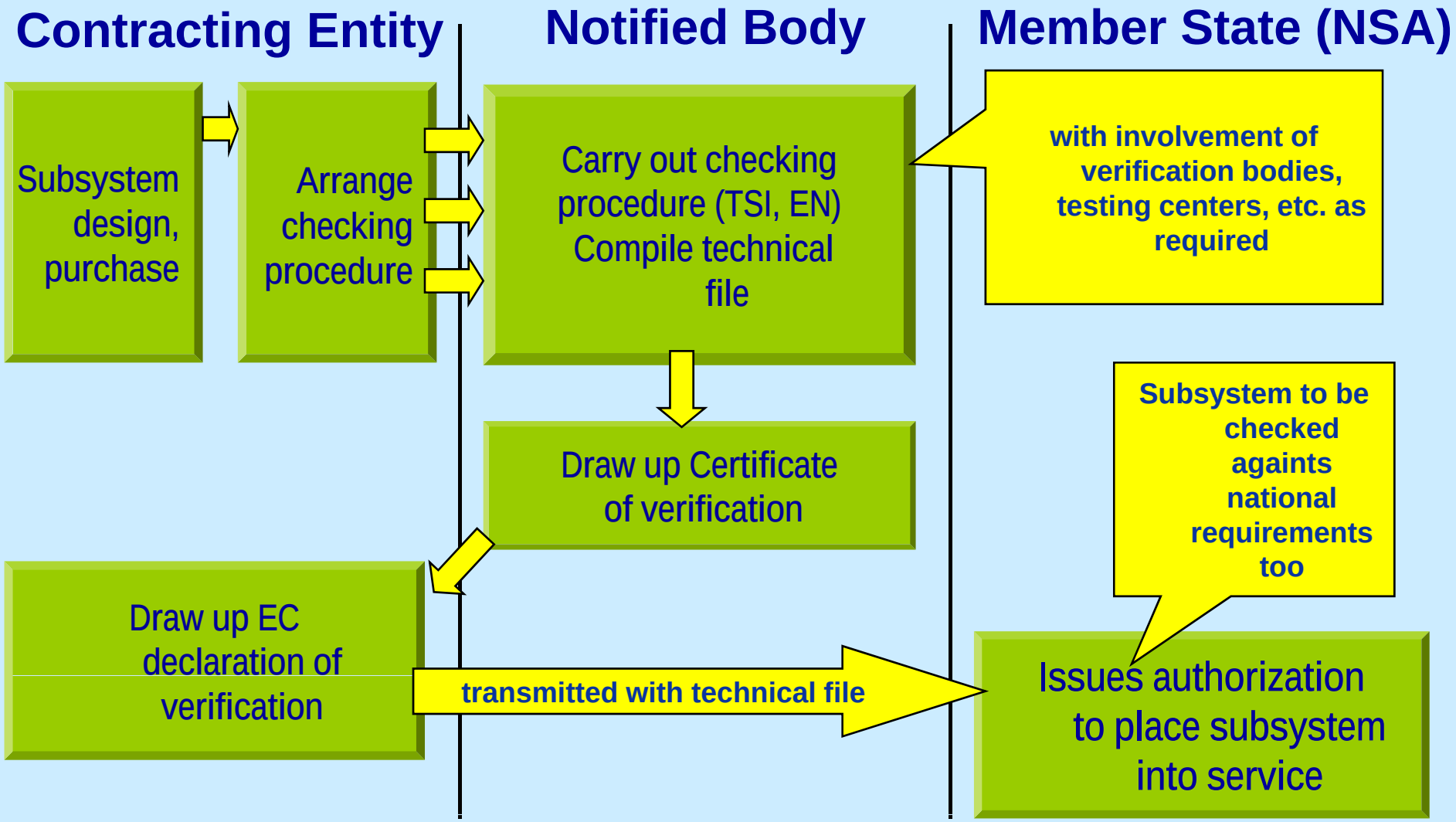
- Infrastructure
- Energy
- Control command & signalling
- Rolling stock
- Traffic operation & management

Operational

- Maintenance
- Telematics applications
  - for passengers
  - for freight

TSIs apply to one subsystem, but may also apply to a part of a subsystem, or to several subsystems
No one-to-one correspondence : see next slide

Subsystem verification process



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Safety

Safety : the stakes

- Railway safety is comparatively highest among all transportation means
- It evolved favourably in recent times
- Railway accidents are mostly level-crossing, i.e. road accidents, or involve « third parties »

So why take any steps ?

- Safety level is not uniform across Member States
- High fragmentation ➔ new risks
  - EU25 = about 320 railway undertakings on 23 national networks + local ones (… about 200 infrastructure managers)
- EU Legislation, to be complete, cannot stay at subsystem level

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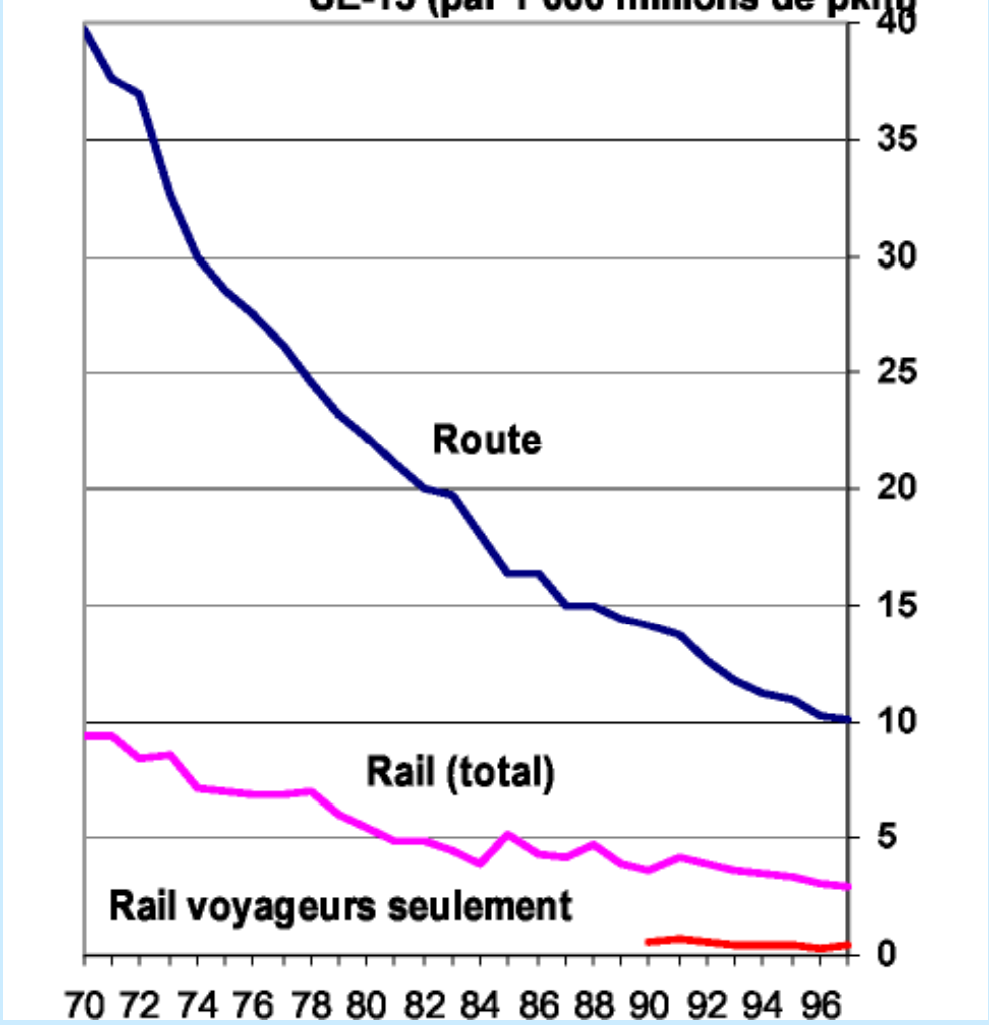
Safety : Rail vs. other modes

Graphique 3: Nombre de décès dans des accidents UE-15 (par 1 000 millions de pkm)



Mode of transport	Fatalities / billion p.km
Powered two-wheelers	44.8
Pedestrians	38.6
Bicycles	30.0
Passenger cars	**5.9**
Buses and coaches	**0.4**
Airline passengers	0.4
Railway passengers	**0.2**

Source : DG TREN 2001

Source : EUROSTAT Brief stats, 3/2002

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Rail accidents : types

- As of 2004, for EU25 (source : EUROSTAT)
  - 10 844 train accidents : 3 594 persons killed or seriously injured
  - Frequency (% of accidents, by cause)
    - 26 % : rolling stock in motion
    - 17 % : at level-crossings
    - 8.2 % : derailments
    - 7.6 : collisions
    - …
  - Gravity (% of killed or seriously injured, by cause)
    - 57 % : rolling stock in motion
    - 22 % : at level-crossings
    - 3.3 % : collisions
    - 2.3 % : derailments
    - …
  - Of the killed & seriously injured, 31% were passengers or employees
  - Of the 1 657 persons killed, 77 were passengers

Safety & Interoperability, a coherent whole

Subsystem Level

Rolling Stock, Track, Energy, Signaling, Operation

- Functional requirements
- Interface requirements

➔

- Interoperability Directives
- TSIs, Registers

« What »

System Level

RUs, IMs, National Safety Authorities EU Commission

- Allocation of responsibilities

➔

- Safety Directive
- CSTs, CSMs, CSIs

« How »

Tool = European Railway Agency

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ERTMS

ETCS – current version

Basis for significant investments*:

- **5% of ETCS-NET in operation (>2000 km)**
- **800+ RS in service**

*) Source: UIC

The accumulated return of experience is growing:

Clarifications, error corrections, design choices

Transparent, efficient CCM process.

ETCS –the next baseline

Tenfold increase in the next few years: 20000 km contracted or planned*

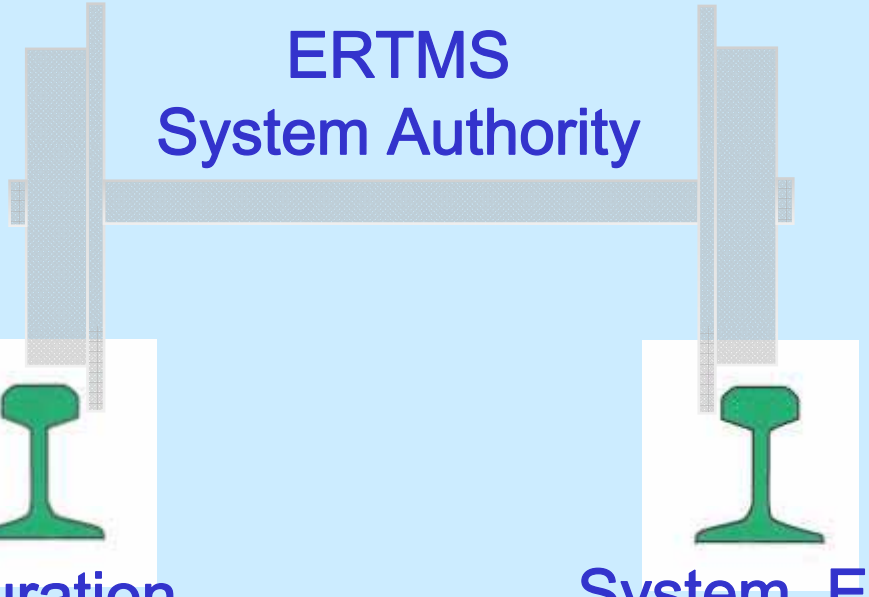
*) Source: UIC

ETCS on freight corridors

Increased functionality

Maintenance of current baseline and development of Baseline 3 with backwards compatibility

ERTMS -The role of the Agency



Configuration and Quality Control

- Repository of all specs
- Quality review
- Cross check
- Consistency
- Gap identification
- ……

System Evolution Change Management

- Baseline Planning
- System Version mgmt
- Backward compatibility
- EE analysis
- ……

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ERTMS – system evolution

Maintenance of the current specifications in parallel with development of the next version

Backward compatibility and system version management to protect investments

GSM-R 8/16 Development

GSM-R 8/16 Maintenance

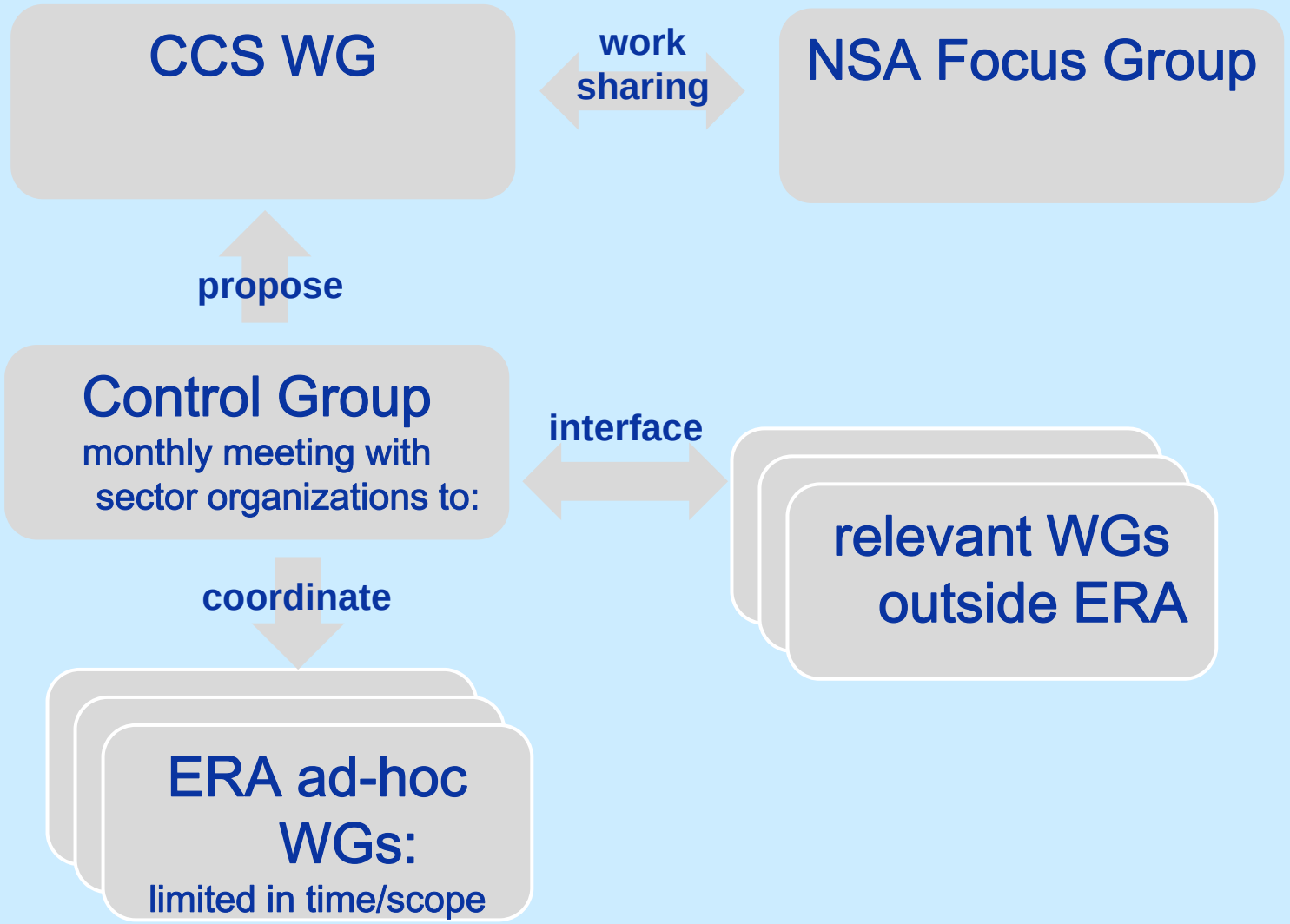
ETCS Baseline 3 Development

ETCS Baseline 3 Maintenance

GSM-R 7/15 Maintenance

ETCS 2.3.0 Maintenance

ERTMS ERA Working Groups



ETCS – maintenance of 2.3.0 version

14/1/2008 - ERA Recommendation to update ETCS specifications in Annex A of TSIs CCS, resulting in EC Decision 2008/386/EC, in force since 1/6/2008.

Work in progress (to finish by December 2008):

DMI specifications (interface with driver)

System test requirements

ERTMS Operational Rules (referenced in TSIs OPE)

ETCS – Baseline 3

September: solution for all functional change requests (with sector agreement when possible)

October: results from feasibility study for the formalisation of the specifications

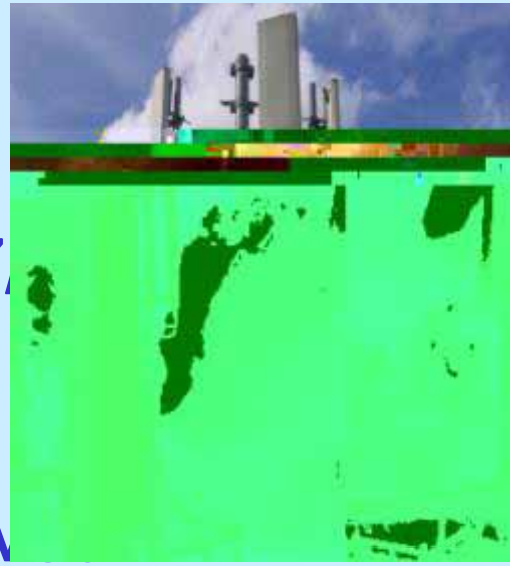
November: detailed planning for all baseline 3 activities: to be endorsed by sector in ERTMS MoU

December: first draft SRS 3.0.0, to be presented to MS in Interoperability and Safety Committee

2009/10: new WP on ERTMS testing; rest of ETCS specs

2011: validation and test; feedback

mid 2012 Recommendation for EC Decision



Maintenance of current baseline 7

-review of Optional Functions

-NSA ERTMS Focus Group involv

-close coordination with Cross Acceptence (NNTR)

Development of System Version Management for the next baseline 8/16

Kick off meeting of the WP on the 14/02/08

Review of the Open Points to organise further work for their resolution

Editorial review of the TSIs text

Chapter 7 (migration and implementation strategy) depending on DG-TREN plans

Cooperation with NSA ERTMS Focus Group

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Cross Acceptance

Vehicle Authorisation and Cross Acceptance

- **All** vehicle authorisation is covered by the new Interoperability Directive (adopted 14th May)
  - New and upgraded first authorisations
  - Vehicles for TENs and Non-TENs operation
  - Vehicles already authorised in another Member State

In the short-medium term vehicle authorisation will inevitably involve **a mixture of checks** against
- TSIs - a single European specification
- national rules – different for each country

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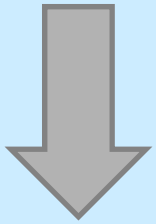
Cross – Acceptance is:-

- Mutual Recognition in respect of national rules
- Based on the principle of equivalence ie recognising that there is more than one way of meeting an essential requirement
  - Eg Recognising that a French fire extinguisher can meet the essential requirement of putting out a fire in other countries as well as France
- It relies upon
  - Mutual recognition of national rules
  - Mutual recognition of verification checks against rules
  - Mutual recognition of authorisations to place into service

The essence of Cross-Acceptance

- Cross-Acceptance requires confidence and trust

- Transparent, repeatable national rules
- Transparent, repeatable national checking process

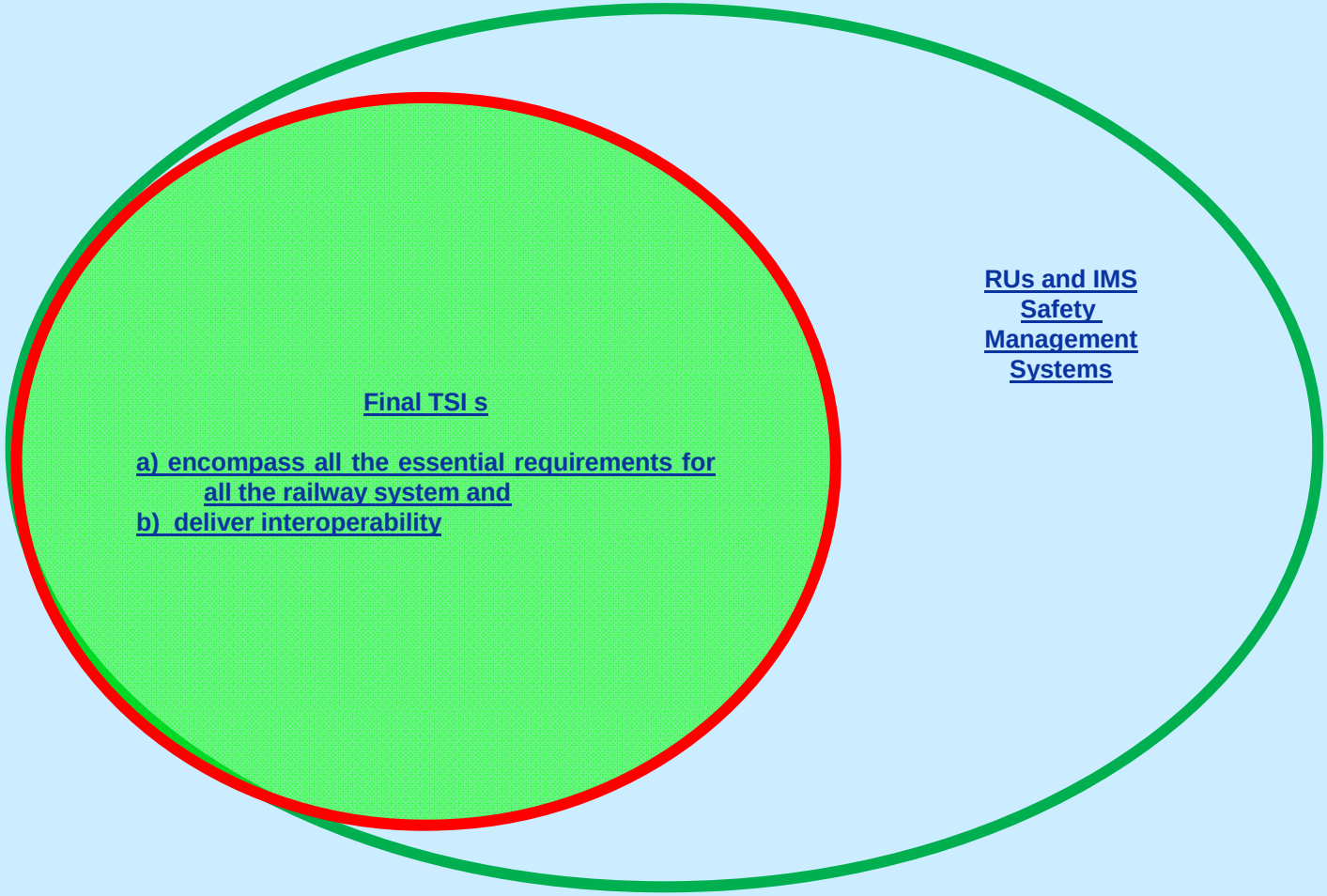


- Mutual recognition of
  - National rules (equivalence)
  - Checks
  - Member State Authorisations

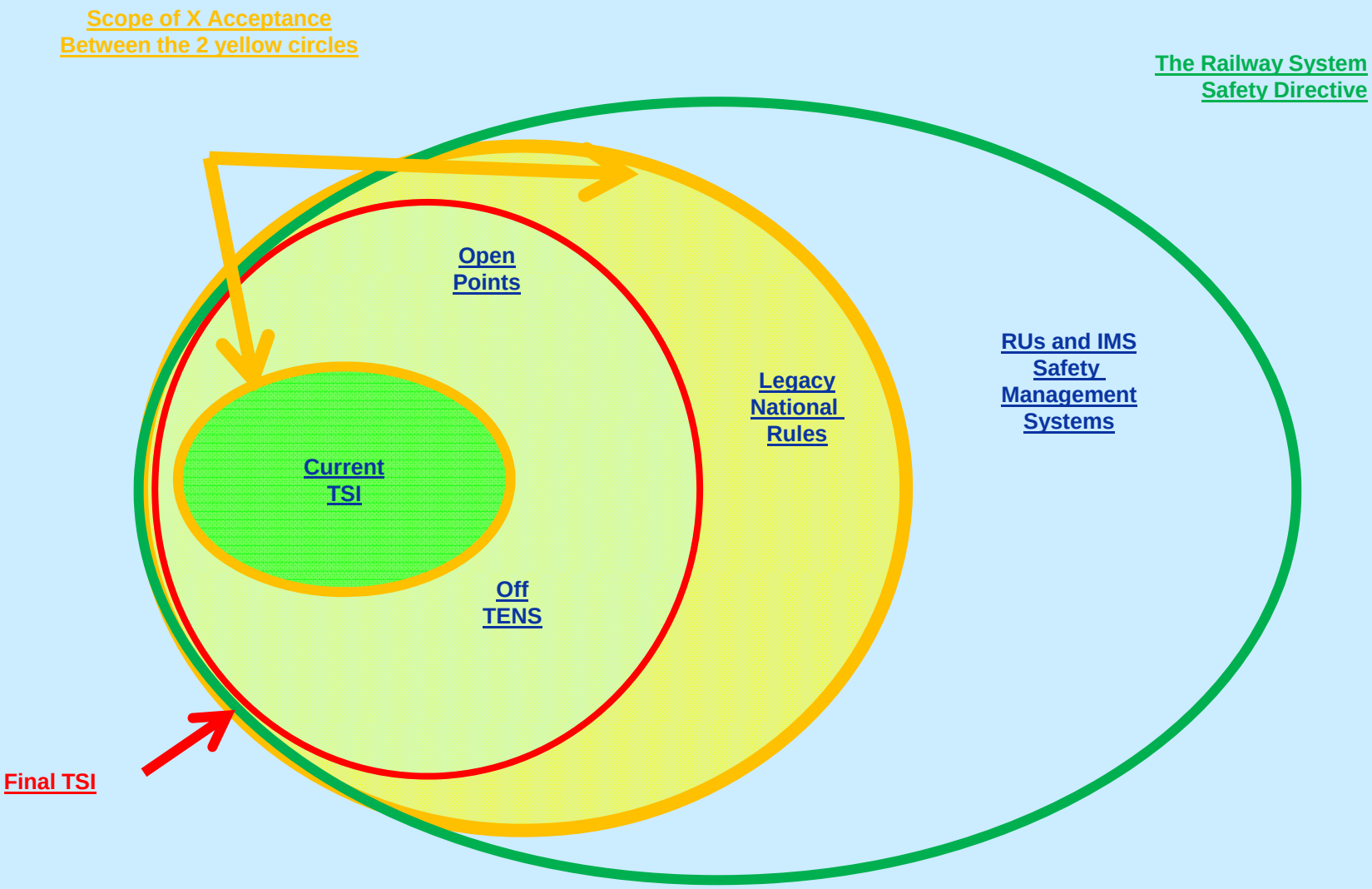
The far future – Completion of the Target System

The system complies with a complete set of complete TSIs

Safety Directive



Where does Cross Acceptance Fit?



Activities of the Unit

- Review the **parameters** to be complied with or checked to gain authorisation for placing into service
  - Compare with parameters to be checked required by TSI
  - Make a recommendation within 6 months

- Is there **equivalence** between the national rules about a parameter – Categorise
  - A = equivalent
  - C =no equivalence -network specific characteristic
  - B = not yet assessed

- Facilitate a common understanding of the required vehicle authorisation **process(es)**
  - Harmonisation of SA decision making
  - Common understanding of roles and responsibilities

More information ?

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