

#7 Influencing safety culture: how regulatory oversight can have a positive impact

Rail Safety Days – 03 November 2021

DRSI, CRR & ERA



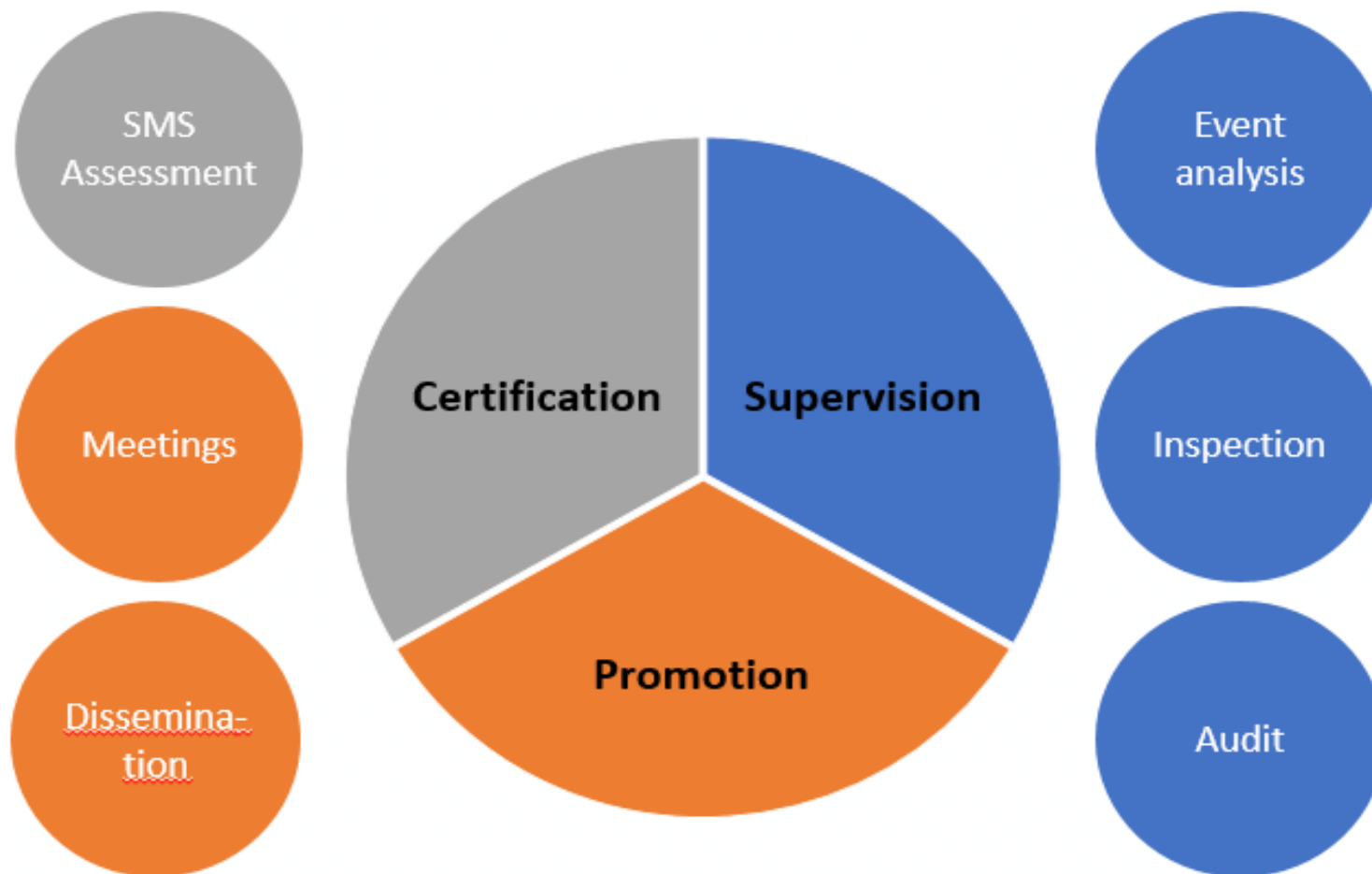
Kingdom of Belgium
*Department for Railway
Safety & Interoperability*



- Introduction
- Exercise in groups: questions on the model: 15 min.
- Strategies
 - Promotion based strategy
 - Regulation based strategies
 - Picture building strategy
- Closing

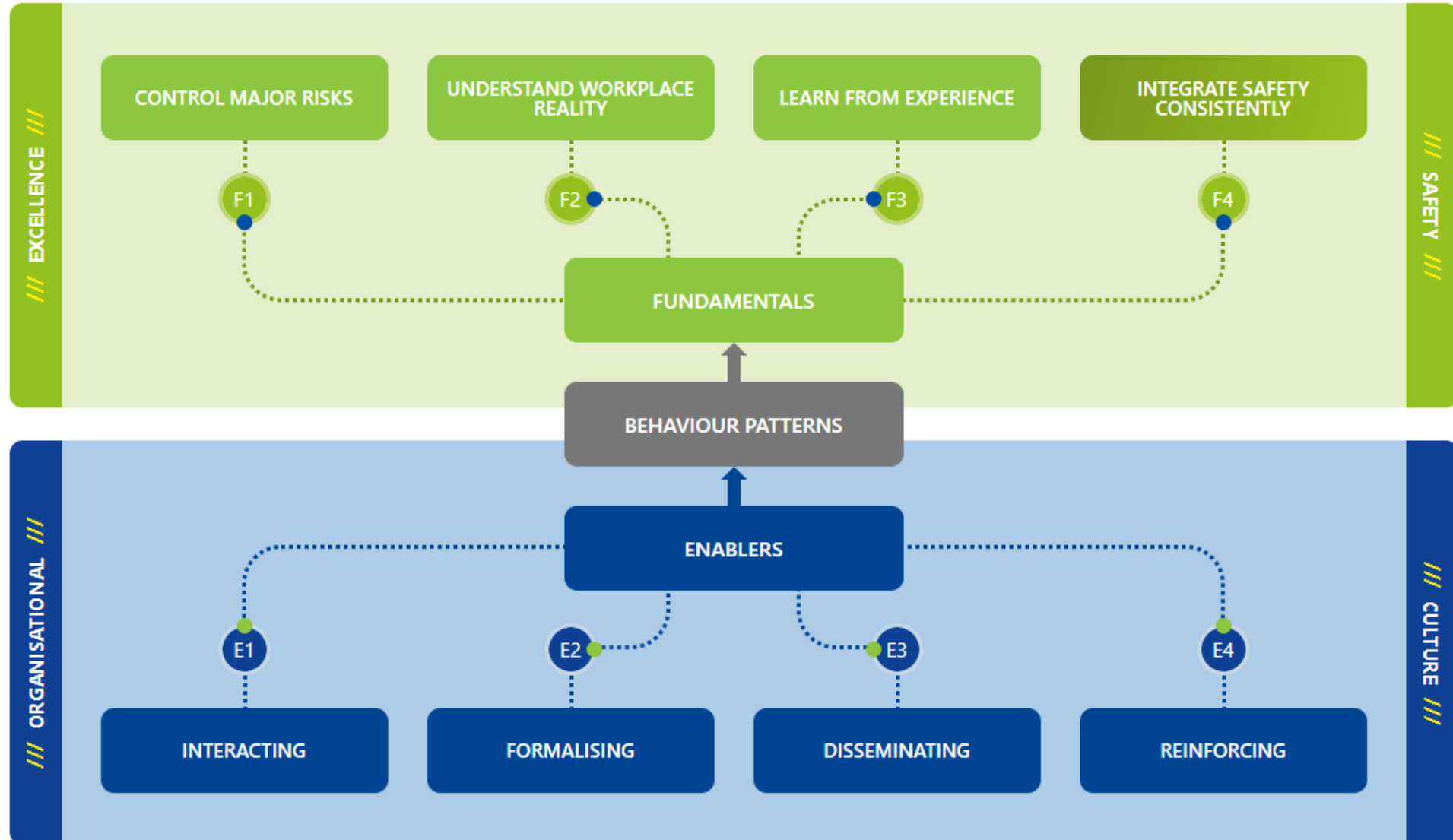
- Brief introduction participants

(How) Can a national safety authority influence the safety culture of a railway organisation?



Regulatory Oversight Activities

Exercise / Create questions looking at the fundamentals and enablers from the SC model



Exercise 15 min

Three Types of Strategies

5



**PROMOTION
BASED**



**REGULATION
BASED**



**PICTURE
BUILDING**

Influence railway safety culture by raising awareness of safety (culture) throughout the sector

Create a common understanding



→ DRSI promotes safety culture through :

1. a sectorial “railway safety concertation meeting” 2 times a year:

- What is discussed? → In general: issues and important aspects of safety
- Active contribution of the sector is crucial
- For difficult / complicated themes there are working groups organised
- Special exchange platform for the sector to share documents / information

We plan to improve the safety concertation meeting through

→ A further development of competencies of DRSI staff concerning safety (E.g. safety culture, integration of human factors in risk management, safety leadership, etc.)

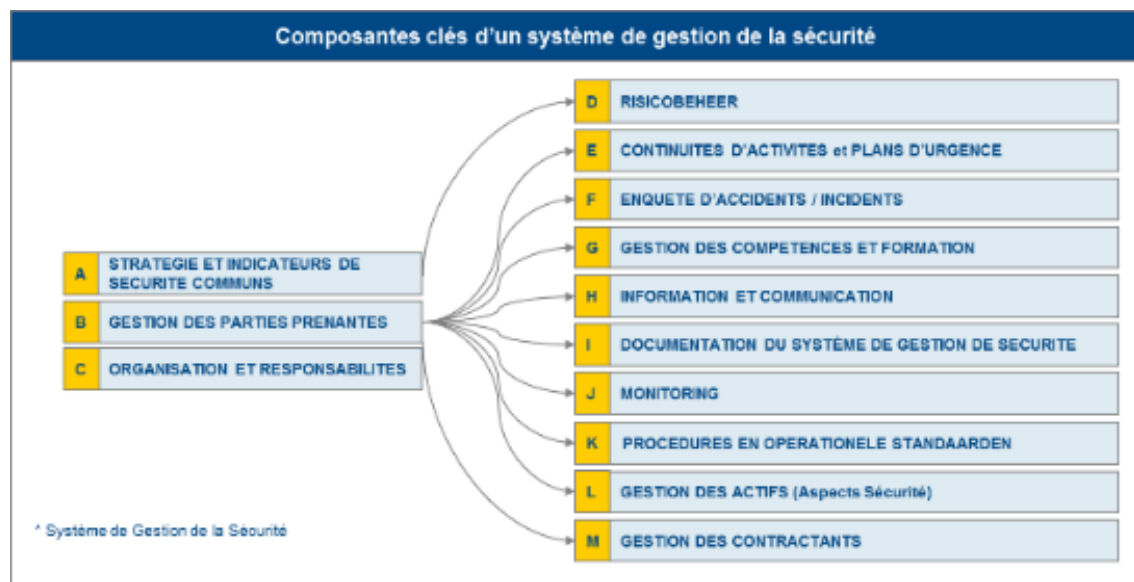
2. In the context of the reduction of NSR → Supporting the railway sector by the development of (non-binding) documents with “good practices”

Influence safety culture by performing assessments and inspections based on the current requirements on the safety management systems

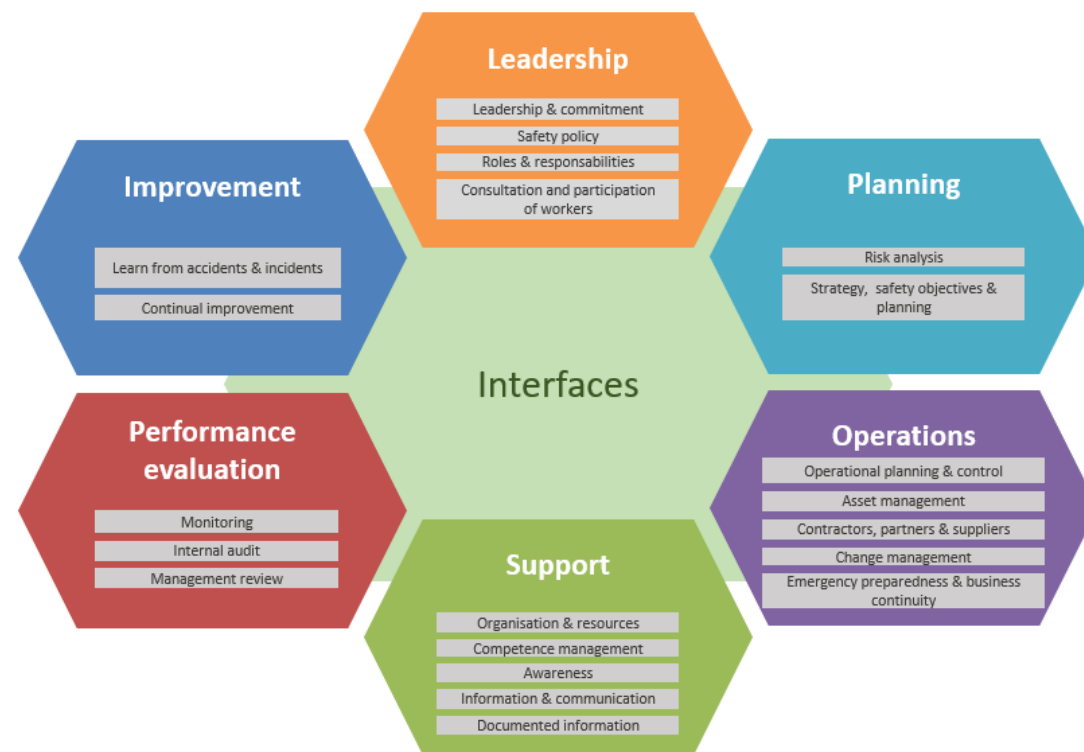
- CSM on SMS Safety Culture Specific Requirements
 - Safety Leadership
 - Safety Culture Strategy
- CSM on SMS Other Requirements
 - One Example: Competence Management System
 - Other Requirements
- Integrating Safety Culture Attributes into SMS Processes

We established a framework of “safety practices”:


Framework safety practices DSRI 1.0 – 13 components (2015)

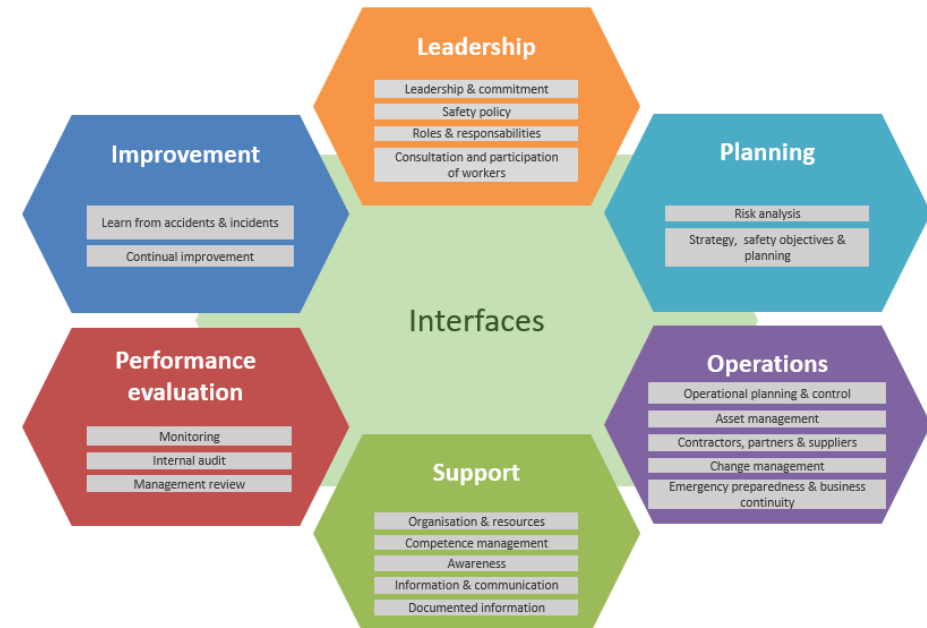
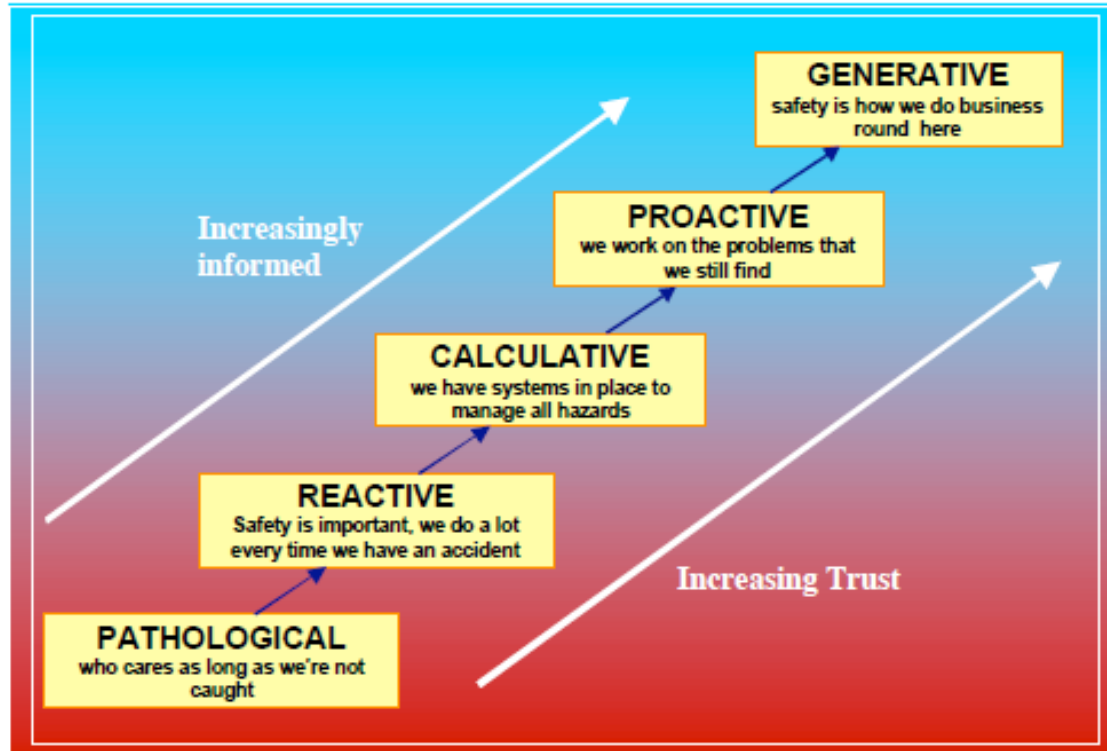


Framework safety practices DSRI 2.0 – 21 components & architecture ERA (2017)



How do we assess maturity through the framework of safety practices?


 486
 assessment
 criteria



Source: "The evolutionary model of Safety Culture" from professor P. Hudson's paper "Safety Management and Safety Culture The Long, Hard and Winding Road", 2003

→ CSM on SMS, annex I criteria 2.2.1 & 2.2.2

2.2.1 A document describing the organisation's safety policy is **established by the top management** and is:

- (a) appropriate to the organisation's type and extent of railway operations;
- (b) **approved by the organisation's chief executive** (or a representative(s) of the top-management);
- (c) actively implemented, communicated and made available to all staff.

2.2.2 The safety policy shall:

- (a) include a commitment to conform with all legal and other requirements related to safety;
- (b) provide a framework for setting safety objectives and evaluating the organisation's safety performance against these objectives;
- (c) include a commitment to **control safety risks** which arise both from its own activities and those caused by others;
- (d) include a commitment to continual improvement of the safety management system;
- (e) be maintained in **accordance with the business strategy and the evaluation of the safety performance** of the organisation.

management. It is promoted by the
highest hierarchical level / CEO.

performance similar to that of the best
organisations (e.g. image, customer
satisfaction, additional revenues, etc.). The
safety policy recognises that risk
management is an integral part of the
productivity and the profitability of the
organisation.



→ CSM on SMS, annex I criterium 2.1.1. (b)

Top management **shall demonstrate leadership** and commitment to the development, implementation, maintenance and continual improvement of the safety management system by: ...

(b) **ensuring commitment to safety** by management at different levels within the organisation through **their activities and in their relationships** with staff and contractors;

side.

Example:

“Safety show” – big meeting or a big number of individuals is invited, management emphasizes the importance of safety.

Examples:

“Safety walks” – performing runs in installations / sites / on board in the line of duty.

“Safety talks” – conversations / discussions about safety topics.

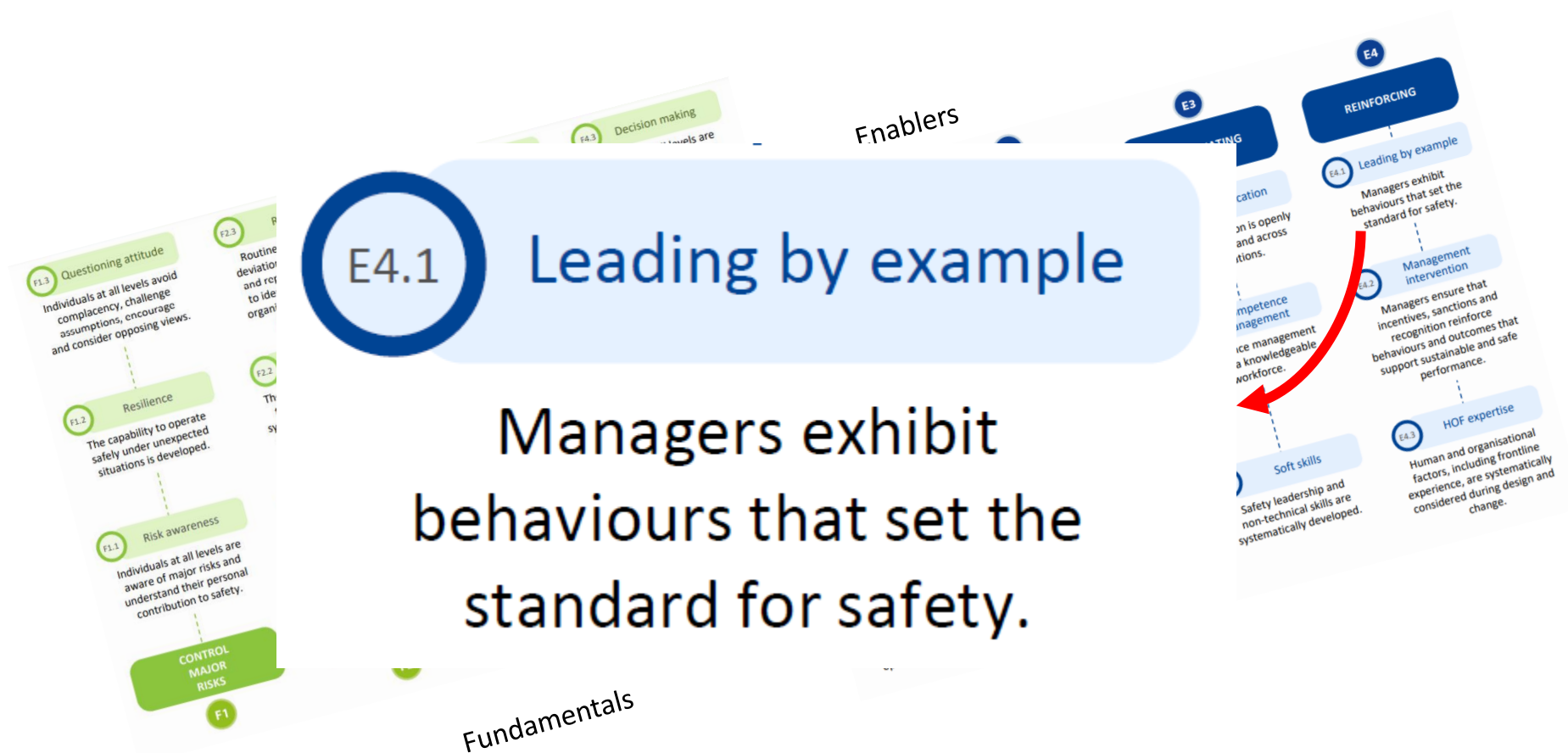
“Safety celebrations” – in case of a good safety performance.

have a clear understanding of the risk profile of the sector and “what good looks like” (leaders recognise the difference between a good and a bad situation). Leaders are committed to take personal actions.

Example:

Elements that can be listed in “Mini-review”:

- Safe behaviour, risk areas are under control;
- Dangerous behaviour or issues / risks are identified. Improvements are identified;
- Actions are taken on local level and by the management;
- ...



Maturity framework DRSI

Example for 1 “safety practice” component “P1 – Risk management”

→ CSM on SMS, annex I criterium 3.1.1.1 (a)

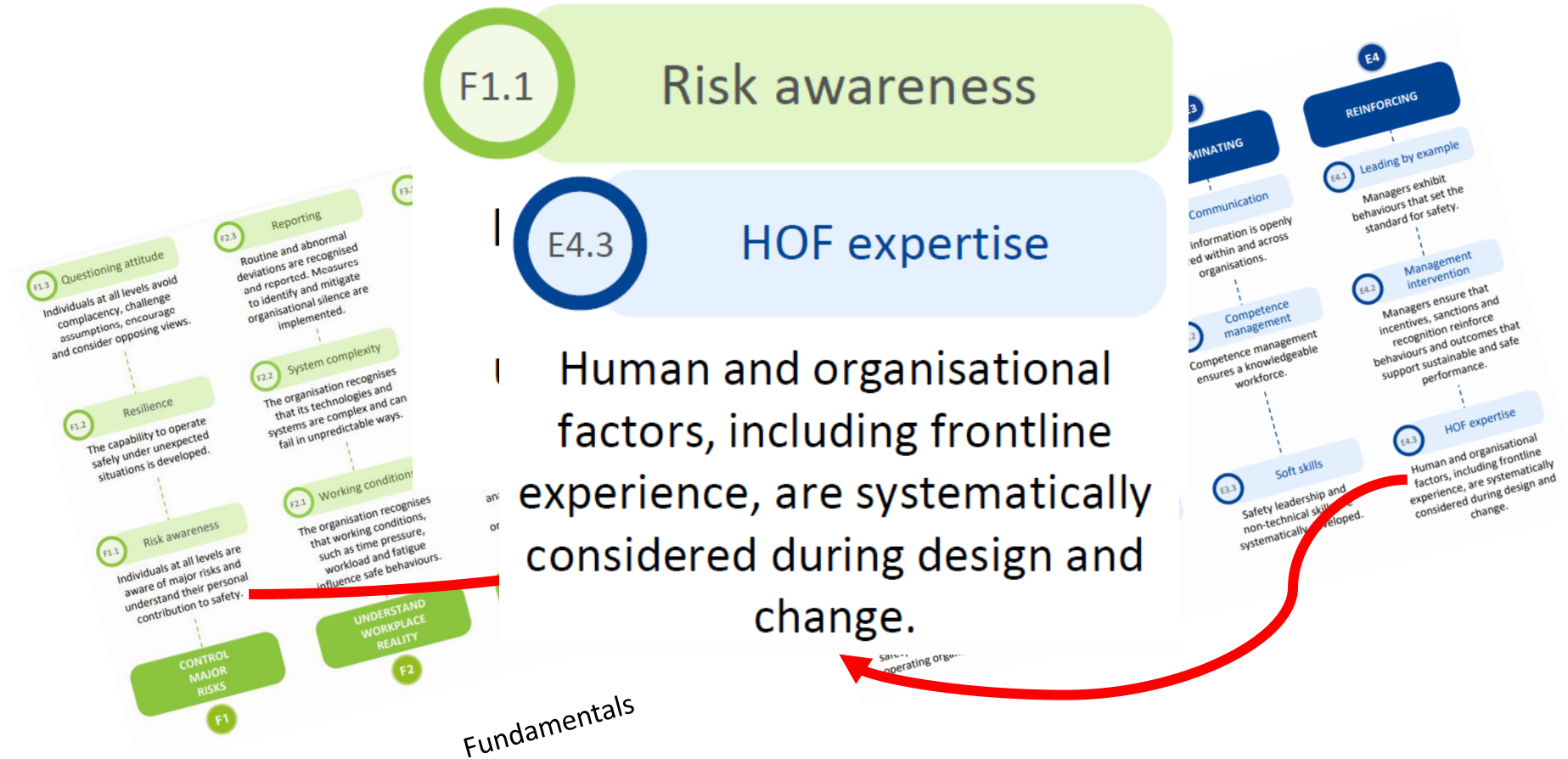
The organisation shall: (a) **identify and analyse all** operational, organisational and technical **risks** relevant to the type, extent and area of operations carried out by the organisation. Such risks shall include those arising from **human and organisational factors** such as workload, job design, fatigue or suitability of procedures, and the activities of other interested parties (see 1. Context of the organisation); (b) **evaluate the risks** referred to in point (a) **by applying appropriate risk assessment methods**;

→ CSM on SMS, annex I criterium 4.6.1 (b)

The organisation shall demonstrate a systematic approach to **integrating human and organisational factors within the safety management system. This approach shall:** (...)

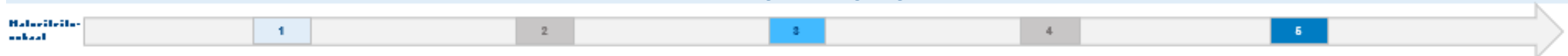
address risks associated with the design and use of equipment, tasks, working conditions and organisational arrangements, **taking into account human capabilities as well as limitations, and the influences on human performance.**

1	2	3	4	5
Basic safety practices		Common safety practices		Advanced safety practices
Hazards and risks are grouped in domains in a logical manner. Example: Operational risks, risks linked to infrastructure, external risks, interface risks, etc.)		Hazards and risks are grouped in a logical manner and compared to a list of generical hazards / risks so that missing hazards /risks are identified.		Structural method(s) to identify hazards to guarantee that new risks are not forgotten (HAZID, HAZOP,...) and specific methods concerning human factors (CREAM, ATHEANA, MERMOS, etc.) are used.

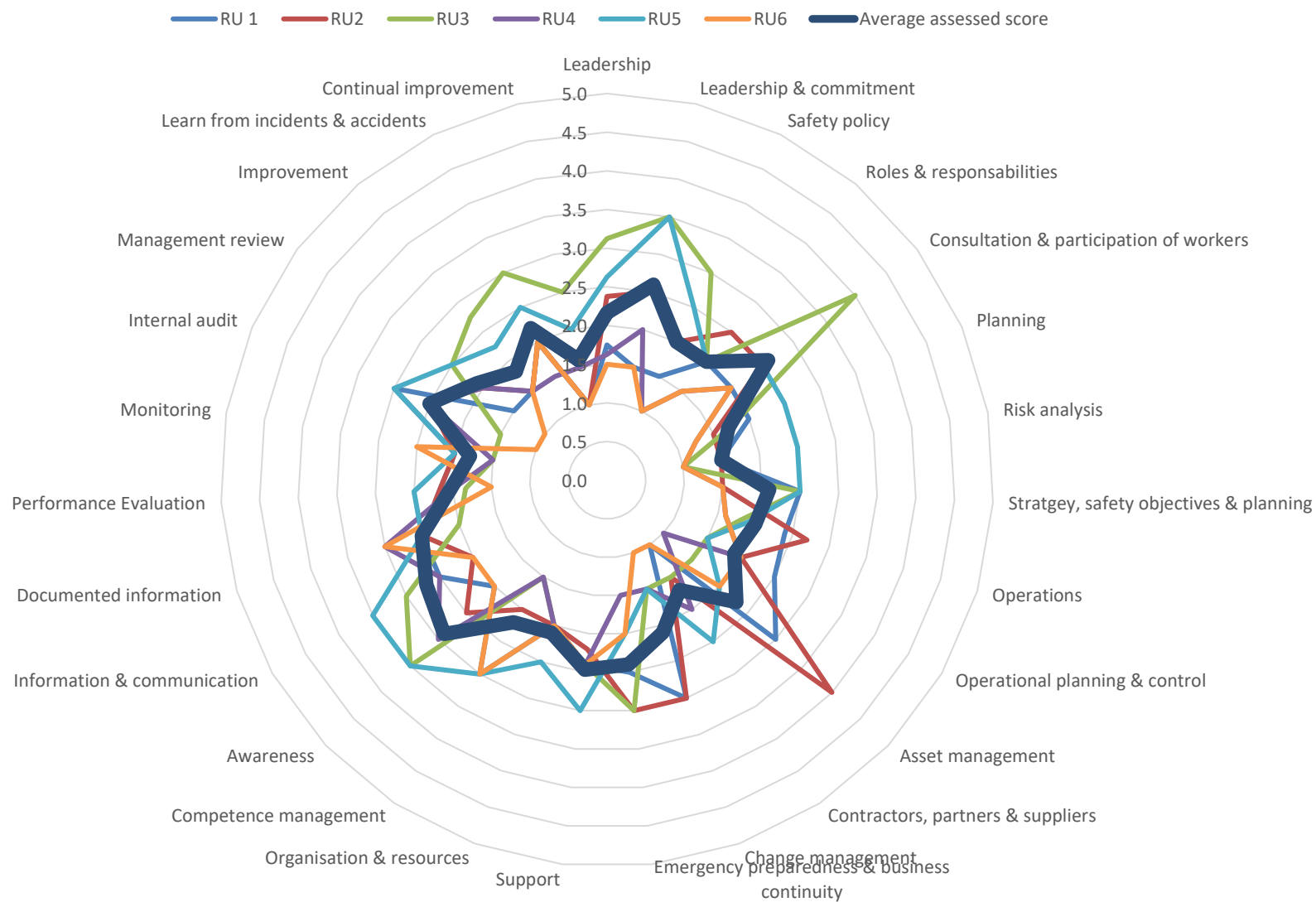


Maturity framework DRSI – example for component L2 Safety Policy

Nederlands

Leadership				Planning		Opérations					Support					Evalu
L1. Leadership et engagement	L2. Politique de sécurité	L3. Rôles et responsabilités	L4. Implication des collaborateurs & autres parties	P1. Analyse des risques	P2. Stratégie, objectifs de sécurité & planification	O1. Planification & Maitrise des opérations	O2. Gestion des actifs	O3. Contraintes, partenariats et fournisseurs	O4. Gestion du changement	O5. Gestion de crise & continuité	S1. Ressources	S2. Gestion des compétences	S3. Sensibilisation	S4. Information & communication	S5. Documentation de l'information	E1. Monitoring
Evaluatie van de veiligheidsbeheerpraktijken																
																
Basiselementen				Gevoelensgebonden praktijken					Geavanceerde praktijken							
Veiligheidsbeheer	Het veiligheidsbeleid wordt onderzocht door de hoogste autoriteit (CEO).			0+	Het veiligheidsbeleid bevat een ernstig engagement tot continue verbetering van risicobeheer. Ze wordt gepresenteerd door de hoogste hiërarchische autoriteit (CEO).					Partiële	Het veiligheidsbeleid wordt gebruikt om de organisatie aan te zetten een commerciële prestatie te bereiken die gelijkwaardig is aan die van de beste organisaties (bijvoorbeeld: image, tevredenheid van de klant, bijkomende inkomsten). Uit het veiligheidsbeleid blijkt dat het risicobeheer integraal deel uitmaakt van de productiviteit en de winstgevendheid van de organisatie.					Partiële
	De consultatie in het kader van het ontwerp van het beleid beperkt zich tot het personeel van het veiligheidsdepartement			0+	Het veiligheidsbeleid is het resultaat van de betrokkenheid van meerdere topmanagers van de onderneming					Nee	De werknemers (daarheen de hele hiërarchische lijn) werken actief samen aan de realisatie en het herzien van het veiligheidsbeleid en haar concretisering					Nee
	De medewerkers zijn zich bewust van het bestaan van een veiligheidsbeleid dat up-to-date gehouden wordt.			0+	De medewerkers kennen en begrijpen het veiligheidsbeleid. Hun interpretatie van het beleid is globaal genomen coherent in de verschillende lagen van de organisatie					Partiële	De medewerkers begrijpen de gevolgen van het veiligheidsbeleid en handelen daaraan overeenkomstig					Partiële
	De veiligheidsbeleidverklaring is een algemeen document waarbij het niet duidelijk is dat het over een SO gaat. De veiligheidsbeleidverklaring is al jaren dezelfde.			0+	Uit de beschrijving van de missie/visie/algemene richting blijkt duidelijk dat het om een SO gaat. De veiligheidsbeleidverklaring geeft een beeld van de activiteiten die de SO uitaant en wordt aangepast aan veranderende situaties. Ze wordt gecommuniceerd (vb. ieder jaar wordt de nieuwe veiligheidsbeleidverklaring uitgesproken en ieder personeelslid krijgt een nieuwe exemplaar (elektronisch of fysiek)), aan het personeel en is geïntegreerd in het aantal van nieuwe medewerkers.					Nee	De veiligheidsbeleidverklaring onderstreept het belang van risicobeheer en bevat een engagement tot continue verbetering. Ze wordt aangepast op basis van de resultaten van de risicoanalyse en de monitoring van het verleden.					Nee
MATURITE DE LA COMPOSANTE															2.5	

Hypothetical assessment based on system audits "safety practices"

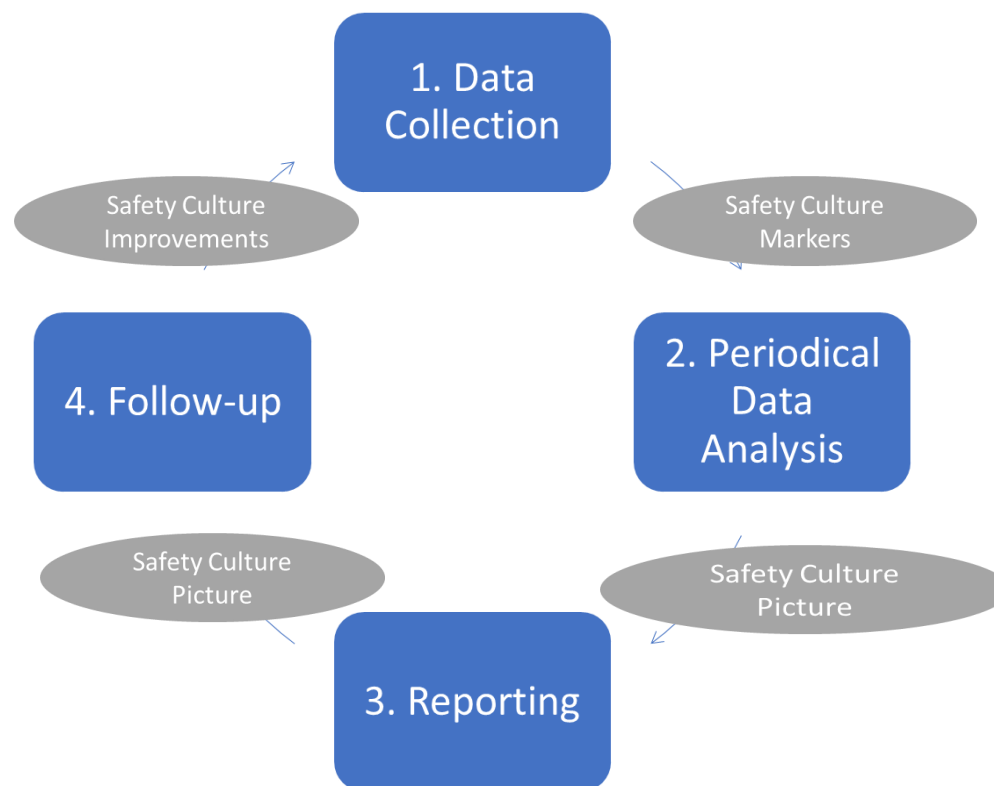


To guarantee a successful outcome of an audit “safety practices” :

- Well trained auditors
- Rigorous application of audit methodology supports the expert’s judgement
- ...

Influence railway safety culture by developing an understanding of the safety culture of the railway organisations

- Safety Culture Oversight Process



Safety Culture Picture

for Railway Organisation X

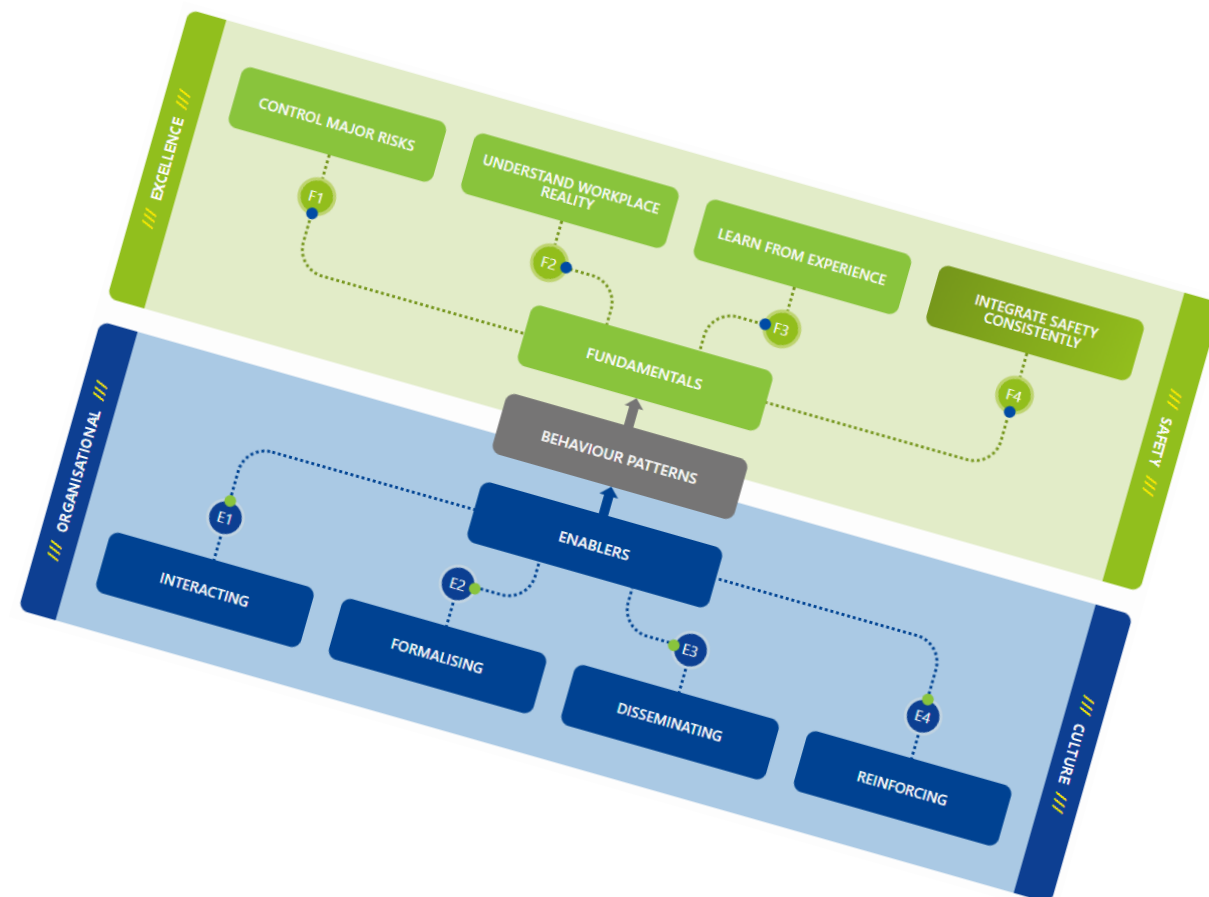


NSA IE Supervision - What we do:

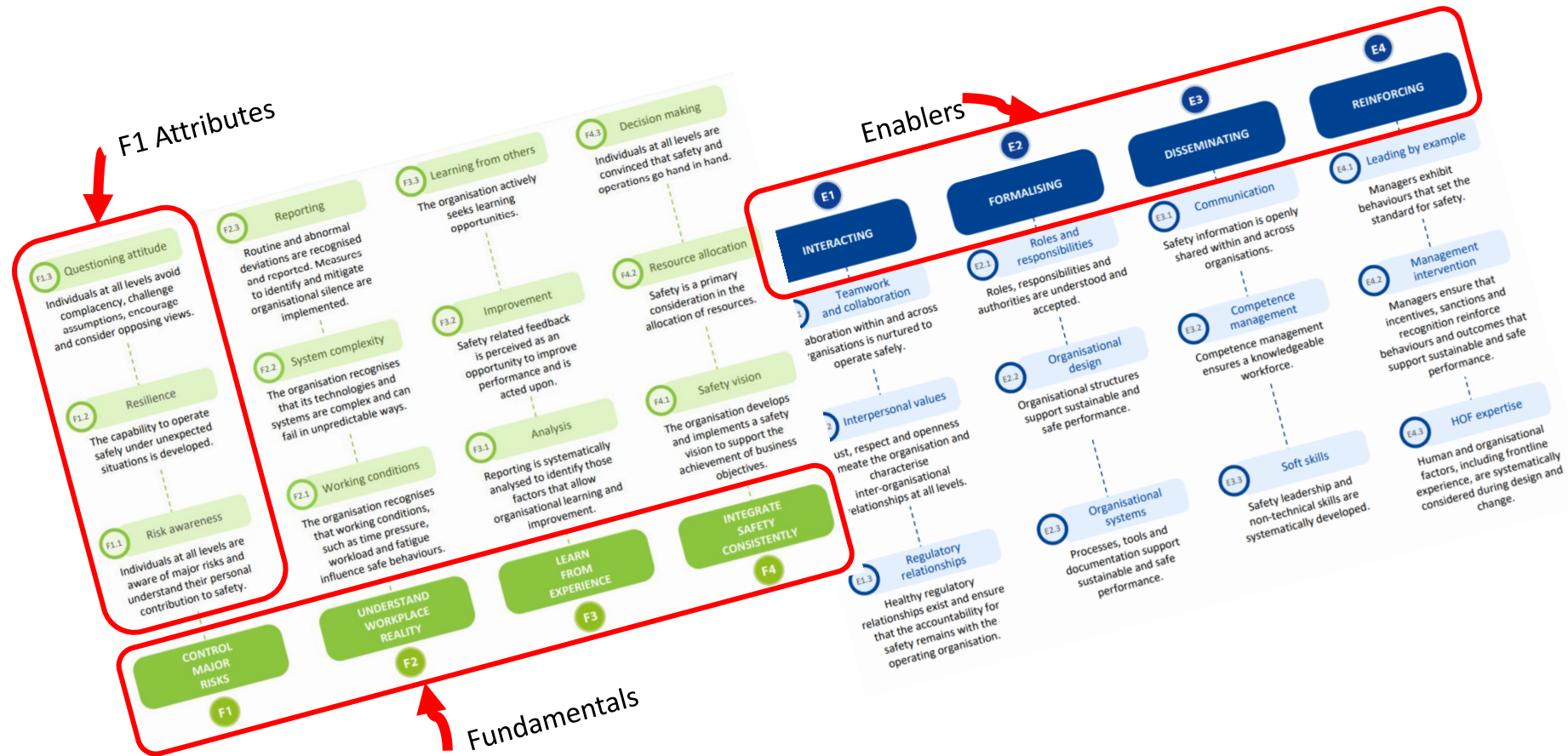


- A. Audits
 - i. SMS, Process, Specific Topic Audits
- B. Inspections
 - i. Sample asset inspection –
 - ii. Process / procedural inspections
- C. Meetings
 - i. SPRMs with Railway Organisation Executives
- D. Reactive Supervision (Inspections)
 - i. Post Occurrence Inspections
 - ii. Public or other representations (complaints)

- After each supervision activity (*or other activity where an observation is made by an inspector on Safety Culture*)
 - Review the ERA Safety Culture model and identify which attributes observations were made on
 - Navigate to the attribute in this file (you can use the hyperlinks on next slide for efficiency – just click the attribute text) and complete the details
 - Save any supporting evidence (e.g. photos, documents) in the ‘Supporting Evidence’ folder including the supervision activity number in the file names
- Monthly review by Head of Supervision with Inspector(s)
- Team to review quarterly in a supervision meeting
- Notes in this file will be analysed and collated at year end to produce a short report for the Railway Organisation



Fundamentals, Enablers and their attributes



Fundamental 1: Control Major Risks

F1.1: Risk Awareness (individuals at all levels are aware of major risks....)

• Positive markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
	A member of staff noticed a woman in a distressed state at station X and intervened to prevent an occurrence of self harm.	AL
	Staff at Station Y have been 'doubling up' with two Platform Staff on the platform during the rush hour, since the construction work commenced (Station platform is narrower than normal).	HI
33/21-1	Good cooperation between Department X and Y at Station Z station during the roof works. Actively managing and chasing up risks identified (e.g. additional lighting under temporary roof structure, monitoring diesel train emissions).	JK

• Negative markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
NA	Not standing in a position of safety when using a mobile phone (see photo). At Location X on a curve - a train passed on the adjacent track 20 seconds afterwards. (9/02/21)	TB
86/21-POA	Dangerous occurrence involving rail staff / Near Misses due to distraction	AB

F1.2: Resilience (capability to operate safely in unexpected conditions)

• Positive markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
35/21-1	Covid guidelines in place are being monitored and appear effective.	LM

• Negative markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
89/18-PII	The investigation report (led by RO-1 with RO-2 input) did not initially identify any contributory factors or root causes to the possession irregularity/SPAD incident. The investigators were aware of some, but had not documented them (although were taking some actions).	NB

F1.3: Questioning Attitude (individuals at all levels question / challenge assumptions)

• Positive markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
123/21-I	A Gatekeeper knew that he had to know the emergency procedure very well and understood that the likelihood of using was very low.	EF

• Negative markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
106/21-POA	Some observations from the NIB (ref: asset failure 2020) and this inspection activity demonstrated that Department X personnel have not fully evaluated (or considered) the safety related consequences of their actions when making engineering changes	ES
General	Internal investigation reports regularly point to human error and violations rather than questions why this was the case.	GH

F2: Understand Workplace Reality

F2.1: Working Conditions (the organisation recognises that working conditions influence safe behaviour's)

- Positive markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
CC Study	Measuring human error failings at the Control Centre but not yet normalising data. Would add benefit	TB

- Negative markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
General	Rosters and fatigue not routinely reviewed following accident/incidents	DP
CC Study	It is not evidence that the RO understands the limits of human performance	SoD

F2.2: System Complexity (people understand that systems can be complex)

• Positive markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
66/19-1	A gatekeeper noticed a vehicle RRV on the track that was not on the gatekeeper's timetable, and reported it to the signalman to inform him.	SoD
66/19-1	Gatekeepers are very aware that the environmental temperature conditions affect the performance of their equipment and may need adjustments to be made.	SoD

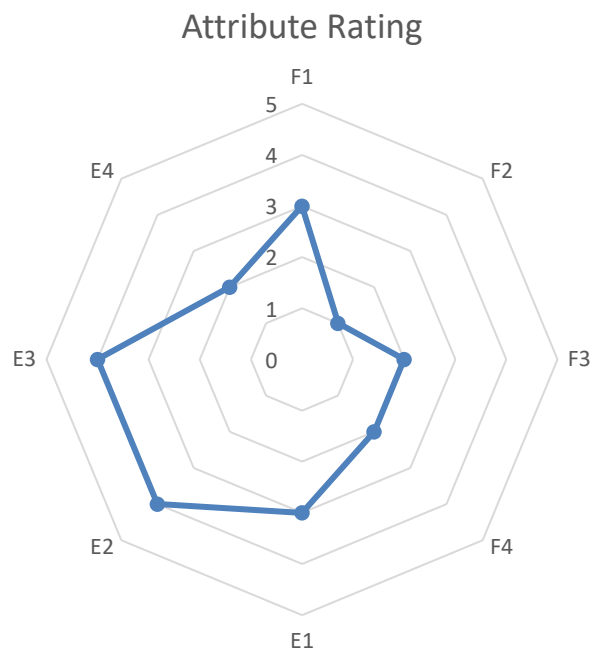
• Negative markers

Supervision Activity No.	Marker/Indicator/Observation	Inspector
	Change Management. Department X have made several changes to their own systems without giving the necessary consideration to how it affects the wider system. Similarly their risk register does not encapsulate the real risk presented to the Network from their systems.	ES



- At the end of the period (annual, life cycle) all findings will be reviewed and on the basis of a collective discussion and opinion we will rate the railway organisations performance in terms of safety culture. *(Note: we are still developing this!!)*
- CRR propose to use the following sliding scale based on the ERA Management Maturity Model scale

Level	ERA Scale	CRR Scale	CRR Definition
Level 1	Inadequate	Ad Hoc	performance against the characteristics of an HRO were evident in isolated or temporary instances only
Level 2	Coping	Initializing	the organisation shows elements of performing as an HRO. These are greater than ad hoc in nature and have the potential to be organisation wide, but are likely to be at an early stage of definition or have only recently been adopted.
Level 3	Consistent	Implementing	the organisation is adopting or has recently adopted HRO characteristics systematically across all activities.
Level 4	Anticipating	Managing	the organisation has sustained performance as an HRO across all activities.
Level 5	Excellence	Improving	the organisation has sustained performance as an HRO across all activities and demonstrates continual improvement in all activities.



Fundamental / Enabler	Attribute	Result
control major risks	F1	Implementing
understand workplace reality	F2	Ad Hoc
learn from experience	F3	Initializing
integrate safety consistently	F4	Initializing
Interacting	E1	Implementing
Formalising	E2	Managing
Disseminating	E3	Managing
Reinforcing	E4	Initializing

Our report includes all supporting tables by way of background with a short executive summary containing some overarching remarks on areas for management attention.

- **How can a national safety authority influence the safety culture of a railway organisation?**

- ⇒ NSA are influencing the development of Safety Culture in the sector in any case
- ⇒ If you are aware of this, you can influence in an active way
- ⇒ Different strategies are available for this objective
- ⇒ Strategy of your choice depends on the company you are working with
- ⇒ Can integrate this activity in supervision activities

Key: harmonization within NSA and amongst NSAs on approach and framework etc. (Maturity will rise)



End: thank you for participating

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- https://www.era.europa.eu/activities/safety-culture_en
- Safety leadership training
- Regulatory oversight of Safety Culture training
- Safety culture toolbox
- ...