WEBINAR

RAILWAY SAFETY

6TH JULY 2022

9 am Morocco Time / 4 pm Phillipines Time

Microsoft Teams

Thank you for waiting !

The webinar will start in

00:00:02

IFF

PHILIPPINE RAILWAYS INSTITUTE

SNCF

ONCF

Opening

Christophe MARTIN
General Manager
IFF

PROGRAM

Opening and presentation of IFF (10 min)

Christophe MARTIN, General Manager - IFF (Morocco)

Safety management fundamentals (20 min)

Marc FALCHI -Safety Management System Trainer - IFF (Morocco)

Safety management system set up by ONCF, Moroccan National Railways Office (5 min)

Meryem BERRAK - Chief of the Regulatory Department - ONCF (Morocco)

Q&A session (10 min)

Implementing a safety culture : Example of SNCF, French National Railways (20 min)

Guillaume FOEILLET - Safety Project Manager - SNCF (France)

Deploying the safety management system in Rail traffic : Example of ONCF (5 min)

Taha GOUNAYA - Traffic Inspection Supervisor - ONCF (Morocco)

Q&A session (10 min)

Concluding words and closure (10 min)

Karim Eddine CHENNOUF, President of the Management Board -IFF (Morocco)

Section 1

Safety management fundamentals

Marc FALCHI
Safety Management System Trainer
IFF (Morocco)

SMS : a world standard

The requirement for businesses to have in place arrangements to manage safety within their organisations is not a new concept

It has been enshrined in various forms of legislation and regulations for many years and through industry specific documents and academic papers

Some involved industries: mining, chemical, gas, oil, aviation, nuclear, space, rail

Creating législation/régulation UK example (1965 – 2011)

1965
The Nuclear Installations Act 1965. This required the first set of formalised safety arrangements to be developed by organisations in order to gain a licence to operate.

1971
The first UK wide standard for quality assurance in the electronics industry BS 9000, was produced by the British Standards Institute.

1976
A chemical release incident occurred near Seveso, Italy. It was a major hazardous event affecting thousands, but which led to development of the European Seveso Directive.

1979
The UK agreed British Standard document BS 5750, an assurance standard that would be available across all industries.

1984
The European Seveso Directive was implemented in UK law by the Control of Industrial Major Accident Hazards (CIMAH) regulations in 1984, which created the need for chemical operators to have a Safety Case.

1987
BS 5750 was developed into the international standard ISO 9000:1987. Its aim was to influence the management of organisations to meet a certain standard of quality in their products.

1991
Piper Alpha offshore oil installation disaster occurred in the North Sea, leaving 167 people dead.

1991
Concept of TQM was combined with safety to form HS(G)65 Successful Health and Safety Management.

1992
The Management of Health and Safety at Work Regulations (MHSWR, 1992).

1994
Railway (Safety Case) Regulations (RSCR) required transport operators to have a Safety Case. Within the Safety Case actions were required in pursuance of Regulation 5 of the MHSWR.

1996
BS8800 developed as a British Standard to help implement and manage an SMS.

2000
RSCR guidance highlighted that operators should hold a Health and Safety Management System highlighting the benefits of TQM and HS(G)65.

2006
ROGS replaced the RSC with the Safety Management System and brought it to the forefront of an organisation's effort to manage safety.

2011
Five year anniversary of the introduction of ROGS and start of the safety recertification process for duty holders

SMS and TQM (Total Quality Management)

There are many aspects of TQM that we would recognise in today's SMS including:

- **Senior management leadership and commitment**
- **Continuous improvement**
- **Plan - Do - Check – Act (Deming wheel)**
- **Worker participation**
- **A TQM culture (many similarities to a safety culture)**

SMS : a rail standard

- **Safety Management Systems exist in many American transport companies**
- **In the European Union, implementing a SMS is mandatory for companies (directive 2016/798 of the European Parliament and of the Council of 11 May 2016, recasting Directive 2004/49/EC)**
- **Morocco (ONCF) has implemented a SMS in 2013, on a voluntary basis**
- **European companies working overseas has implemented the European framework outside Europe**

The European directive (2016/798)

It lays down provisions to ensure the development and improvement of the safety of the Union rail system and improved access to the market for rail transport services by:

- **harmonising the regulatory structure in the Member States**
- **defining responsibilities between the actors in the Union rail system**
- **developing common safety targets (CSTs) and common safety methods (CSMs) with a view to gradually removing the need for national rules**

The European directive (2016/798)

It lays down provisions to ensure the development and improvement of the safety of the Union rail system and improved access to the market for rail transport services by:

- **setting out the principles for issuing, renewing, amending and restricting or revoking safety certificates and authorisations**

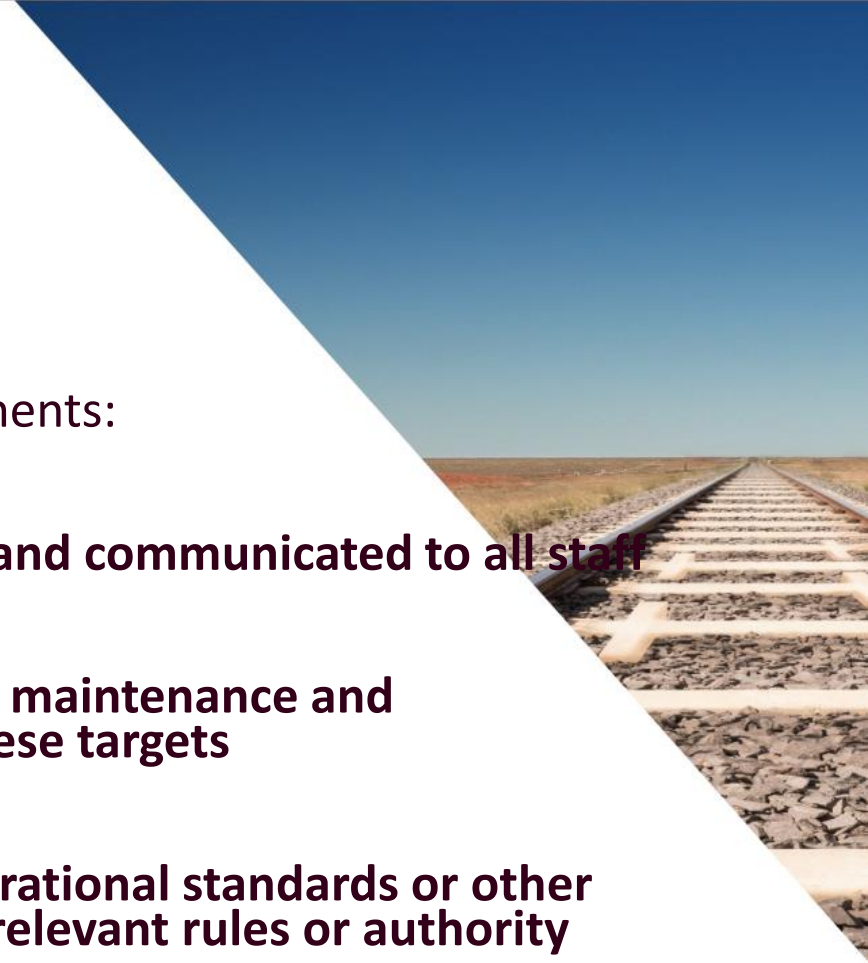
- **requiring the establishment, for each Member State, of a national safety authority and an accident and incident investigating body; and**

- **defining common principles for the management, regulation and supervision of railway safety**

The European directive (2016/798)

- 'safety management system' means the organisation, arrangements and procedures established by an infrastructure manager or a railway undertaking to ensure the safe management of its operations
- The safety management system shall be documented in all relevant parts and shall in particular describe the distribution of responsibilities within the organisation
- It shall show how control is ensured by the management on different levels, how staff and their representatives on all levels are involved and how continuous improvement of the safety management system is ensured
- There shall be a clear commitment to consistently apply human factors knowledge and methods
- Companies shall promote a culture of mutual trust, confidence and learning in which staff are encouraged to contribute to the development of safety while ensuring confidentiality

The European directive (2016/798)



The safety management system shall contain the following basic elements:

- **(a) a safety policy approved by the organisation's chief executive and communicated to all staff**
- **(b) qualitative and quantitative targets of the organisation for the maintenance and enhancement of safety, and plans and procedures for reaching these targets**
- **(c) procedures to met existing, new and altered technical and operational standards or other prescriptive conditions as laid down in TSIs, national rules, other relevant rules or authority decisions**
- **(d) procedures to assure compliance with the standards and other prescriptive conditions throughout the life cycle of equipment and operations**

The European directive (2016/798)

The safety management system shall contain the following basic elements:

- **(e) procedures and methods for identifying risks, carrying out risk evaluation and implementing risk-control measures whenever a change of operating conditions or the introduction of new material imposes new risks**

- **(f) the provision of programmes for the training of staff and systems to ensure that the staffs competence is maintained and that tasks are carried out accordingly, including arrangements with regard to physical and psychological fitness**

- **(g) arrangements for the provision of sufficient information within the organisation and, where appropriate, between organisations of the railway system**

The European directive (2016/798)

The safety management system shall contain the following basic elements:

- **(h) procedures and formats for the documentation of safety information and designation of procedure for the configuration control of vital safety information**
- **(i) procedures to ensure that accidents, incidents, near misses and other dangerous occurrences are reported, investigated and analysed and that necessary preventive mesures are taken**
- **(j)the provision of actions plans, alerts and information in the event of an emergency, agreed upon with the appropriate public authorities; and**
- **(k) provisions for recurrent internal auditing of the safety management system**

SMS, not so easy, effective

- **Although the basic structures of an SMS are clear, the organisational environment and relationships that affect its use and practice can be complex**

- **Furthermore, SMSs can be overly complicated and their effectiveness compromised by high levels of bureaucracy, a ‘compliance-centred’ approach, or a lack of purpose**

- **Major accidents in many different industries around the world have occurred where SMSs existed but were ineffective**

SMS, some key points (RSSB, SMS Principles, moving beyond compliance)

- **Defining the system**
  - Parts that work together to accomplish a shared aim (Deming, 2000)
  - Must have a clear purpose and also a defined system boundary to establish what should and should not be included within it

SMS, some key points (RSSB, SMS Principles, moving beyond compliance)

- **Establishing a purpose**
  - The purpose sets out what the employees aim towards
  - It allows them to understand what they contribute to and clearly asks them to invest in the idea
  - It allows management to show leadership and direction
  - It is only through conscious effort that the relationships between SMS activities will be clearly understood and therefore open to optimisation
  - It should generate cooperation between functional interfaces to meet the overall purpose
  - It promotes the development of a positive organisational culture

SMS, some key points

An under-performing SMS with an ill-defined purpose is more likely when the organisation is:

- **Only attempting to meet basic legal requirements**
- **Unthinkingly following the SMS of other organisations**
- **Repackaging versions of previous / existing systems**
- **Focusing purely on producing comprehensive standards and procedures, resulting in a compliance culture**

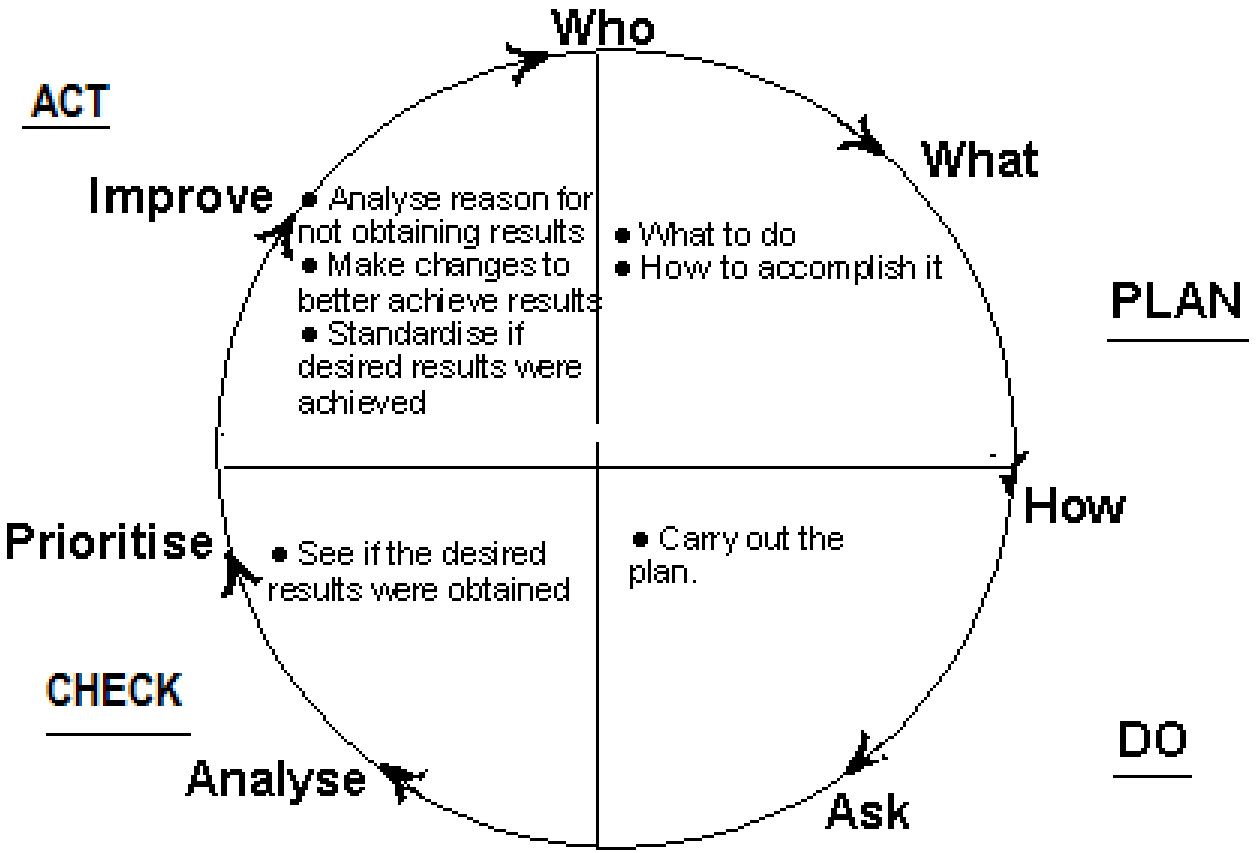
SMS, some key points

An SMS with an ill-defined purpose will prove less effective because it has:

- **Poor foundations on which to develop a safety culture and continuous improvement**
- **Been designed by convenience which sacrifices effectiveness and efficiency**
- **Originally been designed for, and therefore better suits, a different organisation**
- **Details and structure that better suit a different legislative system**
- **Become overly complex and inflexible, and is continually added to without thought or justification**

ONCF approach

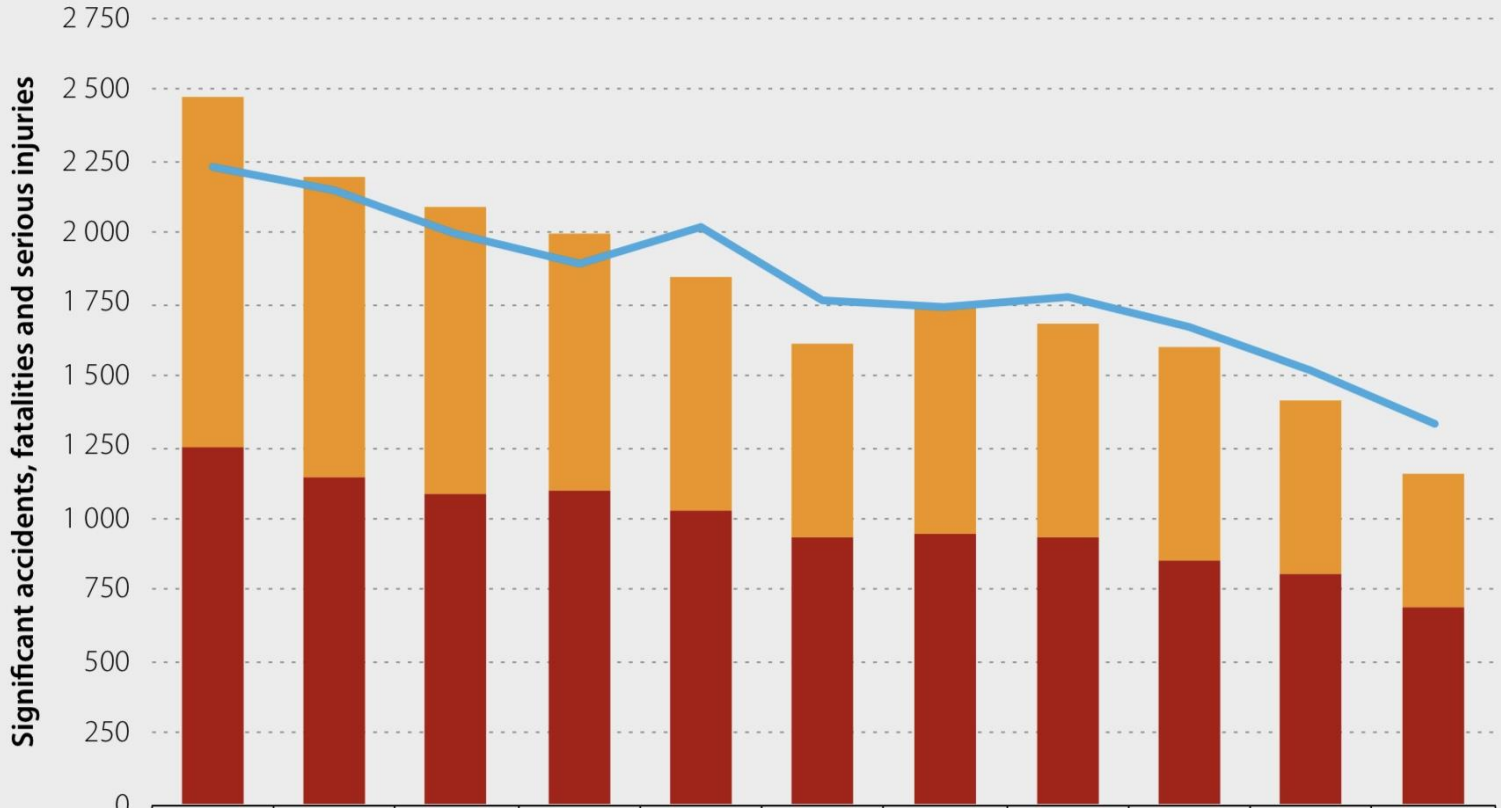
Quality approach (Deming wheel)



EU results (www.era.europa.eu)

Figure A-3: Main safety outcomes (EU-27, 2010–2020)

Significant accidents, fatalities and serious injuries



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Serious injuries	1 226	1 041	996	899	810	672	813	747	750	613	469
Fatalities	1 245	1 151	1 093	1 095	1 029	939	942	933	855	802	687
Significant accidents	2 230	2 146	1 994	1 896	2 022	1 764	1 742	1 777	1 671	1 515	1 331

Section 1

Safety management system set up by ONCF

Meryem BERRAK
Chief of the Regulatory Department
ONCF

ONCF

Safety Management System

Genesis of ONCF's SMS

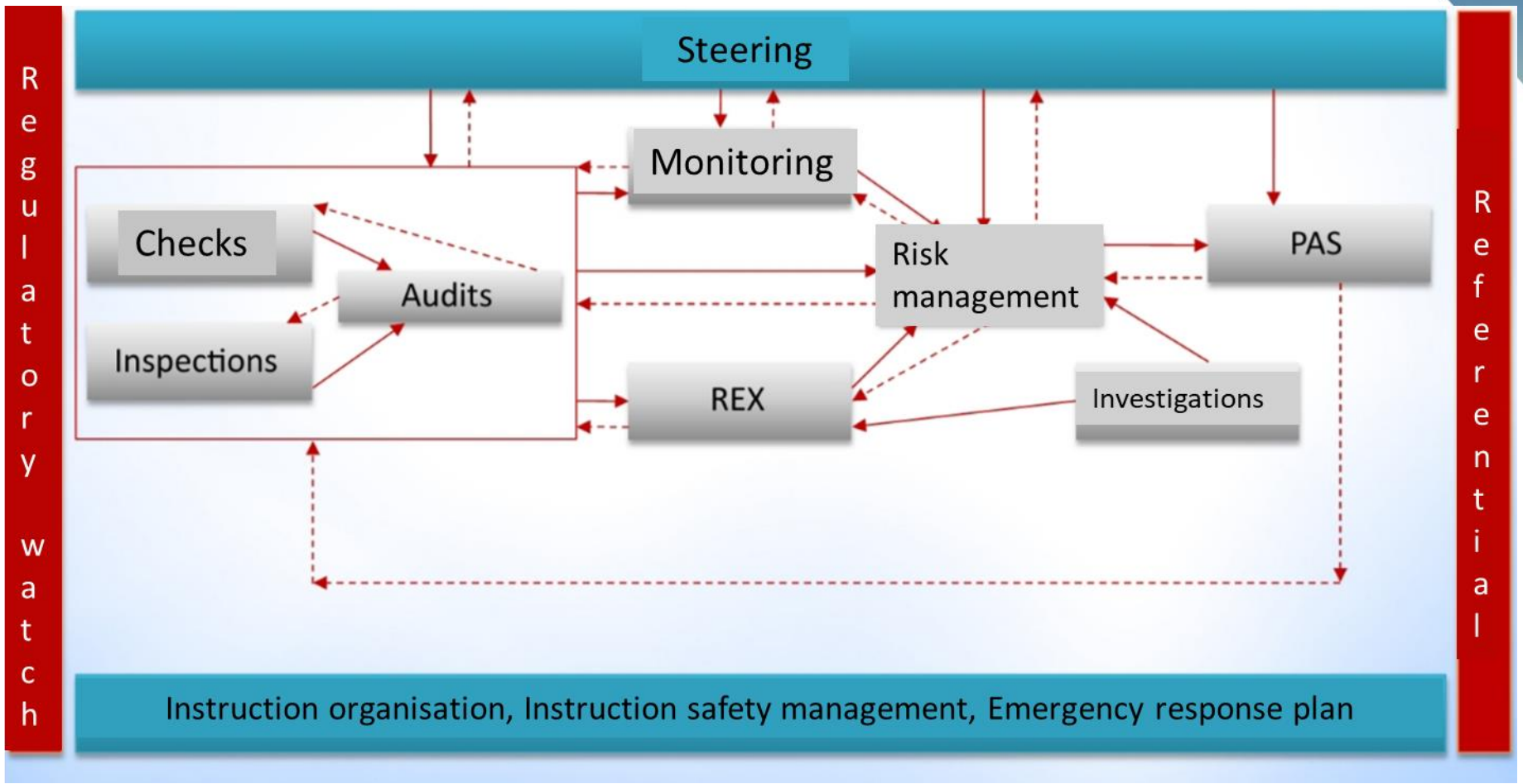
- Increasing traffic volumes, increasing complexity of facilities and the acquisition of new equipment.
- The need for significant improvements in safety;
- The growing need for customer satisfaction

adopt international standards:

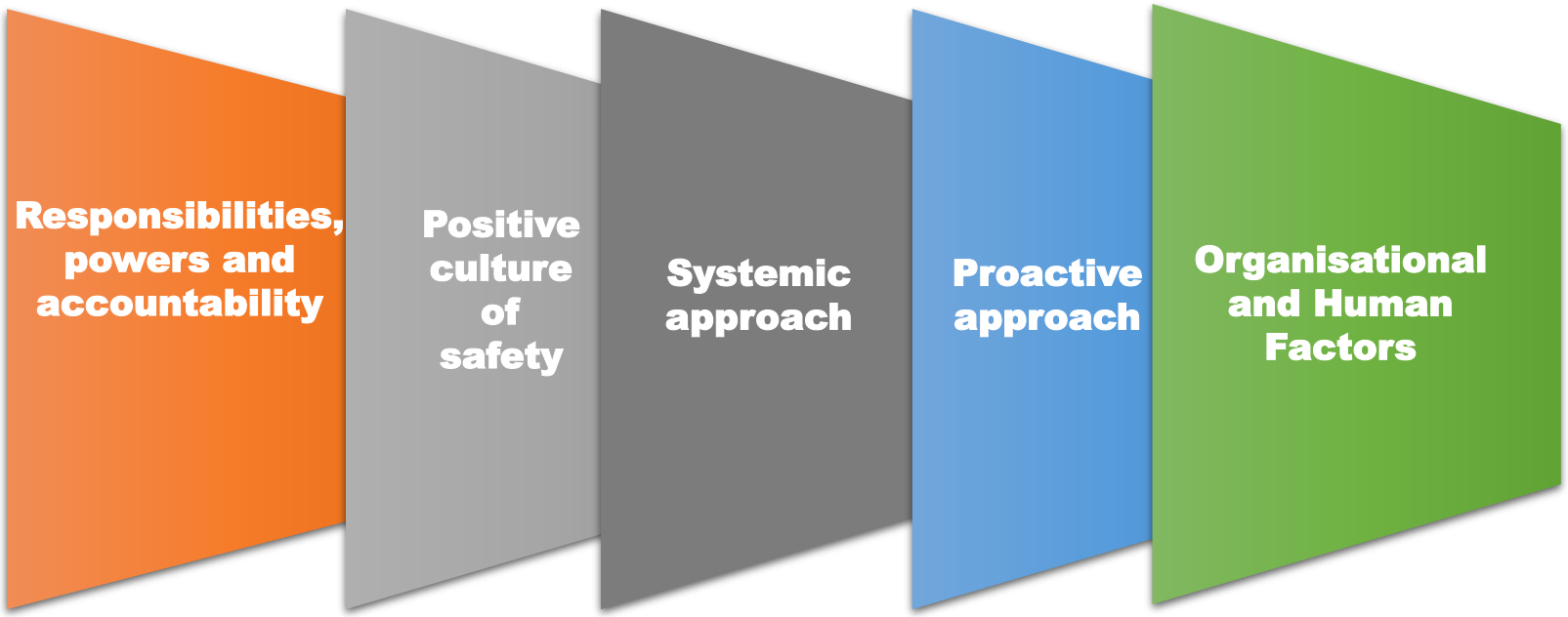
A new safety management system

system in 2013.

Interactions between the different SMS processes



Basic principles:



ONCF

Thank you for your attention

Q & A session

Section 2

Implementing a safety culture

Example of SNCF, French National Railways

Guillaume FOEILLET
Safety Project Manager
SNCF (France)

PRISME

« Setting and implementing a Safety Culture » - SNCF’s choices in PRISME programme

THE PURPOSE OF PRISME PROGRAMME

PRISME is

the Change Management programme

of our **Safety Culture t**o support

our Safety Excellence ambition

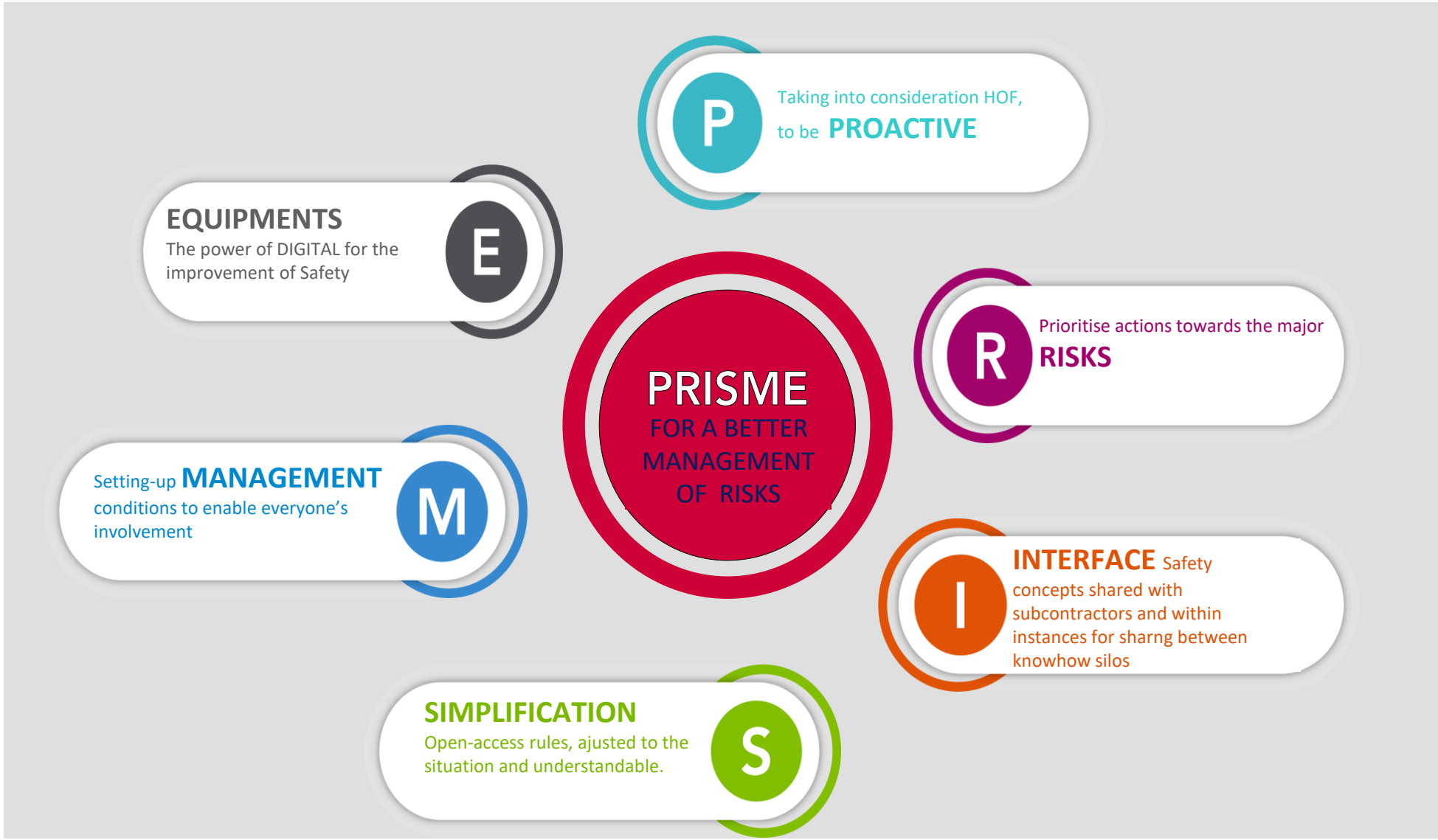
THE SAFETY CULTURE AND THE PILLARS OF SAFETY

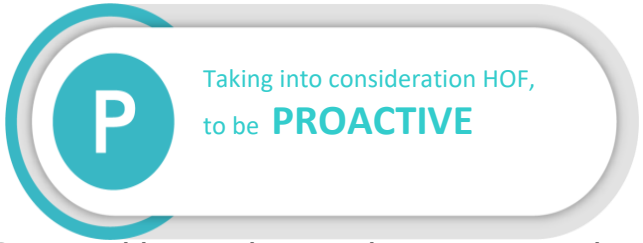
* ICSI

SAFETY CULTURE DEFINITION(S)

- according to IAEA : « The assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, protection and safety issues receive the attention warranted by their significance ».
- according to ICSI : « The safety culture is a set of ways of doing and thinking that is widely shared by the employees of an organisation when it comes to controlling the most significant risks associated with its activities.
- according to ERA : « Safety culture refers to the interaction between the requirements of the Safety Management System (SMS), how people make sense of them, based on their attitudes, values and beliefs, and what they actually do, as seen in decisions and behaviours.».

PRISME IS A SET OF MOMENTUM LEVERAGES





ANTICIPATE POTENTIAL RISKY SITUATIONS

Our goal is continuous improvement but also anticipation. Contribution of Human and Organisational Factors (HOF) is increased to perform thorough and deep analysis of safety events' contributors, set further some indivual and collective methods in order to improve reliability of our activities, to better prevent from the risks involving Human Factors, right from the beginning of the design of systems. This dynamic approach favours a confident climate, and openness for early contributors' feedback.

Taking HOF into consideration

- Increase managers and Designers' awareness to HOF
- HOF networking going professional
- Deep cause analysis

Broadening the methods which increase reliability

- Widespread of non-technical Skills
- Operational and Organisational Standards
- safety event prevention
- Analysis by peers of working situations

Introducing new values

- Just & Fair approach

Prioritise actions towards the major
RISKS

MANAGEMENT OF SAFETY THROUGH RISKS MGMT
A CONTINUOUS LOOP FOR IMPROVEMENT IN SAFETY

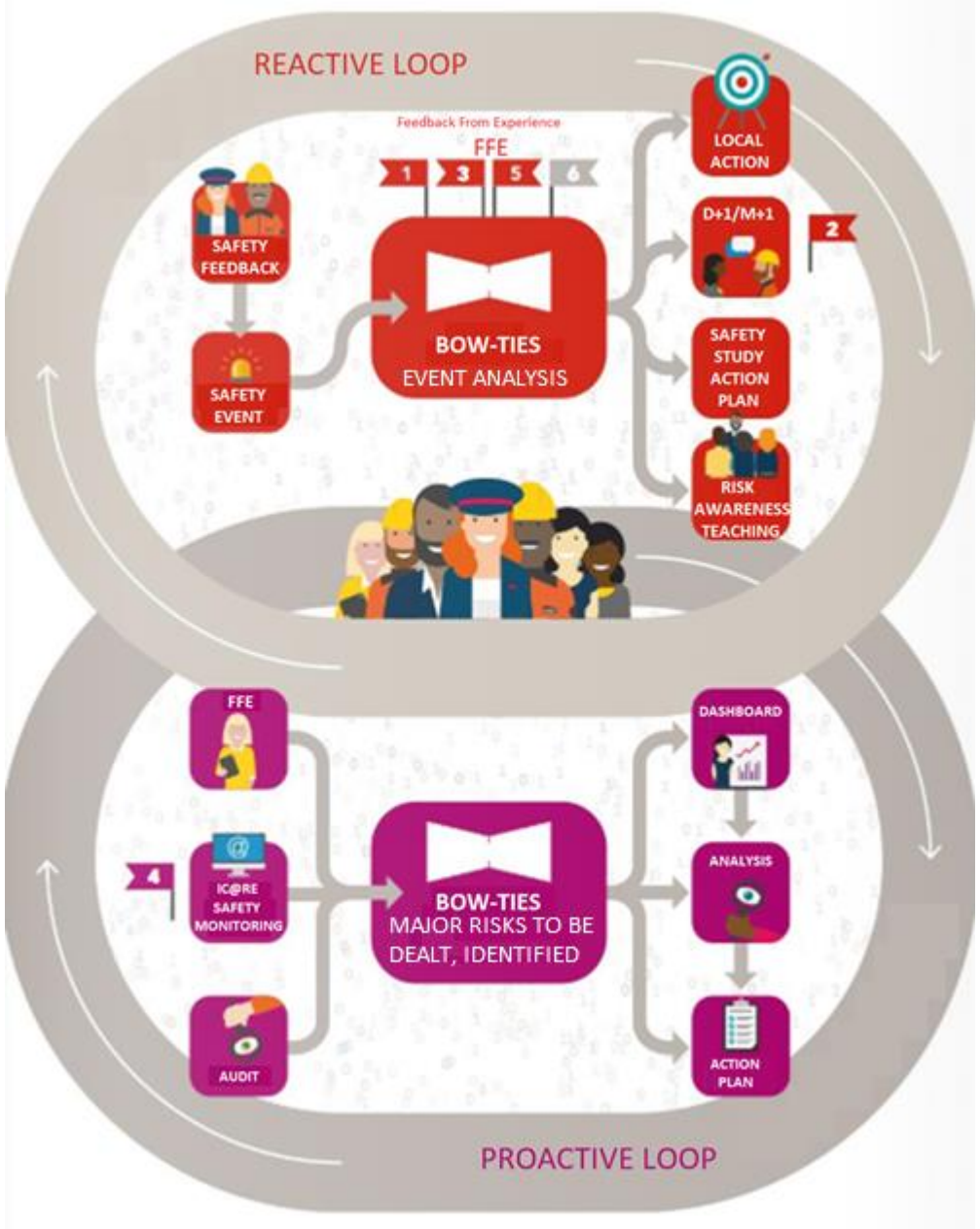
BOW-TIE MODEL IS USED IN BOTH LOOPS

FRONT OFFICE

THE GOAL

Make our Safety management more efficient by strenghening our risk handling process with additional modern tools on DIGITAL side.

BACK OFFICE



INTERFACE Safety concepts shared with subcontractors and within instances for sharng between knowhow silos

MASTER THE INTERFACES WITHIN OUR WORKING COMMUNITIES, BETWEEN OUR DIFFERENT WORK PROFILES AND ALSO WITH OUR SUBCONTRACTORS

Through the « I » part of PRISME, we wish to master the interfaces within our working communities, between our various work profiles and also with our subcontractors. We make sure that safety at work for employees of our services providers is guaranteed, at least at the same level than the one for SNCF employees themselves. Co-working situations are being monitored. Risks exported from one expertise silo to another are identified and handled. We reinforce the trainings in multi-silo contexts (for instance with adapted simulators)

Including safety as a criterion within the Procurement policy and subcontractors' relationship

- Scope application note
- Gather of frequency levels from Health and Pension companies of sub-contractors
- Add a frequency level threshold in the tenders' criteria

Project borne by SNCF Réseau (IM)

- Communication to Providers
- Selection criteria refined
- Selection of providers

Project borne by SNCF Voyageurs (TOC)

Cooperation between knowhow silos

- Sharing between working profiles of the professionnal risks awareness (since 2016)
- **Briefings** in multiple-silo or multiple-entities context, with digital tools whenever necessary for remote connection
- **Debriefing to** identify oddities and best practices
- **Partners (what's more subcontractors)** are included in the FFE, the safety event monitoring is shared; safety is considered as one of the criteria for their evaluation

SIMPLIFICATION

Open-access rules, ajusted to the situation and understandable.

SIMPLIFY THE PROCEDURES AND OPERATING MODES TO ALIGN THEM WITH THE FIELD SITUATION FOR MORE EFFICIENCY

5 long-term goals are chosen to deeply rejuvenate the documentation system: document rewriting, reorganise its architecture, design efficient tools, put document rewiting in the hands of professionals, build a networking strategy among professionals of the document rewriting domain.

Document's Policy

Optimisation of the document writing process, of the document management and read-only access, with stakeholders and policy managers

Document writing tools

« Standards »

« Doc NG »

Untangling
(for clarification)

Access to documents

« Digidoc+ »
(Read-only access)

« Digidoc+ »
(Management)

« Digidoc Nomad »
version

Simplification of folders available in entities

Methodology's assistance

Methodology assistance provided to technical profiles involved in Railway activities, for the writing of top priority documents
(200 documents)

Simplification team in charge of the Works / Delliverables

Works / Deliverables in charge of other parties
(not by Simplification team)

Setting-up **MANAGEMENT** conditions to enable everyone's involvement

M

ALL PARTIES INVOLVED IN SAFETY

Safety culture implies a strong commitment from all the employees and a strong commitment from the management. The PRISME M leverage aims at developping a safety leadership to be in position to bring to all the employees the management changes. TRAINING & TOOLBOX

Safety Leadership

Training for top managers

Training for workshop Directors / Middle managers
Safety leadership E-learning
Training session to promote Just & Fair culture

Operational Unit Mgr / Local production Mgr
Management Standards, Quality & safety Management, Continuous improvement, FFE for a full safety production

Local Safety units, contributors to PRISME transformation

Management's components

Management Standards

Management changes in favour of workshop's H&S

EQUIPMENTS
The power of DIGITAL for the improvement of Safety

DEVELOP TECHNICAL EQUIPMENTS

Thanks to « E » leverage of PRISME, innovation and all the opportunities brought by new technologies, among which many are digital, can provide safety improvements and risk reduction. Top priority goals are the development of tools or equipments which will improve man-to-machine interface work equipments or additional safety loopbacks. Whenever possible, the cost/efficiency ratio will be evaluated to determine investment priorities.

(Examples)

(Many others not listed)

« ODICEO » product

- **Currently tested over 3 railway lines**
- **Will progressively go into service for SNCF Réseau / Voyageurs**
- **Will be made available also for other TOCs**
- **All exception handling procedures will be available in digital version**

« SEVAC » product

- « shock Replay »
- Accident's Video sequence for judiciary police officer
- **Complet cabin recording system (Voice & Picture)**
- Experiments simultaneously performed on 20 types of rolling stock : HST and Regional

«SPEED LIMIT» product

- Reliability of announced Speed limits et field works for the 2021 TOC services
- OPTIMISED DRIVING – REFERENCE SPEEDS
- Interface steering committee with IM – Drivers unit

QUALITY IMPROVED WITH PRISME PROGRAMME

Main successes

- A programme addressing true needs
- Symbolic actions are the talk of the town
- A cultural change launched

Main issues to overcome

- Heterogeneous processes could be found on the field here & there
- Employees' H&S was way behind Trafic Safety
- Operators were not fully committed
- Safety projects and process were not top priorities

Key to success for 2020-2026

- Clarify the goal and the scope of PRISME
- Set efficient team mgmt and safety mgmt
- Anchor programme
- Share the leadership

PRISME, AMBITION OVER THE YEARS 2020 - 2026

« Establish in time

a contributive, committed

& integrated Safety culture »

AN INTEGRATED SAFETY CULTURE

Integrated safety encompasses

Are considered mutual impacts between safety types themselves (exported risk)

AND

Management processes set for Train operation safety are transposed to other safety types

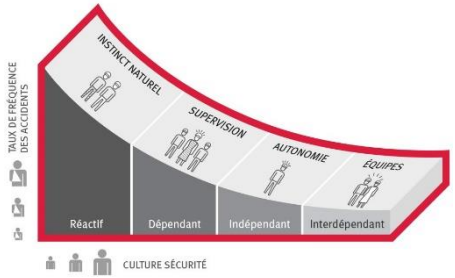
Scope of an integrated safety

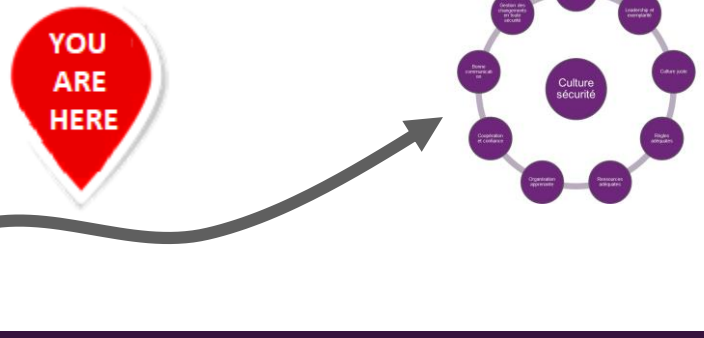
THE 9 COMPONENTS OF SNCF' VISION OF WHAT IS SAFETY CULTURE

SNCF AIMS AT A SAFETY CULTURE EVALUATION

- A true evaluation process is the unavoidable **starting point** to all actions launched by an organisation aiming at a change in its safety culture. It concerns the applicable scope, the involved parties' feedback and the true behaviours.
- **Evaluation is not a standalone scope.** Launching such an evaluation requires first a minimal maturity level enabling to collectively face facts and handle issues (sometime severe) revealed through evaluation.

(Adjusted to the Bradley curve)





The four levels of maturity			
Foundations	Development	Efficiency	Excellence
Safety management based upon safety event occurrence.	Passive sticking to the rules	Full commitment and responsibility of the main parties.	Safety is everyone's priority, all parties are responsible.

PRISME, AMBITION OVER THE YEARS 2020 - 2026

Handle projects until the very end, check that safety practices are everywhere in full application (deployment, anchoring, assistance)

Give to H&S working conditions as much importance than TOC safety by setting common methodologies and tools (FFE, Analysis of risky situations, Sharing of Best practices, …)

Add the « O » which stands for Organisation **to HF Human factors** to reduce risk exposure, confirm the reliability of human actions.

Mobilise safety's leadership of top and middle management with fully-supportive safety specialists

Promote and welcome individual and collective contribution for the improvement of operators' safety.

Increase risk awareness and their management at all levels of company.

THE TOP PRIORITIES FOR PRISME IN 2022, LAUNCHED FOLLOWING THE INITIAL PHASE OF PRISME PROGRAMME

Anchoring at the level of Management and Safety teams :

- **‘Rules of thumbs’ which save lives**
- **PRISME safety ‘standards’: at Management, Organisational and Operational levels**
- **Changes in work H&S management**
- **Just & Fair and HOF analysis**

Pursuing the long-term actions for a new safety culture :

- **Complete rejuvenation of processes brought in by PRISME contributions (for instance Simplification - Management based on Risks - FFE NG)**
- **And also: Safety Culture, KPIs, all knowhow silos involved, …**

TRAINING SESSIONS DRIVEN BY THE PRISME PROGRAMME IN ORDER TO DEVELOP THE SKILLS RELATED TO THE WIDESPREAD OF SAFETY CULTURE

- **a PRISME e-learning** open to all employees is currently under design (purpose is to provide meaningful content)
- **a catalogue of training sessions for PRISME programme encompassing all momentum leverages**
- **HOF trainings**: SNCF has very strongly invested in such trainings since the launch of the programme (HOF concepts has been introduced to roughly 9,000 managers, more than 200 local HOF contacts have benefited from a part-time training during 6 months…)
- **Leadership trainings** : safety leadership of managers and safety experts has been strenghened to enable them being in position of driving the expected changes for all the concerned parties.
- **A training portfolio constantly updated** (e-learning, virtual class) with an enlarged scope, depending on which subjects related to PRISME programme are raised (for instance, co-working situation)

APPENDICES

WHAT SNCF MEANS BY ITS ‘PROGRAMME STANDARDS’

Operational Excellence Standards common to basics:

SNCF ROBUSTESSE — H00 Programme

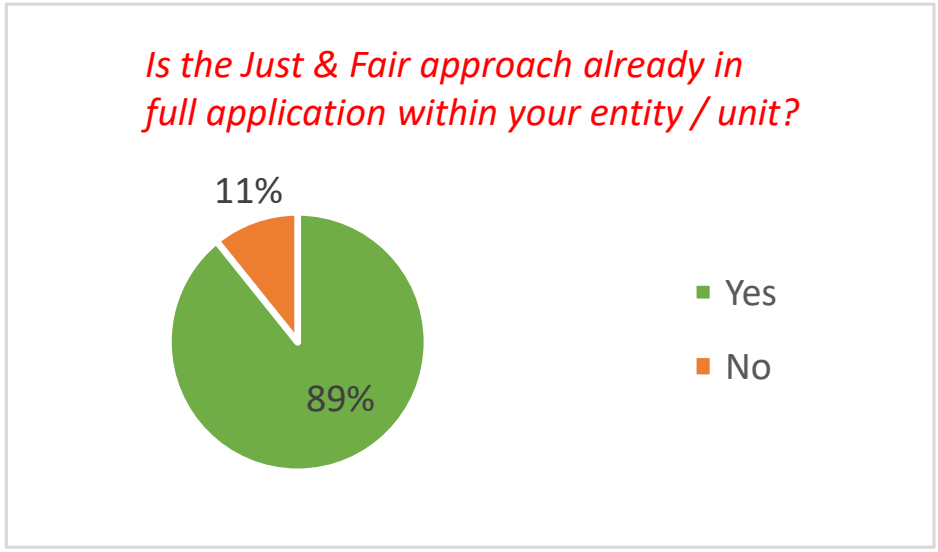
SNCF INFORMATION — FIRST Programme

MORE ABOUT THE JUST & FAIR APPROACH

- **Purpose of the polling :** obtain a complementary situation overview of the Just & Fair deployment Strategy

1. Estimate its scope of application within managers (launched after a 1st polling sent to 200 local HOF employees (150 answers received)
2. Determine its efficiency
3. Deduce a set of appropriate actions to ease its deployment and its future use.

- **491 contributors** (Mgrs and/or Unit Directors)
- A widely spread campaign (89%)

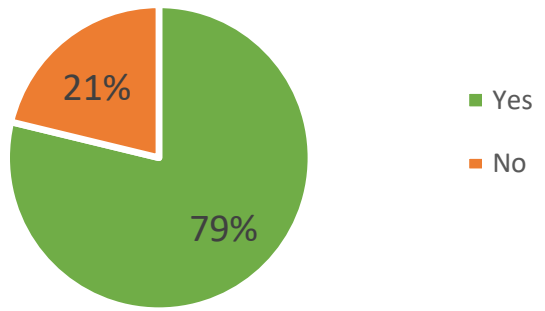


RESULTS AND Efficiency of the approach

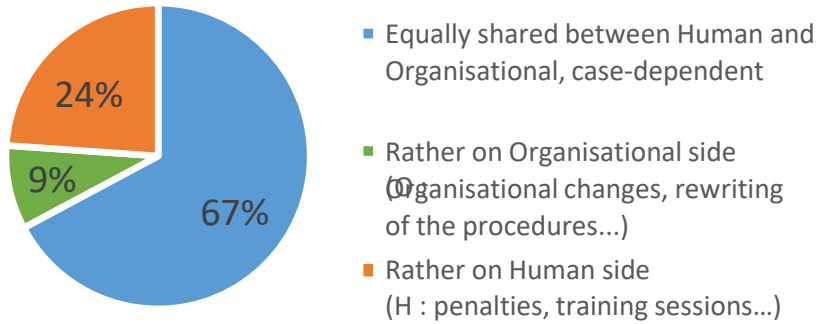
↗ 79% of population consider that this approach is efficient

↗ With time, the trend is that H and O actions seem to be more and more equally invoked

According to you, is this approach favouring a better feedback from information?



Following this approach, the actions launched are more often…



To proceed further on

Promote within each and every unit an effective application of the approach

Trainings should include analysis of true cases – An application manual to ease everyday use should be built-In addition to the existing reference documents.

Reinforce and manage the « O » analysis to handle all the safety issues raised

Beyond the question of whether the criticity of the safety issue raised (on « H » side) Investigation should be made on Organisational side (« O ») and the work environment.

Section 2

Deploying the safety management system in Rail traffic

Example of ONCF

Taha GOUNAYA
Traffic Inspection Supervisor
ONCF

Which document do we use to deploy the safety management System ??

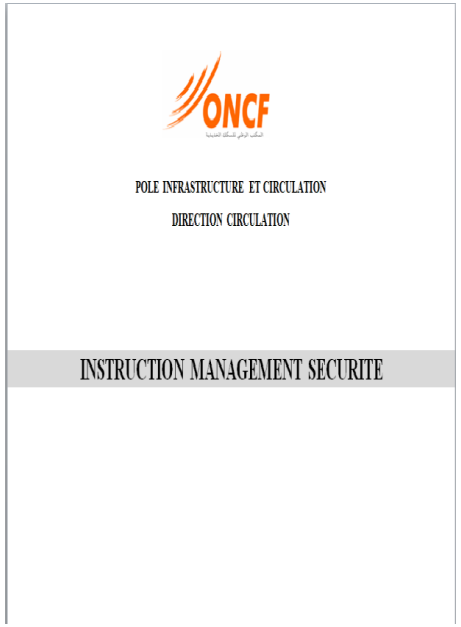
THE SAFETY MANAGEMENT INSTRUCTION

THE SAFETY MANAGEMENT INSTRUCTION

Every field dealing with safety has to have a Safety Management Instruction

The Safety Management Instruction defines the modalities specific to safety management in the Rail traffic Direction activity scope

Declines the safety policy of the executive management



Defines Safety indicators

Defines the objectives that are specific to Rail Traffic Direction

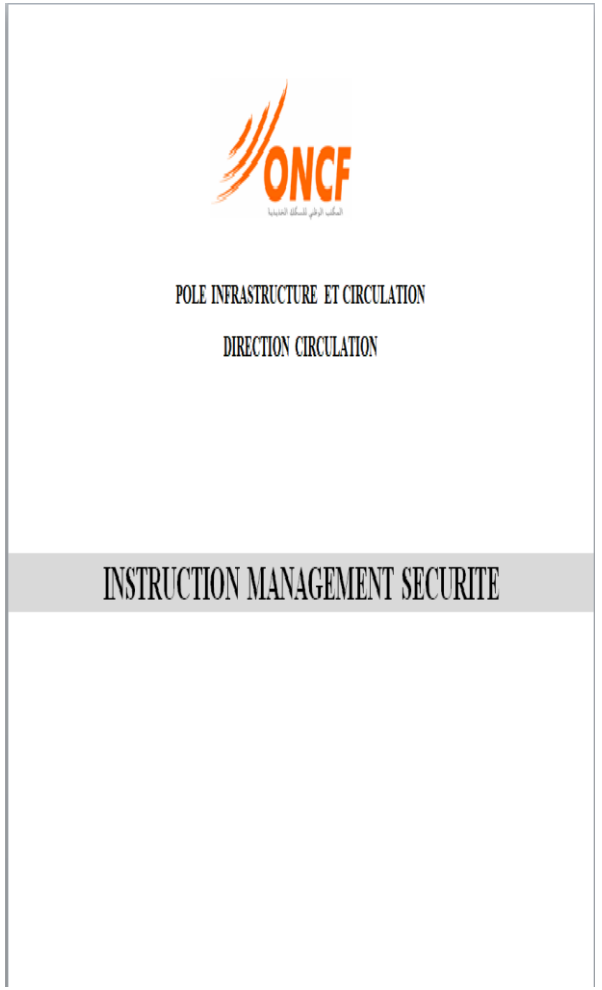
Promotes and deploys the positive culture into each entity

THE SAFETY MANAGEMENT INSTRUCTION

Defines responsibilities, and Powers linked to Safety Management

Identifies internal and external interfaces

Describes the monitoring, animation and review process of the Safety Management System



Puts in place the necessary means to identify risks and dangers and to ensure risk control

Puts in place the railway safety feedback

Deploys preventive and corrective actions to ensure safety

WHAT IF WE GIVE AN EXAMPLE OF DEPLOYMENT ?

Safety Railway Feedback Guideline

Example of deployment: safety Railway Feedback

The safety Railway Feedback is a continuous process of gathering and analysing events that have affected or could affect safety and then giving a feedback to the whole entities concerned

Example of deployment: safety Railway Feedback

All the entities in charge of safety have to make sure that all collaborators are sensitized and conscious about THEIR duty to report a serious or a significant event linked to the railway safety system

Example of deployment: safety Railway Feedback

STEP	WHO ?	WHAT ?	HOW ?
Reporting of fact	Any collaborator of the direction or of another entity.	Everything done in connection with the main activities of the entity	Verbally, or written by any means possible.
Taking charge of the fact	Section/service Head	Nature and identification code of the event, circumstances, persons and employees concerned	Circumstantial report
Event analysis	working group led by the head of section	Causes of the event; weaknesses	Circumstantial report
Communication	Department Head	- the occurrence of the event; -its analysis; -practical conclusions. to : the head of control department	Circumstantial report
Feedback	Rail Traffic Manager	- the occurrence of the event; -its analysis; -practical conclusions. to : - sections, centers, stations of the entity and to the initiator of the event	Reportings S- note to stations- Event sheet ….

Q & A session

Concluding words and closure

Karim Eddine CHENNOUF
President of the Management Board
IFF