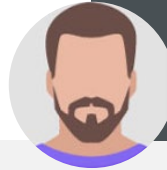# STAFF WORKSHEET

Trainer / Training organizer

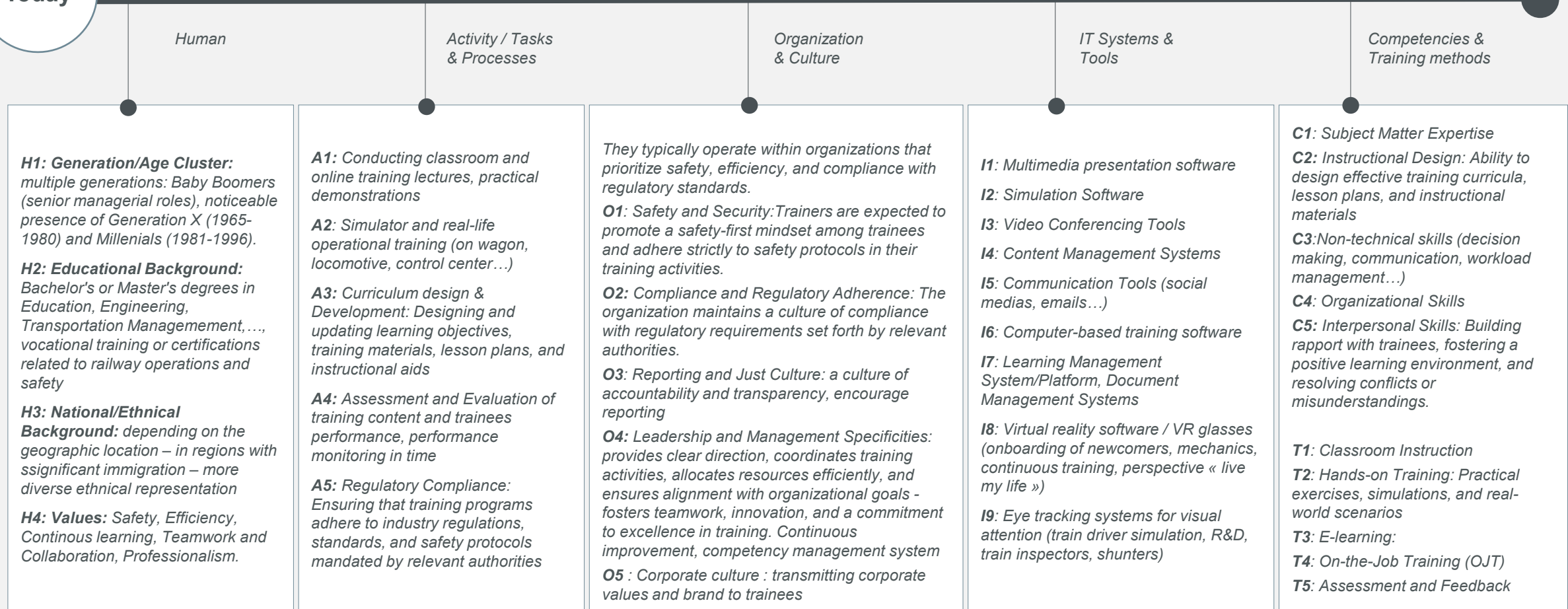**Education & training**

Educ. & training
Trainer / Training organizer

A Trainer/Training Organizer in the railway sector is responsible for designing and delivering training programs to develop the skills and knowledge of railway personnel. This role involves creating curriculum, conducting training sessions, and managing logistical aspects such as scheduling and resource coordination to ensure effective training outcomes
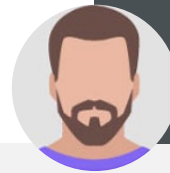
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Today

Current ways of working

Human	Activity / Tasks & Processes	Organization & Culture	IT Systems & Tools	Competencies & Training methods

Human

H1: Generation/Age Cluster: multiple generations: Baby Boomers (senior managerial roles), noticeable presence of Generation X (1965-1980) and Millenials (1981-1996).

H2: Educational Background: Bachelor's or Master's degrees in Education, Engineering, Transportation Managemement,…, vocational training or certifications related to railway operations and safety

H3: National/Ethnical Background: depending on the geographic location – in regions with ssignificant immigration – more diverse ethnical representation

H4: Values: Safety, Efficiency, Continous learning, Teamwork and Collaboration, Professionalism.

Activity / Tasks & Processes

A1: Conducting classroom and online training lectures, practical demonstrations

A2: Simulator and real-life operational training (on wagon, locomotive, control center…)

A3: Curriculum design & Development: Designing and updating learning objectives, training materials, lesson plans, and instructional aids

A4: Assessment and Evaluation of training content and trainees performance, performance monitoring in time

A5: Regulatory Compliance: Ensuring that training programs adhere to industry regulations, standards, and safety protocols mandated by relevant authorities

Organization & Culture

They typically operate within organizations that prioritize safety, efficiency, and compliance with regulatory standards.

O1: Safety and Security:Trainers are expected to promote a safety-first mindset among trainees and adhere strictly to safety protocols in their training activities.

O2: Compliance and Regulatory Adherence: The organization maintains a culture of compliance with regulatory requirements set forth by relevant authorities.

O3: Reporting and Just Culture: a culture of accountability and transparency, encourage reporting

O4: Leadership and Management Specificities: provides clear direction, coordinates training activities, allocates resources efficiently, and ensures alignment with organizational goals - fosters teamwork, innovation, and a commitment to excellence in training. Continuous improvement, competency management system

O5 : Corporate culture : transmitting corporate values and brand to trainees

IT Systems & Tools

I1: Multimedia presentation software

I2: Simulation Software

I3: Video Conferencing Tools

I4: Content Management Systems

I5: Communication Tools (social medias, emails…)

I6: Computer-based training software

I7: Learning Management System/Platform, Document Management Systems

I8: Virtual reality software / VR glasses (onboarding of newcomers, mechanics, continuous training, perspective « live my life »)

I9: Eye tracking systems for visual attention (train driver simulation, R&D, train inspectors, shunters)

Competencies & Training methods

C1: Subject Matter Expertise

C2: Instructional Design: Ability to design effective training curricula, lesson plans, and instructional materials

C3:Non-technical skills (decision making, communication, workload management…)

C4: Organizational Skills

C5: Interpersonal Skills: Building rapport with trainees, fostering a positive learning environment, and resolving conflicts or misunderstandings.

T1: Classroom Instruction

T2: Hands-on Training: Practical exercises, simulations, and real-world scenarios

T3: E-learning:

T4: On-the-Job Training (OJT)

T5: Assessment and Feedback

MIND4 CHANGE

This is a tentative analysis following the methodology agreed within MIND4CHANGE Working Group as described in How-to Guide Staff worksheets.pdf. MIND4CHANGE Working Group encourages railway operators to do this exercise internally.

Educ. & training

Trainer / Training organizer

Drivers of transformation:
DT1: General technological changes (AI, augmented operations,…)
DT2: Societal changes (generation change, new ways of working, ..)
DT3: Job organisation changes (Social IT tools, new wmployees)
DT4: Training changes
DT5: Transportation technological changes – indirect impact – to organise training in new technology

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New ways of working

In BLUE the changes that will have the biggest resistance to change

By 2030

Human	Activity / Tasks & Processes	Organization & Culture	IT Systems & Tools	Competencies & Training

Human

H1: Generation/Age Cluster: Shift of generations, Millenials will largely dominate the workforce, Gen Z professionals increasingly entering the field

H2: Educational Background: Professionals entering the field by 2030 will likely hold advanced degrees in specialized areas such as Railway Engineering, Educational Technology, or Transportation Systems Management.

H3: National/Ethnical Background: The workforce will be highly diverse, reflecting the globalization of the railway industry. Professionals will come from various national backgrounds, contributing to a rich cultural tapestry within railway education and training centers.

H4: Values: Sustainability and Green Initiatives, Technical Proficiency and Digital Literacy

Activity / Tasks & Processes

A1: Designing adaptive and personalized training programs using digital learning technologies.
A2: Incorporating sustainability and cybersecurity training into curriculum updates.
A3: Delivering remote training solutions to accommodate distributed workforces.
A4: Collaborating globally to exchange best practices and address industry challenges.
A5: Continuously evaluating and updating training methods to meet evolving regulatory standards and industry needs.
A6: Generative AI supervision

Organization & Culture

O1: Innovation and adaptation to new technologies and methodologies.
O2: Collaboration and knowledge-sharing among trainers and stakeholders.
O3: Emphasis on sustainability, cybersecurity, and non-technical skills development.
O4: Flexibility and agility to respond to changing industry dynamics and regulations.
O5: Commitment to global collaboration and partnership in railway education and training.

IT Systems & Tools

I1: Advanced learning management systems (LMS) with AI and data analytics capabilities.
I2: Generative AI tools (in-house or market) to create content
I3: Virtual reality (VR) and augmented reality (AR) simulation platforms (2nd generation).
I4: Mobile learning applications for on-the-go training access.
I5: Cybersecurity training software and simulations.
I6: Collaboration platforms for global communication and knowledge-sharing.

Competencies & Training

C1: Digital learning design and implementation.
C2: Sustainability practices and environmental awareness.
C3: Cybersecurity knowledge and risk management.
C4: Global collaboration and cross-cultural communication.
C5: Continuous learning and adaptation to emerging technologies and industry trends.
C6: Ability to change mindsets

T1: Personalized learning pathways tailored to individual needs.
T2: Remote training solutions leveraging online courses and virtual classrooms.
T3: Soft skills development through interactive and experiential learning.
T4: Regulatory compliance training to ensure adherence to evolving standards.
T5: Modern training delivery methods: microlearning, mobile learning, gamification

Learning Lab scope of study

Main challengers for cultural change:
CH1: Lack of anticipation
CH2: Fear of the unknown
CH3: Poor vision and strategy
CH4: Lack of resources
CH5: Lack of skills
CH6: Poor leadership

Enablers to facilitate the change:
E1: Smart and easy communication
E2: Personalised communication
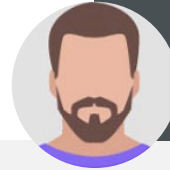**E3:** Strategy definition
E4: Innovative organization
E5: Personalized and innovative training + Learning program construction on Tutorials
E6: Leadership academy/best practice charters

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Educ. & training
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Drivers of transformation:
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New ways of working

In BLUE the changes that will have the biggest resistance to change

By 2040

Human	Activity / Tasks & Processes	Organization & Culture	IT Systems & Tools	Competencies & Training	Learning Lab scope of study

Human

H1: Generation Z mostly + partly Millenials + generation Alpha
H2: Diverse age distribution
H3: Advanced Degrees in Education and Technology (specialized training in XR technologies, data analytics, and sustainability practices)
H4: Global Mobility and Cultural Diversity – diverse cultural background
H5: Ethical Leadership and Social Responsibility: Railway Training Professionals will demonstrate ethical leadership, prioritizing social responsibility and community engagement

Activity / Tasks & Processes

A1: Designing highly immersive and adaptive training experiences using advanced AI and extended reality (XR) technologies.
A2: Incorporating advanced data analytics and predictive modeling to tailor training programs to individual learner needs.
A3: Developing cutting-edge training solutions for emerging technologies such as hyperloop, maglev, and autonomous trains.
A4: Implementing sustainable and eco-friendly practices throughout training programs

Organization & Culture

O1: Adaptive Management Practices: Leaders will embrace adaptive management practices, enabling organizations to respond quickly to changing industry dynamics + culture of continous improvement
O2: Diversity and Inclusion Advocacy
O3: Strategic Partnerships and Visionary Leadership
O4: Agile Training Structures: Organizations will adopt agile training structures that enable rapid adaptation to changing industry dynamics, regulatory requirements, and technological advancements.
O5: Cross-Sector Collaboration Hubs: Railway training organizations will serve as cross-sector collaboration hubs, fostering partnerships with stakeholders from academia, government agencies, technology firms, and other industries.

IT Systems & Tools

I1: Advanced AI-driven learning platforms capable of personalized, adaptive, and immersive training experiences.
I2: Next-generation extended reality (XR) technologies, including virtual reality (VR), augmented reality (AR), and mixed reality (MR) for highly realistic simulation-based training.
I3: Blockchain-based credentialing systems for secure and transparent verification of trainee certifications and qualifications.
I4: Sustainable learning management systems (LMS) powered by renewable energy sources and designed for minimal environmental impact.
I5: Global collaboration platforms and networks facilitating seamless communication, knowledge-sharing, and partnership-building among railway training professionals worldwide.
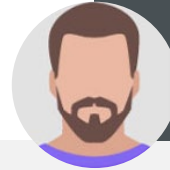
Competencies & Training

C1: Advanced instructional design methodologies leveraging AI, XR, and data analytics for personalized learning experiences.
C2: Proficiency in global collaboration, cross-cultural communication, and partnership-building
C3: Continuous learning and adaptability to stay abreast of rapid technological advancements

T1: Highly immersive and interactive XR-based simulations for realistic hands-on training experiences.
T2: Data-driven adaptive learning pathways tailored to individual learner preferences, abilities, and career goals.
T3: Continuous evaluation and feedback mechanisms leveraging AI-driven analytics to monitor learner progress, identify areas for improvement, and optimize training effectiveness.

Learning Lab scope of study

CH1:Lack of anticipation
CH2:Fear of the unknown
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CH4: Lack of resources
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MIND4 CHANGE

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After 2040

New ways of working

In BLUE the changes that will have the biggest resistance to change

Human | *Activity / Tasks & Processes* | *Organization & Culture* | *IT Systems & Tools* | *Competencies & Training*

H1: Generation Z and Alpha + Millenials
H2: Extended Work Life: Advances in healthcare, longevity, and changes in retirement norms could result in professionals working well into their senior years, leading to an even wider age distribution in the workforce.
H3: Interdisciplinary Expertise: Education professionals may possess increasingly interdisciplinary backgrounds, blending expertise in education, technology, psychology
H4: Globalization and Cultural Integration: Railway Training Centers may become even more interconnected on a global scale, fostering collaboration and cultural exchange among professionals from diverse backgrounds.

A1: Advanced Training Methodologies: AI driven adaptive learning algorithms
A2: Innovative Curriculum Design: They will develop innovative curriculum designs incorporating gamification elements, interactive simulations, and scenario-based learning
A3: Cross-Disciplinary Training: psychology, behavioral economics, and data science

O1: Innovation Hub: Railway training organizations will evolve into innovation hubs, fostering creativity, experimentation, and the adoption of cutting-edge technologies to enhance training effectiveness
O2: Diversity and Inclusion: There will be a strong emphasis on diversity and inclusion, ensuring equal access to training opportunities
O3: Innovation and Risk-Taking: Leaders will encourage innovation and risk-taking, creating a culture that embraces experimentation, creativity
O4: Agile Decision-Making: Leaders will demonstrate agility in decision-making, adapting quickly to changing circumstances

I1: AI-Driven Learning Platforms (to analyze trainee performance data, provide personalized recommendations, and optimize learning)
I2: Immersive Simulation Technologies: Immersive simulation technologies, including VR, AR, and mixed reality (MR), will be integrated into training programs to provide realistic, hands-on learning experiences
I3: Blockchain for Credentialing: Blockchain technology will be utilized for secure credentialing and certification
I4: Data Analytics for Performance Monitoring: Data analytics tools will be employed to monitor trainee performance, track learning progress, and identify areas for improvement

C1: Data Literacy and Analytics Skills
C2: Technology Integration Expertise
C3: Adaptive Leadership and Change Management: Adaptive leadership and change management skills will be developed to navigate complexity, uncertainty, and rapid change
C4: Human-Centered Design Principles – prioritizing user experience

T1: Microlearning and Bite-Sized Content
T2: Peer-to-Peer Learning Networks
T3: Gamification and Rewards Systems

Learning Lab scope of study

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Thank you
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