Criteria and measurable indicators to evaluate employability and career opportunities

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
CDL	Comprehensive Distance Learning
CER	Community of European Railway and Infrastructure Companies
CEDEFOP	European Centre for the Development of Vocational Training (Centre Européen pour le Développement de la Formation Professionnelle)
CVET	Continuing Vocational Education and Training
CVTS	Continual Vocational Training Survey
DB	Deutsche Bahn AG
EACEA	European Education and Culture Executive Agency
EDO	Employment Development Opportunities
EFQM	European Foundation for Quality Management
EIM	European Rail Infrastructure Managers
ETF	European Training Foundation
EQAVET	European Quality Assurance in Vocational Education and Training
EU SILC	European Union Statistics on Income and Living Conditions
E&T or ET	Education and Training
FLP	Flexible Learning Program
HR	Human Resource
ILO	International Labour Organization
IVET	Initial Vocational Education and Training
ISCED	International Standard for Classification of EDucation

ISCO	International Standard for Classification of Occupations
LFS	Labour Force Survey
LMP	Labour Market Policy
LMS	Learning Management System
NGL	Next-Generation Learning
NEET	Not in Education, Employment or Training
OECD	Organisation for Economic Co-operation and Development
PoV	Point of View
RACER	Relevant, Accepted, Credible, Easy and Robust
SNCF	Société Nationale des Chemins de Fer (French National Railway Company)
VET	Vocational Education and Training
WBL	Work-based learning
WIL	Work-integrated learning
WMP	WMP consult – Wilke Maack GmbH
WP	Working Package
UB	University of Belgrade
UASFHE	University of Applied Science Fachhochschule Erfurt

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1 INTRODUCTION

Employability was spotlighted in the 1990s' when it became not only important for unemployed or deprived persons but for all active population. Employability became a core labour market instrument and alternative to job security. At the end of 20th century employability has become one of the 'pillars' of the European Employment Strategy (firstly adopted in 1997 and today a constituting part of the Europe 2020 growth Strategy). Bearing in mind that, the question can be raised: how the employability as a phenomenon in railway sector is treated? Moreover, in context of STAFFER project, this question can be transformed as: what the level of education and skills of railway staff is needed in modern railway?

The overall aim of WP 5 is to validate the new and/or updated mobility and training paths, programmes and curricula developed in WP 4 specifically aiming to increase employability and career opportunities. It is a part of Phase 2 of the STAFFER project titled Mobility and training programmes design and implementation with three WPs:

- WP 4: Development of mobility and programmes
- **WP 5: Validation of mobility and training programmes for effectively increasing employability and career opportunities**
- WP6: Implementation of training and mobility programmes

The flow of the STAFFER entails the following: based on the identification of current and future skills and competence needs for the whole rail sector (WP2 and WP3), developing suitable training and education programmes (WP4), and validating them for effectively increasing employability and career opportunities (WP5). Namely, WP5 is about embedding employability perspective in the process of developing (WP4) and implementing (WP6) new and/or updated ET programmes in the rail sector (Figure 1).

On the road to an approach to assess employability and career opportunities of rail related ET programmes, WP5 includes four tasks. First, a methodological umbrella to consider is developed (Task 5.1); then, in parallel, the assessment of employability and career opportunities is performed by rail operators and infrastructure managers in Task 5.2, and by rail suppliers in Task 5.3. Synthesis provided by Task 5.4 will provide the outputs of WP5 as a feedback mechanism to better tune the mobility and training programmes developed in WP4 running, partially, in parallel. The timeline follows the conceptual setting of WP5. Task 5.1. runs first from

M7 to M12, 5.2. and 5.3 run in parallel from M13 to M24, while Task 5.4. is from M25 till the end of the project (M48).
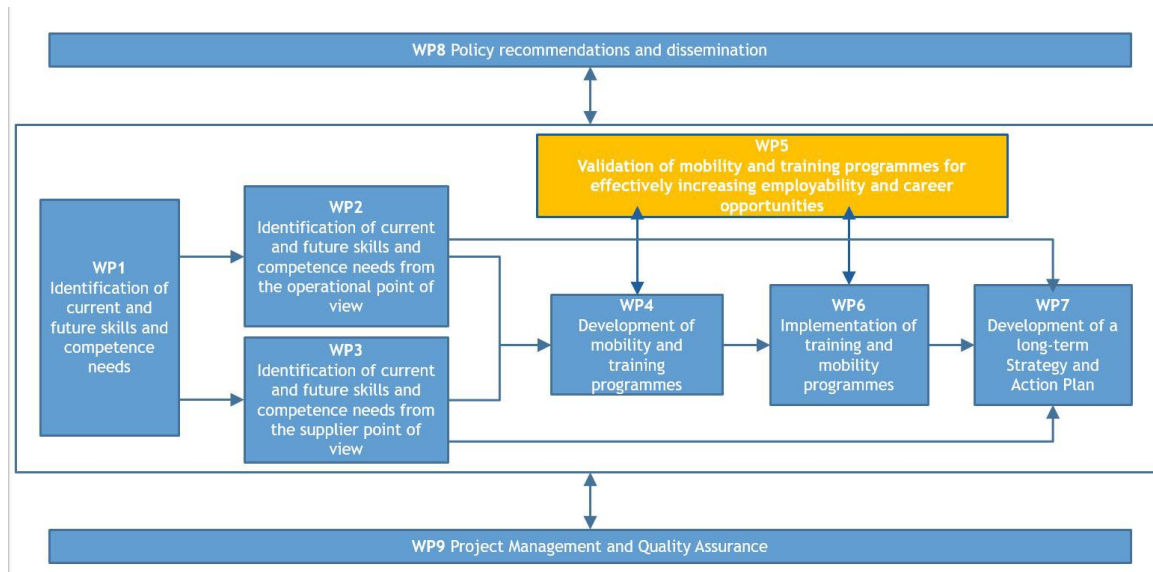
FIGURE 1 POSITIONING OF WP5 WITHIN STAFFER

This document is the output of the Task 5.1. - D.5.1. *Criteria and measurable indicators to evaluate employability and career opportunities.* It is structured as follows. First an approach to the task introduced - from the initial idea to final setting according to the inputs from involved project partners. Rest of the documents follows two phases of the approach: conceptualization and operationalization. The document ends with the consolidated set of criteria and indicators. Throughout the document all contributions and valuable inputs from project partners are acknowledged.

At last but not least the consolidated set of criteria and indicators, as a result of this task, railway operators and infrastructure managers as well as suppliers will use for assessment of employability and career opportunities mobility and training programmes in tasks 5.2 and 5.3. The consolidated set of indicators will be fine-tuned during these tasks and a harmonised set will be the result of WP5. So, finally we can say the result of this deliverable is a living set of criteria and indicators to evaluate employability and career opportunities.

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2 APPROACH AND ACTIVITIES

The work on WP5 started in mid-March 2021 with the set of regular (monthly) meetings of WP5 core partners (UASFHE, DB, Alstom and UB) as preparatory phase for official start of WP5 in May 2021. The aim was to set basis for the approach in terms of actives within constituting tasks and assuring their effective mutual interconnection as well as connection with other WPs[1].

Having that the Task 5.1 is the first one and predecessor of other tasks in WP5, discussion was mainly focused on approach and activities within 5.1. The "quest" for proper approach started with the common procedure for devising indicators which is also acknowledged in the field of employability [16] (Figure 2).
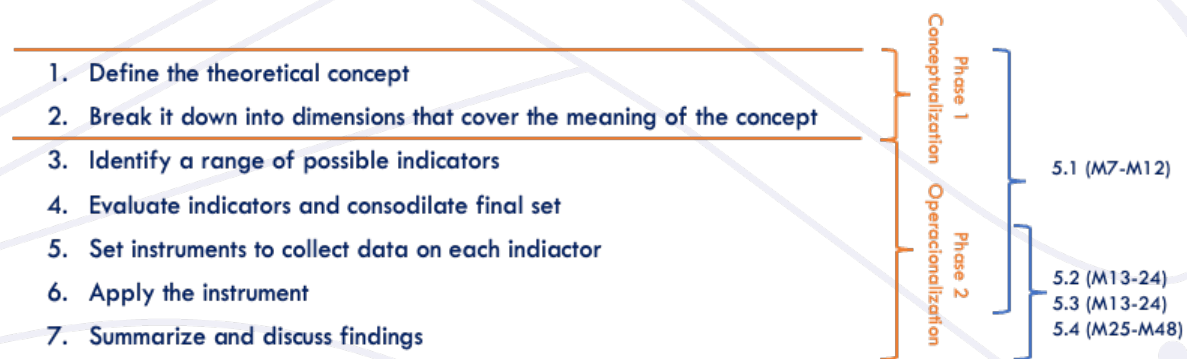
FIGURE 2 STEPS IN COMMON PROCEDURE FOR DEVISING (EMPLOYABILITY) INDICATORS AS THE BASIS FOR THE ACTIVITIES IN TASK 5.1.

Note: steps 5, 6 and 7 in the procedure overlap with tasks 5.2, 5.3 and 5.4 in order to ensure the operability (applicability) of devised indicators.

Throughout meetings[2] and feedbacks it was agreed to break Task 5.1. into two phases *Conceptualisation* and *Operationalization*. In simple, the first one is about what is being measured and the second is about how it is going to be measured. Both phases entail several steps with similar underlying idea: assemble state of the art - body of knowledge different views on employability concept and indicators, enrich it with insights from rail sector perspective and finally nest it the STAFFER's objectives. The rationale behind is that employability is a complex concept that strongly depends to the context in which it is immersed. The aim is not to embrace every aspect of employability but those that are in line with STAFFER and particularly the

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1 UASFHE and Alstom are co-leaders at WP5.
2 several meetings were held such as at 2021 in March 16th , April 8th, May 12th , July 16th, October 11th , etc. (MoM at project repository)

objective of WP5 *Validation of mobility and training programmes for effectively increasing employability and career opportunities.*

In addition, some insights from STAFFER already indicated the need to come to first understanding on what employability means before proceeding to criteria and indicators. A feedback from WP1 on a proposition to include the question on how employability is seen from the rail suppliers and operators was "we do not have any definition on employability as this means different things for different people" once again pointed to the need to define this term in the STAFFERS project and particularly at task 5.1. Also, experiences from existing studies (including some ERASMUS + reports, like Emple-AP [1]) point to the need to start work on employability metrics with comprehensive analysis on employability concept.

In line with this report employability is broader investigated to explain the general views of its construct before proceeding to nesting it within STAFFER and particularly WP5. The aim of this document is not solely to offer a set of criteria and measurable indicators of employability and career opportunities but to, in broader sense, communicate a gathered body of knowledge on employability concept and issues of measurement between WP5 and other project partners and to pave the way towards common understanding on employability both from conceptual and operational point of view.

In line, within the conceptualisation phase of Task 5.1. is conducted two main and one supportive line of research, were conducted in parallel (Figure 3)

1) Employability concept	2) Employability metrics	+1 Communication tools
Nesting employability concept within STAFFER	Existing indicators	Tools in help for getting consensus on the indicator set

FIGURE 3 LINES OF RESEARCH WITHIN TASK 5.1.

It is a kind of a "rotated view" of the common approach which entails three consecutive lines defining, understanding and measuring, where metrics are used to better understand the concept as well. A supportive line of research is in regard to finding proper tool that will be in help for gathering opinions of a number of partners in STAFFER coming from the field of education and training representatives as well as from rail operators and rail suppliers. Findings from each line are summarized in dedicated sections of the report.

3 CONCEPTUALISATION

3.1 Employability concept - general view

Employability is a complex social construct with no consensus on how it should be understood, measured and managed. It was coined in 1950s and at the beginning it was associated with problems of short supply of qualified personnel and employing disadvantaged people.[3] In the early 1970's the focus shifted to individual potential (having right occupational knowledge and skill) as to become (and stay) employed [9]. During the 1980s the companies started focusing on the employability concept. Employability was embraced as HR instrument for coping with perpetual changes in the field of work. It was mostly about achieving functional flexibility of employees i.e. increasing the skill inventory of staff in such a way that in the outcome the employees acquire the capacity to work across traditionally distinct occupational boundaries [4].

Employability was spotlighted in the 1990s' when it became not only important for unemployed or deprived persons but for all active population. Employability became a core labour market instrument and alternative to job security. At the end of 20th century employability has become one of the 'pillars' of the European Employment Strategy (firstly adopted in 1997 and today a constituting part of the Europe 2020 growth Strategy). The four pillars are employability, entrepreneurship, adaptability and equal opportunities [5].

Today employability encompasses both individual and contextual factors, ranging from purely personal aspects such as competency (knowledge, skills and personal attributes) to labour market conditions and trends (like aging/demographic shifts, digitalization, globalization, offshoring and climate change).

Trying to answer the question what it takes and makes a successful career resulted in adding more and more related 'ingredients' in the employability characterisation and made it very much fuzzy [9]. As a result scholars, international organizations, labour unions etc. at all levels engaged on quest for defining and understanding employability. In Table 1 common definitions of employability coming from these sources are presented. It is important to stress that these are

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[3] Some authors argue that the term 'Employability' was introduced even earlier, at the beginning of the twentieth century in Great Britain [10]

not nearly all the definitions that can be found but rather small selection aimed to portray the interest of different parties and interlinks in their perceptions.

TABLE 1 COMMON DEFINITIONS OF EMPLOYABILITY

Source:	Definition:
Outin (1990)	Employability is a construct of four elements that influence one's chances to become and/or remain active on the labour market: individual qualities (relational, motivational), occupation-specific skills, labour market situation and government and employer training policies.
CEDEFOP (2008)	Employability refers to the combination of factors which enable individuals to progress towards or gain employment, to stay in employment and to progress during their career. Employability of individuals depends on: 1. personal attributes (including adequacy of knowledge and skills); 2. how these personal attributes are presented on the labour market; 3. environmental and social context (incentives and opportunities offered to update and validate their knowledge and skills); and 4. the economic context. Comment from the education and training perspective, factors include learning outcomes (knowledge, skills and competences) and their relevance to the labour market, learning incentives and learning opportunities
De Grip et al. (2004)	Employability involves the capacity and the willingness of workers to remain attractive for the labour market (supply factors), by reacting and anticipating on changes in tasks and work environment (demand factors), facilitated by the human resource development instruments offered to them (institutions)…. Employability of workers is the shared responsibility of individual workers and of the firms that employ them
Weinberg (2004)	Employability encompasses the skills, knowledge and competencies that enhance the ability of workers to get and keep a job, improve their work and adapt to change, secure another job if they want or get laid off, and get work more easily in the market in different periods of their life
Werner et al., (2004)	Employability is a broad concept and means adaptable and updated competencies and labour market-oriented behaviour for every person participating in the workforce; most usually, employability policies combine training, further training, re-training, career advice, placement and incentives/subsidising programmes.

Harvey (1999)	Employability of a graduate is the propensity of the graduate to exhibit attributes that employers anticipate will be necessary for the future effective functioning of their organization.
Kuo et al. (2014)	Employability is the embodiment in an individual of the capability to maintain the ongoing acquisition of knowledge, skills, and positive attitudes and to properly translate learning experiences into such forms, so as to maintain demonstrations of the performances expected by enterprises on being employed (definition for solar industry)
Hillage&Pollard (1998)	Employability is the ability of individuals to get a first job, maintain employment, move between roles within the same organization, get a job if required and ideally ensure an adequate and sufficiently satisfactory job
Forrier et al. (2015)	Employability is "an individual's chance of a job in the internal and/or external labour market"
(CER, EIM, ETF, 2010)	"The notion of employability addresses capacities, skills and qualifications that can be acquired and built on. In short, this is the way to maximise one's opportunities within a company and in the labour market as a whole."
(Yorke, 2004)	Employability' is not just about student employment -it is far wider than that. It should be understood as: 'a set of achievements - skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy'
unknown	Employability relates to the teaching and learning of a wide range of skills and attributes to support continued learning and career development. This is achieved through the creation of a pedagogy for employability.
(HRD Recommendation, ILO, 195 (2004)	"Employability relates to portable competencies and qualifications that enhance an individual's capacity to make use of the education and training opportunities available in order to secure and retain decent work, to progress within the enterprise and between jobs, and to cope with changing technology and labour market conditions."
Pegg et al. (2012)	Employability is a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy.

With growing interest in employability and "piling" of definitions several studies tried to perform stratification of the existing employability explanations resulting on three broad groups of definitions [51]. The first one, sometimes referred as 'core' definitions focus on individual characteristics - capacity and willingness to be successful in a diversity of jobs. The second one is broader view definitions that strive to add a future perspective to the concept and do it mostly around the ability to cope with the dynamics of changing of jobs. The third collection is labelled as "all-embracing" definitions as encompasses both individual characteristics, contextual conditions (e.g. the employer provision of training) and external factors (labour market conditions) [9]. Contextual conditions are also labelled as 'effectuation conditions', i.e. the conditions under which individuals can effectuate their employability (e.g. career counselling and the provision of training courses) [10]. Acknowledging effectuation conditions is about overcoming employers' tendency to view employability as primarily a characteristic of the individual and neglecting opportunities offered to individuals to realise his or her aspirations and potential in work [44]. This further extends on the working conditions in terms that individual characteristics are likely to change over the life course and working conditions need to be transformed to eliminate the factors that discourage or hinder workers from staying in or entering the workforce. This is embraced by the concept of 'sustainable work' developed by EUROFOND among others [22]. In the core is reaching living and working conditions that support people in engaging and remaining in work throughout an extended working life. An example of a question in interest is providing instruments and mechanisms that will enable and motivate people to extend their working lives (like partial retirement schemes).

The majority of the approaches in the literature are on track of core definitions and broader view definitions. This broader view means that employability is not only about current range of workers qualifications (also referred as employability radius) but also about futural perspective - personal competencies needed to improve the workers' employability, especially their learning and career planning competencies [51]. The approaches that strive to include futural perspective in the employability setting introduce the concept of employability skills (also labelled as career management competences) as a key to survive in labour market. Employability skills determine whether workers are able and ready to use opportunities beyond their current employability radius. There are various terms associated with employability skills. It is important to differ between 'core' and 'generic' employability skills. While 'core' skills are discipline (or job) specific skills, 'generic' skills represent 'the so-called transferable (also labelled portable) skills that can support study in any discipline (or for any occupation) [57]. Examples of these transferable skills are different cognitive (e.g. problem solving) or social skills that are not only important in obtaining a job, but also in keeping it and in eventually moving on to the next one.

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However, the minority of approaches to studying employability take effectuation factors and contextual conditions. The reason is that causal effects may be not easy to investigate as in case of trainings. From the employers' perspective investing in training is "tricky" and sometimes referred as 'employability paradox' - investments in workers' transferable skills imply that other 'poaching' firms will reap part of the benefits of the training investments. Another concern from the perspective of employers is that they often do not know what trainings to choose to improve the employability of their employers. The term "improve employability" can be imply as: (1) learn and adapt to the current job to comply with changed regulations, (2) adapting to gradual changes in technology or market and (3) accept and empower to deal with disturbances and revolutionary change.

Another, but similar, stream addressing stratification of employability comes from the education field (predominately tertiary level). It is built around the question is employability an institutional achievement or a 'propensity of the individual student to get employment' [16]. The debate is also based on the critique of employment rates as the main employability indicators. In this context the so called "magic bullet of employability" is introduced which combines the perspectives and acknowledges the role of employers. Within this framework employability is underpinned by employment development opportunities (e.g. career services, work-experience opportunities) offered by educational providers and experience along with extra-curriculum activities. Within this framework employers are seen as those who convert the `employability' of the graduate into employment where the central part is recruitment process. To a certain degree the different views and definitions of employability seem to concentrate on the individual (qualitative dimension) and social/sectorial responsibility (quantitative dimension). This sort of resembles the economic principle of demand and offer. A perfectly trained apprentice/student could lack employable qualities if he/she is just choosing a field not in demand.

Besides embedding employability attributes in the course of education it also needs to be nurtured further through continuous professional development. Back to education this means empowering students as a critical life-long learner's by embedding employability skills in the curriculum [9]. This again goes back to EDO's and changing traditional patterns of education by adding more learning opportunities and activities (self-study, participation in lectures, attending specialized career-advising workshops or participating in work-integrated learning (WIL) programmes). Teaching methodologies in support of these changes can be derived from digitalization of learning (online and modularized education and training) but also in traditional pedagogic context (like small group teaching) [9]. However the effects are much dependant on recruitment practices. Although many scientific approaches are more and more embedded in

the recruitment many sources report that there are still biases in the process (age, gender, ethnicity or educational establishment).

One of the approaches to include some clarification in the employability construct is through three conceptual components that can be seen as concentric circles (Figure 4).
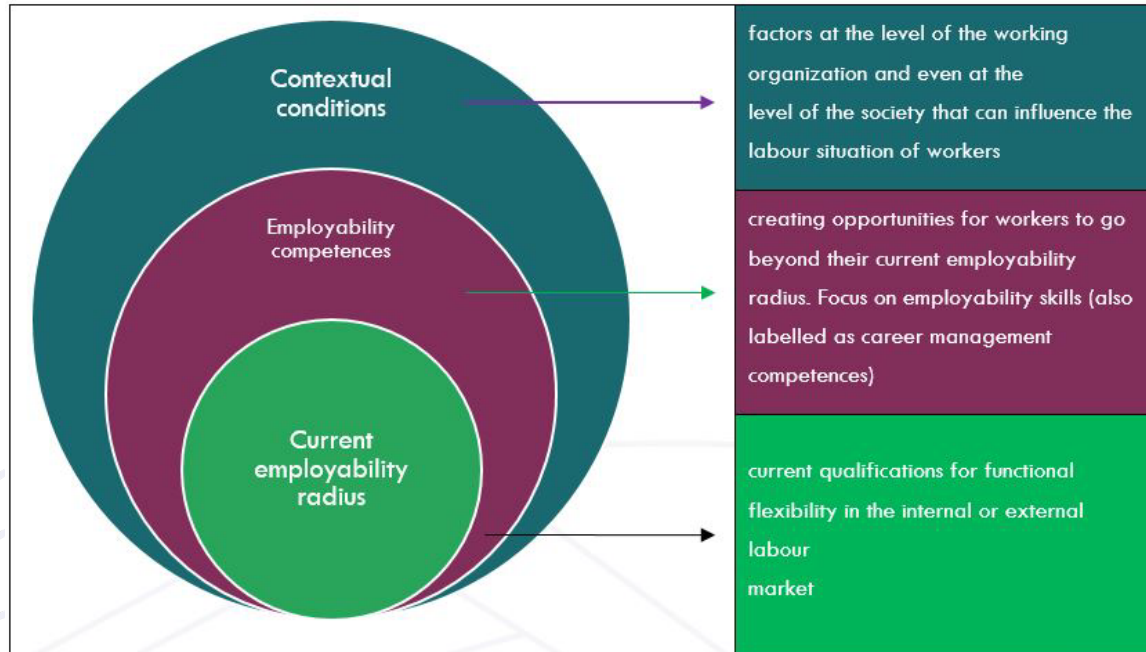
FIGURE 4 CONCENTRIC CIRCLES OF EMPLOYABILITY CONCEPT
(based on [51] and [12])

This illustration implies that in order to encompass all aspects there is a need to go beyond current the employability radius and include future perspective, effectuation conditions and trends.

Although offering an insightful view on employability construct the *circles* tell little about the distinction between the perspective of employers and employees. One of possible distinctions is to associate employers with one of three employability strategies: broadening, selling and consuming, and accordingly employees as broadeners, sellers and consumers (as presented in Figure 5). The logic behind is that both employers and employees have their own approach towards employability, going from (simply put) continuous learning and enhancing employability to no engagement. From the perspective of employers broadening strategy means providing training opportunities and stimulation to participate in them (time and/or money) even outside the formal ET offer. The selling strategy suggests that employees are focused on providing constant information about new job offers (vacancies) within and even outside the company and mostly without additional training. The consuming strategy implies in fact the absence of a strategy i.e. no actions in terms of training nor information on vacancies and relying on ad-hoc

activities like moving employees to another job or urging them to leave. Similar employees can be characterized as broadeners (highly interested and engaged in training), sellers (changing jobs without additional education and training) and consumers (endeavouring to stay at the same job with the same competencies until hopefully early retirement). However, it is important to highlight that this distinction is rather theoretical and in practice it is difficult to find 'pure' examples of such strategies and 'types' of employees. Nevertheless, it adds to the fact that the enhancing employability is dependent on changing the mind-set of both employers and employees and is heavily grounded ET enhancing culture.

An important conclusion coming from the literature is that broad definitions and in line with a broadening strategy of employers is associated with education-enhancing culture i.e. broadening the employability radius of employers by not just adjusting the offer of formal education but also facilitating further trainings and life-long learning opportunities. Some go even further with including an array of work support and learning activities beyond the ones that are occupation specific, aimed overall learning competences like self-management.

The differences in perspectives can be summarized in two focuses that the discussion moves around: focus is upon the individual 's characteristics and 'readiness' for work, or upon the factors influencing a person getting into a job, moving jobs or improving in their job [44].

Employability strategies from employers and employee's perspective	
Employers	**Employees**
broadening strategy Companies which provide a wide array of specific and general training activities (even beyond formal offer), facilitate and stimulate participation of their employees.	**broadeners** Employees who are 'heavy' users of education and training opportunities even without the clear anticipation of the benefits
selling strategy Companies which help employers to find other paid jobs inside or outside the organization and without an evident further training.	**sellers** Employees who move easily within the labour market without extra training
consuming strategy Companies which focus on exploiting current competencies of employees and ad-hoc offering new job or urging to leave.	**consumers** Employees who remain with the same competencies throughout work life until (hopefully early) retirement.

FIGURE 5 EMPLOYABILITY STRATEGIES FROM EMPLOYERS AND EMPLOYEES PERSPECTIVE

(based on [51])

The strong impetus to enhancing employability through education and training in order to meet current and future labour market challenges was given by Strategic Framework for European cooperation in Education and Training for the next decade ("ET 2020"). Within the implementation of the framework indicators for measuring the contribution of Education and Training systems to employability including benchmarks.

Key points from analysing general views on employability:

- **Employment and employability are not the same thing and should be differentiated. Employability can be seen as dynamic version of employment, going beyond getting a job and focusing on career development [3, 53]. Being employed means having a job, being employable means having all needed to maintain employment and progress in the workplace[4]. Higher employability is seen as a precondition for achieving an increased employment rate but it is not straightforward.**

- **Employability is a multidimensional and complex concept. Employability encompasses features of preparation for employment, staying in employment and progressing in employment. Drivers of employability come from characteristics of individuals as well as the effectuation conditions within educational and employers' setting end even at the level of society. Accordingly, employability is a shared responsibility.**

- **Employability can be seen as labour market instrument (also labelled as external employability) and HR instrument (i.e. internal employability). In simple terms the first view is focused on 'employment for all' while the second is focused on coping with perpetual changes in the field of work (especially ones coming from digitalization).**

- **Employability is strongly linked to human capital, notably employability skills that go beyond sector or occupation specific skills.**

- **Employability is strongly linked to education and training. Employability needs to be translated into improving and adapting education and vocational training to new conditions and forms of work and the implementation of lifelong learning principles.**

3.2 Employability concept in the railway sector

Employability concept in the rail sector was endorsed by CER, EIM and ETF. As the follow up of two study projects carried out in 2000/2001 and 2005/2006 on the usability of employability

concept for rail sector a joint recommendation "The concept of employability in the railway sector" was signed in 2007, including five joint recommendations, see figure 6 below [53]. It is currently being revisited within the project "Employability in the Railway Sector in the Light of Digitalisation and Automation (EDA Rail).[5] The aim of the project and the accompanying research is to develop an updated understanding of employability for the railway sector that takes into account needs and requirements from the perspective of individual employees and workers as well as from the perspective of companies and HR management.

Another, CER, EIM and ETF project that address employability in rail with focus on specific factors is about demographic change (published in December 2010, [24]). The study report highlights that employability should be the core element of modern HR policies in rail companies, but also emphasizes the existence of misunderstanding confounding the "capability to work and employability". Within the section on employability concept the report emphasizes that it is about capacities, skills and qualifications that can be acquired and built on with the aim to maximise one's opportunities within a company and in the labour market as a whole."

Important findings on employability in rail come from the study on promoting employment in rail sector (ETF, CER) that was commissioned by the social partner in the context of a joint project and published in 2016, [25].). While the strategy highlights mutual responsibility of unions, employers and employees it seems focussed on preserving the status quo and lacks the incorporation of change and coping with new technologies and conditions. On the other hand, the study indicates that the image and attractiveness of the railway sector and efforts to promote employment and quality of work in the sector in the European Union are influenced by political, technological and socio-economic trends. The attractiveness of the sector as an employer is influenced by public perceptions of the quality-of-service provision, an insider outside split exists and more positive perceptions by young workers are encouraging. Finally, the study also showed that for all rail security staff is the most important factor in terms of the attractiveness of the sector, a factor which may be undermined by policy developments.

It is also important to point to the activities of the EU social partners on promoting women in rail. This started with research studies about the situation of female workers in railways, annual monitoring reports about female employment trends (6th annual report published in 2020, [26]).

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[5]The project started in March 2020 and runs for 18 months. Expected results are about new joint recommendation on the concept of employability and decision on follow-up actions; mapping the employability factors with focus on digitalisation and automation and tracking good practices in the field of change management and employability and just transition, with the objective to maintain attractive working conditions in the sector. Details about the project can be found at:https://docplayer.net/195825382-Employability-in-the-railway-sector-in-the-light-of-digitalisation-and-automation-eda-rail.html and https://www.etf-europe.org/activity/employability-in-the-railway-sector-in-the-light-of-digitalisation-and-automation/

As highlighted in the last report the purpose is to follow the development of women's employment in the European railway sector, to measure the impact of the Joint Recommendations from 2007 on "a better participation and integration of women in the rail sector" and to motivate railway companies to act and to develop a corporate policy to attract more women which in 2018 accounted for 21.41% of workers in 28 surveyed rail companies. During the last years negotiations of a joint autonomous framework agreement of ETF and CER took place and it was concluded on June 9 2021 [27].

1. The railway companies in Europe should use the strategy of employability as developed in this memorandum as a central theme for human resources policy and thereby package the various instruments for *personnel and organisation development* into an *integrated* approach.

2. Employability as a strategic concept is based on prevention and aims to create a working environment which maintains and improves the capacity of the workers in respect of qualifications and competences as well as health and fitness in order to be 'employable' in general terms. The responsibility is a shared responsibility of the company, the employees, works councils and trade unions.

3. Aims, principles and framework conditions for the implementation of the strategy into operational practice should be agreed on the basis of social dialogue between the social partners in order to allow the benefit of the approach to be effective for both parties i.e. the company and the workers.

FIGURE 6 CENTRAL PARTS OF A JOINT RECOMMENDATION "THE CONCEPT OF EMPLOYABILITY IN THE RAILWAY SECTOR" (CER, EIM, ETF, 2007)

It is still an evolving concept but with some fundamental principles set that imply broader and even and all-embracing view on employability including both individual characteristics and effectuation conditions.

Deeper investigation of employment in rail factors come from human capital series of reports elaborated for the Shift2Rail Joint Undertaking It contains six reports [28] that address three core issues enhancing sustainable employment, human resource policy and skills gaps. Several conclusions are of importance for setting criteria and indicators for measuring employability:

- **Foresight and forecasting studies show clear discrepancies with the actual tendencies in employment and skilling. The forecasters see other things than current statistics show in terms of up skilling. This implies that technological change is putting emphasis on futural perspective i.e. skills and competencies demand that will continue to rise. In such circumstances the education and training system will have to be ready to offer efficient and effective solutions to emerging skills needs;**

- **Actions aimed at lifelong learning, work-based learning (learning from real practice) and Next-Generation Learning (NGL)[6] actions are crucial to address emerging technologies and adapting to new organisational and emerging skill needs; Training should be accompanied by pre- and post- assessment of competences of employees (e.g. digital passports);**

- **fostering a better match between the human resources needs and the offer of skills coming out of the different research-based education and training institutions across Europe;**

- **faster upscaling of knowledge (from 1 person to many persons);**

- **employers more focused on non-academic stuff (like train drivers), example of rail logistics Lifelong Learning Program at Newcastle University, UK;**

- **education more directed towards a greater degree of universality of knowledge that enables mobility (more digital literacy, language and communication competencies).**

3.3 Employability within STAFFER - conceptual framework

Based on insightful findings from the literature and series of consultations with rail operators and suppliers[7] conceptual framework for devising employability criteria and indicators is set as in Figure 7. As employability is a complex social construct but also widely studied both in terms of definition and measuring the idea was to put existing employability metrics under evaluation end extract those relevant for STAFFER. Simply put the existing metric are put under 'double lenses': of employability dimensions and criteria on one side and success factors on other side.

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[6] NGL is new learning method that overcomes standard classroom-based training approaches. It is aimed at individualizing training and education by the means of blended learning methods, modularised teachings, regularly (compartmentalized) assessments of competences, e-learning based on improved LMS, etc. It is aimed also towards non-academic staff like train drivers. Examples from SNCF and DB.

[7] In July 2021, the first draft of conceptual framework was presented twice, once to the WP5 core team and once to all partners involved in the WP5. The final conceptual framework is the result of harmonization of opinions of all participants in WP5.
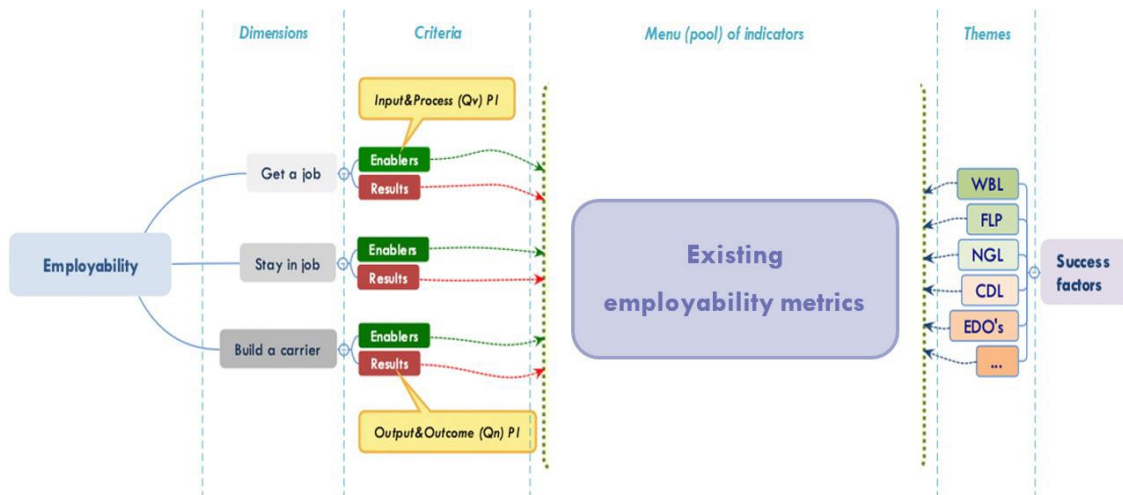
FIGURE 7 CONCEPTUAL FRAMEWERK - INITAL PLOT

(Abbreviations: Qv – Qualitative, Qn-Quantitative, PI-Performance Indicator, WBL-Work Based Learning, FLP-Flexible Learning Pathways, NGL – Next Generation Learning, CDL – Carrier Development Learning, EDO's – Employment Development Opportunities)

3.3.1 Dimensions

As presented within section 3.1 there are several definitions of employability. The most exploited is the one provided by Cedefop and also included in STAFFER Glossary of key project terms and concepts: "*Employability refers to the combination of factors which enable individuals to progress towards or gain employment, to stay in employment and to progress during their career.*" Accordingly, three key dimensions are included in the framework:

- **Get a job - refers to two main aspects preparation for employment in terms of education and training and transition from education to work;**

- **Keep a job (stay in employment)**

- **Build a career (progress in employment)**

They refer to three main stages in employment and add a dynamic dimension to it. Expert group of EC on skills for jobs labels these dimensions as "get in" to work, "stay in" work and "get on" (i.e. progress through the labour market into better jobs). It is important to note that some sources also imply three dimensions suggest different labelling. For example, EC [41] identifies three stages: preparation of employment; transition from education to work and staying in employment and progressing in career. Regardless the labelling and grouping of the dimensions, employability is a dynamic version of employment were getting a job i.e. becoming employed is just a first step towards building career which is the new name for job security.

Nevertheless, a paragraph on the different dimensions and situations could help and support more detailed work in Task 5.2 and Task 5.3, e.g. highlighting:

- change of tasks and job acc. age and mobility of the employee,
- change of expertise (e. g. from train driver to dispatcher or manager),
- development in responsibility or expertise vs. "simple" changes of jobs/companies,
- career vs. employment biography.

3.3.2 Criteria

Common to all employability definitions is that they highlight the existence of different factors and conditions from personal attributes to labour market conditions and even broader context of socio-economic aspects. As pointed out by one of the STAFFER partners (rail supplier) *"Employability includes* <u>all activities</u> *that help people staying relevant for jobs in the company or industry in a changing business environment; Careers includes* <u>all activities</u> *that support people accelerating towards with higher impact and responsibility."* This entails (based on the discussion with the same partners) that indicators should capture both learning environment as well as its reflection on the job (e.g. in terms of skills match).

This standpoint is embedded in the employability criteria which will further lead to employability indicators. Based on CEDEFOPs elaboration on associating EQAVET indicators and two groups of criteria from EFQM excellence model [29] two types of criteria are considered: enablers and results. The reason behind is to cover both the enablers or in employability terms effectuation conditions (e.g. employment development opportunities or partnership with employers) and results reflected on the labour market (e.g. Workers helped to improve their work by training – CEDEFOP indicator).

3.3.3 Themes -success factors

Focus on success factors and building indicators as success indicators was an objective set in the initial meeting of WP5. This was addressed by the intention to cover employability enhancing activities with proposed indicators. Previous findings indicate several broad areas on the topic [17]:

- **career development learning and support (usually via the agency of careers services);**
- **embedded attribute development in the programme often as the result of modifications to curricula to make attribute development explicit or to accommodate employer inputs;**
- **innovative provision of work experience opportunities;**
- **enabled reflection on experience, attribute development and achievement**

In addition, coming from Shift2Rail (section 3.2) NGL and Flexible learning pathways (ability to switch from one to another module or learning area) are also considered as a success factor.

The proposed conceptual framework was presented along with the list of employability metrics and agreed among WP5 partners in the middle of Task 5.1 time frame. Some of the partners suggested that the initial set of indicators should be clustered according to the way they are measured, quantitative and qualitative measures of the indicators. This observation was taken into account and included in the revised initial list of indicators.

4 OPERATIONALISATION

The operationalisation phase is divided in three main sub-phases (steps) as presented in Figure 8) and described below.
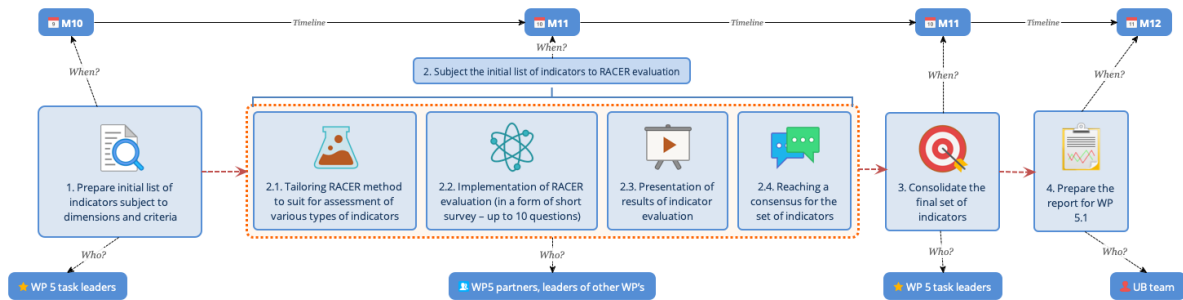
FIGURE 8 STEPS IN OPERATIONALIZATION OF INDICATORS

In the first step the initial set of indicators was prepared regarding measuring all relevant processes that influence employability and skills in rail sector. The sources of the most important European and global institutions such as OECD, European Commission (together with General Directorates and relevant agencies), ILO, ETF, World Bank, their strategies and policies were considered. A separate analysis of some good practices on measuring the uptake of employability within education programmes (so-called employability toolkits) is also included.

In the second step, STAFFERS' partners had the opportunity to review the initial set and to add or to change suggested indicators, after which, in the third step, partners approached the evaluation of the initial set using the RACER method. Based on the results of this evaluation a consolidated set of indicators, also including employability toolkit (audit and mapping tool), is obtained.

Each step is described in the separate subsections that follow.

4.1 Employability metrics - overview of existing sources

The complexity of the employability concept is reflected in the ways how it is measured. How it is measured depends on a way that it is perceived (individual vs. institutional achievement, labour market vs. HR instrument, etc.). From the appraisal perspective, review of employability concept (presented in section 3.1.) implies that indicator may differ depending on the perspective [12].

- **from the point of view of society and the government, employability is an indicator of the chance of full employment,**

- **for an employer, employability is an indicator of the possibility of matching labour offer and demand, or**

- **for individual (student or employee), employability is an indicator of the chance of a job or a career.**

Important insights come from the existing indicators sets. The indicators and instruments for collecting data can be adjusted to measure different scopes - from macro-economic trends to targeted surveys. From the perspective of labour market, employability could be monitored by following indicators sets:

- **World indicators of skills for employment and productivity (WISE),**

- **Skills for jobs indicators (by OECD),**

- **The Torino process indicators (European Training Foundation),**

- **STEP indicators (Skills toward Employment and Productivity. Skills measurement survey by the World Bank),**

- **ET 2020 indicators and benchmarks.**

Another stream are indicators that can be drawn on the data from surveys:

- **ELFS and EES surveys,**

- **Employer Skills Survey,**

- **Employers' employability surveys.**

From the perspective of evaluation of ET programme, the inspiration for indicators and criteria come from quality assurance in education and training. Here we can distinguish three valuable sources:

- **EQAVET quality indicators**
- **CEDEFOP's indicators for VET and lifelong learning**
- **Employability audits**

In following text we describe the nature and purpose of some indicators which we find suitable for measurement of employability in railway sector.

The purpose of designing and implementing of EQAVET (European Quality Assurance Reference Framework for Vocational Education and Training) indicators is to assure quality in VET at system level and the mutual trust among VET stakeholders. The EQAVET set of 10 indicators is a selection from the total possible range of VET relevant indicators (around 200) and it is based on the underlying theoretical and political understanding of what types of VET impacts are important [37]. EQUAVET indicators cover "get a job" dimension of employability, in terms of describing both inputs and processes and outputs and outcomes of ET programs.

CEDEFOP indicators were developed by European Centre for the Development of Vocational Training, an Agency of European Commission. CEDEFOP has selected a set of 36 indicators to quantify some key aspects of VET and lifelong learning [38] for achieving the objectives of the Europe 2020 strategy. In contrast to EQAVET indicators, this set of indicators measure not only the quality of initial VET but also continuous VET, which encompasses trainings and lifelong learning. In that manner, some of CEDEFOP indicators cover "stay in job" and "build a career" both in terms of enablers and results.

From the different perspective, ET2020 indicators measure some aspects of employability in order to monitor implementation of Education and Training Strategy (ET2020) of the EU. The ET 2020 states that an important objective of monitoring employability is meeting labour market "challenges" in "changing circumstances". Such challenges can be described in a long-term (demographical change, global competition, migration, technological change) or in a short or medium-term perspective (e.g. the current economic crisis) [41]. ET2020 indicators are collected from different sources (e.g. Eurostat, OECD Pisa, EU SILC, LFS, LMP, CVTS and national sources). There are 26 indicators that measure E&T at all stages. It should be noted that ET2020 pay special attention to transition education to work, which is one phase of "get a job" dimension from the labour market perspective (e.g. Long-term unemployment rate by age range, Frequency periods in NEET, Percentage of workers working involuntarily part-time, Number of months before finding a permanent job for relevant age cohort etc).

Another stream of surveys is hard-to-fill vacancies which is result of a mismatch between labour market and required skills for a particular job profile. Moreover, one of the major reasons of hard-to-fill vacancies appearing are skills-related (namely skill-shortage vacancies). From the employer perspective, hard-to-fill vacancies can be measured by using its incidence and density. Incidence is the proportion of employers reporting at least one hard-to-fill vacancy and density means the proportion of hard-to-fill vacancies and all vacancies [55]. Data on hard to fill vacancies are usually collected throughout Employer Skills Survey (ESS) also referred to as Employer Establishment Surveys. This relevant source describes skills challenges faced by

employers, both in terms of their existing workforce and when recruiting, and how they respond to these challenges through investment in training and workforce development.

The term skill mismatch is very broad and can relate to many forms of labour market characteristics, including vertical mismatch (usually measured in terms of overeducation, undereducation, overskilling and underskilling), skill gaps, skill shortages, field of study (horizontal) mismatch and skill obsolescence [49]. The term is generally restricted to mismatches impacting workers in employment, or firms currently employing or seeking to employ workers. The various concepts of skills mismatch are very different in terms of how they manifest themselves, their measurement, their determinants and how their consequences are felt. Some relate to mismatches experienced by employees, while others relate to employers and firm level difficulties. Some skill mismatch concepts are measured subjectively while others are derived from existing data. Measures of mismatch can be most usefully sub-divided into those that are measured at the level of the individual's circumstances and those that are measured in terms of firm-level aggregates. Individual concepts of mismatch relate to the degree to which workers in firms possess skill or education levels that are above, below or poorly connected to those required within their current job [7], [48], [8].

Skill mismatch can be seen as antithesis or opposite of "employability". Again, one could distinguish individual (qualitative) aspects and quantitative aspects referring to a larger group or sectoral phenomenon. But "skill mismatch" is in some cases easier to measure than employability because reduced mismatches indicate success and higher employability.

Having in mind above said for the initial set of STAFFERS indicators in railway it is selected two skill mismatch for education: (1) Overeducation – Percentage with education level above required or identified level of education in occupation (group or in selected occupation by STAFFERS project); Worker's level of education (qualification) exceeds the required level for the job (occupation) and (2) Undereducation – Percentage with education level below required or identified level of education in occupation group (selected occupation by STAFFERS project); Worker's education (qualification) level is lower than the required level for the job (occupation).

4.2 Initial set of indicators

After the review of potential sources of indicators named in previous chapter 4.1, and according to the defined conceptual framework, the list of sources is reduced and presented in the Figure 9. The initial set of indicators is formed considering sources such as EQAVET, CEDEFOP, Skills mismatch indicators (ILO), ET2020 indicators and indicators on recruitment and skills within EES.

On the other hand, the initial set of items is constructed regarding the examples of employability audits and self-assessment (SA) within quality assessment (QA) and accreditation processes. Both initial sets were formed taking into account not only different dimensions, their process and outcome sides, but also success factors. In the following text we present initial sets of employability indicators, items for employability audit and attributes for mapping tool.
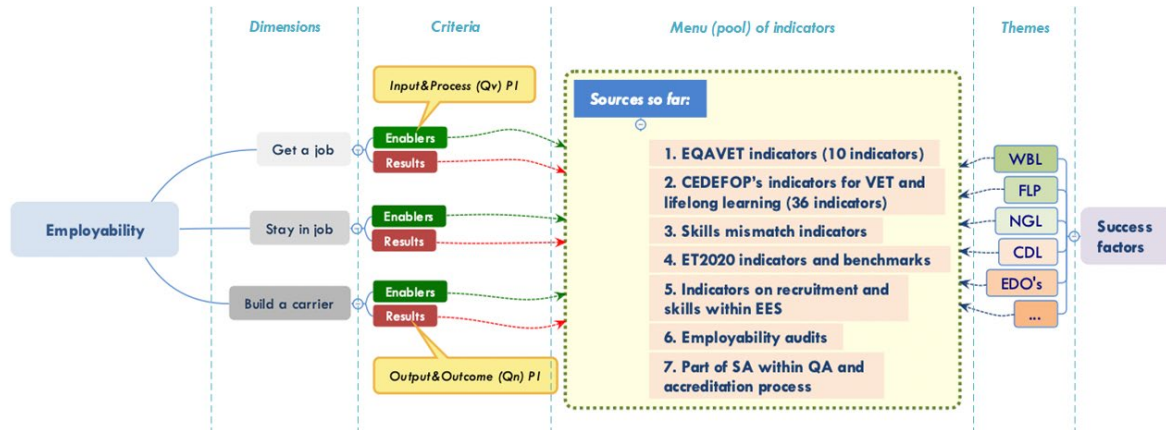
FIGURE 9 POSITIONING OF INDICATORS AND USED SOURCES OF INDICATORS IN THE CONCEPTUAL FRAMEWORK

(Abbreviations: Qv – Qualitative, Qn-Quantitative, PI-Performance Indicator, WBL-Work Based Learning, FLP-Flexible Learning Pathways, NGL – Next Generation Learning, CDL – Carrier Development Learning, EDO's – Employment Development Opportunities, EES-Employer Establishment Surveys, SA-Self Assessment, QA-Quality Assurance)

4.2.1 Employability indicators

Employability is a complex concept, involving not only individual's characteristics, skills, attitudes and motivation, but also other external factors which lie beyond the scope of education and training policy, such as labour market regulations, demography, the structure of the economy and the overall economic situation [30]. Therefore, it is not easy to capture almost every aspect of the process and factors that influence success of some education or training program without using well designed instrument. In order to develop a systematic approach to monitoring the performance of ET systems and ET provision, a set of indicators is necessary.

An indicator is a quantitative or qualitative measure of how close we are to achieving a set of goals (e.g., policy outcome) [31]. They help to analyse and compare performance across job profiles, before and during implementation, and can be useful for determining policy priorities. According to the European Commission Toolbox for better regulation, monitoring of how successful the implementation of new or updated ET programmes is, indicators should follow several principles [31]:

- **Collect only what is relevant so as to minimise administrative burden;**

- **Automate as much as possible with the use of IT tools to shorten data collection and processing time;**
- **Use common reporting standards to increase interoperability and ease sharing of data in the context of different policy areas;**
- **Make maximum use of existing data to save time and increase coherence of results; and**
- **Be transparent towards the stakeholders and opt for making data publicly available, preferably as "open data".**

In WP 5, indicators – relevant for validation the new and updated education and training programmes developed in WP 4.4 and WP 4.5 with the specific goal to increase employability – were identified. During reviewing possible indicators in defined pool of sources, some indicators that appear among different sources were identified and filtered (e.g. Unemployment rate). On the other hand, some indicators had to be adopted to get a more detailed picture of successfulness of education program. One example is "Percentage of trainers and teachers with a prior professional experience", which is different from original EQAVET indicator "Percentage of trainers and teachers participating in further training".

The following table shows an initial set which contains 30 indicators. Every indicator is described by its name, definition, source, type, criteria, and dimension. It should be noted that some indicators cover more than one dimension of the employability concept.

TABLE 2 INITIAL SET OF EMPLOYABILITY INDICATORS

No	Indicator name and its definition	Source	Type[8]	Criteria	Dimension
1	**Share of providers applying internal quality assurance systems defined by law/at own initiative** (Percentage of VET providers showing evidence of applying the EQAVET principles (or use of different quality assurance principles, e.g. ISO 9001 or EFQM) within a defined quality assurance system, where the number of registered VET providers is 100%)	EQAVET	Qn	Enablers	Get a job, Stay in job
2	**Share of teachers and trainers participating in further training** (Percentage of teachers and trainers participating in accredited training programmes, from the total number of registered teachers and trainers)	EQAVET	Qn	Enablers	Get a job, Stay in job
3	**Share of teachers and trainers having prior professional experience** (Percentage of teachers and trainers participating in non-formal learning and prior experience, from the total number of registered teachers and trainers)	EQAVET adapted	Qn	Enablers	Get a job, Stay in job
4	**Participation rate in VET programmes according to the type of programme and the individual criteria** (Percentage of annual cohort completing lower secondary school/compulsory education participating	EQAVET	Qn	Enablers	Get a job, Stay in job

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[8] Qn – quantitative type of indicator, Ql – qualitative type of indicator.

	in IVET programmes at upper secondary level (which lead to a formal qualification))				
5	**Number of successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria** (**Percentage of those completing** (i.e. attaining a formal qualification) IVET/CVET programme(s) (which lead to a formal qualification), compared to those entering IVET/CVET programme(s))	EQAVET	Qn	Results	Get a job, Stay in job
6	**Success rate of disadvantaged groups according to age and gender** (Percentage of programme completers, from disadvantaged groups defined at European and national level, compared to the number of those entering)	EQAVET	Qn	Results	Get a job
7	**Destination of VET learners at designated point in time after completion of training, according to the type of programme and the individual criteria** (Proportion of VET programme completers who are placed either in the labour market, further education or training (including university) or other destination within 12- 36 months after the end of programme)	EQAVET	Qn	Results	Get a job, Build a career
8	**Share of employed learners at designated point in time after completion of training, according to the type of programme and the individual criteria** (Percentage of VET programme completers who are employed one year after the end of training)	EQAVET	Qn	Results	Get a job
9	**Information on occupation obtained by individuals after completion of training, according to type of training and individual criteria** (Percentage of VET programme completers working in relevant occupations)	EQAVET	Qn	Results	Get a job
10	**Satisfaction rate of individuals and employers with acquired skills/competences** (Percentage of employers of a given sector who are satisfied to find VET programme completers with relevant qualifications and competences required for the workplace)	EQAVET	Qn	Results	Get a job, Stay in a job
11	**Unemployment rate** (The number of people unemployed as a percentage of the labour force)	EQAVET	Qn	Results	Get a job
12	**Information on mechanisms set up to identify changing demands at different levels** (Type of mechanisms used to update the VET offer to the future labour market needs)	EQAVET	Ql	Enablers	Get a job
13	**Schemes used to promote better access to VET** (Type of schemes used to improve access to VET)	EQAVET	Ql	Enablers	Get a job
14	**Indicator of learning outcomes** (Percentage of low achievement in reading, science and math)	ET2020 (OECD PISA)	Qn	Enablers	Get a job
15	**Indicator on apprenticeship or traineeship** (Percentage of learners having finished their studies and who have benefited from apprenticeship or traineeship)	ET2020 (EU SILC)	Qn	Results	Get a job
16	**Indicator on youth NEET**[9] (Percentage of the cohort population not in education, employment and training)	ET2020 (LFS)	Qn	Results	Get a job, Build a career
17	**Indicator on labour force participation of young people** (Percentage of workers (20-24; 25-29) working involuntarily part time)	ET2020 (LFS)	Qn	Enablers	Stay in job, Build a career

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[9] Not employed, education or training.

18	**Indicators on education/job (mis)match** (Percentage of youth people (by age cohort and ISCED level) employed at a relevant skill level (ISCO))	ET2020 (LFS)	Qn	Results	Get a job, Build a career
19	**Indicator on job** (mis)match within a time interval after leaving education (Proportion of young people who have an occupation relevant to their educational level X years after leaving education)	ET2020 (LFS)	Qn	Results	Get a job, Build a career
20	**Indicator of incidence of hard-to-fill vacancies due to shortage of qualification, skills or experience** (The proportion of employers (companies) reporting at least one hard-to-fill vacancy)	ESS 2019	Qn	Results	Get a job, Build a career
21	**Indicator of density of hard-to-fill vacancies due to shortage of qualification, skills or experience** (Hard-to-fill vacancies as a proportion of all vacancies)	ESS 2019	Qn	Results	Get a job, Build a career
22	**Indicator on transition by type of contract** (Transition between formally non-employment and employment and within employment by type of contract (permanent, fixed-term, ET(paid-apprenticeship), self-employment) from year n to year n+1)	ET2020 (EU SILC)	Qn	Results	Get a job, Stay in job, Build a career
23	**Indicator on career opportunities service** (Percentage of learners having finished their studies and who have benefited from career support services/organisations)	LFS	Qn	Results	Get a job, Build a career
24	**Indicators on smooth transition from one job to another** (Rate of inflow into employment 3 or 6 months after participation in a regular activation measure (LMP category 2 – training))	ET2020 (National sources)	Qn	Results	Get a job
25	**Skill mismatch in education - In accordance with the specifics of the occupation** (The rate between a person's current occupation and their field of education related to the highest-level education use for this occupation)	ETF	Qn	Enablers	Stay in job, Build a career
26	**Skill mismatch in education - OVER-education** (Percentage with education level above required or identified level of education in occupation (group or in selected occupation by STAFFERS project); Worker's level of education (qualification) exceeds the required level for the job)	LFS, ILO, ETF	Qn	Results	Get a job, Stay in job
27	**Skill mismatch in education - UNDER-education** (Percentage with education level below required or identified level of education in occupation group (selected occupation by STAFFERS project); Worker's education (qualification) level is lower than the required level for the job)	LFS, ILO, ETF	Qn	Results	Get a job, Stay in job
28	**Average number of foreign languages learned in IVET** (Average number of foreign languages learned in upper secondary vocational education)	CEDEFOP	Qn	Results	Get a job, Stay in job
29	**Innovative enterprises with supportive training practices** (Number of enterprises which have engaged in technological innovation and which have provided training to their staff to support such innovation. This number is expressed as a percentage of all companies engaged in technological innovation)	CEDEFOP	Qn	Enablers	Stay in job
30	**Workers helped to improve their work by training** (Number of trained workers reporting that 'training has helped them to improve the way they work' expressed as a percentage of all trained workers. Training refers to training sponsored by their employer (or by themselves in the case of the self-employed)	CEDEFOP	Qn	Results	Stay in job, Build a career

4.2.2 Employability audit and mapping tool

Within the enabler group of employability criteria, a useful source of measurable indicators are so called employability toolkits. They are mostly based on tailored audit or self-assessment schemes structured to reveal the uptake of employability within programmes. These are in fact specific questionnaires that search and uptake of employability elements within programme content and provision. They are referred as employability toolkit as they entail more than one constituting element. For example, 1) an audit tool used to gather first insights about presence of employability and 2) mapping tool that maps programmes against the key attributes that employers mostly value.

Employability audit tool focusses on the success factors i.e., elements or items that are seen with strong positive impact on employability, such is partnership between education providers and employees. The term 'audit' is used to highlight that all employability issues are appraised in terms of existing and future provision. The principal aim is to make the audit a developmental tool. In practical terms this means that the aim is not to comply with the overall score or use it to use it in a "league table" but decompose it to track fields of action and improvement. There are several main steps in devising employability audit tool [32]:

- Set audit items
- Set an appraisal scale (an example is given in **Table 3**).

TABLE 3 AN EXAMPLE OF APPRISAL SCALE FOR EMPLOYABILITY AUDIT [32]

Score	Descriptor
0	The audit point has not been seriously considered at all.
1	The audit point has been considered but reflection indicates it is poorly satisfied.
2	The audit point has been considered but reflection indicates it is partially satisfied.
3	The audit point has been considered and reflection indicates it is adequately satisfied.
4	The audit point has been considered and reflection indicates it is optimally satisfied.

- Decide on the audit team (programme designers/teachers, students, recent graduates, employee representatives)

- Perform an audit

- Analyse each of the audit points with a score of 2 or less in terms of: options to satisfy the audit item?; constraints that make any of these options unrealistic? when the changes can be made, consider prioritization in terms of short- and long-term plans, etc. Explore possibilities to transfer good practices from programmes with higher scores where interviews on "how it is done" can be serve as a guide for improvements.

The key part is defining the set of audit items that will be further apprised. Based on the existing examples of specific questionnaires that investigate the uptake of employability elements in ET programmes[10] and insights from conceptualisation phase the initial set of aspects (dimensions) and associated items is prepared and presented in Table 4. It includes six dimensions that can be seen as indicators falling into enabler's criteria and get a job dimension in terms of preparation for employment and transition from education to work. The indicator that is a kind of specific here is Extra-curricular activities. Unlike the others that are strongly associated with employability, this indicator is still emerging. It seems necessary to highlight two aspects: First that there are some evidence to support including this indicator [45] and second that during discussions among partners this aspect was brought to the table using online gaming as an example. In line it was decided to put this indicator under scrutiny i.e. subject it to further evaluation.

TABLE 4 INITIAL SET OF INDICATORS AND ITEMS WITHIN EMPLOYABILITY AUDIT

1.1. Employability within curriculum

Associated items:
Is the information provided about the programme clear, complete and facilitates decision-making by young people and their families?
Does the information provided about the programme contain data on employment and carrier opportunities?
Are promotion strategies and resources planned and budgeted at annual basis?
Do students and recent graduates participate in programme promotion activities?
Are transversal skills (1) explicitly taught?
Are transversal skills assessed?
Are digital skills explicitly taught (2)?
Are digital skills separately assessed?
Is there a skills matrix which is completed by each learner/trainee (3)?
Is ability to write clear, concise, correct English assessed regularly?
Do learnerss/trainees have a choice of modules or choice of work areas within a module so they can tailor the content of their course to their perceived needs/interests?
Are appropriate professional attitudes developed and discussed with learners/trainees?

1.2. Employment development opportunities

Associated items:
Has employment destination data been circulated to ET staff within the last 2 years?
Does ET staff know who actually employs their graduates?
Do current learners know who employs programme graduates?
Do recent graduates visit to talk about their current jobs?
Are learners made aware of where they can obtain information on graduate destinations in employment?
Are learners are regularly informed about opened employment opportunities (e.g. through annual job fairs or similar activities)?
Are learners explicitly thought to track and understand labour market news and updates (e.g. through trainings, workshops, etc.)?

1.3. Carrier development learning and support

Associated items:
Are graduate career possibilities and profiles available to learners?
Do recent graduates visit to talk about their career paths?
Do more senior graduates visit to talk about their career paths?
Are learners explicitly taught career management skills (4)?
Is a PDP (5) portfolio maintained throughout the course?
Is reflection on and review of achievements actively promoted within the course?
Do learners/trainees get help with producing/improving a CV?
Do learners/trainees get help with letters of application for employment?
Is help with module or work area choice available in each year?
Can learners easily switch to another module or work area?
Is there an effective relationship between the programme (course) team and your Careers Service?
Are learners explicitly guided in the course to make contact with the Careers Service?
Do you know the name of the Careers Adviser associated with your subject?
Are your learners encouraged to have confidence and high aspirations?

EXPLANATIONS:
(1) Communication skills; Teamwork skills; Customer handling skills; Problem solving skills; Learning skills; Planning and organisation skills (List of transversal skills from WP2 Survey)
(2) Information, Communication, Problem solving and Software skills as defined within EC Digital Competence Framework
(3) skills matrix maps required (desired) and available skills of learners. Usually it contains output of learner's assessment of skills against competences
(4) Self-awareness; Labour market awareness; Career planning; Resilience; Curiosity and inquisitiveness; Creativity; Self-employment skills; Collaboration; Communication; Leadership, etc.
(5) Personal Development Plan. Considered in terms of generic competences and about ability to maintain an up-to date personal development plan and takes action to make

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[10] e.g. Guide to quality standards: a tool for assessing youth employability training and job placement processes [33], [35], [50]

1.4. Partnership with employers

Associated items:
Do employers review your curriculum and provided feedback on its content?
Are mechanisms to review and update curricula based on employer feedback applied regularly?
Do you know strengths and weaknesses of the graduates perceived by employers?
Do learners have the opportunity to visit local employers?
Do learners have the opportunity to travel and visit foreign employers?
Do learners have the opportunity for virtual visits of foreign employers?
Do you have good communication with major employers of our learners?
Do employers visit your unit and give talks about employment opportunities?
Do employers attend learner final year project presentations?
Do you know what skills, knowledge and attitudes your major employers see as becoming more important in the next five years?

1.5. Options for work experience

Associated items:
Have you identified where work related learning activities take place in the course and are these made explicit to students?
Have opportunities to increase work related learning in the course been identified and taken?
Are apprenticeships and traineeships provided and encouraged as part of the programme?
Are placements (e.g. service learning) provided and encouraged as part of the programme (course)?
Is minimum length of work experience clearly identified within the programme?
Are sandwich placements provided and encouraged as part of the programme?
Are virtual placements possible and encouraged for students?
Are abroad placements possible and encouraged for students?
Does the programme include NGL resources as virtual and augmented reality?
Are realistic simulations used to give experience of real work situations (6)?
Do majority of students carry out course project work in real settings with employers?
Are work placements available in areas not involving programme specific discipline?
What proportion of students on your course have obtained work experience before graduation? (0=don't know; 1=<5%; 2=5 to 20%; 3=20 to 50%; 4=>50%)
Are students on work placements supported by a process which encourages reflection and emphasises breadth of learning opportunities?

1.6. Extra-curricula activities

Associated items:
Is the contribution of extra-curricula activity to CV and skills development explained to students early in the course?
Are extra-curricula activities and responsibilities recorded by your students?
Are extra-curricula activities known to ET staff?
Are arrangements in place to encourage voluntary work by students?
Are interests and engagements outside programme field (e.g. sport, using modern technologies in everyday life) shared and encouraged throughout education?

sure that personal development takes place (6) Simulation is about experiential learning experiences, whereby learners are engaged in analysis and decision-making in real work situations in an educational setting. In VET, examples of simulated work environments are: campus-based training sites (such as workshops with role playing) or technology-assisted simulation (such as train simulators)

The employability mapping tool helps to explore how and where the programme promotes the employability attributes. It can be used to identify where and how attributes are developed and assessed, and what is the reflection on current provision as well as what are the reflections on future provision. An example is given in Table 5.

TABLE 5 EXAMPLE OF EMPLOYABILITY ATTRIBUTES MAPPING TOOL

Employability attributes (from operators and/or suppliers PoV)	Existing provision				Future provision		
	How important it is?	Is it developed within the programme?	Is it assessed within the programme?	The score for existing provision?	How important it is?	Short-term plans	Long-term plans
...							

The reflection on current provision requires an appraising scale to be set. An example is given in Table 6.

TABLE 6 AN EXAMPLE OF APPRISAL SCALE FOR ATTRIBUTES IN EMPLOYABILITY MAPPING TOOL [34]

Score	Description
1	No attribute coverage
2	Attribute coverage implicit/assumed
3	Attribute coverage explicit (e.g. through learning outcomes/module information)
4	Attribute coverage is explicit and learners/trainees reflect on their development of the attribute
5	Attribute coverage is explicit, learners reflect on their attribute development, and reflections are turned into action plans

It is important to note that the importance of an attribute is not commonly included in the mapping tool. However, it should be considered in STAFFER due to the different perspectives (operators vs. suppliers) as well as job families and occupational profiles. In the final appraisal this will allow to combine importance and reflection on provision.

Similar as it was the case with the audit, for the mapping tool the key step is to identify relevant employability attributes. Again, similar as it was done with the audit the initial set of attributes is prepared based on the existing examples [34]. The initial set of employability attributes is presented in Table 7.

TABLE 7 INITIAL SET OF EMPLOYABILTY ATTRIBUTES FOR MAPPING TOOL

1. Specialist subject knowledge and expertise

Understanding how its knowledge can be applied in a broader context and how learning can be transferred to new contexts.

2. Critical thinking

Developing questioning, analytical, and problem-solving skills.

3. Creativity

Recognising opportunities, being happy to experiment, take risks and make mistakes, and then learning from experience.

4. Research skills and digital literacy

Being curious and resourceful, identifying and accessing appropriate sources, practising effective information management, and using digital, communication and media technologies with professionalism and confidence.

5. Learning and study skills

Developing learning skills and recognising the power of learning. Personal reflection, progression, planning, 'learning to learn', being alert to new experiences and opportunities in rail and broader fields.

6. Career management

Being able to understand and track labour market information (job offers and their description, recruitment process, HR, etc.) and reflect own career plans.

7. Systems thinking

Being able to understand the interrelationships between environmental, social, economic, political systems and technological aspects when trying to understand and respond to sustainability challenges in rail sector and overall development.

8. Openness

Being able to communicate and collaborate with people with other cultural perspectives and different views, and being willing to question and reflect on own perspectives. Willing and knowing how to connect with people abroad.

9. Responsibility

Knowing that individual actions have consequences and seeking to enhance integrity within academic, professional and civic life.

10. Leadership

Willing to act collaboratively in bringing about change towards more sustainable futures.

11. Self-organisation and management

Taking initiative, planning ahead, and demonstrating your leadership potential.

12. Teamwork and collaboration

Working professionally and confidently, being an active listener and assertive as appropriate in voicing opinions, seeking to resolve conflicts, and understanding the contribution you bring to a group.

13. Professional and ethical manner

Developing a strong sense of your own ability, working and communicating with integrity, and taking responsibility for your actions.

14. Negotiation and persuasion

Being able to put your ideas forward with confidence, to convince others, to take an active part in discussion, and to reach agreement.

15. Effective verbal and written communication

Conveying information clearly, for a variety of purposes and audiences, and enhancing your social capital and personal capacity through ethical, strategic, and relevant networking.

16. Be empowered

Making informed choices, developing resilience through navigating and dealing with uncertainty, acting in a forward-looking and flexible manner.

4.3 Evaluation of indicators

4.3.1 Methodology

In order to select a set of indicators that will measure the employability of existing educational programmes for a defined set of occupations, a method is needed that will efficiently capture the views of the partners within the STAFFER consortium. This method should play the role of a communication tool that will reach a consensus of the partners on the choice of a set of indicators.

The evaluation of indicators was divided in two phases. In the first phase, partners were asked to review the initial set of indicators, items and attributes, with a possibility to add new indicators and to suggest redefinition of current ones. After collecting suggestions of participants and updating the initial set with a new and changed indicators, participants were asked to give evaluation of proposed indicator in the second phase.

For evaluation of indicators in the second phase, there are few well-known and widely used methods such as SMART (stands for Specific, Measurable, Attainable and action oriented, Relevant and Time-bound), SPICED (stands for Subjective, Participatory, Interpreted,

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Communicable, Empowering and Disaggregated), RACER (stands for Relevant, Accepted, Credible, Easy and Robust) etc. The SMART method is suitable for the selection of quantitative indicators while the SPICED method is used for the selection of qualitative indicators [43]. Unlike the previous two, the RACER method involves the evaluation of both quantitative and qualitative indicators. This makes it easier for STAFFER partners to select these two groups of indicators by knowing and using one method correctly, making this method more suitable for a larger number of decision makers within the consortium. The assessment method (RACER) was presented on the meeting held in July 16th 2021 and approved by WP5 partners.

Originally, the RACER method consists of two rounds of indicator evaluation [11]. In the first step, each indicator is evaluated from the angle of the five basic criteria of the RACER method (Relevant, Accepted, Credible, Easy, Robust). Since the basic criteria are overly broad, a set of sub-criteria is determined for each basic criterion in order to accurately assess each indicator (it is common to define 2-5 sub-criteria for each criterion). For each sub-criterion, the question to which decision makers should give one of three possible answers should be precisely defined: fully satisfies the sub-criterion, partially satisfies the sub-criterion or does not satisfy the sub-criterion. Instead of answering, decision makers often assign a certain colour (green in the first case, yellow in the second and red in the third) for each indicator to a particular sub-criterion question. In this way, the first step is represented by a matrix containing the indicators as a vertical dimension and the sub-criteria as a horizontal dimension. The fields inside the matrix contain one of three colours, so it is easy to visually determine which indicators more or less meet the requirements of the sub-criteria. The second step is evaluation of indicators related to their application to the specific problem for which they are determined.

In the described form, the RACER method was used for evaluation and selection of indicators in general areas, such as sustainability and resources consumption [2]., where a large number of indicators are available and for which databases are available. In contrast to these topics, for the evaluation of educational programs for a defined set of occupations within the STAFFER project, numerous data are not available to that extent or are not easily measurable. Therefore, it was necessary to adjust the application of the RACER method to determine the set of indicators in two steps. In the first step, the indicators had to be selected according to the criteria **R**elevant and **A**cceptable (which would form the **Conceptual filter** of the evaluation of indicators) and in the second step the remaining indicators would be selected according to the criteria **E**asy and **R**obust (which would form the **Operational filter** of the evaluation of indicators)[11].

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[11] In description of RACER criteria, there is an overlap between them. We recognise those overlapping and therefore we distinguish four criteria. On the other hand, we made balance in numbers of criteria in conceptual

WP5.1 partners were asked to assess proposed indicators regarding four criteria with the following meaning:

- **Relevant: Indicator is in line with STAFFER WP5 objectives ("to validate the new and/or updated mobility and training paths, programs and curricula developed in Tasks 4.4 and 4.5 with the specific goal to increase employability and career opportunities of young professionals");**
- **Acceptable: Indicator is easy to understand and accepted by employees, employers and E&T providers[12];**
- **Easy: Indicator is easy to collect or already used/collected in previous WPs (with a suggestion to participants to indicate if this is the case); and**
- **Robust: Indicator is sensitive enough to monitor changes (current and future changes) but not deeply affected by short-term changes.**

However, the assessment of items and attributes had to be done by using first three criteria (without using **R**obust criterion). Participants had to assess suggested indicators regarding all four criteria. For every criterion they could express one of four answers:

- **4 - Yes, an indicator completely fulfils a criterion in its current form (marked with green color);**
- **3 - An indicator partially fulfils a criterion and it needs to be adjusted (yellow);**
- **2 - No, an indicator does not fulfil a criterion (red); or**
- **1 - Do not know (gray).**

Since **R**elevant criterion is a key criterion in this evaluation, for this criterion possible answers are 4, 3 or 2 (do not know for this criterion was excluded). If some indicator had been assessed as not relevant, the participant was not obliged to proceed with evaluation on that particular indicator for other three criteria. In case that an evaluator had deemed that an indicator should be accepted with adjustment (by choosing answer 3), he should add a proposal for a new formulation of the indicator.

After collecting completed assessments by participants, two rounds of evaluation were implemented. In the first one, the indicators were removed if they did not satisfy conceptual criteria (**R**elevant and **A**cceptable criterion). The indicator/item/attribute is removed from the set if:

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and operational filter. In that way we adapted RACER method which was presented on meeting in July 16th 2021 and approved by WP5 participants.
[12] The criterion has been rephrased according to a suggestion of respondents.

1. **At least one representative from two groups of the stakeholders' group (operators, suppliers, ET providers) did not approve it; or**

2. **The majority of the representatives from a stakeholder group did not approve it.**

In the second round of evaluation, we have identified indicators/items/attributes that need further adjustments (e.g., in terms of clarifying, merging or splitting). Responds received from partners were processed by using specially designed tool in excel, which is shown in following figure that are given in Annex 2 in larger format as well.
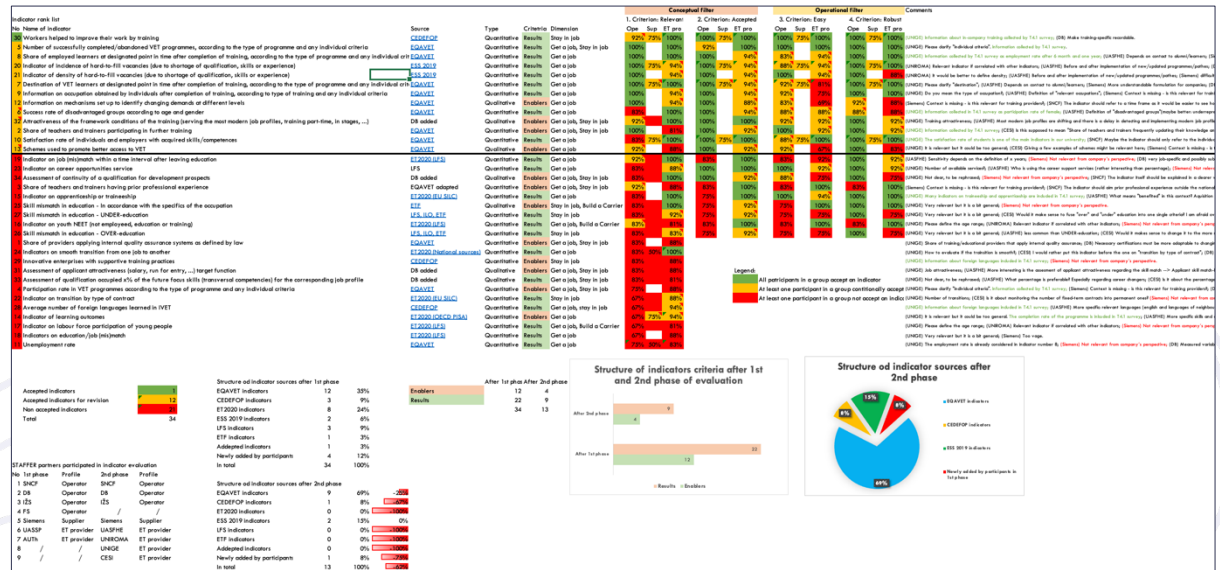

FIGURE 10 SNAPSHOT OF EXCEL TOOL FOR PROCESSING RESULTS OF RACER METHOD FOR INDICATORS

4.3.2 Results

Results from the phase 1

During the first phase of the evaluation WP5 partners were asked to add new indicators, items and/or attributes to the Employability audit and mapping tool. Seven partners participated in this phase (four operators, two education/training provider and one supplier representatives) have added to the initial set four indicators, five items to the audit and six attributes to the mapping tool, in total.

TABLE 8 SET OF EMPLOYABILITY INDIACTORS NEWLY ADDED AFTER THE PHASE 1

New indicators	
31.	Assessment of applicant's attractiveness (salary, run for entry, ...) target function
32.	Attrativeness of the framework conditions of the training (serving the most modern job profiles, training part-time, in stages, ...)

33.	Assessment of qualification occupied x% of the future focus skills (transversal competencies) for the corresponding job profile
34.	Assessment of continuity of a qualification for development prospects

TABLE 9 SET OF ITEMS FOR EMPLOYABILITY AUDIT AND ATTRIBUTES FOR MAPPING TOOL NEWLY ADDED AFTER THE FIRST PHASE

New items	New attributes
Employability within curriculum 1. Are there any admission tests or assessment that can be useful to be shared with employers in case of placement?	1. **Adaptability** (the ability quickly to operate under previously unknown conditions or in previously unfamiliar roles)
Employment development opportunities 2. Is there any data base/website/intranet/social channel available for learners? 3. Is there any periodical exchange among old graduates and learners?	2. **Fundamentals of economics and law** 3. **Fundamentals of Natural Sciences** 4. **Basic knowledge about the environment and climate** 5. **Customer Development** (put the client at the centre of strategy, its needs and new expectations in order to provide an outstanding service)
Career development learning and support 4. Are learners made aware of D&I policies for career paths in employers?	6. **Continuous improvement** (Aiming at constantly improving processes. Asks others to give new ideas share and spread them. Searching for optimization)
Extra-curricular activities 5. Is there room for extra curricula activities?	

There were also some very valuable comments received within this phase. Some of the indicators, items and attributes where rephrased in order to make them clearer. Also, the criterion 'Acceptable' was rephrased to make clear that the partners are asked to express their opinion on whether the item or the attribute is easy to understand by both ET providers and 'ET customers'. Besides proposals to enrich the initial set of items, the suggestion from rail suppliers' point of view was to cover (and also differentiate) between indicators/items/attributes that address ET environment and company environment. From educational providers the suggestion was to merge dimensions within the audit (EDO's and Partnership with employers) but also to merge some items within the dimensions.

Results from the phase 2 – RACER evaluation

In the second phase, partners were asked to evaluate set of indicators, items and attributes proposed after the first phase. During the second phase eight partners participated in RACER evaluation (three operators, four education/training and one supplier representative). In Table 10 is given a general assessment outcome. In the following text we present the results of evaluation of every module.

Employability indicators: From 34 proposed indicators, 13 had got a positive opinion by most of the participants. Only one indicator is fully accepted by all participants and the 12 were conditionally accepted with requests for revision in terms of clarification, doubts of their relevance for training providers or challenges to monitor the indicators on the individual basis.

TABLE 10 GENERAL ASSESSMENT OUTCOME

	Indicators	Items in Employability Audit	Attributes in Mapping Tool
Initial set	30	61 in 6 dimensions	16
After phase 1	34	67 in 6 dimensions	22
After phase 2 (RACER)	13 (12 to be fully revised)	51 in 5 dimensions (28 to be fully revised)	17 (9 to be fully revised)

Most of rejected indicators did not pass the **R**elevance criterion, while the rest were rejected because they did not fulfil **R**elevant and **A**cceptable criterion combined (7 of 21 rejected indicators). If we consider indicator sources, among accepted indicators, 9 of 13 are EQAVET indicators (Figure 11). Both ESS 2019 indicators that measure incidence and density of hard-to-fill vacancies also received positive opinion by most participants (86% and 90% respectively). The rest of chosen indicators are "30. Workers helped to improve their work by training" (CEDEFOP indicator) and an indicator that DB added "Attractiveness of the framework conditions of the training (serving the most modern job profiles, training part-time, in stages, ...)".

It is interesting to see that none of the ET2020 indicators (8 of 34) got a positive appraisal by the participants with explanation that most of them are useful but too general or not relevant at all for some participants. The reason is that ET2020 indicators are indicators related to external employability and company practitioners are more interested in internal employability. Skill mismatch indicators (ETF indicators) also did not receive positive opinion. Some explanation said that they might be judgemental, and with a suggestion to fuse UNDER- and OVER-education in to a single, more neutral, indicator "education gap". Still, a similar indicator "Skill mismatch in education - In accordance with the specifics of the occupation" did not get a positive appraisal too. Regarding criteria, the most chosen criteria are "Results" but the ratio between Enablers and Results indicators after 1st and 2nd phase remains almost same (Figure 12).
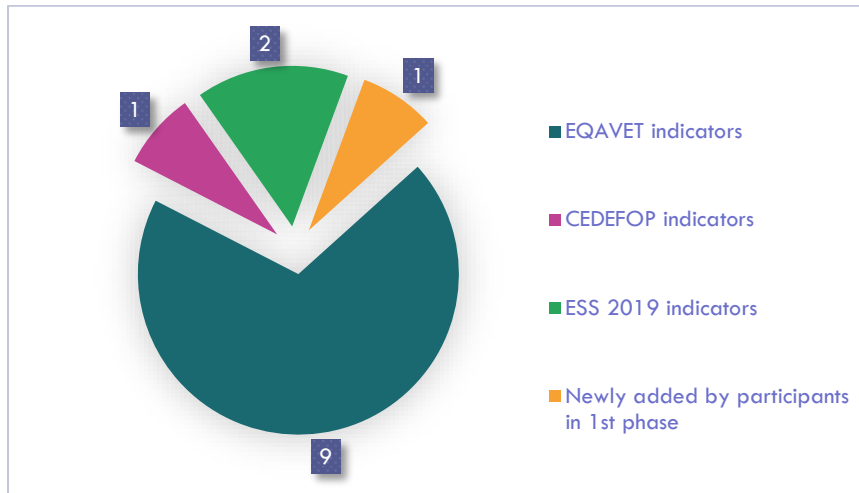
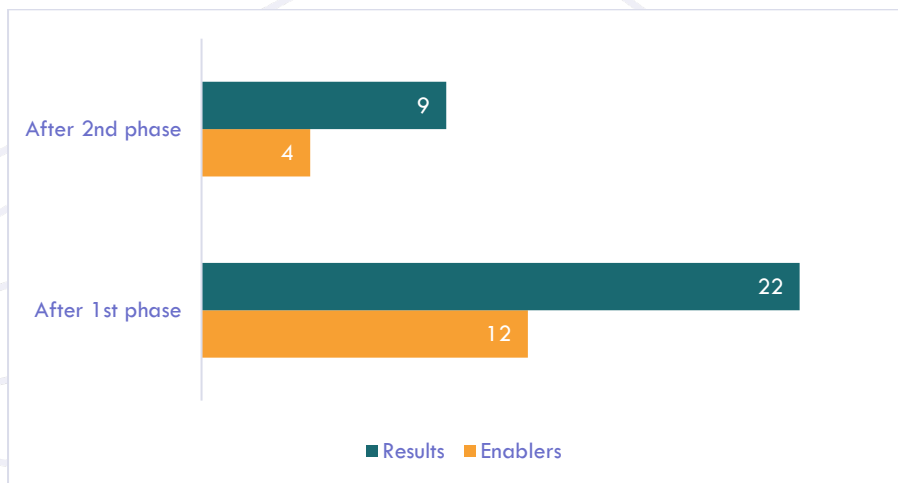**FIGURE 11 STRUCTURE OF INDICATORS SOURCES AFTER SECOND PHASE OF EVALUATION**

FIGURE 12 STRUCTURE OF INDICATORS CRITERIA AFTHER 1ST AND 2ND PHASE OF EVALUATION

Employability audit: Six dimensions with 67 items in total were subjected to RACER evaluation. It is important to remind that unlike the indicators, for the audit and mapping tool only one criterion was included within operational filter (**E**asy to collect within the timeframe of WP5), since the audit is not just a set of criteria and indicator but also an instrument for data collection.

In total, ten items in five dimensions and one dimension (which contains 6 items) did not pass the conceptual filter (criteria **R** and **A**) and were removed from the set. Moreover, sixth dimension (Extra curricula activities) is excluded, as the whole dimension is considered to be not relevant. At the end the employability audit consists of five dimensions and 51 items in total (Table 11). It can be noticed that the rate of rejected items is much smaller than for employability indicators.

TABLE 11 SET OF ITEMS WHICH AS BEEN FULLY OR CONDITIONALY ACCEPTED FROM PARTICIPANS WITH A REQUEST FOR THEIR REVISION

Dimension		Number of items
1	Employability within curriculum	11
2	Employment Development Opportunities - EDO's	7
3	Career development learning and support	13
4	Partnership with employers	10
5	Options for work experience	10
Total: 5 dimensions (indicators)		43

Mapping tool: After second phase (receiving evaluation of proposed attributes) five attributes were removed. In total nine attributes have to be rephrased according to job profiles i.e. point of view of suppliers and operators collected in 5.2. and 5.3. For those attributes, participants sent useful suggestions. For example, attribute "**Critical thinking**" should be explained as "being able to think in the system and to think from different point of views" instead of "developing questioning, analytical, and problem-solving skill". All received suggestions and comments are grouped and addressed for every attribute and can be found in supplementary excel file.

4.4 Consolidated set of indicators

In this chapter we present a consolidated set of indicators, items for employability audit and attributes for employability mapping tool. In Table 12 accepted indicators are given considering the appraisals which have been received from participants in WP 5.1. survey (survey is given in annex 1).

TABLE 12 SET OF CONSOLIDATED SET OF EMPLOYABILITY INDICATORS

No.	Name of indicator	Source	Type	Criteria
30	Workers helped to improve their work by training	CEDEFOP	Quantitative	Results
5	Number of successfully completed/abandoned VET programmes, according to the type of programme and any individual criteria	EQAVET	Quantitative	Results
8	Share of employed learners at designated point in time after completion of training, according to the type of programme and any individual criteria	EQAVET	Quantitative	Results
20	Indicator of incidence of hard-to-fill vacancies (due to shortage of qualification, skills or experience)	ESS 2019	Quantitative	Results
21	Indicator of density of hard-to-fill vacancies (due to shortage of qualification, skills or experience)	ESS 2019	Quantitative	Results
7	Destination of VET learners at designated point in time after completion of training, according to the type of programme and any individual criteria	EQAVET	Quantitative	Results
9	Information on occupation obtained by individuals after completion of training, according to type of training and any individual criteria	EQAVET	Quantitative	Results

12	Information on mechanisms set up to identify changing demands at different levels	EQAVET	Qualitative	Enablers
6	Success rate of disadvantaged groups according to age and gender	EQAVET	Quantitative	Results
32	Attractiveness of the framework conditions of the training (serving the most modern job profiles, training part-time, in stages, ...)	DB added	Qualitative	Enablers
2	Share of teachers and trainers participating in further training	EQAVET	Quantitative	Enablers
10	Satisfaction rate of individuals and employers with acquired skills/competences	EQAVET	Quantitative	Results
13	Schemes used to promote better access to VET	EQAVET	Qualitative	Enablers

Legend:		Fully accepted		Need adjustment (rephrasing)

From the table it can be noticed that all participants agree that the most important indicator is value of training for current workers (indicator marked with green). This can be explained as rising needs for workers adaptability in terms of changing demand for their skills and knowledge in forthcoming digitalisation of the railway sector. In this indicator, operators and suppliers have found the common ground, following the education and training providers. Of course, except first indicator in the set, all indicators will be the subject of revision and tailored according to the participant needs and specific jobs in rail sector (indicators marked with orange).

Majority of chosen indicators falls in the 'results' (9 are in 'results' indicators and 4 'enablers indicators). Some of them are qualitative as such as "32. Attractiveness of the framework conditions of the training" or "9. Information of mechanisms set up to identify changing demands of different levels". More detail of quality of education and training process and its enables are subject of employability audit. Set of items in audit are listed in Table 13 according to received percentage of positive appraisals.

TABLE 13 SET OF CONSOLIDATED SET OF THE ITEMS FOR EMPLOYABILITY AUDIT

No.	Name of dimension (indicator)/item
1.1. Employability within curriculum	
6	Are transversal skills assessed?
12	Are appropriate professional attitudes developed and discussed with learners/trainees?
3	Are promotion strategies and resources planned and budgeted at annual basis?
1	Is the information provided about the programme clear, complete and does it facilitate decision-making by young people and their families?
5	Are transversal skills explicitly taught?
11	Do students/trainees have a choice of modules or choice of work areas within a module so they can tailor the content of their course to their perceived needs/interests?
2	Does the information provided about the programme contain data on employment and career opportunities?
7	Are digital skills explicitly taught?
8	Are digital skills separately assessed?
13	Are there any admission tests or assessment that can be useful to be shared with employers in case of placement?
10	Is ability to write clear, concise, and correct English assessed regularly?
1.2. Employment development opportunities	
3	Do current learners know who employs programme graduates?
5	Are learners made aware of where they can obtain information on graduate destinations in employment?
6	Are learners are regularly informed about opened employment opportunities (e.g. through annual job fairs or similar activities)?
1	Has employment destination data been circulated to ET staff within the last 2 years?

8	Is there any data base/website/intranet/social channel available for learners?
2	Does ET staff know who actually employs their graduates?
7	Are learners explicitly taught to track and understand labour market news and updates (e.g. through trainings, workshops, etc.)?

1.3. Career development learning and support

1	Are graduate career possibilities and profiles available to learners?
12	Are learners explicitly guided in the course to make contact with the Careers Service?
14	Are your learners encouraged to have confidence and high aspirations?
15	Are learners made aware of D&I policies for career paths in employers?
11	Is there an effective relationship between the programme (course) team and your Careers Service?
4	Are learners explicitly taught career management skills?
6	Is reflection on and review of achievements actively promoted within the course?
9	Is help with module or work area choice available in each year?
10	Can learners easily switch to another module or work area?
2	Do recent graduates visit to talk about their career paths?
3	Do more senior graduates visit to talk about their career paths?
7	Do learners/trainees get help with producing/improving a CV?
8	Do learners/trainees get help with letters of application for employment?

1.4. Partnership with employers

4	Do learners have the opportunity to visit local employers?
5	Do learners have the opportunity to travel and visit foreign employers?
6	Do learners have the opportunity for virtual visits of foreign employers?
1	Do employers review your curriculum and provided feedback on its content?
3	Do you know strengths and weaknesses of the graduates perceived by employers?
2	Are mechanisms to review and update curricula based on employer feedback applied regularly?
7	Do you have good communication with major employers of our learners?
8	Do employers visit your unit and give talks about employment opportunities?
9	Do employers attend learner final year project presentations?
10	Do you know what skills, knowledge and attitudes your major employers see as becoming more important in the next five years?

1.5. Options for work experience

3	Are apprenticeships and traineeships provided and encouraged as part of the programme?
9	Does the programme include NGL resources as virtual and augmented reality?
11	What proportion of learners on your course carry out course project work in real settings with employers? (0=don't know; 1=<5%; 2=5 to 20%; 3=20 to 50%; 4=>50%)
10	Are realistic simulations used to give experience of real work situations?
1	Have you identified where work-related learning activities take place in the course and are these made explicit to learners?
2	Have opportunities to increase work related learning in the course been identified and taken?
6	Are sandwich placements provided and encouraged as part of the programme?
8	Are abroad placements possible and encouraged for students?
4	Are placements (e.g. service learning) provided and encouraged as part of the programme (course)?
7	Are virtual placements possible and encouraged for students?

Legend: Fully accepted Need adjustment (rephrasing)

The participants reached consensus for most items in dimensions "1.2. Employment development opportunities" (5 out of 7 accepted items), and "1.5. Options for work experience" (6 out of 10 accepted items). The number of received suggestions for revision are less than for employability indicators. Besides changing, dividing or merging some items, some suggestions of participants also suggest that the order of the items in a dimension should be changed in Task 5.2 and task 5.3. For a employability mapping tool, a consolidated set of attributes is shown in Table 14.

TABLE 14 SET OF CONSOLIDATED SET OF THE ATTRIBUTES FOR EMPLOYABILITY MAPPING TOOL

No.	Name of attribute
12	**Team-work and Collaboration** (Working professionally and confidently, being an active listener and assertive as appropriate in voicing opinions, seeking to resolve conflicts, and understanding the contribution you bring to a group)
5	**Learning and study skills** (Developing learning skills and recognising the power of learning. Personal reflection, progression, planning, 'learning to learn', being alert to new experiences and opportunities in rail and broader fields)
8	**Openness** (Being able to communicate and collaborate with people with other cultural perspectives and different views, and being willing to question and reflect on own perspectives. Willing and knowing how to connect with people abroad)
9	**Responsibility** (Knowing that individual actions have consequences and seeking to enhance integrity within academic, professional and civic life)
13	**Professional and ethical manner** (Developing a strong sense of your own ability, working and communicating with integrity, and taking responsibility for your actions)
4	**Research skills and digital literacy** (Being curious and resourceful, identifying and accessing appropriate sources, practising effective information management, and using digital, communication and media technologies with professionalism and confidence)
22	**Continuous improvement** (Aiming at constantly improving processes. Ask others to give new ideas share and spread them. Searching for optimization)
1	**Specialist subject knowledge and expertise** (Understanding how its knowledge can be applied in a broader context and how learning can be transferred to new contexts)
2	**Critical thinking** (being able to think in the system and to think from different point of views)
17	**Adaptability** (the ability to adapt in terms of resilience – quickly to operate under previously unknown conditions or in previously unfamiliar roles)
7	**Systems thinking** (Being able to understand the interrelationships between environmental, social, economic, political systems and technological aspects when trying to understand and respond to sustainability challenges in rail sector and overall development – more appropriate for the managerial positions)
3	**Out-of-the-box thinking** (Recognising opportunities, being happy to experiment, take risks and make mistakes, and then learning from experience)
15	**Effective verbal and written communication** (Conveying information clearly, for a variety of purposes and audiences, and enhancing your social capital and personal capacity through ethical, strategic, and relevant networking)
6	**Career management** (Being able to understand and track labour market information (job offers and their description, recruitment process, HR, etc.) and reflect own career plans)
18	**Fundamentals of economics and law** (employees, particularly engineers skilled with entrepreneurial mindset)
10	**Leadership** (Willing to act collaboratively, influence and maximize the efforts of others towards a more sustainable future)
21	**Customer Development** (put the client at the centre of strategy, its needs and new expectations in order to provide an outstanding service)

Legend: ▮ Fully accepted   ▮ Need adjustment (rephrasing)   Additional descriptions proposed by partners

Some of the attributes are adjusted according to participants suggestions. For example, for attribute "Fundamentals of economics and law" explanations were added "employees, particularly engineers skilled with entrepreneurial mindset". All suggested changes are marked with red letters in Table 14.

5 CONCLUSION AND OUTLOOK

This report should be considered the first important result of STAFFER WP5 which should define a consolidated set of criteria and indicators of employability and career opportunities, i.e. to develop a methodological umbrella for assessing employability and career opportunities in E&T programs before adjusting the curriculum.

A key challenge of the WP5.1 has been to deal with a very abstract employability term that has a broad interpretation in practice. From this reason the concept of employability for our project is very complex to define. In other word the concept needed to be built in a way that combines both a theoretical perspective but at the same time to make it practical relevant for the STAFFER stakeholders, HR and training experts in the railway companies and suppliers. So, we highlighted the overall relevance and understanding of the employability concept by giving the general view of it.

To come up with consolidated set of indicators it was necessary to introduce a two-phases procedure. First were setting the initial set of indicators and second was evaluation of the indicators (filtering initial set) according to the relevant criteria. The initial set was consisting of 30 indicators. Seven partners participated in this phase (four operators, two education/training provider and one supplier representative) have added to the initial set four indicators in total. At the end was 34 indicators.

In the second step, STAFFERS' partners had the opportunity to evaluate the initial set using the RACER method. From 34 proposed indicators, 13 had got a positive opinion by most of the participants. Only one indicator is fully accepted by all participants and the 12 were conditionally accepted with requests for revision in terms of clarification, doubts of their relevance for training providers or challenges to monitor the indicators on the individual basis. All participants agree that the most important indicator is value of training for current workers. This can be explained as rising needs for workers adaptability in terms of changing demand for their skills and knowledge in forthcoming digitalisation of the railway sector.

However, this report has also shown that from the perspective of railway operators and infrastructure managers as well as railway suppliers, the consolidated set of indicators, items and attributes will serve as methodological umbrella for the following tasks in WP5 i.e. tasks 5.2. and 5.3. that collect points of view from rail operators (5.2.) and rail suppliers (5.3). These

tasks will start with the fine tuning of the consolidated set of indicators in order to move towards devising instruments for collecting data.

At last, but not least this report is not solely to offer a set of criteria and measurable indicators of employability and career opportunities but to, in broader sense, communicate a gathered body of knowledge on employability and issues of measurement between WP5 and other packages and to pave the way towards common understanding on employability both from conceptual and operational point of view.

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7 ANNEX 1 – SURVEY SHEET OF INITIAL SET OF INDICATORS REVIEWING

8 ANNEX 2 - PROCESSING OF INDICATOR ASSESSMENT RESULTS AFTER USING RACER METHOD

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