European Commission

ANNEX 1

EXPERT GROUP ON GRADUATE TRACKING

Task force 1:

Final conclusions on options for tracking graduates at European level

Education and Training

Contents

1.0 Context

In the single European market increasingly characterised by high skill international labour mobility, it is of crucial importance to have in place data infrastructures collecting comparable information on graduates and their labour market outcomes. Graduate tracking can provide crucial insights on the transition from education to the labour market, on returns to education (including to fields of study and higher and vocational education institutions' characteristics), on graduates under-employment and skill mismatches, on students' and graduates' mobility and on their perceptions about their jobs and career progress. They can also be used to monitor the development of the European Education Area, the Bologna Process and the European Research Area.

The importance of closely looking at the early career of graduates has been acknowledged by Member States (MSs) in the 2012 *Council Conclusions on the employability of graduates from education and training*, which established a benchmark on the employability of graduates[1] and to monitor the share of employed graduates from education and training, with a view to enhancing the evidence base for policy development at the European level on the interface between education and training and employment.

The 2015 *Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020)* proposes the promotion of the relevance of higher education to the labour market and society, including through better intelligence and anticipation about labour market needs and outcomes, for example tracking the career of graduates. Member States also highlighted the importance of addressing skills mismatches and skills gaps and to facilitate the provision of information on educational and labour market-related opportunities and outcomes.

In the 2016 *Communication on a New Skills Agenda for Europe*, the European Commission has prioritised the improvement of skills intelligence and information for better career choices by proposing an initiative on tertiary graduate tracking to support Member States in improving information about the transition of graduates to the labour market.

The 2017 *Council Recommendation on tracking graduates* recommends that Member States: "*improve the availability and quality of data about the activities of graduates and, where appropriate, people leaving higher education and vocational education and training without graduating, including making progress by 2020 on the establishment of graduate tracking systems that may include:*

a) *the collection of relevant anonymised administrative statistical data from education, tax, population and social security databases;*
b) *the development of longitudinal graduate surveys at education system and, where appropriate, institutional level, in recognition of the importance of qualitative data on people's transition to the labour market, or to further education and training, and their subsequent career paths; and*
c) *the possibility for public authorities to link, on an anonymised basis, data from different sources, in order to build a composite picture of graduate outcomes."*

To achieve that objective, good quality information about what graduates do after obtaining their qualification is essential, in order to both understand the causes of graduate recruitment and employability problems in

[1] By 2020, 82% of 20-34-year-old graduates, having left education and training no more than three years before the reference year, should be employed.

particular regions, economic sectors or for graduates from particular higher education or vocational education and training disciplines, and to identify solutions for those employability problems.

The 2017 Council Recommendation specifies that data should be collected (by the MSs) in the following areas:

a) *"socio-biographical and socioeconomic information;*
b) *information on education and training;*
c) *information on employment or further education and training;*
d) *relevance of education and training to employment or life-long learning;*
e) *career progression."*

Member States are invited to "*take steps to ensure the timely, regular and broad dissemination and exploitation of the results of graduate tracking analysis, with the objective of:*

1. *strengthening career guidance for prospective students, current students and graduates;*
2. *supporting the designing and updating of curricula to improve acquisition of relevant skills and employability;*
3. *improving skills matching to support competitiveness and innovation at local, regional and national level, and to resolve skills shortages;*
4. *planning for and forecasting of evolving employment, educational and social needs;*
5. *contributing to policy development at both national and Union level."*

Member States should also:

6. *"encourage a high, representative and continued response rate to longitudinal graduate surveys, and, when possible, the tracking of graduates who have migrated, whether for the purposes of education and training or on completion of their education and training."*

Tracking graduates is also a core component of effective quality assurance systems as it provides a mechanism for gathering intelligence on skills utilisation in the labour market and placement rates. This is recommended in both the *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)* and the *European Quality Assurance Framework for Vocational Education and Training (EQAVET)*.

Finally, the 2017 Recommendation acknowledges that initiatives and systems for collecting information about Higher Education (HE) and Vocational Education and Training (VET) leavers could benefit from improvement, and sets out minimum requirements for graduate tracking measures.

Following this Recommendation, a *Eurograduate Pilot Survey* was launched in 2018 (European Commission, 2020b), a mapping study of graduate tracking in VET was completed in 2018, and an *Expert Group on Graduate Tracking* (2018-2020) was established to provide a forum for cooperation and mutual learning about graduate tracking and data analysis.

The Task force interprets the Council recommendation requirements above (1-6) as the **strategic objectives** of graduate tracking at the European level and as a starting point for identifying the most appropriate tool for gathering relevant data.

2.0 The mandate of Task force 1

Due to the large scope of the mandate of the Expert group on graduate tracking and to facilitate in-depth discussions in smaller groups, the expert group split into four Task forces, each with distinct mandates. The members chose which Task force to join and the membership was stable across the 5 expert group meetings in 2019 and 2020.

Task force 1 had 19 members and was chaired by Eric Carver (Finland) and Marioara Grebenisan (Romania).

The main objective of Task force 1 was to examine different ways of organising a graduate outcomes data collection at EU level. In examining the different options, the group needed to assess the potential of each approach and the strengths and weaknesses for the EU and for national systems and ultimately produce an informed opinion on what is the most viable way forward. Taking into account the political priorities of EU's graduate tracking initiative and the identified users of EU graduate outcomes data, the exercise required a discussion on the data gaps at EU level that the EU's graduate tracking initiative should plug, comparability of data that are currently collected through the national graduate surveys as well as through administrative data matching and the steps towards the alignment of national graduate tracking efforts.

Taskforce 1 worked on exploring the feasibility of diverse data collection options and research designs at EU level, all with the aim of achieving regular, comparable and comprehensive data on higher education and VET graduate outcomes across Europe. The Taskforce 1 considered options that include building on existing comparative data collections and national data collection systems, as well as those with a potential of drawing on other (non-survey) data sources, including matching administrative and other data sources.

Task force 1 was given the mandate to consider at least three different options of collecting EU-wide data on graduates:

- Option 1: Combining nationally available data on graduate outcomes with a European-wide survey or a European set of survey questions to be gradually integrated into the national surveys. Identification of those questions and strategies for development (where non-existent) and adjustment (where already existent) of national surveys would need to be spelled out.
- Option 2: Instead of a centrally managed European wide graduate survey, a European graduate outcomes study where data already collected through national surveys and administrative data matching is collated and a study is produced based on that data.
- Option 3: A European-wide graduate survey along the lines of the pilot Eurograduate Survey (European Commission , 2020b), but covering all European Member States.
- Option 4: More options can be proposed by the group. Here it is possible to explore more forward-looking and cost-efficient options such as big data or drawing on data from existing comparative data collections.

In the course of the Expert Group activities (and taking advantage of Option 4 above), the set of options was reordered and slightly modified. The final list of options discussed by the Expert Group (and by Task force 1) is outlined in section 7.0.

The initial mandate to Task force 1 also specified that: "In assessing the different approaches, the group will present a detailed analysis of the strengths and benefits of each approach–a kind of SWOT analysis. The analysis of the different options should consider **technical, economical, legal, operational and schedule feasibility**. The group will then agree on the most recommendable option based on the assessment of the following criteria:

- Length of timeframe during which all EU Member States could potentially join
- Value for money
- Cost-efficiency and heaviness of the financial burden to the Member States and the European Commission
- Potential to deliver observations on long-term developments (not just directly after graduation but also several years after graduation)
- Quality, regularity and novelty of data and results to be obtained
- Representativeness and coverage of Member States
- Attractiveness of the end-product to different stakeholder groups (students, higher education institutions, policy makers, EU decision makers)
- Propensity to build on the work and capacities accumulated by Eurostat, ETER, U-Multirank, Europass, OECD and other data collections
- Possibility to conduct a panel study (survey the same graduates repeatedly over a number of years)"[2].

To these criteria, specified in the Mandate of Task force 1, the following additional criteria were subsequently added:

- Degree of international comparability;
- Privacy policy for sensitive data;
- Comparability with/impact on existing systems of graduate tracking.

When considering these criteria (and especially: Length of timeframe during which all MSs could join, value for money, cost efficiency and the financial burden to the MS and the EU, and comparability with/impact on existing systems of graduate tracking), it was important to take into account the complexity of data collection and the existence/inexistence of national graduate surveys (which could affect the level of "survey fatigue" among graduates).

Based on the SWOT analysis and the recommendation for the best option to pursue, the group was invited to look at the state of play of graduate tracking in each Member State and to develop guidelines on how each country could meet the requirements of the preferred option.

Elements of national graduate tracking which Task force 1 was invited to consider are:

- Timing and frequency of national-level graduate studies
- Sampling procedures of national-level data collections
- Data protection laws regarding availability and storage of graduates' contact information
- Differences in structure of higher education/VET systems[3].

[2] Text in italic is taken from "Mandate Task force 1.pdf", available at https://webgate.ec.europa.eu/fpfis/wikis/display/GradTrackExperts/Second+Meeting+of+the+Expert+Group?preview=/302943214/327854674/Mandate_Taskforce%201_final.pdf.

[3] Text in italic taken from "Mandate Task force 1.pdf", available at https://webgate.ec.europa.eu/fpfis/wikis/display/GradTrackExperts/Second+Meeting+of+the+Expert+Group?preview=/302943214/327854674/Mandate_Taskforce%201_final.pdf.

Given the political objectives of graduate tracking, as specified in the Council Recommendation, and given the mandate of Task force 1, it was decided to structure this report along the following lines:

1. Definition of the key policy-relevant aspects over which graduate tracking can provide useful information: this originates from the strategic objectives set by the 2017 Council Recommendation and has the purpose of clearly delimiting the specific areas in which data need to be collected.
2. Definition and evaluation of scientific and operational criteria that graduate tracking should satisfy
3. Analysis of the available options against the key policy questions and the strategic objectives set in the 2017 Council Recommendation.
4. Definition of governance and administration criteria that need to be satisfied in order to achieve the objectives set in the 2017 Recommendation.

3.0 The process of identification of key policy-relevant questions for graduate tracking

Any graduate tracking system should have clearly defined strategic goals and principles. They are the foundation for the design of any tracking measure, and inform decision making from planning to implementation. Well defined strategic goals and principles need to be developed in consultation with relevant social partners and stakeholders and in line with national frameworks for quality assurance in education.

Taskforce 1 has elaborated the goals and uses of a graduate tracking at different levels (individual, institutional, national and European level) inspired by the 2017 Council Recommendation[4]:

1. *"Strengthening career guidance for prospective students, current students and graduates"*: graduate tracking data is a valuable source of information for career planning and can be used in career education and career counselling; it can be used to inform prospective/current students and their parents about the learning outcomes of their studies (in terms of skills acquired), perspectives of further learning and recruitment, and career progression in the labour market.
2. *"Supporting the designing and updating of curricula to improve acquisition of relevant skills and employability"*: the goal is to collect data about the skills and knowledge acquired while at university/technical school and their relationship with job requirements (for example as indicated by experts, employers and business representatives). This information can help universities/technical schools to better design and update the curricula so that in the future the incidence of under-employment, skill mismatch and skills gap is reduced (for both discipline-specific and transversal/soft skills). Comparability across countries and HEIs is what makes this aspect very interesting. International comparisons of policies and outcomes make it possible to identify the best practices in boosting employability through curricular design.
3. *"Improving skills matching to support competitiveness and innovation at local, regional and national level, and to resolve skills shortages"*: Graduate tracking data can be complemented with occupational employment forecasts to better understand whether the EU and the MSs are/will be able to satisfy the expected demand for specific occupations (this is especially relevant in ICT and STEM-related occupations). It can provide insights into the kind of skills that are in high/low demand in a given field/geographical area, which in turn could reduce future skills mismatches. This exercise needs to rely on objective descriptions of occupational tasks and implied skills (such as in O*NET for the USA[5]). The European Skills, Competences, Qualifications and Occupations classification (ESCO) could be potentially very relevant and useful, as it is purposely designed for this[6].
4. *"Contributing to policy development at both national and Union level"*: information on labour market outcomes of graduates, coupled with information on features of the learning experience (provided by graduates or students) and institutional characteristics (as captured in ETER and U-Multirank), can provide useful information on education and labour market policies directed at improving graduates' successful employment. HE is part of the broader education system, which is governed by Member States (or Regions) and by international processes such as the Bologna process. These processes are often characterized by benchmarks and targets, which require full data comparability across countries. Extending the comparison to the EU opens up possibilities of looking at specific characteristics of the different HE sectors and hence expand peer learning.

[4] Below text in italics is taken from the 2017 Council recommendation.
[5] https://www.onetonline.org/
[6] https://ec.europa.eu/esco/portal/home

5. “Encourage a high, representative and continued response rate to longitudinal graduate surveys, and, when possible, the tracking of graduates who have migrated, whether for the purposes of education and training or on completion of their education and training”. We interpret this point as specifying that data collection should gather multiple observations of graduates, at different points in time. Also, graduate tracking should be organised in a way that allows tracking of graduates that have migrated to other countries, whether to continue their education or training, or to take up employment.

In order to select the most appropriate method for the comparable graduate data collection at EU level, among the three options described in section 2.0, it is first necessary to transpose these broad strategic objectives into key policy questions that are not only relevant or interesting *in general*, but that bring *added value* to the EU, Member States and stakeholders.

From a survey done in the context of the Eurograduate Feasibility Report, it emerged that the policy questions that are of greatest interest for actors and stakeholders are: transition to the labour market, employability, under-employment, skills mismatch, relevance of higher education, competences acquired during studies and graduate mobility. The data should cover graduate outcomes in the short, the medium and the long-run.

Agreeing on a set of policy questions that graduate tracking at the EU level should address has been a difficult task for the Expert Group. Some members would prefer to set a very limited list of policy questions for the EU level system – at least in the beginning. Others prefer a wider list of questions.

The added complexity is the need to take into account the feasibility of collecting data on the policy questions from two different sources, administrative statistical data and survey data. The cost of/effort necessary for gathering information from existing linked administrative data is quite independent from the size of the data extracted (as long as they are already existing and linked). On the other hand, in the case of surveys, it is important to ensure that the questionnaire is not excessively long, in order to avoid survey fatigue and a drop in response rates. Finally, Task force 1 has identified three different sets of key policy questions: a limited list, a wide list, and a wider list.

Starting with some 40 policy questions prepared by the Commission, Task force 1 was able to narrow down the number of **key policy questions** to 16 (widest list), 10 (wide list), and 7 (limited list), further described in section 4.0. The three lists reflect different equilibria between comprehensiveness of the information collected (which requires coverage of a large list of variables) and complexity of the data gathering process (which tends to increase as data requirements increase).

4.0 Key policy questions

Table 1: Differentiation between three layers of policy questions:

Key Policy Questions	Limited list	Wide list	Widest list
Employment status of graduates at two time points – 1 year and 5 years after graduation.	X	X	X
Graduates' working conditions (for instance, in terms of full time-part time status, contract type, etc.).	X	X	X
Geographical destination of employment: in the region of the education institution, in the country or internationally (in the EU or outside).	X	X	X
Employment in occupations that are coherent with the field of study in which students graduated (Horizontal match).	X	X + if graduated are not horizontally matched in their work, *why is that?*	X + if graduated are not horizontally matched in their work, *why is that?*
Employment at a qualification level coherent with the level of educational attainment (Vertical match).	X	X + if graduates are not vertically matched in their work, *why is that?*	X + if graduates are not vertically in their work, *why is that?*
Educational achievement level of the graduate's parents.	X	X + parental occupation	X + parental occupation
Information on career progression (job history before present job), including further learning after graduation.	X	X	X
Existence of a match between the skills acquired by graduates during higher education and the skills they are using in their current (or past) job.		X	X
Characteristics and mobility patterns (after graduation) of degree mobile graduates AND/OR Impact of learning mobility on labour mobility (including destinations).		X	X
The role of higher education in fostering vertical social mobility. Labour market outcomes of under-represented groups in higher education after graduation in comparison with other groups.		X	X
Satisfaction with the learning experience, in general and in relation to the current and past jobs and with the job-search experience.[7]			X
Job search duration/length of time incurred between graduation and first job.			X
Employment duration and experience.			X
Education experience and work-based learning experience after or before graduation.			X
Job satisfaction.			X
Quality of employment.			X

[7] See the specific point in the Council Recommendation*: relevance of education and training to employment or life-long learning*.

The policy questions seem also relevant for doctoral graduates, although some specific questions concerning the distinct career paths of PhD graduates could be added. Task force 1 agrees that graduate tracking should cover PhD graduates (also following the indications of the Eurograduate Feasibility Study , which concluded that "*PhD graduates (ISCED 8) would be a very interesting group for an EGS as they form the most highly-educated part of a country's workforce. A majority of national-level stakeholders would like an EGS to cover ISCED 8 degrees*".

It would be valuable to have the whole picture of the employability situation of all higher education graduates on the labour market with different career paths for PhD graduates. This may help to raise awareness about potential career opportunities. At the same time it would be important to take into account concerns regarding technical and operational feasibility of covering PhD graduates, expressed by some Member States during the work of the Expert Group and voiced in the Eurograduate Feasibility Study.

5.0 Scientific and operational criteria

When considering how to meet the requirements of the 2017 Council recommendation in the aspects of quality and comparability of data produced at EU level, Task force 1 has been inspired by Eurostat's Code of Practice[8]. This code provides guidelines about the institutional environment and statistical processes, which can be useful when designing a graduate tracking system. To ensure data quality, Eurostat prescribes the following criteria that have to be met:

- **Relevance:** the information collected and the statistics produced meet the needs of the users.
- **Accuracy and reliability**: the statistics produced accurately and reliably portray reality. It is important to measure and document the statistics' errors. With survey-based statistics, this mainly means having to deal with sampling errors and errors due to non-response. With administrative data based statistics, this mainly means having to deal with measuring what is aimed to be measured, as the data is not collected for graduate tracking.
- **Timeliness and punctuality**: the statistics produced are released in a timely and punctual manner, meaning that the periodicity of the statistics takes into account users' requirements as much as possible and that release dates are announced in advance and respected.
- **Comparability and coherence**: the produced statistics are consistent internally, over time and comparable between regions/countries as well as different parts of the HE/VET system. Furthermore, it is possible to combine them and make joint use of related data, e. g. HE and VET graduate tracking.
- **Accessibility and clarity**: the produced statistics are presented in a clear and understandable form, released in a suitable and convenient manner. They are available and accessible on an impartial basis with supporting meta-data (e.g. definitions) and guidance (e.g. how to interpret and use the data). It is important to keep users informed about the quality of the statistical outputs with respect to the quality criteria above.

In Table 2, we apply the Eurostat Code of Practice to the scientific criteria relevant for graduate tracking (as specified in the Task force 1 mandate outlined in section 2.0).

Table 2: Identification of scientific criteria

Criteria[9]	Explanatory comments	Code of Practice
Quality, regularity and novelty of data and results to be obtained	**Quality**: we interpret it referring to the satisfaction of the following conditions: 1) the data cover all relevant areas (i.e. education before tertiary; tertiary; labour market outcomes);	Relevance
	2) data allow to track graduates who have moved to other countries (in the EU as well as outside the EU);	Relevance Accuracy
	3) data capture both factual information (e.g. age, gender, grades during secondary and tertiary education, time to complete tertiary education, employment status, type of occupation, sector, wage income, family composition, job experience, health status, mobility	Relevance

[8] Please note that these guidelines are one of several parts in the Code of Practice document. Other parts are about institutional environment and statistical processes.
See https://ec.europa.eu/eurostat/documents/4031688/8971242/KS-02-18-142-EN-N.pdf/e7f85f07-91db-4312-8118-f729c75878c7

[9] Please note: Criteria reported in italics are specifically mentioned in Task force 1 mandate and others were added by Task force 1 members following the discussions in the group.

	during studies or during work experience, etc.) and non-factual information (e.g. opinions/behaviors) characteristics;	
	4) Minimize measurement and statistical errors. > Measurement error might arise when questions are not clearly specified (and hence clearly understood) or they are not informative on the underlying policy-question. > Statistical errors arise from: over/under coverage of different units; sampling error; unit non-response (or partial response), leading to missing data; self-selection; editing and processing errors.	Accuracy and reliability
	Regularity: possibility of repeating data collection on a regular basis. It is different from the longitudinal dimension (but it can be related). It is also important to ensure that the same questions appear in the different waves so that results are comparable across time.	Relevance
	Novelty: information provided by data are not already available and data collection can expand the knowledge frontier (e.g. on the issue of graduates' mobility). Also, the possibility of ad-hoc modules in different years could be explored. This criterion should be validated taking into account the existence/inexistence of national data infrastructures for tracking graduates.	Timeliness
Representativeness of data	Data collected are representative of the underlying population and of the sub-groups deemed relevant (e.g. gender, field of study, mobility before or after graduation, socio economic status, region of study/work, etc.). In essence, representativeness refers to the fact that data are collected from a sample that mirrors the underlying population in all relevant aspects. Representativeness has direct implications for: i) the stratification of the sample; ii) the minimum response rate; iii) identification of the underlying population units.	Accuracy and reliability
Longitudinal observations and Potential to deliver observations on long-term developments (not just directly after graduation but also several years after graduation)	Data allow following individuals through time/age, so as to have info on short, medium and long term labour market outcomes. This is crucial to provide a life-cycle perspective. The two criteria refer to the same phenomenon. The crucial element here is the frequency of data collection after graduation (e.g.: one, five and nine years; every year; etc.).	Relevance
Degree of international comparability	Data collected in the various countries provide easily comparable information on the key policy questions. Comparability crucially depends on the satisfaction of the same (or similar) statistical quality standards by all participating MSs. This is relevant for both administrative and survey data. International comparability depends upon: the use of linked administrative data vs survey data; the sampling methods used (when relevant); the selection of the relevant subgroups for which data are required to satisfy representativeness; the size and distribution of the statistical and measurement errors (see also the **Quality** criterion above).	Comparability
Propensity to build on the work and capacities accumulated by Eurostat, ETER, U-Multirank, Europass, OECD and other data collections	Graduate tracking data can be linked to other data sources, such as ETER, U-multirank, Europass, OECD. In certain cases this can be done at the level of HEI (provided it can be uniquely identified) while in others it can be done only at the country / region / sector / occupation level. Eurostat could be consulted/involved in order to improve data quality, comparability and data linking.	Not applicable

Table 3 lists the operational criteria that should also be considered.

Table 3: Identification of operational criteria

Criteria[10]	Explanatory comments
Length of timeframe during which all EU Member States could potentially join	Amount of time that would be required so that all MS can participate. This will largely depend upon the status of graduate tracking (existing or potential) across MSs. In some countries, linked administrative or national surveys already exist, and the main challenge would be that of fruitfully integrating them with the EU graduate tracking project. In other countries, relevant administrative data are not collected or not linked and there are no national graduate surveys. In this case, the EU graduate tracking project will need to take into account that an appropriate data infrastructure should be built. A very important element to consider is the time needed to ensure high comparability of graduate tracking data across EU MSs.
Value for money *And* *Cost-efficiency and heaviness of the financial burden to the Member States and the European Commission*	Value for money mainly refers to the breadth and depth of additional information that the EU graduate tracking project would bring to the EU, MSs and key stakeholders. It depends upon the pre-existing situation and it will be highest for countries lacking any form of graduate tracking. On the other hand, for countries that already have in place it, the main advantage would come from across-country comparability and from the possibility of tracking mobile graduates. Cost-efficiency refers to the minimum investment needed to reach the EU graduate tracking project goals (including opportunity costs, such as time spent answering a survey). Heaviness of financial burden refers to the overall costs and to its splitting between MSs and EU Commission. Both are determined by the investments needed in different MSs to participate in the EU level graduate tracking project and by the role of the EU in funding EU level tracking. As in Value for Money, countries are in very different situations (some already have in place graduate tracking system while other do not).
Attractiveness of the end-product to different stakeholder groups (students, higher education institutions, policy makers, EU decision makers)	Availability of data/reports/indicators summarizing descriptive statistics that are of interest for stakeholders or other national or international organizations. Data gather aspects that are of value for stakeholders. Access to anonymized micro data and to aggregate data by researchers proposing research projects satisfying a given set of requirements/conditions (to be defined).
Privacy policy for sensitive data	Data might capture aspects for which an explicit consent is necessary. It is essential to ensure that data collection and data usage satisfy the conditions set by GDPR (or by national regulations). At the same time, it would be important to distinguish between scientific (i.e. research based) and non-scientific data usage, with different conditions for access and usage for the two cases.
Comparability with/impact on existing systems of graduate tracking	The impact of additional data collection (a survey/panel in particular) on existing data collections needs to be considered (e.g. survey fatigue at institutional and individual level). In particular, it is important to consider how to fruitfully integrate an EU survey with the existing national surveys, in order to avoid negative effects on data quality and on the international comparability of data (see Scientific and Operational Criteria).

[10] Please note: Criteria reported in italics are specifically mentioned in Task force 1 mandate and others were added by Task force 1 members following the discussions in the group.

6.0 Analysis of different sources of graduate data – surveys and administrative data

In what follows, the Task force looked in depth at the two different sources of graduate data (administrative and survey data) and assessed to what extent each of them meets the scientific and operational criteria of Table 2 and Table 3 lists the operational criteria that should also be considered.

Table This is a necessary preliminary step towards a comparative evaluation of the pros and cons of each of the three options for collecting comparable EU data on graduate outcomes.

Table 4: A comparative assessment of administrative and survey data in relation to the scientific criteria

Criteria	Explanatory comments	Administrative Data	Survey Data
Quality, regularity and novelty of data and results to be obtained	**Quality**: we interpret it referring to the satisfaction of the following conditions:		
	1) Data cover all relevant areas (i.e. education before tertiary; tertiary; labour market outcomes);	1) High: to the extent that administrative data covering all the aspects (i.e. education and working life; personal characteristics) are linked;	1) High: to the extent that the survey captures all relevant aspects,
	2) Data allow to track graduates who have moved to other countries (inside the EU and outside the EU);	2) Low: at this stage it is not possible to track graduates who moved in other countries (data are not linked across countries. For this it would be necessary to introduce a EU identification number (assuming that linked internally administratuve data exist);	2) Medium: it depends on the means that are used to gather info on graduates and on the methods used to reach them;
	3) Data capture both factual (e.g. age, gender, grades during secondary and tertiary education, time to complete tertiary education, employment status, type of occupation, sector, wage income, family composition, job experience, health status, mobility during studies or during work experience, etc.) and non-factual (e.g. motivations, opinions, behaviors, evaluations) characteristics;	3) High on factual but low on non-factual	3) Medium on factual and High on non-factual, provided that data quality is high (including the clear specification of questions).
	4) Minimize measurement and statistical errors. Measurement error might arise when questions are not clearly	4) High: measurement error is likely to be low with administrative data.	4) Low/Medium: measurement error is typically higher in survey data.

	specified (and hence clearly understood) or they are not informative on the underlying policy-question. Statistical errors arise from: over/under coverage of different units; sampling error; unit non-response (or partial response), leading to missing data; self-selection; editing and processing errors.		Another aspect to consider is the response rate. To ensure high quality of data and reduce measurement and sampling error, it is important to ensure a high response rate in surveys. This depends upon the quality of the questionnaire, the availability of contacts, the lenght of the survey, and the existence of concurrent surveys on similar topics.
	Regularity: possibility of repeating data collection on a regular basis. It is different from the longitudinal dimension (but it can be related).	High: to the extent that linked data are available regularly. In principle it would be possible to have new data every year.	Medium/High: in principle it would be possible to have a survey every year, but this is not cost effective and would be difficult to implement. Relative to admin data, we expect the frequency to be lower.
	Novelty: information provided by data are not already available and data collection can expand the knowledge frontier (e.g. on the issue of graduates' mobility). Also, the possibility of ad-hoc modules in different years could be explored. This criterion should be valuated taking into account the existence/inexistence of national data infrastructures for tracking graduates	Medium: in countries where data are already linked the novelty would be minimal. However, the use of the data could be innovative. On the other hand, countries that do not have in place linked admin data could be interested in exploring this possibility, with the support of the European Commission.	Medium/High: on the graduates' mobility dimension the novelty would be high. Also it would be high in MSs that currently do not have a graduate survey. However, the novelty would be minor in MSs that already have a graduate survey. In fact, in these MSs the issue of the relation between the EU and the existing graduate surveys would arise.
Representative-ness of data	Data collected are representative of the underlying population and of the sub-groups deemed relevant (e.g. gender, field of study, mobility before or after graduation, socio economic status, region of study/work, etc.). In essence, representativeness refers to the fact that data are collected from a sample that mirrors the underlying population in all relevant aspects. Representativeness has direct implications for: i) the stratification of the sample; ii) the minimum response rate; iii) identification of the underlying population units.	High: if data are linked or can be linked, administrative data tend to guarantee very high representativeness.	Medium: survey data can suffer from suboptimal sampling design and low response rates. Both would reduce representativeness. This problem can be substantially reduced by careful design of the sampling method (also in light of the key policy variables and strategic objectives) and by careful implementation of the survey (i.e. follow up contact for those that do not fill the questionnaire). Weighting and calibration techniques could also be used to correct for low response rates of specific sub-groups.
Longitudinal observations *and*	Data allow following individuals through time/age, so as to have info on short, medium and long term labour market outcomes.	High: to the extent that data are available and linked it would be possible to follow the individual	Medium: the same person could be re-interviewed once or twice (or more times). This could be done at intervals of 4 years (e.g.

Potential to deliver observations on long-term developments (not just directly after graduation but also several years after graduation)	This is crucial to insure a life-cycle perspective. The two criteria refer to the same phenomenon. The crucial element here is the frequency of data collection after graduation (e.g.: one, five and nine years; every year; etc.).	along the whole working life (but not if she/he migrates). Additionally, administrative data allows for customization of data (also relative to the past).	1 year, 5 years and 9 years after graduation). However, from experience, it is know that the response rate tends to diminish in the follow-up surveys (possibly more in some sub-groups than in others). Appropriate measures should be taken to reduce this risk and to identify the sub-groups where the risk is higher (in these cases oversampling could be the appropriate solution).
Degree of international comparability	International comparability depends upon: the use of linked administrative data vs survey data; the sampling methods used (when relevant); the selection of the relevant subgroups for which data are required to satisfy representativeness; the size and distribution of the statistical and measurement errors (see also the **Quality** criterion above).	Medium: to the extent that data exist and are linked, international comparability is limited to the set of policy questions for which comparable data exist in the various MSs. Also, comparability could be limited by the fact that the years for which linked data exist might vary across MSs or by the fact that the statistical methods used to gather data in the different MSs do not guarantee international comparability.	Medium/High: to the extent that representativeness is satisfied, a commonly designed graduate survey would insure high comparability. However, special care should be put to ensure that the translations of the questions in the different languages do not alter the meaning of the questions. This should be tested with the help of Item Response Theory.
Propensity to build on the work and capacities accumulated by Eurostat, ETER, U-Multirank, Europass, OECD and other data collections	Graduate tracking data can be linked to other data sources, such as ETER, U-Multirank, Europass, OECD. In certain cases this can be done at the level of HEI (provided it can be uniquely identified) while in others it can be done only at the country/region/sector/occupation level.	High: to the extent that it is possible to have access to HEI identifiers, admin data can be linked to other datasets. If admin data cover the whole population it would be possible to have very reliable estimates.	Medium: to the extent that it is possible to have access to HEI identifiers, survey data can be linked to other datasets. The major problem is the fact that the sampling strategy will determine the variables for which representativeness is guaranteed. It is likely that it will be extremely difficult to have data that are representative for the individual HEI (this can be discussed with individual HEI). However, it could be possible to have data that are representative of field of study.

Table 5*:* A comparative assessment of administrative and survey data in relation to the operational criteria

Criteria	Explanatory comments	Administrative Data	Survey Data
Length of timeframe during which all EU Member States could potentially join	Amount of time that would be required so that all MS can participate. It is essential to understand when full comparability can be obtained. This will largely depend upon the status of graduate tracking (existing or potential) across MSs. In some countries, linked administrative or national surveys already exist, and the main challenge would be that of fruitfully integrating them with the EU graduate tracking project. In other countries, relevant administrative data are not collected or not linked and there are no national graduate surveys. In this case, the EU graduate tracking project will need to take into account that an appropriate data infrastructure should be built. A very important element to consider is the time needed to ensure high comparability of graduate tracking data across EU MSs.	Low: since a relevant number of MS do not have linked admin data it would take quite some time to have fully comparable data.	Low/Medium: a EU graduate survey could be implemented quite rapidly, taking into account the lessons learned from the Eurograduate Pilot Project (European Commission, 2020b). Integration with existing national surveys would be needed for those countries that have them in place. The main problem, especially, for MSs that do not have in place national surveys, would be having access to stable contact details, which are often held at the level of HEI.
Value for money	Value for money mainly refers to the breadth and depth of additional information that the EU graduate tracking project would bring to the EU, MSs and key stakeholders. It depends upon the pre-existing situation.	Medium: the added value would be lower for those countries that already track graduates with either administrative data or national surveys. For them, the main advantage would come from international comparability and from the possibility of tracking mobile graduates. Value added will be highest for countries lacking any form of graduate tracking.	Medium: an EU survey would provide limited value added to those countries that already track graduates with either administrative data or national surveys. For them, the main advantages would be international comparability, the possibility of tracking mobile graduates, and the possibility of gathering non-factual data (for those who only have administrative data). On the other hand, the value-added would be very high for those countries that do not have in place any graduate tracking mechanism.
Cost-efficiency and heaviness of the financial burden to the Member States	Cost-efficiency refers to the minimum investment needed to reach the EU graduate tracking project goals.	On cost-efficiency, countries that do not have in place some of the necessary admin data would incur very high costs. Such costs would be very	On cost-efficiency, the costs of graduate surveys would depend upon the choices made for representativeness and the attention paid to guaranteeing

and the European Commission	Heaviness of financial burden refers to the overall costs and to its splitting between MS and EU Commission. Both are determined by the investments needed in different MSs to participate in the EU level graduate tracking project and by the role of the EU in funding EU level tracking. As in **Value for Money**, countries are in very different situation (some already have in place graduate tracking system while other do not).	limited or null for countries that already have linked administrative data. On heaviness of the financial burden, it is unclear at this stage how much the EU Commission would contribute.	high quality of the data (including high response rates). Those costs are likely to be very low for countries that already have in place high quality national graduate surveys. Additional costs involve the need to translate the questionnaire, the organization and implementation of the survey etc. On heaviness of the financial burden, it is unclear at this stage how much the EU Commission would contribute
Attractiveness of the end-product to different stakeholder groups (students, higher education institutions, policy makers, EU decision makers)	Availability of data/reports/indicators summarizing descriptive statistics that are of interest for stakeholders or other national and international organizations. Access to anonymized micro data and to aggregate data by researchers proposing research projects satisfying a given set of requirements/conditions (to be defined	Medium: We should distinguish between access to statistics and indicators obtained from admin data (i.e. aggregated data), which should be made available to everyone, and access to microdata. Access to administrative micro data is often limited (e.g. based on the nationality of the applicant). It could be considered the option of having safe-data centers that allow access to anonymized data (even from remote) for those who are members of an approved research project, where the latter should be interpreted in a wide sense.	High: We should distinguish between access to statistics and indicators obtained from survey data (i.e. aggregated data), which should be made available to everyone, and access to microdata. To the extent that the survey does not gather personal information for which the explicit consent has not been given, the anonymized data should be made available to any interested party (as it is the case for many surveys, e.g. Labour Force Survey, EU SILC, Adult Education Survey). This would guarantee the best use of the public money invested in the survey.
	Data gather aspects that are of value for stakeholders.	Medium: only factual characteristics can be measured with admin data. Also, comparability will apply only to those factual characteristics for which comparable data exist.	High: in principle all relevant aspects can be included. For this it would be important to involve stakeholders in the process. Oversampling at the level of HEI would be necessary if the survey is supposed to provide representative data at the level of each HEI. This should be an option for each country.
Privacy policy for sensitive data	Data might capture aspects for which an explicit consent is necessary.	Medium: if microdata are to be accessed and used for quantitative analysis, it is necessary to ensure that GDPR and national regulations on privacy are fully complied with.	High: it would be necessary to obtain explicit consent for sensitive data. However this can be easily added at the beginning of the questionnaire. Also, it would be important to ask consent for using contact information for the purposes of graduate tracking.

Comparability with/impact on existing systems of graduate tracking	The impact of additional data collection (a survey/panel in particular) on existing data collections needs to be considered (e.g. survey fatigue at institutional and individual level). In particular, it is important to consider how to fruitfully integrate an EU survey with the existing national surveys, in order to avoid negative effects on data quality and on the international comparability of data (see Scientific and Operational Criteria).	Medium: those countries that already have in place graduate tracking through linked administrative data would have to make these data available (either as aggregate or as microdata: see above) for the EU graduate tracking project. For them the main additional burdens would be: i) insure that high quality and comparable data are gathered on all the relevant policy questions; ii) develop a system to track mobile graduates (which would require linking with other countries administrative data).	Medium: those countries that already have in place graduate tracking through national survey data would have to make these data available (either as aggregate or as micro data: see above) for the EU graduate tracking project. For them, the main problem would be how to integrate the EU graduate survey questions into the existing national framework, without disrupting the latter but also satisfying the goals set by the 2017 Council Recommendation (and the policy-questions proposed by the Expert Group), ensuring international comparability. A modular approach should be considered (see Section 4).

7.0 Evaluation of different options for producing comparable EU level graduate tracking data

Task force 1 evaluated three realistic options for producing comparable EU level graduate tracking data (the option of using big data was left aside as not mature enough to be used to track graduates at this stage):

- **Option 1:** A European graduate outcomes project where data already collected through national surveys and/or administrative data matching is collated and made available (possibly accompanied by a report).
- **Option 2:** A European-wide graduate survey along the lines of the pilot Eurograduate survey, but covering all European Member States.
- **Option 3:** Combining nationally available data on graduate outcomes with a European-wide survey or a European set of survey questions to be gradually integrated into the national surveys. Identification of those questions and strategies for development (where non-existent) and adjustment (where already existent) of national surveys would need to be spelled out.

Following the logic of Table 4 and Table 5, below is an evaluation of the options above.

7.1 Option 1

Strengths:

It is very cost effective since existing data can be re-used with little extra costs at national level. It does not interfere negatively with national systems and makes a good use of existing surveys and statistics. Probably it would be well accepted by Member States that already have national surveys and administrative data in place.

Longitudinal data are likely to exist already, especially in the Member States that track graduates with linked administrative data. The existing data infrastructure provides a useful starting point on which to build for improvements in data collection and management, especially for countries that do not have such data-systems in place.

It can foster European wide (continuous) dialogue in the field of graduate tracking, leading to benchmarking and peer-learning and development opportunities. Trends can be observed and compared from the start. As for privacy, since data already exist, we would not expect problems with data protection rules. The only aspect of governance that should be addressed is that referring to the coordination with other Member States.

Weaknesses:

Not all Member States have linked administrative data or survey data that can be used to track graduates (more evidence on this from European Commission (2020a) and Task force 3 Annex). Non-factual characteristics (opinions, behaviours, motivations, and evaluations) can hardly be captured by administrative data. The type and quality of information retrieved in the various Member States is non-homogeneous (questionnaire are not coordinated), and this reduces the comparability across Member States.

Moreover, the timing of data collection might not be uniform across Member States. Also, different methods are used to collect data in the various Member States. This all would make it difficult to ensure reliability and comparability of data, unless additional effort in this direction is put forward.

7.2 Option 2

Strengths:

It would be the easiest option to generate comparable graduate tracking data, especially for countries that have no graduate tracking system in place. Since the questionnaire would be uniquely determined, “content” comparability would be ensured. It would also allow the collection of data on non-factual characteristics.

For Member States that do not have graduate tracking structures in place, it would provide impetus for additional capacity-building in longitudinal data, and it would provide a good alternative if there is no system in place yet. At this moment, it is also the only solution that would allow tracking of graduates that have moved to other Member States, either for education, work, or personal reasons.

It would be a good option for tracking doctoral holders (EQF level 8 graduates) within the European-wide graduate tracking system, as using the same methodology in different countries and as with Bachelors and Masters will ensure comparable data across Europe and would give the whole picture of all cohorts of higher education graduates on the labour market.

Weaknesses:

In general, scientific and operational precautions are to be implemented in order to maintain high the data quality achieved. It is very important to ensure that the statistical process for selecting graduates is based on a rigorous sampling methodology to allow for the collection of representative data rather than being based on the pragmatic availability of graduate contact information.

It is fundamental to design the questionnaire properly, to ensure that the relevant “policy questions” can be assessed, that the questionnaires are coherent across Member States and other EEA countries and that high response rates are obtained in individual Member States and other EEA countries. Attention should be paid to translations of the questionnaire and to cultural influence in answering questions. Moreover, variety in socio-economic and institutional settings have to properly taken into account. Best practices can help in overcoming these problems.

For the Member States that already have in place national surveys, the value added would be limited (but still relevant for capturing mobile graduates and for improving across-country comparability) and the coordination of an EU and a national graduate survey could be difficult, which could reduce support from Member States. Also, survey fatigue is already high and will likely rise, which could pose difficulties for data collection.

Compared to administrative data, an EU wide survey would have low frequency, so that results would be available only every few years. As for representativeness and comparability, this would very much depend on the sampling methodology and on how the survey is implemented (it is essential to ensure high response rates in all countries). Both aspects would have consequences for funding. The time point of surveying in each country is also important, because an external event could make the results non-comparable. The risk of measurement error is higher than with administrative data.

7.3 Option 3

General observation: Option 3 could mean that national surveys have “an EU module” or it could mean that each national survey (or tracking system that includes administrative data) would be “custom fitted” to produce EU level comparable data on the issues selected for comparative data selection.

Strengths:

It builds on existing national graduate tracking systems (infrastructures and networks), hence reducing the costs and the time necessary to have comparable data, but this is true only for Member States that have in place (comparable) graduate tracking infrastructures. An EU module will be complementary to existing data-systems, so there will be no duplication efforts. Survey fatigue is limited, while offering a possibility of getting comparable data at EU level. It can foster European wide (continuous) dialogue in the field of graduate tracking, leading to benchmarking and peer-learning and development opportunities. Countries that do not have in place any graduate tracking infrastructure would be able to put one in place and learn from the experience of other Member States.

Weaknesses:

Each national tracking system would have to be “custom fitted” to guarantee the need for EU comparable data. This could be done by adding “EU modules” to existing national surveys or by analysing all the national tracking systems and aligning their content (if required) to match the EU level data needs.

“EU modules” might make the questionnaires longer (and risk lower answer rates for national surveys). 50% of EU Member States do not have national systems and or surveys in place. This option would require they set up one (but it could be based/ focused on the “EU module”). National systems have great variation in the timing, frequency, and methodology of tracking and/or surveying (see (European Commission , 2020a)European Commission, 2000a). This option could require harmonization, the extent of which would depend on how comparable data/variables are. Governance costs in a mixed (national/ EU-level) semi-centralized systems are likely to be high.

Following the weighing of the three options, Task force 1 agreed to make a proposal that combines various aspects of the three original options, and which is presented in section 7.4. The proposal is based on the reflection that, in the short term, a European Graduate Survey (optional and designed in a way that avoids conflicts or incongruences with existing national graduate surveys) is the most appropriate solution to rapidly gather comparable graduate tracking information, since administrative data and indicators cannot guarantee the comparability, completeness and quality.

For the medium term, it is recommended that Member States and other EEA countries, possibly supported by the EU, develop relevant administrative information systems (in case they do not yet have them) and ensure the inter-linking (educational information linked to social security and tax data). This will guarantee the availability of a common set of comparable indicators through linked administrative data. This will guarantee the possibility of generating a common set of comparable indicators through commonly identified and defined administrative data. However, due to the very nature of administrative data, this common set does not cover all the objectives of the 2017 Council Recommendation.

7.4 Alternative option: A phased approach that includes both a European Graduate Survey and Administrative data

There are significant differences in the existing graduate tracking systems in Member States and in the organisation, governance, quality assurance and qualifications offered by higher and vocational education institutions. This makes it difficult to propose a single approach to graduate tracking. While there is a large degree of commonality in the organisational arrangement in higher education across Europe, these similarities do not apply to the provision of VET. In this context, Task force 1 believes a different strategic approach should be taken to support European developments in the two sectors. In Task force 1 Annex, the recommendations are given only for tracking graduates from higher education.

For higher education, Task force 1 recommends that the European Commission works with Member States to establish a **phased approach to graduate tracking**, taking into account the status quo of data collection in the different Member States and also the relative pros and cons of survey and administrative data.

In the short run, Task force 1 recommends that an EU Graduate Survey for graduates who obtained any qualification offered by institutions in the higher education sector is the appropriate solution to generate comparable graduate tracking data, especially for countries that have no graduate tracking system in place. It is also the only solution –*rebus sic stantibus*- that would allow tracking of graduates who have moved to other Member States, either for education, work, or personal reasons, and probably the best option for tracking doctoral graduates within the European-wide graduate tracking system.

This survey should take place at least every four years and Member States should be invited to become involved (participation is voluntary). The European Commission should encourage participation with the aim of gradually achieving full coverage for all EU and EEA members. During the development of this survey, it will be important to ensure that the statistical process for selecting graduates is based on a rigorous sampling methodology to allow for the collection of representative data rather than being based on the pragmatic availability of graduate contact information. It is also fundamental to design the questionnaire properly, ensure that the relevant "policy questions" are properly assessed, that the questionnaire is coherent across Member States, and that efforts are made to ensure high response rates in individual Member States.

Each wave of the European graduate survey should address two cohorts of graduates – the cohort of graduates who completed their course in the previous year and the cohort of graduates who completed their course five years prior to the survey (the Expert Group should also decide whether to leave open the possibility of adding an additional cohort, say 9 years after graduation).[11]

The introduction of a European Graduate Survey needs to take into account the fact that in some Member States there are already in place national graduate surveys, and that there is a concrete risks of survey-fatigue and lack of support from those Member States in which the European Survey and the national survey address the same graduate cohorts with similar questions.

[11] This assumes the majority of higher education students start programmes in the autumn and complete in the following summer. Different arrangements may be needed for those whose 'academic year' follows a different pattern.

Task force 1 has considered various options for the integration of the national and EU graduate surveys and it recommends the following solution:

1. EU Member States and EEA countries that do not have a graduate survey in place adopt the European Graduate Survey, with the possibility of expanding the list of "policy questions" in light of national policies and interests.
2. EU Member States that do have in place national graduate surveys and that wish to participate to the European graduate tracking project, have the option of:
   a) Stop running their national graduate survey in the year in which the EU Graduate Survey is carried forward and only run the latter.
   b) Adding a national module to the EU Graduate Survey, in the year in which the latter is run. For the EU module, participating countries can choose between the "restricted", the "wide" and the "widest" lists of "policy questions". For the national module, participating countries can add "policy questions" that are of national interest. Since the EU Graduate Survey is designed to insure across-country comparability, the addition of national modules will affect cross-country comparability of these modules only.
   c) Adding an EU module to the national graduate survey, in order to guarantee that comparable data on (at least) the limited list of "policy questions" is collected. In this case it is important to ensure that the data gathered through the EU module are fully comparable across countries, which require collaboration of Member States. The timing of the national graduate surveys (i.e. the interval from graduation), the sampling methods adopted, the methods used to contact graduates, will all heavily influence the degree of cross-country comparability.

The introduction of a European Graduate Survey should also take into account the principles, timing and approaches used by Eurostat, Eurostudent and Eurydice data collections[12].

In order to ensure high data quality and representativeness, a European graduate survey will need to pay special attention to the following aspects:

1. **Availability of population data on graduates**: this guarantees accurate sampling, especially in relationship with population sub-groups (e.g. field of study, region, underprivileged social background etc.); from the Eurograduate pilot project we know that only few countries had population data on graduates;
2. **Sampling**: this largely depends upon point a) and also upon the features of the HE sector, which vary by country. In small countries it would be possible to sample the whole population while in larger countries this would not be feasible. In this case it would be essential to determine the minimum number of observations that are necessary to insure representativeness with respect to each relevant subgroup.
3. **Contact details of graduates**: this is an essential element of any graduate survey. From the Eurograduate pilot project we know that only two countries had this information available at a centralized level, while in the others the contact details were held by HEI. One of the main problems here is the possibility that contact details are no longer valid. This could apply if only the University email address was registered (i.e. after graduation it could be disabled or graduates would stop using it) or if a graduate changed address (which is likely the rule for those who migrated in other countries after graduation). One possibility would be to record the postal address of parents and use this for initial and follow-up contacts. However, using this would be more costly and there would be no guarantee that parents would then contact their offspring. Ideally, the HEI should associate to each student/graduate a (likely) permanent email address, besides the institutional one.

[12] The technical assessment of the EUROGRADUATE Pilot Survey notes that for the majority of countries this alignment would be fine and EUROGRADUATE was able to jointly identify workable solutions. However, for 7 (out of 29) Erasmus+ countries no workable solutions have yet been identified. (European Commission, 2020c)

4. **Linking of sampling and contact details**: once the relevant sample is drawn, it is necessary to have access to the contact information of the sampled graduates. This can be easily achieved if data on graduates and contact details are held at the central level. On the other hand, it is more complicated if the contact details and/or the population data are held by HEI, which would need to be involved in the sampling and in the sharing of contact details. In this case, the legal restrictions regarding the possibility of HEIs sharing the contact details need to be taken into account.

Looking at the medium to long run, Task force 1 recommends that Member States and EEA countries, with the support of the European Union, improve the collection and linking of administrative data, in particular in relation to education, labour market participation, and earnings. To track migrant graduates, Task force 1 (following Task force 2 and 3 recommendations) recognizes that the adoption of a unique European graduate identifier (possibly linked to stable contact details) would be an important step forward. Member States/countries that have experience in collecting and linking this type of data, could provide valuable information on how to structure such data collection, its costs and its benefits. The European Union (the European Commission, Eurostat etc.) could support this process, also by suggesting how to make the relevant administrative data reliable and comparable across all the countries.

This process is not likely to be completed in a short time, as it involves many complex issues that must be discussed and coordinated across different Member States and countries. However, when completed, it will allow the collection of comparable data on many “policy questions” that are of national and European relevance. At that stage it would be possible to reduce the length of the questionnaire of the European Graduate survey, which could be dedicated to those “policy questions” that cannot be addressed by administrative data (such as those on personal evaluation/interpretation). However, at this stage, there is no certainty that the process of collecting comparable administrative data in the great majority of countries will be completed in a relatively short time interval. For this reason, Task force 1 considers the European Graduate survey (integrated with the national surveys) the only short-run available option.

8.0 Governance criteria of European-level comparable data

One major concern Expert Group members and Task force 1 members have is the governance of the EU-level graduate tracking initiative. How would such a system be governed? How are decisions to be made? Who will fund the system? Existing governance models for EU-level and international data processes can be used as a reference point. These examples include Eurostat, OECD, Eurostudent and the Eurograduate pilot project.

Governance and administrative functions required for an EU level graduate tracking system can be divided into 5 categories.

1. **Governance, policy and management functions**

> Governance system (steering committee, project group, sub-groups)
> Representation and decision making procedures (consensus vs majority, who is represented, member state representation, stakeholder representation etc.)
> Administrative model and/or home base for EU level graduate tracking (who organizes meetings, makes minutes, communicates with member states and stakeholders etc.)
> Does the tracking system have a permanent staff or is the organization project-based or a combination of both?
> Data ownership, governance: who can use the data and for what purpose?

2. **Funding functions**

> Budget model (for example, are labour costs from members states included in the budget or not?)
> Budget process, decision making and cost sharing: Commission, Member states or funding from other sources or combination of all of these?
> Does tracking have a permanent budget (*for the time being*) or is it project-based or both?

3. **Scientific and quality assurance functions**

> Development and maintenance of policies and practices that ensure the quality, representativeness, reliability and comparability of the EU level data.
> Development and maintenance of policies and practices that ensure the quality and scientific reliability of analysis and reporting of graduate tracking results.

4. **Legal functions**

> Compliance with EU and national regulation and legislation relating to graduate tracking, especially GDPR and data protection laws.
> Legal expertise and support needed for both EU and national level operationalization of EU level graduate tracking measures

5. **Operational and technical functions**

> Operational and technical functions can be centralized, de-centralized or the combination of the two depending on the selected approach and they include:
> Data gathering and data protection
> Data quality assurance
> Translations
> Data analysis and research

- Data management and ownership functions
- Communications
- Dissemination of results

The list of governance and administrative functions does not directly convert into criteria for different approaches for producing comparable EU level graduate tracking data. Any selected approach will have to include governance and administrative functions at some level. Each of three options require a somewhat different approach to governance. All approaches and their governance models greatly benefit from a direct relationship and cooperation with existing national graduate tracking systems.

The requirements for governance and administration of EU level graduate tracking are connected to the goals of the system. Does the system aim to cover a wide list of policy questions and themes or is the scope limited? And vice versa, the selected method of data gathering greatly influences the governance and administrative needs of an EU level graduate tracking system. Is the system based on existing data collection procedures (administrative data, survey data or both) at the national level or does the selected approach require a new data collection – either at the national level or at EU level – or both?

Governance and administrative functions are highly important for any graduate tracking system – that includes the EU level system. However, comparing governance criteria is not an easy process because governance and administrative approaches depend on the selected approach to EU level graduate tracking. It is possible to offer general governance criteria to inform the comparison of different approaches to EU level graduate tracking.

Table 6: Criteria for the governance of graduate tracking

Criteria	Key issues	Possible concerns
	Governance, policy and management functions	
Policy level commitment	How well does the selected approach meet the policy needs of Commission and Member states? Is the selected approach seen as both beneficial and legitimate? *Do they trust the results (is the data representative, reliable and comparable)? Do they see value for their money?*	Strategic graduate tracking system development requires a long view (5-10 years). Is there enough political patience?
National level – EU level graduate tracking systems coordination	How well does the selected approach take into consideration the needs of the national graduate tracking systems and facilitate cooperation with and between the national systems? What is the role of the national systems in the EU level system governance?	Systems level collaboration requires time and effort (and trust). *The EU level system can be a threat for existing national systems (survey fatigue).*
Stakeholder engagement	How well does the selected approach take into consideration the needs of educational institutions and other key stakeholders? What is their role in the governance of the EU level system?	Is stakeholder management done at the national level or EU level or both?
EU level system administration	How well does the selected approach support the development and maintenance of EU level graduate tracking? How well does the selected administrative model support the needs of the system (and the Commission, Member States and key stakeholders)?	How to balance efficiency with consensus building? How to ensure that right expertise is available?
Data ownership and management	How well does the selected approach to data management and ownership meet the data needs of Members states, Commission and key stakeholders?	How to balance data protection with openness and data needs?
	Funding functions	
Funding model	How well does the selected approach to funding meet the needs of the system? Is the funding model transparent, sustainable,	How to balance project-based funding with, sustainable funding

	and cost-efficient? Is the funding model seen as legitimate by the Commission, Member states and key stakeholders?	and long-term systems development needs?
	Scientific and quality assurance functions	
Quality of the EU level data	How well does the selected approach ensure that the EU level graduate tracking system produces quality data that is *representative, reliable and comparable*? What are the policies and practices that ensure this? *Does the EU level system build on existing international standards and data practices and processes and expertise (Eurostat, OECD)?*	How to ensure that the system has enough graduate tracking expertise from different Member States?
Quality of reporting	How well does the selected approach ensure the quality and scientific reliability of analysis and reporting of EU level graduate tracking results? What are the policies and practices that ensure this? Is the system transparent and seen as legitimate?	See above.
	Legal functions	
Legal design	How well does the selected approach ensure that all the regulatory needs of graduate tracking are met at both the national level and the EU level?	How to ensure that system has enough relevant legal expertise from MS and the EU?
Legal support	How well does the selected approach ensure that the legal consultation needs of the graduate tracking system are met at both national and EU level?	See above.
	Operational and technical functions	
System design and efficiency	How well does the selected approach meet the operational and technical needs of the EU level tracking? Are centralized and de-centralized resources allocated optimally?	Optimal balance between centralized and de-centralized resources might be different for different countries.

9.0 A proposal for the governance of graduate tracking in Europe

Given the modular approach recommended by the Task force 1, it is important to design a governance model that can bring forward the development of graduate tracking in Europe, while respecting the competences and choices of the Member States.

The proposed governance model is structured as follows:

1. Member States are invited to establish, where it does not exist, a Graduate Tracking Co-ordination Centre or reference point (if possible for both higher and vocational education and training). Such centres (which may be virtual, based on a network of contacts/experts, or a physically-located organisation) should be invited to build on the existing structures and arrangements in each Member State. In accordance with national practice, they should bring together existing relevant bodies/organisations and involve social partners and relevant stakeholders at the national and regional levels, in order to support the development or strengthening of graduate tracking systems. The precise role and functions of the Graduate Tracking Co-ordination Centre are discussed below.
2. The European Commission is invited to establish a European Secretariat to support the Co-ordination Centres/reference points' implementation of the Council Recommendation on graduate tracking. This Secretariat could be based on an existing structure (if its existing mandate were sufficiently broad) or a new arrangement which would work across the European Union and the European Economic Area. This Secretariat (which should work with existing European networks, Eurostat and European agencies[13] working in relevant fields) would facilitate cooperation and mutual learning, develop and promote guidance material, and provide information on developments in graduate tracking across Member States and more widely. The precise role and functions of the Secretariat are discussed below.
3. The Graduate Tracking Coordination Centres (point 1 above) and the European Secretariat (point 2 above) are invited to create a Steering Committee, to guide the practical implementation of graduate tracking among all participating countries. The Steering Committee, formed by a limited number of experts selected by the Graduate Tracking Coordination Centres and the Secretariat, will coordinate and steer the work of the groups that interact in the design, development and implementation of the modular graduate tracking approach here recommended. Task force 1 proposes that the Steering Committee has decision power, but at this stage we do not make any proposal on the voting procedure.
4. The European Secretariat, the Steering Committee and the Graduate Tracking Coordination Centres, will decide how best to organize their work, taking into account the expertise and competences needed (statistical, legal, policy oriented, etc.) and the different phases of the graduate tracking project. One possible option would be the creation of two groups, whose actions will be coordinated by the Steering Committee:
   - **a Policy Group**: this group would focus on the policy dimension of the European graduate tracking project and could identify and propose to the Steering Committee the set of "policy questions" that graduate tracking (through both survey and administrative data) will need to address, in order to satisfy the 2017 Council Recommendation and any other requirement set by the Steering Committee. All Member States (through the Graduate Tracking Coordination Centres) could be represented in the Policy Group, together with representatives from the European Union.

[13] For example CEDEFOP and the ETF.

- **a Scientific Group**: this group would discuss and propose to the Steering Group solutions to the methodological aspects related to data comparability, data collection, data cleaning, and data quality, both for survey and administrative data. All Member States (through the Graduate Tracking Coordination Centres) could be represented in the Scientific Group, together with representatives from the European Union.

5. Task force 1 proposes that the Steering Committee (considering the proposals from the Policy and Scientific groups, if these groups are formed) selects the list of "policy questions" and the appropriate methodological approaches for tracking graduates with both survey and administrative data. Following the decisions of the Steering Committee, it is expected that the use of survey and administrative data might differ across countries (depending on their existing data infrastructure). In order to support the Secretariat, the Steering Committee and the Graduate Tracking Coordination Centres in the implementation of the graduate tracking with survey and/or administrative data, it is recommended that the necessary competences are made available to the actors involved. These competences could be made available by creating three working groups as described below (however, the final decision on the identification of the working groups and on their functioning and timeline should be left to the Steering Committee, in accordance with the Graduate Tracking Coordination Centres):
   - an **EU Survey working group**: it would support the development of the EU Survey and its integration with existing national surveys, following the indications of the Steering Committee, and reporting to the latter (especially in relationship to the integration of the national surveys with the EU survey). The EU Survey working group could be formed of Members States representatives (not all Member States need to be represented), members of the Consortium that will be selected to develop and implement the EU Survey, representatives from the European Union and external experts.
   - an **Administrative Data working group**: it would support and follow closely the development of linked administrative data in the Member States, offering a place where Member States that are more advanced in data collection and data linking can propose solutions to Member States that have not developed them yet. All Member States could be represented in the Administrative Data Working Group, and they would work together with representatives from the European Union and external experts.
   - a **Legal Expert working group**: it would analyse and propose solutions to data collection and data sharing across Member States, considering the GDPR directive and the national legislations concerning privacy and data protection. The criteria for its organization would need to be defined.

9.1 Graduate Tracking Co-ordination Centres

Following the completion of the Expert Group's work, there will be a need to support Member States to develop or strengthen their approach to system-level graduate tracking. Task force 1 notes DG EAC's February 2020 call to support the building of Member States' capacity to collaborate on the production of comparable European graduate tracking data, and to prepare for a European graduate survey. This capacity building programme will support stakeholders in each country to develop further the skills and abilities needed to implement the Recommendation on graduate tracking and stimulate strong international cooperation so that a true 'European' graduate tracking approach can be developed.

Each Member State should decide the most appropriate arrangement for a Coordination Centre/reference point which could, for example, be part of a Ministry, an independent agency or a virtual network with the necessary expertise and capacity to undertake the work set out below.

Each Graduate Tracking Co-ordination Centre/reference point would be part of the network of experts and be invited to:

- support the further development of graduate tracking in line with the 2017 Council Recommendation;
- share their approach to tracking those graduates covered by the Council Recommendation in order to increase awareness of different European approaches;
- use and disseminate graduate tracking data within their system;
- monitor their country's progress in the implementation of the Council Recommendation on tracking graduates;
- support the higher education graduate tracking and ensure dissemination and exploitation of the results at a system level;
- participate at meetings organized in the context of the European network of experts;
- learn from other practice.

In practical terms establishing Co-ordination Centres/reference points would be an invitation to:

- keep a wide range of stakeholders and institutions informed about the activities of the European network;
- support the implementation of the work programme of the European network;
- promote the further development of graduate tracking in the national/system context;
- continue to widen the coverage and improve the quality of administrative data-bases which support graduate tracking measures and comparable European data;
- work with the European Commission, the European Secretariat and other Graduate Tracking Coordination Centres/reference points to analyse, publish and promote the outcomes from the European graduate survey for the higher education sector;
- develop and use a pilot approach to administrative data sharing on migrant graduates among Member States;
- ensure that national/system level information on graduate tracking and the work of the European network is disseminated effectively to national/system-level stakeholders.

One of the activities which should be undertaken by Co-ordination Centres/reference points is the further strengthening of the quality (and quantity) of the administrative data which supports graduate tracking systems. Using the key data items in the report of Task force 3, Coordination Centres/reference points should work with stakeholders and with the Administrative data working group to create data which is comparable across Member States. This move towards comparability should cover all those learners who are included in the Council Recommendation.

9.2 The Secretariat

The Secretariat should work within the context of Member States' national competence for education, academic freedom, and autonomy in the higher education sector. The Secretariat should:

- develop an annual work programme which supports the development and strengthening of vocational and higher education graduate tracking systems across Member States. Such a programme would include the creation of the working groups proposed above; the publication of guidance and advisory notes; support for the development of comparable European data; the organisation of peer learning activities, an annual meeting for representatives from all the Co-ordination Centres/reference points, and an annual meeting for stakeholders with an interest in graduate tracking; and the creation of a web-site which is updated regularly;
- work with the Co-ordination Centres/reference points to monitor progress on the implementation of graduate tracking measures as set out in the 2017 Council Recommendation on graduate tracking and as described above;

- work with the Co-ordination Centres/reference points and the European Commission to prepare, distribute, promote, and analyse the results of the European higher education graduate survey as set out above[14];
- promote the use of the common principles and standards (see Task force 4 Annex);
- support Member States' development and use of a pilot approach to administrative data sharing on migrant graduates;
- support those Members States wishing to develop a common European approach to tracking graduates at Doctoral level or EQF Level 8 programme and VET graduates.

[14] It is important to note that the European secretariat, or a contractor working on their behalf, would work with data collected and provided by national authorities. It should not collect data from learners and it should not keep personal or sensitive data on individuals.

10.0 Monitoring the graduate tracking recommendation

Monitoring the implementation of the graduate tracking recommendation would allow the measurement of the extent to which national systems collect, analyse and use data to improve the quality and relevance of learners' programmes. Task force 1 recommends that the European Secretariat should work with the Coordination Centres/reference points to monitor progress in implementing the graduate tracking recommendation. The European secretariat should coordinate this process to ensure that the information provided is available in a standardised format. The approach used for monitoring should be developed in partnership with the Coordination Centres/reference points to ensure a non-judgemental and supportive methodology and reporting system.

Task force 1 noted the current position in relation to the implementation of the recommendation (as described in Section 4 of European Commission, 2020a) and proposes that this is used as the basis for recording change every 2 years. In order to simplify the work of the Coordination Centres/reference points, the timing of this two-year monitoring cycle should be aligned with the collection of data through the European graduate survey for the higher education sector.

The monitoring arrangements should be based on a broad view of the recommendation's implementation. Task force 1 recommends that the following five measures (as described in European Commission, 2020a) form the basis for evaluating the benchmarking criteria in the Council Recommendation:

- **inclusion of graduate programmes -** coverage of relevant programmes in higher education, initial and continuing vocational education and training;
- **inclusion of graduates -** inclusion of all graduates in each cohort, coverage of the full graduate population, including people who migrate to another country after graduation;
- **longitudinality -** tracking of graduates at different points after they have graduated;
- **quality of data -** based on both qualitative and quantitative information from both survey and administrative data[15]; and the ability to disaggregate the data to understand graduates' progress based on education/training providers, regions, fields of study etc.;
- **dissemination and use of data -** data is available in a range of formats in order that it can be used for different purposes and by different users in the national/regional system; ongoing liaison with the users of data.

Task force 1 recommends that the European Secretariat uses these measures as the basis for the initial monitoring of the implementation of the graduate tracking recommendation. Over time, the Secretariat, in partnership with the Graduate Tracking Coordination Centres/reference points and the European Commission, should refine these criteria to reflect emerging developments and priorities.

[15] https://ec.europa.eu/eurostat/web/quality/european-statistics-code-of-practice .

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Task force 1: Final conclusions on options for tracking graduates at European level

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