EUROPEAN COMMISSION

Directorate-General for Structural Reform Support

Joint Management of Data and Analysis for Swedish Healthcare Regions

Call for tender TSIC-RoC-23001 under Framework Contract procedure No. REFORM/2021/OP/0006 Lot 1

Inception Report

Final draft Aug 2024

EY

Building a better working world

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List of Abbreviations

Term	Abbreviation
Directorate General for Structural Reform Support	DG REFORM
European Health Data Space	EHDS
Ernst & Young	EY
European Union	EU
Information Technology	IT
Key Performance Indicators	KPI
Kick-off Meeting	KoM
Steering Committee	SC
Swedish National Board of Health and Welfare	NBHW
National Cooperation Group Data & Analysis	NSG DA
National working group	NAG
Operating Working Group	OWG
Swedish Association of Local Authorities and Regions	SALAR
Reference architecture	T2
Team of experts	EY team
Workshop	WS

List of Definitions

Competence	Refers to the attributes, skills, attributes, judgement and knowledge that when developed they increase the ability of the employees to perform the task.
Competence centre	Refers to a centralized department or team for developing and supporting the business requirements of an organization, often to coordinate skills. Responsibilities include providing access to fact-based knowledge and skills that other departments or employees need.
eHealth	eHealth describes healthcare services which are supported by digital processes, communication or technology such as electronic prescribing, telemedicine, or Electronic Health Records (EHRs).
FAIR data principles	Findable, Accessible, Interoperable, Reusable. The FAIR data principles state that it should be possible to find research data, there should be information about how to gain access to them, they should be compatible with other data, and possible to reuse.
Health data platform	A data platform refers to a software platform used for collecting and managing data, and acting as a data delivery point for application and reporting software. A data platform handles the collection, cleansing, transformation, and application of data to generate business insights. In this case a platform for health specific data.
Interoperability	The ability of systems, organizations or business processes to work together and be able to communicate with each other by following agreed rules.Types of interoperability include syntactic interoperability, where two systems can communicate with each other, and cross-domain interoperability, where multiple organizations work together and exchange information.
Skills	Refer to the abilities/competencies required to perform the job. These can be hard, referring to the technical ones usually acquired through academic institutions and the soft skills are those which relate to the individual's personality traits during interpersonal and intrapersonal communication.

1 Proposed Methodology

This document is an inception report to EY's engagement for Joint Management of Data and Analysis for Swedish Healthcare Regions

The aim of this report is to summarize the overall approach to the project which was detailed in our proposal and presented during the Kick-off Meeting on 11th of June 2024.

We begin our report by introducing the project background and key objectives as stated in the submitted proposal by EY.

1.1 EY's understanding of the general context and the purpose of the support

EY is pleased to detail the proposed execution of the provision of services to DG REFORM for supporting the Swedish Association of Local Authorities and regions (SALAR) as the main beneficiary institution in conducting the Project "Joint Management of Data and Analysis for Swedish Healthcare Regions".

There is an ongoing trend on all markets, including EU and Sweden, towards increased patient centricity, increased access and quality of care, and a shift towards more proactive care models. The shift will require more information and insights about the patient, and hence a need to untap the value of the increasing amount of healthcare data available, which is today mostly locked into multiple IT systems of healthcare organisations.

To increase access and quality of care in Sweden, there is a need to better understand regional differences in the delivery of care. Today, the Swedish regions are faced with several challenges when it comes to managing and analysing healthcare data of national interest, with regions and hospitals submitting data to several different entities, sometimes the same data points and with varying degree of data quality and comparability. There is a huge potential in addressing and improving the way data is currently collected, exchanged, and analysed on a national and regional level, with potential value-adds such as reducing manual and time-consuming tasks, improving data quality and insights, and gaining better information and insights about the state of healthcare across Sweden. As EY was supporting SALAR to develop the Healthcare data strategy, EY has a very good understanding of the current situation when it comes to follow-up and analysis of healthcare data on a national level in Sweden, as well as the complexity of the Swedish Regions and SALAR as an organisation.

Unlocking the value of healthcare data is a top priority, both within Sweden and across the European Union. At the EU level, it is the move towards the European Health Data Space (EHDS) that aims to create a secure environment for exchanging and utilising health data. This EU initiative seeks to empower patients with control over their health information, facilitate cross-border health delivery, and support research by ensuring that health data can move freely and safely within the EU. Complementing the EHDS is the Digital Europe Programme (DIGITAL) that aims to build the EU's strategic digital capacities. The EU4Health programme aims to reinforce crisis preparedness and response capabilities for health crises in the EU.

In Sweden, there are several ongoing initiatives, both regionally and nationally. For example, several regions are conducting pre-studies or are implementing health data platforms. Nationally, the Swedish eHealth Agency is conducting a pre-study on a new common digital infrastructure for the Swedish National Quality Registries (Nationella Kvalitetsregister) used by Swedish Healthcare providers. The same agency has also conducted a pre-study on a state-owned national health data space for data exchange as well as a pre-study on core data within the healthcare domain. On a governmental level, a study is currently conducted with the objective to investigate how and if health data should be viewed and considered a national interest (Dir. 2022:98). Swedish National Board of Health and Welfare (NBHW) has conducted a study on the secondary use of healthcare data as well as an investigation to map healthcare

variables of national interest. Moreover, NBHW has been provided a government assignment to develop the collection of data on waiting times. There is a need to have a clear national coordination and collaboration of these initiatives to understand how the initiatives can complement each other, avoiding duplications and ensuring integration and interoperability where necessary. Therefore, the authorities will be important stakeholders to interview and monitor.

At the same time, there is an ongoing trend of healthcare data becoming more open, where data is separated from systems and stored in vendor neutral health data platforms. With the right information technology, a health data platform can combine healthcare data from several different sources and systems and make the data available in an open and secure way.

In a healthcare data platform, several different standards for data storage and data exchange must coexist together. When developing a health data platform, it is important to clearly define the semantics and which standards to use early in the process. Common international standards are HL7 and IHE for interoperability, openEHR and OMOP for clinical data models, and SNOMED CT, LOINC, ISO 11073 for supportive clinical terminology.

The project can learn a lot from the work being done on health data platforms in Europe and other parts of the world. For instance, the Catalunya region in Spain selected openEHR for their new longitudinal Electronic Health Record and HiGHmed in Germany a consortium including Charité, are using openEHR in combination with FHIR as an open data platform. Currently EY is supporting Ruhr-Universität Bochum to create a new platform to integrate patient data from its eight hospitals using openEHR. EY keep a close eye on the latest developments in this area, is an active participant in the international openEHR community and is committed to support the FAIR data principles.

According to best practice and lessons learned from implementing health data platforms indicate that scalable, stepwise implementations are most effective. Focusing on a small , clearly defined area or use case, for gradual expansion over time. The areas or use cases are prioritised where a clear value can be provided for the users, usually implemented with agile project methodologies to enable flexibility and adaptability throughout the process.

By implementing this project, EY aims to work together with DG REFORM, SALAR and the Swedish regions to support the Swedish usage of data and analytics in healthcare. This is done by investigating the need and requirements for a scalable inter-regional system for secure data transfer, as well as providing recommendations for the regional health data platforms and recommendations for a new national health data platform. Moreover, providing recommendations for procedures and governance for a competence centre at the national level to advocate for and facilitate the use of regional health data for follow-up and analysis. During the project, EY will utilise the established EY methodologies and frameworks, international/EU standards, best practices and experience from local teams and team of senior internal and external experts. Health stake holder institutions, primarily the National Board of Health and Welfare and the Swedish e-Health Agency as well as academic institutions and life science actors will also be consulted in the EY support.

1.2 EY's added value to the design and implementation of the reform

EY has local market presence and has extensive experience with the Swedish healthcare system. EY has been present in the Swedish healthcare market for 30+ years and is today one of the leading consultancy firms with a practice of 180+ employees in Sweden focused on healthcare and the public sector.

EY has demonstrated the ability to deliver various national and international healthcare projects. EY's 30+ years of experience in the health domain enables us to assemble high performing teams to deliver the best value to our clients. For this specific contract, EY has

created a team composed of strong internal (EY) and external experts in the field of healthcare, and more specifically with competence in healthcare data, IT-infrastructure, informatics, follow-up policy and data management. EY also has extensive clinical expertise, where they engage and embed clinicians as clinician-consultants within the organisation. The hundreds of clinician-consultants in EY across the world understand the local healthcare context and engage with client clinicians quite differently from those who do not have clinical backgrounds, in terms of both effectiveness and efficiency.

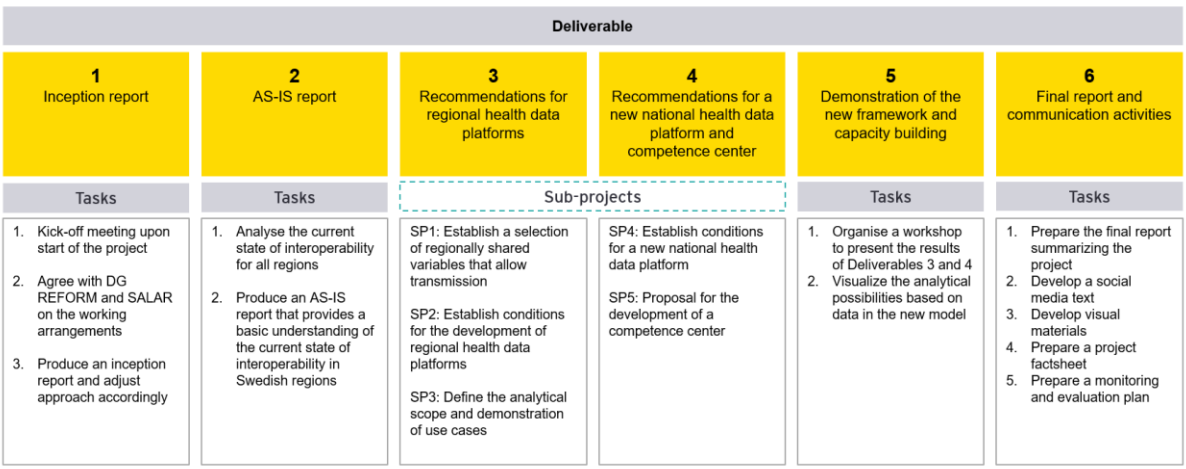
The proposed team structure is a mix of Swedish and international experts, project management and one Junior Expert. EY's local team has previous experience in working with a variety of different organisations relevant for the scope of this project (Regional leadership, Regional and University Hospitals, Government agencies such as the Swedish eHealth Authority, Public Entities, Health Technology Vendors, and other relevant entities in the healthcare sector). Moreover, the team has previous experience working with SALAR and was the main advisor in the development of the Healthcare Data Strategy during 2021 and 2022 together with SALAR. Given this, EY has a very good understanding of the local context and stakeholders relevant for this project. The local team also has previous experience working with investigation of healthcare data standards for future IT infrastructure (openEHR study for Region Stockholm), EHR and health data platform investigations (health technology vendor), healthcare data ecosystems and innovation (Nordic Innovation), which gives EY an excellent understanding of the technical aspects of this project when it comes to healthcare data, infrastructure and data ecosystem in a Swedish context.

Senior EY experts have previous experience in healthcare data strategy, strategy implementation, organisational design, healthcare policy, healthcare IT infrastructure, health informatics, data management, data privacy and cyber security, both in a local Swedish context and from other countries. Altogether they also have extensive experience working for DG REFORM, for example eHealth for a healthier society in Slovenia, Improving the Use of Health Technology Assessment (HTA) in Decision-Making in Latvia and the Future Directions and Evolutions of eHealth in Belgium. One of EY's external experts has profound experience from health data standards and health data platforms with 25+ years of consultancy experience in more than 31 different countries, including Sweden.

1.3 Overview of EY approach

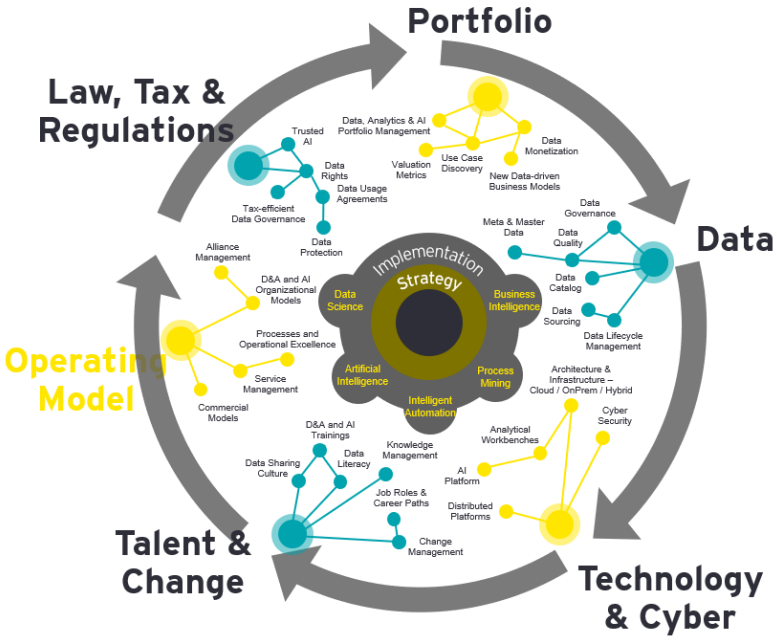
Based on the deliverables outlined in the Terms of Reference, EY's proposed approach is summarised in the figure below:

Figure 1 Overview of proposed methodology



The approach is based on EY Data Driven Enterprise Framework described in figure 2.

Figure 2 EY Data Driven Enterprise Framework



Having considered the overall background of the tender and the current state of health data analysis and follow up in Sweden, EY will in the following section present the overall approach to support SALAR in the joint management of data and analysis for Swedish healthcare regions. The proposed approach is founded on EY's Data Driven Enterprise Framework and the deep expertise of EY's team across the relevant areas of input, including the Swedish healthcare ecosystem, health data exchange in Sweden, technical expertise for health data platforms, as well as the semantics and clinical aspects that separate health data from other forms of data. Throughout the project, EY will also apply EY's proven methodology for project management to ensure overall timeline, milestones and project deliverables are met.

The upcoming section of the proposal details the practical tasks and methodologies that EY proposes in order to reach the project objectives, as well as the project governance structure which has been developed based on the roles and capabilities of both stakeholders and the EY team.

1.4 EY approach to project delivery

This Section describes the approach from an operational point of view, with each deliverable described in turn below.

1.4.1 Deliverable 1 – Inception report

1.4.1.1 Objective

During the initiation phase of the project, EY aims to build a solid foundation for the overall success of the project by reaching mutual understanding with both DG REFORM and SALAR on e.g., the expected result of the project, the steering of the project, foreseen risks and tangible outputs. Based on this, EY aims to create a platform for dialogue, establishing clear agreements with stakeholders on how to prepare execution of project deliverables, responsibilities, governance structures, methodologies to be employed, and the timeline for project delivery

Building on this groundwork, EY will continue to build upon their understanding of their previous role as the primary advisor to SALAR in the development of the Healthcare Data Strategy. EY will further deepen and detail the existing knowledge pertaining to health data exchange, e.g., challenges, opportunities, and conditions, and ensuring that any potential changes or updates since the previous report have been addressed and managed. SALAR

and DG REFORM will then validate which identified challenges should be addressed using project input.

In the final part of the project's initial phase, EY aims to engage in discussions about the good practices that are proposed for analysis. The aim is to have a clear understanding of the direction that stakeholders intend to take, identify key enabling conditions and success factors, and determine how these can be applied to the current project. EY will ensure that all actions taken during this phase will contribute to a well-defined picture of the current (AS-IS) situation, highlight any existing gaps in comparison to the good practices and outline the recommended next steps.

1.4.1.2 Task & methods

Task 1.1 - Kick-off meeting upon start of the project

Upon signature of the contract, the project team will immediately continue desk research on the context described in the proposal and start planning the kick-off meeting which should take place as soon as possible. EY proposes to organise a preparation call or meeting with the client team to prepare for the kick-off meeting, align supporting materials, organisational aspects of the meeting, and confirm the final list of invited stakeholders and other potential project stakeholders.

The kick-off meeting will take place in the premises of SALAR with attendees from SALAR and the appointed National Working Group (NAG) and contractor side (EY and external experts). In advance of the kick-off meeting, an agenda in English and Swedish will be sent to DG REFORM, the meeting invitees, and other relevant stakeholders to ensure purpose and content of the meeting is clear.

Task 1.2 - Agree with DG REFORM and the beneficiary on the working arrangements

During the kick-off meeting an in-depth discussion will be carried out on the selected project methodology, the required data and additional information needs, possible additions to the proposed list of main project stakeholders as well as the communication model between EY and these stakeholders.

SALAR and the 21 Swedish regions will be the main stakeholders of the project where SALAR provides support the regions. Other proposed stakeholders are the NAG, and NSG DA (National Cooperation Group Data & Analysis), and NSG Structured Healthcare Information (National Cooperation Group Structured Healthcare Information). The NAG will work as an operational working/steering group and will be operationally involved. NSG DA is the strategic steering group to which EY proposes frequent reporting throughout the project. Other key stakeholders to monitor and have dialogues with are governmental authorities such as the National Board of Health and Welfare (NBHW) and the Swedish e-Health Agency. It will be important for SALAR and the project to monitor the activities performed by these national actors, and potentially others, in the digital health area outside the direct proximity of the project. These actors are proposed as "other stakeholders" as they are all perceived as influential within the healthcare area in Sweden and also potentially influenced by transformations. Suggested organisational structure is described in section 2.3.1 – Project Governance.

To make the project implementation efficient, a clear agreement will be established during the kick-off meeting on the: (1) scope of the project, (2) expectations of all involved parties, (3) necessary stakeholder involvement, (4) organisation of the work and resources, (5) project timeline, (6) frequency and preparation of meetings, (7) communication, (8) foreseen challenges and (9) quality measures. Moreover, during the kick-off meeting, an agreement will be reached on the structure and participants of the Steering Committee (SC) and Operating Working Group (OWG). During the discussions about the working arrangements, a chosen selection of countries where similar reforms have been implemented will be used as good practice examples. Here, EY suggest the use of Catalonia (Spain), Germany and Finland (detailed in deliverable 1.1 of current proposal).

Task 1.3 - Produce an inception report and adjust approach accordingly

After the kick-off meeting EY will develop a project inception report within one month after project start that will include at least the following segments: (1) a brief account of all meetings held, counterparts and interested parties met during the inception phase (2) a project charter outlining the roles and responsibilities of respective interested parties (3) an updated work-plan and timetable with milestones, as discussed with the counterparts and agreed with DG REFORM (4) an updated detailed description of all deliverables and the methodological approach, as discussed with the counterparts and agreed with DG REFORM (5) a list of stakeholders to be engaged to provide the input for the different deliverables (6) list of relevant data, documents, and other information, reviewed during the inception phase (7) an updated account of possible project risks and remediation approaches (8) a description of the project in Swedish for discussion and communication purposes for related internal and external stakeholders (9) a project description summary in Swedish and English outlining an overview of the background, goals, key tasks, and anticipated outcomes of the project in an easy-to-understand format.

1.4.1.3 How EY approach addresses the scope and challenges

The major challenge of this phase of the project is potential disagreement among different stakeholders about the proposed project methodology and approach which may hinder start of the project and create resistance. To address the challenge, EY approach provides for a structured stakeholder mapping to understand their interests, motivation to participate in the project and where each individual stakeholders believe themselves to contribute best to the final deliverable. This mapping will allow us to better prepare for the kick-off meeting with different perspectives in mind. Furthermore, early involvement of all the relevant stakeholders will facilitate alignment and a collaborative environment.

Given the large number of stakeholders in the project and the time limitation for data collection in terms of questionnaire and interviews, the approach used will not only be important but necessary. By ensuring structure and conditions are clear from the beginning, the project will meet its deadlines and avoid any efficiency-losses due to e.g., conflicting interests or confusion regarding accountability and responsibility within the various deliverables. To ensure high quality in deliverables, quality reviews will be a part throughout the project execution and in all tasks, according to the processes and frameworks detailed in section 3 in this proposal.

1.4.1.4 Validating comments and end-deliverables defined during Inception phase

N/A – this document and its content includes the deliverable.

1.4.2 Deliverable 2 – AS-IS report

1.4.2.1 Objective

The AS-IS report aims at offering a complete analysis of the current state of interoperability (including an overview of processes, systems, technological infrastructures, organisational structures, legislation and strengths and weaknesses of the way the data sharing works in the current system) in the 21 Swedish regions.

In the process of developing the AS-IS report, EY aims to leverage the deep knowledge and unique insights acquired during the development of SALAR's Healthcare data strategy, where EY was the provider, combined with experience from regional and national initiatives.

1.4.2.2 Task & methods

Task 2.1 - Analyse the current state of interoperability for all regions

To get a thorough and well substantiated understanding of the current state for the 21 regions in Sweden, EY will use a (1) questionnaire and (2) case studies. To receive more insights and

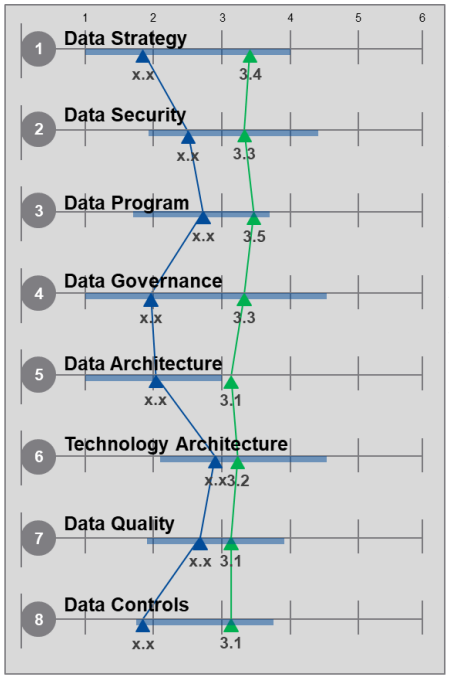
perspective, EY will also perform interviews with other relevant regional stakeholders such as the strategic IT departments, the Healthcare Administrations, representatives from NAG (National Working Group), representatives from NSG DA and NSG Structured Healthcare Information; key hospitals with a spread in size and geographical location such as Karolinska University Hospital (Stockholm), Sahlgrenska University Hospital (Gothenburg), Uppsala University Hospital, Sundsvall Hospital and Skåne University Hospital (Lund and Malmö). Other national actors should also be interviewed such as the eHealth agency, Inera, the Dental and Pharmaceutical Benefits Authority, the National Board of Health and Welfare and potentially a smaller number of pharma companies and health tech companies.

Below are examples of questions to be asked in the interviews:

- What benefits would a national platform bring to you?
- What kind of information would be valuable for you to analyse at the national level?
- What challenges do you see in implementing a national platform?
- Do you have any experience and/or best practise examples that we can benefit from during our investigation?
- What is the strategy for engaging with and incorporating feedback from healthcare providers, IT professionals, and patients into the ongoing development of interoperability features?

The questionnaire aimed at the 21 regions will be outlined in an understandable and easy-to-follow format where the appointed representative(s) from each region is asked to provide both binary and elaborative answers to questions about currently performed analysis, demand in terms of use cases to be jointly performed, currently shared variables on a national level, applied standards, involved actors, tools used, technological architecture, organisational structures, earned certificates, processes and perceived maturity level. Before sending the questionnaire to the regions, EY will send the questionnaire for a final review and approval to DG REFORM.

Figure 3 Maturity assessment example with questionnaire questions



Component	Score	Commentary	Development Priorities
1 Data Strategy	x.x	• xxxxx	• yyyyyy
2 Data Security	x.x	• xxxxx	• yyyyyy
3 Data Program	x.x	• xxxxx	• yyyyyy
4 Data Governance	x.x	• xxxxx	• yyyyyy
5 Data Architecture	x.x	• xxxxx	• yyyyyy
6 Technology Architecture	x.x	• xxxxx	• yyyyyy
7 Data Quality	x.x	• xxxxx	• yyyyyy
8 Data Control Environment	x.x	• xxxxx	• yyyyyy

Example questions

- What type of health data are you sharing to national actors / other regions today?
- What health data on a national level provided for you today is most valuable to your region?
- What health data on a national level, not provided for you today, would provide value to you?
- Which roles in your organization are responsible for providing health data to national actors / SALAR / other regions today?
- What tools are being used for data sharing to other regions or to national actors?
- What solutions are used for data storage?
- What international standards do you use for storing or sharing health data today?
- Do you have any good examples or best practises that you think we could benefit from?

Key ▲ Region average 20xx ▲ Average 21 Regions 20xx

When all 21 regions have answered the questionnaire, case studies will be initiated on a selection of three to five regions who - based on their provided answers - are perceived to be specifically mature within interoperability. The case studies will consist of in-depth interviews with regional representatives where the aim is to get clarifications and different perspectives

on the current state, wished future state, pros and cons and lessons learned from the work to reach their current state of maturity. To use time in an efficient way, EY will perform interviews with the non-regional stakeholders during the waiting times that occurs when the regions answer the questionnaire.

The outcome of the analysis of the current state of interoperability will be a key source of insights and data in the AS-IS report and the other deliverables of the project. For this reason, EY will put extensive effort into making the tools for analysis – the questionnaire, case studies and interviews - complete and exhaustive. To ensure completeness and exhaustion, EY will firstly conduct a desk review that includes two types of techniques: internal desk research (i.e., previous related work performed by SALAR such as "Investigation of National Service of Management and Storage of Patient-Reported Data January 2021"

Pre-study Data strategy_Final repor_20220120.pdf

and external desk research (i.e. documents relevant to the project but external to SALAR, for e.g., the study by NBHW about secondary use of healthcare data; and their investigation to map healthcare variables of national interest). By collecting, organising, synthetising, and analysing the documentation together with senior experts and client team, EY will gain an understanding of the current situation and be able to identify the gaps or lack of information that will be addressed during the work.

To secure participation in questionnaires, interviews, and other activities vital for information collection, EY propose to introduce an escalation mechanism as part of the project governance. Such mechanism would allow project members to escalate issues related to e.g., low response rates to the steering groups who has greater authority to demand re-prioritisations or re-allocation of resources.

To ensure that all 21 regions answer the questionnaire without the support from the proposed escalation mechanism, EY will send out two general reminders. When one week remains of the decided time frame, EY will take individual contact with the region representatives who haven't provided answers to ensure that no barriers to answering the questionnaire have occurred and find out if extra support is needed.

Task 2.2 - Produce an AS-IS report that provides a basic understanding of the current state of interoperability in Swedish regions

The AS-IS report is the result of the analysis of the current interoperability among the 21 Swedish regions. It will be written in Swedish and English by the EY team with input from the regional representatives, client project team and other relevant stakeholders.

Apart from the updated view on the status of interoperability, the AS-IS report will contain (1) an initial assessment of improvement potential of issues, inefficiencies, constraints and limitations identified in the analysis in task 2.1, (2) examples of regions who have found innovative solutions to issues related to data interoperability, (3) experience from health data platform implementations in Europe and (4) a draft report providing an easy-to-understand summary of the current situation. (1), (2) and (3) are described in more detail below.

(1) The AS-IS assessment will most likely reveal issues related to the regions' interoperability and ways of working. To evaluate the degree to which identified issues have potential for improvement and efficiency gains, EY will conduct an impact vs feasibility assessment. This assessment will provide a clear vision on which issues should be prioritised by revealing how serious the problem is (it's impact) and with what ease the problem can be solved (feasibility). For detection of strengths and weaknesses in the regions' data interoperability and ways of working, a SWOT analysis will be performed. This analysis effectively highlights internal and external strengths, weaknesses, opportunities, and threats which will facilitate prioritisation of current issues in need for solution.

(2) As real-life examples are known for improving understanding and inspiration, deep dives will be made in the solutions and ways of working provided by the regions who have been selected for case studies. The selection of use cases will be based on their ability to represent different perspectives and approaches that has proven to be well-functioning and sustainable in the long term. Three regions who have come particularly far when it comes to digitalisation, interoperability and data management, according to EY's experience are: (A) Region Östergötland (in the forefront of platform development and OpenEHR), (B) Region Halland (in the forefront of digitalisation) and, (C) Region Stockholm (successful implementation of the platform for Karolinska University hospital and active in research projects with a prominent actor in the Swedish e-health field). These three regions can be used as valuable sources of information and inspiration in the project.

(3) Apart from experiences from successful regions, inspiration can also be taken from experiences from work being done on health data platforms in Europe and other parts of the world. For instance, the Catalunya region in Spain selected openEHR for their new longitudinal Electronic Health Record and HiGHmed in Germany a consortium including Charité, are using openEHR in combination with FHIR as an open data platform. Currently, EY is also supporting Ruhr-Universität Bochum to create a new platform to integrate patient data from its eight hospitals using openEHR. EY keep a close eye on the latest developments in this area, is an active participant in the international openEHR community and is committed to support the FAIR data principles.

One week after the initiation of the AS-IS report, EY will perform a Q&A session together with representatives from the 3-5 case study regions. This session is an opportunity for new input and for EY to receive answers to questions that arose during the development of the report.

When a first draft of the AS-IS report has been finalized, reviewed by EY and distributed to the representatives of the 21 regions, the EY team will send out an invitation to a feedback session. The feedback session, which will be managed digitally to enable everyone's participation, serves as a checkpoint of the AS-IS report before sending it for a final feedback-round to DG REFORM. Based on the feedback from the regional representatives and DG REFORM, EY will adjust statements, clarify misconceptions, and add information that is considered important for the understanding of the report. When the report has been finalised, it will be summarised into a short, visual, and comprehensible presentation used for discussion- and communication purposes.

1.4.2.3 How EY approach addresses the scope and challenges

EY approach focuses on learning from current practices and feedback from regions who are perceived as mature in their work with data interoperability, organisation, and processes, and from stakeholders in the health practice. Our proposed approach will provide conclusions on the status of data interoperability in Sweden reviewed by senior experts from EY's Digital Health practice, EY's Cyber Security practice and experts with previous experience from strategy development at SALAR. Furthermore, expert views and operational experiences obtained as part of this deliverable will contribute to development of comprehensive and well-founded recommendations for the regional and national health data platforms where examples outside Sweden is included and utilized. To ensure high quality in deliverables, quality reviews will be a part throughout the project execution and in all tasks, according to the processes and frameworks detailed in section 3 in this proposal.

1.4.2.4 Validating comments and end-deliverables defined during Inception phase

Preparational work has been executed by SALAR during the time between EY submitting the proposal and the project start. The already executed work, within and outside the project group, will be utilized for the AS-IS report. A second opinion of selected parts and further analysis will be executed. The analysis will include mapping what type of health data the regions have access to, and their capacity to follow-up and analyse the data. Ownership of

the regions health data storage will also be mapped, while establishing contact with the responsible persons for future phases of the project.

Beyond analysis on regional level, workshop(s) and an International Outlook (study visit) will be organised to analyse initiatives performed by other actors. These will include initiatives by both Nordic and International actors selected and prioritized based on similarities, positioning, and strategic assessments within the relevant field. The findings from the workshop(s) and International Outlook will be applied in the AS-IS analysis to gain leverage and lessons learned. Furthermore, the effects implementation of EHDS has on the current project scope (secondary use of health data in a national setting) will be included in the analysis.

The results will be presented in an AS-IS report in Swedish and English, together with presentation material.

1.4.3 Deliverable 3 – Recommendations for regional health data platforms

1.4.3.1 Objective

EY aims to provide recommendations for regional health data platforms to establish effective and standardized systems for sharing and managing health data across different regions. The approach on how to reach those recommendations are provided below, and divided into three sub-projects 1, 2 and 3. Deliverable 3 will be delivered in both English and Swedish.

1.4.3.2 Task & methods

EY suggest an approach where the prioritised use cases will be the starting point and guide

for (1) identification and development of the open indicators and statistics needed, (2) identification of variables for initial transfer to the regionally shared platform, and (3) the related variable descriptions that needs to be developed. The prioritised use cases will set the requirements of the needed capabilities in terms of requirements on the IT architecture of the regionally shared platform, competences of the centre of excellence and - on a regional level - data privacy and security requirements.

In parallel with the work on defining and prioritising the use cases (sub-project 3), analysis will be conducted to develop the recommendation on the preferred web-based data catalogue tool (sub-project 1), development of strategic principles for data formats, standards and communication protocols (sub-project 1), as well as development of strategic principles and recommendations for solutions to transfer data from the regional systems to the regionally shared data platform (sub-project 2). Once the use-case prioritisation has been concluded and a formal decision has been reached, the variable descriptions for the variables subject for initial transfer can be developed (sub-project 1).

Sub-project 1 – A well-established regionally shared selection of variables with common specifications allowing transmission to a regionally shared health data platform

The variables to be transferred and available in the regionally shared platform should be based on a data demand. Data demand could be based on what data is of interest for the regional stakeholders to analyse on a national level as well as data that needs to be available on a national level for other reasons, for example due to laws, regulations, or reimbursement systems. As the regions already collect data submitted to SALAR today, EY suggest, in line with the Health Data strategy, to use these data collections as part of the starting point. However, other data points should also be considered. Moreover, the current data collections may need to be evaluated in terms of value generation to assess what data collections should continue. In the questionnaire developed during deliverable 2, EY suggest collecting information about the data demand, analyses of interest, regionally available data, granularity level of the data, and to what degree the data points are already shared today. EY will also,

based on good practices and previous experience, provide recommendations on what data that could be of interest to be available in a regionally shared platform.

A well-designed data catalogue of variables can deliver value by connecting different teams and contributing to a strong data governance, including descriptions of the data and data attributes. There are 6 main building blocks of an effective data catalogue: (1) Centralized data, i.e. to be accessible in centralized data warehouse, (2) Quality, as only high-quality and clean data delivers value, (3) Captured data demand from the healthcare leaders and practitioners, (4) Defined access rights to ensure data privacy, (5) Training & communication, as well as (6) Clear data ownership. If these building blocks are in place, the data catalogue will require minimized efforts, create value and be constantly updated. Data will remain of high quality in the long term, and the risk of data protection requirement breaches is minimized and constantly monitored.

During the AS-IS analysis, EY will gather initial understanding of the end users of the regionally shared platform to best understand what the most suitable web-based tool for the users is in order to find, search and understand the data. To identify the most suitable tool to support the data catalogue formation, EY will also conduct a market assessment of available web-based data catalogue software, as well as define pros and cons of the respective tools, related costs and required time for implementation and overall maintenance aspects. Such tools can for example be Collibra or Apache Atlas. Based on the analysis, we will provide our initial point of view of the most suitable tool to be iterated and verified in a workshop with selected end users. This will increase the understanding of how the different web-based tools can meet the needs and requirements. During the workshop, EY will visualize the user interface and features. Based on the outcome of the workshop and preceding analysis, EY will provide a final recommendation on the web-based tool that meets the user needs and requirements.

To achieve high quality of the data to be available in the regionally shared platform, the variables need to be clearly described and specified in the data catalogue when it comes to data formats and standards. The specifications should preferably be based on well-established international standards for healthcare data, such as HL7 and IHE for interoperability / data exchange, openEHR and OMOP for clinical data models, and SNOMED CT, LOINC, ISO 11073 for supportive clinical terminology. There are also tools that can be used when defining the data specifications, such as ART-DECÓR (open source, used in the Netherlands) and Clinical Knowledge Manager (for openEHR). During the development of specifications, it will be very important to establish a good collaboration with regional representatives knowledgeable about healthcare data informatics as well as with the national collaboration group for structured healthcare information (NSG Structured Healthcare Information). NSG Structured Healthcare Information is a collaboration group working towards a more unified information structure within and between regionally used systems and regions.

EY suggests developing some strategic principles around the data formats, standards and communication protocol. Strategic principles could for example be: to always (where applicable) use a specific terminology; specific standards followed by a majority of the regions will be the guiding standard; always consult with representative at NSG Structured Healthcare Information when developing data specifications; always consult with medical personnel when developing a specification and, use of international standards (where possible). EY suggests conducting a workshop with regional stakeholders knowledgeable about health data informatics, as well as representatives from NSG Structured Healthcare Information with the aim of discussing and aligning on the most suitable principles. Based on the outcome of the workshop, EY will summarise the input and formulate recommended strategic principles.

The outcome of sub-project 3 will be a set of prioritised use cases. These use cases will guide what variables that are subject for initial transfer of data to a regionally shared platform. Once the prioritisation of use cases has been concluded and consensus has been reached, there will be a set of needed variables to support the realisation of the use cases. EY suggests conducting 3-4 workshops with regional stakeholders and representatives from NSG

Structured Healthcare Information to define and agree on the variable descriptions and specifications for the set of variables subject for initial transfer. The development of variable descriptions will follow the strategic principles developed. In between the workshops, EY will summarise what has been discussed and develop recommendations on variable descriptions to be iterated and further detailed in upcoming workshops. The final workshop will aim to reach consensus on all variable descriptions for the first set of variables to be transferred. After consensus has been achieved in the working group, EY will develop a high-level summary of the outcome of the workshops to be presented for the steering group (NSG DA) for a formalized decision on the variable descriptions.

Sub-project 2 - Established conditions for the development of regional health data platforms with a solution for transfer to a regionally shared platform

To enable the transfer of regional data to the regionally shared data platform, there need to be certain regional conditions in place. During the AS-IS phase, EY will gather solid understanding of the current state of the healthcare data and the existing regional IT architecture level where the source data is located (e.g. in regional health data platforms, in hospital level platforms, and/or locked into IT systems), as well as the accessibility and quality of the data. Depending on the source system and database, different data transfer solutions may be suitable for the export of data, e.g. the data may need to be converted into a certain format (such as CSV, JSON, XML, etc.), or there may be possibilities to establish API:s (Application Programming Interface) for automatic transfer of data. As data usually is integrated with a variety of business systems, Transform, Extract and Load (ETL) tools will be needed to pull the data from the source systems and transform it to the defined and agreed data format, as specified in the data catalogue. Based on EY's previous experience, an approach utilized in similar engagements such as within the establishment of a central datahub for Dutch Hospital Data in the Netherlands will be used.

Based on experiences from the Swedish healthcare industry, the regional IT landscape is fragmented with data stored in many different systems and databases. Hospitals are often using monolithic systems with data locked into applications following regional and hospital specific business logic. Therefore, the rules for data transformation into the agreed format will be crucial so that the data in the regionally shared platform becomes comparable between different hospitals and regions. Most likely, the data transfer solution will look different across regions depending on local regional conditions and maturity level. If the region has a regional platform, an API could likely be the preferred solution, however, if the region does not have a regional platform and data dispersed in different systems/data bases, other solutions may be more suitable in the short term. EY's recommendation is to - as far as possible - establish automatic transfers of data to reduce the manual workload and dependency of regional employees.

The prioritised use-cases (defined in Sub-project 3) and the variables for initial transfer to the regionally shared platform will be guiding the requirements of the data transfer solution(s) documented in the draft requirements report. EY suggest interviewing technical regional representatives (e.g., enterprise architects) to better understand regional conditions for data transfer. Based on the input and experience gathered during interviews, EY will formalize the technical requirements to be summarised in a draft requirement report. Also here, EY suggest developing strategic principles for data transfer, taking into consideration complexity aspects, implementation horizon, etc. The findings from the report will also be iterated in a joint workshop with regional stakeholders.

Sub-project 3 – Definition of the analytical scope and demonstration of use-cases based on data available in the new model for data collection and follow-up

The analytical scope of the regionally shared platform should be based on needs and should be defined in terms of use cases. The analytical scope will also impact what variables to be defined, described, and included in the data catalogue in Sub-project 1, and what variables that are subject for initial transfer to the regionally shared platform.

The first step to reach the analytical scope is to define use cases that will provide value for the healthcare system in terms of (1) improved access to care, (2) quality of care and (3) enhancing the regions' potential for innovation in healthcare. These use cases can be based on current data collections that the regions already perform on a national level (e.g., to the KPP data base), on new areas that the regions would like to get insights on, or on analytical use cases as a result of current or upcoming regulations or reimbursement systems. EY will also provide recommended use cases based on best practices and experience from other projects.

EY suggests conducting a use-case assessment workshop (WS1) with regional stakeholders, with the purpose to discuss what is possible with analytics and to identify where the biggest opportunities are and, on a regional level, reach consensus on what kind of analysis and follow up should be jointly dealt with. To really understand the potential value-generation, it will also be important to understand what actions are expected to be taken based on the insights from the analysis. After the workshop, the use cases will be detailed in terms of what specific indicators and open statistics are needed for realization. When summarised, and documented the outcome will be shared with the regional stakeholders for validation.

Thereafter, EY suggests prioritising the use cases in a use case prioritisation workshop (WS2), where each use case will be rated in terms of value and feasibility. Aspects to consider, apart from the added value are efforts to deploy, infrastructure requirements, potential legal aspects/constraints, data availability, as well as potential costs / cost savings. The purpose of the exercise is to identify high priority use cases as well as potential low hanging fruit. The output will guide the prioritisation of data points / variables to be transferred to the regionally shared platform. The prioritised use cases will also define the needed capabilities, such as requirements on the IT architecture of the regionally shared platform, competences in the centre of excellence and on a regional level, data privacy requirements, etc.

EY suggests establishing a high-level portfolio of top prioritised use cases/areas, including: (1) A clear description, (2) Strategy alignment, (3) Measures of success, (4) Use case owners, (5) Users/data customers, (6) Data requirements, (7) Data governance (necessary considerations for data quality, ethics, ownership, access rights and security to ensure appropriate use), (8) Data analysis (considerations about analytics approaches to be applied to analyse the data), (9) Skills (capabilities needed for the realization of the data use case), (10) Technology (use case's implications for tech and infrastructure), (11) Implementation and change (implementation challenges and requirements for the data use case). Other, less prioritised use cases are suggested to be documented in a backlog for possible future implementation.

The last step of the process will be to align the prioritisation with the Project Steering Committee (NSG DA), where we suggest summarising the output from the above workshops, clearly defining the use cases, the provided value as well as high level requirements. This decision point will be very important as it will impact the other sub-projects under deliverable 3 but also the upcoming deliverables.

1.4.3.3 How EY approach addresses the scope and challenges

To ensure that the activities within the three sub-projects are performed in a structured and controlled manner, it is essential to maintain alignment and coordination between the deliverables, sub-projects and tasks. The project team will adopt an approach that leverages the work completed in previous tasks, ensuring that ongoing and future activities are coordinated through overarching project management activities, accompanied by continuous quality assurance of materials and outputs.

By arranging workshops, the regions will get a chance to gather, discuss, align and reach a consensus on various proposals. This process will create consensus and facilitate collaboration, buy-in, and engagement from the regions in later stages of the project. The execution of the conducted tasks includes a balanced approach by utilizing AS-IS analyses at both regional and national levels, while integrating international and EU best practices. EY

methodology will furthermore include expert perspectives of the and recommendations, based on a solid and thorough information gathering and anchoring of results through the proposed project governance structure

1.4.3.4 Validating comments and end-deliverables from inception report phase

For Subproject 1, a workshop-series together with responsible parties will be carried out to map what variables the regions use today that allow transmission. The mapping will include what variables the regions prioritize today, specifying how the variables are interpreted, and where possible, combining and creating data products and defining how they are connected.

For Subproject 2, a future state/"TO-BE" for health data storage, management and transmission will be established together with recommendations for how to reach the future state. This will be based on a current state analysis of how the regions and Inera have started to plan for the future in relation to the AS-IS and reference architecture T2.

Subproject 3 will be based on the results of the AS-IS report, Subproject 1, and Subproject 2. Use cases and data products will be developed to illustrate how the regions intend to operate. To achieve the future state, regions must establish a high-level conditions and design criteria that support the implementation of specific use cases. These criteria will be clearly defined through a collaborative process involving key stakeholders, ensuring that each use case aligns with regional strategic objectives and complies with relevant regulations.

The results will be delivered in a report in Swedish together with presentation material. SALAR and NAG will be responsible for identifying relevant internal responsible persons to execute the Subprojects of Deliverable 3.

1.4.4 Deliverable 4 – Recommendations for a new national health data platform and competence centre

1.4.4.1 Objective

The objective of Deliverable 4 is to establish the conditions for the development of a new national health data platform with a large data capacity, as well as a Competence Centre that can meet the requirements for data management and follow-up and analysis. The investigations in deliverable 4 aim to understand the financial conditions, stakeholders' requirements, technical conditions, and to establish processes related to data quality, compliance and access control. Deliverable 4 encompasses sub-projects 4 and 5 and will be delivered in both English and Swedish.

1.4.4.2 Task & methods

Sub-project 4 - Establish conditions for a new national health data platform

The establishment of conditions for a new national health data platform will be closely linked to the setup of the regional platforms. This is rooted in the need to enable a seamless data transmission from the regional platforms to the national platform, whereby the greatest potential value creation can be ensured. Once these foundational aspects are secure, the attention can then shift to developing specifications for the visualization area and the analytical environment to serve various user needs.

To understand the user needs and specifications, such as those for the visualization area and for the analytical environment, workshops will be arranged with the identified end-users. These workshops should be focused on creating a detailed understanding of the users' needs, including the types of views and data aggregations of interest, useful filtering options, and other functionalities that would be useful. In addition, the analysis and results from similar tasks and use-cases in Deliverable 3 should be used as inspiration to ensure uniformity where appropriate. Moreover, EY sees the value in doing smaller development and getting continuous user feedback to iterate and fine-tune the visualization interface. Since t user requirements, can change over time, it is important to maintaining a backlog for change requests is important for prioritisation and a continuous development of the visualization

component. As users become more familiar with the visualization tool, they are likely to generate t new ideas for analysis and functionality.

The visualization component has a high degree of customizability depending on the chosen solution and should be prioritise user needs and the desired interface. Among the potential visualization tools there are both open-source solutions, such as Web dev, R Shiny. There are also Business Intelligence (BI) solutions, such as Tableau, Spotfire, and PowerBI.

In the context of analytical environments, different requirements will emerge based on the identified use cases. These may range from descriptive analyses that explore historical patterns and trends (Business Intelligence) to more advanced analyses such as predictive analytics. Data will most likely need to be aggregated from several different systems and sources and distributed to both internal organisation and external stakeholders with a varying frequency. Depending on identified use cases, it can require real-time or near real-time updates for certain analyses with less frequent updates when it comes to weekly, monthly, or annual reports. If a use case requires more advanced analysis such as predicting future patterns, an analytical environment capable of supporting complex data modelling is essential.

Another important aspect in ensuring that the right conditions are available for a national health data platform is the establishing of a robust process concerning data quality and compliance. This will ensure legal compliance through data inspection and visualization of mandatory fields, but also confirm data reliability and minimize data quality related issues.

As described in Deliverable 3, there are a range of topics to consider to secure transmission of data, including the dissemination to stakeholders. For example, the output format will be of relevance as it needs to be possible for the receiver to utilize the data. As such, it will be critical to understand the different stakeholders' needs when designing possible output alternatives. Moreover, it is critical to take into account the uniqueness of health data in comparison to other forms of data. Therefore, the utilization of widely recognized formats such as HL7 FHIR and Snomed CT will both simplify the transmission of data from the platform to different stakeholders while also setting up the platform for long-term use as these standardized formats are becoming increasingly utilized from an international perspective. However, again the stakeholder capabilities need to be taken into account depending on their data needs.

To meet the needs of an organisation concerning a data access solution, the recommended approach is a combination of solutions in order to handle different aspects. Modern solutions include data warehouses, data lakes or solutions that are directly connected to the source systems. For most people, it is best to combine different solutions, for example using a data warehouse for structured data and a data lake for unstructured data. An advantage of connecting an analysis solution directly to the source systems is that it does not require a lot of resources to get started and it is easier to control the data quality fdue to fewer intermediary steps from the original data source. However, this approach may require performing the same data transformations repeatedly to prepare the basis for analysis.

There is also the perspective of utilizing Cloud or On-prem solutions. Again, these solutions have pros and cons that need to be considered and weighed against the needs of the organisation. In order to make a choice between the two solutions, the regions needs to find out what is most important to them, and this should be based on the overall business strategy. Another option is to use a hybrid solution to take advantage of both solutions. For example, sensitive data can be handled on-prem and analyses of large volumes of "non-sensitive" data can take place in the cloud solution.

- It is important to consider the type of data and the configuration of access permissions. Controls must be established to regulate who has access to specific data types and what analyses can be done on that data, which can be managed, for example, with row level access rights. From a user perspective, there could be some people that should only have access to view certain data from a certain region, while other could have broader access

to view compiled national data . The user access rights can be set-up in different ways in the visualization tool that is being used.

Finally, a key aspect that should be included, that is outside of the technical and operational conditions, is the budgeting and financing that supports the establishing of a national platform. This should ideally be carried out relatively early during the deliverable in order to ensure that the final result is realistic and that necessary funding can be secured. As the details of the deliverable are documented, the platform costs can be updated to reflect the final estimations, thereby providing clarity to stakeholders.

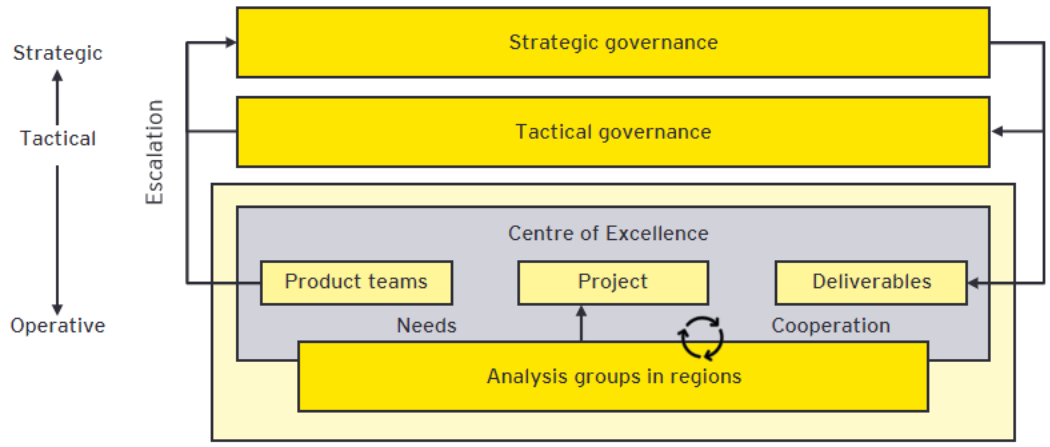
Sub-project 5 – Proposal for the development of a Competence Centre

The development of a Competence Centre involves the creation of a central hub that combines expertise, best practices, support, and training related to the national health data platform. This will support SALAR with harnessing the power of the platform's data to drive intelligent decision-making, strategic planning, and operational efficiencies. The process to create the Competence Centre will involve the following steps:

- Clearly define the objectives and long-term vision of the competence centre. This could include improving decision-making capabilities, streamlining operations, driving innovation, improving customer experience, etc.
- Recruit a multidisciplinary team including data scientists, data analysts, data architects, and data engineers. The team should ideally also include business analysts who understand the organisational needs and can frame those within the context of data.
- Invest in necessary hardware and software tools for data consolidation, processing, storage, and analysis. This can comprise data warehouses, data management systems, and data analytics tools.
- Formulate procedures for data collection, validation, cleaning, integration, and analysis. Best practices should be put in place to ensure that data used for decision-making is accurate, timely, and reliable.
- Establish a data governance strategy that outlines the roles, responsibilities, and processes regarding data access, usage, storage, and privacy. This will ensure compliance with laws and regulations and build trust with stakeholders.
- Develop a training and development program to enhance the data skills of the entire organisation. This will enable employees to understand and utilize the insights derived from the data analytics.
- Begin with pilot projects to test the functionality of the competence centre and iteratively improve to expand scope and reach in the organisation with learnt lessons.
- Finally, track Key Performance Indicators (KPIs) and share success stories throughout the organisation to demonstrate the value of the competence centre and encourage wider adoption.

Concerning the principles of governance at the strategic, tactical, and operational levels of the organisation, EY proposes utilizing SALAR's healthcare data strategy document (as created in cooperation with EY) as an initial starting point. Below are outtakes from the document that showcase how this approach would look (illustration and texts):

Figure 4 Governance Model



Responsibilities at strategic level:

- Directs region-wide principles and policy and assigns mandates to tactical and operational level
- Defines and decides on 3-5 year strategic plans
- Decides tactical plan (1-3 years)
- Decides and follows up KPIs at a strategic level
- Makes decisions according to escalation order and strategic mandate
- Owner of the respective region's data
- Decision on national UA needs to be acted upon within the competence centre

Responsibilities at tactical level:

- Defines tactical plan (1-3 years)
- Makes decisions according to escalation order and tactical mandate
- Provides input on updating the framework and policy
- Tracks KPIs at a tactical level

Responsibility management organisation at operational level (competence centre)

- Creates drafts on a tactical level
- Plans and carries out the operational work
- Prioritises needs based on tactical and strategic plans
- Escalates when necessary
- Identifies need for framework and policy
- Runs and leads collaboration with the analysis groups in regions
- Decides according to operational mandate

To decide which budget and financing model would work best for the competence centre, an in-depth analysis would be required to look into different options, weighing the pros and cons against each other as well as the needs and resources among the stakeholders. Based upon the results of this analysis, the budget and financing model could be set up in different ways, for example based upon the number of users in a specific region, which types of access levels are being utilized, how many users are active, etc.

EY proposes that the competence centre is established with the support of stakeholders at the operational level in the regions. This includes individuals with knowledge and insight into the operational work and agenda of the business, comprehensive understanding of data and analysis and its impact on (1) the operational model, (2) competence in selected parts of data and analysis within the operational model and, (3) legal competence and understanding of how the law affects development work.

The competence centre should be governed and made up of the regions with support of SALAR. The competence centre will work closely together with analysis groups in the regions to collect user needs and to secure the implementation of solutions. For the analysis groups in the regions, the set of roles is more use-case dependent and used to identify new requirements for follow-up and analysis in collaboration with the competence centre. Regions will thus have to set aside resources both for their regional analysis groups but also to the competence centre.

A prerequisite is that there is also an actor with infrastructure responsibility for the national storage location and which has access to competencies in architecture, data engineering and data integration.

A more detailed list of necessary roles for the competence centre follows: Data and Analysis Manager, Change Manager, Business Architect/Information Architect, Computer Scientist, Business Analyst/Project Manager, Data Quality Manager, Data Privacy Officer, Developer, Data Product Owner, Data Analyst/Dashboard Developer, Data Scientist, Integration Expert, and Data Engineer.

In addition, the following roles are suggested for the regional analysis groups: Business representatives, Computer scientist, Business Analyst/Project Manager, Change Manager, and Data Steward.

1.4.4.3 How EY approach addresses the scope and challenges

Our approach to establishing the conditions for a national health centre and to the development of a proposal for a competence centre are well-positioned to address the scope and potential challenges. In particular, EY has the experience and knowledge required to successfully meet the demands of SALAR, and the proposed alignment with the remaining deliverables will be a key success factor in ensuring that the overarching project delivers the desired outcomes.

1.4.4.4 Validating comments and end-deliverables defined during Inception phase

Deliverable 4 will be based on the results of Deliverable 3. For Subproject 4, high level recommendations on how the regional health data platforms should be connected on national level (architectural and infrastructural) will be established. The recommendations will include perspectives connected to information federations and variables with regards to T2.

For Subproject 5, the project team together with NAG will propose a high-level operational model for NSG DA on how to build national competence centres. It will include aspects such as governance, budgeting, and specifying regional ownership and incentives. NSG DA will decide on following steps for the competence centres.

The results will be delivered in a report in Swedish together with presentation material. SALAR and NAG will be responsible for identifying relevant internal responsible persons to execute the Subprojects of Deliverable 4.

1.4.5 Deliverable 5 – Demonstration of the new framework and capacity building

1.4.5.1 Objective

The objective of Deliverable 5 is to secure support of the new health data platform from the regions. Through workshops, convincing demonstrations and visualizations, the aim is to make the regions see the benefit the new health data platform will bring and become motivated and inspired to use it. Deliverable 5 will be delivered in both English and Swedish.

1.4.5.2 Task & methods

Task 5.1 - Organise a workshop to present the results of Deliverables 3 and 4

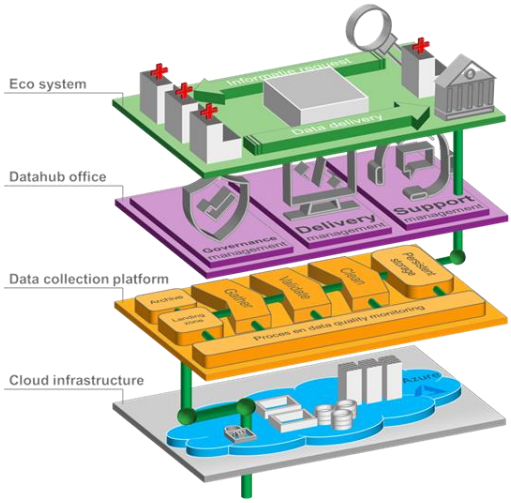
In order to accomplish a successful execution of the workshop and to present the result of the Deliverables 3 and 4, the EY team is convinced that there are four central aspects to take into consideration when executing and performing the workshop preparation activities. These are (1) the importance of knowledge sharing and inclusion of the regional participants along the development process, (2) the importance to throughout the development process highlight the meaningful and crucial areas of WHY the initiative has been conducted (also described in Section 1.1 & 1.2 above in this material), (3) to highlight the importance of why it is central to address the area of Health data platforms from a EU-process perspective, since the execution of the initiative will also fit into parts of EHDS provided value and, (4) highlight the importance of the Regional stakeholders to feel inspired and committed into developing and realizing the output of both this initiative and future related work that lies within the scope of provided recommendations. What EY wants to convey through is the importance of the regions' own motivation to take part of the changes taking place when implementing a new platform. The purpose of the workshops is to give the regions a profound, self-experienced realization and understanding of the value of the new platform and its functionality. In the workshops, EY propose to achieve this by using e.g., scenario descriptions, group exercises and questions challenging the regions' current perceptions and assumptions.

The workshop execution and its content will be prepared together with the execution and the result of Deliverables 3 and 4 and material prior to the workshop will be shared towards participants well in advance. The workshop is suggested to be built up by a balanced mix of both informative sessions combined with iterative sessions to be able to include and inspire the participants during the whole session. After the execution of the workshop, all participants will receive well-formulated and documented output of relevant parts of the workshop and a clear and structured view of the next steps of the realization process.

Task 5.2 - Visualize the analytical possibilities based on data in the new model

EY has extensive experience with supporting the digital transformation by leveraging virtual care platforms, interoperable patient records and digital enablers (e.g., the internet of things, artificial intelligence, remote patient monitoring) to optimize care and shift the focus from volume to value in a controlled and effective way. To show the capabilities of the new national health data platform and provide a better understanding of how it could facilitate interoperability in the Swedish regions, EY is able to showcase a mock-up platform showing a high-level design with a few visualizations of analysed data. The visualized platform would be based on the use cases EY has from our experience with data driven health including the building of a digital patient twin and working with smart health solution transformations globally. By showcasing the analytical possibilities through a digital twin and sharing best practices and our previous work through use cases, EY will help SALAR understand how they can realize efficiencies that optimize performance and enable better outcomes.

Figure 5 Example: high-level design of national data platform



The picture above shows a high-level design of a national datahub EY designed and implemented for sharing hospital data in another EU-country. As part of the work, we supported in the tool selection for the data collection platform and supported in building the new Data collection platform as well as the organisational implementation of the of the Datahub office.

1.4.5.3 How our approach addresses the scope and challenges

As in all possible changes, demonstration and inclusion is key to motivate and inspire the participants and possible receivers of the suggested change. In the suggestions provided by EY in the tasks above (5.1 & 5.2), the aspects of thorough communication, alignment and inclusion are taken into consideration to enable realization of the potential of the proposed change. This is done through active participation of the regions throughout the development process and to provide a clear visualization of possible activities. Furthermore, EY strongly believes that the foundation and background of the reason for projects to be executed should be a guiding and motivational principle throughout the execution of the suggested tasks. Based on EYs previous experiences from similar projects, the aspects covered in the tasks in 5.1 and 5.2 need to be taken in consideration for the execution of the initiative to be successful. EY will include quality checks of materials before interactions.

1.4.5.4 Validating comments and end-deliverables defined during Inception phase

For Deliverable 5, a workshop-series will be facilitated to anchor the results of Deliverable 1-4 together with SALAR and identified stakeholders. The amount and types of workshop-activities will be further defined and agreed upon during Deliverable initiation. Change management components will be applied to facilitate the process of interacting and involving stakeholders to understand why the change needs to happen and how. If applicable, mock-up and visualisation capabilities will be utilized to leverage use cases and possible ways of working. A decision on if mock-up and visualisation capabilities should be utilized will be made after finalization of Subproject 3.

SALAR and NAG will be responsible for identifying relevant internal responsible persons to execute the Subprojects of Deliverable 5.

1.4.6 Deliverable 6 – Final report and communication activities

1.4.6.1 Objective

The last deliverable of the project aims at summarising the project deliverables and experiences and to spread information of its outcomes to stakeholders and to the public in an accessible way. The final report and the communication activities facilitates knowledge-sharing and inclusion and should serve as a source of information for other organisations conducing similar projects, nationally and internationally.

1.4.6.2 Task & methods

Task 6.1 - Prepare the final report summarising the project

After finalising all the project Deliverables, a final project report will be developed by the EY project team. In the preparation of the final report, EY will ensure the result is easy to read, straight to the point and is written in a manner that promotes common understanding. The report will cover the implementation roadmap, action plan and experiences from the project and will include at least (1) best practices, (2) lessons learned, (3) pitfalls and solutions to problems and, (4) post-project recommendations.

The final report will be compiled through a workshop where the Project Manager (EY), the Deputy Project Manager (EY) and client team members (SALAR) share their experiences of the project in terms of best practices, pitfalls, solutions etc. The outcome of the workshop will be summarised by EY.

In the final report, a public brief will also be included. The public brief is a concise and comprehensible document used for communication purposes when presenting the project and its outcomes internally and in public forums. EY will follow the structure of the public brief stated in Annex IV Communication and Visibility Requirements: (1) Project title for communication to a wide audience, (2) Outlined the context of the project, (3) Brief

presentation of the Beneficiary Authority, (4) Description of what needs were addressed, (5) Methodology and approach used to produce the final deliverables, (6) Key deliverables and activities that were undertaken, (7) Consultation with stakeholders, if relevant, (8) Key findings and lessons learnt, (9) Expected results, (10) Expected impact, (11) Mention of EU assistance, (12) EU emblem and funding statement.

The final report will be valuable to similar initiatives in the public sector in Sweden and/or the European Union. EY's careful collection of good practices, lessons learned, and solutions to challenges throughout the project will make sure that insights shared with stakeholders not only cover the successful and less successful actions taken but also the conditions that facilitated and or impeded the continuous work and a successful execution.

Task 6.2 – Develop a social media text

Social media is an important tool for internal and external communication and for achieving engagement and buy-in. A text published on social media has the potential to reach far outside the initial intended target audience in a short time which makes social media very effective. However, engaging in social media also comes with risks, such as negative comments or reputational damage. Being aware of this, EY has their own in-house brand-, marketing-, and communication (BMC) department who creates engaging social media content on various social media platforms such as LinkedIn and Instagram every day. With this internal communication resource available, EY will, if needed, get support in developing impactful and informative social media texts that create a positive picture of the new national health data platform. Before writing the text, EY will perform interviews with the key project stakeholders to get a thorough understanding of (1) the key message and tonality, (2) the intended purpose of the social media text, (3) the social media platforms used for publication, (4) intended target group, (5) strategy for potential positive/negative interaction with audience, and (6) timing and responsibility for final publication. When appropriate during the interviews, EY will provide advice based on previous experience to increase the impact of the social media text. Before the social media texts are considered ready for publication, EY will ask SALAR and DG REFORM for a final approval.

Task 6.3 – Develop visual materials

"A picture is worth a thousand words" is a known proverb for a reason. Most people consider information provided through visuals easier to absorb than endless pages of text. EY are trained experts on turning complex information into comprehensive, informative and aesthetically pleasing visuals in PowerPoint, Power BI or other visualization tools. Similar to the task about developing a social media text (6.2), EY will align the expectations of the visual material with relevant stakeholders at SALAR and provide advice if needed or requested for. The alignment will ensure that SALAR is provided with material that is relevant for their internal and external communication, that the included photos (at least 2) are accurate and approved for publication and a confirmation on the ability to use the material online as well as offline for effective communication and information-sharing.

Task 6.4 – Prepare a project fact sheet

The EY team will prepare a project fact sheet in Swedish and English. A fact sheet should be light-weight and contain a strict selection of key information to provide a comprehensive yet exhaustive overview of the project results. The fact sheet will be prepared when all information has been collected, evaluated, and approved to ensure the complete picture of the project before summarising it to a fact sheet. EY will review the fact sheet with SALAR during at least two occasions: (1) when the first draft is ready (2) when the fact sheet has been adjusted according to the feedback from the first draft review and considered final by EY.

Task 6.5 – Prepare a monitoring and evaluation plan

To provide SALAR, the regions and other Swedish authorities being project stakeholders a way to monitor and follow-up on the result of the project's outcomes, EY will prepare a

roadmap for the next steps. This roadmap will include KPIs, targets and timeline for activities to be performed 6, 12 and 24 months after the deliverables in the scope of the project have been delivered. To ensure that the roadmap is aligned and that EY and SALAR agree on the details of the timelines and KPIs, frequent reconciliations between EY and SALAR will be arranged.

KPIs used to evaluate the results of the project will be based on the current state of interoperability of the regions and on the project objective stated in the Rfs:

> *"… to assist regional authorities in improving their capacity to design, develop and implement reforms in line with Article 4 of the TSI Regulation.*"

Examples of KPIs could be:

- Share of regions with a positive attitude towards the new national data platform >80%
- Number of meetings with regional representatives within 12 months > +50
- Level of project awareness within regions > 50%

A roadmap describing the next steps of the project will facilitate SALAR's work forward and increases the likelihood of project continuation. Although the formal project is finalized, it is important that the project governance at SALAR remains, albeit in reduced format, to monitor and follow the progress of the next steps described in the roadmap.

1.4.6.3 How EY approach addresses the scope and challenges

The final report and the communication activities will be delivered by EY with regular alignments with SALAR to ensure the project if summarised and communicated in a way that creates a common understanding and engagement (a pre-requisite of a continued success). EY will follow a structured approach, including thorough quality reviews, to make the final report, the communication efforts and follow-up efficient, qualitative and unambiguous.

1.4.6.4 Validating comments and end-deliverables defined during Inception phase

Deliverable 6 will result in a final report summarizing the project, as well as presentation material produced in accordance with the agreed formalities and setup. Communication activities will be initiated at the start of the project to secure stakeholder alignment throughout the entire project. This includes development of communication and stakeholder mapping material to be used throughout and after the executed project. EY will also reserve time at project wrap up to assist SALAR in the communication and activities for stakeholder alignment.

2 Organisation of the work and resources

This section presents the organisation of the work and resources for the assignment. The elements of the ToR have been taken into consideration in order to provide a project management plan that guarantees success combined with a deep knowledgeable team of Key Experts.

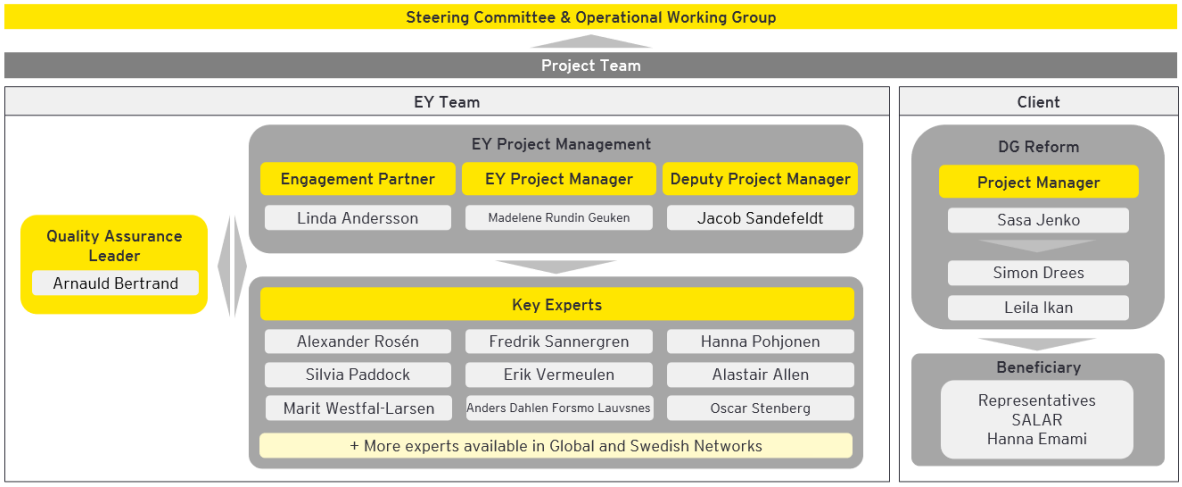
2.1 The Team

This Section presents EY's team for the project, outlining the team structure and the reasons why each team member has been selected.

2.1.1 Team structure

We outline below the overall team structure for the management and implementation of the contract as well as, the roles distributed across the experts.

Figure 6 Our team



As stated in the team structure more experts are available in the EY network, internal and external, local and global. One example is healthcare where EY have extensive healthcare expertise. A key component of the success of EY's healthcare practice is that EY engage and embed clinicians (who usually have qualifications additional to their clinical qualifications) as clinician-consultants within the organisation. The backgrounds of EY's clinician-consultants are diverse, including those with qualifications in nursing, pharmacy, occupational therapy, physiotherapy, radiography, speech therapy, clinical psychology, and branches of medicine such as paediatrics, public health and family practice. One other example is cybersecurity where EY has 30 consultants in Sweden, experts from this part of the practice can provide support to this project in for example Deliverable 4 when investigating the requirements for the transmission of data from the platform to different stakeholders and data access solution taking cybersecurity (compliance, GDPR etc.) in consideration going forward.

2.1.2 Roles and responsibilities

A short summary of the relevant experience of EY's team is provided below. For project execution including all activities and sub projects, EY has assembled a highly experienced and diverse team combining solid project management with health care, health data platform and data management competences, together with local and international Government and Public Sector expertise. For a deep dive in the CVs for the team members, se CV appendix.

Table 1 What our team members bring to the project

Team Member	Why they have been selected?	Role in the project
Linda Andersson (SE)	Linda is a Partner within EY and is the EY EMEIA Government & Public Sector Leader and Nordic Healthcare & Life Sciences Market Segment Leader. She has over 18 years of experience within consulting with a focus on healthcare and the public sector. Linda has supported many healthcare and public sector organisations in large-scale, complex transformations. She has a background as Head of Public Real Estate Strategy at SALAR, prior to joining EY. Linda has also written four books for SALAR within public-private collaboration, competitive dialogue, risk management in connection with PPP projects and implementation models for PPPs.	Engagement Partner commercially responsible from EY & Senior Expert, providing expertise and input throughout the project combined with stakeholder management towards both SALAR and DG REFORM.
Madelene Rundin Geuken **(SE)**	Madelene is a Manager at EY with experience from working within the public sector and health care sector, in team lead and project manager roles. Madelene has broad and deep experience from the healthcare sector combined with a technology and system competence. Madelene has furthermore assisted clients in	Overall Project Manager, supervising the project and quality in its deliverables and Project Manager for sub-project 4 & 5. Continuously responsible for the overall planning of the

	strategy and sourcing related initiatives as well as implementation projects.	project planning and execution together with stakeholders from SALAR and DG REFORM
Jacob Sandefeldt (SE)	Jacob is a Manager at EY within the Data and Analytics practice and is specialised in executing data driven change management projects. Jacob has thorough experience from projects covering multiple technical, architectural and data management related aspects and possesses a brad expertise within technology, IT and data field. Jacob has assisted multiple clients within data driven change transformation projects.	Deputy Project Manager for sub-project 1, 2 & 3, supervising the sub-projects and quality in its deliverables. Will furthermore work in close cooperation with overall PM to ensure alignment between sub-projects and follow up on concreate actions and deliverables.
Alexander Rosén (SE)	Alexander is a Senior Expert within the field of health data platforms and strategy around connected use cases and strategy development. Alexander has extensive experience from similar project conducted on Nordic, National, Regional and Hospital level in Sweden and will have a role within the project team as a Quality Assurance Leader.	Senior Expert, monitoring quality and continuous client feedback, methodological guidance of local team.
Fredrik Sannergren (SE)	Fredrik joined EY in 2011 and is Head of AI & Data in EY Sweden. Fredrik has worked in different project management roles with in-depth experience of digital transformation, system implementation, sourcing, and analysis. Fredrik had a Project Manager role in the project: Development of the Healthcare Data Strategy developed by SALAR, where he ensured design and an efficient delivery of the strategy.	Senior Expert, providing expertise in data management and will mainly focus on the first deliverables to ensure a good foundation for the sub-projects. Will provide methodological guidance towards the local team.
Silvia Paddock (CH)	Silvia is a Director in EY's EMEIA-based Center of Excellence for Digital Health and has a Ph.D. in Neuroscience. She has 13+ years of academic and 14+ years of consulting experience with a broad spectrum of activities to support the development of digital health platforms. She speaks Swedish and have technical expertise on interoperability and data sharing frameworks. During her academic career at Karolinska Institute in Stockholm (1997-2002, 2005-2009), she worked in complex genetics utilizing samples and data from several public registries.	Senior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team connected to interoperability and data sharing frameworks.
Erik Vermeulen (NL)	Erik is EY Global Health Technology leader and leads the EY Health Consulting team in the Netherlands. He has over 17 years of experience in healthcare with a focus on digital transformation and health data. Erik has supported many health organisations with both the development of their digital and data strategy as well as the implementation (e.g. leading the largest EMR roll-out in The Netherlands). He has extensive knowledge on health data standards including different HL7 standards (incl. FHIR), openEHR and terminologies like SNOMED CT.	Senior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team connected to data standardization, data platform realization and health data.
Arnauld Bertrand (FR)	Arnauld is a Global Managing Partner as well as Government & Infrastructure Global Leader and European Institutions, United Nations, World Bank & OECD Account Consulting Leader of EY Consulting service line with over 26 years of experience in working with European institutions, including quality review and programme evaluation.	Quality Assurance Leader, Senior Expert, quality assurance and quality reviews of deliverables. Will provide methodological guidance towards the local team connected to DG REFORM activities.
Alastair Allen (UK)	Alastair is a Partner at EY Ireland and Head of Healthcare Technology at EY. Alastair is an accomplished technology and thought leader with a strong track record in leading the strategy, design, development and operation of large-scale, transformative healthcare products and services such as the development of health data platforms and healthcare applications. Alastair has worked in diverse roles such as Software Engineer, Technology Consultant, Architect, and Product Manager. This has provided him with a wide range of technology, business, and people skills, enabling him to lead large, distributed teams through major transformational programs in highly competitive and technically challenging environments.	Senior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team connected to
Marit Westfal-Larsen (NO)	Marit is a licensed doctor with 15 years of clinical experience prior to joining EY. In addition to her clinical experience, she has 10 years' experience working as a healthcare consultant with focus on health sector digitalization and e-health, including information security and EHR and other clinical ICT. She also has extensive experience and expertise from working with project ad change management within the health care sector. She has been involved in many different projects, covering university hospitals across the Nordics, different health initiatives and other public organisations.	Senior Expert, providing medical expertise and input throughout the project. Will provide methodological guidance towards the local team.

Anders Dahlen Forsmo Lauvsnes (NO)	Anders has many years of combined experience as a clinical psychologist, risk management consultant, and digital health Project Manager. He works with clients across the health sector to develop, implement, and govern data-based decision support tools, ranging from data strategy and simple data visualizations to AI-based solutions. Anders works with health data and analytics in the entire life cycle from strategy, through development and validation to clinical and administrative quality management. Anders worked in projects such as AI-based clinical decision support for "Helseplattformen" as Subject Matter Resource.	Senior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team.
Hanna Pohjonen (FI)	Hanna has an extensive background as a researcher, clinical engineer, and consultant. She has many years of experience within healthcare information systems and IT architecture. Hanna has participated in projects with customers such as Region Stockholm for pre-procurement consultancy for the regional XDS archive as well as openEHR feasibility study.	Senior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team.
Oscar Stenberg (SE)	Oscar is a Senior Consultant who specializes in healthcare projects, with approximately 4 years experience within the healthcare field. His primary focus lies in strategy, process analysis, change management, and business development. His experience also extends to sourcing strategies and procurement. Oscar is currently working together with SALAR as Project Manager for a project aiming to creating a shared framework for healthcare real estate organisations. He also conducted a project together with SALAR last years within process development.	Junior Expert, providing expertise and input throughout the project. Will provide methodological guidance towards the local team.
Louise Litzén (SE)	Louise is a Senior Consultant with experience from working with process mapping and documentation, IT operations and transformation, change management, risk assessment, and public procurement. In one of her recent assignments, she performed a market analysis of IT services within the healthcare sector, including patient record platforms.	Team Member, conduct analysis including compiling and analysing results, prepare interviews, and preparation of deliverables. Will provide methodological guidance towards the local team.

2.1.3 Focus on Key Experts

The table below presents a summary of the EY team's competencies specific to this tender.

Table 2 The team's competences for this tender

	Experience and knowledge of					
Team members	Stakeholders in Sweden (SALAR, regions etc.)	Healthcare	Health data structure	Informatics, data and data management	IT architecture, data platforms	Data organisational design
Linda Andersson	+++	+++	++	++	++	++
Madelene Rundin	+++	+++	+++	++	++	++
Jacob Sandefeldt	++	+++	++	++	++	++
Alexander Rosén	+++	+++	+++	+++	+++	+++
Fredrik Sannergren	+++	+++	+++	+++	+++	+++
Silvia Paddock	+++	+++	+++	+++	++	++
Erik Vermeulen	+	+++	+++	+++	+++	+++
Arnauld Bertrand	0	+++	+	++	+	++
Alastair Allen	+	+++	+++	++	+++	+++
Marit Westfal-Larsen	++	+++	+++	++	++	++
Anders Dahlen Forsmo Lauvsnes	+	+++	+++	++	++	+++
Oscar Stenberg	+++	+++	++	++	++	++
Hanna Pohjonen	+++	+++	+++	+++	+++	++

Legend: 0 : Beginner + : Elementary ++ : Intermediate +++ : Advanced

2.2 EY rationale for the allocation of time and resources

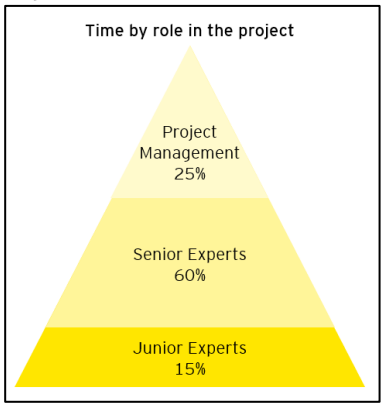
This Section presents our rationale for the allocation of time and resources. EY has estimated that the project requires 561 man days within 13 months to guarantee a successful delivery. EY will rely on a structured team composition, composed of 1 Project Manager, 1 Deputy Project Manager, 9 Senior Experts, 1 Junior Expert, and 1 Quality Assurance leader.

When defining the distribution of the effort by the project phases, EY has taken into account several factors, such as the substance of the work (e.g. desk research, questionnaires, interviews, workshops), the level of seniority and expertise required for each task (e.g. communication with management of the stakeholders), the extent of change management component within each phase (whether significant time of the project team will be required for explaining, informing and engaging stakeholders and aligning deliverables). In combination, EY has also taken into consideration our extensive experience from similar project when defining the distribution of all project tasks and execution.

Due to the structure of deliverables and tasks in this project, EY proposes one overall Project Manager, who also will manage sub-projects 4 and 5, and one deputy Project Manager to assist and manage sub-projects 1, 2 and 3. The Project Managers will make sure that the project follows the project plan and ensure progress in each deliverable. They will also activate the Senior Experts where needed throughout the project execution. The selection of the sub-projects connected to each of the Project Managers is based out on the individuals deep experiences within the relevant field of each sub-project.

2.2.1 Rationale for the distribution of days by deliverable

Figure 7 Division between roles



When distributing the days be deliverable, EY has taken into account the particularities of each deliverable and the work needed to undertake and supervise each of them. Therefore 25% of the time will be allocated to project management and 75% for the operational realization of activities. Furthermore, the allocation of work foresees much effort of our Senior Experts (60%) – EY's previous experience in healthcare strategic transformation projects proves that there is a substantial need for involvement of Senior Experts in designing the methodology and key principles behind setting requirements for health data platforms and developing procedures and governance principles for a Competence Centre.

Deliverable 3 and 4 has been allocated with the largest number of man days (180 and 165 man days) since it is where the sub-projects are performed.

2.2.2 Rationale for distribution of days between team members to guarantee quality

EY's rationale for the distribution between Project Management, Senior Experts and Junior Experts is available in the previous segment. Throughout project EY foresee that Project Manager Madelene Rundin will be a key expert, due to her previous engagement with SALAR in the project Development of the Healthcare data strategy, and her project management skills. In the first and second deliverable Pernilla and Senior Expert Alexander Rosén will contribute to set the Inception report and analyse the AS-IS situation. Furthermore, Pernilla will work throughout the project as overall Project Manager and manage sub-project 4 and 5. In

deliverable 2 we will also include Senior Expert Fredrik Sannergren who worked with Pernilla in the previous strategy project and have extensive experience from data and analytics.

In deliverable 3 deputy Project Manager Jacob Sandefeldt will be involved and manage the sub-projects within the deliverable. Here Senior Expert Erik Vermeulen will have a key role as well, bringing his expertise in healthcare (+17 years of experience), health data standards and digital strategy and implementation. As for clinical expertise Senior Expert Marit Westfal-Larsen will support the project. Senior Expert Hanna Pohjonen (external) have long experience from data platforms and openEHR and will bring her knowledge and perspective into all deliverables and focusing mainly on sub-project 1, 2, 4 and 5.

Linda Andersson, EY's local Senior Expert and Engagement Partner have +18 years of experience of the Swedish public sector focusing on health care and has been advisor for many large-scale, complex transformations in the public sector. She will be involved throughout the project, focusing on stakeholder management and already know SALAR from previous employment.

Additionally, EY plan to involve all experts in the project when needed in different matters and have allocated sufficient time for these engagements. EY's local Project Member Louise Litzén will mostly be involved in collecting information, facilitating workshops and data as well as documenting the outputs of Senior Expert work.

2.3 Project Management

This Section presents the approach to project management for the project. EY and the suggested members of the project has all got extensive experience and knowledge around solid project management frameworks and will execute the proposed work accordingly.

2.3.1 Project governance

This Section presents the project governance that shall be put in place for the project to guarantee its smooth operation and overall success.

2.3.1.1 The governance structure

Our Project governance structure foresees the establishment of a Steering Committee and a trilateral forum (consisting of representatives from the EU Commission, SALAR and EY) to facilitate effective project governance and decision making.

Figure 8 Proposed project governance

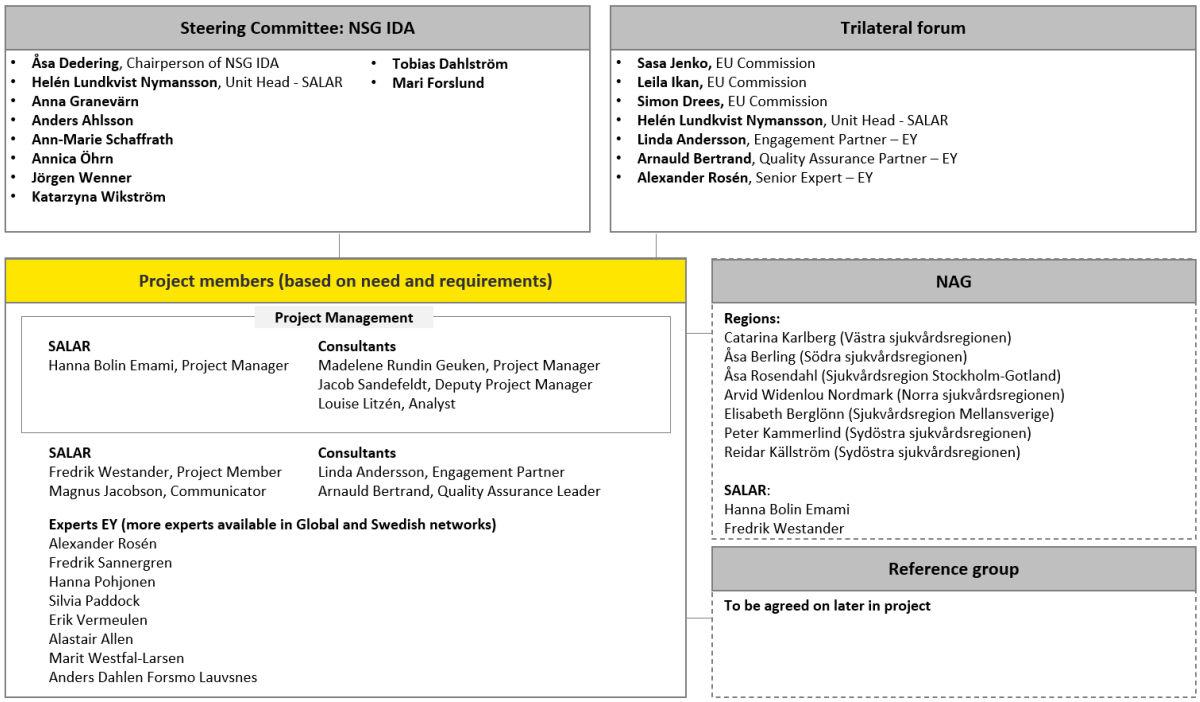


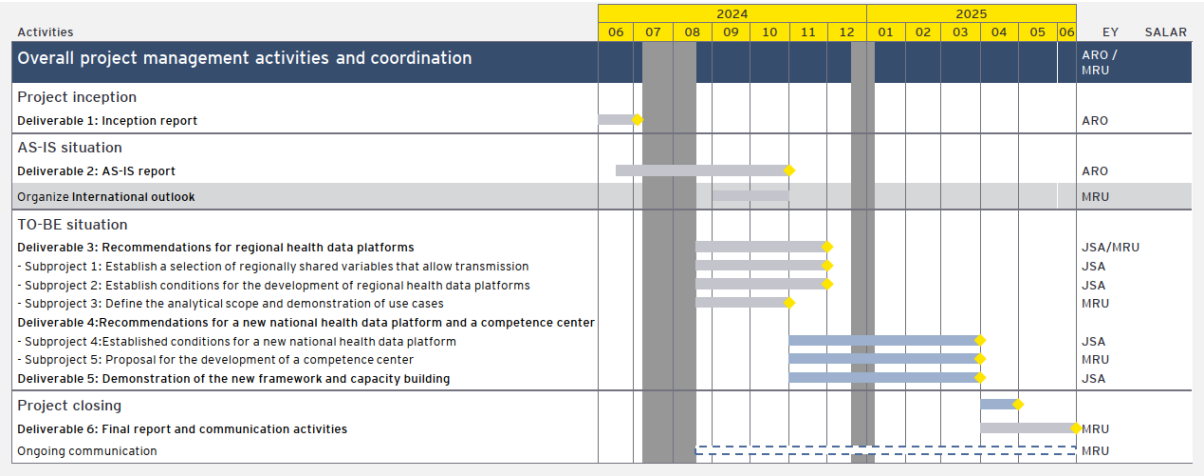
Table 3 Roles and meetings

	Role	Meetings
Steering Committee	• Providing direction and consistency • Ensuring representation from regional instances and working groups • Overseeing, monitoring and guiding the strategical and technical aspects • Giving the final approval to deliverables	• Kick-off meeting • Status meetings as per agreed frequency • Decision-making meetings
Trilateral forum	• Providing support in the development and approval of selected methodologies/ approaches	• Kick-off meeting • Workshops • Validation and review of methodologies, results and deliverables
NAG	• Working closely with together with project group to deliver planned output according to deliverables.	• Kick-off meeting • Workshops • Working meetings
Project team	• Project and resource planning • Project execution • Status and follow-up on deliverables	• Kick-off meeting • Status and project planning meetings • Sub-project meetings
Reference group	• Providing input for analysis	• Interviews • Workshops

2.3.1.2 The project implementation plan

The proposed project implementation plan for this project is presented in the figure below.

Figure 9 Proposed project implementation plan



Prior to Activity 1 Project Inception, the proposed plan was to deliver the project within 13 months leaving 3 months as buffer time for vacations, potential waiting times and changes in parts of the plan.

The project plan, timeline and approach has been revised during the Activity 1 and compressed to a shorter timeline on request by SALAR team. The above suggested timeline will require that working groups and responsible for each deliverable is identified by SALAR in order to not challenge the time plan above. As per the date when the Inception report is submitted is Hanna Emami identified as the overall responsible for each deliverables on SALAR side.

The sub-projects run in parallel and will include collaboration around for example stakeholder contacts, findings and lessons learned.

2.3.2 Project supervision

Project supervision will be carried out by the Project Manager, Madelene Rundin. Below is a list briefly describing how the project will be supervised.

- The Project Manager will be responsible for initiating, planning, designing, executing, monitoring, controlling and closing the Project and its deliverables and tasks.
- The Project Manager will be included in decision-making related to the Project and will be in constant communication and coordinate Project activities with experts involved.
- Key experts will be responsible for the execution of tasks related to their expertise. The Project Manager will be responsible for the overall Project management and results.
- Two-level supervision – The Project Manager shall be responsible for implementing planned project activities, involving the necessary experts according to the competence and ensuring regular communication with the client. Linda Andersson, Engagement Manager and shall be responsible for achieving the planned results of the project. Arnauld Bertrand, Senior Expert and Quality Assurance Leader will be responsible for the quality of the project and its deliverables.
- If need for escalating the Project Manager escalates to the Engagement Partner and Quality Assurance Leader.

3 Quality Control Measures

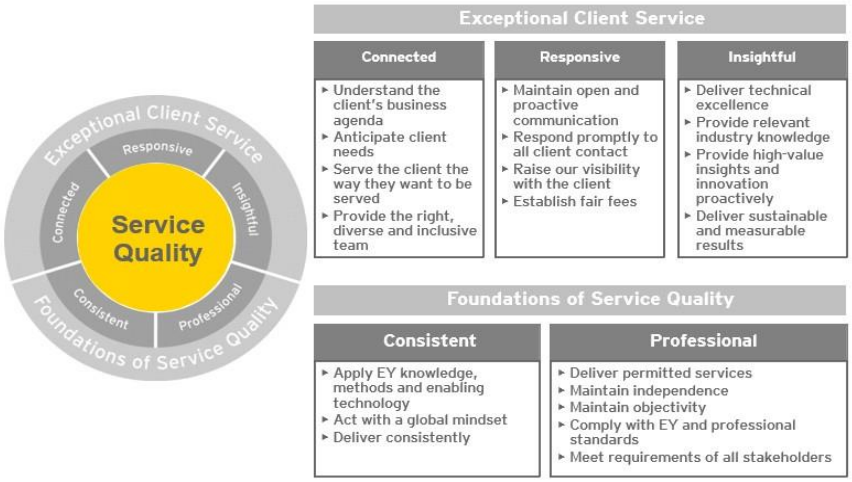
This Section presents the quality control measures that shall be applied for this project. The measures take into consideration the particularities of the project.

3.1 Highlights of our quality control system

EY focuses on the delivery of **Service Quality** – meeting SALAR's needs and delivering a superior client experience – through the application of high-level standards in project management and the implementation of EY Quality Assurance Program. Before initiating the Project, the PM will prepare a Service Quality plan that will document the key stakeholders, their expectation, how our approach addresses the expectations and what qualitative and quantitative SQ indicators we will monitor within each of the dimensions –
Connected, Responsive, Insightful, Consistent and Professional.

Service quality monitoring will be carried out by the PM on a regular basis (one in each of the Project phases) and QA Arnauld Bertrand through the use of EY's Service Quality (SQ) Tool.

Figure 10 How we guarantee quality and focus on clients



EY's appointed Quality Assurance Leader Arnauld, together with the Project Manager, Pernilla, will:

- Supervise the preparation of the quality process and its supporting tools
- Apply quality control measures on the final deliverables
- Monitor any potential risks that arise in the context of this project that could influence the results and activities
- Seek for Client Feedback in a timely way
- Ensure that the best knowledge of EY is transferred to the project

3.2 Specific project indicators to monitor quality

To guarantee that the project is delivered to the highest quality, EY has identified key project indicators that shall be monitored throughout the project.

3.2.1 Qualitative Project Indicators

From EY's perspective it is important to monitor both the process KPIs (how well the Project is run) and outcome KPIs –indicators that show the extent to which the expected results of the Project are met. It is equally important to focus on a few, most relevant KPIs that give a sense of the overall success of the Project. In the table below, we propose the following processes and activities to be monitored:

Table 4 Project processes and activities to be monitored

Documents (reports, recommendations)	International best practices	Questionnaires, Interviews
• Status reporting through governance model • Alignment of document structure and content with national authorities • Internal review cycle implemented for all deliverables • Proofreading	• Good use of the expert group and additional networks where needed • Alignment of chosen best practise examples • Most relevant chosen for the Swedish context chosen	• Align of approach, topics etc • Development and approvement of questionnaires • Development of discussion topics for interviews • Preparation of meeting notes during each interaction
Qualitative desk research	**Stakeholder involvement**	**General**
• Information and variables will be suggested by our experts • Only official and recognized sources will be used	• Structured stakeholder mapping • Ways of communicating	• Regular reporting and status meetings with SC and other relevant stakeholders • Presentations and discussions on major project results and deliverables in SC • External communication and visibility as stated

3.2.2 Quantitative Project Indicators

To additionally support the quality of the delivery, EY propose following specific project indicators:

Table 5 Quantitative project indicators

Nr.	Indicators	Target value
1	Number of Key experts mobilized	>10
2	Number of man-days used	> 500
3	Number of participants in the working group	>10
4	Level of attendance of the convened working group	>75%
5	Number of meetings/workshops held	>10
6	Share of deliverables reviewed for quality control	100%
7	Share of deliverables submitted on time (without the agreement of DG REFORM)	100%

Specifics of EY's quality assurance approach will be clarified and based on the proposed Kick-off meeting and upon confirmation of our approach, validation of the project objectives, and of the suggested methodology to reach these objectives.

3.3 Risk management

Through Risk Management, EY can ensure that adverse events are avoided, and/or their negative impact is minimized. The aim of the Risk Management process is to anticipate these possible events (assigning to each a probability and an impact) and provide a mechanism to control and mitigate them. Should any issue arise, having an impact on the execution of the project, EY will contact the DG REFORM in the shortest delay, in order to propose and discuss possible solutions. The Project Manager will be the key actor in the procedure for the management of all the risks relating to the project, by considering whether the identified problem is easily manageable and can be resolved within the team, or if it requires the involvement of other EY experts.

EY will compile a dynamic table on the key project risks and corresponding mitigating actions and has developed a preliminary list of such risks in the table below, in light of current understanding of the proposed project. EY will ensure that potential or incurred risks are constantly monitored and updated to take stock of the risks we will face throughout the project.

Table 6 Identified Risks for the Project

Risks	Likeli-hood	Potential impact	Proposed mitigating measure
Difficulty in setting up kick-off meeting, mainly due to unavailability of all relevant parties in any given time	Low	Medium	• EY will communicate with DG REFORM and SALAR as soon as the notice of award is received (in advance of contract signoff) in order to provide with as much notice as possible; • EY team members will make all efforts to adjust other commitments; • The presence of the Engagement Partner/ Project Manager will be ensured.
A key expert unexpectedly leaves the team	Low	Medium	• EY has a global structure and can count on a wide range of expertise in each country, thus another expert can be promptly requested according to the need; • Some team members have competence in multiple areas relevant to the project, therefore can provide support at least to some extent in case of such an event.
Potential for a conflict of interest for stakeholders	Low	Medium	• Detailed stakeholder mapping covering potential interests in the project/conflict of interest • Monitoring of stakeholder positions during the project's initial phase • Escalation of potential conflict of interest cases to DG REFORM
Stakeholders lack the required skills and capacity to contribute to the deliverables of the project	Medium	High	• Stakeholders lack the required skills and capacity to contribute to the deliverables of the project • Timely communication and agreement with the key stakeholders on the importance of their participation and contribution • Provision of examples of similar projects from other countries, educational support from our team's Senior Experts to equip stakeholder with the necessary knowledge
Coordination between ongoing initiative and surrounding ones	Medium	Medium	• Enable coordination between ongoing initiative and surrounding ones in order to identify common grounds and differentiating factors • Create communication plans and follow up in order to merge and mitigate lack of communication
Low response rate on central activities and integration	Medium	Medium	• Coordinate stakeholders through governance model and follow up with responsible • Consistent follow-up with key individuals in order to secure timely and efficient communication and responses
Lack of knowledge due to complex area of health data platform among regions	Medium	Medium	• Consistent coordination between stakeholders to enable a transparent dialogue and project setup • Enable a clear description of relevant and mandatory competence levels at stakeholders for sign off • Create a clear escalation path through governance model if risk occur
Regional differences in scope, requirements and understanding	Medium	Medium	• Transparent communication regarding project objectives, required input and output • Clear communication mechanisms so highlight the objectives with the initiatives and what is included and not included • Clear escalation mechanisms to handle differences and mitigation measure through governance structure
Efficiency losses due to confusion regarding accountability and responsibility within the various deliverables	Medium	Medium	• By ensuring structure and conditions are clear from the beginning, the risk of confusion regarding accountability/responsibility will be minimized. • To ensure high quality in deliverables, quality reviews will be a part throughout the project execution and in all tasks

3.4 Language quality check

Regarding the quality check of EY's deliverables, all professionals involved have experience in delivering academic reports and/or reports for public sector organisations and government institutions in English (all experts) and Swedish (local experts). They are committed to ensuring high-level English skills and the highest quality of work. Most of EY's team is based in Sweden and will be able to work seamlessly in Swedish and English and also translate deliverables where necessary. Nevertheless, to ensure highest language standards, EY will always conduct proofreading before delivery.

3.5 Continuity of our services

Regarding EY's ability to ensure the continuity of our services, there is a replacement mechanism in place in case it should be needed. In this case, the Project Manager Madelene

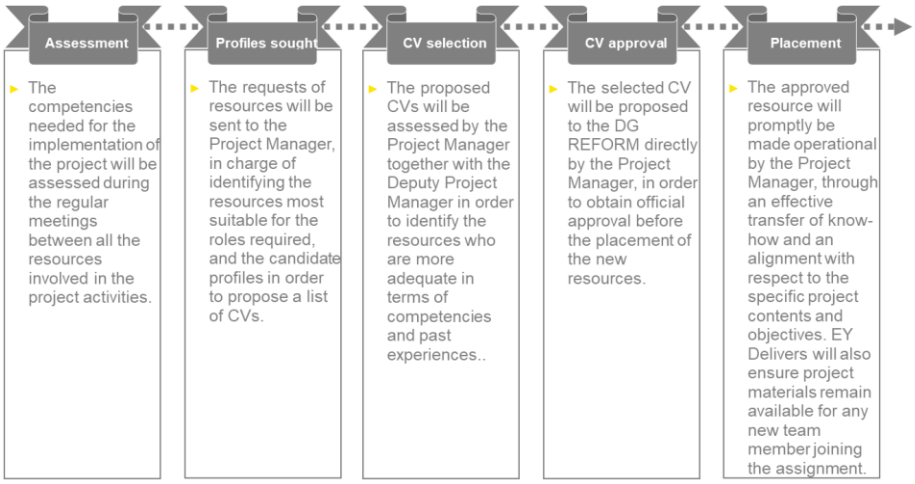
Rundin will promptly communicate the proposed changes to DG REFORM and SALAR. In choosing the new team members, EY will adhere to the following principles:

- same level of seniority
- same skills and expertise

EY is confident in guaranteeing this because of the availability within the EY network of different professionals with similar expertise. EY can find the solution to any replacement issue within an average of 5 working days, starting from the database of CVs collected and the classification of profiles EY has have done for similar proposals/assignments.

The replacement process is presented in the figure below.

Figure 11 Our proposed replacement process



3.6 Our contribution to sustainability and climate protection

Our Consortium is committed to contributing to sustainability throughout all engagements. EY is now globally carbon neutral across all our emission scopes; we are proud to be the first global multi-disciplinary professional services organisation to achieve this, and we will collaborate with you and your broader ecosystems to help drive sustainable, inclusive growth.

To ensure we fulfil our sustainability commitments during the delivery of our project, we commit ourselves: (1) mainly work with local (Swedish) team members; (2) to work in a paperless manner for all our internal work and only producing paper copies of reports or presentations when specifically requested by the stakeholders; (3) to prioritise to the extent possible virtual meetings unless otherwise requested by stakeholders; (5) to use public transportation to and from meetings to the stakeholders (within Stockholm); (5) to book hotels and venues close to each other to minimize local transport needs, and preferably use public transport during the exchanges. While these are small efforts, they contribute to a larger positive impact in the future.

Annex 1. List of data reviewed during Inception phase

Annex 2. Meeting material from working meetings during Inception phase

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About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

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