



# Small and Medium-sized Enterprise Certification

## Open Call Description

**The EHDEN Consortium**

01/03/2021

V1.5

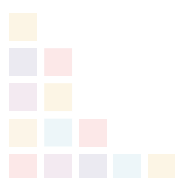


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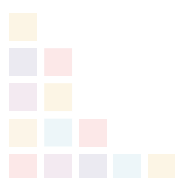
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## 1 DOCUMENT HISTORY

| Version | Date      | Description                          |
|---------|-----------|--------------------------------------|
| V0.1    | 6-3-2019  | First Draft                          |
| V1.0    | 10-3-2019 | PMO Review                           |
| V1.1    | 20-3-2019 | WP5 Review                           |
| V1.2    | 26-3-2019 | ExCom Review                         |
| V1.3    | 1-4-2019  | Final Version – 1 <sup>st</sup> call |
| V1.4    | 1-2-2020  | Final Version – 2 <sup>nd</sup> call |
| V1.5    | 1-3-2021  | Final Version – 3 <sup>rd</sup> call |





## 2 INTRODUCTION

This document describes in detail the 3<sup>rd</sup> Open Call for Small to Medium-sized Enterprises in the European Health Data and Evidence Network (EHDEN) project ([www.ehden.eu](http://www.ehden.eu)).

### 2.1 The EHDEN Project

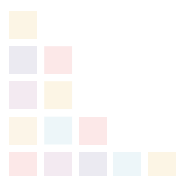
The EHDEN project is a public-private partnership, set up under the framework of IMI2. The EHDEN consortium consists of twenty-two partners, including academia, Small and Medium-sized enterprises (SMEs), patient associations, regulatory authorities and pharmaceutical companies. EHDEN is led by the Erasmus Medical Centre, The Netherlands, and Janssen Pharmaceutica N.V., Belgium. The mission of EHDEN is to provide a new paradigm for the discovery and analysis of health data in Europe, by building a large-scale, federated network of data sources across Europe. Central to EHDEN will be the standardisation of health data to the Observational Medical Outcomes Partnership (OMOP) common data model (CDM), and the utilisation of analytical tools such as those developed by the international Observational Health Data Sciences and Informatics (OHDSI) open science collaboration ([www.ohdsi.org](http://www.ohdsi.org)), and others. The ultimate aim is to generate valid real-world evidence to improve patient care and to enable medical outcomes-based research at an unprecedented scale. The EHDEN consortium will provide the infrastructure and eco-system to make this ambition come true, supporting the disease-specific projects in the IMI Big Data for Better Outcomes (BD4BO) programme ([www.BD4BO.eu](http://www.BD4BO.eu)) as well as academia, pharmaceutical and life sciences companies, and regulatory authorities.

The ambitions of the EHDEN project are high. We aim to standardize more than 100 million patient records across Europe from different geographic areas and different data sources, e.g. hospital data, registries, population databases, etc. Mapping of such data to the OMOP CDM will facilitate their use for a variety of purposes, enhancing and accelerating research and healthcare decision-making for global benefit.

Two types of Open Calls are initiated in EHDEN as described in Figure 1.



Figure 1. EHDEN's Open Calls for Data Sources (top) and Small to Medium-sized Enterprises (bottom), and how both are subsequently interrelated.





## 1. Data Source Calls

Institutions holding health data can benefit from seed funding that will be made available via a “Harmonization Fund” to subsidize a set of conversions to the OMOP CDM performed by certified SMEs. Per data source there will be a maximum amount of funding of 100.000 Euro, the final amount being dependent on the type of call and complexity of the mapping. We anticipate a continuously growing market for conversions because of the increasing interest into the OMOP CDM. Initial outreach efforts indicate the data custodians are expected to have a strong willingness to map their data in order to benefit from being part of the federated ecosystem.

## 2. SME Calls

The EHDEN project also wants to facilitate the creation of an SME eco-system in Europe that supports data sources and other stakeholders in mapping and using data. For this purpose, EHDEN has created calls through which SMEs can apply for training and certification to convert health data from various formats to the OMOP common data model.

This implies that for each of the data sources, an Extraction Transform and Load (ETL) process has to be implemented that:

1. Extracts the data from the source database.
2. Transforms these in the right table structure and Standardized Vocabularies.
3. Loads the data in the OMOP-CDM.

The ETL process needs high involvement of the data custodian who knows the data and its provenance best, and also deep expertise in OMOP-CDM and its Standardized Vocabularies, programming and engineering skills, and advanced expertise in database management systems, among other skills. The data transformation needs to be of high quality and should follow all best practices with respect to transparency and reproducibility in order to fulfil the ultimate objective pursued by EHDEN.

SMEs who receive training and certification through EHDEN will learn how to perform conversions for data sources consistently and reliably, and so help to build the data network. We also hope that they will become active members of the community, sharing ideas and possibly helping to develop or improve data conversion and analysis tools.

The SME Call is described in detail in this document.

## 2.2 Why should your SME participate?

### Expand your existing market

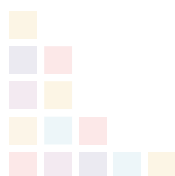
If your company is already operating in the data science, health data interoperability, bioinformatics or medical informatics fields, EHDEN offers a gateway into multiple opportunities for growth.

#### a. Expand your customer base

EHDEN will create an eco-system where a variety of stakeholders (hospitals, health data sources, pharmaceutical and related industries, authorities, HTA, regulators, etc.) will be able to seamlessly network and collaborate. This will be an unmatched opportunity for your company to expand your customer base, including data users interested in deploying and developing tools, and a plethora of data sources willing to be mapped to the OMOP CDM asking for support. Up to 100 million European health records are expected to be mapped to the OMOP CDM thanks to EHDEN, underpinning a newly populated landscape for health data solutions.

#### b. Expand the range of services and products you can offer

EHDEN will allow your data skills to be taken to the next level. New products and services will flourish within the EHDEN eco-system thanks to an extraordinary improvement in our capacity to





re-use health data for better decision-making. IT-centred companies will be able to expand their range of products and services to act as data sciences providers, opening doors to scientific endeavours beyond the technical realm.

c. Expand your geographical reach

EHDEN is a European project, so its scope includes hundreds of data users and providers scattered all over Europe. Additionally, EHDEN builds on and will be deeply connected with OHDSI, an international open community promoting the OMOP CDM, which is now widely adopted from the USA to South Korea. Participating in EHDEN opens the door for your company to be exposed to a growing worldwide market.

**Contribute to the creation of emerging, new markets for data sciences**

Beyond established markets, there are huge opportunities arising derived from a brand-new way of understanding and using health data. EHDEN aspires to facilitate the creation of new markets that support the needs of both data users and providers, a currently incipient field where your company could play a pivotal role:

a. Health data mapping to the OMOP CDM

EHDEN will foster and financially support mapping of European data sources to the OMOP CDM using certified SMEs. This will offer short-term opportunities for service provision. As a critical mass of mapped data sources is reached and reliance on interoperability standards increases, a 'snowball' effect will raise the need of many other data sources to also adopt the OMOP CDM, in what is likely to be an expanding market.

b. Data analysis services for small and medium biomedical companies

Beyond large pharmaceutical companies, the biomedical field is populated by numerous small/medium-size pharmaceutical companies, biotech and medical device companies that cannot or do not want to staff data analysis expertise internally, for efficiency reasons. The same can apply to other public and private institutions. Certified SMEs with knowledge and experience in using the OMOP CDM will be able to benefit from these outsourcing opportunities to develop new services related to data analysis.

c. Enabling high throughput studies by bridging data users and providers

Beyond infrastructure, certified SMEs may also directly facilitate the undertaking of studies and other ways of using health data for a variety of purposes. This facilitating role may be especially important in the future due to the growing requirement to carry out multi-centre international studies in a transparent way to ensure that the best evidence is used for decision making purposes.

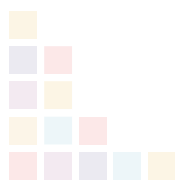
d. Training on the use of OHDSI tools and observational analyses

SMEs engaging with EHDEN will have unique access to specialised knowledge and hands-on training. This will allow the SME to in turn train others on both technical and scientific aspects of the OMOP CDM and its application, from ETL to high-efficiency analytics. Ongoing support and maintenance of connected data and provided solutions

In a fast-changing world, all new products and services developed in this emerging field, no matter how novel or revolutionary they might be, will need continuous support and maintenance. The potential of health data use will only grow with time. For certified SMEs, providing ongoing support may represent a stable revenue source that helps offset the risks of further research and investment in new products.

**Early adopters will gain competitive advantage on specialised skill set**

In most of these emerging markets, there are currently no dominant players that cover all the potential services. Early adopters of the EHDEN training and certification mechanism will possess a competitive advantage and will be uniquely placed to innovate and benefit from privileged market positioning. They will have early experience on deploying the OMOP CDM and its application in different contexts and use cases. This will enable long term growth strategies,





focussing on relative strong areas and developing a solid customer base before the markets mature.

### **Possibility to contribute to a change of paradigm benefitting health of citizens**

EHDEN aims to be truly revolutionary in how the wealth of existing health data can be best used for the ultimate benefit of the patient – enabling better decision making by health professionals, better drugs being developed earlier, better understanding of disease processes... all of which will create positive feedback loops on our ability to generate, analyse and use data. Companies contributing to the eco-system will help develop such learning healthcare systems, for the benefit of all. Profit making is essential for any company, but nothing equals the feeling of having decisively contributed to a better world.

### **Short-term income generation to offset skill investment**

EHDEN will launch periodic calls for data sources that are interested in being mapped to the OMOP CDM. Data sources that are evaluated positively will receive funding in the form of a grant, and they will be able to use it to hire certified SMEs for mapping services. This will offer an opportunity for SMEs to generate revenue, but most importantly, to acquire experience in real-life scenarios all over Europe.

### **Free training and certification**

The best part – the EHDEN training and certification programme for SMEs is free of charge. You will still have to of course invest time and cover your own costs for travel, etc., but EHDEN covers the full cost of the programme so that you can be up and running as soon as possible.

### **Open source community boosts opportunities**

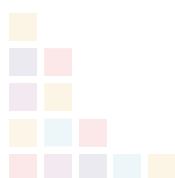
EHDEN is deeply connected with the OHDSI worldwide initiative, which gathers a very active open source community that is continuously developing and improving software tools for better data analysis and use. By participating in EHDEN, SMEs interested in the development of software tools will be able to contribute to this dynamic community, share the burden of development and validation, build services on top of such tools and benefit from the many opportunities that a worldwide, ever growing peer community offers to boost adoption and exploitation of the OMOP CDM.

### **Thriving community facilitates hands-on training of new staff**

Besides tool and service development, the OHDSI and EHDEN communities conform a perfect space for hands-on training of new personnel, facilitating expertise acquisition, a fast learning curve and continuing career development in a way that no SME could afford internally by itself.

### **Synergic ecosystem facilitates exposure and brand recognition with key stakeholders**

EHDEN will gather many different types of stakeholders: hospitals and other data custodians, pharmaceutical companies, regulatory and health technology assessment agencies, healthcare authorities, software developers, patient representatives, ... Participating in EHDEN will immediately help your company to be exposed to such a variety of institutions in Europe and, through OHDSI, worldwide, in the context of a collaborative environment, facilitating contacts with different types of potential customers and allies, helping market positioning and brand recognition in a much faster way than any marketing or outreach campaign would be able to achieve.





### 3 OPEN CALL FOR SMES

This open call is the 3<sup>rd</sup> SME call for training and certification offered by EHDEN. There is no actual limit to the number of SMEs that can be selected by the SME Certification Committee, but the training and certification might be done in sequential batches should there be many SMEs selected. The selected SMEs will receive all necessary guidance from EHDEN to succeed.

#### 3.1 Who can Apply?

The call is open to Small and Medium-sized Enterprises under the official EU definition:

- < 250 staff headcounts
- <= € 50m Turnover or <= € 43m Balance sheet total
- Legally established as a business and based in an EU Member State or H2020 Associated Country (for a complete list see Appendix 1).

See for more details: [http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition\\_en](http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en)

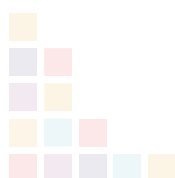
#### 3.2 How to Apply?

Register in the SME Certification Portal which can be accessed via the [EHDEN Website](#), and complete the application electronically in English before April 12<sup>th</sup> 2021 at 17:00 CET. All applications will be processed through the application portal and communication will take place through the applicant's email address as specified in the application form.

##### Step 1. Sign Up

The first step is to sign up in the portal. This email address is used to login to the portal and to get access to the SME Profile and Application form.

The screenshot shows the SME Application Portal interface. On the left, there is a 'Welcome to the SME Application Portal' section with a brief description of the portal's purpose and a link to 'Sign In/Sign Up Instructions'. Below this, there are two sections: 'For New Users' and 'For Returning Users', both providing instructions on how to create an account or log in. On the right, there is a 'Sign In' section with input fields for 'Email' and 'Password', a 'Log In' button, and a 'Forgot your password?' link. Below the 'Sign In' section, there is a 'Need an Account?' section with a 'Sign Up' button.







## Step 2. Create Profile

Click on the + Create Profile button and fill in the Profile form as shown below.

[Logout](#)

### Homepage

Welcome to the SME Application Portal. Here you can apply for the SME training and certification procedure offered by the EHDEN project. After you created your profile, you need to fill in an application form that will be reviewed by an independent committee. For more information about the SME call and the review process please see our [website](#).

Please click "+ Create a Profile to Get Started" if you do not have a profile yet.

You can save your profile as a draft to complete at a future time. When a profile is saved as a draft, it will have a status of "In Progress". Clicking on the "Eye" icon will allow you to view a read-only version of the draft; you can edit the profile by clicking on the "Pencil" icon.

Once the profile has been completed and is saved (the status will change to "Complete"), you can start your application. Please note: the profile is always editable.

[+ Create a Profile to Get Started](#)

Homepage > Applicant Profile Input Draft

### Company Details

**Company Name \***

**Chamber of Commerce ID**  
  
ID of registration at the local Chamber of Commerce if publicly available.

**VAT Number**

**Legal Form \***  
  
For example: Sole proprietor, Private limited company, Public limited company, etc.

**Sector of Activity \***  
  
For example: Health Care

**Year of Incorporation \***  
  
Year the company was officially registered at the chamber of commerce.

**Number of Employees as of December 31st 2018 \***

**Annual Turnover 2018 (Euro) \***

### Company Address

**Street Address \***  
  
Street Name and House Number

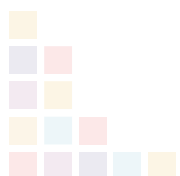
**Postal Code \***

**City \***

**Country \***

Note: only European SMEs are eligible.

The fields that are required have a red asterisk. An incomplete form can be saved using "Save Draft" in which case there is no check of all the required fields. Once you have completed the full form, save the form using the Save button at the bottom of the screen:





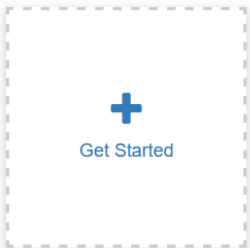
### Step 3. Fill in the application form

First click on the Get Started button and the following screen will appear:

To begin your application for SME Certification, click "+ Get Started" on the submission card below. This will bring you to the application form.

The status of your application is in the colored bar at the bottom of its submission card:

- Grey: the application is in a review state, and no action needs to be taken at the moment.
- Orange: there is an action/step that the applicant still needs to take — for example, a form needs to be filled out, etc.
- Red: there is an error with the submission, and the applicant should contact us via [enquiries@ehden.eu](mailto:enquiries@ehden.eu) for more information.



The application form can now be filled in by pressing the pencil icon. The form contains questions about the experience and expertise of the SME in relevant technologies, terminology systems, and the resources available in the SME. **The form needs to be entered in English**, submissions in other languages will be declined.

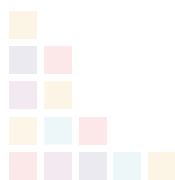
We highly recommend you provide concise but clear answers to all the questions in the form to allow proper evaluation by the SME Certification Committee.

You can save a draft and come back to finalize the form, but you finally need to press the “Save button”.

The Submit button now becomes active and green. The application needs to be submitted by pressing this button. **After this the application can only be viewed but not edited anymore!**

The email address for the Applicant in this form will be used for all communications. You should receive an email confirming you have completed this step. **Check your Spam folder if you do not receive the emails sent by the system and double check the applicant email address in the Application form.**

The application will now be checked for eligibility and will be evaluated by the SME Certification Committee as described below.





## 4 EVALUATION PROCESS

### 4.1 The SME Certification Committee

The applications are evaluated by an SME Certification Committee that consists of four EHDEN Consortium members and two independent external experts.

The independent experts are drawn from a panel of international experts that act as advisors to EHDEN. Independent experts involved in the evaluation are required to have skills and knowledge appropriate to the SME Call. They have a high level of professional experience in the public and/or private sector and are internationally recognised in their field of expertise.

The names of the independent experts assigned to individual proposals are not made public.

An appointment letter binds each independent expert to a code of conduct and establishes the essential provisions regarding confidentiality.

EHDEN takes all necessary steps to avoid conflicts of interest. To this end, independent experts are required to sign off for each application that no such conflict of interest exists at the time of their review.

By submitting an application to the EHDEN calls, applicants accept the evaluation and selection procedures established by the project.

### 4.2 Evaluation Process and Criteria

All proposals submitted are evaluated using the following procedure:

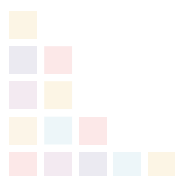
#### 1) Eligibility Check

If the applicant does not meet the EU criteria for Small and Medium-sized Enterprises, the application is incomplete or not in English language, the application will be declared as non-eligible and not be evaluated further.

#### 2) SME Certification Committee Evaluation

Each application will be individually reviewed by at least two Committee members. Each member will work remotely and provide scores on three criteria:

- a. Expertise/experience of the SME in the field. (Score 1-10)
- b. Perceived capacity of the SME to actively engage with the EHDEN community. (Score 1-10)
- c. The expected potential of the SME to add value to the EHDEN network (Score 1-10). This entails the following:
  - The potential to develop and expand on the available codebase and processes for data mapping
  - Proven experience (and contribution) in open source initiatives
  - An existing network and relationship with one or more leading healthcare organizations (e.g. hospitals, registries, population databases, ...)
  - Potential to train the community





For all criteria, a score value of 1 represents “Very Poor”, and a value of 10 represents “Excellent”.

Committee members are required to provide comments to clarify and/or justify each of their scores. These comments must be consistent with any scores awarded and serve as input to any consensus discussion and related consensus report.

Once all the committee members have completed their individual evaluations and communicated them to the EHDEN Project Management Office (PMO), the evaluation progresses to joint assessment. This entails a unique consensus panel meeting in which differing scores are discussed and a consensus view is reached on scores, comments and recommendations.

As part of this joint evaluation of applications, committee members will discuss to provide recommendations for priority order of the proposals that pass the evaluation thresholds, resulting in an overall ranking. The evaluation thresholds are defined as:

1. All three scores should be at least 6.
2. The sum of all scores should be at least 20.

The consensus discussion is moderated by a chairperson ("the moderator"). The role of the moderator is to seek a consensus between the individual views of independent members without any prejudice for or against a particular application or company involved, and to ensure a fair and equitable evaluation of each application according to the defined evaluation criteria.

The moderator will designate one of the independent experts participating in/attending the consensus panel ("the rapporteur") or a person from the PMO to be responsible for drafting and signing off a Consensus Evaluation Report(s). Such report will include the consensus scores and comments for each eligible application, and the overall ranking. Comments to each application should be suitable for feedback to the respective applicants.

If during the consensus discussion it is found that, despite all reasonable efforts to reach consensus, it is impossible to bring all the experts to a common point of view, the moderator may propose actions to reach resolution, which may include an interview with one or several of the applicant SMEs.

### 4.3 Feedback on the evaluation process

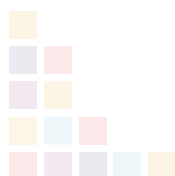
The EHDEN Project Management Office (PMO) will send an information letter, together with the Consensus Evaluation Report relative to the specific application, to the applicant. The aim is to give the applicant a prompt indication of how the application fared in the evaluation.

The applications found to be ineligible or failing to reach any of the threshold scores for evaluation criteria will be formally rejected by the SME Certification Committee. Rejection doesn't prevent an SME to apply again to subsequent calls.

The applications that reach the threshold scores will be deemed successful and are invited to participate in the training and certification program.

### 4.4 Appeal Procedure

The Applicant has 20 calendar days from the date of sending of the formal decision letter to appeal on the outcome of the evaluation process. This can be done by submitting a reasoned complaint in writing





to the PMO at the email address [enquiries@ehden.eu](mailto:enquiries@ehden.eu). Upon receipt, the PMO will check if all review procedures have been fully respected and no content has been inadvertently omitted or overseen during evaluation (e.g. due to technical problems with the portal), and will answer to the applicant within 20 calendar days from the date of reception of the letter of complaint. The PMO will not re-evaluate the proposal and consequently will not call into question the judgement of the appropriately qualified group of experts that form the SMECC.

## 5 TRAINING AND CERTIFICATION PROGRAM

EHDEN has developed a Training and Certification Program together with the OHDSI Community.

### 5.1 Objectives

The process of mapping data to the OMOP CDM is a team effort in close collaboration with the data custodian. In the training program multiple employees from the SME, that may have different types of expertise, can participate. The aim of the program is that the SME as a company will obtain all the necessary competencies to onboard a data source in the EHDEN federated data network following the establish quality standards. This includes, but is not limited to:

- a. Foundational Knowledge about the EHDEN project and its objectives.
- b. Expertise on the OMOP-CDM and the Standardized Vocabularies.
- c. Knowledge about the Extract, Transform, and Load steps and their implementation with OHDSI tools and approaches developed in EHDEN.
- d. Understand the fundamentals of proper documentation of the ETL process in close collaboration with the data custodian, to assure transparency and reproducibility.
- e. Expertise in the installation and use of the OHDSI Tools for federated data analyses such as those described here: <https://www.ohdsi.org/analytic-tools/>

### 5.2 Blended Training

The training will be offered through blended training, i.e. online and face-to-face.

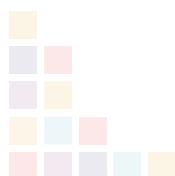
A curriculum will be available through online e-learning courses in the EHDEN Academy that focus on all competencies described above.



<https://academy.ehden.eu>

These courses are implemented in a customized Moodle training environment ([www.moodle.org](http://www.moodle.org)) and will contain video lectures, quizzes, tests, etc. Importantly, the curriculum will also contain mapping exercises on simulated datasets. This will be offered through access to a virtual machine that will host a source database and mapping tools. The exercises will be monitored by the EHDEN consortium and support will be offered through an online forum in the training environment.

The final certification will contain a face-to-face training and assessment session in which a data source will be mapped by the SME.





## 5.3 Certification

Once the SME receives the certificate it obtains the following benefits:

### 1. Certified SME Catalogue

All SMEs that are certified will be mentioned [on the public EHDEN website](#). This serves as reference for interested data sources that want to apply for funding through the EHDEN Harmonization fund in the upcoming Data Source Grant Awarding Open Calls. The Catalogue will contain KPIs such as the number of data sources mapped by the SME.

### 2. Certification Badge

Certified SMEs are allowed to add the certification badge to their website (see a draft version below). The badge will show the year of certification and the colour will indicate how many years the SME has been certified and is actively mapping data sources.



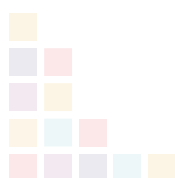
### 3. Member of the EHDEN SME Community

During the EHDEN project we like to actively engage the SME Community that will support the development of the eco-system. This can include invites to additional training sessions, hack-a-thons to improve the open source tools or invites to study-a-thons in which researchers and data sources will collaboratively execute studies to generate reliable evidence. Furthermore, we foresee an online forum for moderated discussions in the SME Community.

## 6 HOW TO CONTACT US?

More Information about EHDEN and this open Call can be obtained by contacting us via email: [enquiries@ehden.eu](mailto:enquiries@ehden.eu)

If you like to stay informed about EHDEN and upcoming calls, please sign up for the newsletter on the website.





## APPENDIX 1. ELIGIBLE COUNTRIES

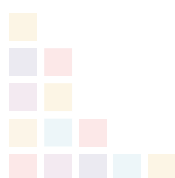
To be eligible the SME should be legally established as a business and based in an EU member state or H2020 associated country.

### EU Member States

|          |         |             |                |
|----------|---------|-------------|----------------|
| Austria  | Estonia | Italy       | Portugal       |
| Belgium  | Finland | Latvia      | Romania        |
| Bulgaria | France  | Lithuania   | Slovakia       |
| Croatia  | Germany | Luxembourg  | Slovenia       |
| Cyprus   | Greece  | Malta       | Spain          |
| Czechia  | Hungary | Netherlands | Sweden         |
| Denmark  | Ireland | Poland      | United Kingdom |

### H2020 Associated countries

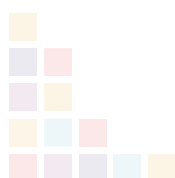
|                        |         |                 |             |
|------------------------|---------|-----------------|-------------|
| Albania                | Georgia | Montenegro      | Switzerland |
| Armenia                | Iceland | North Macedonia | Tunisia     |
| Bosnia and Herzegovina | Israel  | Norway          | Turkey      |
| Faroe Islands          | Moldova | Serbia          | Ukraine     |





## APPENDIX 2. CHANGELOG

| Version | Date     | Description  |
|---------|----------|--|
| V1.4    | 1-2-2020 | <p>The 3<sup>rd</sup> criteria for scoring an application has been changed (4.2 Evaluation Process and Criteria - SME Certification Committee Evaluation). This better definition should allow a more uniform scoring by the SME Certification Committee.</p> <p><b>Previous version</b></p> <hr/> <p>Overall score on the potential impact of the certification and training (Score 1-10)</p> <p><b>Current version</b></p> <hr/> <p>The expected potential of the SME to add value to the EHDEN network (Score 1-10). This entails the following:</p> <ul style="list-style-type: none"><li>• The potential to develop and expand on the available codebase and processes for data mapping</li><li>• Proven experience (and contribution) in open source initiatives</li><li>• An existing network and relationship with one or more leading healthcare organizations (e.g. hospitals, registries, population databases, ...)</li><li>• Potential to train the community</li></ul> |







### APPENDIX 3. APPLICATION FORM QUESTIONS

***The OHDSI ecosystem involves a variety of technology platforms and open-source software development frameworks. Please indicate the expertise available in your company in the following technologies:***

- Relational database platforms (e.g. PostgreSQL, Oracle, SqlServer, Redshift)
- Web application development (e.g. HTML5, JavaScript, D3.js, R Shiny)
- Application development (e.g. Java, C++)
- Database programming (e.g. SQL)
- Statistical programming (e.g. R, Python)
- Additional Comments

***Please describe what experience the company has with person-level healthcare data sets, such as electronic health records, administrative claims or clinical registries.***

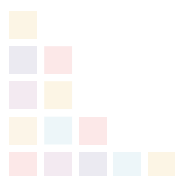
- Which databases have you worked with?
- What is your level of familiarity with the data's structure and content?
- What has been your role in performing data management, transformation into other data structures, or statistical analysis of these data?
- We invite you to add links (max 5) to publicly available material, e.g., journal papers, presentations, or videos to demonstrate your experience with person-level healthcare data sets.

***Please describe what experience you have with healthcare terminologies, such as SNOMED-CT, ATC, RxNorm, Read, ICD, LOINC.***

- Which terminologies have you worked with?
- What is your level of familiarity with the terminology's structure and content?
- What has been your role in performing data management or statistical analysis using these terminologies?
- We invite you to add links (max 5) to publicly available material, e.g., journal paper, presentations or videos to demonstrate your experience with healthcare terminologies

***Finally, please answer the general questions below.***

- What is the core business of your company? (Please provide a brief summary only of the core business here.)
- Why is your company applying?
- In which cities and countries does your company have local offices?
- Which languages does your company routinely use for written or oral communication, within your company and with others?
- How many people would you dedicate to a single data conversion at a time? (You can provide a range)
- How many of such teams could you field at the same time? (You can provide a range)
- How will you maintain expertise about the common data model in your company over time, particularly as people leave and join?
- Describe your proposed approach to engaging with the EHDEN project and OHDSI open source community.





- Which of the following service do you want to provide?
  - Vocabulary Mapping
  - ETL Implementation
  - Analytical Tool Development
  - Software Installation
  - Training
- Any other services your company can provide that might be of interest?
- Describe your approach to project management and cost control for providing data service.
- Describe any processes (and/or certifications) your company has in place with regards to compliance with privacy and clinical data regulations as well as compliance with information security standard.
- Please add any other information about your company you think is relevant (max 500 words)

