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*Isabelle COLLET, Olivier HAAG*  
*Insee*

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**Integration of European data about globalization into the national  
Statistical Business Register**

**1. ABSTRACT**

Why shall National Statistical Institutes integrate European data on multinational enterprise groups into their national statistical business registers? Actually, multinational enterprise groups are very singular and have a worldwide perspective; moreover, they tend towards increasingly complex structure. Therefore, National Statistical Institutes need as much micro data as it is possible to properly grasp their national economic aspects. Thus, national business registers will benefit by taking into account European micro data, to better identify the statistical business units within the largest multinational enterprise groups.

What kind of European micro data could benefit national business registers? There are mainly two areas where European micro data would be valuable insight: data on the multinational enterprise group structure more especially relationships between its foreign affiliates; and data about the way the multinational enterprise groups organise themselves from an economic point of view.

How such integration could occur? Additional dataflow from the European register network, with high priority setting, would fuel the national business registers network. In doing so, it

would update the structure and organization model of multinational enterprise groups into the national business registers.

## **2. INTRODUCTION**

What a Statistical Business Register (SBR) stands for? Often seen as ‘the backbone of business statistics’, SBR provides a solid and reliable infrastructure, genuine basis for business statistics. SBR has notably to manage all the business statistical units, to record the relationships between them and to manage the main characteristics of these units. All this information is crucial to set up proper sampling frames and it permits effective sample design with stratification.

To step toward an efficient European SBRs network, the European Statistical System (ESS) has set up the European System of interoperable Statistical Business Registers (ESBRs) project, as presented by Eurostat (2013), to tackle issues such as the inconsistencies between national SBRs due to the lack of common infrastructure for linking and sharing SBRs’ information. The project has already provided important outputs, i.e. the upgraded Euro-Groups Register (EGR) handling data on multinational enterprise groups implanted in Europe and the setting-up of collaborative European profiling to define global enterprises in a more relevant way. One can consider these outputs as the European SBR, the heart of the ESBRs.

Currently, the national SBRs are feeding the European SBR with national SBR units and their characteristics. In light of the European SBR progress, the French National Statistical Institute, i.e. INSEE, intends to go one-step further, and fuel the French SBR with European SBR data. This integration will increase the French SBR data quality. Actually, it will provide a better view of foreign multinational enterprise groups implanted in France and provide valuable information of French enterprises controlled by these groups. Moreover, other National Statistical Institutes might use this work as a benchmark.

The article firstly provides background information on business register units, depicts the French and European SBRs network, then explains the integration process and finally highlights the benefits and challenges of such integration.

### **3. STATISTICAL BUSINESS REGISTER UNITS**

There are mainly three kind of units managed and recorded into a SBR: Legal Units (LEUs), Global Enterprise Groups (GEGs) and Enterprises (ENTs). Moreover, a SBR must be regularly updated and every variables on its units properly defined and stamped.

#### **3.1. Legal Unit (LEU)**

LEUs are companies legally speaking. Although one should consider LEUs as administrative units, they have been building blocks of SBR. The SBR assigns a unique identifier to each LEU and records LEU economic characteristics, such as employment and turnover. Moreover, SBR assigns, for statistical purpose, an activity code - Nace code - to each LEU.

#### **3.2. Global Enterprise Groups (GEGs)**

A GEG is a set of LEUs bound by controlled relationships. These relationships are usually assessed by financial relationships between LEUs, i.e. shareholders and affiliates. The complete ownerships chain of LEUs is the GEG structure and the GEG perimeter is the set of LEUs within the GEG structure. The SBR assigns a unique identifier to each GEG and records the GEG structure, namely relationships between its LEUs, GEG perimeter and GEG economic characteristics, such as employment, turnover and its activity - i.e. Nace code. A GEG can be either domestic, if all its LEUs belong to the same country, or multinational if not. Within the GEG perimeter, the Global Decision Center (GDC) is the LEU where the strategic decision about the GEG are made. In SBR, the GDC nationality provides the nationality of the GEG.

### **3.3. Enterprise (ENT)**

The Enterprise (ENT) is the key statistical unit for business statistics. Actually, ENTs are statistical units reflecting the economic reality. ENTs are defined according to the Regulation (EC 696/93) ‘An enterprise is the smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit’. The ENT perimeter is set of LEUs belonging to the ENT. The SBR assigns a unique identifier to each ENT, records ENT perimeter and ENT economic characteristics, such as employment, turnover and its activity - i.e. Nace code.

For the LEUs outside of any GEG perimeter, i.e. independent LEUs, one could consider an ENT identical to a LEU. For the LEUs within a GEG perimeter, the ENT delineation and definition is done through a process called profiling.

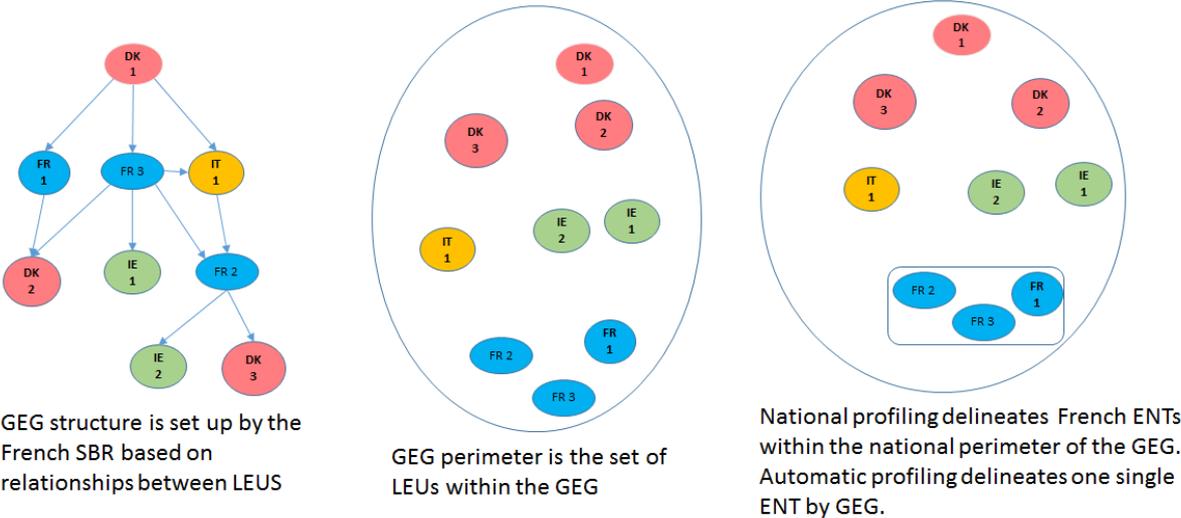
## **4. PROFILING A GEG**

Profiling a GEG consists of the delineation of enterprise, and providing data at enterprise level. National profiling delineates ENT within the national part of the GEG; and European profiling delineates Global Enterprise (GEN) within the worldwide perimeter of multinational GEGs implanted at least in one European-EFTA country. Both ENT and GEN are defined according to the Regulation (EC 696/93) definition.

### **4.1. French national profiling**

INSEE, the French National Statistical Institute (NSI), achieves yearly national profiling for all GEGs implanted in France, domestic and multinational. That is to say, INSEE, delineates the ENTs within the French part of GEGs and sets up full ENTs’ consolidated accounts. INSEE handles national profiling in both ways, for the largest GEGs implanted in France - around 50 GEGs - INSEE performs manual profiling. Namely, INSEE experts contact these GEGs every

year to get information about their economic structures, delineate their French ENTs and obtain ENTs data. The remained part of the GEGs implanted in France - around 125 000 GEGs - are automatically profiled using algorithms. First, an algorithm delineates one ENT by GEG, made off the French part of the GEG; then a consolidation algorithm provides for each ENT a full-consolidated account and its characteristic, as discussed by Chanteloup (2017). To better understand the process the following sketches feature the French automatic profiling.

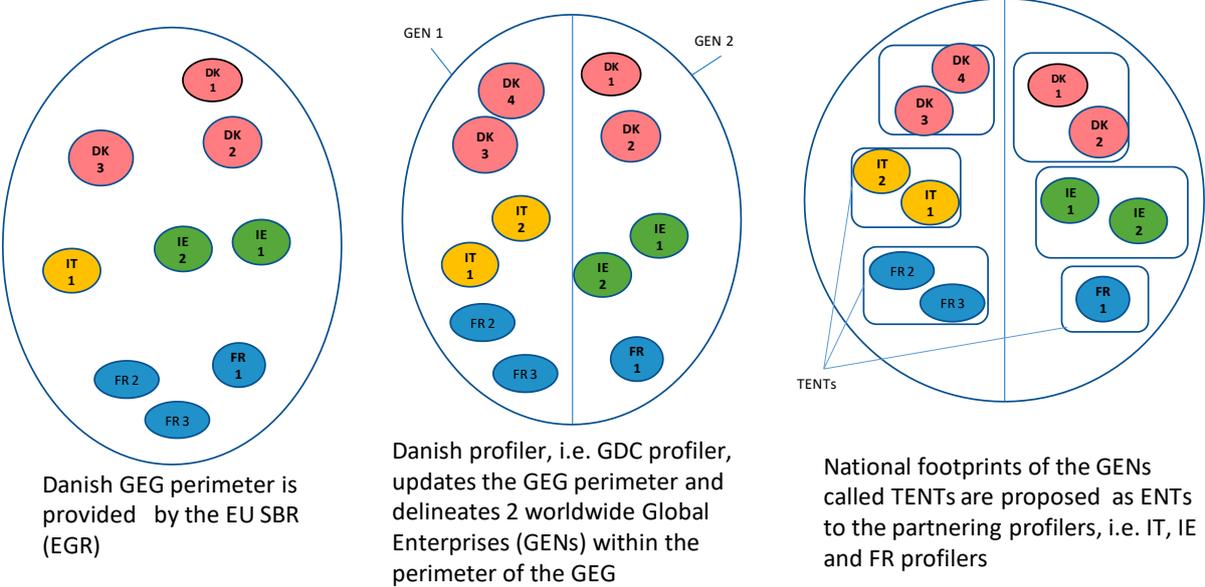


**Figure 1: French national automatic profiling**

**4.2. European profiling**

European profiling is a collaborative work involving two kinds of NSI experts - one called the GDC profiler and the other called partnering profilers. The GDC profiler belongs to NSI country of GDC; the partnering profilers belongs to the other NSIs’ countries where the GEG is also implanted. In a first step, the GDC profiler contacts and usually meets the GEG. With the information provided by the GEG itself, the GDC profiler updates the worldwide GEG perimeter and delineates Global Enterprises (GENs) within. This top-down approach at global level provides a better view of the GEG structure as a whole. Moreover, it also provides a more accurate way to delineate the set of LEUs, i.e. the GEN, with autonomy decision-making, as discussed by Xirouchakis and Hecquet (2018). The outputs of this first GDC exercise can be

very valuable information for the other NSIs' countries where the GEG is implanted; i.e. partnering NSIs' profilers. Actually, in a second step, partnering NSIs could use the national footprints of these GENs, called Temporary Enterprises (TENTs) to define their national ENTs.



**Figure 2: European profiling**

**5. THE FRENCH AND EUROPEAN SBRs NETWORK**

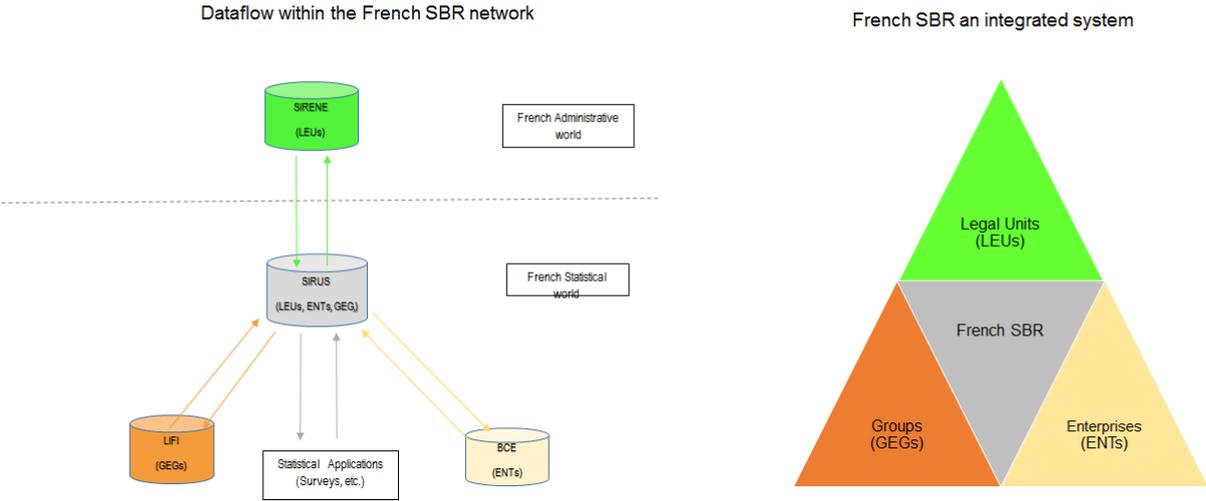
This section briefly outlines the main features of the French and European SBRs networks and their data flow.

**5.1. French SBR**

As discussed by Haag (2018), the work model of the French SBR consists of an integrated 4-business register network. Thus, the core French SBR (SIRUS) is fuelled by 3 so-called “Authentic source BRs” each dealing with one SBR statistical unit. SIRENE manages Legal Units (LEUs), LIFI, as discussed by Mariotte (2017), manages GEGs and financial relationships between LEUs and BCE manages Enterprises. Therefore, SIRUS gathers all the different information about the statistical units and links between them. SIRUS serves as the sole basis for all statistical operations requiring a survey or a sampling frame. As it shown

Figure 1, data flows towards SIRUS the core of the French SBR. The satellite BRs SIREN, LIFI and BCE do not directly exchange data but get through SIRUS. For instance, if LIFI needs LEU data it will get the data from SIRUS and not from SIRENE.

As the French SBR is an integrate system it will be considered as a whole hereinafter.



**Figure 3 – Dataflow within the French SBR network, an integrated system**

**5.2. The European SBR**

The European SBR consists of two main components the Euro-Group Register (EGR) recording the multinational GEGs implanted in European-EFTA countries and the Interact Profiling Tool (IPT) supporting the European profiling exercises.

*5.2.1. EGR Euro-Group Register*

As presented by Eurostat in the EGR metadata report and discussed by Götzfried, A., Völfinger, Z., and Bikauskaite, (2018), the Euro-Groups Register (EGR) is the statistical business register of multinational GEGs implanted in European-EFTA countries. The EGR has been created by the cooperation between Eurostat and the European-EFTA NSIs, by pooling together micro data on LEUs, relationships between LEUs, ENTs and GEGs. The EGR is a database for

statistical use only and it is restricted to users of NSIs, national and European Central Banks (nCBs and ECB). EGR provides harmonised information on:

- GEGs, ENTs, LEUs (identification, demographic and economic characteristics),
- Relationships and control between LEUs,
- LEUs' Shareholdings of at least 10%.'

The EGR was upgraded to the EGR 2.0 version using ESBRs outputs, it runs according a yearly cycle.

The EGR identifies each LEU with an ID built up with the LEU ID provides by its national SBR. That is to say, there is a direct link between national and European LEU ID and one can deduce them from each other.

**Table 1: Features on the EGR 2016 final frame**

	EGR 2016 final frame
Number of GEGs	111 508
Number of LEUs	944 661
Number of ENTs	779 326

Source: Eurostat

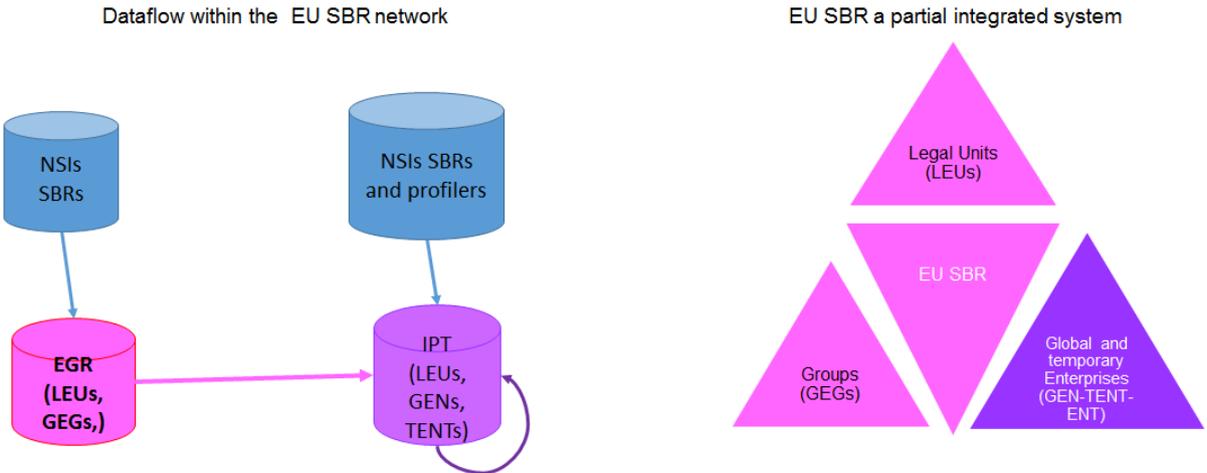
*5.2.2. IPT, Interactive Profiling Tool*

Eurostat has also developed an IT application and a database the Interactive Profiling Tool (IPT) allowing the NSIs to performed European profiling on multinational GEGs implanted in European-EFTA countries. As explain previously, European profiling is a collaborative work involving European-EFTA NSIs. IPT also runs according to a yearly cycle. Around 90 GEGs per year have been profiled using the IPT during the IPT 2015, 2016 and 2017 cycles.

At the beginning of European profiling, for a reference year N, the EGR provides to the IPT with the GEG perimeter of reference year N-1.

As NSIs handle European profiling on a voluntary basis on a limited set of GEGs, IPT cannot currently be seen as a proper European register. The IPT partially include the multinational GEGs implanted in European-EFTA countries. Actually, a few of NSIs are currently involved in European profiling. Moreover, NSIs select a few GEGs to be under European profiling and choose their roles and involvement. That is to say, NSIs decide the number of GEGs profiled as GDC and as partner. However, IPT is definitely part of the European SBR network.

Although the European SBR is partly integrated, it also will be considered as a whole hereinafter.



**Figure 4 – Dataflow within the European SBR network, a partial integrated system**

A more detailed dataflow is provided in the Appendix.

**5.3. Dataflow between the French and European SBR**

The French SBR, as the other European national SBR, feeds the EU SBR with LEUs, relationships between LEUs, GEGs and ENTs data, as presented by Eurostat. The dataflow from the French SBR to the EU SBR is about multinational GEGs implanted in France. The French SBR could partly cover the overall structure of these GEGs. Actually, the French SBR

is quite thorough about relationships between French LEUs and direct cross-border relationships between a French and a foreign LEU, but less about the relationships between foreign LEUs.

The French SBR sends to the EU SBR according yearly cycle, as presented by Eurostat.

**Table 2: Number of records send by the French SBR during the 2016 cycle**

Data send by the French SBR to the EU SBR	EGR 2016 cycle
Number GEGs implanted in France included in the delivery	24 650
Number LEUs' records	173 858
Number of Relationships between LEUs	246 446

Source: INSEE

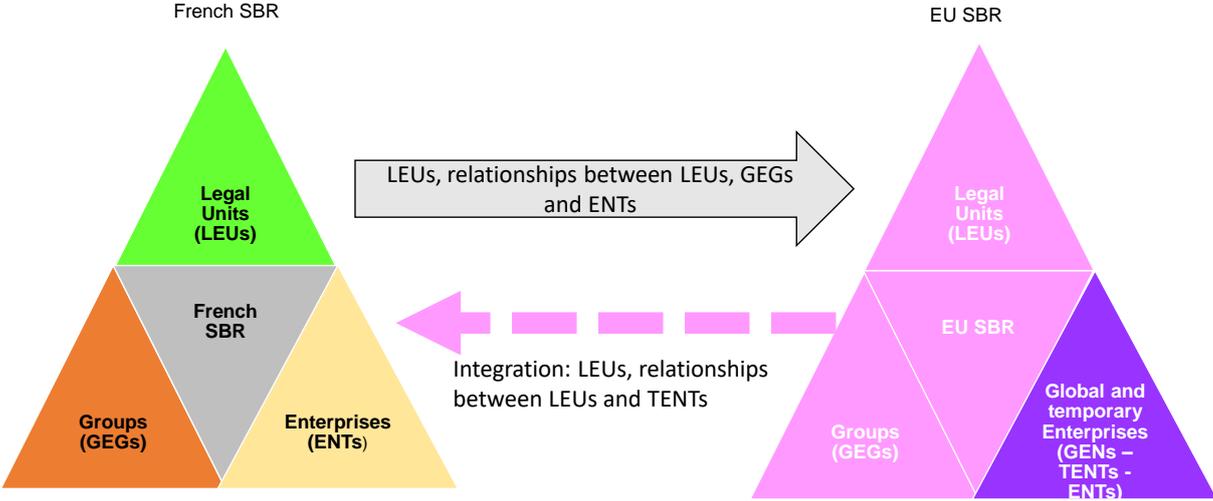
*Note: The LEUs' data send, during the EGR cycle, included French and foreign LEUs' data.*

Since the very beginning, namely the IPT 2015 cycle, INSEE profilers have been performed European profiling exercises using the IPT. They have profiled around 25 GEGs per year ever since, either as GDC or partnering profilers. Namely, INSEE profilers have updated the GEG perimeters, delineated the GENs and managed the French TENTs towards the French ENTs using data from the French SBR.

The integration will consist of the use by the French SBR of data from EU SBR. Actually, the EU SBR will feed the French SBR with LEUs, relationships between LEUs, and TENTs data. The dataflow from the EU SBR to the French SBR will be about multinational GEGs implanted in France, especially about the foreign GEGs with French affiliates.

The dataflow for setting up GEGs' structures, that is to say, the relationships between LEUs from the EU SBR, will integrate the French SBR, on a routine basis. Currently, the French SBR team has used a few of these data with a manual mean.

The outputs from the European profiling recorded in the EU SBR, i.e. in the IPT, is not integrate into the French SBR yet. The dataflow will consist of GEGs' perimeters, TENTs perimeter and characteristics, e.g. TENTs' turnover, employment and Nace code. This integration process is still on going. It aims at improving the quality of the French ENTs, specifically the French ENTs delineation, and therefore the improvement of the French SBR accuracy.



**Figure 5 – Dataflow between the French and European SBR network, a step toward an interoperable system**

The following paragraph will focus on the integration of European profiling outputs recorded in the European SBR, into the French SBR and its impact on the French SRB quality.

**6. THE INTEGRATION PROCESS**

The integration process of European profiling data is rather complex. It will only consider the multinational GEGs implanted in France under automatic profiling. Actually, for these GEGs,

the French SBR could benefit of first-hand information from the GEG itself and a top-down approach to analyse the GEG organisation from an economic point of view. Actually, direct GEG contact and data delivery at TENT level, as in manual profiling, is consider as the high-end quality data. Moreover, it could allow, where justified, considering more than one ENT within the GEG perimeter, which the algorithm does not consider.

The integration process will include the following steps:

### **Step 1**

The European profiling provides French SBR with GEGs' perimeter, characteristics and the delineation of the French TENTs within these GEGs. The dataflow will be send after the delineation of the GENs by the GDC profiler.

### **Step 2**

The process excludes the GEG manually profiled by French profiler. Actually, INSEE considers that French national manual profiling provides the best quality data for national ENTs.

### **Step 3**

The process compares the French GEG footprint delivered by the European profiling with the footprint recorded in the French SBR. Actually, the process will compare the French part of the GEG as recorded in the EU SBR with the French SBR. That is to say, list of French LEUs recorded into the EU SBR with the list of French LEUs recorded in the French SBR. The comparison will be easily achieved, as the LEU European ID is built from the national LEU ID.

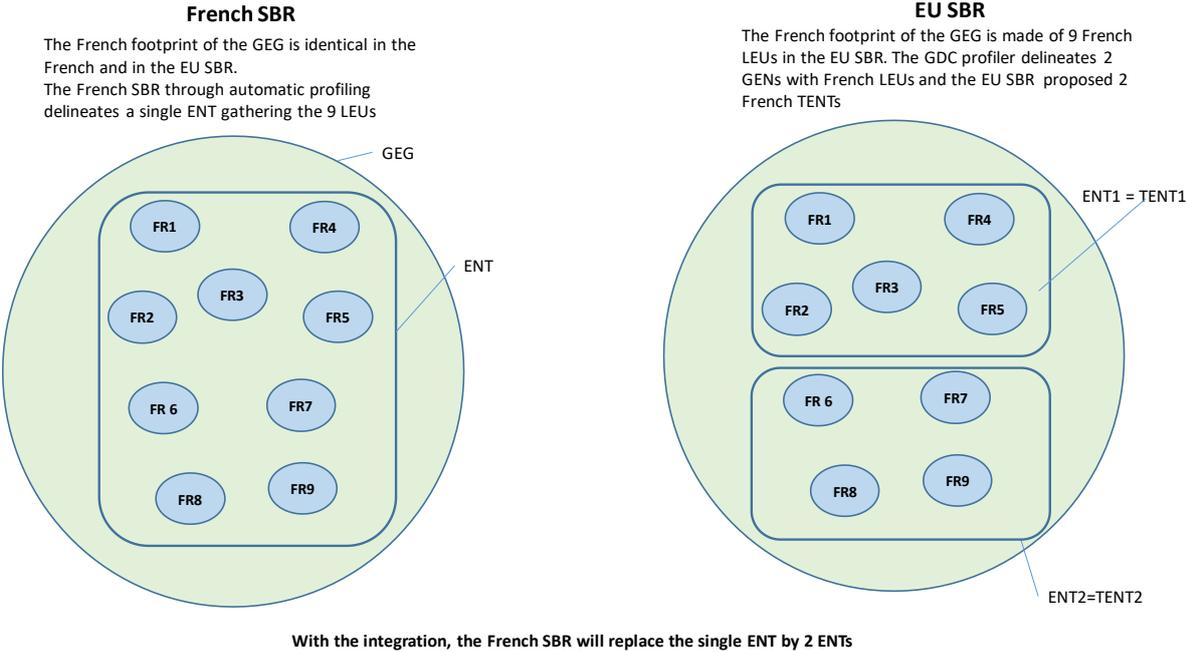
### **Step 4**

The process identifies three cases according the comparison results and follows different patterns accordingly:

- **Case 1**

There is a perfect match between the French GEG footprint provided by the European profiling and the footprint recorded in French SBR.

The French TENT(s) delineation(s) of the GEG delivered by European profiling overwrites and replaces the ENT recorded into the French SBR, which consisted of the French GEG footprint as a whole. The consolidation algorithm will run using the new ENTs' delineation and provide the characteristics and a full-consolidated account for these new ENTs.

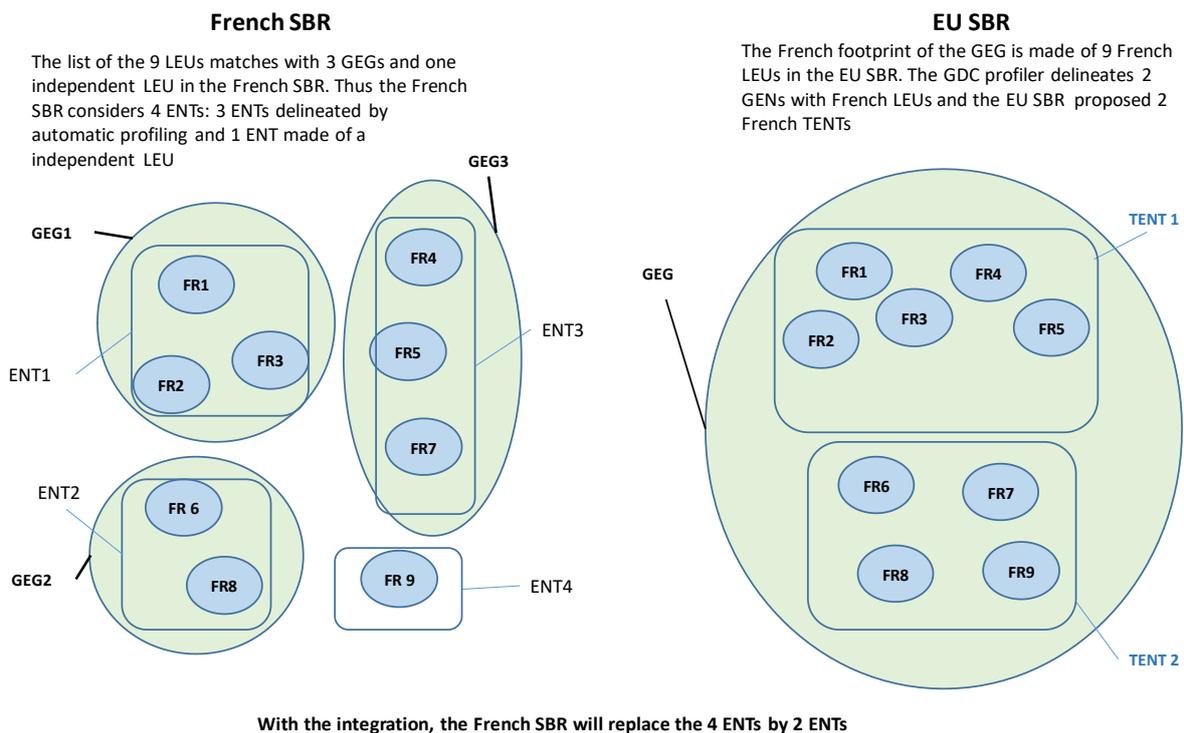


**Figure 6 – Case 1 the French footprint of the GEG is a perfect match in both SBRs**

- **Case 2**

The French GEG footprint provided by the European profiling matches with the French part of several GEGs and independent LEUs recorded in the French SBR.

The process compares the global structure provided by the European profiling and the global structure recorded in the French SBR. The process spots the potential missing LEUs and missing relationships between LEUs in the French SBR. After analysis of the GEG structure and proposed French TENTs, the INSEE experts could add the missing LEUs and relationships in the French SBR overwrites and replaces the ENTs by the proposed TENTs. The consolidation algorithm will run using the new ENTs' delineation and provide the characteristics and a full-consolidated account for these new ENTs.

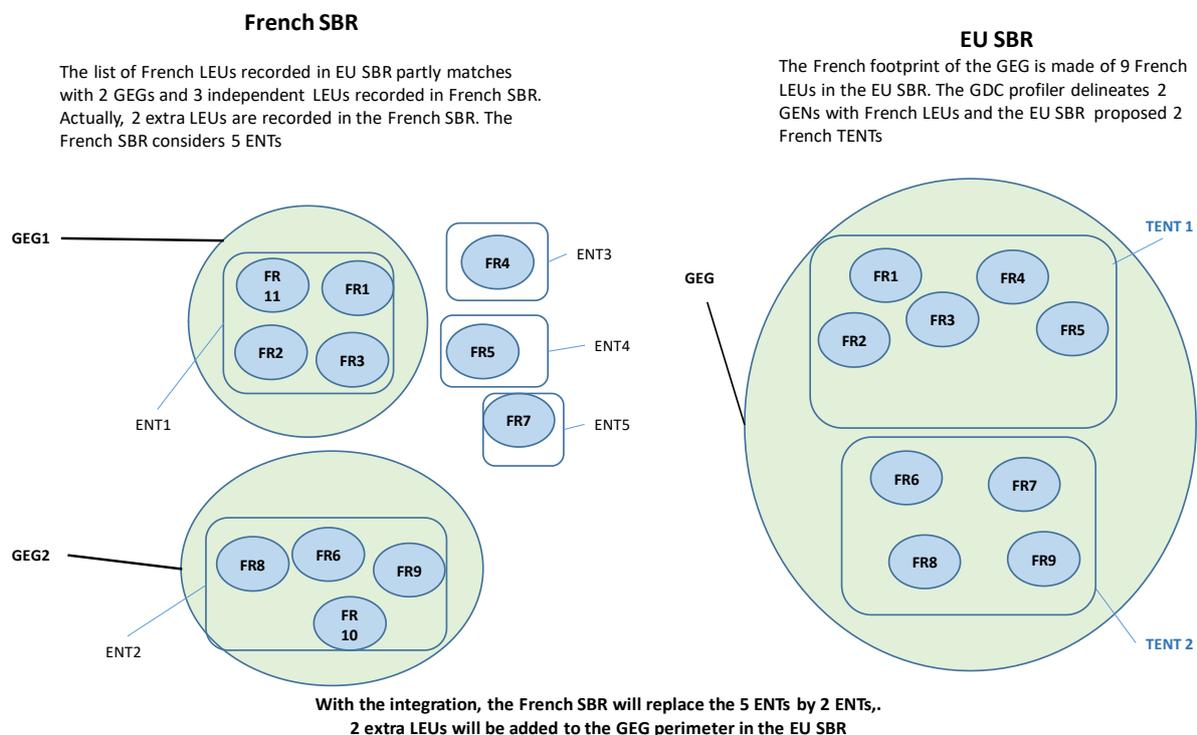


**Figure 7 – Case 2 the French footprint of the GEG is a single GEG in the EU SBR and several GEGs and independent LEUs in the French SBR**

- **Case 3**

The French GEG footprint provided by the European profiling partly matches with the French part of several GEGs and possibly independent LEUs recorded in the French SBR.

The process compares the global structure provided by the European profiling and the global structure recorded in the French SBR. The process spots the potential missing LEUs and missing relationships between LEUs in the French SBR and/or in the EU SBR. After analysis of the GEG structures and proposed French TENTs, the INSEE experts could add and/or withdraw LEUs and relationships in the French SBR and in the EU SBR. Then INSEE experts could replace the ENT recorded in the French SBR according to their analysis. The consolidation algorithm will run using the new ENTs' delineation and provide the characteristics and a full-consolidated account for these new ENTs.



**Figure 8 – Case 3 the French footprint of the GEG is a single GEG in the EU SBR and several GEGs and independent LEUs in the French SBR. There is a partial overlap.**

## **7. CHALLENGES AND BENEFITS OF THE INTEGRATION**

### **7.1. Challenges of the integration process**

The main challenge consists of the adjustment of the French and EU SBR timeframes. Actually, the French SBR network is tightly linked to national application e.g. survey. Moreover, in order to adjust French and EU SBR, French SBR need to fuel back EU SBR with updated data on ENT.

Another challenge lies in the fact that European profiling is perform on a voluntary basis. Thus, the sustainability of such integration process depends on the frequency and the coverage of European profiling. The ESBRS project target a pool of the most important GEGs implanted in European & EFTA countries profiled by NSIs' profilers at least every two or three years.

However, the French SBR needs yearly ENTs' updated perimeters and data. If European profiling is not performed every year, that is to say if a GEG implanted in France is under European profiling program for the year N and not for the N+1, INSEE should developed a specific process taking into account the potential changes in the French footprint of the GEG and in its ENTs. For instance, if a French LEU has been liquidated.

Finally, the integration process as a routine will need substantial IT development at national and European level.

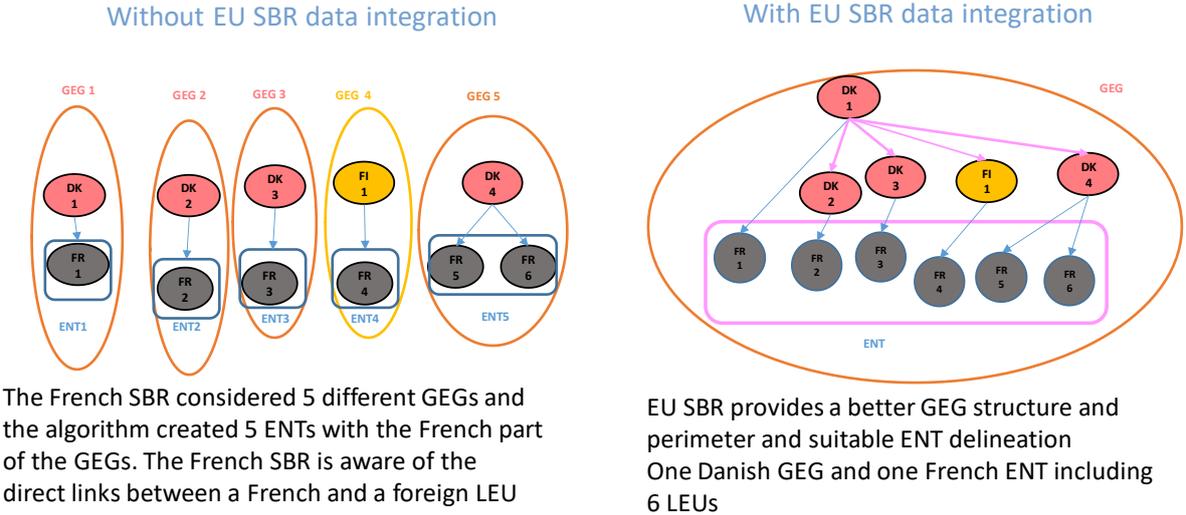
### **7.2. Benefits of the integration process**

Despite the challenges, there is a great deal of improvements for the French SBR with such integration process, illustrated by the following examples.

#### *7.2.1. Example 1*

To build up a GEG structure, the French SBR uses relationship between LEUs. As previously discussed, the French SBR data sources mainly cover the relationships between French LEUs

and direct cross-border relationships between French and foreign LEUs. However, the data sources could be partial about relationships between foreign LEUs. For instance in the example 1 below, the relationships between Danish LEUs and Danish and Finish LEU are unknown to the French SBR.



**Figure 9 – Example 1 fits the case 2, several GEGs recorded in the French SBR and one in the EU SBR**

In the example 1, the integration of European profiling data affects the nationality of the GEGs, the distribution of employment and turnover by activity but also the amount of turnover due to a consolidation effect. Currently, without the European profiling data, INSEE would have considered that the 6 LEUs belonged to 5 different GEGs, 4 Danish GEGs and one Finish GEG. As the 5 GEGs have been automatically profiled, the French SBR recorded 5 ENTs made of these 6 LEUs; 4 ENTs were recorded under Danish control and one under Finish control. Thanks to the European profiling, INSEE could realize that in fact, the 6 LEUs belonged to one single Danish GEG. Moreover, as this Danish GEG was under European profiling, Danish profilers could discussed with the GEG about its business organisation and considered that the GEG included a single GEN with French LEUs. Therefore, a single French TENT was proposed

to INSEE to set up the French ENT in the French SBR. As the 6 French LEUs were working for one another and there were intra-flow within the ENT, INSEE took into account the intra-flow to avoid double counting in the assessment of the ENT turnover. Actually, one LEU produced and sold its production to other LEUs in the ENT. These sales, i.e. intra-flow, were not market price and were withdrawn through the consolidation process.

Besides, the European profiling allowed to affect the ENT features under the true activity sector, in this case the industrial sector, and provided a more accurate view of the French economy. For instance, in the example 1, without European profiling INSEE split the 5 ENTs' features into 3 sectors: wholesale, manufacture of machinery and specialized construction activities. With the European profiling analysis, INSEE considered a single ENT handling business in manufacture of machinery namely, into an industrial sector. Thus, INSEE would allocate the employment figure under manufacture of machinery only.

Without EU SBR data integration

Activity	Number of ENT	Turnover (K€)	Employment
Wholesale	2	182 483	182
Manufacture of machinery	1	138 370	408
Specialized construction activities	2	346	0
Total	5	321 199	590

With EU SBR data integration

Activity	Number of ENT	Turnover (K€)	Employment
Manufacture of machinery	1	182 829	590

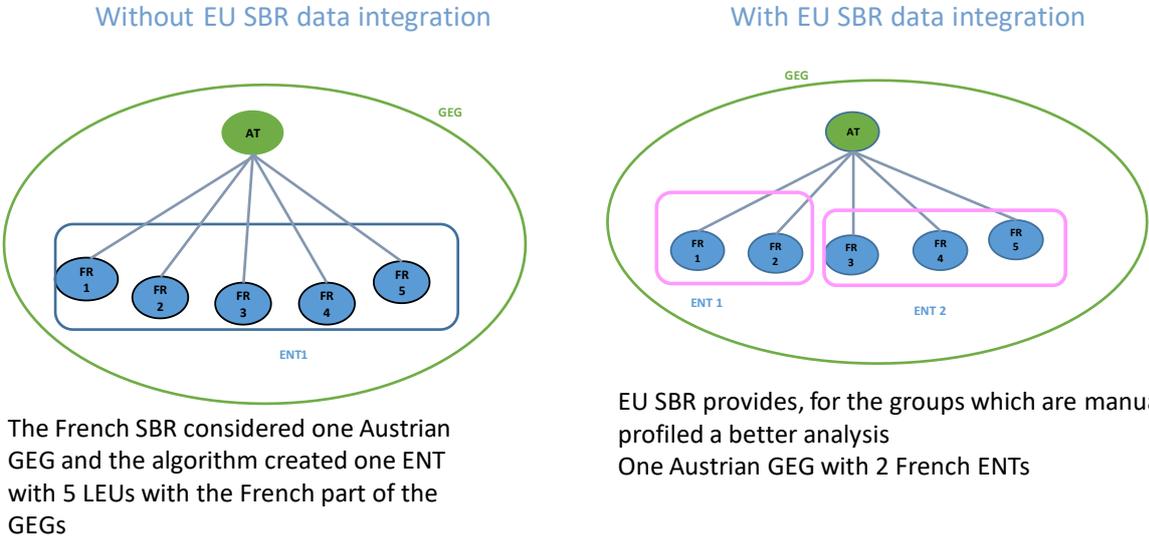
Impact on the distribution by activity and on the amount of turnover with the consolidation

**Table 3 – Impact of the EU SBR data integration in the example 1**

7.2.2. Example 2

The French SBR creates one ENT by default for each GEG automatically profiled. In the example 2, the Austrian profiler after direct exchanges with the GEG confirmed the worldwide perimeter of the GEG of which the French perimeter. In this example, the French footprint of

the GEG, including 5 LEUs, recorded into the French SBR was identical as the information delivered by the Austrian profilers, i.e. which corresponds to the Case 1. However, Austrian profilers, with the GEG inputs, delineates several GENs within the GEG, of which 2 GENs with French LEUs. Therefore, 2 French TENTs, respectively including 2 and 3 LEUs, were proposed to INSEE experts. As the information directly provided by the GEG to the Austrian profilers and their analysis are considered as more accurate than the automatic profiling process, the integration process would replace the single ENT recorded into the French SBR by the 2 French TENTs proposed by Austrian experts.



**Figure 10 – Example 2 fits the case 1, identical French footprint in both SBR but a several French TENS proposed**

In the example 2, the integration of EU SBR data affected the distribution of employment and turnover by activity. However, there was no consolidation neither nationality effect. Thus, instead of considering one ENT in the manufacture of bricks sector, the French SBR recorded 2 ENTs and their features split into the manufacture of bricks and the manufacture of plastic plates sectors. There was no consolidation effect here due to the lack of intra-flow between the LEUs of the two TENTs. That is to say, the 2 LEUs belonging to the first ENT did not exchange

- e.g. no sale - with the 3 LEUs belonging to the second ENT. There was no nationality impact either as the previous ENT and the new 2 ENTs were both under Austrian control.

#### Without EU SBR data integration

Nace code	Number of ENT	Turnover (K€)	Employment
Manufacture of clay building materials	1	231 993	978

#### With EU SBR data integration

Nace code	Number of ENT	Turnover (K€)	Employment
Manufacture of clay building materials	1	176 600	805
Manufacture of plastics products	1	55 393	173
Total	2	231 993	978

Impact on the distribution by activity  
No consolidation impact due to the lack of exchange between the 2 ENTs

**Table 4 - Impact of the EU SBR data integration in the example 2**

## 8. CONCLUSION

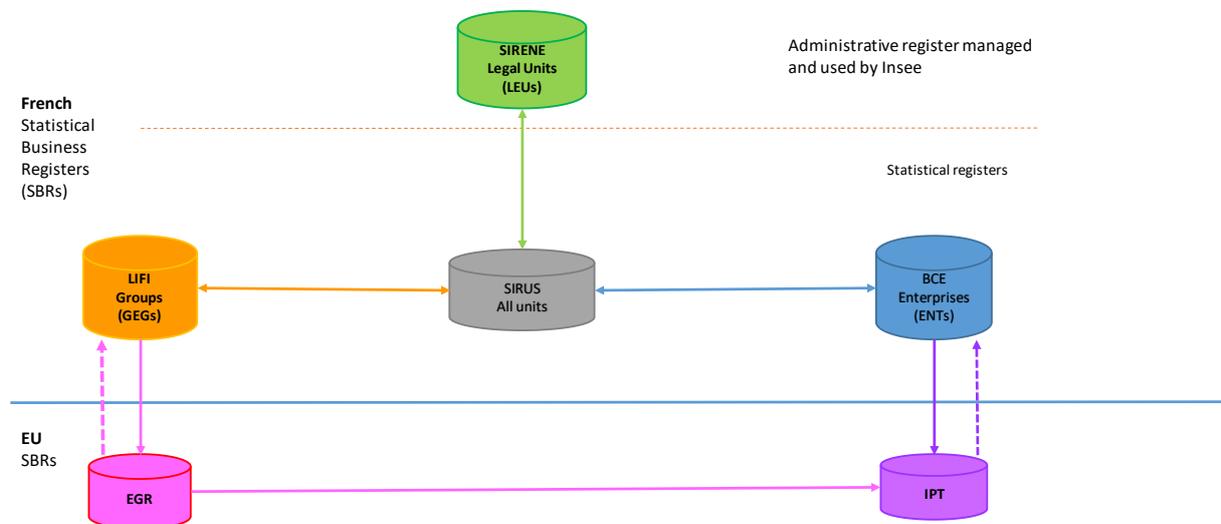
Nowadays, with the globalization and the rising economic importance of multinational enterprise groups, it is crucial for the European NSIs to share micro data about it. Actually, the European economies are increasingly linked and interdependent and sharing data will improve the national statistics. Thus, NSIs could get the best view as possible of the organisation, the true features and economic activities of these multinational enterprise groups in each country. Indeed, this is surely the right way to proceed for the European NSIs to provide consistent and accurate business statistics.

Micro data collected by European SBR such as the output from European profiling provide a huge opportunity for NSIs to get first-hand information from the multinational enterprise groups, even the strategy of the group is outside their countries. Actually, information directly from the source, that is to say the multinational enterprise group itself, is the most valuable data

that NSIs can get. Moreover, integration these data into national SBRs will improve national but also European business statistics. Actually, better defined the ENT within a national SBR was the main goal of this data integration.

Beside, integration of European Statistical Business Register could also allow NSIs to truly improve the quality of the ENTs as statistical units in their SBR ,at least for the biggest one.

## 9. APPENDIX



**Figure 11 - Detailed European and French SBR networks**

## 10. REFERENCES

Chanteloup, G. 2017. “The calculation of the automatically profiled enterprises characteristics in the statistical”, UNECE - Meeting of the Group of Experts on Business Registers - <https://www.unece.org/index.php?id=44252>

Götzfried, A., Völfinger, Z., and Bikauskaite, A. 2018 “The EuroGroups Register”, OECD – 16<sup>th</sup> conference of IAOS - <http://www.oecd.org/iaos2018/programme/>

Haag, O. 2018. “How to improve the quality of the statistics by combining different statistical units” The Unit Problem and Other Current Topics in Business Survey Methodology - Edited Cambridge scholar Publishing - pp 31 to 46, Edited by Boris Lorenc, Paul A. Smith, Mojca Bavdaž, Gustav Haraldsen, Desislava Nedyalkova, Li-Chun Zhang and Thomas Zimmermann. ISBN (10) 1-5275-1661-X, ISBN (13) 978-1-5275-1661-8. <https://www.cambridgescholars.com/the-unit-problem-and-other-current-topics-in-business-survey-methodology>

Mariotte, H. 2017. “The French Enterprise Group Register”, UNECE - Meeting of the Group of Experts on Business Registers - <https://www.unece.org/index.php?id=44252>

Xirouchakis, I. and Hecquet, V. 2018. “Improving the quality of Business Statistics through Profiling”, Eurostat - European Conference on Quality in Official Statistics [https://www.q2018.pl/papers-presentations/?drawer=Sessions\\*Session%2019\\*Ioannis%20Xirouchakis](https://www.q2018.pl/papers-presentations/?drawer=Sessions*Session%2019*Ioannis%20Xirouchakis)

Eurostat ESBRS, <https://ec.europa.eu/eurostat/web/ess/esbr>

Eurostat, Euro-Group Register [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EuroGroups\\_register](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EuroGroups_register)