TWINNING CONTRACT

Support to the Statistics

Kosovo

MISSION REPORT

on

Design of Database System for the Statistical Business Register (SBR)
Component no 3.5.2.1

Mission carried out by
Søren Netterstrøm, Statistics Denmark and
12-16 January 2015

IPA 2012

Author's name, address, e-mail (keep the relevant information)

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Table of contents

List of Abbreviations

GSBPM	Generic Statistical Business Process Model
KAS	Kosovo Agency for Statistics
KBRA	Kosovo Business Registration Agency
NACE	Statistical Classification of Economic Activities, latest version revision 2
SBR	Statistical Business Register
SBS	Structural Business Statistics
SIDA	Swedish International Development Cooperation Agency
SQL	Structured Query Language
STS	Short Term Statistics
TAX	Kosovo Tax Authorities
ToR	Terms of Reference
VAT	Value Added Tax

1. General comments

This mission report was prepared within the Twinning Project „Support to Statistics". It was the forth mission to be devoted to the Statistical Business Register (SBR) within Component 3 of the project.

The purpose of this mission was to review work done by KAS since the last mission and to prepare KAS for the work to be carried out during the coming month.

The consultant would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Kosovo, and which highly facilitated the work of the consultants.

This views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, KAS or Statistics Denmark.

2. Status

Since the last mission (October 2014) the database structure has been set up. There have been added some data to the administrative units, however these data are not carried on to the statistical units. The structure is completed by setting up the necessary tables to hold classifications and code lists and all relations (constraints) between the tables have been created.
Data from KBRA has been requested, but was not delivered (in the right format). There seems to be some confusion on the behalf of KBRA about the format, but this should hopefully be sorted out in good time before next mission.
According to the time schedule, the work of creating SQL-procedures for the update of SBR with data from KBRA should have been started, but these has not been accomplished. The reason seems to be, that further training was needed in how to create such procedure.

3. Hands on

In order to insure further progress in the development of the system if was agreed between the consultant and Mr. Muhamet Kastrati to devote most of the time of this mission in hands-on training on the topic of SQL-procedures using cursors.
During the mission the consultant and Mr. Kastrati worked close together on creating the procedures used to create transactions from KBRA data and the first procedures for updating SBR (administrative units) using these transactions. The goal was that Mr. Kastrati should be able to continue completing the remaining procedures. Both the consultant and Mr. Kastrati were confident that the goal was reached at the end of the mission.
It was agreed, that Mr. Kastrati will communicate by e-mail with the consultant in order to get assistance as needed to insure that there will be a continuous progress in the development.

4. Other issues

In the process of creating the first procedures minor adjustments was made to the pseudo code developed during the previous missions. These are reflected in the appendix.
A minor issue regarding the Fiscal Number included in the Legal Unit was solved. A legal unit may be connected to more than one fiscal unit and vice versa, so the relation between the units needs to

be in the form of a relational table. However, the data from KBRA contains 1 and only 1 fiscal number and this fiscal number is stored in the local unit (but not used as a link).

EnterpriseID and LocalUnitID will be assigned by KAS (automated as units are created). These numbers should include a check digits (using modulus 11) as this is a very effective method of avoiding entering wrong numbers in the first place. The method of modulus 11 and how to ´create this numbers were discussed. For further information see the appendix.

5. Time plan and next mission.

The project is further delayed in relation to the time schedule set up during last mission. To what extent it will be possible to catch up with this has to be seen, during next mission the time plan will be reviewed.

It is still anticipated that Mr. Kastrati will be able to use 50% of his time on the development of SBR, taken into account that he will have to run the existing system and give service regarding that. If that is not possible due to more urgent needs of KAS that will involve Mr. Kastrati, it will be necessary to lower the ambition level for this subcomponent.

It was further discussed if Mr. Kastrati could get assistance for some trivial but time consuming tasks. The idea was well received during the debriefing.

The next mission, to be carried out by Søren Netterstrøm is scheduled to take place from 2-6 March 2015.

Follow-up actions to be finalised before next mission

Action	Responsible person
Create SQL Procedures for updates	Muhamet Kastrati
Obtain and load first set of data from KBRA	Muhamet Kastrati
SQL procedures (Querys) to create transactions completed	Muhamet Kastrati
Identify sources for statistical data regarding activity codes and other data	Muhamet Kastrati

Annex 1. Terms of Reference

EU Twinning Project
KS12 IB ST 01
Support to Statistics

Terms of Reference:

Component 3:   Business Statistics
Activity 3.5.2.1:   Support to improvement of Statistical Business Register (SBR)

Scheduling:
ToR –ready date: **15 December 2014**
Start / end of activity: **12-16 January 2015**
Reporting time: **23 January 2015**

Mandatory result of the component:

Mandatory Result	Intervention logic	Benchmarks	Sources of information	Assumptions
Mandatory Result 3.5.2	**Support to improvement of Statistical Business Register (SBR)**	• Mission report stating the most prioritized action areas for improving the business register uploaded on project homepage • Adjusted timetable and road map for improvements developed • Recommendations for new procedures to ensure seamless updating of the SBR from available sources given • Draft of correspondence table between NACE Rev 1.1 and NACE Rev 2. Updated • Correspondence table between NACE Rev 1.1 and NACE Rev 2 finalized	• Twinning Quarterly reports • Mission reports • Roadmap • Timetable	• Sufficient absorption capacity • Low turn-over of staff involved in implementation • Staff works on project related tasks in between missions • A detailed Terms of Reference is developed in a timely manner detailing tasks (input), expected output, participants of the activity and agenda

Subject / purpose of activity: 3.5.2.1 activity

Review of the work with procedures to implement automated update of SBR from administrative data
Analyses of data from KAS in order to better understand how take-over, partial take-over, mergers and split is handled in the KAS data.
Based on this analysis necessary revisions of the rules for update

Expected output of activity 3.5.2.1:
Mission report – describing the progress made since last mission.
Suggestions for Terms of reference for other activities dealing with SBR.

KAS resources:
Mr. Muhamet Kastrati, Manager of database, muhamet.kastrati@rks-gov.net

KAS Twinning team:
Project Leader Mr. Ilir T. Berisha, Director of Economic Statistics and National Accounts,
Ilir.T.Berisha@rks-gov.net
RTA Counterpart Ms.Teuta Zyberi, International Relations Officer, teuta.zyberi@rks-gov.net

Member state resources:
Mr. Søren Netterstrøm, Business Statistics Expert, Statistics Denmark, sne@viv.dk

Twinning ressources:
Mr Per Knudsen, RTA, pkn@dst.dk
Ms Nora Zogaj, RTA Assistent, nzogaj@yahoo.com

Description of the background for the activity
This mission is based on the plan made by the MS expert and the expert from KAS during the last mission.

Follow-up actions to be finalised before next mission

Action	Responsible person
Create data base tables	Muhamet Kastrati
Create SQL Procedures for updates	Muhamet Kastrati
Load first set of data from KBRA	Muhamet Kastrati
SQL procedures (Querys) to create transactions	Muhamet Kastrati
Identify sources for statistical data regarding activity codes and other data	Muhamet Kastrati

Activities to be undertaken in preparation for the mission:
- All reports from Component 3 Business Statistics are available at dst.dk/kosovo

The expected activities are:

- Following up on activities since last mission
- Further development of the database

Expected output:

- Mission report – according to template
- Detailed plan for further activities to be completed regarding SBR in Kosovo by the twinning program

Annex 2. Persons met

KAS resources:
Mr. Muhamet Kastrati, Manager of database, muhamet.kastrati@rks-gov.net
Mr. Ismajl Sahiti, Head of Division, ismail.sahiti@rks-gov.net

KAS Twinning team:
Project Leader Mr. Ilir T. Berisha, Director of Economic Statistics and National Accounts,
Ilir.T.Berisha@rks-gov.net

Member state resources:
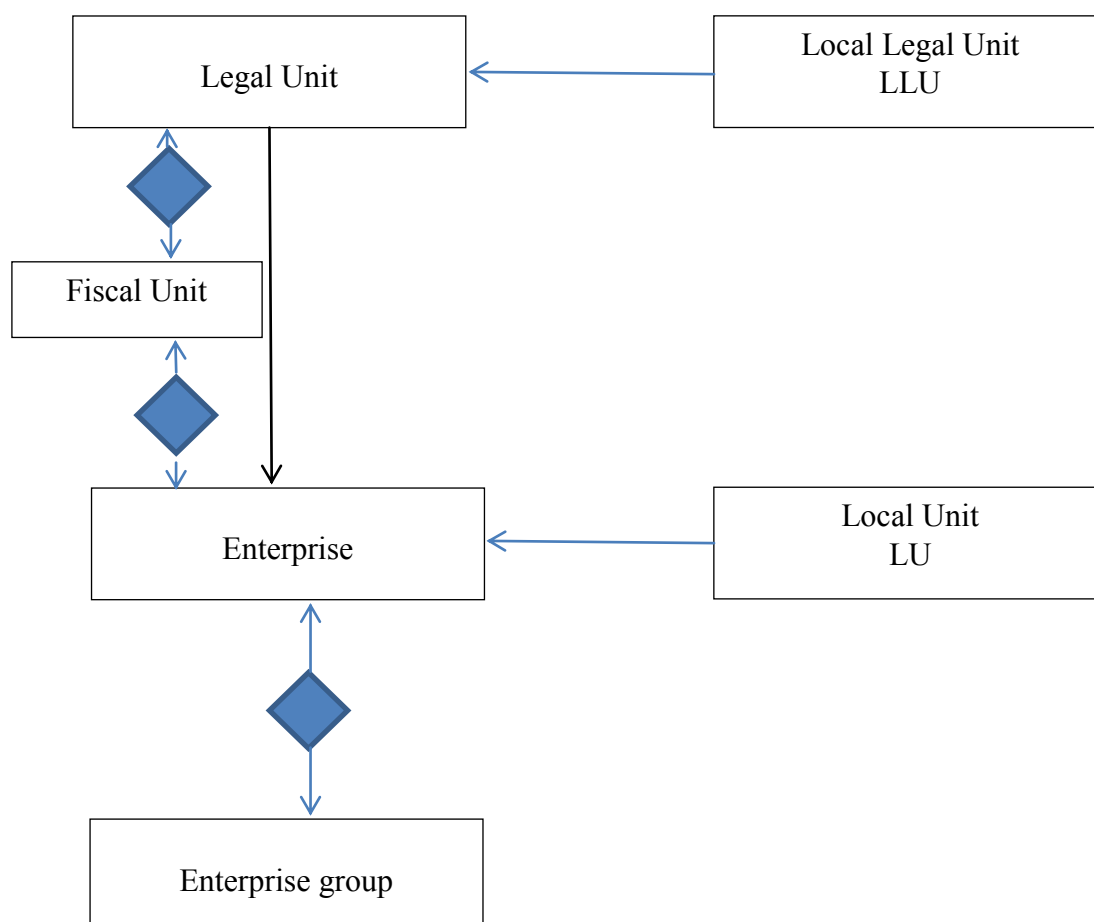Mr. Søren Netterstrøm, , Business Statistics Expert, Statistics Denmark, sne@viv.dk

Twinning ressources:
Mr Per Knudsen, RTA, pkn@dst.dk
Ms Nora Zogaj, RTA Assistent, nzogaj@yahoo.com

Annex 3. Database model

SBR – KOSOVO   Overview

```
┌──────────────────┐                      ┌──────────────────────┐
│                  │ ◄─────────────────── │   Local Legal Unit   │
│   Legal Unit     │                      │         LLU          │
│                  │                      │                      │
└──────────────────┘                      └──────────────────────┘
    ▲                │
    │  ◆             │
    ▼                │
┌──────────────────┐ │
│   Fiscal Unit    │ │
└──────────────────┘ │
    ▲                │
    │  ◆             │
    ▼                ▼
┌──────────────────┐                      ┌──────────────────────┐
│                  │ ◄─────────────────── │      Local Unit      │
│   Enterprise     │                      │         LU           │
│                  │                      │                      │
└──────────────────┘                      └──────────────────────┘
    ▲
    │  ◆
    ▼
┌──────────────────┐
│                  │
│ Enterprise group │
│                  │
└──────────────────┘
```

SBR – KOSOVO Details (revised August 2014)

```
┌─────────────────────┐              ┌─────────────────────┐
│     Legal Unit      │              │   Local Legal Unit  │
└─────────────────────┘              └─────────────────────┘
     ↑           ↑                              ↑
┌─────────┐  ┌─────────┐              ┌─────────────────┐
│Leg-Owners│  │Leg-NACE │              │     LLU-NACE    │
└─────────┘  └─────────┘              └─────────────────┘
```

```
         ┌─────────────────────┐
         │     Fiscal Unit     │
         └─────────────────────┘
            ↑              ↑
   ┌─────────────┐  ┌─────────────┐
   │ Fisc-Employ │  │Fisc-Turnover│
   └─────────────┘  └─────────────┘
```

```
         ┌─────────────────────┐
         │     Enterprise      │
         └─────────────────────┘
       ↑        ↑        ↑        ↑
┌──────────┐┌─────────┐┌──────────┐┌──────────┐
│Ent-Surveys││Ent-NACE ││Ent-Employ││   Ent-   │
└──────────┘└─────────┘└──────────┘│ Turnover │
                                    └──────────┘
```

```
         ┌─────────────────────┐
         │     Local Unit      │
         └─────────────────────┘
         ↑         ↑         ↑
   ┌──────────┐┌─────────┐┌──────────┐
   │LU-Surveys││ LU-NACE ││LU-Employ │
   └──────────┘└─────────┘└──────────┘
```
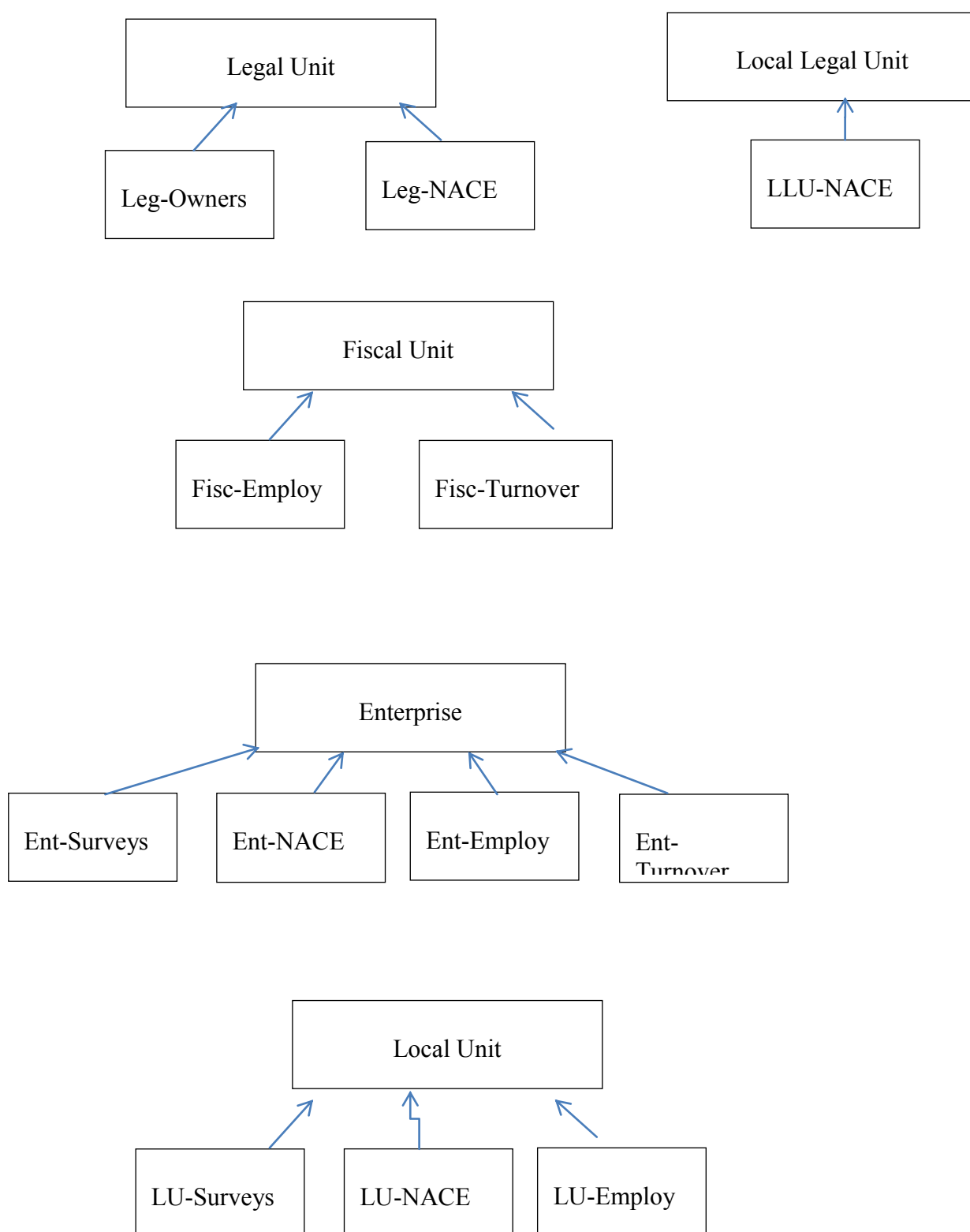
SBR-KOSOVO Attributes (revised October 2014)

Legal Unit

NAME	Explanation	Remarks
UID	Number taken from a sequence that identifies a row in the database.	Internal to the database, never displayed. Used for references only. Primary Key
BRnumber	ID in KBRA	Not null
FiscalUnitID	Fiscal Unit ID from KBRA	Not used as linked
Name	Name, From KBRA	
Municipality	Code, From KBRA	
Settlement	Code, From KBRA	
Street	Name of street, taken from KBRA	
House Number	From KBRA	
Telephone number	From KBRA	
Fax	From KBRA	
e-mail	From KBRA	
Web-address	From KBRA	
Date created	Date created in SBR	
Data updated	Date of last update in SBR	
Constitution date	From KBRA	
Cessation date	From KBRA	
Legal form	Coded, From KBRA	
FK_Enterprise	UID of Enterprise	May be null?
MainUnit	0 No enterprise associated 1 Base of Enterprise (Main unit) 2 Linked to Enterprise	
Language Preferred		
Succession of	UID of Legal unit that this unit succeeds	From KBRA take over
Succeeded by	UID of Legal unit that succeeds this unit	From KBRA take over

Legal Unit-Owners

FK-Legal Unit	UID of Legal Unit	
TypeOfOwner	Legal/Natural Person	
Resident/Non Resident		May be part of TypeOfOwner?
ID_of_Legal Unit		May Include Country Code
ID_of_Natural_Person		May include Country Code
Name	Name of Enterprise or Person	Full name for Persons
Share	% of ownership	
FK_resident owner	If Legal resident person	??????????
Gender		
Valid from date		
Valid to date		

Note: all data taken from KBRA

Legal Unit-NACE

FK-Legal Unit	UID of Legal Unit	
Valid from date		Date when inserted in register
Valid to date		Date when terminated in register
NACEcode	NACE rev 2	From KBRA
Primary	1 of Primary, 2 if secondary, 3 if other	From KBRA

Local Legal Unit

UID	UID of Local Legal Unit	Se explanation for legal unit
ID Number	From KBRA	
FK-Legal Unit	UID of Legal Unit	
Name		
Municipality		
Settlement		
Street		
House Number		
Date created	Date created in SBR	
Data updated	Date of last update in SBR	
Constitution date	From KBRA	
Cessation date	From KBRA	

Local Legal Unit-NACE

FK-Legal Unit	UID of Legal Unit	
Valid from date		Date when inserted in register
Valid to date		Date when terminated in register
NACEcode	NACE rev 2	From KBRA
Primary	1 of Primary, 2 if secondary, 3 if other	From KBRA

Fiscal Unit

UID	UID of Local Legal Unit	Se explanation for legal unit
Fiscal Unit ID	From KBRA (TAX)	
Date created	Date created in SBR	
countNumber	Number of Legal Units using this Fiscal Number	

The only purpose of this table is to store the ID-number of a Fiscal Unit and be and anchor for data on employment and turnover obtained by fiscal Number

In most cases, a legal unit corresponds to one fiscal unit, however, a fiscal unit may have more than on fiscal unit and a fiscal unit may cover more than one legal unit.

An enterprise may correspond to one or more fiscal units or parts of a fiscal unit.

Fiscal Unit-Employment

FK-Fiscal Unit	UID of Fiscal Unit	
Source	Code for source	Source of data Fiscal, Tax ? ..
Period	YYYY or YYYYMM	Depending on source
Number of employed persons		

Fiscal Unit-Turnover

FK-Fiscal Unit	UID of Fiscal Unit	
Source	Code for source	Source of data Finacial statement, VAT …
Period	YYYY or YYYYMM	Depending on source
Turnover		

Fiscal Unit-Legal Unit

FK-Fiscal Unit	UID of Fiscal Unit	
Fk-Legal Unit	UID of Legal Unit	

Fiscal Unit-Enterprise

FK-Fiscal Unit	UID of Fiscal Unit	
Fk-Enterprise	UID of Enterprise	
Share of Employment	Part of Fiscal Unit Employment that is going to Enterprise	0-100
Share of Turnover	Part of Fiscal Unit Turnover that is going to Enterprise	0-100

Share is used when a fiscal unit is divided into several enterprises. Set to 100 in all other cases.

Enterprise

UID		Se explanation for legal unit
ID Number	Assigned by KAS (Automated)	
Name		
Municipality		
Settlement		
Street		
House Number		
Source for NameAdress	0 From KBRA 1 From survey	
Telephone number		
Fax		
e-mail		
Web-address		
Date created	Date created in SBR	
Data updated	Date of last update in SBR	
Constitution date	From KBRA	
Cessation date	From KBRA or statistical source	
Cessation Reason	Reason for Cession (KBRA, No Activity according to..	
Legal Form		
Institutional Sector		In most cases generated Assigned by National Account
Language Preferred		

Enterprise-NACE

Fk_Enterprise	UID of Enterprise	Se explanation for legal unit
Valid from date		Date when inserted in register
Valid to date		Date when terminated in register
NACEcode	NACE rev 2	From KBRA
Primary	1 of Primary, 0 if secondary	From KBRA
Source		

Enterprise-Survey

Fk_Enterprise	UID of Enterprise	
FK_Survey	UID of Survey	
Response	0 No response from unit 1 Unit has responded 2 Unit removed from survey???	

Survey

UID		Se explanation for legal unit
Code		
Name		
Period		

The table survey is used to assign a Code, a Name and the period of Surveys that has taken there survey frame from SBR.

Enterprise-Employment

FK-Enterprise	UID of Enterprise	
Source	Code for source	Source of data Fiscal, Tax ? .. Survey
Period	YYYY or YYYYMM	Depending on source
Number of employed persons		

Enterprise-Turnover

FK-Enterprise	UID of Enterprise	
Source	Code for source	Source of data Finacial statement, VAT … Survey
Period	YYYY, YYYYQ or YYYYMM	Depending on source
Turnover		

Enterprise Group

UID		Se explanation for legal unit
ID Number	Assigned by KAS (Automated)	
Name		
TypeOf Group	All Resident, Truncated …	
Date created	Date created in SBR	
Data updated	Date of last update in SBR	
Cessation date		
NACE	2-digit NACE code	

EnterpriseGroup-Enterprise

Fk-Enterprise	UID of Enterprise	
Fk-EnterpriseGroup	UID of EnterpriseGroup	
Starting data	Start of relation	
Ending data	End of relation	

??? Is a UID needed in case an Enterprise is part of the group for more than 1 period???? Or Primary key may be FK_Enterprise, FK_EnterpriseGroup and Starting date.

Local Unit

UID		Se explanation for legal unit
Local Unit Number	Assigned by KAS (Automated)	
Name		
Municipality		
Settlement		
Street		
House Number		
Source of NameAdress	0 KBRA, 1 Survey	
Telephone number		Source ??
Fax		Source ??
e-mail		Source ??
Contact person		Source ??
Date created	Date created in SBR	
Data updated	Date of last update in SBR	
Constitution date	From KBRA	
Cessation date	From KBRA or statistical source	
BasicSource	Type of Source 0 Enterprise 1 Secondary Legal Unit 2 Local Legal Unit 3 Statistical source	
FK_Enterprise	If Enterprise is source	
FK_Legal Unit	If Legal Unit is Source	(Secondary Legal Unit)
FK_LLU	If Local Legal Unit is Source	

LocalUnit-NACE

Fk.Local Unit	UID of Local Unit	
Valid from date		Date when inserted in register
Valid to date		Date when terminated in register
NACEcode	NACE rev 2	
Primary	1 of Primary, 0 if secondary	
Source		
Fk_LLU		??????????

Local Unit-Employment

Fk.Local Unit	UID of Local Unit	
Source	Code for source	Source of data Fiscal, Tax ? .. Survey
Period	YYYY or YYYYMM	Depending on source
Number of employed persons		

Annex 4. Procedures (January 2015)

PROCEDURES FOR CREATING TRANSACTIONS

Transactions are created by a set of procedures that compare the latest complete set of data from KBRA with the corresponding units in SBR.

For legal units:

IF the unit does not exist in SBR THEN
   create transaction 'Create new Legal Unit'
ELSE
   IF name,address, telephone … has changed
     create transations update name,address..
   END IF
   IF cessation date has changed (from NULL) THEN
     create transation Legal unit has terminated
   END IF
   IF Fiscal number has changed THEN
     create transation Legal unit has new Fiscal Number
   END IF

There should not be any units in SBR that does not exists in the new set. This is an error that should be further investigated in case in happens.

For legal_unit_activity codes:

     The tables are compared by BRNumber and Activity code (including only BRNumbers in SBR as new units are covered by transaction create new local unit).

IF same Number,code is found in both sets THEN
     IF type of activity (main ..) has changed THEN
       Create transaction UPdate Actitity, Subtype Change
     END IF
 END IF

IF same Number,code only in new data THEN
     Create transaction UPdate Actitity, Subtype new
 END IF

IF same Number,code only in SBR THEN
     Create transaction UPdate Actitity, Subtype terminate
 END IF

Legal unit owners are treated in a similar way.

Local legal units are treated like Legal units.

PROCEDURES FOR CREATING NEW ADMINISTRATIVE UNITS

P1. Procedure to handle creation of new Legal Unit of LEType in (2, 4, 5, 6) (Form A0):

Note: Handles transaction from KBRA
Note: This procedure is in general the same for Form B, E and K11. However input format may differ.
Create a new legal unit
  Obtain UID
  Fill in other data
  Set DateCreated date=NOW
  Set DateUpdated=NULL
  Set CesationData=NULL
  Set MAIN_UNIT = 0 (Not connected to an Enterprise yet)
Copy Activity codes
Copy OWNERS

IF Legal Unit has a FiscalNumber THEN
  IF Fiscal Number does not exist in Fiscal_Units THEN
    create row in Fiscal_Units
  ENDIF
  Create link between LegalUnit and FiscalUnit
  IF Legal Unit is a Takeover (contains reference to old Legal Unit THEN
    Create Transaction TakeOverEnterprise (Old LegalUnit ID, New Legal Unit ID) (P51)
  ELSE
    Create transaction CreateEnterpriseFromLegalUnit (P30)
  END IF
  Note: Legal units without a fiscal number will not create an enterprise
ENDIF

P2. Procedure to handle creation of new Local Legal Unit (Form: A0, B, E, K11)

Create a new Local Legal Unit
      Obtain UID of Local Legal Unit
      Fill in other data
      Set Creation date=NOW
      Set Updated date=NULL
      Set CessationDate=NULL
      Create link between Local Legal Unit and Legal Unit
      note: Local Legal units without a Legal Unit number will not create an Local LegalUnit
      ==Create Transaction CreateLocalUnitFromLegalLocalUnit== (P52)

PROCEDURES FOR UPDATING ADMINISTRATIVE UNITS

P10. Legal Unit has new Name, Municipalty, Settlement, Street, House, Telephone, Fax, Email, Web, Language or LegalForm

    Set Updated date=NOW
    Update Fields
    IF Legal_Unit is MainUnit
      ==Create Transactions UpdateContactInfoForEnterpriseFromLegalUnit== (P40)
    ELSE
      IF ExistLocalUnit Based on this Legal Unit THEN
        ==Create Transactions UpdateContactInfoForLocalFromLegalUnit== (P61)
      END IF
    END IF

P11. Legal Unit has new/changed Activity_Codes

Subtrans Change

     Change Primary
     IF code now is Primary THEN
         Create Transaction UpdateActivityCodeForEnterpriseFromLegalUnit (P41)
     END IF

Subtrans New

     Create new row in Legal_Unit_Nace, Valid From = Today, Valid To = Null
     IF code is Primary THEN
         Create Transaction UpdateActivityCodeForEnterpriseFromLegalUnit (P41)
     END IF

Subtrans Terminate

     Set ValidTo = today

P13. Legal Unit has new/Changed Owners

Similar to P11, but no transactions are created

P5. Legal Unit has terminated

Set CessationDate=NOW (or date from KBRA?)

IF Legal Unit is Succeded by another Legal Unit
    Create Transaction CheckTakeOver (P91)
ELSE
    Create Transaction UpdateEnterpriseForCessation (P45)
     Note. Enterprise may not be terminated if there are another legal unit connected that is active
END IF

P12. Change in Fiscal Unit for Legal Unit

```
IF Fiscal Number does not exist in Fiscal_Units THEN
        create row in Fiscal_Unit (Count_Number=0)
ENDIF
Create link between LegalUnit and FiscalUnit
 Count_Number=Count_Number+1
Create Link between Fiscal Unit and Enterprise

Delete link between Old Fical Unit and LegalUnit
CountNumber of OldFiscalUnit=   CountNumber of OldFiscalUnit-1
 IF  CountNumber of OldFiscalUnit=0 THEN
    Delete Link Between Old Fiscal Unit and Enterprise
    Delete Old Fiscal Unit
    STOP
 END IF
IF Any LegalUnit Linked to OldFiscalNumber is linked to the same Enterprise as this LegalUnit
  THEN
    STOP
END IF
Delete Link Between Old Fiscal Unit and Enterprise
```

P20. Local Legal Unit has new Name, Municipalty, Settlement, Street, House, Telephone, Fax, Email, Web, Language or LegalForm

    Set Updated date=NOW

    Update Fields

    IF there is a Local Unit based on this LLU, then

      <mark>Create Transaction UpdateLocalUnitFromLLU</mark> (P60)

    ENDIF

P7. Local Legal Unit has new Activity_Codes

<mark style="background-color:#00ff00">Similar to P4</mark>

P21. Local Legal Unit has terminated

    Set CessationDate=NOW (or date from KBRA?)

     IF there is a Local Unit based on this LLU, then

    <mark>Create Transaction TerminateLocalUnitFromLLU</mark> (P72)

    ENDIF

PROCEDURES FOR CREATING ENTERPRISES

P30. Procedure to handle Transaction CreateEnterpriseFromLegalUnit

IF Fiscal Number of LegalUnit is connected with more than one Legal Unit THEN

     IF all Legal Units (except the new one) is connected to same Enterprise THEN

         Connect new unit to same enterprise

         Set MAINUNIT = 2 in Legal Unit

         Set FK_Enterprise in Legal Unit

         note the Link to Fiscal unit should be there already

         Create transaction CreateLocalUnitFromLegalUnit (P51)

     ELSE

         Create Unfinished Transaction CreateEnterpriseForComplex

     END IF

     STOP

ENDIF

Create Enterprise

     Obtain UID and EnterpriseID

     Fill in other data from Legal Unit

     Set Creation date

     Set MAIN_UNIT = 1 in Legal Unit

     Set FK_Enterprise in Legal Unit

     Create FISCAL_UNIT Enterprise Link (shares = 100 %)

     Create transaction CreateLocalUnitFromEnterprise (P50)

P31. Procedure to handle Transaction TakeOverEnterprise

IF Fiscal Number of LegalUnit is connected with more than one Legal Unit THEN

     IF all Legal Units (except the new one) is connected to same Enterprise THEN

         Connect new unit to same enterprise

         Set MAINUNIT = 2 in Legal Unit

         Set FK_Enterprise in Legal Unit

         Create transaction CreateLocalUnitFromLegalUnit (P51)

         Check for Termination of Enterprise connected to Old Legal Unit (P90)

     ELSE

         Create Unfinished Transaction CreateEnterpriseForComplex

     END IF

     STOP

ENDIF

Update Enterprise of Old Legal Unit with Data from New Legal Unit (including Activitycodes)

Create FISCAL_UNIT Enterprise Link (shares = 100 %)

Create transaction CheckLocalUnitsForTakeOver (P92(

PROCEDURES FOR UPDATING ENTERPRISES

26

P40. Procedure to handle Transaction UpdateContactInfoForEnterpriseFromLegalUnit

If ContactInforSource is Null (Source is KBRA OR Enterprise is Not Part of an Active Survey THEN
   Update Name,address etc from Legal Unit (Main Legal Unit)
   Create Transaction UpdateContactInforForLocalUnitFromEnterprise (LU is based on Enterprise) (P62)
  If Enterprise is Part of an Active Survey
    Create Message ContactInfoForEnterpriseHasBeenUpdatedToSurvey
   END IF
  ELSE
   Create Message ContactInfoForEnterpriseHasChangedToSurvey
END IF

P41. Procedure to handle Transaction UpdateActivityCodeForEnterpriseFromLegalUnit

IF there is only one activity code and source is KBRA THEN
   Update ActvityCode For Enterprise
   Create Transaction UpdateActivityCodeForLocalUnitFromEnterprise (All local units??) (P63)
ELSE
  IF MainActivityCode for Legal Unit <> MainActivityCode for Enterprise THEN
   Create Unfinished Transaction CheckActivityCodeForEnterprise
  ENDIF
ENDIF

P45. Procedure to handle Transaction UpdateEnterpriseForCessation

IF Enterprise CessationDate is not Null THEN
   STOP
END IF
IF Exists Select * From LegalUnit where EnterpriseID = this And CessationData is Not Null THEN
  Select 'one of those' as new Main Unit
  Note- There sems not to be a proper way to select among multiple units (should this create a message?
  Update ContactInfo and ActivityCode
 IF Enterprise is Part of ActiveSurvey THEN
   Create Message PartOfEnterpriseTerminatedToSurvey
 END IF
 Create Transaction CheckLocalUnitsAfterCessation (P71)
ELSE
 Terminate Enterprise (Set Cessationdate = Cessationdate of Legal Unit)
 IF Enterprise is Part of ActiveSurvey THEN
  Create Message EnterpriseTerminatedToSurvey
 END IF
 FOR Each Local Unit (belonging to this Enterprise)
  Create Transaction TerminateLocalUnit (P70)
NEXT LocalUnit

Terminate any relations to EnterpriseGroups (Set termination date = CessationDate)

PROCEDURES FOR CREATING LOCAL UNITS

P50 . Procedure to handle Transaction CreateLocalUnitFromEnterprise

Obtain UID and LocalUnitID
Fill in other data from Enterprise (including main activity code)
Set Creation date
Set Source=Enterprise
Set LinkToEnterprise

P51 . Procedure to handle Transaction CreateLocalUnitFromLegalUnit

Obtain UID and LocalUnitID
Fill in other data from LegalUnit (including main activity code)
Set Creation date
Set Source=LegalUnit
Set LinkToEnterprise

IF Enterprise Has Another Legal Unit on same address THEN
   Create Message CheckLocalUnitsForEnterprise
ENDIF
IF Enterprise is part of an ActiveSurvey THEN
   Create Message NewLocalUnitForEnterpriseToSurvey
ENDIF

P52 . Procedure to handle Transaction CreateLocalUnitFromLegalLocalUnit

Obtain UID and LocalUnitID
Fill in other data from LegalLocalUnit
Activity code (from Enterprise?????)
Set Creation date
Set Source=LegalUnit
Set LinkToEnterprise

IF Enterprise Has Another Legal Unit on same address THEN
   Create Message CheckLocalUnitsForEnterprise
ENDIF
IF Enterprise is part of an ActiveSurvey THEN
   Create Message NewLocalUnitForEnterpriseToSurvey
ENDIF

Note. If will have to be seen to what extent   too many local units on the same address will be created that will have to be removed. The rules may be changed to not creating the new local unit in the first place, if one already exists.

PROCEDURES FOR UPDATING LOCAL UNITS

P60 Procedure to handle Transaction UpdateLocalUnitFromLLU

    Take new Name, address etc. fom Local Legal Units
    IF Enterprise is part of an ActiveSurvey THEN
      Create Message LocalUnitForEnterpriseChangedToSurvey
    ENDIF

P61 Procedure to handle Transaction UpdateContactInfoForLocalFromLegalUnit
    Take new Name, address etc. from Legal Units
    IF Enterprise is part of an ActiveSurvey THEN
      Create Message LocalUnitForEnterpriseChangedToSurvey
    ENDIF

P62 Procedure to handle Transaction UpdateContactInforForLocalUnitFromEnterprise
    Take new Name, address etc. from Enterprise

P63 Procedure to handle Transaction UpdateActivityCodeForLocalUnitFromEnterprise
    Take new activity code Enterprise
    Note. This is only called when there is just one activity code and Enterprise not part of a survey

P70. Procedure to handle Transaction TerminateLocalUnit
    Note. Created when enterprise is closed (not take over)
    Set cessationdate = cessationdate of enterprise

P71. Procedure to handle Transaction CheckLocalUnitsAfterCessation
 Note. Created when a legal unit is closed but the enterprise continues with a new Legal Unit as main Unit
Create Unfinished Transaction CheckLocalUnitsForEnterprise
Note. This may be refined at a later stage.

P72. Procedure to handle Transaction TerminateLocalUnitFromLLU
    Set cessationdate = cessationdate of LLU
Note. The unit may already be closed by P70, but it does not matter

PROCEDURES IN RELATION TO TAKEOVER

These procedures has not been finalised. They require a more in depth study on, have this matters are handled in KBRA. It is suggested to just let then issue an unfinished transaction in order to obtain experience in this area and then gradually create procedures for automated updates.

P90 Check for Termination of Enterprise connected to Old Legal Unit

P91 CheckTakeOver

P92 CheckLocalUnitsForTakeOver

Annex 5. Time plan including mission plan

Time plan and mission plan for development of SBR

JUNE 2014	DB-model revision	Plan update procedures	
JULY	DB-model revision	Plan update procedures	
AUG	DB-model revision	Plan update procedures	Mission to review work
SEP	DB-model revision	Plan update procedures	
OCT	Create database (Empty)	Create SQL Procedures	Mission to finalize DB-model and planning Prepare for next actions
NOV		Create SQL Procedures	
JAN 2015	First test load of SBR from KBRA	Plan handling of unfinished transactions	Mission to review SQL procedures and prepare for next actions
FEB		Plan handling of unfinished transactions	
MAR	Planning of Windows application	Create SQL procedures	Mission to review planning and load and prepare next actions
APR	Planning of Windows application	Test procedures for unfinished transactions	
MAY	Develop Windows application		Mission to review unfinished transactions and prepare next actions
JUNE	Develop Windows application		
JULY			Mission to review Windows application and prepare next actions
AUG		Establish procedures for Loading KAS data (from old business register)	
SEP	Load DB with KBRA and KAS data		Mission to review procedures and prepare next actions Presenting SBR for the users Establish rules for feedback
OCT	Testing	Rules for feedback from surveys established	
NOV	System goes in production		Final Mission

Annex 6. Modulus 11

Enterprise numbers and Local Unit numbers is assigned by KAS. The numbers are generated by the update procedures whenever a new unit is created.

These numbers should be created as 10 digit numbers, where the last digit is a check digit according to modulus 11. The base number (the first 9 digits) are taken from a sequence. The check digit is calculated. For some numbers, it is not possible to calculate a valid check digit, then the nest number in the sequence is used as a base number.

Check digits are calculated using the following method

Each digit in the base number is assigned a multiplication factor. The factors are assigned from right to left, starting at two and counting up. For numbers longer than six digits, the factors restart at two after seven is reached. The product of each digit and its factor is calculated, and the products summed, as follows:

```
Base number :  1    6    7    7    0    3    6    2    5
Factor  . . :  4    3    2    7    6    5    4    3    2
               ---  ---  ---  ---  ---  ---  ---  ---  ---
               4 + 18 + 14 + 49 +  0 + 15 + 24 +  6 + 10 = 140
```

The sum of the products is divided by the prime number 11. The remainder is inspected, and:

if the remainder is zero, the check digit is also zero.

if the remainder is one, the check digit is ambiguous, and the base number should not be used as an account number.

for all others, the remainder is subtracted from 11. The result is the check digit.

To continue the example, 140 divided by 11 is 12, with a remainder of 8. 11 minus 8 is 3, so 3 is the modulus 11 check digit for 167703625.

```
Divide sum of products by 11 : 140 / 11 =  12    remainder   8
Confirm  . . . . . . . . . . :  12 * 11 = 132    140 - 132 = 8
Subtract remainder from 11 . :  11 -  8 =   3
```

It is simple to validate numbers using this method. The first nine digits are treated the same way as above. The check digit is added. Now the remainder after division with 11 should be 0, if not, it is not a valid number.

The method catches the most common errors when entering an ID number and for that reason is widely used.