

## The BIRO software

1st EUBIROD Annual Meeting, Dasman Centre, Kuwait City







> BIRO Box: a Graphical User Interface to configure and run all BIRO software tools for the local BIRO system



#### **BIROBox**



### **User Datasets**

#### Compulsory User Datasets

- **Merge table:** each row represents a specific clinical episode of a specific patient. Each  $\geq$ BIRO field should be mapped to a column; patient ID and episode date should be primary keys;
- **Population table:** total population and mortality in the catchment area. The number of persons (dead or alive) should be stratified on the basis of years, age bands and gender.
- Site header and profile contact details of centre/regional referents (provided directly through a specific form)

#### Recommended User Datasets

- activity table: information about the enrolment of patients to the centre, i.e. dates of  $\geq$ entry and exit from the centre and related reasons (birth, diagnosis, transfer toward/from another centre, death, lost to follow-up)
- **diabetic population table:** it is similar to population table but it refers to diabetic patients within the catchment area





#### **BIROBox**

BIRO Box GUI						
i.						
Home		-Heids mapping configurati	on			
		Configure mapping betwe	een	BIRO fields and	local fields	
Go homo		BIRO field		Description of	selected BIRO field	
Gonome		Date of Birth	-	Date of Diago	osis	
		Date of Diagnosis		Date of Diagn	0010	
DIDO A LOCAL	(10)	Patient ID				
BIRO Adaptor	8	Sex				
-		Type of Diabetes				
Configure & Run Adaptor		Alcohol Intake		Extract fro	om local database	
		Amputation		Local field nar	ne	
		Average Injectons	=	datadian		
BIRO Database	*	Blindness		uataulay		
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a consigning and a second second second	-	Creatinine		yyyy-MM-dd		
Configure & Run Database Manag	er	Diabetes Specific Education		ddMMAaaaa		
		Diastolic blood-pressure		dd MM yanar		
Configure & Run Statistical Engli	ne	End Stage Renal Failure		dd-inn-yyyy		
		Episode Date	-	yyyy-mm-aa		
		Eye Examination	-	mm-dd-yyyy		
BIRO Communication software	8	Foot Examination	-			
-		Foot Puise	-			
Configure & Run Communicato	r i i	Foot Sensation	-			
		Poot Uicer	-			
		HDATC	-			
		Height				
		Humantancian	-			
		riypercension				



All main tools of local BIRO System, can be accessed by selecting the appropriate button from the button panel on the left side of the window.

Each BIRO function can be executed separately from the others. Each step has to be triggered by the user.

#### The user may:

- import XML files even if they are produced somewhere else;
- skip the execution of Adaptor and Database Manager if he already has a database in the BIRO format;
- run the Statistical Engine without sending data to central server



Go home Image: Configure & Run Adaptor   BIRO Database   Configure BIRO Database   Configure & Run Database Manager   Configure & Run Statistical Engine   BIRO Communication software   BIRO Communicator	Home	Connection configuration Configure the connection	n n to data source	
BIRO Adaptor   Configure & Run Adaptor   BIRO Database   Configure BIRO Database   Configure & Run Database   Configure & Run Statistical Engine   BIRO Communication software   Configure & Run Communicator	Go home	⊖ database		
BIRO Database	BIRO Adaptor 🛞	DBMS driver database host and port database name	PostgreSQL <org.postgresqldriver></org.postgresqldriver>	+
Configure BIRO Database         Configure & Run Database Manager         Configure & Run Statistical Engine         BIRO Communication software         ©         Configure & Run Communicator             Previous    Next	BIRO Database	database username database password		
BIRO Communication software       activity file name       ts and SettingsiValentina\Desktop\activityMalta.csv       Brownerstein         Configure & Run Communicator       : •       •         Previous       Next	Configure BIRO Database Configure & Run Database Manager Configure & Run Statistical Engine	csv file merge file name	C1Documents and Settings/ValentinalDesktop/ma	Brow
Configure & Run Communicator	BIRO Communication software	activity file name	ts and Settings\Valentina\Desktop\activityMalta.csv	Brows
Previous Next	Configure & Run Communicator	separator		
		Previo	us Next	

- The first step of the Adaptor configuration is the setting of the connection to the local data source.
- This can be a database or a CSV file.



Home 😞	Mergetable configuration		
Go home	select the mergetable from already	present table	
	mergetable		
BIRO Adaptor 🛞	select interval for enisode d	atae	
Configure & Run Adaptor	episode date column name	episode_data	] [
DIDO Dotahana	starting date for episodes	23/03/2001	
	ending date for episodes	21/03/2002	
Configure BIRO Database	Select the mergetable from a custor	n querv	
Configure & Run Statistical Engine		· · ·	
BIRO Communication software			
Configure & Run Communicator			



- In the second step the user has to configure the merge table.
- If the merge table is not present in the local database, the user may create it by writing the appropriate SQL query in the text area.
- The user may choose to import the whole merge table or just a subset of records, by defining start date and end date for episodes.
- A similar configuration is required for activity table



Home	Data source configuration		
	Configure static BIRO fields		
Go home	Site header fields		
	Field	Value	
	Clinical Contact	Massimo Massi Benedetti	×
BIBO Adaptor	Clinical Contact Email Address	massi@unipg.it	
	Country of Origin	Italy	
Configuro 8 Pun Adaptor	Data Source ID	2	
Conligare a Run Adaptor	Data Source Name	Umbria Diabetes Register	
	Mailing Address	via E.dal Pozzo	1
	Mailing Address	Perugia	
BIRO Database	Mailing Address	Italy	
	Mailing Address		
Configure BIRO Database	Post Code	I-06126	
Configure & Dup Database Manage	Technical Contact	Valentina Baglioni	
Configure & Run Database Manage	Site profile fields		
Configure & Run Statistical Engine	e Field	Value	
	Data Source Denominator	value	100000
	Data Source Denominator		100000
BIRO Communication software	Diabetologists	1	33
	Disease Management Programmes	1.	
Configure & Run Communicator	Doctors	1.	
	Geographical Area		
	Hospital Beds	1.	
	Physicians	3	
	Specialist Diabetes Nurses	1	
	Previous	Next	
		A BARTAN	

In the data source configuration panel the user has to input static information about the centre (data souce ID, clinical and technical contacts...) and about the catchment area of the centre (total population, number of diabetologists, nurses, doctors...).





### **BIRO DB configuration**

Configure Java database com BIRO DBMS driver BIRO database host and port BIRO database name	nection to BIRO database PostgreSQL <org.postgresqldriver></org.postgresqldriver>
BIRO DBMS driver BIRO database host and port BIRO database name	PostgreSQL <org.postgresql.driver> +</org.postgresql.driver>
BIRO database host and port BIRO database name	localhost
BIRO database name	
	birodatabase
BIRO database username	Valentina
BIRO database password	•••••
	No.
	Save BIRO database configura
	BikO database password

- The user needs to configure a database which will be considered the local BIRO database and will be used as basis for analysis by Statistical Engine
- URL details (DBMS Driver, database name, host and port) and login details (username and password) of chosen database are requested to the user.



6		
-	Fields mapping configuration	1
Home 🌸	Configure mapping betwee	n BIRO fields and local fields
	BIRO field	Departmention of palasted DIDO field
Go home	Date of Birth	Description of selected birto field
	Date of Diagnosis	Date of Diagnosis
	Patient ID	
BIRO Adaptor 🛞	Sex	
	Type of Diabetes	10 10
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	Amputation	Local field name
	Average Injectons	=
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Unit Database	BMI	P. L. M. S. MARA R. M.
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Configure BINO Database	Creatinine	yyyy-MM-dd
Configure & Run Database Manager	Diabetes Specific Education	delatation
	Diastolic blood-pressure	uu/www.yyyy
Configure & Run Statistical Engine	End Stage Renal Failure	aa-ww-yyyy
1	Episode Date	yyyy-mm-dd
	Eye Examination	mm-dd-yyyy
BIRO Communication software	Foot Examination	12
	Foot Pulse	
Configure & Run Communicator	Foot Sensation	
	Foot Ulcer	
	HbA1c	
	HDL	
	Height	
	Hypertension	
	Hypertensive Medication	•



- The most complex configuration step of Adaptor is the mapping between local fields and BIRO fields.
- For each BIRO fields the user must specify if the field can be extracted, the local name and data format. There are four types of field:
  - Date fields: the mapping is done by choosing the date format in use locally
  - Enumerated fields: for each enumerated value the user has to write the correspondent value in local data source.
  - Numeric fields: the user has to choose the unit of measurement adopted in the local data source
  - Simple fields, like patient ID and BMI, don't require any mapping



#### Statistical Engine configuration

	Statistical Engine Configu	ration		
Home	Source O ct	sv 🛞 RIRO datahase		
Go home		n o uno unuouse		
	Centre ID	2		
BIRO Adaptor	S Current year			2
Configure & Run Adaptor	Start date	28/03/2006		
	End date	28/03/2009		
IRO Database	Reference date	30/06		
Configure BIRO Database	Population file			Bro
Configure & Run Database Manager	Diabetic population file			Bre
BIRO Communication software	8			
Configure & Due Communicator				
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B. R. D Executive Agency fo			Run Stati	stical Engine

- The Statistical engine requires few data to be configured
  - centre ID
  - current year
  - start date and end date (time interval for data analysis)
  - reference date
  - population file and diabetic population file (CSV)
- Every time the user runs the Statistical Engine, a statistical report is produced in html and PDF format, stored in folders named with the current timestamp

# **Communicator configuration**

ome       Image: Comparison of the sent:         Go home       Id       Institution Comparison         RO Adaptor       Id       Institution Comparison         Configure & Run Adaptor       Id       Image: Configure & Run Adaptor         RO Database       Image: Configure & Run Database       Image: Configure & Run Database         Configure & Run Database       Image: Configure & Run Database       Image: Configure & Run Database         Configure & Run Database       Image: Configure & Run Database       Image: Configure & Run Database         Configure & Run Database       Image: Configure & Run Communicator       Image: Configure & Run Database         RO Communication software       Image: Configure & Run Communicator       Image: Configure & Run Communicator         Send the following statistical object: #170209221014       Image: Configure & Run Communicator         Send the following statistical object: #170209221014       Image: Configure & Run Communicator		Communicator Cont	figuration		
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d         creation date         last standing date         se           If 0200921420         2009-0217 221426         empty         impty	1	Please choose a sta	itistical object to be sent:		
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R0 Adaptor       #170209220427       2009-02-17 22:0427.0       empty		#170209212406	2009-02-17 21:24:06.0	empty	0
RO Adaptor       #170209220755       2009-02-17 22:07-55.0       empty       •         Configure & Run Adaptor       #17020922104       2009-02-17 22:142:60       empty       •         RO Database       •		#170209220427	2009-02-17 22:04:27.0	empty	<u>Q</u>
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Configure & Run Adaptor         #170209221638         2009-02-17 221638.0         empty         O           RO Database         Configure BIRO Database         2009-02-17 221632.00         empty         O           Configure & Run Database Manager         Configure & Run Statistical Engine         2009-02-21 15:35330.0         empty         O           RO Communication software         Configure & Run Communicator         Send the following statistical object: #170209221014         Send		#170209221014	2009-02-17 22:10:14.0	empty	
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RO Database       Image: Configure BIRO Database       Image: Con		#170209222106	2009-02-17 22:21:06.0	empty	8
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- The Communication Software panel shows the complete list of statistical objects created by the Statistical Engine to be transferred to the central engine
- For each statistical object, the creation last sending date are duly specified
- When the user selects one of the statistical objects from the list and clicks the "send" button, the Communication Software creates a compressed folder and sends it to central server where it will be decompressed and permanently stored in the central database



Discussion



Kuwait City, 2<sup>nd</sup>-4<sup>th</sup> May 2009

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#### Discussion

