

»» **InfoTech-Cs**  
Reverse Data Modelling  
- Work Flow



# Data Modelling – Work Flow

## ➤ RestNat

- Include DDM's and System Library
- DDM Usage in Application
- Select Part of Application (Call Graph - Related objects)
- Save Objects for RestDDM processing

## ➤ RestDDM

- Import objects
- Reverse Relations Between DDM from Programs

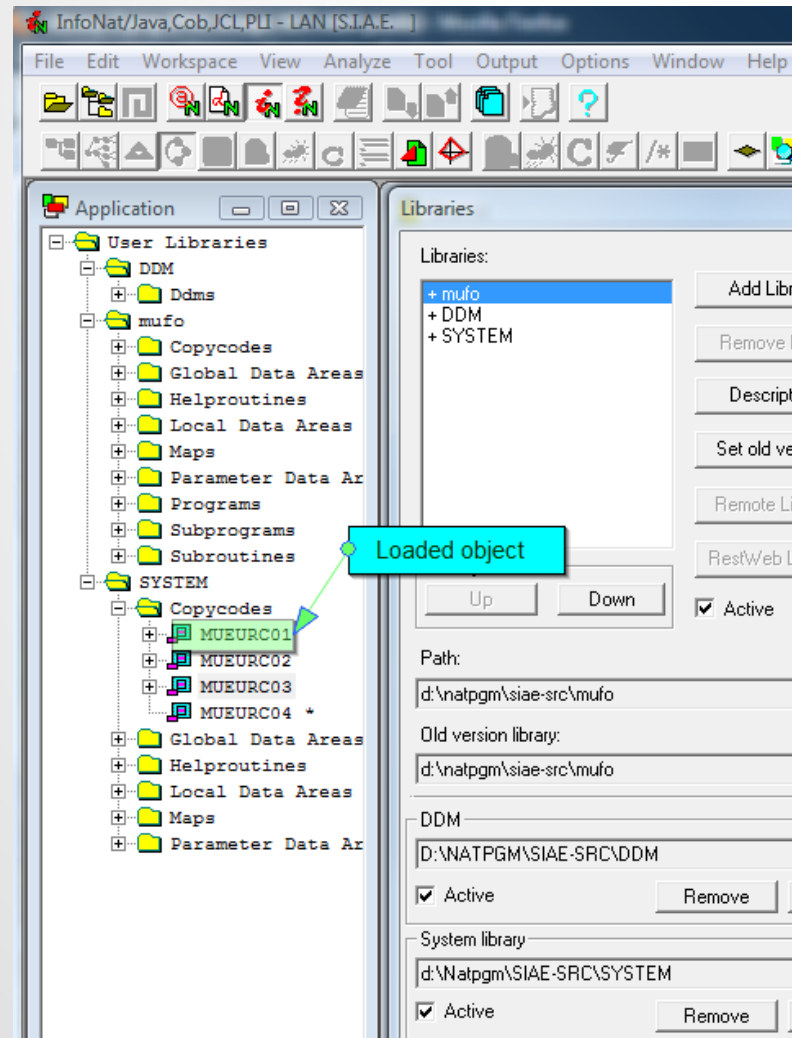
## ➤ RestDM

- Publishing Data Model, Call Graph in Browser (I.E.)



# RestNat - Include DDM's and System Library

Loaded Objects when running Analysis (Copycode, Data Area ..)



# RestNat - DDM Usage in Application

InfoNat [S.I.A.E.] - Call graph tool

File Edit Workspace View Analyze Tool Output Options Window Help

Application

- DOPE-FORMAZIONI
- DOPE-LIMITI
- DOPE-PERM-ANAG
- DOPE-PERM-OPER
- DOR-RIPAR
- DOR-RIPAR2
- DOPE-M424-SOSP
- DOUT-UTIL
- DOVPA
- DOVPA\_SORT
- DRM-DRMI**
- Used
- EDITORI
- ELABORATI-SSI
- ELABZ\_TEMP
- ELEZ-ANAG

Source: DRM-DRMI.NSD

```
0000DEFINE DATA LOCAL
00100 DRM-DRMI VIEW OF DDM-5298-1
0020*
0030* T L DB Name           F Leng  S D Remark
0040* -----
0050*   Generation started
0060*   at 2010-05-17 15:26:38
0070*   by user SPINELLI
0100* GIBUSUPP-CODS           A0010N
0110* 2BASUPP-BARCODE         N0130N Barcode
0120* Barcode
0130* 2BBSUPP-DRM-COD       A0130NNum. SIAE univoco
0140* Num. SIAE univoco
0150* 2BCSUPP-PROD-COD       A0080N Cod. Produttore (ANA
0160* Cod. Produttore (ANAG-DRMI)
0170* M2BDSUPP-CATL-COD     A0200NNumero di catalogo
```

Click Relation

Select DDM

# RestNat - DDM Usage in Application

The screenshot displays the InfoNat [S.I.A.E.] - Flow graph tool interface. The main window is divided into two panes. The left pane shows the source code for a program named MUFONTG4.NSP. The right pane shows the relations for the program, specifically the CLASF-DRMI relation.

**Source: MUFONTG4.NSP**

```
6680*
6690 IF D-AA-LIQ-N GT 50 /* 110901
6700 MOVE 19          TO SEC-AA-LIQ /* 110901
6710 ELSE /* 110901
6720 MOVE 20          TO SEC-AA-LIQ /* 110901
6730 MOVE D-AA-LIQ-N TO AA-LIQ-N /* 110901
6740*
6750 IF ANNO-LIQ GT 2000 DO /* 110901
6760*
6770   IF N-ISN-APPO NE 0 DO
6780     GET CLASF-DRMI N-ISN-APPO
6790     IF X-SI EQ 'SI'
6800       UPDATE (6780)
6810       CLASF-SEM      = D-SEM-LIQ-ALF
6820       CLASF-COMP     = I-IMPO
6830       CLASF-COEF    = N-COEF
6840       ELSE DO
6850         IF CLASF-LIQ (6780) NE ' '
6860           REINPUT '- RENDICONTO LIQUIDATO'
6870           DELETE (6780)
6880           DOEND
6890       DOEND
6900     ELSE
6910     IF X-SI EQ 'SI' DO
6920     STORE CLASF-DRMI
6930     CLASF-PROD = C-PROD
6940     CLASF-SEM-REND = O-SEM
6950     CLASF-TRIM  = N-TRIM
```

**Relation: CLASF-DRMI**

Relation	Attributes
AGGCLASF	R, U
BLOCZBG1	F, G
MARCHIO1	R
MUFOGTE9	R, G
MUFOGTEA	R, G
MUFOGTEB	R, G
MUFOGTEC	R, G
MUFOIBEI	R, G
MUFONTG2	R
MUFONTG4	F, S, U, G, D
MUFONTG5	F, U, G, D
MUFONTI1	F
MUFONTSH	F
MUFOTBS4	R
MUFOTTSA	R
MUFOXTG1	F, U
MUFOZBG1	F, G
MUFOZBG3	R, U, G
MUFOZBG5	R, G
MUFOZBS3	R, G

Annotations in the image include:

- DDM**: A box pointing to the CLASF-DRMI relation header.
- PGM**: A box pointing to the MUFONTG4.NSP source file name.
- Find, Store, etc.**: A box pointing to the MUFONTG4 relation entry in the list.

# RestNat - DDM Usage in Application

The screenshot displays the InfoNat [S.I.A.E.] - Flow graph tool interface. The window title is "InfoNat [S.I.A.E.] - Flow graph tool". The menu bar includes "File", "Edit", "Workspace", "View", "Analyze", "Tool", "Output", "Options", "Window", and "Help". The toolbar contains various icons for file operations, editing, and analysis.

The interface is divided into three main panels:

- Left Panel (Application Tree):** Shows a hierarchical tree of application components. The "Used" folder is expanded, listing several components. A red circle labeled "1" highlights the "Application" folder, and a red circle labeled "2" highlights the "AGGCLASF" component. A blue "Select" callout points to the "AGGCLASF" component.
- Middle Panel (Source Code):** Displays the source code for "AGGCLASF.NSP". The code includes comments and SQL-like statements:

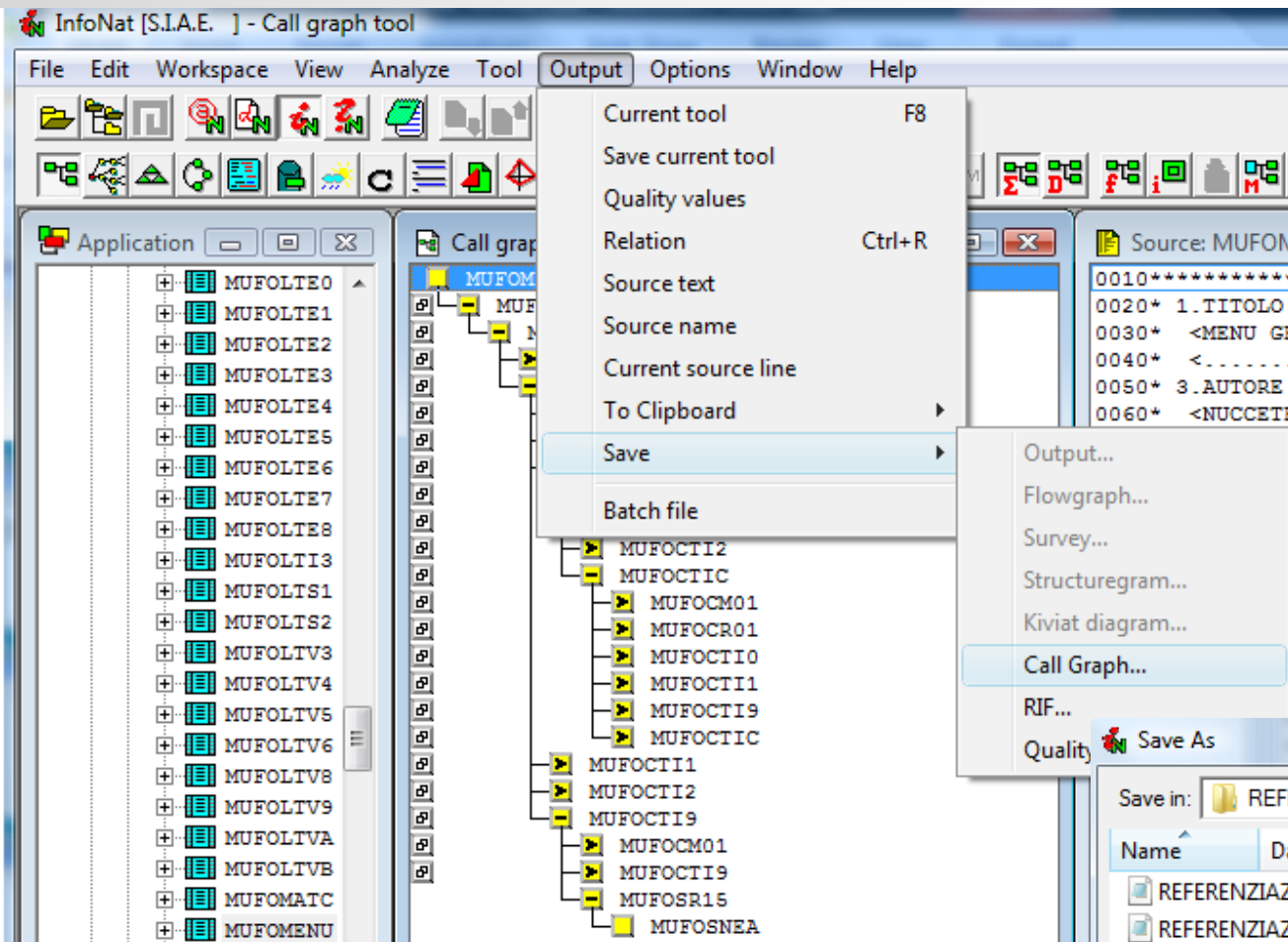
```
0010*  
0020* AGG. CLASSIFICHE  
0030*  
0040FORMAT CV=22  
0050FORMAT(2) CV=65 LS=100  
0060READ CLASF-DRMI BY CLASF-PROD-SEM-REND = 'V'  
0070 IF CLASF-PROD NE 'V0001155'  
0080 ESCAPE  
0110/ CLASF-SEM-REND CLASF-COMP  
0120 UPDATE SAME  
0130 ADD 1 TO R-AGG(P3)  
0140 IF R-AGG GE 5 DO  
0150 RESET R-AGG  
0160 END TRANSACTION  
0170 DOEND  
0180LOOP  
0190IF R-AGG GT 0  
0200END TRANSACTION  
0210*  
0220END
```
- Right Panel (Flow Graph):** Displays a flow graph for "aggclasf/.main". The graph consists of a vertical sequence of nodes connected by lines, with a large purple loop on the left side and a smaller yellow loop on the right side.



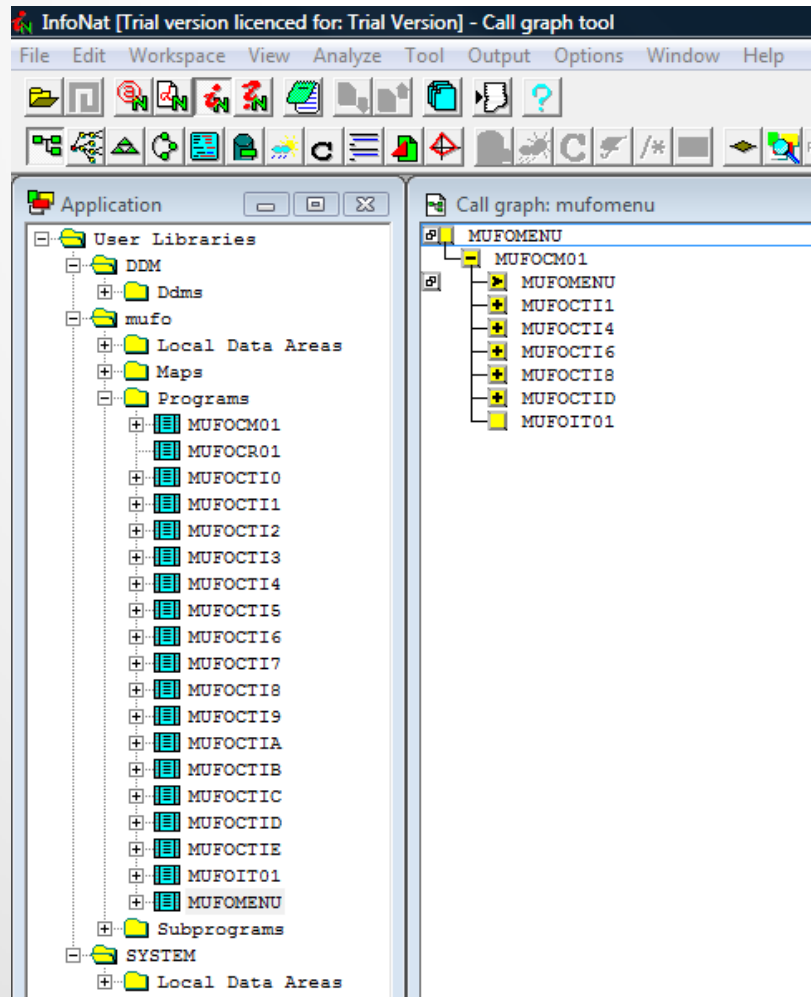
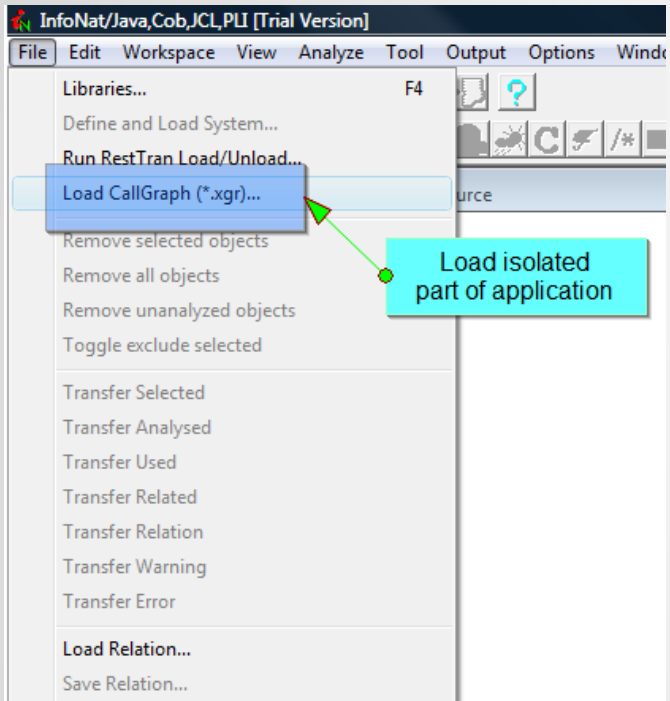




# RestNat – Save Objects for RestDDM processing



# RestNat – Load Isolated Part of Application



# RestNat – Call Graph and Map Draft

The screenshot displays the InfoNat software interface with three main components:

- Call Graph (Left):** A tree view showing the structure of the program. The 'MUFOMENU' node is selected, indicated by a green arrow and a callout box labeled '1' with the text 'Select'.
- Source Code (Middle):** A window titled 'Source: MUFOMENU.NSP' showing the source code. A green arrow points to a specific line of code, with a callout box labeled '2' and the text 'Click on Map'.
- Map Draft (Right):** A window titled 'Maps: mufomenu' showing the 'Map Draft' for 'MUFOMENU'. A green arrow points to the 'Map Draft' label, with a callout box labeled '3'.

The source code in the middle window includes the following lines:

```
0920*
0930RESET M-CURS (A32)
0940 X-CURS-ELE (N2)
0950REDEFINE
0960 M-CURS (M-CURS-ELE (N2))
0970*
0980* -- M A I N   L I N E
0990*
1000* ASSIGN M-CURS = '06070809101112131415161718192021' 150208
1010ASSIGN M-CURS = '06070809101112131415161718'
1020* MOVE *INIT-ID TO W-INIT
1030* REDEFINE W-INIT (SS (A2) 2X)
1040MOVE *PROGRAM TO W-PROGRAM
1050* MOVE *DAID TO W-DAID 150208
1060* MOVE *TIME TO W-TIME
1070MOVE *PROGRAM TO C-PROGRAM
1080* -- ABILITAZIONE FUNZIONI TAB 86 ELEM 502
1090RESET X-ABIL (N1)
1100PERFORM CONTR-ABIL
1110*
1120REPEAT
1130 MAP USING MAP 'MUFOVMEN' X-CURS-01 X-CURS-02
1140 X-CURS-03 X-CURS-04 X-CURS-05
1150 X-CURS-06 X-CURS-07 X-CURS-08
1160 X-CURS-09 X-CURS-10 X-CURS-11
1170 X-CURS-12 X-CURS-13 /* X-CURS-14 X-CURS-15 X-CURS-16 150208
1180 C-AREA T-MSG-MAP
1190 MOVE *CURSOR TO W-CURSOR
1200*
1210 IF W-CURS-LINE EQ 5
1220 AND (*USER EQ 'VIOLAS' OR
1230 *USER EQ 'MOZZETT' OR
1240 *USER EQ 'FABIANIO') DO /* 151208
1250**ATCH 'LOG-COF' /* 151208
```

The map draft in the right window shows the following content:

```
MAP using map MUFOVMEN

Map draft: MUFOVMEN

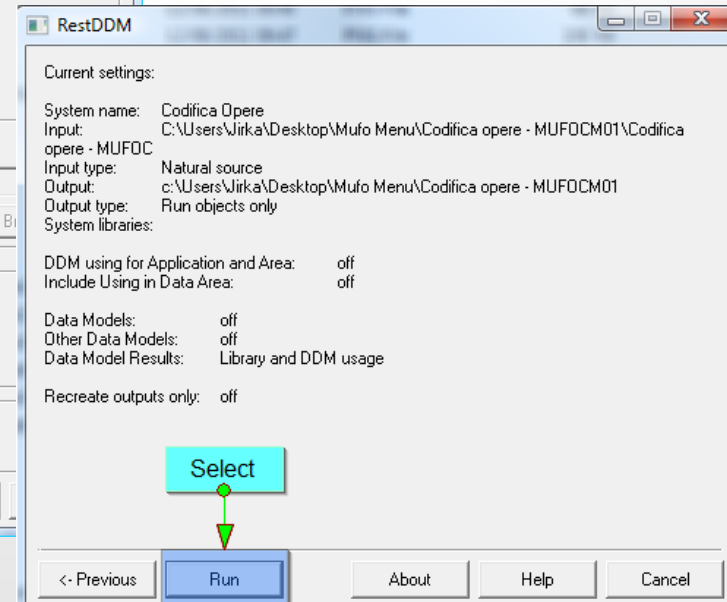
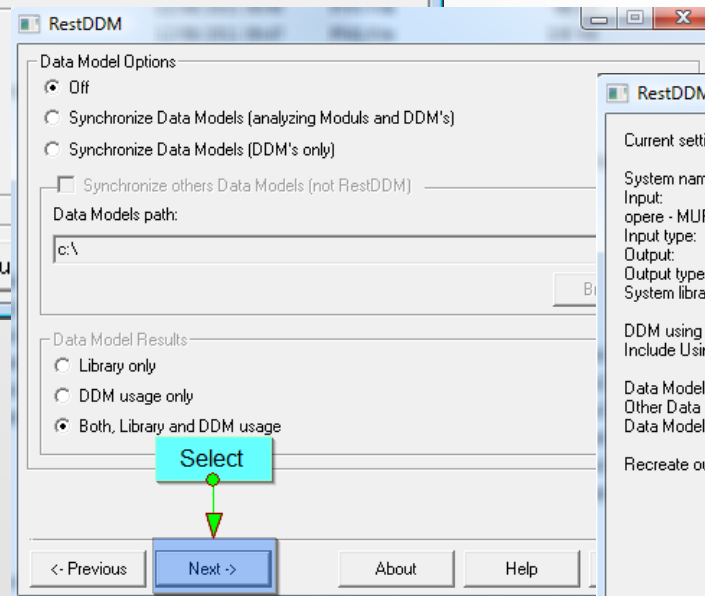
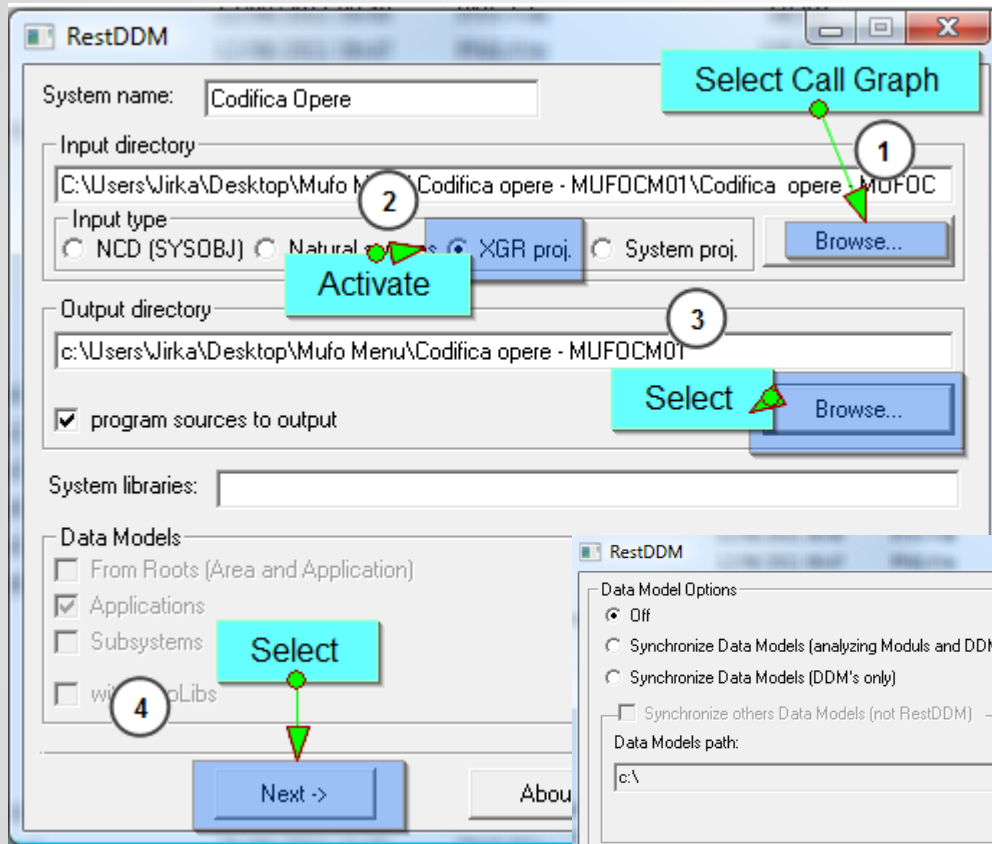
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DIRITTI DI RIPRODUZIONE FONOMECCANICA (D.R.F.) ITALIA

- MENU GENERALE -

m Referenziazione Supporti (S)
m Anagrafe Produttori (P)
m Anagrafe Marchi (M)
m Listini, Minimi e Percentuali (L)
m Codifica Opere (C)
m Fabbricanti (F)
m Transitorio per Rendiconti (T)
m Rendiconti (N)
m Ripartizione (Z)
m Quadratura contabile Produttori (Q)
m Interrogazioni e Stampe (I)
m Statistiche e Grafici (G)
m Operazioni di Servizio

STD= ... AREA= ... DATA/ORA= ...
```

# RestDDM – Import objects, Data Analysis



# RestDDM- Reverse Relations Between DDM from Programs

File Edit View Favorites Tools Help

Page Safety Tools

**DDM Relations: MATRIX**

DDM	Rel. DDM
ANAG-DRMI	1
DRM-DRMI	3
MOVN-DRMI	1
OPE-MCDEM	1

Export

**DDM - DRM-DRMI, Relations:**

Related DDM	Object			CALLNAT			Field	Related Field
	Library	Object	Type	Library	Object	Type		
ANAG-DRMI	mufo	MUFOCT18	NSP				SUPP-PROD-COD	PROD-COD
ANAG-DRMI	mufo	MUFOCT19	NSP				SUPP-PROD-COD	PROD-COD
ANAG-DRMI	mufo	MUFOCT1A	NSP				SUPP-PROD-COD	PROD-COD
MOVN-DRMI	mufo	MUFOCT12	NSP				SUPP-DRM-COD	MOVN-DRM-COD
MOVN-DRMI	mufo	MUFOCT1B	NSP				SUPP-DRM-COD	MOVN-DRM-COD
MOVN-DRMI	mufo	MUFONN02	NSN				SUPP-DRM-COD	MOVN-DRM-COD
MOVN-DRMI	mufo	MUFOSNV1	NSN				SUPP-DRM-COD	MOVN-DRM-COD
MOVN-DRMI	mufo	MUFOSR15	NSN				SUPP-DRM-COD	MOVN-DRM-COD
OPE-MCDEM	mufo	MUFOCT17	NSP				SUPP-OPER-COD	AB-CDNEW-101
OPE-MCDEM	mufo	MUFOCT1E	NSP				SUPP-OPER-COD	AB-CDNEW-101

Export

Note: RestDDm output is for Internet Explorer Only

PREVIOUS NEXT FILTER UNLOAD SAVE LOAD to RestNat

Total: 1 0

```

2110*
2120MOVE ALL H'F0' TO M-ISN
2130*
2140IF N-ISN-OPER NE 0
2150MOVE N-ISN-OPER TO N-ISN-REC
2160GET DRM-DRMI N-ISN-REC
2170MOVE SUPP-DRM-COD (2160) TO C-DRM
2180MOVE SUPP-OPER-TITL (2160) TO T-TITL
2190MOVE SUPP-OPER-COD (2160) TO C-OPE
2200*
2210MOVE T-FAPR TO Relation
2220MOVE ' 000' TO Relation source
2230* -- ANNO 2000
2240CALLNAT 'SIAETE29' D-SEM-BLOC3 D-SEM-BLOC5 (N5)
2250CALLNAT 'SIAETE30' D-AUTR6 D-AUTR8 (N8)
2260*
2270FIND MOVN-DRMI MOVN-DRM-COD = C-DRM
2280 WHERE MOVN-VEND-STS NE 'S'
2290 AND MOVN-AUTR-STS NE 'S'
2300*
2310 IF MOVN-IDEN LE '01' DO
2320 ACCEPT MOVN-SEMS-RENDS GE D-SEM-BLOC5
2330 MOVE MOVN-VEND-QTY (2270) TO Q-QTY (N7)
    
```



# RestDM – Import Data Model

RestDM - untitled

File Edit Component Model View Tools Plug-ins

New Model Ctrl+N

Open Model... Ctrl+O

Open from URL/Internet...

Reopen

Save Ctrl+S

Save As...

Export

1 Merge model from... **Select**

Import

Import and filter DDM...

Page Layout...

Print Preview...

Print...

Exit

DDM Filtering

Options

DB 0

All DB

Create new model

Remove duplicated rels

Usage

Usage filter

define

DELETE

ACCESS

STORE

UPDATE

Name

Filter Off

Import	Name	Usage	DB	File
<input checked="" type="checkbox"/>	ANAG-DRMI	A	1	5308
<input checked="" type="checkbox"/>	DRM-DRMI	dAU	1	5298
<input checked="" type="checkbox"/>	MOVN-DRMI	dSAU	1	5928
<input checked="" type="checkbox"/>	OPE-MCDEM	dA	1	6018
<input checked="" type="checkbox"/>	SIS-ANAGRAF	dA	1	5508
<input checked="" type="checkbox"/>	TABELLE	dA	1	5208

Deselect All Select All Open file... Apply

Open DDM file to filter

Look in: Datamodels

- Mufo Menu
  - Codifica opere - MUFOCM01
    - RestDDM
      - Datamodels**
- DVD RW Drive (G:)
- Network
- Jirka
- Applications

Recent Items

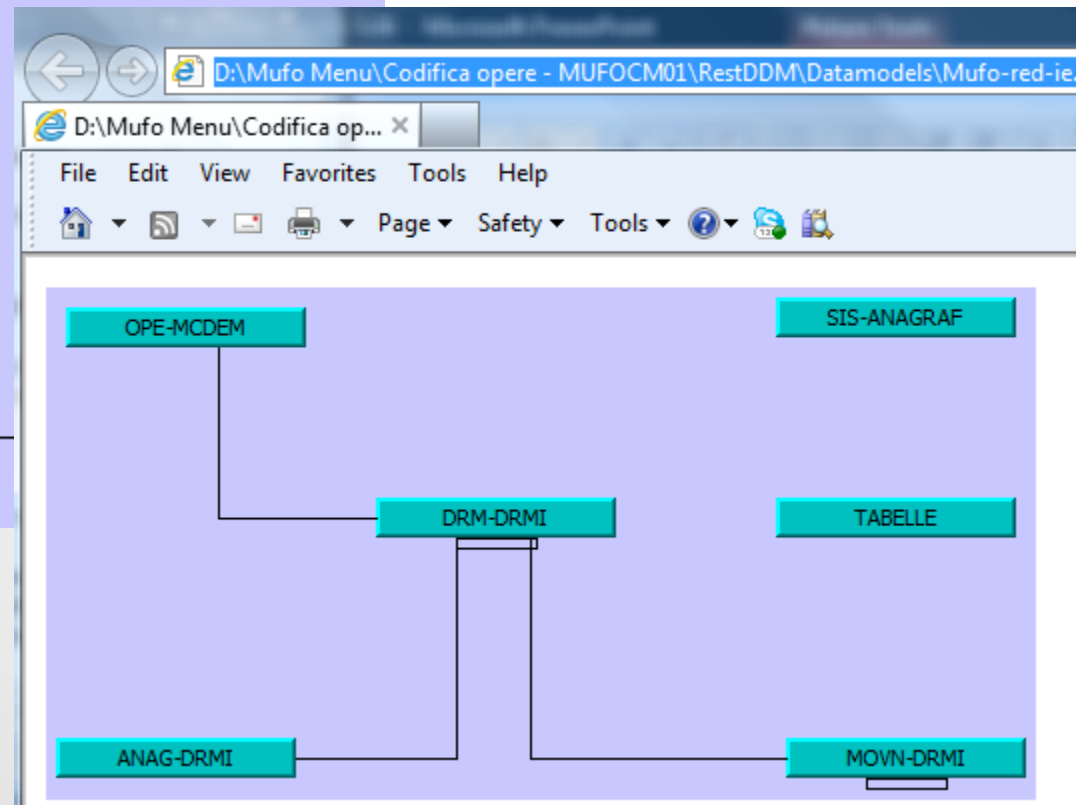
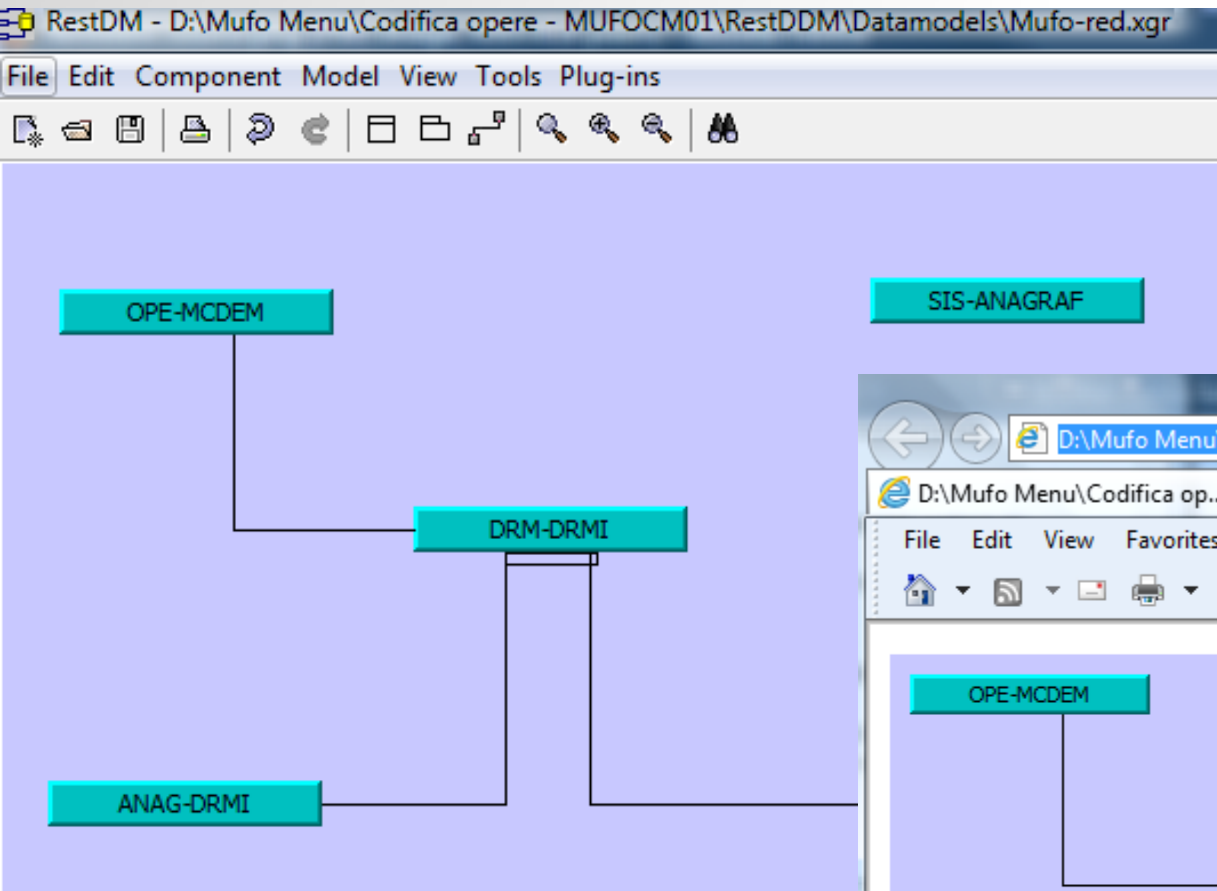
Desktop

RestDDM output folder

InfoTech-Cs



# RestDM- Publish Data Model in Browser (I.E.)



# RestDM - Publish Call Graph in Browser

The image displays the RestDM software interface. The main window shows a call graph with nodes labeled MUFOCM01, MUFOCT11, MUFOCT12, MUFOCR01, MUFOCT10, MUFOCT19, and MUFOCTIC. A menu is open over the graph, with 'Export model' selected, and a sub-menu showing options like 'RestDM Viewer...', 'Only active model...', 'RestWeb input data and HTML...', 'JPG image...', 'PNG image...', and 'To Excel...'. An inset window shows the browser-based view of the call graph, which is more detailed, including nodes like MUFOCTIC and MUFOCT19. The browser window title is 'C:\Users\Jirka\Desktop\Mufo Menu\Codifica opere - MUFOCM01\Codifica opere - MUF...' and the address bar shows 'C:\Users\Jirka\Desktop\Mufo Menu\Codifica opere - MUFOCM01\Codifica opere - MUF...'. The browser window also shows a menu with 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'.

Thank you for your attention

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