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The Data bases

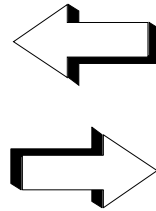
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THE DATA BASES

The data transfer between ICS-telecom and external data bases is done using an ODBC/DAO link

External
Data Bases
ICSTel99.mdb
ICSTel2000.mdb
MS™ ACCESS™
file



The export of ICS-telecom objects toward external data base is done either from the terrain and concerns activated objects of Station and Microwave link types, or from the DB station database.

The external data may be imported in ICS-telecom either on map, or directly in the DB station et DB mw internal data bases.

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THE DATA BASES

The ICS-telecom objects can be stored in the internal ICS-telecom data bases



Record	Cover	Callign	Address	type	Frequency	Power	Antenna	Distance	Selected
1	C	c717734	address	T/R	190	50.0000	15.00	0.00	Yes
2	C	c295269	address	T/R	190	50.0000	15.00	0.00	Yes
3	C	c271277	address	T/R	190	50.0000	15.00	0.00	Yes
4	C	c371562	address	T/R	190	50.0000	15.00	0.00	No
5	N	c113851	address	T/R	190	50.0000	15.00	0.00	No
6	N	c595321	address	T/R	190	50.0000	15.00	0.00	No
7	N	c691640	address	T/R	190	50.0000	15.00	0.00	No
8	N	c955320	address	T/R	190	50.0000	15.00	0.00	No
9	N	c237525	address	T/R	190	50.0000	15.00	0.00	No
10	N	c113851	address	T/R	190	50.0000	15.00	0.00	No

3 / 10 selected

Objects of Station and Microwave link types set up on the terrain, may be stored in the DB station and DB mw data bases. The objects contained in DB station and DB mw and DB Subscribers data bases can be imported on the terrain.

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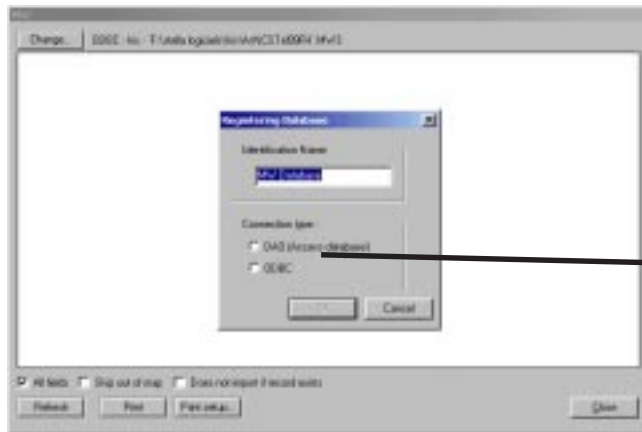
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DATA TRANSFER WITH THE EXTERNAL DATA BASES

1. EXAMPLE: CONNECTION TO THE MW TABLE OF THE ICSTel99.MDB DATA BASE USING DAO

1- Select the **ODBC / Microwave links table** function of the **Database** menu

2- A first message offers to connect ICS-telecom with the ICSTel99.mdb database located in the C:\ICS directory. The answer Yes establishes automatically the connection with the default table. The answer No cancels the connection action.



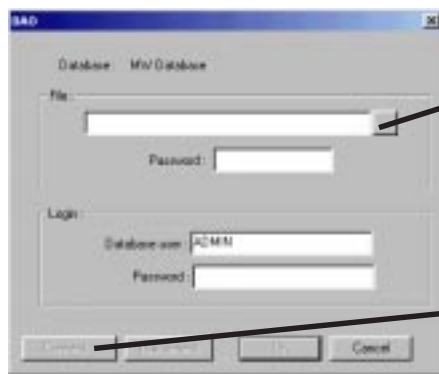
3- In both cases, the **MW** box is open. Beside the **Change** button, the name and disk path of the .mdb data base is displayed. Click on the **Change** button to specify the data base to be loaded.

The **Registering Database** box is open.

Enter the link name in the *Identification name* field. By default, the system offers the name *MW database*.

Select the type of connection: ODBC or DAO. The DAO type is dedicated to the connections with ACCESS (.mdb) data bases. For the present example, choose DAO type.

Confirm with the OK button.



4- The **DAO** box is open.

Click on the 3 points button.

A file box is open. Search on disk the location of the ICSTel99.mdb file containing the database, then confirm and close the file box with the OK button. The disk path and the .mdb file name are displayed in the *File* field.

Click on the **Connect** button.

The connection is established. Confirm and close the DAO box with the OK button.

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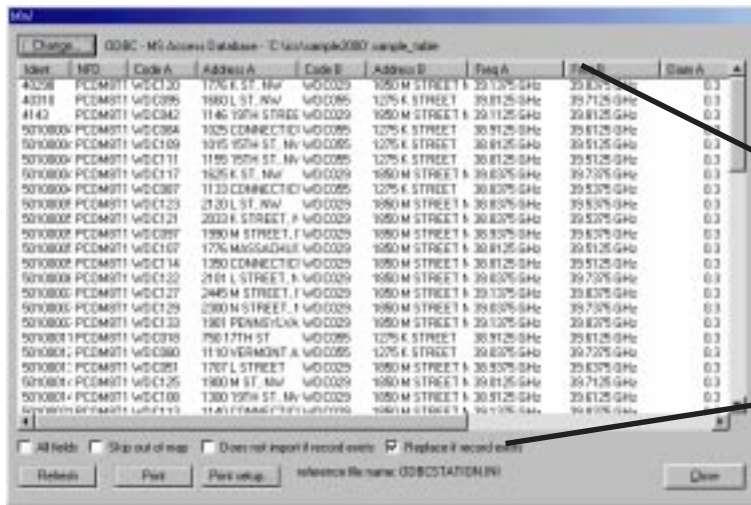
DATA TRANSFER WITH THE EXTERNAL DATA BASES



5- The user must select the MW table to be displayed. Click on the OK button
6- The **Select Table** box is open and lists all the tables contained in the database. Click in the list on the table name



Confirm and close the Select Table box with the OK button
A **Security** message offers to save the password for later connections. The answer yes keeps the password in a file. The answer no does not keep the password.



7- The **MW** box displays the content of the chosen MW table. By default, the MW box displays some fields of the table, and all the records . The column can be expanded or reduced: click left between two columns, keep clicking and move the mouse to the right or to the left.



The MW box offers three options:

- **All fields:** displays all the fields of the table
- **Skip out of map:** displays only the records which coordinates correspond to the geographic area of the current project
- **Does not import if record exists:** verifies the presence of the records in the internal database and imports only the records that are not present
- **Replace if record exists:** replace the record already present in the internal base by the new record imported from the table

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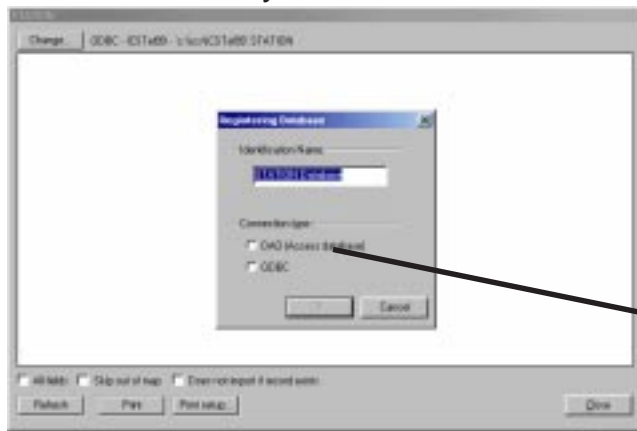
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DATA TRANSFER WITH THE EXTERNAL DATA BASES

2. EXAMPLE : CONNECTION TO THE STATION TABLE OF THE ICSTel99.MDB DATABASE USING ODBC

1- Select function **ODBC / Station table** of the **Database** menu

2- A first message offers to connect ICS-telecom with the ICSTel99.mdb database located in the C:\ICS directory. The answer Yes establishes automatically the connection with the default table. The answer No cancels the connection action.



3- In both cases, the **Station** box is open. Beside the **Change** button, the name and the disk path of the .mdb database are displayed.

Click on the **Change** button to specify the database that has to be loaded.

The **Registering Database** box is open.

Enter the link name in the **Identification name** input field. By default, the 'Station database' is offered and can be used.

Select the connection type: ODBC or DAO. For our example, choose the ODBC type. Confirm with the OK button.

4- The **Select data source** box is open.

Click on the **Machine data source** tab. If no machine data source exists, a new one has to be created.

Click on the **New** button. The Windows Wizard will guide you to create the new data source.

In the first screen, choose the source type (fig 1).

Then click on **Next**

In the second screen, chose the driver (fig 2). In our example, choose Microsoft Access driver (.mdb).



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DATA TRANSFER WITH THE EXTERNAL DATA BASES

Click on **Next**

The third screen enumerates the characteristics of the new data source for control (fig 3).

Click on **Finish**.



fig 1

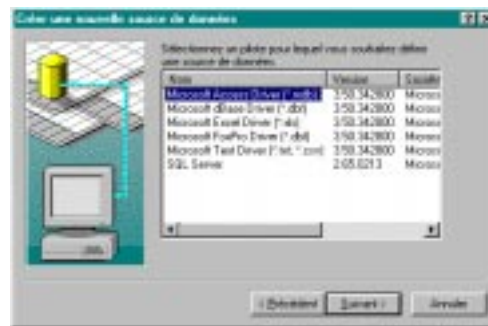


fig 2

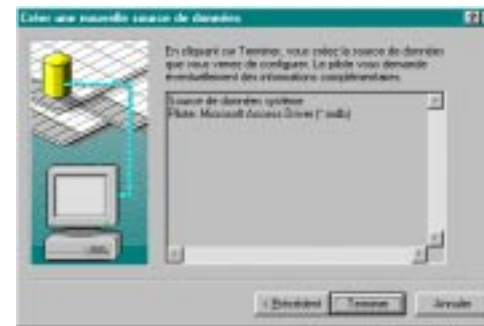
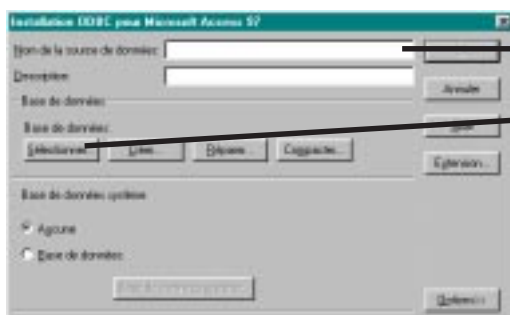


fig 3



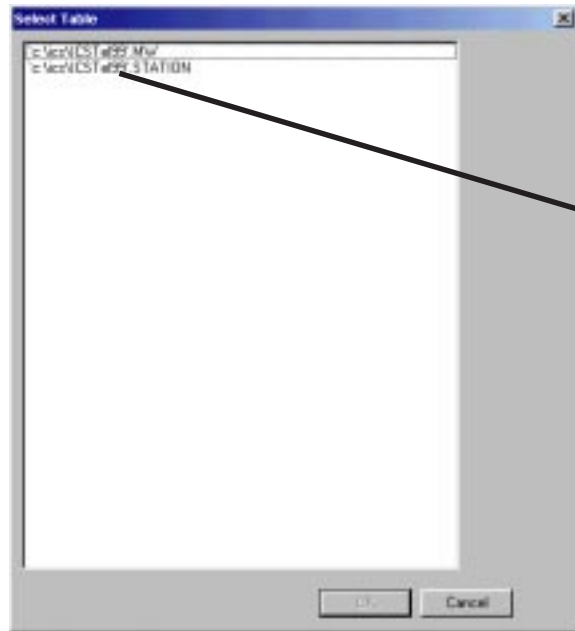
The **ODBC Installation** box is open. In the *Data source name* field, enter a name that will allow you to identify the source. Click on **Select** to designate the ICSTel99.mdb file. Confirm and close the file box with OK.

The **Select the data source** box is open. The new data source is added to the list. Click on the data source name and confirm with OK.

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DATA TRANSFER WITH THE EXTERNAL DATA BASES



5- A Message box prompts the user to select the table to be loaded. Click on OK

6- The **Select Table** box is open and lists all tables contained in the data base.

In the list, click on the Station table



Confirm and close the Select Table box with OK

A **Security** message offers to save the password for later connections.

The answer *yes* saves the password in a file.

The answer *no* does not keep the password.

A **Compatibility** message asks for the separator symbol used:

yes for comas (ORACLE 8 FR)

no for points (majority of cases)

7- The Station box displays the contents of the chosen Station table.

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DATA TRANSFER WITH THE EXTERNAL DATA BASES

3. RECORDS SORT

SQL queries can be defined to sort the records of the table.

Id	Siret	name	power	power2	tag	P	Pu	W	Pu	W	Pu	W	Pu	W	Pu	W
1	Mu930001	34	34	0	0010.6	-88	-70									
2	Mu930002	34	34	0	0075.6	-88	-70									
3	Mu930003	34	34	0	0010.6	-88	-70									
4	Mu930004	34	34	0	0075.6	-88	-70									
5	Mu930005	34	34	0	0000.7	-88	-70									
6	Mu930006	34	34	0	0000.6	-88	-70									
7	Mu930007	27	27	0	0010.6	-88	-70									
8	Mu930008	34	34	0	0000.1	-88	-70									
9	Mu930009	34	34	0	0075.6	-88	-70									
10	Mu930010	40	40	0	0000.1	-88	-70									
11	Mu930011	27	27	0	0070.1	-88	-70									
12	Mu930012	27	27	0	0000.2	-88	-70									
13	Mu930013	27	27	0	0070.1	-88	-70									
14	Mu930014	27	27	0	0000.1	-88	-70									
15	Mu930015	34	34	0	0020.7	-88	-70									
16	Mu930016	27	27	0	0020.7	-88	-70									
17	Mu930017	27	27	0	0000.7	-88	-70									
18	Mu930018	27	27	0	0000.1	-88	-70									
19	Mu930019	34	34	0	0000.7	-88	-70									
20	Mu930020	34	34	0	0020.7	-88	-70									
21	Mu930021	34	34	0	0000.7	-88	-70									
22	Mu930022	34	34	0	0000.7	-88	-70									
23	Mu930023	34	34	0	0000.7	-88	-70									

Display of all fields

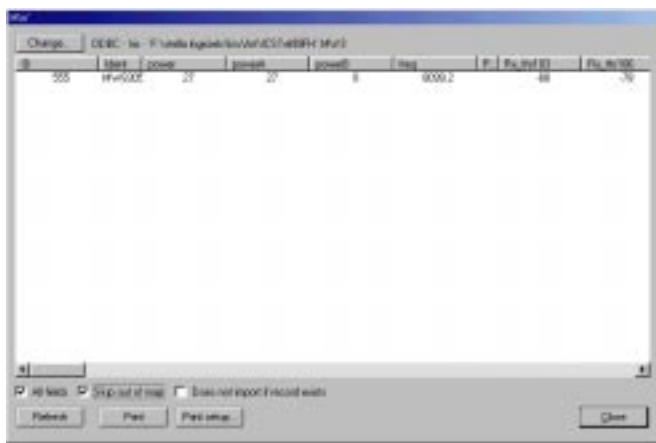
Display of all fields + Skip out of map

- 1- Click left in the list, then click right. A Popup menu is open and offers several options.
- 2- Choose the **Select all** option
- 3- Click left then right again and choose option **Where** in the Popup menu.
- 4- The **Record Selection** box is open. In this box, the SQL queries can be defined.

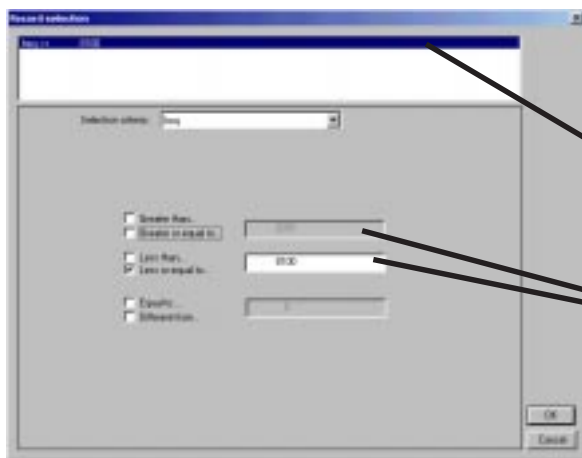
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DATA TRANSFER WITH THE EXTERNAL DATA BASES



The MW box displays only the records which frequency is greater or equal to 8050 MHz and is lower or equal to 8100 MHz.



To suppress the query applied to the records:

Select the records, then click left and right in the list. Choose in the popup menu the **Where** option.

The **Record Selection** box is open and displays the queries applied to the records.

Click in the query list, on the query to be deleted.

The query components are displayed.

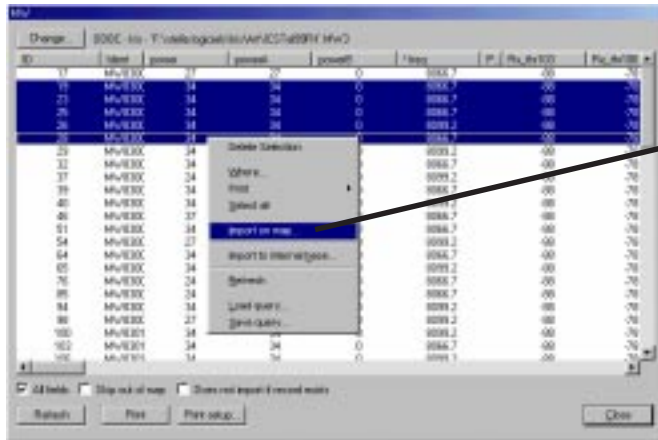
De-select the choices.

The query is progressively erased in the query area

Confirm and close the Record Selection box with the OK button.

The MW box re-displays the records accordingly.


4. EXAMPLE : IMPORT OF MICROWAVE LINKS ON THE TERRAIN




- 1- In the MW box, select the records that must be imported on the terrain, then click right to open the popup menu.
- 2- Choose option **Import on map** in the popup menu.
- 3- The microwave links are imported on the terrain.
- 4- To return to the project and to control the microwave link import, close the MW box with the Close button.

Results :

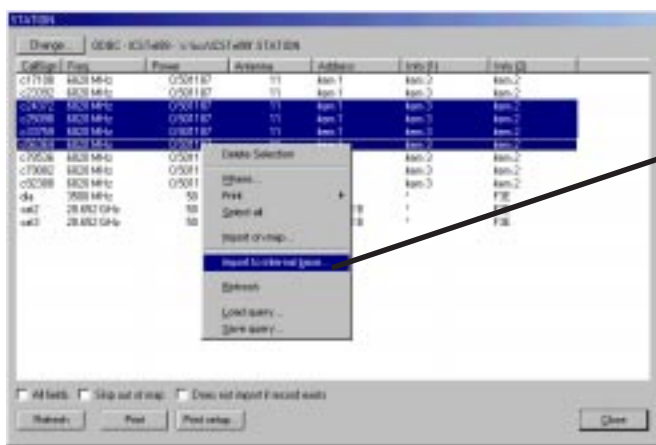


The microwave links are setup on the terrain
 The management of microwave links in ICS-telecom is done using the Mw mode  and through the **Microwave link** list.

-  : used to add microwave links on the terrain
- the Microwave list enumerates all microwave links present on the terrain, and offers the management and calculation options.

Recall:
Up to 499 microwave links (or 999 objects) can be set up on the terrain.

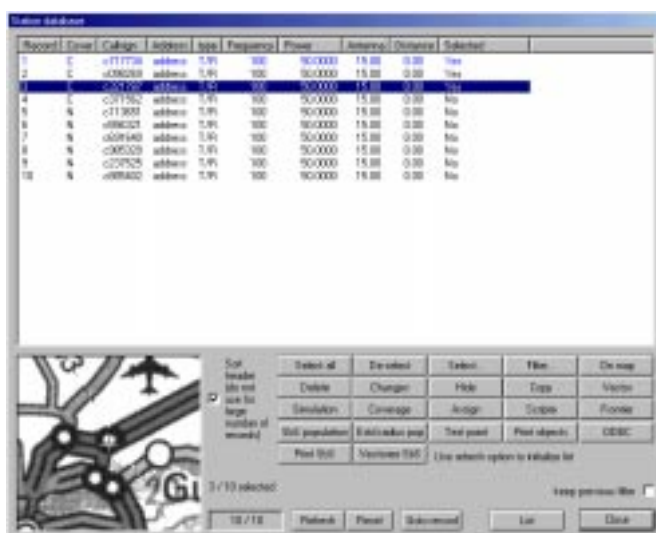
5. EXAMPLE : IMPORT OF STATIONS INTO THE STATION INTERNAL DATABASE



- 1- In the Station box, select the stations that have to be imported in the Station database of ICS-telecom, then click right to open the popup menu.
- 2- Choose option **Import to internal base** in the popup menu.
- 3- The system proceeds first to a control of the call signs, stations with identical call sign will not be imported. Then the stations are imported into the current DB Station database.

Recall:

1. The number of internal data bases are unlimited.
2. Each DB Station database can store up to **32 000** stations.



- 4- Open the ICS-telecom Stations database by choosing the **DB station** in the internal database list **Base**.

A list of last database access is displayed. Select (double-click left) in the list the database where the stations have been imported.

The **Station database** box is open and displays the records of the data base.

Stations can also be imported into the Station database from the terrain :

After an 'import on map' action, select the **Station database / Export activated elements** function of the **Database** menu. Before importing the stations, ICS-telecom controls the call signs of each station to avoid double record.








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THE INTERNAL DATA BASES

TYPES OF ICS-TELECOM DATA BASES

Objects data bases:



- **Station** database - Access using the **DB station** choice of the **Internal database** tool 
- **Mw** database - Access using the **DB MW** choice of the **Internal database** tool 
- **Subscriber** database - Access using the **DB subscriber** choice of the **Internal database** tool 
- **Satellite** database - Access using the **DB satellite** choice of the **Internal database** tool 
- **DF** database (direction finders) - Access using the Bearing list choice of the **Monitoring** tool 

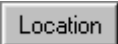
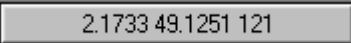
For each type, an unlimited number of data bases can be created (except for the Satellite database).


In each database, up to 32 000 records (100 000 records for the Subscribers data bases) can be stored.


Equipment, site and user data bases:

- Equipment data bases: microwave/station, connector, feeder, antenna - the access to these data bases is given by the

Database menu - function Other databases and in the parameters box: Tx/Rx parameters box: click on 
(General tab) and on the  button (Patterns tab) - Microwave link parameters box: go to the Equipment tab, then click on equipment symbols (Microwave, c, cable, antenna symbols).

- Site database: accessible from the Site coordinates box (site base button) - The Site coordinates is open by clicking in the parameters box on the  button (Tx/Rx parameters box - Site tab), or on the site coordinates buttons  (Microwave link parameters box - Site tab).

- User database: accessible from the parameters box - User' three-points button found in the General tab of the Tx/Rx Parameters box and the  button found in the General tab of the Microwave link parameters box

- Multimedia database: used to associate documents (Word™, Excel™, audio, video, images....) to the object - accessible from the parameters box via the  button.

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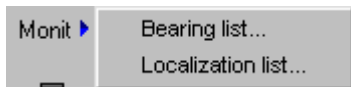
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THE INTERNAL DATA BASES

Data inserted in the Equipment, site, user and satellite data bases are stored automatically in files with specific extensions : .sat (satellite), .sit (site base), .usr (user base), .ant (antenna), .fdr (feeder), .cox (connector), mwe (mw and station equipment), .mux (multiplexer). The location of these files on disk can be chosen using the **Other database / location** function of the Database menu.

MANAGEMENT OF THE OBJECTS DATA BASES

The creation, the loading, the repair, the deletion of objects data bases are done through the Database list containing the last loaded data bases and open when choosing one database type in the **Base** list or in the **Monit** list (excepted for the Satellites database, and for the localizations database):

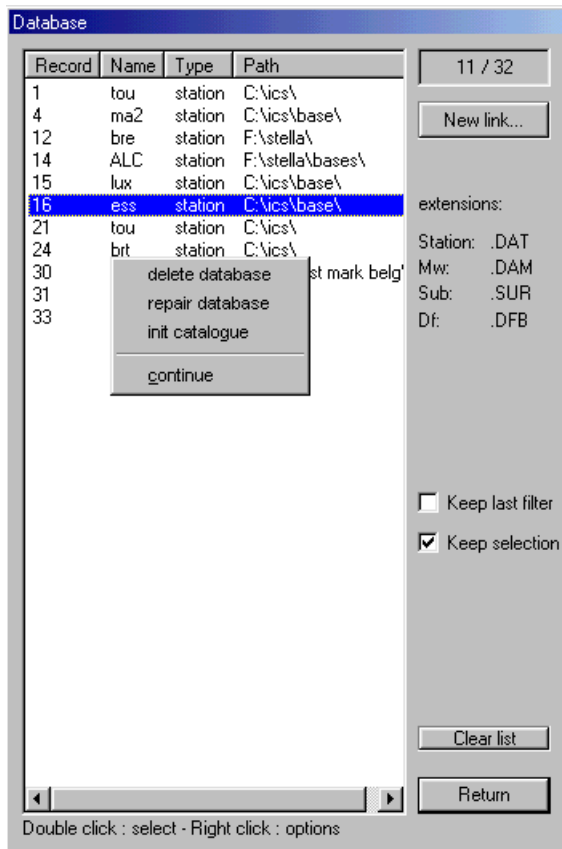


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THE INTERNAL DATA BASES

THE DATABASE LIST



Open after the choice of one database type in the **Base** list, the Database list enumerates the last loaded data bases (up to 50 data bases) for the chosen database type. For each database, the name, the type and the disk location are displayed. The loading of a database is done in this list by double-clicking left on the database identifier.

The management options: deletion, repair are found in the **popup menu** accessible by a left then a right click on the identifier of the database to be treated.

The **New link** button allows the creation, and the addition of a database in the list, and opens the **Database Selector** box.

The **Clear list** button allows to empty the list of all data base Identifiers, and will not affect the records of the data bases.

The **Return** button closes the Database list.

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MANAGEMENT OF INTERNAL DATA BASES

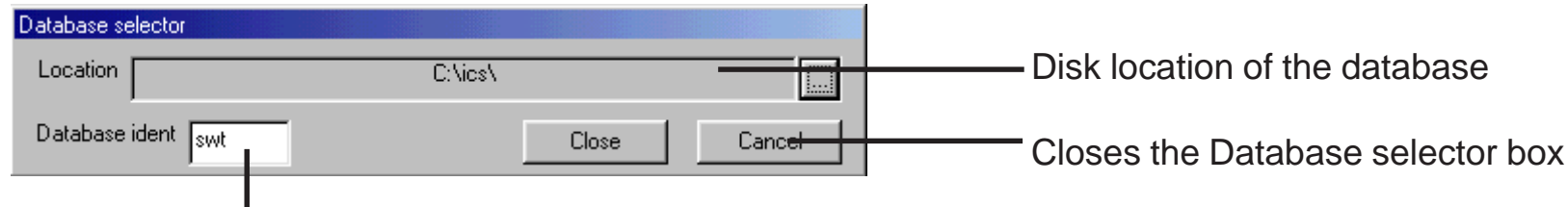
CREATION OF A STATION DATABASE

1- Click on **Base**, then choose **DB station**.

2- The Database list is open.

Click on the **New link...** button

3- The **Database selector** box is open



Identifier of the database
(3 characters)

3- Click on the **3 points** button. In the file box, designate the disk location where the new database has to be stored, and enter the identifier (3 characters only) of the new database in the *Name* field. Confirm and close the file box with the OK button

4- In the *Database ident* field, the identifier of the new database is displayed.

The 3 characters of the identifier are used to generate the records files.

Example: for the swt database, the records files will be named swtx.DAM (with x = arrival number of the record in the database).

5- Confirm and close the Database Selector box with the Return button.

The new Station database is created and ready to be filled with stations.

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MANAGEMENT OF INTERNAL DATA BASES

LOADING OF A STATION DATABASE

- 1- Click on **Base ▶**, then choose **DB station**.
- 2- The Database list is open.
- 3- In the list, double-click left on the identifier of the database to be loaded. If the identifier of the database is not present in the list, then click left on the **New Link** box.
- 4- The **Database Selector** box is open. Control the disk path displayed in the **Location** field. If this disk path corresponds to the location of the database to be loaded, then enter only the database identifier (3 characters) in the **Database ident** field. If the disk path is not correct, then click on the 3 points button, and in the file box, designate the correct location and select one of the record file of the database - Confirm and close the file box with the Ok button. The database identifier is displayed in the **Database ident** field of the Database Selector box. Confirm and close the Database Selector box with the Close button.
- 5- The database identifier is added to the Database list. Double-click left on this identifier to load the database.

Caution ! The loaded database is the current database. Imports will be done toward this database.

DELETION OF A DATABASE

- 1- Click on **Base ▶**, then choose the type of database to be deleted
- 2- The Database list is open. If the database that has to be deleted is not listed, insert the database into the list using the **New Link** button (see above procedure).
- 3- In the list, click left on the database identifier, then click right to open the popup menu.
- 4- Choose (click left) the **Delete** option.
- 5- The system prompts the user to confirm the deletion: Yes to confirm the deletion, all records files will be suppressed; No to cancel the action.
- 6- The database identifier is no more listed.



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MANAGEMENT OF INTERNAL DATA BASES

REPAIR OF A DATABASE

In case of database manipulation errors (saving of a database on a CD-Rom then loading of the files that are of 'read only' type), it is necessary to repair the database catalogue.

Two repair commands:

- **Init catalog** re-initializes (updates) the catalogue.
- **Repair base** rebuild a new catalogue for the database by erasing the old one.

It is recommended first to re-initialize the catalogue, and if the trouble still exists, to rebuild the catalogue.

To RE-INIT THE CATALOGUE

- 1- Click on **Base ▶**, then choose the type of database to be treated
- 2- The Database list is open. If the database that has to be treated is not listed, insert the database into the list using the **New Link** button (see above procedure).
- 3- In the list, click left on the identifier of the database to be repaired, then click right to open the popup menu.
- 4- Choose option **Init catalog**
- 5- The Le catalogue is updated with for example the new records added by another user or according to any modifications.
- 6- Close the Database list with the Return button.

To REBUILD THE CATALOGUE

- 1- Click on **Base ▶**, then choose the type of database to be treated
- 2- The Database list is open. If the database that has to be treated is not listed, insert the database into the list using the **New Link** button (see above procedure).
- 3- In the list, click left on the identifier of the database to be repaired, then click right to open the popup menu.
- 4- Choose option **Repair base**
- 5- A warning message informs the user that the action can not be cancelled, and recommends to save the database before running the

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MANAGEMENT OF INTERNAL DATA BASES

repair. During the repair, the system will copy all the catalogue and will need space on disk.

The user has to confirm the action: *Yes* runs the repair - *No* cancels the action

6- The catalogue is repaired and the record files of the database are renumbered.

7- The number of records of the database is given - Confirm and close the message box with the OK button.

8- Close the Database list with the Return button.

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THE INTERNAL DATA BASES

ACCESS TO THE INTERNAL DATA BASES



The selection of one type of database opens first the Database list, where the database ident must be selected to open the database, except for the DB satellite choice or the Localization list choice that opens directly the database.

The Database menu offers also the access to the data bases (... **database manager** options, and **other databases** functions).

Records contained in the data bases are listed in a specific dialogue boxes that offer different records managing tools.

THE RECORDS

Records are ordered according to their insertion in the database, and information regarding the records are organized in columns.

The single and multiple selection of records is possible. The upward and downward sort of records can be used.

Complementary sort and selection tools offer to sort/select records according to criteria or specific queries.

The display of records in the list depends on the geographic area contained in the current project. The database boxes display only records which coordinates correspond to the loaded geographic area, and not all records. A counter indicates the number of displayed records and the total number of records.

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THE INTERNAL DATA BASES

RECORDS MANAGEMENT TOOLS AND OPTIONS

The Microwave links database

⇒ The tools

- Selection / de-selection of all records (*Select all* and *De-select* tools)
- Deletion of selected records (*Delete* tool), temporary mask of the selected records (*Hide* tool)
- Update of the records (*Refresh* tool)
- Records sorting according to: the frequency, the margin, the identification code, the record number, the band width, the text information (site address) - And / Or methods, cumulative sorts (*Filter* tool)
- Access to a record by its record number (*Goto record* tool)
- Modifications of some parameters for all selected records (*Changes* tool)
- Import of records on the terrain (*on map* tool)
- Creation of a matrix containing the received powers for each selected records, interference calculation according to a IRF - Results table with precision on the wanted signal, the unwanted signal, the C/I and the frequency (*Matrix* tool) - reading of the matrix and recall or results (*Interference* tool)
- Printing on the Image layer of the selected records (*Print objects* tool)
- Creation of a .txt ascii list of the selected records (*List* tool)

⇒ The popup menu (right click on one record in the database)

- *distances calculation*: calculates the distance between the selected record and the other record (the selected record is the reference point)
- *sort by distance*: sort of the records according to the distance with the selected record
- *parameters*: opens the parameters box of the selected record
- *spectrum*: displays the frequency band occupancy spectrum, and analyses the presence of the selected record in the frequency band
- *sub_bands*: assigns a sub-band to the selected record



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THE INTERNAL DATA BASES

RECORDS MANAGEMENT TOOLS AND OPTIONS

The Station Database

⇒ The tools

- Selection / de-selection of all records (*Select all* and *De-select* tools)
- Deletion of selected records (*Delete* tool), temporary mask of the selected records (*Hide* tool)
- Update of the records (*Refresh* tool)
- Selection (*Select...* tool) or Sort (*Filter* tool) of records according to: the station type, the frequency (multi-channel), the radiated power, the call sign, the Dif and Type database keys, the text information (address and info 1), the associated coverage presence - And / Or methods, cumulative sorts
- Access to a record in the list by its record number (*Goto record* tool)
- Modifications of some parameters for all selected records (*Changes* tool)
- Import of records on the terrain (*on map* tool)
- Creation of a new Station database and copy of the selected records into this new database (*Copy* tool)
- Simulation of each selected record according to 2 calculation modes: transmitting or receiving coverage calculation that can be parametered in terms of limit distance, calculation model, antenna height, calculation resolution, and DEM file resampling factor (*Simulation* tool)
- Composite coverage calculated from the associated coverage of each selected records (*Coverage* tool)
- Frequency assignment of the selected record from of frequency band or from frequency groups (*Assign* tool)
- Coverage printing and display scripts for the selected records (*Scripte* tool)
- Frontier coordination of the selected records (*Frontier* tool)
- Covered population calculation (% and number of inhabitants) for each selected record (*Population* tool)
- Printing on the Image layer of the selected records (*Print objects* tool)
- Site per site printing batch (*Print SbS* tool)
- Creation of vector objects from the selected records (*Vector* tool)

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- Export of selected records toward an external database (ODBC and DAO connections)
- Creation of a .txt ascii list of the selected records (*List* tool)
- ⇒ **The popup menu** (right click on one of the records)
 - *distances calculation*: calculates the distance between the selected record and the other record (the selected record is the reference point)
 - *sort by distance*: sorts the records according to the distance with the selected record
 - *parameters*: opens the parameters box of the selected record
 - *control by DF1*: calculates the received power and the azimuth of DF n°1 from the selected record
 - *frequency list*: edits the list of frequencies used by the records of the database
 - *spectrum*: displays the frequency band occupancy spectrum, and analyses the presence of the selected record in the frequency band
 - *sub_bands*: assigns a sub-band to the selected record

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THE INTERNAL DATA BASES

RECORDS MANAGEMENT TOOLS AND OPTIONS

The Subscribers Database

⇒ The tools

- Selection / de-selection of all records (*Select all* and *De-select* tools)
- Deletion of selected records (*Delete* tool), temporary mask of the selected records (*Hide* tool)
- Update of the records (*Refresh* tool)
- Sorts of the records according to: the frequency (multi-channel), the radiated power, the parent station call sign, the database keys (Dif and Type), text information (address and info 1) - And / Or methods, cumulative sorts (*Filter* tool)
- Access to a record in the list by its record number (*Goto record* tool)
- Modifications of some parameters for all selected records (*Changes* tool)
- Creation of a new Subscribers database and copy of the selected records into the new database (*Copy* tool)
- Addition of a new subscriber in the database (*Add subscriber* tool)
- Verification of the presence on the terrain of the parent base station for each selected record (*Check parent* tool)
- Conversion of the selected subscribers into Tx/Rx stations (*Convert to T/R* tool)
- Printing of the selected subscribers on the Image layer (*Print objects* tool)
- Creation of vector objects from the selected records (*Vector* tool)
- Export of the selected records toward an external database (ODBC or DAO connection)
- Creation of a .txt ascii list of the selected records (*List* tool)

⇒ The popup menu (right click on one record of the database)

- *distances calculation*: calculates the distance between the selected record and the other record (the selected record is the reference point)
- *parameters*: opens the parameters box of the selected record
- *profile to parent*: calculates and displays the terrain profile between the selected subscriber and its base station
- *profile from parent*: calculates and displays the terrain profile between the parent base station and the selected subscriber
- *parent station parameters*: opens the parameters box of the base station of the selected subscriber

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RECORDS MANAGEMENT TOOLS AND OPTIONS

The DF database

⇒ The tools

- Selection / de-selection of all records (*Select all* and *De-select* tools)
- Deletion of selected records (*Delete* tool), temporary mask of the selected records (*Hide* tool)
- Update of the records (*Refresh* tool)
- Sort of the records according to : the date, the time, the call sign, the frequency , the measurement mode, the quality mark (*Filter* tool)
- Access to a record by its record number (*Goto record* tool)
- Localization calculation from the selected bearings (*Localize* tool)
- Creation of a .txt ascii list of the selected records (*List* tool)

⇒ The popup menu (right click on one record of the database)

- *info*: edits the information list of the selected bearing
- *sort by azimuth*: sorts the records according to their azimuth

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RECORDS MANAGEMENT TOOLS AND OPTIONS

The Satellites database

⇒ The tools

- Coverage calculation of each selected satellite (*Coverage preview tool*)
- Import on the terrain of the coverage of each selected satellite (*Coverage on map tool*) and composite coverage from calculated satellite coverages (*Coverage analysis tool*)
- Access to a record by its record number (*Goto record tool*)
- Addition of satellites in the database (*Add tool*)
- Creation of a .txt ascii list with all the selected records (*List tool*)
- Printing (*Print tool*)

⇒ The popup menu (right click on one record of the database)

- *parameters*: opens the parameters box of the selected satellite
- *resources*: calculates the number of connected subscribers, the frequency band occupancy and the gain losses for the selected satellite
- *delete*: deletes the selected satellite from the database

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THE INTERNAL DATA BASES

THE FILLING OF INTERNAL DATA BASES

⇒ The filling of the Stations and Microwave links database

- Import of external data toward the internal data bases: option **Import to internal base**
- Import of activated objects from the terrain toward the internal data bases: options **Database / Station database / Export activated elements** or / **Export microwave station** - options **Database / Microwave link database / Export activated microwave links**

⇒ The filling of the Subscribers database

- Setup of subscribers on the terrain and automatic insertion in the current Subscriber database: **Polygon selection** tool - option **Generate subscribers**
- Setup of subscribers on the terrain according to the clutter, and automatic insertion in the current Subscriber database: **Area selection** tool - option **generate subscribers**
- Random creation of subscribers on the terrain: options **Statistics / Create subscribers** and **Subscribers / Generate random subscribers**
- The **Add subscriber** tool of the Subscriber database box
- On the terrain, right click at a location and choose option **Add subscriber**

⇒ The filling of the DF database

- Import of the bearings toward the internal DF database: option **Database / DF bearing database / Export bearings to DF database**
- Press spacebar to add a new direction finder on the terrain, will add the bearing to the current DF database

⇒ The filling of the Localization database

- Automatic and progressive insertion of localization into the database
- Conversion of stations present on the terrain into localization and import into the Localization database: option **Database / Localization database / Export transmitters to localization database**

⇒ The filling of the satellite database

- The **Add** button of the **Satellite database** box