CLC2006 Support Package

Preparing the work
and using
InterPrepare 2.0

User Manual
for the national central team

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www.mlog.hu/CLC2006/, fax: 36–1 416 56 50

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January 2007

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1. CLC2006 Support Package

1.1. CLC2006 Support Package

Background

CLC2006 Support Package is a significantly modified and improved version of CLC2000 Support Package. The CLC2000 software has been developed for Remote Sensing Centre of Hungarian Institute of Geodesy, Cartography and Remote Sensing (FÖMI), and aimed to help the implementation of the European CLC2000 project managed jointly by the European Environment Agency (EEA) and Joint Research Centre (JRC). The CLC2000 software was also used by many national teams, 15 out of 30 participating countries used it for interpreting changes in CLC2000 project. CLC2006 Support Package is distributed by **MLOG Instruments Ltd.**, Budapest, Hungary (www.mlog.hu/CLC2006/, fax: 36–1 416 56 50).

Main features

CLC2006 Support Package operates under **ArcView** environment. ArcView software is designed primarily for viewing GIS databases with tools for creating maps, menus for handling databases and graphical editing tools. At the same time, ArcView includes only limited and less effective tools for creating and filling new polygon databases or modifying existing polygon databases. As a solution, CLC2006 Support Package under ArcView provides a cheap tool for quick and comfortable editing and handling of CORINE Land Cover databases. CLC2006 Support Package is a macro package written in *Avenue*, ArcView's own macro language. The software is a supplement to ArcView 3.2/3.3 GIS. Working with CLC2006 Support Package requires a basic knowledge of using ArcView GIS. The use of the CLC2006 Support Package significantly facilitates updating, change detection, quality control and correction of land cover databases by means of computer-assisted visual photointerpretation.

Minimum system requirements

- IBM PC compatible computer,
- 2 GHz processor,
- 512 MB RAM,
- 17" monitor, at least 1024x768 pixel resolution,
- Windows 95/98 or Windows NT/2000/XP operation system,
- ArcView GIS 3.2/3.3 software.

CLC2006 Support Package consists of three interrelated programs, all which can be used independently.

InterPrepare for the national central team

InterPrepare can be used for the preparation of source files and work directories for change detection to be carried out with InterChange. When interpreting changes with InterChange program, a pre-described directory structure has to be built for the interpreters. The directory structure should contain all files needed for change detection. The source data must have a pre-set record structure. All the above tasks can be simply solved with InterPrepare. CLC code table editor allows substitution of standard English CLC nomenclature category names and descriptions with national language nomenclature in InterChange program. Nomenclature can be edited and can also be extended with fourth and fifth level categories if required.

InterChange for interpreters of land cover changes

InterChange program provides a tool for the revision of CLC2000 land cover database and supports the interpretation of land cover changes in order to create the CLC2006 database. The program provides a convenient and easy-to-use interface for editing and creating polygons in CLC2000 and CLC-Change databases, for viewing and modification of polygons' data and for finding and correction of errors generated during interpretation and editing. InterChange program was designed specially for revision of existing land cover databases and interpretation of land cover changes. It is unsuitable for primary interpretation of satellite images and for building up an independent land cover database. For these purposes was developed a separate program called InterView, which has been used in the production of national CLC2000 databases in Croatia, Hungary and Serbia-Montenegro.

InterCheck for checking final databases

InterCheck program serves the checking of revised CLC2000 and CLC-Change map sheets (working units). InterCheck program has been prepared primarily for supporting the *CLC2006 Technical Team*, although national central teams might apply it as a tool for final checking of the completed CLC2006 and CLC-Change databases. InterCheck can be used for checking CLC2006 and CLC-Change databases in any file format that can be added to ArcView program as a theme (ArcView shapefile, ARC/INFO coverage, AutoCAD drawing etc.), i.e. not only those that has been prepared with InterChange.

1.2. New features in version 2.0

InterPrepare

- Converts LUCAS point databases (if available) for use with **CLC2006 Support Package**.

InterChange

- Interpreter can modify also CLC2000 code of change polygons;
- can add technical change attribute to change polygons;
- can search for polygons also according to area, change probability or technical change.
- New principle and advanced features are available for importing, searching and fulfilling supervisor's remarks.
- LUCAS land cover and land use data and field photos can be viewed with a single click (if data available on computer).
- Advanced code, polygon area and code change probability statistics available.
- Thicker polygon outlines as well as larger code labels can be switched on befor creating screen shots for documents and reports.

InterControl (obsolete)

- This part of **CLC2000 Support Package** has proved to be unnecessary in the actual practice, thus **CLC2006 Support Package** does not include it. In this new version **InterCheck** program can be used also for national level thematic control instead of **InterControl**.

InterCheck

- New principle and advanced features are available for creating, editing and searching supervisor's remarks: short remarks can be added in both databases not only to polygons but to any point within the working unit.
- Quality supervisor can search for polygons according to area, change probability or technical change.
- LUCAS land cover and land use data and field photos can be viewed with a single click (if data available on computer).
- Advanced code, polygon area and code change probability statistics available.
- Thicker polygon outlines as well as larger code labels can be switched on before creating screen shots for documents and reports.

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1.3. Installation

- Download the purchased **CLC2006 Support Package** CD-image file from CLC2006 homepage.

- Burn install CD from this CD-image.
  You should find five subdirectories and two additional files on the CD:

  Change (directory)
  Check (directory)
  Doc (directory)
  LUCAS (directory)
  Prepare (directory)
  Program (directory)
  _inst.___
  install.exe
  readme.txt

- Open the pdf format documentation (manuals) in **Doc** directory and print – if possible using a colour printer –, then study them carefully.

- Install ESRI ArcView software (if not installed yet) on your computer.

- If you have previously installed any programs of CLC2000 Support Package, please delete **Doc** and **Program** directories of this version before installing CLC2006 Support Package.

- Create a new directory at any location on your computer for the preparation of source files and work directories for CLC change detection. The directory name is optional, but it must not exceed 8 characters. Suggested names are e.g.: **clc**, **clc2006** or **corine**. Be careful that you use short directory and file names (8+3 usable characters: **A-Z**, **0-9** and **$ _ ~ ^ ! # % & { } ( ) ' @** only) on all directory levels of paths referred to in InterPrepare and other CLC2006 Support Package programs. It is important to note that ArcView 3.2 does not support in all cases the long Windows file names, so give short names (8+3 characters) to the images and directories on all directory levels of their paths.

- Start **install.exe** program, which is found in root directory of source CD. The program allows you to select the source and destination directory. The program automatically specifies the source directory, so normally you do not need to modify it. As destination directory select the directory created on the basis of the previous paragraph. On clicking the *Install* button the program copies the needed directories and files to the specified destination directory and deletes their read-only attribute. (The read-only attribute of files on a CD is always set and it does not change after copying.) The CLC2006 Support Package programs do not need any further installation. However, you have to prepare working units using **InterPrepare** before starting **InterChange**.

- According to the amount of purchased software licences, create the working directory structure for each photointerpreter. Following the instructions found in the manual of **InterPrepare**, copy these directories to the appropriate computer or to an install CD for each interpreter as proposed in part *Preparation for interpretation*.

2. Data preparation

2.1. General advice

The following guidelines include recommendations for the National Team's GIS expert, who prepares data for the photointerpreters. For detailed information read **CLC2006 Technical Guide**.

Data used for CLC2006 program

Obligatory data

- CLC vector database of the previous CLC inventory (CLC2000),
- Landsat TM satellite image used for the creation of CLC2000 database (IMAGE2000),
- SPOT-4 and / or IRS P6 satellite image for the new inventory (IMAGE2006),
- Topographic maps (hardcopy or digital)

Ancillary data

- Additional satellite images taken in different seasons for both years (2000 and 2006),
- Digital orthophotos,
- Other databases, maps.

During computer-assisted photointerpretation the work is easier if all spatial information is integrated into a single GIS, have common geographical reference (co-ordinates) and similar geometric precision. For CORINE Land Cover database the 100 meter minimum geometric precision requires 25-meter precision of the source satellite images. For ancillary data 25--50 meter precision is highly recommended.

Filenames and formats

As the date (year and month) of the image acquisition is important for the photointerpreter, it is recommended to use a file name, that refers to the image acquisition date (eg. 75_oct90: working unit 75 and image taken in October 1990). Be careful that you use short directory and file names (8+3 usable characters: `A-Z`, `0-9` and `$ _ ~ ^ ! # % & { } ( ) ' @` only) on all directory levels of paths referred to in InterPrepare and other CLC2006 Support Package programs.

Theoretically any image formats supported by ArcView can be used. In the practice ERDAS LAN, ERDAS IMG and GeoTiff formats have been tested.

2.2. Preparing raster data

Geometry

IMAGE2000 data (Landsat--7 ETM+ satellite images taken in 2000±1 year) and IMAGE2006 data (SPOT-4 and IRS P6 satellite images taken in 2006±1 year) have been orthocorrected centrally.

Any other satellite images taken in other season than IMAGE2000 or IMAGE2006 could be useful for the photointerpreters. Due to the significant overlap between neighbour paths of Landsat satellites, IMAGE2000 data themself can yield multitemporal coverages for significant regions. It is recommended to use as many as possible available satellite imagery. CLC2006 project aims to provide a double SPOT-4 and/or IRS P6 satellite data coverage for the area to be mapped in order to help high quality photointerpretation. As the priority lies in the full (and double) coverage of the participating countries, and because of financial reasons, panchromatic bands will not be available.

For the purposes of working with the **CLC2006 Support Package** it is recommended to cut (subset) all satellite images (IMAGE2000, IMAGE2006 and ancillary) into working units with an overlap of one km between neighbouring working units.

Colour composites

Landsat TM images (IMAGE2000) include seven multispectral bands (channels), resampled to 30 meter pixel size, and Landsat--7 ETM+ includes an additional panchromatic band with 15 meter pixel size. Pixel size of SPOT–4 and IRS P6 images is 20 m and 23 m, respectively.

Multi-band satellite images are prepared for the interpreters covering each working unit. Usually red, near-infrared and middle-infrared parts of the spectrum are used for CLC interpretation with the following colour rendition:

Sensor / Colour	Landsat TM/ETM	SPOT-4	IRS P6 LISS III	Spectral range
Red (R)	band 4	band 3	band 3	Near-infrared (NIR)
Green (G)	band 5	band 4	band 4	Middle-infrared (SWIR)
Blue (B)	band 3	band 2	band 2	Red (VIS)

If images contain the above channels in the above order, using the CLC2006 Support Package the interpreter does not have to manually set the colour composite when loading the image. In some cases however, other than the above standard colour composite is useful to interpret some features (decision of the project manager). In such a case, images with more than three channels are prepared and the interpreter should select the necessary colour composite using standard facilities of ArcView. Be aware however, that more image channels mean more data, which might slow down your computer.

Contrast

Satellite images should be suitably contrast stretched by the Central Teams's GIS expert in order to produce optimal colours for the interpretation. It should be done under an image processing system (e.g. **ERDAS**). Please note, that ArcView has no proper functionality for this purpose, and interpreters are asked not to change the colour tables (LUT), as improper colours might confuse the photointerpretation.

An advice to make a good contrast stretch: Compute a histogram for the image or the working unit or for any larger area of interest, which contains land cover elements more or less evenly distributed. Areas covered by clouds, shadows, large water surface or zero values (no data) should be excluded from calculation.

Resolution enhancement of IMAGE2000 images

An additional way of image enhancement is the resolution merge which means an optimal combination of multispectral and panchromatic data of the Landsat–7 ETM+ sensor. If a proper method is used (e.g. *Chavez et. al*, 1993), the result is a higher resolution multispectral image, with the same colours as the Landsat TM composites. It is especially useful to interpret artifical features. On request FÖMI can provide the national teams with the ERDAS GSD to implement Chavez's HPF method. Please note that a resolution-merged image is four times larger than a similar image with the same number of multispectral bands.

2.3. Preparing vector data

The ArcView-based CLC2006 Support Package operates at sufficient speed on maximum few hundreds square-kilometer area databases. It does not render possible either several interpreters to work simultaneously on a single database. However, it provides all necessary features to allow quick, comfortable and effective change detection and successfully helps preventing, finding and correcting mistakes.

Cut national CLC2000 vector database into working units with a 1 km overlap, similarly to the satellite images and convert data to ArcView **`.shp`** format. Upon finishing change interpretation, the produced change databases (and the derived CLC2006) have to be matched along working unit borders. If your computer is too slow for handling data covering a full working unit, specify and use a smaller unit (e.g. cutting one unit into two). The CLC2000 database should contain the 3-digit CLC code as attribute.

Display CLC2000 data on the top of the geometrically correct IMAGE2000 (or IMAGE2006). If the geometric precision is insufficient, improve it before starting photointerpretation. In some cases an affine transformation based on at least 4 points per working unit will work, but in most cases rubber sheeting with several (sometimes very large number of) control points is needed to achieve a proper result. Do not leave too much manual geometric correction work for the photointerpretation phase!

2.4. Preparation for interpretation

Change detection with **InterChange** program requires a pre-defined directory structure, which has to be built up for all interpreters. This structure can be easily created with help of **InterPrepare** program, part of CLC2006 Support Package.

This directory structure can then be copied to any optional place on the hard disc of the computer used by the interpreter. Interpreters may receive the directory structure built for them either on CD or any high storage capacity data medium, or they might download it through a sufficiently fast network.

Directory structure needed by **InterChange** change detection contains **`Program`** and **`Doc`** and **`LUCAS`** directories in the same form as they can be found on **CLC2006 Support Package** installation disc and on the same directory level there is one more directory for each map sheet to be interpreted. Name of map sheet directories can be practically composed from topographic identification name of the map sheet (working unit) used, but it must not exceed 7 characters. It is important to note that ArcView 3.2 does not always support long Windows file names, so give short names (8+3 characters) to the images and directories on all directory levels of their paths. **`Program`**, **`Doc`** and **`LUCAS`** directories should be copied to directory structure compiled for interpreters in an unaltered form. **`Prepare`** directory contains **InterPrepare** program and its accessories, which are needed only in the preparation work done by central technical teams, so this directory should not be copied for interpreters!

Main steps

- Create a base directory for each interpreter.
- Copy **`Program`** and **`Doc`** and **`LUCAS`** subdirectory from originally installed **CLC2006 Support Package** directory to each interpreter's base directory.
- Create the appropriate map sheet directories in each interpreter's directory with help of **InterPrepare**.
- If copying of any satellite image with help of **InterPrepare** is unsuccessful, copy it manually.
- Copy available LUCAS data from the separate source CD/DVD or from internet to each interpreter's **`LUCAS`** directory. *LUCAS2000* and *LUCAS2006 point databases* in ArcView shape file format have to be copied to **`LUCAS`** directory. LUCAS field photos have to be copied into the **`photo00`** and **`photo06`** subdirectories respectively.

An example of directory structure created for interpretation:

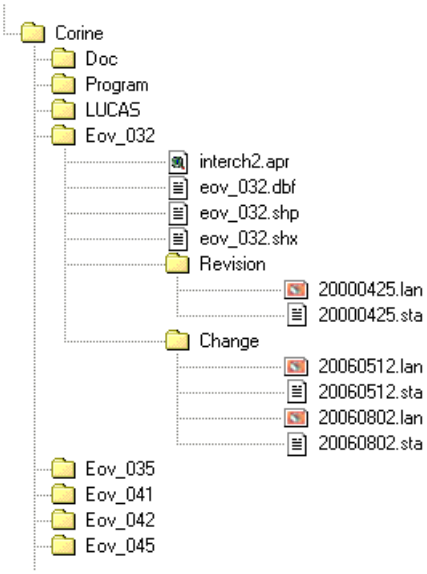
Within the directory structure the **`Program`** directory contains the files needed for running **InterChange** program. In **`Doc`** directory you will find printable documentation in PDF format, printable keyboard template and other written information. A separate subdirectory belongs to each map sheet to be interpreted.

`LUCAS` directory contains *LUCAS2000* and *LUCAS2006 point databases* in ArcView shape file format, with names **`LUCAS00`** (**`.shp, .dbf, .shx`**) and **`LUCAS06`** (**`.shp, .dbf, .shx`**) respectively. LUCAS field photos are in **`photo00`** and **`photo06`** subdirectories.

Prior to beginning the interpretation, each map sheet directory contains two subdirectories and four files. One of the four files is the project file **`interch2.apr`**, which contains InterChange program. The other three files make up the *CLC2000 source database* in ArcView shape file format. The name of these three files must be exactly the same as the map sheet directory containing them. The record structure, the fields' name, size and type are strictly bound in the **`.dbf`** file. However, **InterPrepare** automatically forms this record structure while creating directories. The two subdirectories bear the same names for all sheets: **`Revision`** and **`Change`**. Before starting the interpretation these contain only satellite images to be used in the corresponding tasks.

`Revision` subdirectory includes images from the early 2000's needed for the correction of CLC2000 database – practically the ones that were originally used for creating the CLC2000 database.

In **`Change`** subdirectory images from around year 2006 for change detection should be placed.



2.5. Preparation for thematic control

Running of **InterCheck** program requires a simple but fixed relative directory structure. If the interpretation of land cover changes is performed with **InterChange** program, and for thematic control you use **InterCheck** program, supervisor can work with same directories and files as the interpreter. Simply copy the project file **`check2.apr`** to each map sheet directory and open it to start thematic control. There is no need to create new directories, or move files. Interpretation (**InterChange**) and thematic control (**InterCheck**) mutually reads but not writes over data of the other operation. Naturally the interpreter and the supervisor cannot work simultaneously on the same map sheet. However for maximal data safety it is recommended to create backup copy of the ArcView databases in **`Revision`** and **`Change`** subdirectory of each map sheet directory.

If interpretation is performed with other tool than InterChange

Create a new directory for each map sheet to be checked on the same directory level as **`Program`** directory for the supervisor. The name of this subdirectory refers to the topographic identification of the map sheet or working unit, but must not exceed 7 characters. Copy the **`check2.apr`** file into each map sheet directory. The *CLC2000* and *Change* database files (**`.shp`**, **`.dbf`**, **`.shx`**) of the map sheet to be checked can be placed to any location within the computer's directory structure. In case the interpretation was carried out with help of **InterChange** program, the same map sheet directory can be used for checking as was used for interpretation or for subsequent thematic control. In order to simplify the EU supervisor's work, a **`Revision`** and a **`Change`** subdirectory can be created within the map sheet directory for the 2000 and the 2006 satellite images respectively, but this is optional. I.e. the program first looks for the satellite images to be loaded in these locations.

Main steps

- Create a base directory for checking for the *CLC2006 technical team* expert.
- Copy **`Program`** and **`Doc`** and **`LUCAS`** subdirectory from originally installed **CLC2006 Support Package** directory to each supervisor's base directory.
- Create the appropriate map sheet directories in each supervisor's directory with help of **InterPrepare**.
- If copying of any satellite image with help of **InterPrepare** is unsuccessful, copy it manually.
- Copy available LUCAS data from the separate source CD/DVD or from internet to each interpreter's **`LUCAS`** directory. *LUCAS2000* and *LUCAS2006 point databases* in ArcView shape file format have to be copied to **`LUCAS`** directory. LUCAS field photos have to be copied into the **`photo00`** and **`photo06`** subdirectories respectively.
- Copy **`check2.apr`** from **`Check`** subdirectory of originally installed CLC2006 Support Package directory to each map sheet directory.

- The databases to be checked can – though not needed to – be collected in the relevant map sheet directory for the supervisor. This case it is recommended to place the *CLC2000* database in the **Revision** subdirectory and *Change* database in the **Change** subdirectory.

An example of directory structure created for checking procedure:

Within the directory structure the **Program** directory contains the files needed for running InterCheck program, **Doc** directory contains printable documentation in PDF format, printable keyboard template and other written information.

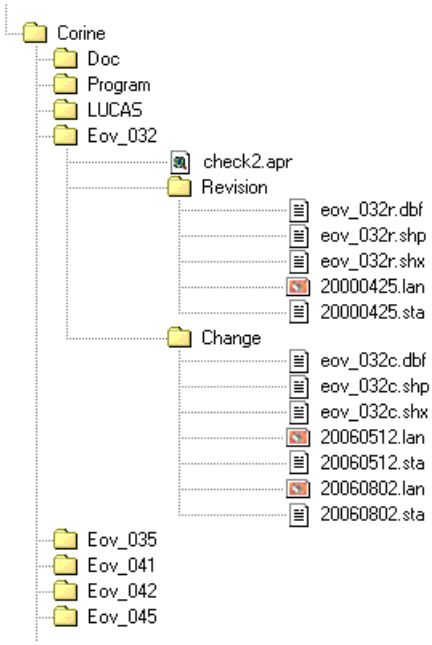
LUCAS directory contains *LUCAS2000* and *LUCAS2006 point databases* in ArcView shape file format, with names **LUCAS00** (**.shp, .dbf, .shx**) and **LUCAS06** (**.shp, .dbf, .shx**) respectively. The **photo00** and **photo06** subdirectories cantain LUCAS field photos of the two databases, respectively.

Prior to beginning the checking procedure each map sheet directory contains one file, the project file **check2.apr** and two subdirectories. The two subdirectories bear the same names for all sheets: **Revision** and **Change**.

Revision subdirectory may contain those satellite images that are used for revision of the CLC2000 database and were made around 2000. It is recommended to use the same image(s) as were used during the creation of original CLC2000 database.

Change subdirectory may contain the satellite images made around year 2006 that are used for change detection.

The databases to be checked can – though not needed to – be collected in the relevant map sheet directory for the supervisor. This case it is recommended to place the *CLC2000* database in the **Revision** subdirectory and *Change* database in the **Change** subdirectory.



3. InterPrepare program

3.1. Using InterPrepare

Start ArcView, then open **`prepare2.apr`** project file found in **`Prepare`** directory. This contains **InterPrepare** program. If the **InterPrepare** project window is active, five buttons are available on the button bar.

 With **Create directory** button or **Project – Create directory** menu command you can open the **Preparing InterChange working directory** window.

 With **Edit code table** button or **Project – Edit code table** menu command you can open the **CORINE code table editor** window.

 With **Convert LUCAS data** button or **Project – Convert LUCAS data** menu command you can convert original LUCAS databases (if available) for use with **CLC2006 Support Package**.

 On clicking **>>What is this?<< help** button in the button bar the cursor changes its shape. Click on any button or menu command with this question marked cursor and the general help window opens with information on the selected control element. The cursor then assumes its former shape so you have to click **>>What is this?<< help** button again on order to ask information again.

 With **InterPrepare help** button or **Help – InterPrepare help** menu command you can open the **InterPrepare help** window.

In **Preparing InterChange working directory** window you can collect all files and information needed for interpreting a single map sheet (working unit), and you can create a working directory:

- you can specify the base directory where the above-mentioned directory structure for each interpreter will be built up;
- you can select the CLC2000 database, the source database for change detection;
- you can give the identification name of map sheets (working units), which will serve as map sheet directory name as well;
- you can select from a list the field that contains CORINE code 2000 in the source database;
- you can list all satellite images that will be used for revising the CLC2000 database and for creating the change database.
- Upon completing the above, the map sheet directory is created and compiled with a single click on a button.

In **CORINE code table editor** window

- you can substitute standard English CORINE nomenclature category names and descriptions with national language nomenclature
- you can extend nomenclature with fourth and fifth level categories if required.

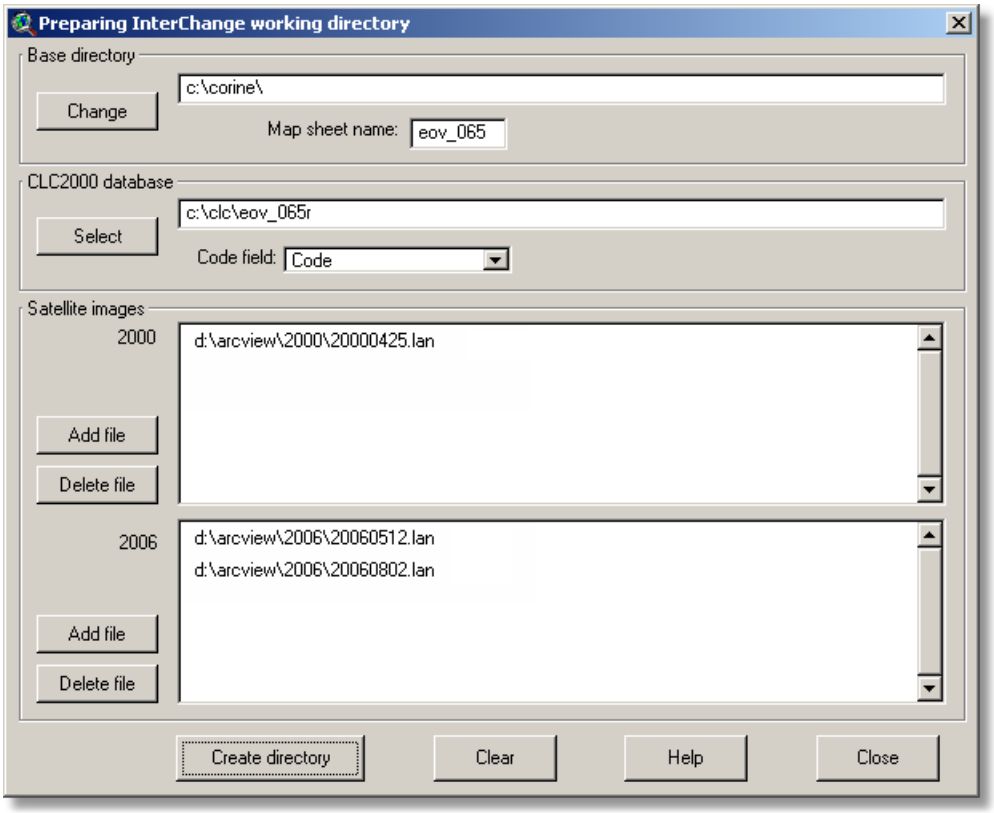
With **Convert LUCAS data** command

- you can create **`\Program\LUCAS00.dat`** and/or **`\Program\LUCAS06.dat`** files – required by **LUCAS data viewer** window and **LUCAS photo viewer** program – from **`\LUCAS\LUCAS00.dbf`** and/or **`\LUCAS\LUCAS06.dbf`** – part of appropriate ArcView point database (if available).

3.2. Creating working directories

Preparation window

With **Create directory** button  or **Project – Create directory** menu command you can open the **Preparing InterChange working directory** window. In this window you can collect all files and information needed for interpreting a single map sheet (working unit), and you can create a working directory.



InterPrepare help can be opened with the *Help* button. *Clear* button clears all specifications and lists in the window. You can close **Preparing...** window any time with the *Close* button or the close widget in the upper right corner. If you re-open the window, it appears at the same place and with similar content as appeared on closing.

The **Add theme** dialog window, in which you specify the base directory and select files to be copied is similar to the window ArcView uses when executing *Add Theme* command. In this dialog window browsing is only allowed in local disks. If you wish to copy files from other computers in the local area network, you have to map the needed network drive before starting InterPrepare. Name of files selected in the **Add theme** window will automatically be written into the appropriate text box or list. Creating map sheet directory leaves the original files untouched; only a copy of them is put in the new directory.

Compiling a map sheet directory

Base directory is the directory where the map sheet directory will be created. By default it is the InterChange/InterPrepare directory. You can modify the base directory with *Change* button.

Click *Select* button and select CLC2000 database in the **Add theme** window appearing. The selected file's name appears in the *Database* text box. Name (first 7 characters) appears in the *Map sheet name* text box as well. If you want to identify the map sheet directory and the base files with a different name, you can modify the content of the *Map sheet name* text box. The name must not be longer than 7 characters.

In *Code field* drop-down list you find the field names of the source database data record. Select the field that contains the CORINE code of CLC2000 polygons. Source database for change detection inherits data only from this field; the content of other fields is not used.

Collect required satellite images with the *Add file* button. In the *Satellite images 2000* list you should include images made around 2000, these will serve as base for the correction of CLC2000 database. To *Satellite images 2006* list you should add images to be used in change detection, made

around 2006. More than one image can be selected from the source directory (Shift + clicking file names). A single image cannot be added to a list more than once and cannot be added to both lists. You can remove selected images from the list with *Delete file* button.

Once you have collected all necessary files and specified all data needed click *Create directory* button. The program poses a confirmation question and on clicking *Yes* it begins creating the directory. Data are checked, messages show if any error is detected – if this is the case correct the error, then try creating the directory again. The program creates the map sheet directory if all data are appropriate. Then the program copies starting project file **`interch2.apr`** into the map sheet directory. This contains the InterChange program. In the map sheet directory a copy of the source database is also created, although this contains only data from the field specified in the *Code field* text box. Area and perimeter data are re-calculated for each polygon. The database will also contain new fields named: *Comment*, *Error*, *E* (error code) and *Done*.

Next the program creates **`Revision`** and **`Change`** subdirectories in the map sheet directory. The selected satellite images are copied to these directories. In case of ERDAS **`.lan`**, **`.img`** and **`.tif`** (geotiff) file formats the ancillary data files (**`.sta`**, **`.rrd`** and **`.pro`**) are copied as well. (Files in **`.img`** format appear in the selection window only if you have previously loaded *Imagine extension* in ArcView.) In case of those special image file formats that are not supported by ArcView as default, files might have to be copied to the right directory "by hand" (e.g. with Windows Explorer).

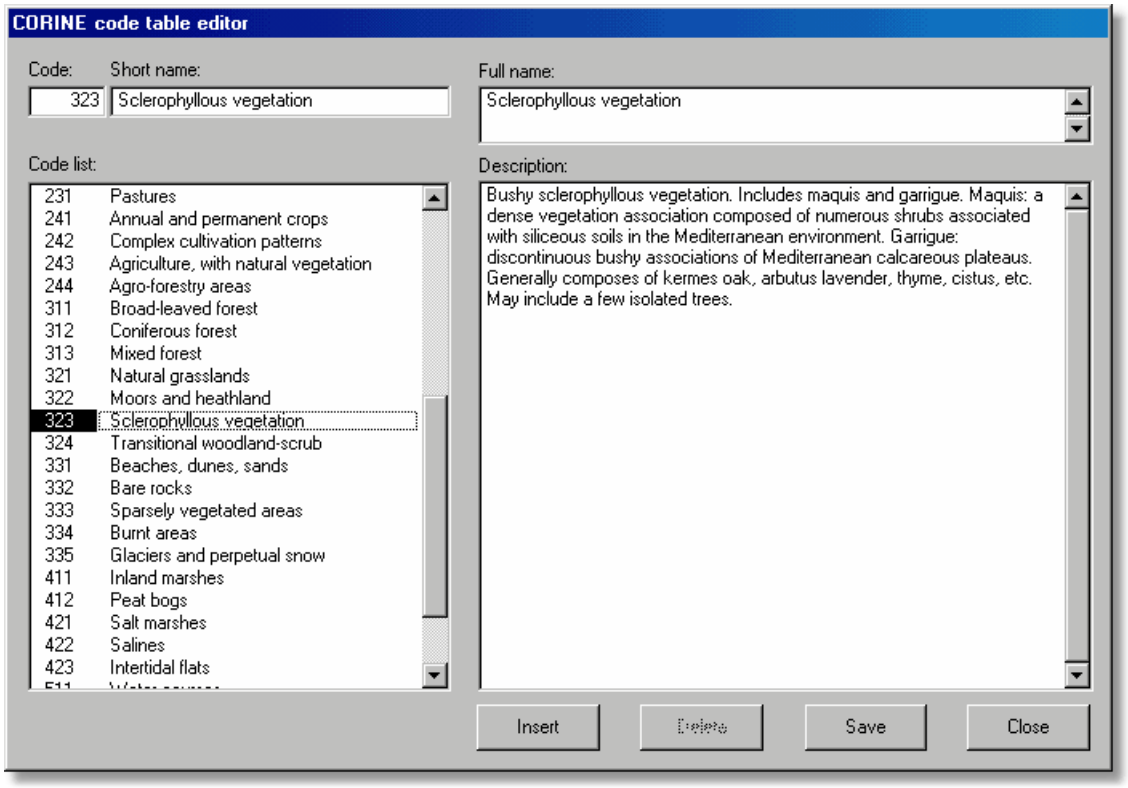
The program checks whether copying was successful and the result of the checking is shown in a dialog box. Program writes log file with the name of the map sheet directory into the **`Prepare`** directory. Then it resets *Preparation* window. Thus you can begin to prepare the next map sheet directory or close the window and the InterPrepare program.

Interpreters might receive the directory structure built for them on CD or any high storage capacity data medium, or they might download it through a sufficient fast network.

3.3. Modifying CORINE code table

The CORINE code table editor window

Open **CORINE code table editor** window with the *Modify code table* button  or **Project – Edit code table** menu command. This window allows substitution of standard English CORINE nomenclature category names and descriptions with national language nomenclature in InterChange program. Nomenclature can also be extended with fourth and fifth level categories if required. However, for compatibility reasons it is not possible to delete third level categories not existing in the country or to add any new third level categories.



In the list box on the left side of the window you will find the recent code table in the form it appears in InterChange during interpretation. On selecting any lines in the list box, more detailed data on the selected CORINE category appear in the window. Texts can be modified, completed or translated into national language. If you change the selection in the list box, modified data of the code last edited will be written into the code table. You can move between text boxes and the list with Tab button.

- **Code:** number of the CORINE category code. Three-digit code numbers cannot be modified.
- **Short name:** short name of the category. The text written in this box should not be longer than 35 characters. During interpretation only the code number of category and the content of short name box appear in **CLC data window**'s code selection list.
- **Full name:** full name of the category, as it is given in the official nomenclature.
- **Description:** detailed description of the category with examples and instructions for the interpreters. The full name and the content of description box can be read in the **CLC code help** window during interpretation. The description can be arranged into paragraphs with inserted blank lines (pushing ***Enter*** twice).

Inserting new categories

With *Insert* button a new fourth or fifth level code can be inserted in the code list below the selected line. First three digits of the new code will be similar to that of the line above, they cannot be modified. Add the last digit and the texts belonging to the new code. The program sends an error message in case you exit the *Code* text box with only three digits given or you give a fourth (fifth) digit already existing in the code list. In the error message dialog box you can decide whether you correct (*Yes*) or delete (*No*) the inserted code.

Deleting categories

Inserted fourth or fifth level categories can be deleted from the code table with *Delete* button. The program poses an affirmative question and on answering *Yes* it deletes the selected line. You cannot delete third level categories.

Saving the modified code table

Present content of code table can be saved to disc with the *Save* button. The program poses an affirmative question before saving. Be careful to choose *Yes*, because the earlier code table file will be overwritten. Program creates backup of the earlier code table file.

Closing the edit window

Edit CORINE code table window can be closed with the *Close* button. If you have modified the code table since opening or the last save, the program gives a dialog box asking: *Close window without save?* Answering *Yes* discards modifications and the window is closed. When opening the window next time the code table will appear in its last saved form. Answering *No* leaves the window opened; you can save or continue editing.

Hot keys

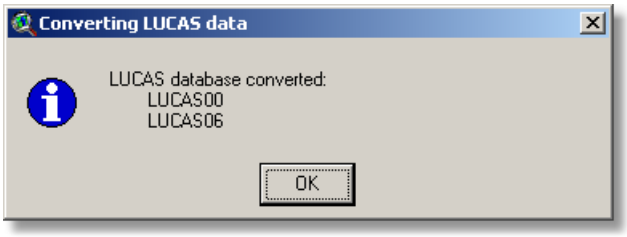
Hot keys in the **Edit CORINE code table** window:

Alt + I **I**nsert
Alt + D **D**elete
Alt + S **S**ave
Alt + C **C**lose

3.4. Converting LUCAS data

With **Convert LUCAS data** button  or **Project – Convert LUCAS data** menu command you can create special LUCAS databases for use with **CLC2006 Support Package**, required by **LUCAS data viewer** window and **LUCAS photo viewer** program.

LUCAS database converter requires a special record structure, and works only with source files prepared by FÖMI KTO (Hungary). After an affirmative question program converts original **`\LUCAS\LUCAS00.dbf`** and/or **`\LUCAS\LUCAS06.dbf`** – part of appropriate ArcView point database (if available) – to **`\Program\LUCAS00.dat`** and/or **`\Program\LUCAS06.dat`** files. If any of the source databases fails, program displays a warning message. At the end of the conversion program lists names of the converted databases.



4. Special information

4.1. CLC2000 source database

InterChange program for change detection requires a given data record structure. **InterPrepare** automatically forms this record structure while creating directories. Data record structure of *CLC2000* databases as found in map sheet directories at the beginning of interpretation:

- **Shape** field:

The polygon that the data record belongs to.

- **Code2000** field: numeric (#FIELD_DECIMAL), 5 digits, 0 decimal.

CORINE category code data inherited from the original CLC90 database.

- **Area** field: numeric (#FIELD_DECIMAL), 12 digits, 2 decimals.

Area of the polygon in square metre.

- **Perimeter** field: numeric (#FIELD_DECIMAL), 12 digits, 2 decimals.

Perimeter of the polygon in metre. InterChange uses it for polygon identification and error prevention.

- **Comment** field: character (#FIELD_VCHAR), 255 characters.

Interpreter's comments on the polygon.

- **Error** field: character (#FIELD_VCHAR), 50 characters.

Errors of the polygon given as text.

- **E** field: numeric (#FIELD_DECIMAL), 2 digits, 0 decimal.

Errors of the polygon given numerically (as a code).

- **Done** field: numeric (#FIELD_DECIMAL), 1 digits, 0 decimal.

Revised status of the polygon.

4.2. LUCAS database

Structure of special tab separated text format LUCAS databases **`\Program\LUCAS00.dat`** and **`\Program\LUCAS06.dat`**, required by **LUCAS data viewer** window and **LUCAS photo viewer** program.

```
SSU_ID       DATE        LC1  LC2  LU1  LU2  PHOTO     GPS_PREC  OBS_TYPE  OBS_DIST
HU_47902658  10.04.2006  C13  8    U12  8    47902658  7         1         1
HU_47942662  10.04.2006  C11  8    U12  8              6         2         1
HU_47962668  22.05.2006  B23  8    U11  8    47962668  4         1         3
HU_47982666  10.04.2006  C12  8    U12  8    47982666  6         1         1
...
```

5. License

5.1. End user license agreement

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