7. DATA INPUT/OUTPUT

In the systems CNC836/846/856 mainly part programs are to be understood under data. To the data, with which the operators work, firm cycles and correction tables, parameters, starting point displacement belong. Generally machine constants, tables of non-linear corrections, configuration system file and error message file of the PLC program belong too. However the operators do not work with this data usually.

From the point of view, the most important thing to do is to be familiar with the input and output of the part programs.

All data are stored in the system, in the files in the backup memory which may be CMOS memory type ("D" disk) or hard disk if the system consists of it ("C" disk). In the system delivery , sample files of the firm cycles, files with tables with zero values and other system files are prepared. The part programs shall be read into the file stored in the system memory from any input device. With systems CNC836/846/856, the following inputs are possible:
- serial channel RS232C – COM1 without a log (standard)
- serial channel RS232C – COM1 with a log of the DNC network of the MEFI company (standard)
- floppy disk drive (optionally)
- DNC network type NOVELL (optionally)

All above mentioned inputs are both-directional i. e. they allow the data output from the system too.

7.1. File names

To distinguish the files in the memory from the point of view of the listing to the system screen the file suffixes (similar as with the PCs) are used which are defined in the configuration file CNC836.KNF. From the point of view of operators it is the question of completely unimportant information because the suffixes are assigned automatically.

Note:
The files may also have a mark prefix which is specified in the system configuration file. The prefix has, however, no practical importance. It is possible to mention it because of compatibility for the case of DNC network with communication adapters TRANS if the system CNC836 is assembled in this network.

In the configuration file CNC836.KNF the following names or filters for names are listed explicitly:

```
*.NCP                  file names with the part programs
PEVNECYx.NCP    file names with the firm cycles, x specifies the PC version
TAB0.REK             file name with the machine constants
TAB0.KOR             file name with the correction table
TAB0.POS             file name with the table of starting point displacements
```

TAB0.PAR   file name with the parameter table

It is recommended to maintain these setting if possible.

Instead of the asterisk, maximum 8 arbitrary characters approved for the relevant file name are stated with an actual file with the part program. All characters illustrated on the system push-button board inclusive of digits except marks for per cent, slash, dot and & may be used.

One of the possible methods is to mark the file names with the part programs by numbers equal to the number after the part program per cent character. Generally, the file name with the part program is not limited at all.

7.2. File contents

Because the files located in the system may be edited and, in the case of the part programs, created, the conditions to be kept in the case of entries are mentioned as follows:

PART PROGRAMS:
The files with the part programs are shaped as described in the programming instructions. The part program start point shall consists of % (per cent) character after which maximum 6-digit number follows, then the individual blocks of the part program starting with the N character and maximum 8-digit number follow. One block may be written in the several rows too. The further block starts with the N character again. The file with the part program ends with the * (asterisk) character. This character is, however, not to be written because it is not located on the push-button board and so it is added into files automatically.

Note:
The asterisk shall be provided in every file end if the file is prepared on the external device (computer) and it is read in from the serial channel RS232. The asterisk, in this case, serves as the reading terminal character.

TABLES :
With the files TAB0.KOR, TABN0.POS, TAB0.PAR and TAB0.REK, the TAB shapes from the syntactic point of view are similar. They start with the key word $KOR or $PAR or $POS or $REK. Any arbitrary comment may be inserted in front of these key words.

Behind the key words the table with the following shape follows:

Correction tables:
$KOR

01:	R = 0.0	X = 12.00	Y = 100.000 Z = 200.000	4 = 0.000
02:	R = 0.0	1 = 0.00	2 = 0.000 3 = 0.000	4 = 0.000
03:		1 = 0	2 = 300.000	

The correction table consists of two-digit number of the correction table following with colon. The radius correction marked by R and the length correction for maximum four axes marked by X, Y, Z, 4 follow. Instead of X, Y, Z the sequence No. of a co-ordinate i. e. 1, 2, 3 may be mentioned. Behind the equal sing the correction value is stated. Among the names of co-ordinate, equal sing and value no spaces may be inserted. If the correction value is stated

without the decimal point, this is understood as mm i. e. 2.0 i 2 is the correction entry of 2 mm. The negative value is entered with minus sign, for positive value no sign has to be entered. In the file TAB0.KOR may be max. 99 correction tables. If any correction table is not mentioned in the file, its content for this system is of zero value. Also not all items shall be mentioned in the individual correction tables. In the table 03 of the above mentioned example the radius correction and length correction of the third and fourth corrections are not stated. All these items shall be understood as the zero values. If required to add any further correction table by means of the editor it is recommended to copy the whole row by block copy and to adapt the values and the table No. in the copied row. It is necessary to use this procedure because no colon push-button is available on the push-button board.

Note:
For lathes which have the co-ordinating system X, Z (X is the first axis, Z is the second one) it is necessary to add the number 2 instead of Z so that the fact that it is the question of the second axis will be emphasized. In the system CNC836, the sequence Nos. 1, 2, 3 are implicitly assigned to the axes X, Y, Z. For lathes the letter Y shall be used in this case which, however, does not corresponds to the axis name.

File contents of the TAB0.KOR file is written in the table in the internal system memory after switching on and after every edition, if the edited file is stored.

TABLE OF THE STARTING POINT DISPLACEMENT
$POS

53.	X = 0.0	Y = 12.00	Z = 100.000	U = 200.000	V = 0.000	W = 0.000
54.	X = 0.0	Y = 0.00	2 = 0.000	4 = 0.000	5 = 0.000	6 = 0.000
55:	1 = 0.0	2 = 0	3 = 200			

Rules of the entries into the displacement tables are the same as in the case of corrections. For lathes, the above mentioned note is valid.

PARAMETER TABLES:
$PAR
00:    0.00
01:    10.00
03:    0.00

The file provided with the parameter table is not very important because the parameter tables are mostly filled in directly in the part program (see the Programming Manual). The file with the parameters may have maximum 96 parameters (0 up to 95). The contents of the parameter files are overwritten into the internal system table after switching on the system and for the edition. The file consists mainly of filling in the parameters by zeroes.

TABLE OF MACHINERY CONSTANTS:
$REK
00:    +00000.024   : comment
01:    -00000.025   : comment
03:     00000.26   : comment

The file with the machinery constants has the similar shape as the parameter file. Behind the constant NO. and the colon the plus sign is located (it may not be mentioned) or minus sign

and 8-digit number with the decimal point behind the fifth digit. The comment may be added behind the semicolon. The above mentioned syntax is obligatory. The file contents are described in an separate chapter.

7.3. File listing

The overview of the files with the part programs stored in the system memory provides the listing which will be appeared after pressing down the PROGRAMS push-button s (F4 in the main menu) – see the figure. In the listing, the file name inclusive of suffix, file length in characters and date and time at which entries were made into this file. From the figure it is visible that the file names may be arbitrary in principle. The system panel symbol in the frame informs that the relevant listing of the file is from the system memory. In other cases, as below mentioned, the symbols may illustrate the file listing on a floppy disk, hard disk or in any connected computer. From the memory marking [C:\CMOS] (it is the question of the hard disk system) may be understood that it is the question of the system memory listing. In the information frame the remaining free memory capacity in the relevant memory in characters (bytes) is mentioned too.

The file with which it will be operated furthermore (e. g. when editing or copying) is emphasized in the frame. When selecting the file list, the second row is emphasized i. e. usually the file (part program) with which is worked currently and which is dated with the most current date. On the figure, the third row is emphasized. After pressing down the EDITION push-button , the 1.NCP file would be opened.

Note:
File sequence in the listing may be influenced by setting of the $9 parameter in the CNC836.KNF file. The files may be ordered according the alphabet, date, time or the first file according the date and time and other files according the alphabet.

```
Název              Délka  Datum      Čas  [C:\CMOS\]  Paměť:2147155968 bajtů

ZALOZENI NOVEHO PARTPROGRAMU NEBO MAKRA
@TIME   .NCP     1224  17.12.1999   12:08
1       .NCP      434  17.12.1999   12:08
3       .NCP      170  08.11.1999   19:31
2       .NCP      170  08.11.1999   19:25
11      .NCP       78  26.10.1999   15:29
L810    .NCP      372  23.09.1999   17:44
PCMILEV .NCP    11683  23.09.1999   17:44
MILE87  .NCP      163  23.09.1999   13:47
L880    .NCP      392  23.09.1999   13:43
L890    .NCP      395  23.09.1999   13:43
L860    .NCP      355  23.09.1999   13:43
L870    .NCP     4926  23.09.1999   13:43
L850    .NCP      320  23.09.1999   13:42
L830    .NCP     3245  23.09.1999   13:42
L840    .NCP      489  23.09.1999   13:42    ↵  - potvrzení
L820    .NCP      363  23.09.1999   13:41    ↔  - stránkování
10      .NCP      246  22.09.1999   14:18    ↑↓ - volba
```

Název = name	délka = lenght	čas = time
pamět' = memory	bajtů = bytes	volba = selection
potvrzení = confirmation	stránkování = paging	

Založení nového partprogramu nebo makra = establishment of a new part program or macro.

- if pressed the ENTER push-button in the selected file or the part program, its syntactic checkup is performed.
- if pressed the cursor arrow push-button to the left/to the right the listing paging i. e. further pages of programs (one page consists of 18 rows) are displayed.
- pressing down the cursor arrow push-button up/down the movement through the listing is performed. It serves to select the program for editing and selecting the program or block.
- pressing down any arbitrary push-button , so-called filter will be run which displays only the programs which start by pressed down push-button . Pressing down the same push-button again the filter will be extended to further characters. E. g. after pressing down the L push-button and 8 push-button , the listing of files, which names starting with L8 will be displayed.

Pressing down the TABLES push-button in the main menu and then pressing down the CORRECTION, PARAMETER DISPLACEMENT or CONSTANT push-button s, the list of the files in the same format as illustrated in the figure will be appeared. The filter for the tables, however, displays only the file with the relevant suffix. For instance, after pressing down the TABLES and CORRECTION push-button s, the listing (mainly) consisting from only one file TAB0.KOR will be displayed.

And vice versa, after pressing down the SYSTEM push-button in the main menu and then EDITION –system push-button the listing of all files stored in the system memory regardless to their suffix will be displayed. The listing of the part programs, all tables and other system files will be displayed.

7.4. Serial input/output – hardware requirements

The input/output (I/O) is performed from the COM1 serial channel from the standard 9-pin connector CANON located on the rear part of the panel. Because the panel is usually built in the hanging case or any other suitable closed case located next to the machine, the output from this connector is usually conducted by the prolongation cable coupling to the accessible place in this case and terminated by a connector. Here, regarding to requirements, the 9-pin or 25-pin connector CANON (for connection of cables and lengthening cables see the Appendix) may be used.

Equipment to be connected to this connector is e. g. LAPTOP, NOTEBOOK, TRANS or computer of the PC type. Only the setting of the configuration parameters in the file CNC836.KNF is decisive if the transmission is performed from the COM1 without or with the DNC protocol. In the case of the DNC protocol connected to the current loop line the TRANSRED (conversion of RS232 to the current loop line) reduction shall be incorporated between the connector and the DNC distribution. Both inputs manners (without or with the DNC protocol) may not be used simultaneously. The change is performed by setting of the configuration parameters in the file CNC836.KNF.

7.5. Serial part program I/O – without any protocol

Setting of the transmission parameters in the configuration file CNC836.KNF:
$43 parameter = 18   "recommended transmission velocity of 4800 Bd"
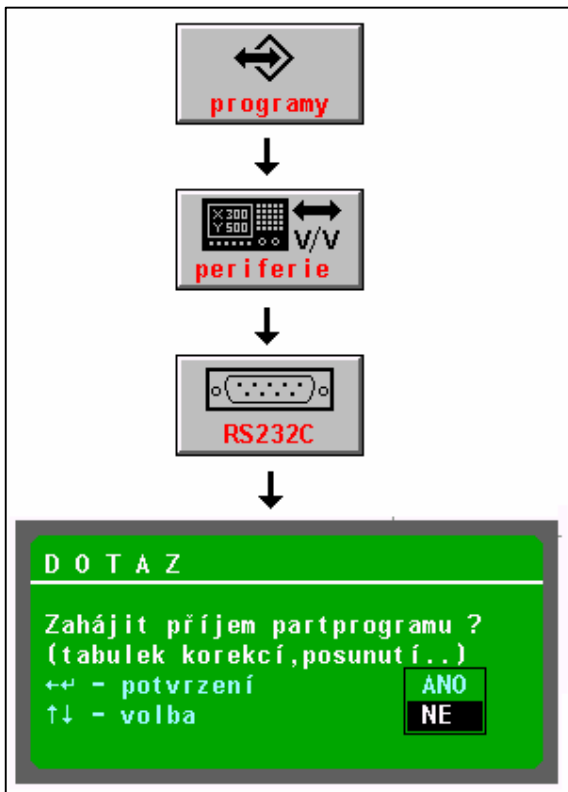$46 parameter = N   "DNC protocol NO"

Setting of the transmission parameters of the serial channel in the external device (e. g. NOTEBOOK):
mode COM1: 4800, n,8,2

7.5.1. Input into the system

Control sequence (see the figure)
In the main menu, the PROGRAMS push-button and then the PERIPHERY and then RS232C shall be pressed down.

The query is appeared whether the part program reception may be started. By means of the cursor arrow push-button , select "YES" (by default "NO" is set) and confirm by the ENTER push-button or the cursor arrow left key.

The system waits now for the character reception from the serial input. Only after the transmission on the external device (e. g. NOTEBOOK) is started, the data receipt starts . The data transmission is indicated by a styled stop watch. After the date are received, the system asks for the file name under which the part program will be saved in the system memory. BY default, the file name as a number is offered which was found behind the % mark. The file name may be confirmed by the ENTER push-button or any other name may be selected by keyboard entry.

When transmitting the data into the system, the transmission on the system shall be started first and then that on the NOTEBOOK. shall be started later.

programy = programs
periferie = periphery
DOTAZ = query
zahájit příjem partprogramu = is the part program reception to be started
(tabulek, korekcí, posunutí) = (tables, corrections, displacements)
potvrzení = confirmation
volba = selection

Warning:
The part program file received shall start with the % character and must be terminated by the asterisk, otherwise no reading-in will be possible.

Note:
It is possible to read-in the files with correction tables, starting point tables or parameter tables by means of the serial channel. In practice, it is not necessary usually because a copy of files with the tables is available in the system directly. The procedure is similar, only on the start the TABLES push-button shall be pressed instead of the PROGRAMS push-button , then the relevant table and then the PERIPHERY push-button . The further procedure is the same.

Received file with the table shall start with the relevant key word (e. g. $KOR, $POS etc.) and shall be terminated by the asterisk.

7.5.2. Output form the system

The part program (and tables) output control from the system to RS232C (e.g. into the NOTEBOOK) is similar with the exception that the output from the system is selected by the direction push-button . Before starting the transmission the receiving side shall already be prepared for the reception.
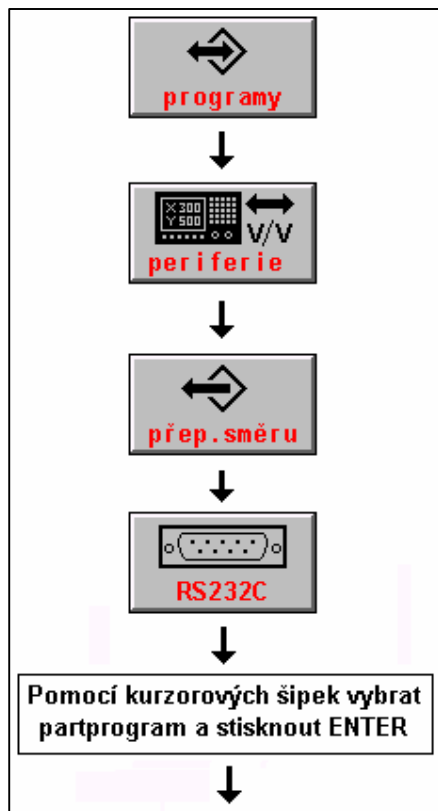
Control procedure (see the figure)

In the main menu, press down the PROGRAMS push-button and then the PERIPHERY push-button . Then press down the direction change push-button (the direction from the system) and the push-button RS232. Select the program the output of which is required by the cursor and press down the ENTER push-button . The window with the query is appeared whether the data transmission is to be started. When confirming by YES, the system starts to transmit data to RS232. The receiving side shall be prepared to receive the data transmission
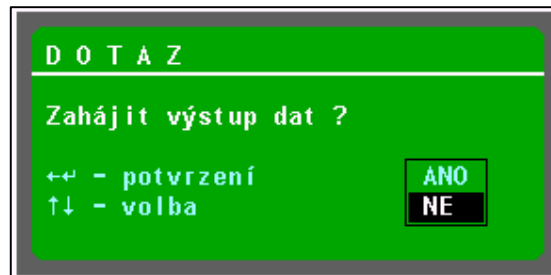
Programy = programs
Periferie = periphery
Přep. směru = direction change
Pomocí kurzorových šipek vybrat partprogram a stisknout ENTER.
Select the part program by means of the cursor arrows and press down the ENTER push-button .
DOTAZ = query
Zahájit výstup dat? = Is the data transmission to be started?
Potvrzení = confirmation
Volba = selection
Ano = yes
Ne = no

7.6. Serial I/O of the part programs – with the DNC protocol.

The MEFI connection of the system to the DNC network is the most effective method to input and output the part programs as well as backup of all system files.

Setting of the configuration parameters in the file CNC836.KNF is as follows:
$43 parameter = 18   "recommended transmission velocity of 4800 Bd"
$46 parameter = A/W   "DNC log, a = for DOS, W = for WINDOWS 95/98"
$46 parameter = XX   "WHEERE xx is the system No. in the DNC network
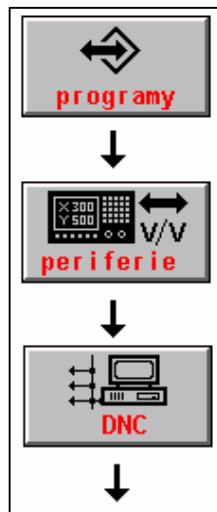
On the computer connected, the software for MEFI DNC network shall be installed. The installation and usage are described in the communication instructions for the TRANS adapter.

The part program transmission from the connected computer shall be performed in accordance with the following procedure:

In the main menu, the PROGRAMS push-button , then PERIPHERY push-button and then DNC push-button shall be pressed down.

programy = programs
periferie = periphery

The menu is appeared which is illustrated in the following table.

Vstup DNC (zdrojový) = DNC input (source)
Vstup DNC (pracovní) = DNC input (work)
Výstup na DNC síť = Output to the DNC network
Adresář v počítači = Directory in the computer

Press down the push-button "Directory in the computer". The communication will be performed and the part program list will be displayed in the relevant directory on the connected computer. Select the required part program by the cursor and press down the push-button "DNC input (source)". The window with the name of the selected file will be displayed and the confirmation of the transmission start by the ENTER push-button of arrow left push-button will be required.

Note 1:
If stored lot of files on the connected computer in the relevant directory (e. g. 100 and more), the transmission of the file list may be delayed. If known the file name which shall be transmitted, it is better to select directly the DNC INPUT (SOURCE) instead of the DIRECTORY IN THE COMPUTER. The window for file name entry is appeared. Entry the file name and press down the ENTER push-button . The condition to perform this entry is that the characters which are absent on the system push-button board shall not be used.

Note 2:
The DNC INPUT (WORK) push-button is used to transmit the part program which was sent from the system into the computer in the case that the DNC network is so configured (uses various suffixes for files transmitted towards the PC – TRANS and TRANS – PC). This problem is described in detail in the manuals to the DNC network with the communication adapters TRANS.

The part program output to the DNC network i. e. transmission of part program files to be archived in the connected computer is performed by the similar process. After pressing down the DNC push-button , the part program listing is appeared in the system (in the listing, the system symbol is illustrated). Required part program is to be selected by the cursor and then the OUTPUT TO DNC NETWORK push-button is to be pressed. During two transmission the accurate number of transmitted bytes is indicated in the system which is simultaneously the information that the transmission is conducted correctly.

Note 3:
By means of the DNC transmissions, the files with other suffixes than those configured for the part programs (usually ∗NCP) and tables may not be transmitted. To transmit these files it is suitable to use so-called CNC system backup. For details see the separate chapter.

7.7. Input/output from the floppy disk
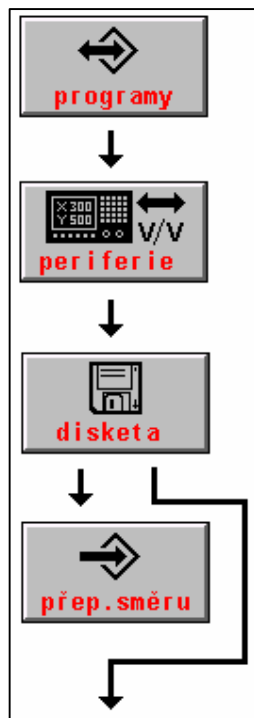
It is possible in the case only when the system has a built in floppy disk unit. From the floppy disk, it is possible to read-in the file (part program) into the backup system memory or to archive the file from the system memory to the floppy disk.

Part program reading-in procedure from the floppy disk into the system is similar as with the serial input. Select the floppy disk push-button instead of the RS232 push-button symbol.

Control procedure (see the figure):
In the main menu, press down the PROGRAMS push-button and then PERIPHERY push-button . Then press down the FLOPPY DISK push-button .

After pressing this push-button the part program list on the floppy disk is appeared. Only the files with the part programs or files with the part program suffixes are displayed. When such a file (usually with the NCP suffix) is not stored on the floppy disk, the error message will be issued.

If required to copy from the system to the floppy disk, press the FLOPPY DISK push-button and then the DIRECTION CHANGEOVER push-button . The part programs list of part programs in the system is appeared. Select the required part program by the cursor and press the ENTER push-button . The query to enter the file name which is to be copied to the floppy disk is appeared. By default, the name of the selected file is offered so it is not necessary to enter it. The only thing required is to confirm it by the ENTER push-button .

Programy = programs
Periferie = periphery
Disketa = floppy disk
přep. směru = direction change

Note:
In both cases the query may be appeared whether the file shall be overwritten, if any file with the same name is stored on the floppy disk or in the system. Selecting YES/NO the overwriting may be confirmed or rejected.

Information on the selected transmission direction may be obtained, beside the push-button of the direction change, by the figure illustrating which directory is written on the screen currently. Device, the directory of which is stated, is in the frame, and an arrow displays, which is the direction of the transmission (see the figure).

7.8. Input from the EPRM memory or the hard disk

It is used to copy the files from the directory PROG (A:\PROG with the systems provided with the EPRM board or C:\SYST\PROG with the system provided with the hard disk) consisting of sample files supplied by the producer. The files from the directory PROG are copied automatically into the directory CMOS (i. e. into the backup memory) if found in the CMOS directory no configuration file CNC.836.KNF. Practically it is used to copy the individual files e. g. tables for the case of destroying or losing them.

The copying procedure is the same as with the floppy disk. As an instance the reading procedure of the file TAB0.KOR.

In the main menu, press the TABLES push-button , then the CORRECTION push-button (or DISPLACEMENT, PARAMETERS or MACHINE CONSTANTS push-button s depending on which table shall be copied), then the PERIPHERY and then the HARD DISK push-button s. The file listing with the suffix KOR (or POS or PAR or REK regarding to the table selected) will be appeared which are included in the PROG directory. Practically, minimum the file TAB0.KOR will be displayed.

Select the required file by means of the cursor arrow push-button s and confirm by the ENTER push-button . In the query window, the name of the selected file will be appeared which shall be confirmed by the ENTER push-button again.

In the case when this file is stored in the CMOS directory, confirm by the YES selection that it shall be overwritten.

NOTE:
Return transmission i. e. from the CMOS directory into the PROG directory is forbidden. In the case of the systems provided with the EPRM plates, it is the question of the ROM type memory into which it is not possible to make any entries.

Tabulky = tables
Korekce = correction
Periferie = periphery
Pevný disk = hard disk

Note:
Transmission of other files than tables is performed similarly but through the system directory
i. e. from the main menu it starts by pressing down the SYSTEM, then EDITION - SYSTEM

and then PERIPHERY and then HARD DISK push-button s. All files will be appeared from the PROG directory. After selecting of the required file, the further procedure is the same.

7.9. Networking

Starting with the version Panel 40.31 system includes built-in networking support for partprograms or service pack transmission. For connecting with remote computer an Ethernet, Internet or wireless WIFI transport can be used. The system is configured as FTP client.

 The system Setup

In file **CNC836.KNF** following parameters must be set:

DNC directory path - the same directory as in parameter $01
$03 C:\CMOS\

protokol FTP
$46 F

IP address of FTP program transmission (TCP/IP protocol)
$84 192.168.0.211
IP address of FTP server (computer) for partprograms
$85 192.168.0.210
IP gate address for partprograms
$86 192.168.0.210
system's name (max. 16 characters) of FTP program transmission server
$87 MCFHD80
System password (max 16 characters) for FTP program transmission server access
$88
IP address of FTP service pack transmission (TCP/IP protocol)
$90 192.168.0.100
IP address of service FTP server
$91 192.168.0.1
IP gate address of service pack
$92 192.168.0.1
system name max. (16 characters) for FTP service server
$93 CNC859S
System password (max 16 characters) for FTP service server access
$94

Notice:

IP address and other parameters are examples only. For real addresses ask administrator. IP address of FTP server must be an address of computer where FTP software is loaded (see next). In case when system shares the same local net as the server the gate addresses are identical (e.g. parameters $85 and $86, resp. $91 a $92 are

equal). In case when system do not share local net with FTP server the proper gate address must be set. (The gate address through which IP packets will be routed outside current Ethernet net segment).

To access FTP server the user name and password must be set. This name and password must be used during login. The FTP server can be configured not to use the password. If password in parameter $88 resp. $94 is set the same password must be set in FTP server .

Alike as IP addresses for partprogram transmission are set addresses for service transmissions which are destined for system's diagnostic and event logs .

AUTOEXEC.BAT file must contents calling of **SITFTP.BAT**. program. This calling is factory preset but inhibited by REM statement :

```
CALL  SITFTP.BAT
```

The batch file **SITFTP.BAT** contents calling of program „**Packetdriver**" only, (e.g DLKFET.COM for net cards DLINK 100MBd) with parameter 0x60: Corresponding „Packetdriver" is in root directory or could be downloaded from the web address of the manufacturer. (www.mefi.cz).

Configuration of Net Computer

For data transmission via **TCP/IP** protocol among MEFI systems and a computer in the net computer must run arbitrary FTP server program). If operating system of the net computer does not content FTP server program is necessary to install it additionally .

From free share FTP servers we recommend for instance TYPSoft FTP Server for platform WINDOWS 9x/ME/NT/2000/XP. You find it on our web pages or on our company CD.

Generally a random FTP server can be used. As example a description of recommended FTP server TYPSoft is provided including of its user and configuration guide. In the computer must be properly installed card drivers and also TCP/IP protocol must be properly set for net card installed .

Important condition is the fixed setting of IP address at least in computer which contents shared partprogram directory. **Hence is not possible to us automatic address allocation via DHCP server.**

Rem.:
Further information about FTP servers can be found in User's guide of communication adapter ETRANS, which is also accessible on our web pages.

Configuration of TYPSOFT FTP server - example

Rem.: The system configuration as stated in article A is supposed. System's name will be MCFHD80 (e.g name according to type of machine) the password will not be set.
Install TYPSoft FTP Server in standard way. Its icon is on left figure.
Create in the root directory C:\ a subdirectory C:\PROGRAMY, which contents partprograms destined for transmission to system. Generally the directory name can be random. It can be for instance the same as system's name.

Run TYPSoft FTP server.

A program window with stage indication similar to this on left picture is open.

Click on Setup to see configuration of FTP.

The next window shows the stage which we have set. A new user is created by click on button „New User".   After setting the name MCFHD80 a new directory for FTP transmission is set in „Root Directory" window. In our case we choose directory name PROGRAMY. Setting directory in window „Root Directory" the same directory reveals in window „Directory Access". The other directories are not significant for our example.

Mark only items „Download", „Upload" for technologist FTP access from remote computer. Also mark fields „Rename Files and Directories" and „Delete" to have possibility to rename and delete directories. To have above mentioned fields accessible, is necessary to click in window Directory Access on selected directory (C:\PROGRAMY)
Delete Password i.e. no password is set
Save settings by click on button „Save"
Rem.:
In possible next opening of window SETUP   for selected user name (List of Users) in window Password reveals text **<< Encrypt >>,** i.e. password is coded and we cannot see the originally typed password. This text reveals even if no password is set.
The password (if set) must correspond to password typed in system file CNC836.KNF in parameter $88 resp. $94
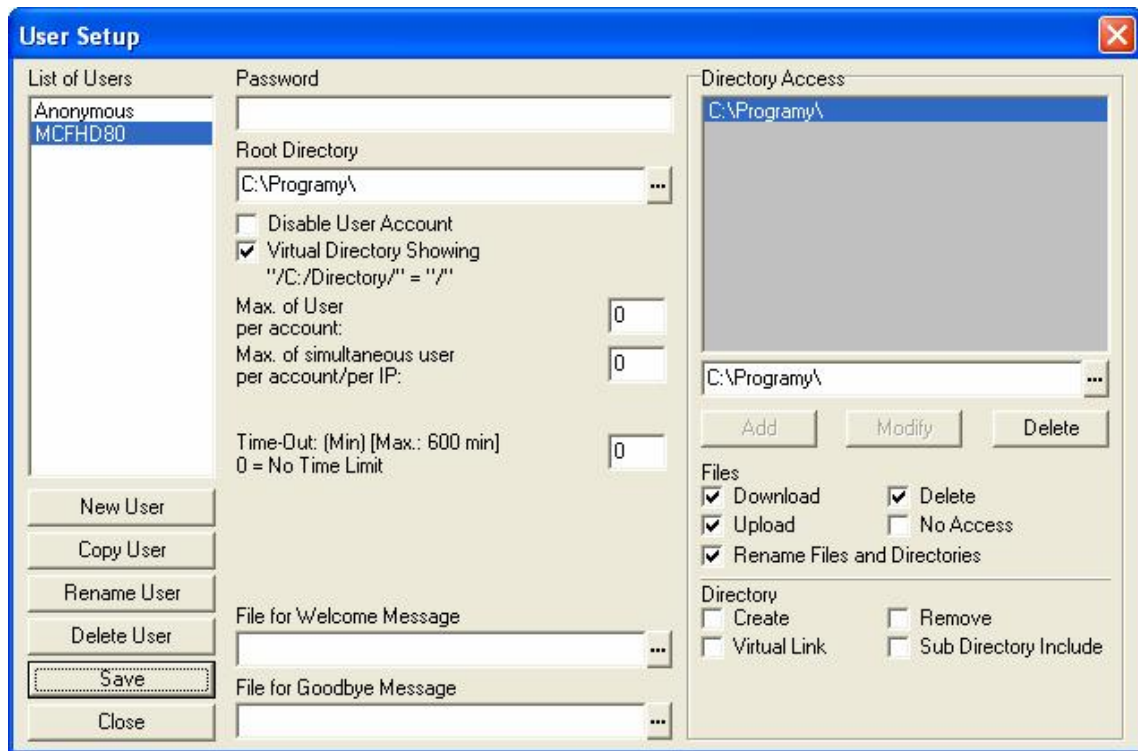
For complexity the properties setting of TCP/IP protocol for WINDOWS XP is shown.
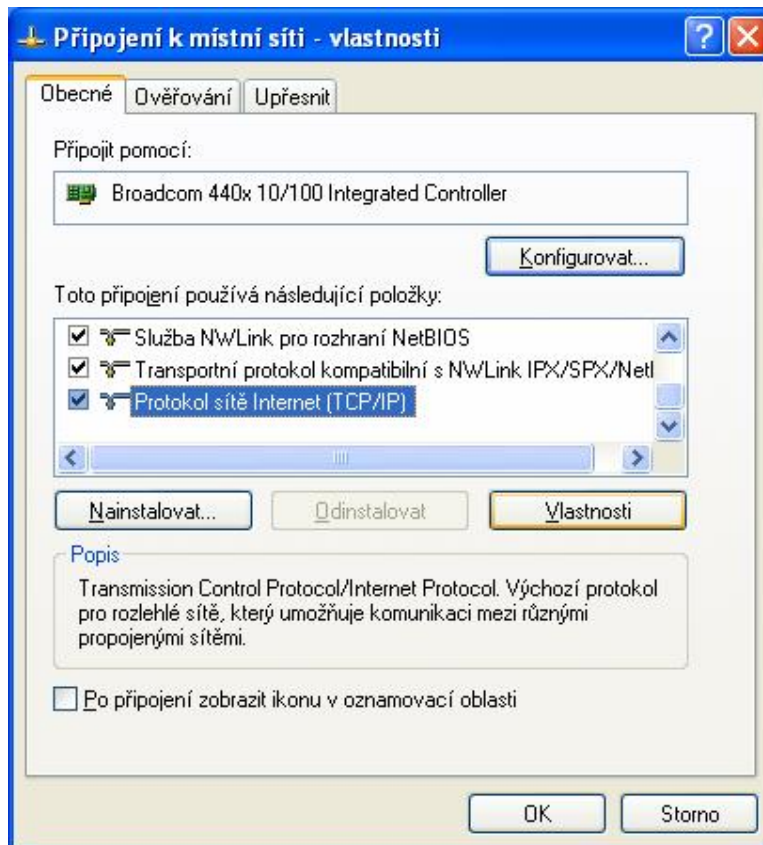
For properties setting click on „ Control Panel, > Network > LAN connection > Properties. (See left fig.

For FTP system transmission purposes the IP address must be set as fixed. This address must be the same as one in configuration file CNC836.KNF in parameter $85.

If Internet protocol (TCP/IP) is set click on" Settings" and in window shown { see fig.) select possibility „Specify an IP address" and type value (for example):

 192.168.0.210
Subnet mask type 255.255.255.0
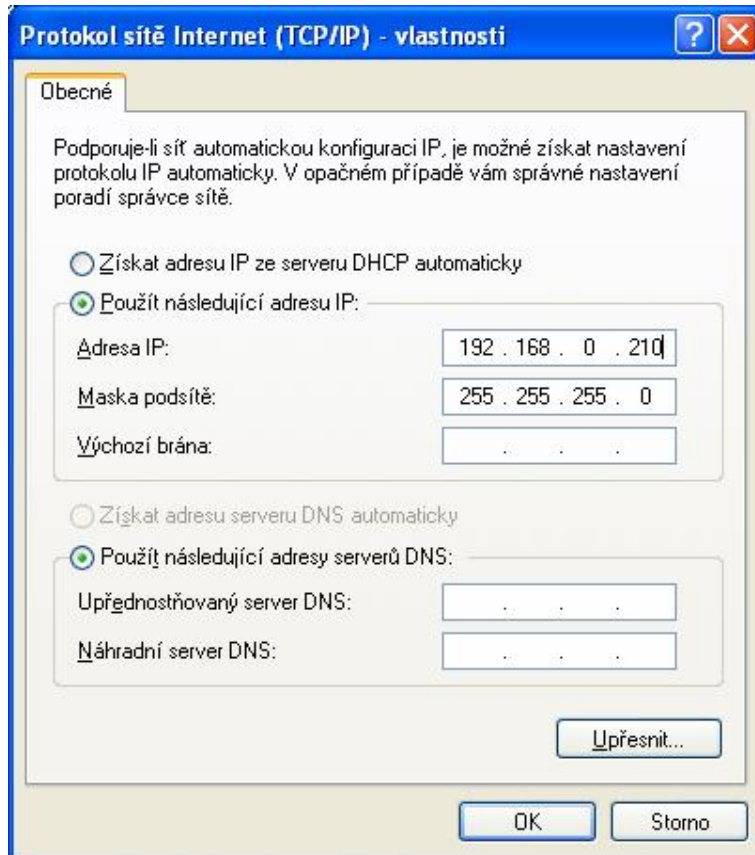
Confirm settings by clicking OK button.
This ends of FTP transmission settings.

System control of transmissions

The files transmission control is provided via System Control Panel.
Select menu PROGRAMY > PERIFERIE > LAN/DNC.
 By pushing button „Computer Directory" the list of programs in directory PROGRAMY is shown.
After partprogram selecting and after pushing button „INPUT DNC" the partprogram is downloaded.

Using pushbutton „OUTPUT to DNC" the partprogram is uploaded from system
Rem:
To gain TCP/IP addresses and other configuration information about IP addresses the following standard WINDOWS programs can be used:
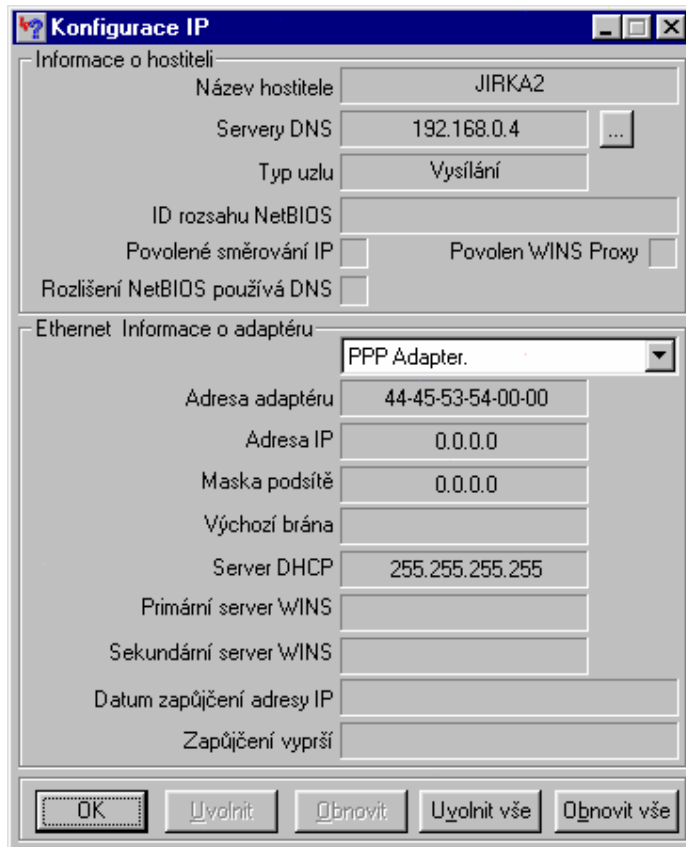
WINIPCFG a **IPCONFIG**

Program IPCONFIG is destined for   WINDOWS NT, but may be used for WIN95 a WIN98 as well
Run programs with parameter /ALL, e.g.:

```
WINIPCFG  /ALL
```

After this statement an IP configuration window is shown (see following figure)
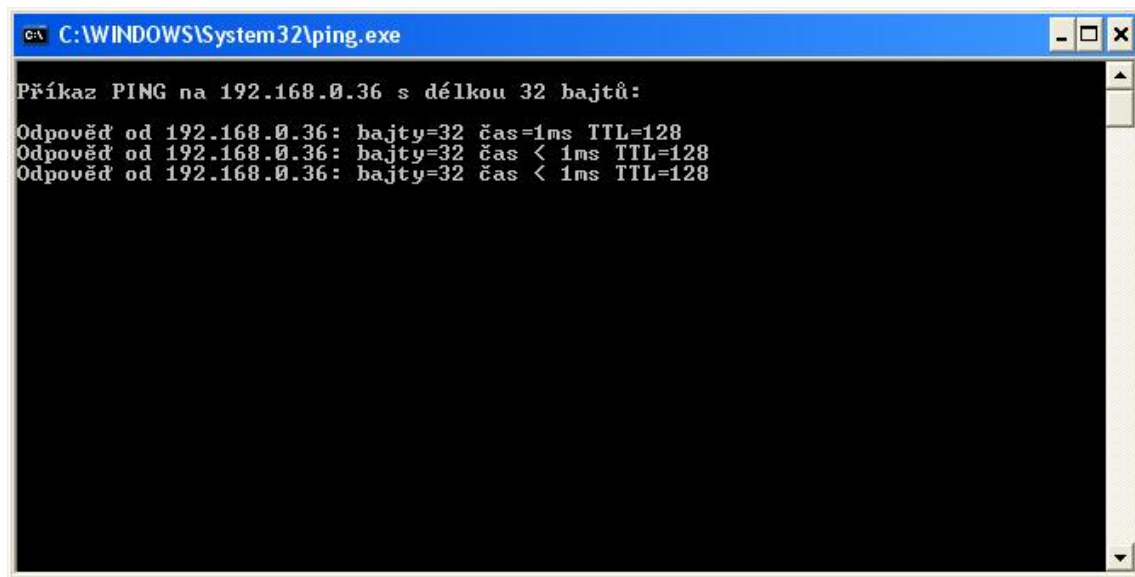

Connection check

For connection checking use program PING.EXE, which is a part of WINDOWS.
It is necessary to set properly the configuration of control system i.e. in file CNC836.KNF. In the computer no configuration is needed i.e. FTP server program may not be either installed or run.
At the command prompt, type:
PING 192.168.0.36

Where as a parameter is an IP address of the system (address which is set in parameter $84). In the following example address is 192.168.0.36 (in this example the other address is used than in examples mentioned above)

If the system reply is similar to answers shown in figure the transmission is OK and installation and configuration of FTP server takes place as mentioned above.

When as a message „ Timeout error" is obtained the connection does not work and installation of FTP server must take place after error correction only.

FTP transmission -List of errors

A transmission error results error **10.35** - Error FTP transmission No: xy, where xy means:

40	No connection with FTP server.
41	Error in connection – FTP server does not answer
42	Login is not permitted
43	Error during connection –FTP sever does not answer
44	User name not accepted
45	Password not accepted
46	Error during login - ACCT not implemented
47	Password not permitted
48	Binary transmission not set – no FTP server reaction
49	FTP server not accept setting binary transmission
50	Error during disconnection – no FTP server reaction
51	Disconnection rejected
52	Statement error - no FTP server reaction
53	Statement not accepted
54	Error during PORT statement – no FTP server reaction
55	Statement PORT not accepted
56	Data transmission error -no FTP server reaction
57	Error during data transmission
60	Error during data loading

61	Error during termination of data receiver
63	Error during termination of data source
64	Cancel...
65	Transmission cancelled
2	File in System does not exist
3	System path not found
5	System file access denied