Timer

Die Zeitschaltuhr

Restarts your computer
using the BIOS-clock

Version 0.32

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1 CONTENTS

2 START PARAMETERS CHANGED IN THE BIOS

When you do a new installation and if your BIOS accepts months additionally to day and time:

and/or if you deleted "Timer_UserInit.bat" in directory:

"C:\Documents and Settings\<User>\Application Data \Timer\"

If the BAT file does not exist it is copied from Timer's installation directory and contains as start day for the BIOS the 2001-12-31.

ONLY if you can set the start month in your BIOS you have to set the month from 1 (as it was before) to 12.

So: If your BIOS accept day and time only, you do not have to change anything.

3 BEFORE STARTING

3.1 Hint: Beta Version

Please remember: Beta Version

I am using Timer for weeks now – and it works (on my computer) as desired.

But you know: Programs are never without mistakes … and especially programs of version 0.xx will have that problem.

So: If you want to record an important broadcast that you do not want to miss use the method you were using before you loaded Timer down.

3.2 Overview

The program "Timer - die Zeitschaltuhr" starts the computer with the internal BIOS clock (see p. 10).from the shut down state (with mains activated). This means: You select the start time for the computer, start Timer (e.g. with "Timer 19:30") and shut down the computer. The computer needs instead of 100 W when running may be about 5 W in stand by. The BIOS restarts the computer some minutes before 19:30 and Windows is loaded and running at the desired time.

3.2.1 How does Timer work?

Timer computes the time difference till next start up of Windows. The BIOS is set to a fixed start-up time like the 31st of the month (Dec. 2001) at 23:59:59. Timer changes the Windows system time to the start time in BIOS minus the computed

time difference. So the BIOS will start up the computer in the computed time difference after shut down at the correct time of day.

Changing of the Windows system time means that the BIOS RTC (Real Time Clock) is set to the changed Windows time.

You don't have to hurry for shutting down the system. And if the RTC counts the seconds with or without running Windows gives the same time: the restart time is ok. Normally Timer will shut down the computer, you will not have to do this manually.

After restart of the computer (either automatically by BIOS or manually by the user – that's you) Timer recomputes the actual system time and adjusts it. Thereafter the user program is started (if you want to record transmissions this is DVBViewer).

Failure of the mains during the shut down period of the computer has no effect on the correct restart time (mains has to be back in time of cause), as the BIOS RTC is buffered by the battery. When the mains return the BIOS can boot depending on the settings. In the case that the computer boots the system time is correctly restored and the user program gets started. It wait for the start time of the program to be recorded and recording starts.

3.2.2   What does Timer change in your system?

Timer does not make entries into the Registry and can be removed simply by deleting the "installation directory". Running Timer creates two new directories, which should be deleted too:

```
%Temp%\Timer
= C:\Documents and Settings\<User>\Local Settings\Temp\Timer
```
and:

```
C:\Documents and Settings\<User>\Local Settings\Timer
```

Nearly all parts of Timer are written in plain old DOS except some AHK scripts (AutoHotKey) and some external programs (see below).

The time from start of boot until Windows is running is measured and taken into account by Timer. Change from winter to summer time DST (Daylight Saving Time) and back is taken into account

3.2.3   Why using DOS?

Timer was started as a test for DOS commands. I tried to find out if certain functions could be written as CMD file too instead of using C or Basic. During the time Timer grew to a greater number of lines (at this time more than 8800) and

subroutines (written in DOS too) were added. The subroutines are published as "DOS Doctor" (see below) at SourceForge.

You see the result now.

3.3   Used Programs

Because of the Microsoft licensing the PSTools are not included in this package and should be downloaded separately.

Programm	
PsTools.zip	From this collection you will need the programs PsList.exe (necessary) and PsShutdown.exe (necessary for Win 2000). Extract and save the programs using the original names PsList.exe and PsShutdown.exe into the Timer-directory or into one of directories listed in the user variable „path" („C:\Windows\System32" is one of them).
PsList.exe	Process Information Lister by Mark Russinovich Lists all tasks or gives information about one task. As Sysinternals belongs to Microsoft now it is not allowed to supply this file in the installation.
PsShutdown .exe	PsShutdown by Mark Russinovich shuts down the system; necessary for Windows 2000 (for Win XP suggested): PsShutdown has the advantage that the user can directly close it. At first PsShutdown is tried to be started. If this fails the normal Shutdown is tried. As Sysinternals belongs to Microsoft now it is not allowed to supply this file in the installation. Please load down for al PS-Tools: PsTools.zip
	http://www.microsoft.com/technet/sysinternals/Utilities/Pstools.mspx

These files are included in the Timer package:

Programm	
EPG Manager	thanks Griga: Program to read program information (times and names of transmissions) can only be run separately after a record
IniFile.com	read from an .INI-File from [section] and parameter=… Horst Schäffer

	http://home.mnet-online.de/horst.muc Horst.Schaeffer@gmx.net

QEcho.com	Echo with special parameters (e.g. without linefeed)
	
	Horst Schaeffer
	if present and if accessible:
	QEcho is used (with a time counted down to zero)
	
	if not present and NoEcho is not set:
	the message "... waiting for xx seconds now" is shown once
	
	The program is supplied with this package.

Sleep.exe	sleeps a period of time
Timeset.dll	von Lars_MQ (thanks Lars): Sets the system time if the TV transport stream contains time information. (The program is not necessary for the correct work of Timer but very recommended to correct timeuncertainties. Can only be used by and with DVBViewer. http://www.dvbviewer.info/forum/index.php?showtopic=19974 copy to "..\DVBViewer\Plugins"
TimerTool .exe	Special functions for timer that cannot be programmed in DOS command language. Checks if a given time is in DST (Daylight Saving Time, sommer time) or not. It is written in AHK (Autohotkey) and relativly complex as it take into account the leap-years starting at 1582. It does not make sense to export it to DOS. Converts the recording list into a DOS readable format. http://www.autohotkey.com/

Timer_Help
.bat
	opens the Explorer two times in the directories:
	`%Temp%\Timer`
	`%AppData%\Timer`

Timer_ZIP .bat	in `%AppData%\Timer`: Utility batch file that zips the directory `%AppData%\Timer` and its contents; result is contained in the parent directory. Only if 7-ZIP is installed.
www. 7-Zip.org	7-ZIP creates ZIP files (Freeware); also compressing to 7Z files which are much smaller than ZIP files.

3.4   Functions of Timer (Short write up)

- Auto restart of the computer by the BIOS from the shutdown state

- Manually set the restart time by the DOS command "Timer <Date> <Time>"

- Automatically set the restart time from the entries of the DVBViewer parameter file Timers.XML

- Correction of the Windows system time after auto restart by the BIOS

- Correction of the Windows system time after manual restart done by the user

- User specific batch file for determining of own start times

- Taken into account: Boottime and starttime of Windows

- Taken into account: Switching from DST to winter time and back (0.16)

- Monitor to recognize an external correction of the system time (e.g. by the DVBViewer); any change is monitored and logged (now only monitor: to be used later on) (0.16)

4 QUICK STARTUP

4.1 Using Timer, short and sweet

(Actions in brackets ( ) are done automatically without user interaction, however they must be installed by the user once.)

Functions before which are thought to be done manually by the user can be executed automatically by Timer as well.

- DVBViewer or another program: program the time to start (which is used by Timer and the time to end (where the user program should stop); this could be the start and end time of a TV program to be recorded
- Close your user program
- Start Timer once (this sets the new Windows system time)
- Shut down Windows (Start / Shut down / Shut down); do not switch off mains

- (The BIOS restarts the computer at the correct time / Set the BIOS Alarm Time, installation p. 17)
- (Auto logon into the user account in Windows / installation see p. 39)
- (An entry in the Startup-directory starts "Timer /Startup"; Timer restores the correct system time/ installation see p. 11)
- (Timer starts DVBViewer or another user program)
- (the user program does its work / DVBViewer records the programmed broadcast)

4.2 Installation and Startup in detail

4.2.1 A first test: Is the BIOS able to start your computer automatically?

Please check, if your computer is automatically started by the BIOS. In the BIOS set – as described on p. 11 – the "RTC Alarm" to "Enabled".

- Let us assume that the date / time is 2007-07-21 17:24. Do not alter the Windows system time. Do not use Timer.

- In the BIOS set the Alarm-day to 21 and the time e.g. to 17 hours 55 minutes 00 seconds. Save the BIOS (! do not forget !).

- Now boot your Windows. When Windows is working you can shut down the computer again. (Although this step seems to be useless it is *necessary* for some main boards, otherwise the auto boot of the BIOS would not work.)

- So: the computer is shut off now except for the 5V used by standby from the power supply; and of cause: do not switch off mains.

- Your computer should be switched on at 17:55 automatically. If this does not work you will have a BIOS problem. Check all BIOS settings again. If everything is alright: May be a BIOS update could help.

Everything ok till now? If not: also Timer cannot work correctly and will not work. If yes: please continue with the next chapter "Installation".

4.2.2 Installation

- Unzip the files to a directory of your choice. In this example I use "C:\Program Files\Timer".

- If you are working as a normal User (not Power User and not Administrator): Grant yourself the right "Change the system time", see p. 38. Administrators do have this right.

- Start Timer for the first time and let it generate the personal files:

- Please check the setup in file Timer_UserInit.bat.

  If Timer was did never run before, you will only find "Timer_UserInit_Vorlage.bat".

  If "Timer_UserInit.bat" does not exist, Timer copies it for you and loads it into the editor. Please check the settings, save it and close the editor. You will find this file in

```
%AppData%\Timer
("C:\Documents and Settings\<User> \ApplicationData\Timer").
```

Especially check the path of DVBViewer.exe which is normally installed in %Programfiles%\DVBViewer. Starting with 0.16.03 Timer controls and finds the installation path of DVBViewer.

Please do not remove or rename "Timer_UserInit_Vorlage.bat".

- Timer_UserInit.bat: If using DVBViewer: Check if the path for the files DVBViewer.exe and Timers.xml are correct. In the standard configuration this is "C:\Program Files\DVBViewer"; better and correct too is "%ProgramFiles%\DVBViewer"

- Enable the automatic boot time in the BIOS: Set "RTC Alarm" to "Enabled" and set the day to: 31 and the time to 23:59:59. In most BIOSes the field "month" and "year" do no exist; but if they exist set these to 2001 and 12 = December or to "N/A" = not defined.

To enter the BIOS at boot time press the key <Del> (in some cases it may be <F2>; watch the messages) and hold it until the BIOS is entered. The desired settings have a different place in every BIOS; so I'm sorry but you have to seek a little bit.

- In the Windows "Startup" directory include a small file (also named) "Timer.bat" with the start parameter "/Setup": In the English version Windows uses: "C:\Documents and Settings\<User>\Start Menu\Programs\Startup". <User> represents the actual username.

```
PUSHD "%ProgramFiles%\Timer"
Timer /Startup
POPD
```

(A batch file is used instead of a link because when using a link the pathnames sometimes are not resolved correctly. And the result is an error message. Seen using a path with blanks in it – although the path was enclosed by double quotes. You get an error message and Timer does not start.)

You will find the Startup directory with this path:

"C:\Documents and Settings\<User>\Start menu\Programs\Startup"

- Having selected and programmed a broadcast in DVBViewer you close the DVBViewer program and

- execute the command "Timer" without further parameters (e.g. using the command line).

Timer searches for the next program to be recorded and sets the Windows system time to the new value. (If there are 6 hours left until the recording starts Timer will set the system time to 2001-12-31 and 18:00 (about). Now shut down the computer (Start / Shut down / Shut down – CPU, fans etc. are switched off); but *don't switch off* the power supply. The computer will restart automatically about 5 min. before the recording starts depending on the time for the boot and start of Windows as measured before automatically and saved.

4.3   Uninstall Timer

- Delete the local directories

```
C:\ Documents and Settings \<User>\Application Data\Timer
   = %AppData%\Timer
C:\Documents and Settings\<User>\Local Settings\Temp\Timer
   = %Temp%\Timer
C:\Program Files\Timer
```

- Delete manually files that you created in the "Startup"-directory.

- Now you can delete the directory where you unzipped Timer, e.g. "C:\Program Files\Timer".

- In the BIOS: Set "RTC Alarm" to "Disabled", thereby the BIOS cannot start the computer automatically.

- There are no further entries made in your system.

5 OPERATING TIMER

5.1 Startparameter

5.1.1 Timer and the start parameters

Timer can be started manually in a DOS-box or by a link e.g. on the desktop.

Using the DOS-box you have to key in a parameter explicitly like in:

```
Timer /Startup
```

when you use a link the parameter has to be included in the link (s. S. 4),

Possible parameters:

Parameter	Meaning
(no parameter)	"Timer restart"
	1. Timer_UserPara.bat is not existing: The start of the next program to be recorded is searched in Timers.xml
	2. Timer_UserPara.bat is existing: this batch file provides date and time of the next restart.
	Only if date and time are found in 1. or 2.: The Windows system date and time is changed for the next restart by the BIOS.
	(Please remember: All files changed from now on show a date of the year 2001 !!!)
	The computer can be shut down at any time from now on (but before the restart time is reached).
/Auto	automated execution
	Timer does not wait for user intervention (e.g. in the

	case of an error), no PAUSE command is executed but the system is delayed for xx seconds; if anyone is looking at the screen at this time he/she can see the (error-) message the script is closed automatically is automatically set by /Startup
/Force	Some actions are executed, although Timer would not do this normally. What is done: • „DVBViewer is loaded": new system time is forced to be set
/Shutdown	includes /Auto: computes next time of start and shuts down the computer; „Timer /Wait /Shutdown" takes over control while DVBViewer is running (may be during a recording); waits until the recording is finished (DVBViewer should finish with „Close DVBViewer"), prepares the next start time and shuts down the computer (also if errors were detected during execution)
/Startup or /Restart	Timer can correct the Windows system time to actual time of day but cannot set a new start time. /Startup includes the switch "/Auto": the program executes without user intervention. After restart and boot by the BIOS: the operating system is loaded and the programs contained in the "Startup" directory are executed together with Timer. • The computer was shut down after a "Timer restart" (Timer.bat was executed): after the reboot the system time is changed to actual time of day • If the computer was *not* shut down after the "Timer restart" (Timer.bat *not* was executed): the system time is not changed after reboot • The computer was restarted before reboot-time of the BIOS is reached: the Windows system time is set to the actual time of day
/Uninstall	delete the directory with personal settings in C:\documents and settings\<User>\Application Data\Timer (see p. 13)
/Version	The version of Timer is written to the screen and to a file „Timer_Version_..." writes a batch file "„Timer_ZIP.bat" for zipping the Timer directory; the ZIPped filename includes the ver-

	sion of Timer
/Wait	waits until DVBViewer is unloaded
	after closing DVBViewer (automatically or with (X)) the program works for some seconds invisible for the user.
\<date\> \<time\>	Start date and time for an automatic reboot of the computer by the BIOS. \<date\> and \<time\> have to be separated by at least 1 blank:
	date and time overwrite a time read by the program, also in the case that the internal determined time is earlier that the time given by the parameter.
	Additional time needed for reboot until Windows is operating properly is taken into account (this time is measured and saved by Timer at every successful automated restart.
	Date can be in the form: "Mo 2007-06-09", "2007-06-09", "09.06.07" or "09.06.2007"
	Time is only allowed in form "13:50:10"
Set Debug=/JA	(see below in the separate chapter p. 14)
	DOS-command given in a DOS-box before starting Timer (or can be edited into Timer.bat to be one of the first lines); output is made to CON (the console)
	Sorry: YES is not recognized, please use "JA".
Set Debug=/ECHO	dumps all batch commands to the console (useful when the script terminates with something like "Unknown command")
Set Debug=/FILE	(see below in the separate chapter p. 14)
	Output is made to a special data file "Timer_DebOut.txt"
Set Debug=/TRACE	Print specific points in Timer to the console;
	output of much less lines than with the parameter ECHO;
	useful when searching message like "File not found" during the output of a normal Timer run (for details please see the FAQs).

5.2   Starting Timer

5.2.1   Install a link to Timer in the Path

Create a batch file in one of the Path's directories with the name Timer.bat. This file is used to start the (provided) file Timer.bat. As all directories in the global name Path are searched, Timer can be reached from every starting point.

You get the directories in Path in a DOS-box typing:

```
> path
```

and the system replies e.g. with:

```
> path=C:\Windows\System32;C:\Windows;…
```

Create the new file Timer.bat; it should contain:

```
PUSHD "%ProgramFiles%\Timer"
Timer.bat" %*
Rem --- return to original dir
POPD
```

This file could be created e.g. in C:\Windows\System32. (You will need Administrator rights for this.) I prepared a file as a template for you in "Timer.bat_nach-System32-kopieren".

5.2.2   Starting Timer on the command line

You compute in your own program date and time for the next start of your computer. Start Timer with date and time as parameters. If your program is a batch program you should CALL Timer by (Call because otherwise Timer would not return to the calling program – separate <Date> and <Time> with a blank):

```
call timer <Date> <Time>
```

You can do this manually on the command line (<Win-Taste-R>) or in a DOS-box (<Win-Taste-R> CMD) by typing:

```
Timer 10.6.07 20:10
```

When the July 10th is he actual date (today) you can omit <Date> and write:

```
Timer 20:10
```

Path to Timer's directory

If Timer is not found you must either supply the full path
or install a small batch file as mentioned above.

5.2.3 *Reset the time of day to the correct time*

When you called timer for a later automatic reboot by the BIOS the system time was set somewhere in December 2001.

When you decide to continue working you want to return to the correct time of day.

Simply call Timer again (you can do this without any parameters – also without the /Startup): Timer recognizes that the system time was set for a restart and corrects it to the actual time.

Some seconds difference are possible. – So if you are using DVBViewer start the viewer and use the plugin "Timeset.dll" by Lars_MQ or another possibility for time correction. Possibly (and hopefully) some seconds difference will make no problems for your application.

5.2.4 *Creating your own reading routine into Timer: Timer_UserPara.BAT*

As Timer is a DOS script you could change it and include your own time determining routine (too complicated? – please continue reading).

> **Please mention:**
>
> I provided a template for you: *Timer_UserPara_Vorlage-.BAT*.
>
> Copy this file to the name
>
> *Timer_UserPara.BAT*.
>
> and include you commands there.
>
> If this file (*Timer_UserPara.BAT*) exists it is executed; if it does not exist nothing happens (and no errors are shown).

The routine *Timer_UserPara.BAT* is *always* executed from the user's directory which is normally:

```
%AppData%\Timer
   which is:
"C:\Documents and Settings\<User>\Application Data\Timer"
```

If it does not exist in %AppData% but in the installation directory it is copied to %AppData% (it is never deleted).

You have two possibilities for calling Timer:

- returning one pair date and time to Timer or

- returning several pairs of date and time to Timer

If the file Timer_UserPara.BAT exists the return of several parameters (with defined names) are expected.

5.2.4.1 Method 1: returning 1 pair of date and time

In your program you will have to return these parameters:

```
Timer_Manuell_DateStr and Timer_Manuell_TimeStr
```

which could be set by (in this example to fixed values):

```
Set Timer_Manuell_DateStr=10.06.2007
Set Timer_Manuell_TimeStr=20:12:15
```

5.2.4.2 Method 2: Returning many pairs of date and time

This can be as much pairs as you want; no limit is set only execution time will be longer. The pairs do not have to be sorted. Timer will search for the next start time and computes when to wake up again. Timer finds overlaps of two or more pairs and takes this into account respecting the end time.

Principle:

Timer enumerates the claimed pairs internally: the call contains a pair number which has to be returned. Timer has to claim the pairs two times in order to find the earliest pair. And you, the user of Timer_UserPara.BAT have to return the same pair for the same pair number.

Are there no more date/time pairs to return please return an empty variable TUP_DateS (Set TUP_DateS=). Timer recognizes this as the end of the pairs.

The following table summarizes possible variable names and there meaning. The column "necessary" marks those variable, that are needed by Timer for a correct work.

> **Remark:**
>
> The names of the returned variable are used for recording a transmission. If not used please leave them blank or assign them your own meaning (except the "necessary" ones).

Variable name	necessary	meaning
TUP_...		means: Timer User Parameter

TUP_RecNo		Claim of Timer: Pair number, the first pair number is 1
TUP_Prog		free text: Title of the pair (name of the transmission)
TUP_Send		free text: Name of the TV station
TUP_DateS	X	Date start: Format YYYY-MM-DD or DD.MM.YYYY (2007-11-16 or 16.11.2007)
TUP_TimeS	X	Time start: Format: HH:MM:SS or HH:MM (17:01:27 or 17:27)
TUP_TimeE	X	Time end: Format: HH:MM:SS or HH:MM
TUP_End		only info: what to do at the end of the recording
TUP_Day		only info: name of the start day (Monday, …)
TUP_Activ		date-time pair is active (sorry not _Active) if not active it is not taken into account (is neglected) passive: 0(=Null), N, NO, NEIN, FALSE (lower and upper case are not considered) aktive: all other text

5.2.5 *Converting characters: TimerTool.exe FILE …*

DVBViewer's recording list contains characters that cannot be processed in a DOS program. These characters are converted into those that do not make problems. Characters to be converted are: ä ö ü Ä Ö Ü und: ß ( ) | ! %.

Calling TimerTool.exe FILE:

```
TimerTool.exe FILE <Input-file>  <Output-file>
```

5.2.6 *Determining Summertime: TimerTool.exe TIME …*

Determins if a date-time pair is in the winter or summer time (DST). According to the result the change from winter to summer time or back are taken into account for the time till next restart.

Calling TimerTool.exe TIME:

with SZMonStart / SZMonEnd: Start month and end month of summer time, in Europe 3=March and 10=October.

```
TimerTool.exe TIME Year Month Day Hour Min Sec SZMonStart SZMonEnd
```


5.3   Timer /Startup

This picture shows a run of Timer, that will restart the computer in about xx hours ("hours to wait:"). The white background signs a preparation without errors. (Explanation of error messages see p. 14.)

A yellow background refers to warnings, a red background shows errors. When errors are detected the computer is not shut down; they must be corrected first (Example: "DVBViewer is loaded").

As you see in the picture above Timer prepares the list of programs (this takes a while) and shows the contents in the DOS window:

Program	meaning
inactive	programs that are entered in the list but not activated; they are simply ignored
	(in the program list of DVBViewer at the left end of the line there is no cross in the check box; when calling the users batch it is set: TUP_Activ=0)
waiting	a program that is recorded at a later time
Start	this program will be recorded next (the BIOS starts the computer at that time); it is possible that more programs overlap; in this case more than one program is marked "**Start**".
	"days to wait" and "hours to wait" shows the time till next restart.

All other output should not be explained here in detail – I hope you can understand them (if not send me a mail).

When the computer starts up the next time ("Timer /Startup") the system time is reset to the correct time of day and starts DVBViewer for the next recording (the picture below shows a premature start):

Bild

When DVBViewer closes down Timer detects this, prepares the list of programs again (DVBViewer has updated it in the meantime) starts the shutdown and closes itself.

5.3.1 Yellow window: wait for actual system time to be set
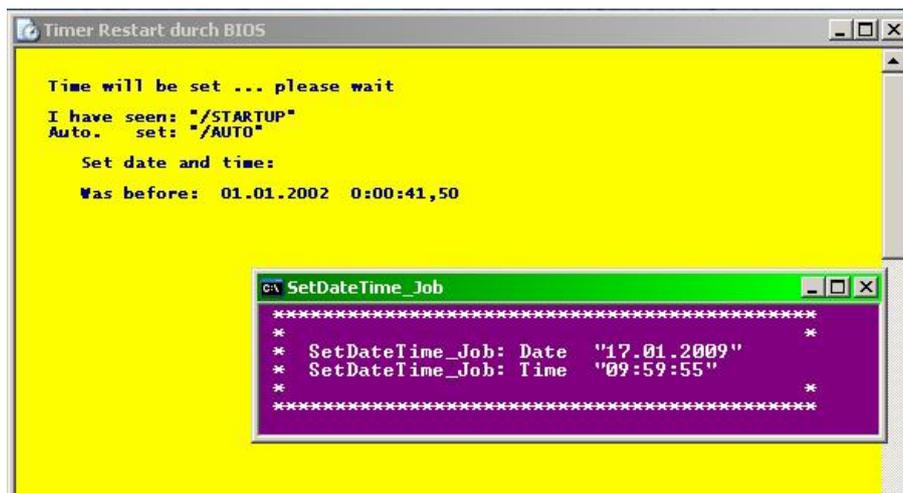
If you see a yellow window when starting "Timer" or "Timer /Startup", Timer computes the actual systemtime. When starting the computer a system time in the year 2001 was detected (during the last shutdown Timer had set a new time for automatic restart), which had to be recomputed to the actual systemtime.

When the actual time is set, the background colour of the window is reverted to white.

5.3.2 Reverting the date / time set by Timer (from 2001 to time of day)

If you called Timer for a later restart and boot by the BIOS the system time was set to a day in December 2001.

If you decide to continue working and you do not want to have the files changed in 2001 you will have to revert to the correct system date and time.

Just call Timer a second time (without any parameters or with "/Startup"). Timer recognizes that the system time was changed before and reverts to the original time of the day. (Some seconds difference are possible depending of the execution speed of Timer – which is normally high. I recommend "Timeset.dll" written by Lars_MQ, p. 7).

5.3.3   Date- and *Timeformats*

Use as format for a date:

Format	Example
DD.MM.YYYY	21.06.2007
[D]D.[M]M.YY	21.6.07 or 21.06.07
	(but not 21.6.7)
YYYY-[M]M-[D]D	2007-06-21 or 2007-6-21
dd YYYY-[M]M-[D]D	Mo 2007-06-21 or Mo 2007-6-21

Use as format for a time:

Format	Example
HH:MM:SS	20:12:15
HH:MM	20:12

5.4   Configuring the BIOS

5.4.1   *BIOS without setting of the month to restart*

(Since 0.19.01) The next start can be 365 days away.

To do this job Timer has to restart every month once (the BIOS itself can set only the day to restart). At each start up in between Timer controls if the final date is reached. If there is another period to wait Timer does not start the user program and shuts down the computer after a short waiting period.

When using more start ups till reaching the end time, you should set the start time to some minutes earlier than when using only one hop.

The configuration in the BIOS provides that your computer is awakened at the right time for work.

Please set the following:

```
Power On by RTC Alarm        [Enabled]
Date(of Month) Alarm         [31]
Alarm Time(hh:mm)             23:59:59
```

The RTC (Real Time Clock) alarm has to be set to enabled, otherwise the BIOS clock cannot wake up the computer.

As day please set the 31. of the month. (All modern BIOSes do have these settings and most of them are working correctly, only very new boards (written in Feb. 2008) can set the month for a restart. I haven't seen one with a year to restart) If your BIOS shows these please set the month to 12 = December and the year to 2001. (we choose the December because it has 31 days.)

Set the time to 23:59:59.

Please notice:

Selecting December you have the longest possible time for the Restart (31 days in advance).

Although the restart time in the BIOS can be set in the configuration file, you should not alter this. Timer could not compute the time difference correctly if you did. (May be this could be implemented later on – if there it is necessary to do so.)

Unfortunately – I must say – you have to look around a little bit in the BIOS as every company configures the RTC Alarm parameters at different places. But somewhere you will find the settings, every modern BIOS supplies these.

Please notice: Start by mechanical timer clock

If you selected in the BIOS "Start when mains are switched on" it could be possible that you have to press the start button at the front of your computer from now on.

Therefore: A start done by an external timer clock (switching on the power supply at some time) may not work correctly. Please try this first if you need an external timer clock. An external start should work again well when you set the "Power on by RTC Alarm" to "Disabled".

5.4.2 BIOS with setting of the month to restart

The next restart time can be max. 365 days away.

```
Power On by RTC Alarm      [Enabled]
Month for Alarm            [12]
Date(of Month) Alarm       [31]
Alarm Time(hh:mm)           23:59:59
```

If you want to use more than 31 days till restart (up to 365 days) set the month to restart to 12 = December.

If you set the month to "N/A" the function is the same as if "Month for Alarm" did not exist. Start is at the 31st day of every month. (As December is used there are 31 possible days till start.)

Additionally you will have to set in your file Timer_Startup_Para.bat the variable

```
Set Timer_BiosRestartUseMonth=1
```

Warning:

Do not use this variable if you board is not capable of setting the month to restart or if you did not set it to December.

5.5   Timer_UserInit.bat

Sie sehen hier einen Ausschnitt: / This is a part from the file:

```
::   ********************************************************************
::   *
::   Sprache, die Timer sprechen soll
::   Language to be used by Timer
::     Deutsch  / German:  Set Timer_Lang=DE
::     Englisch / English: Set Timer_Lang=EN

Set Timer_Lang=DE
::   *
::   ********************************************************************

::   Pfad zum nach dem Reboot durch das BIOS
::   zu startenden (beliebigen) User-Programms
::     Standard: DVBViewer.exe und Timers.xml in der Dir des DVB-Viewers
::
::   Path to the program that is to start after automated Reboot by the BIOS
::     default: DVBViewer.exe and Timers.xml in the Dir of  DVB-Viewers
```

```
::
::  default:
::     Set Timer_Dir_StartProg=%ProgramFiles%\DVBViewer
::     Set Timer_File_StartProg=%Timer_Dir_StartProg%\DVBViewer.exe
::     Set Timer_File_XML=%Timer_DVBViewer_Dir%\timers.xml
::
:: --- no longer used / --- nicht mehr benoetigt: ---
:: Set Timer_Dir_StartProg=D:\Programme\DVBViewer
:: Set Timer_File_StartProg=%Timer_Dir_StartProg%\DVBViewer.exe
::
::  machs nur einmal / do only once
:: If "%Timer_PathSet%" EQU "" (
:: Set Timer_PathSet=1
:: Set PATH=%Timer_Dir_StartProg%;%PATH%
::)
::
:: Set Timer_File_XML=timers.xml
:: Set Timer_File_XML=%Timer_Dir_StartProg%\timers.xml
::  *
:: **********************************************************************


::  das temporaere Datenfile / temporary datafile
::  default:
::     Set Timer_File_Temp=%Temp%\Timer
::     Set Timer_File_Korr=%Timer_File_Temp%\Timers.korr
::
Set Timer_File_Temp=%Temp%\Timer
Set Timer_File_Korr=%Timer_File_Temp%\Timers.korr
::  *
:: **********************************************************************
::  User defaults:

::  Zeit, zu der das BIOS den Rechner wieder startet
::     !!! MUSS im BIOS genau so gesetzt sein !!!
::
::     immer HINTER das heutige Datum setzen (spaeter)
::     sonst loescht DVBViewer sofort alle aufzunehmenden
::     Programme, wenn es noch aktiv ist
::     (Das Jahr ist vollkommen egal, nur Windows muss es koennen)
::
::     ACHTUNG: Diese Zeit bitte NICHT aendern.
::     Eine andere Zeit ist z.Zt. nicht unterstuetzt.
::


::  Time set in BIOS when the computer should be restarted
::     !!! has to be set in the BIOS with these parameters !!!
::
::     has to be a time earlier than the actual time of day
::     otherwise DVBViewer closes all recordings and deletes
::     all programs to be recorded in the future
::     (The year is normally not of interest - most BIOSes do not
::     support years - only Windows has to recognize it correctly)
::
::     ATTENTION: Do NOT change this time.
::     Other times may not be supported by Timer.
::
Set /A Timer_BiosRestartDateYYYY= 2001
Set /A Timer_BiosRestartDateMM= 12
Set /A Timer_BiosRestartDateTT= 31
Set /A Timer_BiosRestartTimeStd= 23
Set /A Timer_BiosRestartTimeMin= 59
Set /A Timer_BiosRestartTimeSek= 59

::  Sicherheitszeit, die der Computer vor der Startzeit
::  bereit sein soll (die Zeit vom Booten bis zum laufenden
::  Windows wird noch zusaetzlich hinzuaddiert)
::
::  Beispiel:
::  Startzeit der Aufnahme:     20:15
::  Boot bis laufendes Windows: -2:00
::  Sicherheitszeit:           -1:00
::                              ------
::  Startzeit des BIOS:         20:12
::

::  Security time: Time from working Windows til start of the
::  recording
::  (The time from boot til working Windows is not included in
::  this parameter)
::
::  Example:
::  Recording starting at      20:15
```

```
::   Boot til running Windows:  -2:00
::   Security time:            -1:00
::                             -----
::   Starttime of BIOS:        20:12

::   Default: Set /A Timer_WindowsStartSek= 60

Set /A Timer_WindowsStartSek= 60
:: *
:: *********************************************************************

:: wenn die naechste Aufnahme in weniger als xx Sekunden
::   bevorsteht, Rechner nicht herunterfahren
::   default (deaktiviert): "... *0"
::

:: Start of next recording in less than xx seconds
::   then do not shut down the computer
::   default (deactivated): "... *0"
::
Set /A Timer_RestartNichtMachenSek= 15 * 60  *0
:: *
:: *********************************************************************

::   Systemzeit kann durch Timer umgestellt werden
::   System time can be changed by Timer
::
::     default: aktiviert, die Systemzeit wird umgestellt:
::     default: activated, system time is changed:
::     Set   Timer_SetDateUndTime=
:: *
:: *********************************************************************
```

5.5.1   *Timer starts your favourite program*

The setting in the variable .._DIR_.. gives the path to the program to start; .._FILE_.. sets the program itself.

(If the list of recording for DVBViewer "Timers.xml" does not exist in this path, the conversion is not tried. Please notice that you will have to provide the date and time in you own program in this case, see p. **Fehler! Textmarke nicht definiert.**.)

```
Set Timer_Dir_StartProg=D:\Programme\DVBViewer
Set Timer_File_StartProg=%Timer_Dir_StartProg%\DVBViewer.exe
```

5.6   **Timer_Startup_Para.bat**

> **Please remember: Restarting User**
>
> This file is automatically generated by Timer. Changes made by you are overwritten with the next run of Timer.
>
> The file is kept in "C:\ Documents and Settings\<User>\ Application Data\Timer": That means: The user logged on automatically after restart of the BIOS has to be the same

as the one who executed Timer before restart. (In most cased this is true as the computer logged on automatically before restart too.)

Please notice: Timer_aktiv=…

When using the debug option (Set Debug=/JA or Set Debug=/FILE) this value is correctly set by:

TimerSav_Restore.bat.

Here the values for the next automated startup of the computer are kept. The file will be rewritten if one of the values are changed.

Timer_aktiv=0: No start using the BIOS is set. The system time is the actual time of the day.

Timer_aktiv=1: The computer was started by the BIOS or the BIOS should start the computer at later times. The system time has to be corrected to revert to the correct time of the day. (This also works right if you start Timer as second time.)

```
Rem vvvvvvvvvv Anfg %0 vvvvvvvvvv
Rem --- von "Timer" automatisch erzeugtes File ---
Rem
Set Timer_Startup_File=Timer_Startup_Para.bat
Set Timer_LizenzAkzeptiert=
::
Set Timer_BiosRestartDateYYYY=2001
Set Timer_BiosRestartDateMM=12
Set Timer_BiosRestartDateTT=31
Set Timer_BiosRestartTimeStd=23
Set Timer_BiosRestartTimeMin=59
Set Timer_BiosRestartTimeSek=59
::
Set Timer_BiosRestartDauer=55
If "%Timer_BiosRestartDauer%" EQU "" Set Timer_BiosRestartDauer=180
::
Set Timer_NextDate=20070618
Set Timer_NextTime=42840
Set Timer_NextDateStr=18.06.2007
Set Timer_NextTimeStr=11:54:00
Set Timer_UhrTimeKorr=42841
::
Set Timer_SetDateTT=31
Set Timer_SetTime=84426
Set Timer_SetTimeStr=23:27:06
Set Timer_SetDateUndTime=Rem .
Set Timer_Aktiv=0
Rem ^^^^^^^^^^ Ende %0 ^^^^^^^^^^
Exit /B 0
```

5.7   Making a series of recordings

Let us assume, you want to record a transmission on Sunday afternoon, the next one in the night from Sunday to Monday and the third on Tuesday evening. You do not want that the computer runs all the time (consuming 120 watts). It should

be started at the correct time for the recording, do the recording and is shut down again. Then started for the second record, going to sleep again and started for the third record.

This option is included starting with version 0.07 of Timer.

As usual Timer starts, corrects the system time to the time of day and starts DVBViewer. Timer is not stopped but waits for DVBViewer to be finished, starting the next shutdown (Timer does the shutdown, not DVBViewer!) incl. setting of the correct system time for the next wake up.

If you close DVBViewer manually before the recording is finished (up to 5 min. before the end of the record – as defined in DVBViewer's list of recordings) Timer does not do the shutdown but stops itself. You can decide what to do next.

When DVBViewer is closed later as marked in the list of recordings (may be by an overlapping recording), Timer does the shutdown after DVBViewer is closed.

But please remember:

Shutting down the system: "Close DVBViewer"

For all series recordings DVBViewer has to be closed with "Close DVBViewer" (not with "Force Shutdown after Recording"). This ends DVBViewer but does not shut down the system. Timer recognizes the closed DVBViewer and starts the search fort he next program to be recorded. Then you have time of xx seconds to cancel the shutdown (with xx = 60 seconds as a standard).

Shutdown of the system

(see special chapter below): You can stop the shutdown and receive manual control thereafter.

Beginning with Windows XP the shutdown program is included in the system. All Windows versions up to Windows 2000 need a special shutdown program. I recommend PsShutdown from Sysinternals.

A special start sequence for PsShutdown is included in Timer. If this fails (PsShutdown not provided in Timers or one of the paths directories), the normal Shutdown.exe is tried to be started. But this can only be stopped on the command line.

```
Timer 0.20.06 BETA

I have seen: "/SHUTDOWN"
Auto.   set: "/AUTO"

I have seen: "/Wait"


1   waiting   20.09.2008 10:01:00 11:02:00 WDR 5: Krimi
2   inactive  20.09.2008 23:01:00 01:02:00 WDR 5: Krimi
3  **Start**  20.09.2008 00:00:00 01:02:00 DLF: KrimiDLF


+--------------------------------------------------+
:                                                  :
:          Timer - Die Zeitschaltuhr               :
:              Version 0.20.06                     :
:                                                  :
+--------------------------------------------------+


+--------------------------------------------------+
:                                                  :
:   Act. date:    18.09.2008                       :
:   Act. time:    19:07:31                         :
:                                                  :
:   Station:      DLF                              :
:   program:      KrimiDLF                         :
:   at:           20.09.2008                       :
:   from:         00:00:00                         :
:   till:         01:02:00                         :
:                                                  :
+--------------------------------------------------+
:                                                  :
:   BIOS-start at:    31.12.2001 23:59:59          :
:                                                  :
:   Restart-Date:     30.12.2001                   :
:   Restart-Time:     19:07:30                     :
:                                                  :
:   days to wait:     1                    :       :
:   hours to wait:    04:52:29                     :
:                                                  :
:   BIOS-Timer:       activated                    :
:                                                  :
+--------------------------------------------------+
```

Possible problems:

- DVBViewer / Settings / Options / General / Shutdown: „Don't shut down if a recording is due within (minutes)" e.g. 15: This can cause that DVBViewer is not closed. (especially when you test series recordings with short sleep and reboot times. The second recording would be appended to the first after a short wait time. As a result DVBViewer would be shut down after the second recording.

- If you use the possibility of series recordings frequently I suggest that you use and set the Options / Recorder / Recordings / Action After Recording "Close DVBViewer" as a standard.

5.7.1   Cancel the Shutdown of the system

There are many possibilities to stop a shutdown:

- DVBViewer shows a window prior to closing or shutting down the system for some seconds. A close of DVBViewer causes Timer to resume its work.

- Timer shows some time (usually 60 seconds) before shutdown a separate window which you can stop by typing <Ctrl-C>. You are asked if you want to cancel the batch job, reply with "Y". (20 Seconds before the shutdown starts the background of the window changes from blue to yellow.)

- Shutdown and PsShutdown (by Sysinternals) itself can be cancelled 15 seconds before shutdown. The info window of Shutdown can be cancelled by a keyboard command only: Type "Shutdown –a" in a DOS-Box. PsShutdown shows a "Cancel" button; shutdown can be stopped by "Cancel".

5.8   DST (Daylight Saving Time) and winter time

Switching from DST (Daylight Saving Time, sommer time) to winter time (UTC = GMT Greenich Mean Time) is included in Timer starting with Version 0.16. You can compute: DST = UTC + 1 hour.

The start of DST is all in Europe on the last weekend in March on Sunday at 02.00 o'clock; the clock is advanced for 1 hour from 02.00 to 03.00 o'clock. We are missing 1 hour, so the time difference from Saturday 21.00 till Sunday 03.00 is 5 hours.

Start of winter time is on the last weekend in October again on Sunday at 02.00; the clock is set back for 1 hour from 03.00 to 02.00. We have two hours from 02

to 03 o'clock on that Sunday. The time difference from Saturday 21.00 till Sunday 03.00 is 7 hours.

> **Switching from DST to winter time**
>
> Due to the double hour from 02 to 03.00 (hour 2a and 2b) Timer cannot start correctly in these hours (as you cannot say if you mean 2a or 2b). (And there is the question what the reaction of a recording program may be during the set back of the clock when being set to before the starting time.)
>
> For recordings during these hours I recommend: set the starting time to winter time (e.g. 1:59:00) and the end time to a time after 03.00 o'clock (e.g. 3:05:00).

5.9   Monitor for Corrections of the System Time

Timer can monitor the quality of the computed system time, if there is an absolute time available. This time can be got over the internet from time servers, in Europe by the time transmitter DCF77 in Mainflingen / Frankfurt / Germany. This absolute time can correct the computers system time directly. It can be won too from the transport stream of most TV stations and can correct the system time over a recording program (like DVBViewer).

If you like you can set the system time from the time of a radio controlled clock. (You have to look that you set it exactly.)

Common to all methods is that the system time is altered. Timer contains a modul TimeLeapJob that controls the system time while a user program runs (like DVBViewer). It is started as a separate job before the user program is started and detects time leap with 3 seconds or more into positive or negative direction. Time leaps are logged to a file.

Time leaps of more than 100 seconds to the positive or negative direction are ignored (not logged or transmitted in the output file); but they are used for adjusting TimeLeap to the new system time. Changes of system time are sometimes produced by errors (not investigated till now) or by Timer itself.

Time leaps with less or equal 2 seconds are used to synchronize TimeLeap to an exact repeat time of 1000 msec. Changes in sleep time for one period are logged to the console.

Today time leaps are only logged but do not result in any other actions.

Incorrect time from the BIOS-clock

A principle possibility for errors is the BIOS-clock itself that results in uncorrect times for the restart.

Incorrect time when mains are switched off

Often when mains are switched off the battery on the main board (in most cases a CR2032, a round battery with the size of 1.5 cm) is the cause for incorrect running BIOS-timers.

At the end of its lifetime when the voltage goes down the BIOS-clock runs quicker than in normal operation. Later on the BIOS stops operation an the computer cannot be restarted by the BIOS.

5.10 EPGManager: Electronic Program Guide

During normal operation DVBViewer reads the program information for the next days for each selected channel. This information is stored in a data file and is available even if you change to another channel.

Griga has provided a separate program (EPGManager) that zaps through all (manually) selected channels and stores the information for later use. This program is included in the GE version of DVBViewer but not in the Pro version. It is not intended to implement EPGManager in the next time.

EPGManager cannot run parallel to DVBViewer because it does not recognize if cards are used by DVBViewer (for display or recording). EPGManager would use these card unconditionally.

Because of these facts Timer starts EPGManager before shutting down the computer. This takes its time depending on the number of channels that have to be read.

Take into account the time EPGManager needs

After DVBViewer is finished EPGManager needs some time to perform reading the program information in the selected channels before the computer is shut down by Timer.

You can set the minimum time in DVBViewer's Options / Settings where DVBViewer does not shut down. This time should be set to the maximum time needed by EPGManager plus 10 minutes.

EPGManager is not started,

if you started Timer manually and Timer can process the information for the next start at once.

EPGManager starts automatically, if DVBViewer ran for a while and Timer detected the end of DVBViewer.

5.10.1 Installing EPGManager

The latest version of EPGManager is 2.0.2 that is provided with this version of Timer. You can find it at: xxxx

Where to store EPGManager

EPGManager has to be copied manually into the starting directory of DVBViewer. It can be run correctly only from that directory.

Before the first automatic start of EPGManager you will have to:

- Check the channels (in EPGManager) whose program information should be read in.

- Set the time that DVBViewer will read the information in every channel ("Interval").

Default time "Interval": 25 seconds

EPGManager sets the "Interval" time to 10 seconds at the first start.

Change this to 25 sec. which should be enough normally.

Store the settings with "Save".
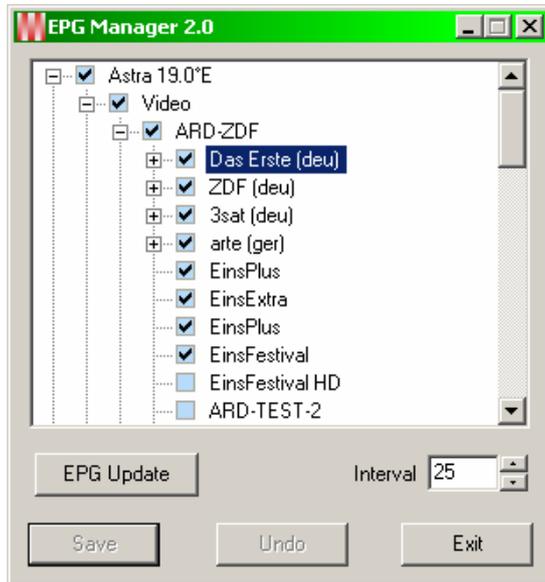
As more than one station is in a bouquet these stations are read together when selecting one frequency. EPGManager jumps over these station whose information is already read.

If you read the information of a station for that no decoder is available you will get an error message that times out after a while. The next station will be read (if DVBViewer was not minimized manually).

5.10.2   Warning: "Recorder/Timeshift is active! ..."

Sometimes when the EPG-Manager is used a message in the DVBViewer arises "Recorder/Timeshift is active! Should I tune the channel, anyway ?". This question cannot be answered normally the EPG-Manager is started automatically. The question is repeated with each change of the channel originated by EPG-Manager. As it cannot be answered the channel will not be changed.

But this is the wrong question as timeshift is not active – the only thing is that the checkbox "Display Waning on channel change if timeshift is enabled" is marked on.

> **"Display Waning on channel change if ..."**
>
> When you receive this message in connection with EPG-Manager (but timeshift is not active), you should mark off this checkbox in:
>
> Setting / Options / Timeshift / Display Warning on channel change if timeshift is enabled
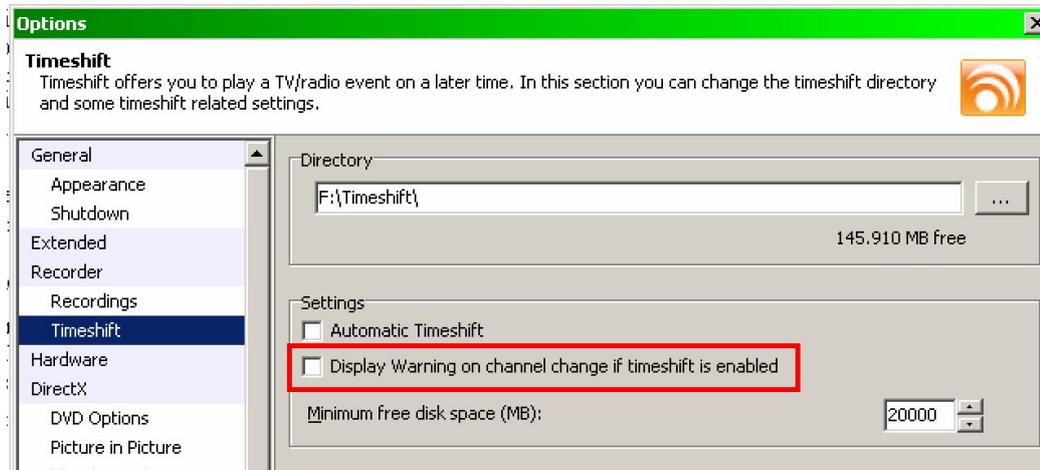
5.11 Timer for multiple applications

5.11.1   The scenery

Let us assume, that there more than one list of programs have to be handled: 1. a list of programs to be recorded from TV, 2. a list in a PIM (Personal Information Manager) with a list of wake-up times for the days of the week and 3. … Therefore we need more the one Timer program, each one made for the special purpose.

Well then: In the case of 1. we leave the name of the program with "Timer.bat" and if not used with DVBViewer, we supply a special routine "Timer_-UserPara.bat" for decoding the time table.

For case 2., the PIM, I copy Timer.bat to "PIMClock.bat" (you are free to choose the name of the copied file). As I have a special list of times to be woken up, I need a special routine "PIMClock_UserPara.bat" that can read and interpret the PIM timetable. All other data files, the initialisation files and … are generated automatically, but the data has to be edited by the user.

5.11.2   Checklist: How to generate a new Timer application

- Copy the "main program" Timer.bat and rename the copy to a any name of you choice (in this example I will use XX.bat). This program can be contained in a new (sub-) directory or can remain in the same directory with Timer.

- Create, if necessary, a routine for providing the start times with the name "XX_UserPara.bat".

- Start XX.bat and edit and save the created initialization files.

- The directory "Startup" should have a link to *one* of the two (or more) main programs "Timer /Startup" or "XX /Startup". See Remark below.

- Timer.bat and XX.bat are ready for use now.

Remark:

Both programs use the same common startup file "Timer_Startup_Para.bat".

The part of the program entered by the "/Startup" parameter is identical for both programs (Timer and PIMClock). There is only one Startup file with the name mentioned above. Only the user programs called are different – DVBViewer or the PIMWecker – depending on the "Timer" that set the system time; the name of the user program is contained in the Startup file, so both programs know what to start.

5.12 Logon as a normal user

Please notice:

If you are logged in as a normal user (Windows: on a limited account) you cannot use Timer *for the time beginning* with the standard settings.

The Administrator has to enable the right "Change the system time" for you.

(This right is enabled as a standard only for Power Users or higher.)

Please notice:

If you are logon on at a domain the rights for your computer should be changed at the domain controller.

5.12.1 Enable the local right "Change the system time"

Is the changing of this right necessary?

This question is easy to answer: Do a double click to the time (right in the taskbar). The "Date and Time Proper- ties" window opens. If you are al- lowed to change the time, you will not have to change this right. But if not:

This is only necessary if you are act- ing as a normal user (you are *not* Power User and *not* Administrator):

o Log on as administrator

o start GPEdit.msc (the Group Policy Editor)

o select Local Computer Policy / Computer Configuration / Windows Set- tings / Security Settings / Local Policies / User Right Assignment then click double in the right field on

o "Change the system time" select "Add User or Group …" / Advanced / Find Now and select "Authenticated Users" and OK for all masks.

o in the column "Security Setting" you will find the added user.
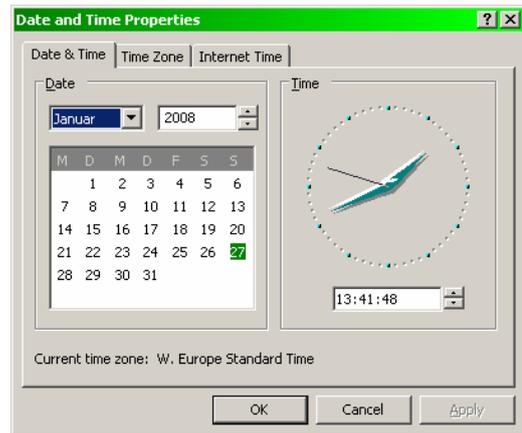
and after a logoff and new logon you have the right to change the system time and so you can use timer now.
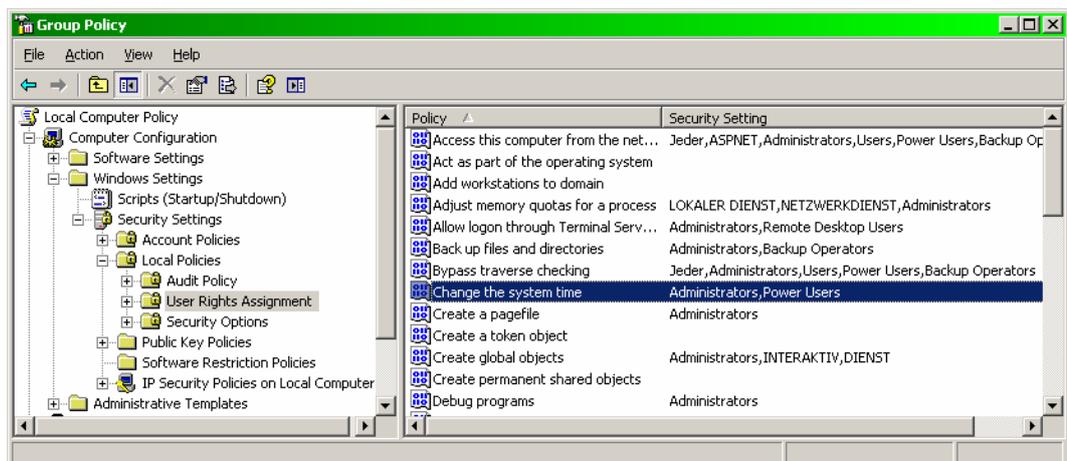
Picture: The Group Policy Editor

5.13 TweakUI: automated Logon

There are two version of TeakUI: one for system up to Windows 2000 and one for Windows XP (and may be Vista ??). You will find these downloads with Google or directly on Microsoft.com.

5.13.1 Installation up to Windows 2000

Beim Start von TweakUI.exe werden 4 Files entpackt. Kopieren Sie diese Files in das Verzeichnis

When starting TweakUI 4 files are expanded to a directory of your choice. Just copy these files to %Winnt%\System32 (e.g. C:\Windows\System32). You find TweakUI under: Start / Settings / TweakUI.

5.13.2 Installation for Windows XP

Please install TweakUI for Win XP by starting the downloaded EXE-file. Then you can start TweakUI by selecting: Start / Programs / Powertoys / TweakUI.

5.13.3 Automated Logon

In TweakUI select the tab „Logon" (similar for Win2000) and enter:
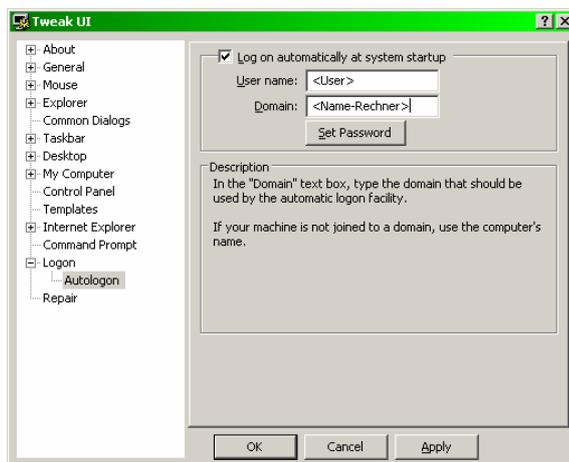
- <User> is the name of the user whose account has to be logged on
- <Name-Rechner> is the name of your computer.

How do I find User and name of the computer?

Press: <Ctrl-Alt-Del>; in the then following window you will see:

6 HOW CAN I HELP YOU?

If you have a problem that is impossible to solve please send the files mentioned below. For your ease I have gathered these files in the directory "Timer_Help".

Please zip this directory and append the ZIP-file to your error message.

6.1 In the case of errors: Send these files

They are contained in the directory "C:\Documents and Settings\<User>\Application Data\Timer":

Filename	
TimerSav_Restore.bat	please store directly after the error occurred
Timer_Startup_Para.bat.SAV	please store directly after the error occurred
Timer_Log.txt	contains a copy of the most important output to the DOS-box
Timer_DebOut.txt	Please see next chapter how to generate this file
Timers.xml	(if using DVBViewer)
Timers.korr	(if using DVBViewer) the transcription of Timers.xml
	A short description of the error, when it arose; … and if there are any unusual messages on the screen (may be also not in the DOS-box) please write these up literally or provide a screenshot
	… and what you did before the error happened
Timer_ZIP.bat	help file, that compresses the whole directory;

> the result is contained in the parent directory;
>
> only if 7-ZIP is installed: www.z-zip.org

Please notice:

No help is possible without these files and statements.

In the ZIP files: Station and recorded program

If you send the ZIP files Timer_Log.txt (and Timer_Deb Out.txt) they contain informations about station and programs you recorded.

If you do not want to send these information please replace them (please only the specific information not the files itself) or what would be better record any program where you do not have this problem and that show the error as well. Thanks.

6.2   Searching errors with Debug=/FILE

Debug=/FILE switches Timer to verbose mode and leeds the output to a data file with the name Timer_DebOut.txt. I chose this to have a protocol in the case of error.

If you have seen an error, restore the state of the system (without starting Timer once mor) at the time of the last Timer start. This is provided by the file:

```
TimerSav_Restore.bat
```

Call this file first. Now you can call Timer a second time with the debug-option set. You can call TimerSav_Restore as many times as you want, no damage is done to the system but you must call it once before each call of timer.

In the DOS-box please key in the commands:

```
Set Debug=/FILE
TimerSav_Restore
Timer
```

„Set Debug=/…" has to be written only once in the DOS-box as it is not changed during the run of Timer.

All parameters can be written with capitals or small letters as you like. "FILE" is equivalent to "File" and "file".

With the parameter

```
Set Debug=/FILE
…
```

the output from Timer is written into a data file instead onto the DOS-box.

You stop the output to a file by either closing and opening a new DOS-box or by writing

```
Set Debug=
```

No character is allowed after the equals-sign (=), this includes Blanks.

If you rename Timer.bat to a new name also the …_DebOut.txt file is changed.

Please notice: Loosing seconds of the system time

If you are running Timer with the Debug-option you will loose system time as the output made to a data file will take some time.

So I suggest to switch off the Debug option for normal use. (I found 5 sec. lost for each run of Timer with writing to the data file.)

Please notice: Message "… cannot access …"

If you receive this message in connection with the file Timer_DebOut.txt something like "The process cannot access the file, as it is used by another process." close DVBViewer and may be also the DOS-box and execute the command a second time.

Please notice: Definition of "Debug"

The variable Debug should not be set from another program or by the environmental variables. You can proof if such a variable is set by opening the DOS-box and write "Set Debug" (without equals-sign). If you receive the message "Enviromnental variable "Debug" not defined" everything is fine.

Otherwise you find these variables under: Working place / Properties / Advanced / Environmental variables.

6.3 How to configure a DOS box

6.3.1 Properties of a DOS box

You can start a DOS box with:

```
Start / Execute / CMD <OK>
```

or with the shortcut <Win-key – R> / CMD <OK>

```
C:\WINDOWS\system32\cmd.exe

>dir
 Volume in drive C is System
 Volume Serial Number is B838-0522

 Directory of C:\Program Files\Scripte\SF_Timer BAT\Timer

13.01.2009  19:39    <DIR>          .
13.01.2009  19:39    <DIR>          ..
18.04.2003  18:06             5.120 DVBviewerSim.exe
03.12.2008  19:04            26.606 GetTimeLeapJob.cmd
05.12.2008  13:20            48.696 GetTimeLeap_Job.cmd
13.01.2009  20:47           417.958 Handbook Timer EN.pdf
13.01.2009  20:46           461.990 Handbuch Timer DE.pdf
10.02.2003  10:07             1.835 IniFile.com
10.02.2003  10:06             5.282 IniFile.txt
19.12.2000  09:53               965 QECHO.COM
03.12.2008  18:57             2.247 SetDateTime_Job.cmd
16.07.2008  14:54             2.329 ShutdownJob.cmd
23.01.2008  19:38             5.120 Sleep.exe
11.12.2007  23:54           215.298 Timer Handbuch.pdf
01.03.2008  03:16               449 Timer(-in-Autostart-Startup).bat
01.03.2008  03:14               948 Timer(-in-C_Windows_System32).bat
13.01.2009  20:47           268.997 Timer.bat
26.08.2008  22:54           208.088 TimerTool.exe
01.02.2008  21:36                65 Timer_Help.bat
```

Click right into the (green) title bar of the DOS box of CMD.EXE and select Properties. In the first tab "Options" you find the "QuickEdit Mode" which should be selected. When selected you can copy the contents of the DOS box into the internal buffer. The next chapter describes how to do this.
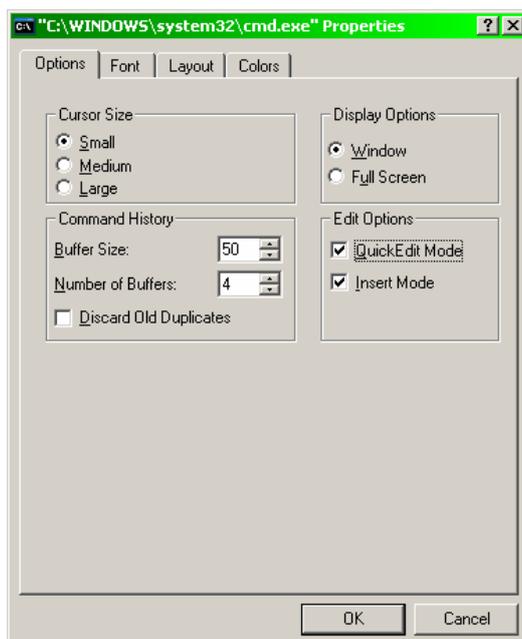
When you change in the "Layout" tab / Windowbuffer / Height to a larger number (here we set Height to 4444) you can scroll back for that amount of lines.

If you deactivate "Let system position window" the window always comes up at the same place.
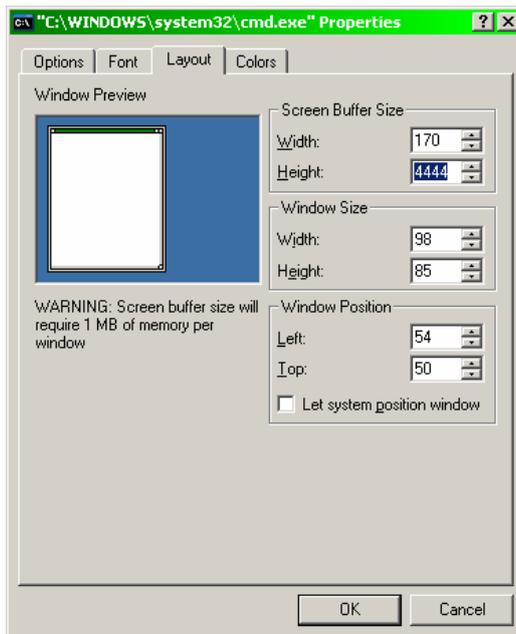
If you want these properties to be kept for later started windows you should select "Save properties for future windows with same title" in the window coming up after "OK".
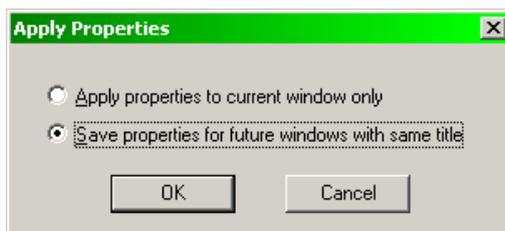
6.3.2   Copy output from a DOS box

If you have set the "QuickEdit Mode" like shown above you could mark the text in the box with the mouse:

```
WINDOWS\system32\cmd.exe

drive C is System
ial Number is B838-0522

of C:\Program Files\Scripte\SF_Timer BAT\Timer

19:39    <DIR>          .
19:39    <DIR>          ..
18:06          5.120 DVBviewerSim.exe
19:04         26.606 GetTimeLeapJob.cmd
13:20         48.696 GetTimeLeap_Job.cmd
20:47        417.958 Handbook Timer EN.pdf
20:46        461.990 Handbuch Timer DE.pdf
10:07          1.835 IniFile.com
10:06          5.282 IniFile.txt
09:53            965 QECHO.COM
18:57          2.247 SetDateTime_Job.cmd
14:54          2.329 ShutdownJob.cmd
19:38          5.120 Sleep.exe
23:54        215.298 Timer Handbuch.pdf
03:16            449 Timer(-in-Autostart-Startup).bat
03:14            948 Timer(-in-C_Windows_System32).bat
20:47        268.997 Timer.bat
22:54        208.088 TimerTool.exe
21:36             65 Timer Help.bat
```

and with a <Return> - the black mark is vanishing – copy the marked region into the buffer. These lines can be included e.g. into this text with "Einfügen" (<Ctrl-V>):

```
DVBviewerSim.exe
GetTimeLeapJob.cmd
GetTimeLeap_Job.cmd
Handbook Timer EN.pdf
Handbuch Timer DE.pdf
IniFile.com
IniFile.txt
QECHO.COM
SetDateTime_Job.cmd
ShutdownJob.cmd
```

(Now a DOS program can run till an error occurs and copy the lines. For timer you could "set debug=/echo" and run "Timer /...".

6.4   Download and Versions

6.4.1   Download of Timer

You will find Timer today hosted at SourceForge under the URL:

https://timerzeitschalt.sourceforge.net/

Here you can find my mail address.

Before that Timer was hosted at (but not commonly available):

http://www.dvbviewer.info/forum/index.php?showtopic=19714

The versions number is e.g. 0.31.01 (x.xx.yy).

A change in x.xx means: Major changes: New code / errors have been fixed, which are important for the functionality of Timer. You should download Timer again.

A change in yy: Minor changes: Not important for the functionality of the program, e.g. changes of output in the DOS-box or in the documentation. A new download of Timer is not absolutely necessary.

6.4.2 Versions

Version	
0.03.02 alfa	first public version; public in DVBViewer Forum
0.04.01 alfa	program and documentation in German / English
0.05.01 alfa	- All user- or changed files only in %Temp%\Timer - better control for the computed date and time - Problem: working as normal user should have right to change the system time
0.05.02 alfa	- problem in echo of English version - add: /Force
0.06.01 alfa	- find the directory where DVBViewer is installed (overwrite setting in Timer_UserInit.bat) - find the directory where Timers.xml (the list of programs to be recorded) is stored - compute difference of dates in general - help message with "Timer /?"
0.07.01 alfa	- serial recordings with shutdown of the computer between the recordings; max. time from record to record: 31 days
0.08.01 alfa 2007-09-20	- bug fixes of internal routines
0.09.01 beta 2007-10-07	- Timer temp directory moved from from: "C:\Documents and Settings\<User>\Local Settings\Temp\Timer" one step down to "C:\Documents and Settings\<User>\Application Data\Timer" (which is not deleted)
0.10.01 beta 2007-10-07	- Correction of errors *** Do Not Use 0.10 *** deletes all files in …\Timer ***
0.11 beta 2007-10-23	- Correction of errors - Improvements in Handbook - Show "Start" again for the program to be recorded
0.12 beta 2007-10-26	- Timer_UserInit.bat moved to %AppData%\Timer
0.13 beta 2007-11-07	- Errors corrected
0.14 beta 2007-11-28	- Timer_UserPara can return multiple start times - /Shutdown shuts down also if errors were detected (includes /Auto) - some problems corrected
0.14.02 beta 2007-12-10	- only 1 zip-file to download instead of Timer…beta and Timer…Progs.

0.14.03 beta 2007-12-11	- moved to SourceForge.net - Handbook sorted English/German
0.15.01 beta 2008-01-04	- Error in computing date differences over a changing year (e.g. from 2007-12-29 till 2008-01-05)
0.16.02 beta 2008-02-01	- new: Time differences taken into account when switching from DST to winter time and back - new: Monitor for external system time corrections - fix: Searched (sometimes) not existing registry keys - fix: Name of program to be loaded was fixed to "DVBViewer"
0.17.01 beta 2008-02-13	- fix: detecting DVBViewer also found other programs like DVBViewer* - fix: special characters in the titles (DVBViewer: "description") of programs cannot be processed; they are substituted or removed - new: sleeping max. 365 days for boards with restart month **- new/changed: restart day / time is: 2001-12-31 23:59:59**
0.18.05 beta 2008-03-05	- fix: in the ZIP some necessary files were missing (used for shut down) - new: if not started by the BIOS: 10 sec time for aborting Timer
0.19.01 beta 2008-03-10	- new: next start time in more than 31 days (for all boards), done by short start ups in between - fix: PsShutdown parameter –S (message: "You can switch off your computer now") changed to –K
0.20.02 beta 2008-03-31	- fix: error in computing time differences when switching from winter to summer time or back - fix: sleep 1 sec. sleeps for 10 seconds
0.20.07 beta 2008-10-17	- fix: problem when ending Timer: routine for timewait was started 2 times changes in internal routines; some enhancements
0.21.01 beta 2008-11-11	under certain circumstances (start at the 1st of the month, some minutes after midnight) it is possible, that the date is computed uncorrect. First fix: Date and time are set in a separate thread; when they are computed uncorrect, the user is asked for manual interaction; and this would block Timers thread. The final fix will be delivered with the next version.
0.22.01 beta 2008-11-25	fix: with a start time in the first minutes of the 01. of a month the system time was restored to the 31. of the month
0.23.01 beta 2009-01-13	fix: Timer_GlobError under certain conditions
0.24.01 beta 2009-02-15	new: automatic start of EPGManager (Electronic Program Guide) after DVBViewer is finished to read program information of manually selected channels
0.25.01 beta 2009-02-16	fix: internal error (number not valid)
0.26.01 beta 2009-02-25	new: read the EPG (Elektronic Program Guide) after closing down DVBViewer; then shut down the computer
0.26.02 beta 2009-03-13	changed, optimized: detected in a shorter time when system time is changed

0.26.03 beta 2009-03-23	new: showing the number of program in the first silent phase when timers.xml is processed
0.26.04 beta 2009-03-23	new: warning in connection with EPG-Manager: "Recorder/Timeshift is active! Should I tune the channel, anyway ?" see p. 35
0.26.05 2009-05-02	upgraded to non-beta (<joke>that means: "all" old errors are fixed, but new errors were programmed</joke>) changed: internal changes
0.28.01 2009-05-26	fix: error in GetIntgNumber
0.29.01 2009-08-20	fix: option /Reset did not work fix: problems in external routines
0.30.01 2009-08-21	fix: error in SetDateTime (terminating Timer)
0.31.01 2009-11-17	several Updates: in the DOS library
0.32.01 2009-12-17	new: Message about "Time will be adjusted" directly after start of the batch file

6.4.3 Special thanks

Special thanks (in alphabetical order) to the beta testers Enno and Josef. They spent much work and time to solve problems and find errors and gave suggestions for new options in Timer.

6.5 Other projects – made by Kalle

If you have problems, suggestions or you only want to say "Hallo" please write a mail in English or German to:

Magra19 at users dot sourceforge dot net.

(I'll try to answer them all though it may take its time.)

> **Mail**
>
> I would be glad if you would send me a mail (if you like with the name of the town you live in) if you use one of

my programs (or also if this does not work as you have expected).

Thank you in advance.

DOS Doctor	Modular build DOS Batch Subroutines supporting Date and Time handling inclusive error handling, command execution with automatic "Delayed Expansion", subroutines for disk partitions, language detection, string handling and last but not least "debugging" of complex DOS projects ... and a detailed handbook (today 60 pages). All subs are written in pure DOS command language. **In detail:** • GetDateTime with arguments date / time / actual • Date/ Time formats: %Year%, %Month%, ..., %Sec%, %YYMMDD% %HHMMSS% ... • Adding / subtracting days to a date incl. leap years • Restarting a batch with "Delayed Expansion" if necessary • Routines to act apon "%UserVariables%" • Routines for checking disk space and automatic alarm to an admin PC • Handing characters / strings (replace/ fill/ upper/ lower/ centered) • Searching for USB sticks • Simplified / automatic NetSend, NetUse • Automated backup utilities (full and part backups) using 7-ZIP or equivalent • Automated backup utilities for Acronis Backup (special) • • Possibility to load all necessary subs into one file with automatic internal call of the subs (DOS project) • Debugging a DOS project file (echo to file / trace info on screen) • Measurement of time consumption (mean value) for individual subs (running in the project context) • Generation of a "Make File" creating a DOS project file (gathering all subs till end of sub-tree) -- written in DOS batch! http://dosbatchsubs.sourceforge.net/
Timer – die Zeitschaltuhr	The program "Timer - die Zeitschaltuhr" starts the computer with the internal BIOS clock from the shut down state (with mains activated). The time needed for boot and start-up of window is considered. Windows and a user-program are ready for doing their job when the preselected start time is reached (e.g. a media-center program like DVBViewer for recording of a transmission). Program language: DOS command language (CMD-files) with a small program in Autohotkey that computes the switches from summer to winter time and back.

As a special feature Timer supports DVBViewer 3.8 and younger

How it works:

Timer computes the time difference till next startup. The BIOS is set to a fixed start-up time like 31. of month at 23:59:59. Timer sets the Windows system time to the fixed time minus the computed time difference. So the BIOS starts up the computer at the correct time of day.

Timer's Functions:

- Auto restart by the BIOS of the computer from shutdown state
- Starting time can be manually set by the command (DOS-box) "Timer <Date> <Time>"
- Starting time can be set automatically by user-supplied date/time pairs (computed by a standard CMD-file) or from the DVBViewer's parameterfile Timers.xml
- Correction of the windows system time after auto start by the BIOS
- Correction of the windows system time after manual restart done by the user
- User-specific batch file for determining of own start times
- (also automatic selection of the next start time from a list of times)
- Serial Recordings: shut down computer / record / shut down / record / ...

What do I have to do when using Timer ?

(Actions in braces ( ) are done automatically without user intervention)

- Set the BIOS restart time (this is done only once) and check for proper action of the BIOS
- Supply a list of date/time pairs (e.g. by a batch CMD file)
- OR with DVBViewer: program the transmission you want to record and close DVBViewer
- Start Timer once (this computes the new BIOS restart time and shuts down the computer)
- Do not shut off the mains
-
- (BIOS restarts the computer at the correct time of day)
- (Auto logon to the user account in windows)
- (An entry in the Startup-directory starts "Timer /Startup" and restores the correct system time)
- (Timer starts user-program)
- (The user-program does its job e.g. records the transmission)
- (Timer detects the end of the user-program, reads the time list and sets the next start time)
- (Timer shuts down the computer)

ATTENTION PLEASE: As the BIOS-hardware is involved the installation is not as straight forward as usual in windows.

For "installation" read the "Timer Handbuch" (German / English) contained in the Zip-file

http://timerzeitschalt.sourceforge.net/

WinSize2	WinSize2: Move and Resize windows on Screen

The capabilities of WinSize2 are:
- Learn and store position and size of any window
- identifying the window according to the title or parts of the title
- Moving to a predefined place
- changing the size of a window according to learned
- one hotkey to manage the program (configurable Crtl+Alt+Z)
- multi language support
- Handbook in English and German

Your favorite editor puts its "Search" window exactly before the text you want to see. Your program to edit pictures or videos, to change your handbooks positions the "Open" dialog optimized for a screen 800 * 600 pixel, but it is so small that you see only some files and of those only half of the name: You need a program that moves the window to a place you want and resizes it: And here it is: 10 years after WinSize was last published, the second edition, WinSize2, is alive again.

Using WinSize2:
- Hotkey, English version: "Ctrl+Alt+Z"
- 1 * hotkey: Insert / Overwrite title entry
- 2 * hotkey: Delete entry
- 3 * hotkey: Special Parameters

https://winsize2.sourceforge.net/ |
| **DateTimeLib** | Library routines for computation of date and time functions since the Gregorian Calendar was introduced on 1582-Oct-15:

25 routines included to do:

- add/subtract days&hh:mm:ss to/from a given date&time
- with variables type Double: exact calculations down to 0.001 sec (1 msec)
- considered all leap years (the anormalities every 4, 100 and 400 years)
- considered the changes from summer time (Daylight Saving Time DST) to winter time and back
- compute the start and end dates of DST for a given year
- compute UTC (Universal Time = Greenwich Time) to local time; |

- 53 -

considered DST

- compute weekdays
- convert to Excel compatible date/time values
- template for your own implementation
- documentation inside the routines and in a handbook

All routines are written in Autohotkey (AHK) which can nearly be used 1:1 in Pascal or other programming languages.

Examples to use these routines.

Description of routine usage in the handbook and in details in the routine's headers.

http://datetimelib.sourceforge.net/

7 ERROR MESSAGES

7.1 DVBViewer is loaded

DVBViewer should not have the time changed while it is active. A running recording could be stopped at once. Therefore changing of the system time is prohibited.

7.2 The time period till next start is too long

In the BIOS you can set only the day to start:

As you can apply only days in the BIOS setup for restart the maximum time period is from day 01 (of December 2001 as we chose it) second 0 (which is midnight) to the 31., 1 second before midnight.

Is the desired time longer than 31 days it must be broken into single periods with a restart and automated shutdown. This is not implemented at the time.

In the BIOS you can set day and month to start:

The time difference till next restart can be as long as 365 days.

7.3 The program to be started does not exist

In Timer_UserInit.bat you declared a program to be started by Timer. This program was not found at the place you said. Also the path has to be correct.

Only the path for DVBViewer can be found under certain circumstances (if you use the Pro-version) in the Registry.

7.4   No recording found to **Start**

The recording list of DVBViewer or the date time pairs you provided for timer do not contain pairs or only inactive pairs.

A restart of the computer cannot be done.

7.5   No recording found although programmed

Some values in one of Timer's parameter files prohibits that Timer can access DVBViewer's data files.

Set these parameter files back to the init state with

```
Timer /Reset
```

7.6   Time to restart is before actual time of day

If you entered the date / time manually (or by the user supplied routine Timer_UserPara.bat): This time is before the actual time of the day.

Please have a look at the starting time of computer / Windows, that can change the wanted time to earlier times.

7.7   File does not exist: …\Timers.xml

E.g. if no next recording is programmed in DVBViewer.

The recording list of DVBViewer is empty, no next recording is programmed. In this case the file Timers.xml does not exist (is always deleted by DVBViewer if there are no entries in the list).

If "/Auto" is set, the system time is set to Jan. 1st (if the board is capable of setting the month to restart)or to Dec. 1st, 2001; so this is the longest time till next system start.

Without "/Auto" Timer wait for a user entry.

7.8   Missing: Timer_UserInit.bat, Timer_UserInit_Vorlage.bat

To operate Timer the file Timer_UserInit.bat is necessary. If it does not exist it is created automatically from Timer_UserInit_Vorlage.bat. If also this does not exist Timer cannot work. Please expand the down loaded ZIP-file and provide this file.

7.9   Timer_UserInit.bat was created as a NEW File

Following a new installation or when Timer was renamed, the file Timer _UserInit.bat is missing. It was created as a new file, you should change and save it and close Notepad afterwards.

After closing Notepad press the key <Return> to continue or press <Ctrl-C> to abort and type Y when you are asked "Abort (Y/N)".

7.10   The program to be used after BIOS-restart does not exist.

In the file Timer_UserInit.bat the name of the program to be started after BIOS-restart is entered:

```
Set Timer_Dir_StartProg=D:\Programme\DVBViewer
Set Timer_File_StartProg=%Timer_Dir_StartProg%\DVBViewer.exe
```

Timer checks if this program exists and provides you with an error message if not.

8 FAQ

8.1 Timer does not work

1. Test: Please see p. 11.

Everything ok till now? Go to Test 2.

2. Test: In DVBViewer program a broadcast to be recorded. You will find this broadcast in the list "Recorder-Programming". Set the starting time to 1 hour ahead.

> **Attention please: Do not forget to "Save"**
>
> If you do not Save in the "Recorder-Programming" you see your program in the list of the programs to be recorded but it is not entered into the file Timers.xml.
>
> Therefore Timer cannot see the programming and you are astonished about the output in the DOS-box.

Now start Timer (can be done with running DVBViewer). In the output of the DOS-box you should see the new entered program (times can be slightly different) e.g.

```
Station:        ZDF
with Program:   heute
at:             31.01.2007
at:             23:00:03
```

Which means: The differenz from actual time to start of the recording is 1 hour (about). Timer sets the differenz from new time (23:00) to start by the BIOS (23:59) also to 1 hour. So the BIOS starts the computer after 1 hour which is the correct actual time of the day.

3. Test: DVBViewer should be shut down this time.

Program a broadcast starting at any time. Start Timer. Timer sets the Windows system time to the new necessary time (some time in December 2001).

If not: save and zip the directory "Timer_Help".

(You do not have to shut down the computer.)

Call "Timer /Startup" in the DOS-box. Timer resets the system time from 2001 to the actual time of day.

If not: save and zip the directory "Timer_Help".

Ok? Then everything works fine.

8.2 DVBViewer is recording; Timer should start when Viewer is closed

Question:

I started DVBViewer and a recording is active. The next recording is programmed. Can I start DVBViewer that it takes over control after the end of the recording?

Answer:

Make sure that DVBViewer is closed after finishing the record. (In "DVBViewer / Timer" in the field "After recording" choose "Close DVBViewer".)

Start Timer with the parameter: „Timer /Wait /Shutdown".

Timer waits for DVBViewer to be closed. (You will receive a message every 10 seconds "Waiting for DVBViewer to finish".) "/Shutdown" searches for the next broadcast to be started and shuts down the computer as well as sets the parameter "/Auto" (as shown) so that Timer does not wait for an interaction with the user.

8.3 Message "File not found": What to do?

Question:

I got a message "File not found" during normal execution of Timer on the console. How can I find the error?

First possibility: "set Debug=/file"

and continue as described on Send the user directory of Timer to the author.

Second possibility: I want to try by myself:

- Open a DOS-box: Start / Execute / CMD

- set Debug=/trace

- start Timer: only labels defined in Timer are printed to the console window; somewhere between two labels you will find that message; remember the number or the text of the label

- copy Timer

- Edit Timer: put an "echo on" behind the first label and a "pause" before the second label; all lines of code between are put out to the console; if there are call to subs between it could be necessary to put an "echo on" also after the call

- restore the copy

-

- Too complicated? Go to "First possibility".

8.4 What is DVBViewer?

DVBViewer is a program for viewing and recording of TV programs. It can play films recorded on DVD as well.

A complete list of options is available at:

> www.dvbviewer.info

DVBViewer supports many cards for terrestric, cable and satellite TV stations that is developed continuously.

DVBViewer is available as a light version without charge (in most cases supplied with a computer card) or – which I would refer – as Pro version for a small amount of money for a (at the time of writing this) lifetime license also for future updates.

Timer can read the recording lists of DVBViewer directly, can start DVBViewer and waits for the end of a recording to do its next actions.

8.5 DVBViewer: Where do I find Timers.xml ?

Timers.xml stores the programmed transmissions. It is not so easy to find this file. It is stored at different locations.

In the installation directory of DVBViewer you will find the file "UserMode.ini". The key "UserMode=" shows where you find Timers.xml.

UserMode	Where is Timers.xml ?
0	%ProgramFiles%\DVBViewer Pro\Timers.xml
1	C:\Documents and Settings\<User>\Application Data\DVBViewer Pro\Timers.xml
2	C:\Documents and Settings\ All Users \Application Data\DVBViewer Pro\Timers.xml

9 THE GNU GENERAL PUBLIC LICENSE (GPL)

9.1 GPL Version 2, June 1991

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