USER MANUAL

ClockManager

version 1.0

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Modified on: 22. Mai 2007

Version: 16

Radebeul, 2007-05-14

Preambel

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This document is written with OpenOffice.org 2.0. The original file is saved as `User Manual.odt`.

Versions

Date/Version	Editor	Changes
2007-05-14 / 8	S.Weber	Initial version
2007-05-15 / 14	S.Weber	Completed
2007-05-16 / 16	S.Weber	Error messages added

Table of Content

Preface

1 General

One of the important iNEWS features that supports the director during a show is the iNEWS Showtiming clock. This clock keeps track of all the time limits of the show and displays them within the iNEWS toolbar.

This toolbar is very small and, of course, only available on PCs where the iNEWS client is installed on. As of these disadvantages there is no easy way to keep the whole gallery or the studio informed about the actual show times.

Thats where the ClockManager comes into play. The ClockManger makes it possible to open a Showtiming clock in a dedicated desktop window. This window is called the ClockClient. When opening the ClockClient a show can be choosen for which the clocks should be displayed. If the director starts Showtiming on this show the ClockClient displays the Showtiming clocks. As the ClockClient is independent of the iNEWS client it can run on all computers within your iNEWS client network.

2 About This Document

The chapters of this manual cover the following topics:

- Chapter 1 – System Overview: Gives a general description of the components of the ClockManager and how these components act together.
- Chapter 2 – The ClockServer: Explains the installation and configuration of the ClockServer component in detail.
- Chapter 3 – The ClockClient: Explains the installation and configuration of the ClockClient component.

3 Symbols And Conventions

3.1 Bold Words Or Characters

Characters and words in bold face type are used by the authors to **emphasize** a special region in the text.

3.2 Hints

Hints and additional information appear in this area.

The hints in the marginal left area help you to work effectively.

3.3 General Information

Information like these help you not to miss important facts.

3.4 Warnings

WARNINGS LIKE THESE SHOULD PROTECT YOU FROM COMMON PROBLEMS AND FAILURES.

3.5 Links

Hypertext links are presented in this way: www.hmedia.de.

3.6 Console Conventions

Sometimes it is necessary to print the output of a console command or the contents of a file in the text. The following is an example of the response of typing the command „java -version“ on the command prompt:

```
h:\>java -version
java version "1.5.0_01" Java(TM) 2 Runtime Environment, Standard
Edition (build 1.5.0_01-b08)
Java HotSpot(TM) Client VM (build 1.5.0_01-b08, mixed mode)
```

CHAPTER 1
System Overview

1 Features

General

- ClockManager displays iNEWS Showtiming clocks on a PC monitor.
- Server and client systems run on standard, low cost IT platforms.
- Because the display is a standard PC monitor the screen size is variable in wide range and not predefinded by ClockManager.
- Both, server and client are available for Microsoft Windows and Linux.
- No need for expensive and overscaled LTC-clocks.
- Protocol for communication between ClockClient and ClockServer is Java RMI. The network port is configurable so the system is easily configurable for a firewall.

Rundown Monitoring

- ClockManager can monitor multiple rundowns simultaneously.
- Multiple ClockClients can watch the Showtiming clocks of the same or different rundowns.
- One ClockClient in fullscreen mode can act as a studio clock.
- Multiple ClockClients on the same PC display might be helpful for master control room.

iNEWS Connection

- The ClockManager and iNEWS communicate over the specified FTP interface.
- Only the ClockServer connects to iNEWS not every ClockClient.
- Very granular configuration of the iNEWS connection settings as:
    - number of simultaneous connections to an iNEWS system.

    - number of simultaneous connections to either iNEWS server A or B, respectively.

    - load balancing – difference between connection numbers to A and to B

- Automatic failover if one of the iNEWS servers in a dual server system doesn't respond.

2 General

The ClockManager is a software for making Showtiming clocks available to the whole production team. The ClockManager is utilized in the following way:

1. The user opens a ClockClient window on a client PC. To see the times for a show she has to connect to a ClockServer.

2. The ClockClient connects to the ClockServer via Java RMI and displays a list with all the shows that can be timed.

3. Now the user can choose a show from this list.

4. If a show is chosen the ClockClient registers itself to the ClockServer as a listener for this show and gets updated by ClockServer for changes of the clocks.

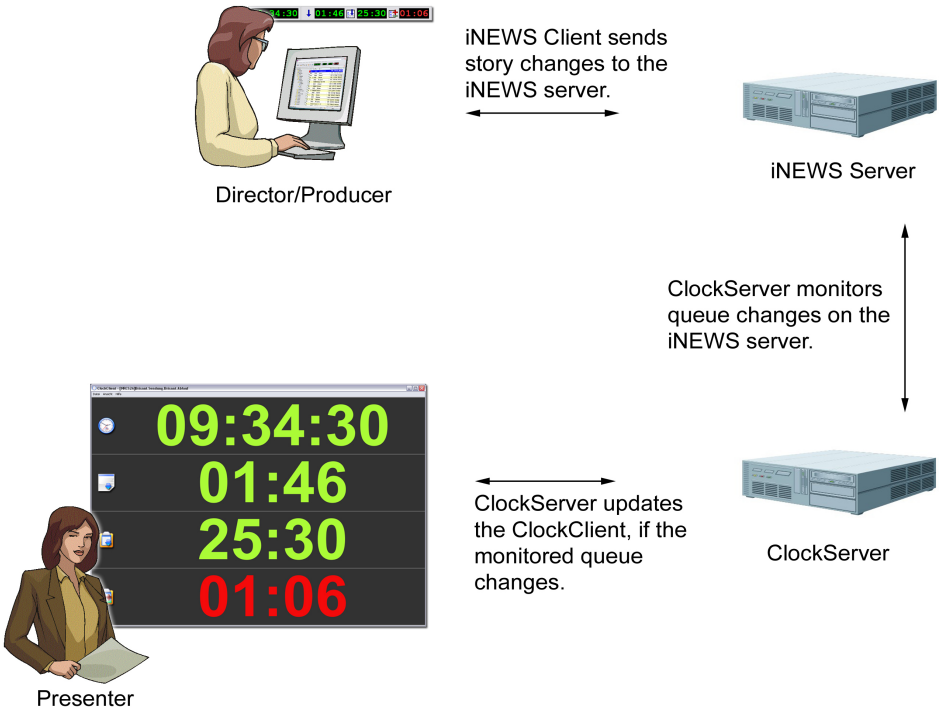

Figure 1: ClockManager system overview

CHAPTER 2
The ClockServer

1 System Preparation

1.1 General

The ClockServer is independent from the underlying operation system as it is implemented in Java. The ClockServer machine at a minimum should comply with the following requirements: Pentium III, 256MB RAM, FTP connection to the iNEWS server.

The Java Runtime Environment (JRE) Version 6 or higher has to be installed on the ClockServer machine.

As the ClockClient connects to the ClockServer via Java RMI, a port has to be available for this connection.

1.2 Java Installation

The ClockServer needs a Java Runtime Environment (JRE) 6 or higher. The JRE can be downloaded at http://java.sun.com.

Make sure that the binary directory of the JRE is entered in the path variable.

The command java has to be executable from the command line. The version of the installed JRE can be checked with the command **`java -version`**. The output of this command should look similar to this:

```
...# java -version
java version "1.6.0"
Java(TM) SE Runtime Environment (build 1.6.0-b105)
Java HotSpot(TM) Client VM (build 1.6.0-b105, mixed mode)
```

On Linux make sure that a file or symbolic link named java is contained in /usr/bin

1.3 .NET Framework Installation

If you want to run the ClockServer on Windows make sure you have the .NET Runtime Environment version 2.0 or higher installed on the ClockServer machine. The .NET Runtime Environment can be downloaded from http://www.microsoft.com/downloads. Details concerning the .NET installation can also be found on this website.

1.4 Time Syncronisation

The time of the ClockServer machine as well as the time of all ClockClient PCs must be synchronized with the iNEWS server time for the ClockManager application to work correctly. To achieve this you can use the Network Time Protocol (NTP). Information about how to set up time synchronization for your operating system should be found in the operating systems documentation.

If you also plan to use the iNEWS Client internal Showtiming clocks, the system time of these iNEWS Client PCs must also be synchronised to the iNEWS server time. Otherwise you'll get incorrect timing information.

1.5 iNEWS System

Ensure that enough unused RXNET resources are available on your iNEWS system. See section „ClockServer Configuration“ how to setup a ClockServer for dealing with iNEWS. See the iNEWS Setup and Configuration manual for further information how to manage RXNET resources.

All storyforms used in iNEWS rundowns have to have the airdate field. Otherwise the Showtiming function can only be used locally inside a single iNEWS client.

If you want to see the Showtiming clocks of a user also on other machines the stories need the airdate field inside the formular. That counts for the ClockManager as well as for the Showtiming bar inside the iNEWS client.

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2 ClockServer Installation

The ClockServer can be installed on Windows and Linux. As the installation procedure differs on the two systems this section is divided into subsections for the different operating systems.

2.1 Windows Installation

Make sure to have the .NET Runtime Environment and the Java Runtime Environment installed on the ClockServer machine as explained in the previous chapters. Login as a user with administrator rights. The ClockManager installation medium contains a setup executable for the ClockServer. Run this file and follow the instructions. The installer will copy the ClockServer into the desired destination directory, install the ClockServer as a service and create a desktop icon for the ClockServer Control.

2.2 Linux Installation

Even if it should be possible to run ClockServer on every Linux distribution, it is designed and testet for RedHat Enterprise Linux 3.x and 4.x as well as for openSUSE Linux 10.x.

Its installation is provided as an rpm package. The rpm package installer can be run by user `root` from command line or from a GUI. As the command line rpm installer on both, Red Hat and Suse Linux, has equal functionality, this chapter explains the ClockServer installation with command line rpm only. The ClockManager installation medium contains an rpm file for the ClockServer. Enter this directory as user `root` and run:

```
clockserver# rpm -Uhv clockserver-1.0-0.i586.rpm
```

This command will install all files on your system and register the clockserver as a demon active on runlevels 3, 4 and 5.

2.3 Licensing

If you have a valid license, a file named `license.lic` is contained in your ClockServer directory. Without this license file the ClockServer won't run. You can test the state of your license with the ClockServer status command (see ClockServer Usage). To get a new license contact Hmedia.

3 ClockServer Configuration

There are two configuration files within the ClockServer directory.

The `inewsconf.xml` file contains the configuration for the connection to the iNEWS system.

The `clockclonf.xml` file configures the ClockServer itself.

Table 1 shows the structure of the iNEWS configuration file `inewsconf.xml`.

Element (Parent Element)	Variables	Sub-elements	Meaning
iNEWSConfiguration		system	root element
system (iNEWSConfiguration)	name = {name} the name of the iNEWS system maxConnections = {integer} the maximum number of simultaneous connections to this system. loadBalance = {integer} the maximum difference of connections between the servers.	server	The configuration of an iNEWS System.
server (system)	host = {string} IP or DNS name of the iNEWS server. maxConnections = {integer} the max. number of connections that can be established on this server. defaultUser = {string} the default login name. defaultPassword={string} the password for the default user. connectionTimeout = {integer} the maximum time in milliseconds the ClockServer will wait for a response when connecting to the server.		Contains the configuration of an iNEWS Server within an iNEWS system.

Table 1: Structure of the iNEWS configuration file.

The following is a sample configuration. It contains two iNEWS systems. The first one called NRCS hast an AB configuration the second one named NRCS26 runs in single server mode.

```
<iNEWSConfiguration>
	<system name="NRCS" maxConnections="6" loadBalance="2">
		<server host="172.21.10.1" maxConnections="6"
				defaultUser="user"
defaultPassword="password" connectionTimeout="3000"/>
		<server host="172.21.10.2" maxConnections="6"
				defaultUser="user"
defaultPassword="password" connectionTimeout="3000"/>
	</system>
	<system name="NRCS26" maxConnections="6" loadBalance="2">
		<server host="172.21.10.3" maxConnections="6"
				defaultUser="user2"
defaultPassword="password2" connectionTimeout="3000"/>
	</system>
```

```
</iNEWSConfiguration>
```

Additionally to the `inewsconf.xml` there is the `clockconf.xml` configuration file. This file configures the ClockServer. Actually there is a single ClockServer for each iNEWS queue that is monitored. The ClockServer are encapsulated in a ClockServerFactory. Table 2 shows the structure of the ClockServer configuration.

Element (Parent Element)	Variables	Sub- elements	Meaning
clockmanagerconfiguration		clockserverfactory clockserverconfiguration	root element
clockserverfactory (clockmanagerconfiguration)	name = {name} the name of the ClockServerFactory. port = {integer} the port on which the ClockServer will be available.		The ClockServerFactory manages connections to the ClockClient. ClockClients connect to a ClockServerFactory with a given name on the given port. The name and port given here have also to be configured in the ClockClient configuration.
clockserverconfiguration (clockmanagerconfiguration)	factoryclass = {string} the factoryclass is responsible for creating instances of the ClockServers.	clockserver	Contains the configuration of different ClockServers.
clockserver	system = {string} the name of the system this ClockServer connects to. queue = {string} the name of the queue this ClockServer monitors. message = {string} a human readable name for this ClockServer. This message will be presented to the user when choosing a ClockServer.		This is the configuration of a single ClockServer that monitors the given queue on the given system.

Table 2: Structure of the ClockServer configuration file.

The following sample configuration file contains three ClockServers in two different iNEWS systems.

```
<?xml version="1.0" encoding="UTF-8"?>

 <clockmanagerconfiguration>
       <clockserverfactory name="ClockManager" port="1099"/>
       <clockserverconfiguration factoryclass="de.hmedia.clockma-
nager.inews.INewsConfigurationReader">
              <clockserver
                     system="NRCS"
                     queue="SHOW.RUNDOWN.1500"
                     message="NRCS: 15:00 Bulletin">
              </clockserver>
              <clockserver
                     system="NRCS"
                     queue="SHOW.RUNDOWN.1600"
                     message="NRCS: 16:00 Bulletin">
              </clockserver>
              <clockserver
                     system="NRCS26"
                     queue="SHOW.RUNDOWN.WAYNES_WORLD"
                     message="Waynes World">
              </clockserver>
       </clockserverconfiguration>
 </clockmanagerconfiguration>
```

THE QUEUE ENTRIES ARE CASE SENSITIVE. QUEUE NAMES MUST BE ENTERED CAPITALIZED AS THE INEWS FTP PROTOCOL RETURNS THE NAMES OF FOLDERS AND QUEUES IN CAPITAL LETTERS.

A network port is given to the `clockserverfactory` element. This port is used for RMI communication[1]. The specified port must be used only by the ClockServer. Problems will occur, if another program on the same machine is working on the same port. For example the H media PrintServer also uses the RMI standard port.

MAKE SURE THAT NO OTHER PROGRAM ON THE CLOCKSERVER MACHINE IS USING THE NETWORK PORT GIVEN TO THE CLOCKSERVERFACTORY ELEMENT IN THE CONFIGURATION. RECONFIGURE THE CLOCKSERVER TO USE AN UNUSED NETWORK PORT IF ANOTHER PROGRAM IS RUNNING ON THE SAME PORT.

4 ClockServer Usage

Usage of the ClockServer also differs with operation system.

1 The standard RMI port is 1099.

4.1 Windows Usage

Under Windows the ClockServer runs as a system service. Thus you can use the MS Windows internal Service Control Manager to start and stop ClockServer. All messages are written in an EventLog viewable with MS Windows builtin Event Viewer. Figure 2 depicts the Hmedia Services EventLog on a ClockServer machine.

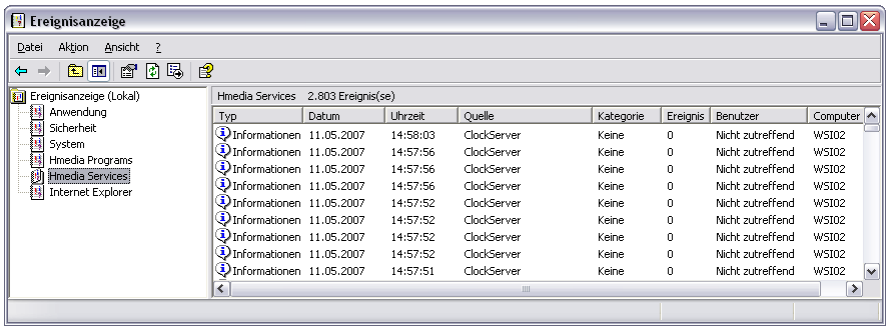

Figure 2: Event Viewer with Hmedia Services as active EventLog

Both programs ServiceControl Manager and Event Viewer can be found within MS Windows Control Panel in the Administrative Tools.

Additionally the ClockServer provides a ClockServer Control to handle the ClockServer service. During the installation procedure an icon is created on your Windows desktop as well as in your start menu. Figure 3 shows the ClockServer Control. The four buttons on the left control the ClockServer. The message panel on the right displays ClockServer messages created after the start of this control. All previous messages can be read in the Event Viewer (see above).

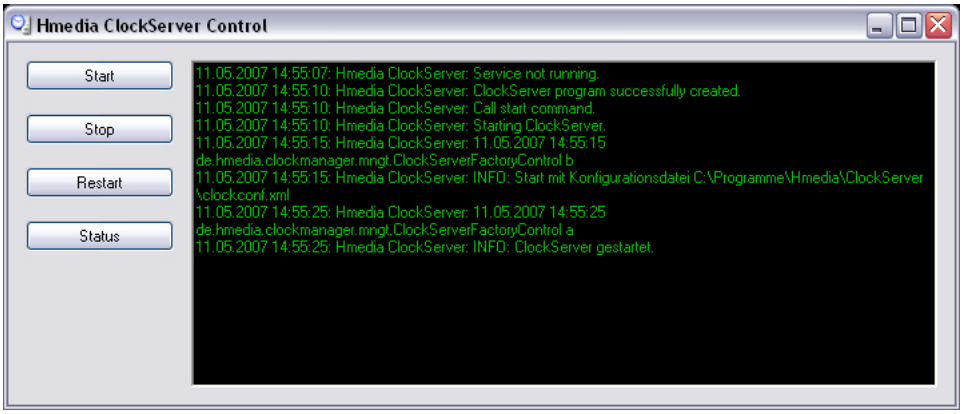

Figure 3: ClockServer Control

4.2 Linux Usage

Because most Linux server systems doesn't need a graphical user interface, the ClockServer under linux is a command line program only.

It is activated by the command `clockserver <option>` wheras `<option>` is one of the following list:

- `start` – starts the ClockServer[2]. This command is performed automatically in the init routine for runlevels 3, 4 and 5. To change this behavior use the `chkconfig` program. To get more information about chkconfig run `man chkconfig`.
- `stop` – stops the ClockServer. All connected ClockClients will continue to display times for the current item. Of course they will not recognise any synchronization event in iNEWS. Therefore they will display an error message. After a stop and start (or a restart – see next point) command all previously connected ClockClients need to be restarted as well.
- `restart` – performs a `stop` and in case of success therafter a `start`.
- `status` – displays some information about ClockServers status, license and configured rundowns.

2 Strictly spoken that command starts the ClockServerFactory only. This factory listens for ClockClients. When a ClockClient starts to watch a dedicated rundown the ClockServerFactory checks whether a ClockServerProcess is already running for this rundown. If so the ClockClient is connected to this ClockServerProcess; if not, a new ClockServerProcess for this rundown is created and activated. That means only for rundowns which are monitored by at least one ClockClient a ClockServerProcess is watching the iNEWS rundown. When the last Client for a dedicated rundown is closed also the relating ClockServerProcess is stopped by the ClockServerFactory.

CHAPTER 3
The ClockClient

1 System Preparation

1.1 General

The ClockClient is independent from the underlying operation system as it is implemented in Java.

The Java Runtime Environment (JRE) Version 6 or higher has to be installed on the ClockServer machine.

As the ClockClient connects to the ClockServer via Java RMI, a port has to be available for this connection.

1.2 Java Installation

The ClockServer needs a Java Runtime Environment (JRE) 6 or higher. The JRE can be downloaded at http://java.sun.com.

Make sure that the binary directory of the JRE is entered in the path variable.

The command java has to be executable from the command line. The version of the installed JRE can be checked with the command **`java -version`**. The output of this command should look similar to this:

```
...# java -version
java version "1.6.0"
Java(TM) SE Runtime Environment (build 1.6.0-b105)
Java HotSpot(TM) Client VM (build 1.6.0-b105, mixed mode)
```

On Linux make sure that a file or symbolic link named java is contained in /usr/bin

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1.3 .NET Framework Installation

If you want to run the ClockClient on Windows make sure you have the .NET Runtime Environment version 2.0 or higher installed on the ClockServer machine. The .NET Runtime Environment can be downloaded from http://www.microsoft.com/downloads. Details concerning the .NET installation can also be found on this website.

1.4 Time Syncronisation

The time of the ClockServer machine as well as the time of all ClockClient PCs must be synchronized with the iNEWS server time for the ClockManager application to work correctly. To achieve this you can use the Network Time Protocol (NTP). Information about how to set up time synchronization for your operating system should be found in the operating systems documentation.

If you also plan to use the iNEWS Client internal Showtiming clocks, the system time of these PCs also must be synchronised to the iNEWS server time. Otherwise you'll get incorrect timing information.

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2 ClockClient Installation

The ClockClient can be installed on Windows and Linux. As the installation procedure differs on the two systems this section is divided into subsections for the different operating systems.

2.1 Windows Installation

Make sure to have the .NET Runtime Environment and the Java Runtime Environment installed on the ClockClient machine as explained in the previous chapters. Login as a user with administrator rights. The ClockManager installation medium contains a setup executable for the ClockClient within the `Windows` directory. Run this file and follow the instructions. The installer will copy the ClockClient into the desired destination directory and create a startmenu entry and a desktop icon for the ClockClient.

2.2 Linux Installation

Even if it should be possible to run the ClockClient software on every Linux distribution, it is designed and testet for RedHat Enterprise Linux 3.x and 4.x as well as for openSUSE Linux 10.x.

Its installation is provided as an rpm package. The rpm package installer can be run by user `root` from command line or from a GUI. As the command line rpm installer on both, Red Hat and Suse Linux, has equal functionality, this chapter explains the ClockClient installation with command line rpm only. The ClockManager installation medium contains a rpm file for the ClockServer. Go as user `root` into that directory and run:

```
clockclient# rpm -Uhv clockclient-1.0-0.i586.rpm
```

This command will install all files on your system. Additionally the program creates desktop icons for KDE and Gnome for every existing user.

2.3 ClockClient Configuration

The ClockClient directory contains a configuration file named `client-conf.xml`. Its structure is explained in Table 3.

Element (Parent Element)	Variables	Sub- elements	Meaning
clockclient		clockserverfactory	root element
clockserverfactory (clockclient)	url = {string} the ClockServer URL.		The clockserverfactory tag just contains the URL to the ClockServer.

Table 3: Structure of the ClockClient configuration file.

This very simple configuration file just tells the ClockClient where to find the ClockServer. The URL parameter just contains the URL of the ClockServer. Keep in mind that this is a Java RMI URL. As URLs normally contain a protocol specification in the beginning, e.g. `http://`, Java RMI URLs do not contain a protocol. The URL has the form `//host/name:port`. Where name specifies the name of the ClockServer as configured in the ClockServer configuration. The following is an example ClockClient configuration file.

```
<clockclient>
       <clockserverfactory url="//172.21.1.2/ClockManager:1099"/>
</clockclient>
```

3 Getting Started With ClockClient

3.1 Getting Started

Keyboard shortcuts for the ClockClient functions can be found right beside their corresponding menu entries.

The ClockClient window is presented in Figure 4. You will see this window after opening the ClockClient.

The Clocks

- The top clock shows the system time of the ClockClient machine.
- Below you see the remaining time for the current item of the show.

- The next is the remaining time until your next hard-out time – usually the end of your show.

- On the very bottom there is a clock which displays the general over/under time for this show.

General the behavior of these clocks is identically to the iNEWS Show-timing clocks.

You can access all the functions of the ClockClient from its menu bar. If you click on the File menu you see that some menu items have keyboard shortcuts right beside their name. You can use these shortcuts to access the ClockClients function without using the menu bar.

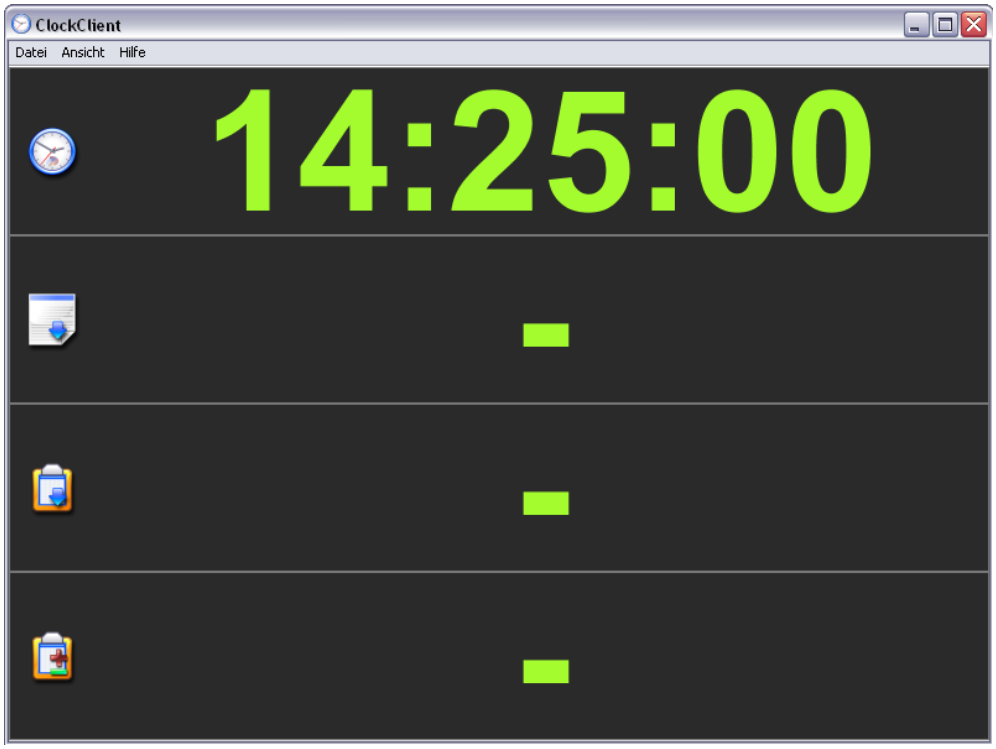

Figure 4: ClockClient Window

At the bottom of the ClockClient window is a small message bar that shows important messages to the user. If the ClockClient window is opened this bar is hidden. It will be visible if the ClockClient has to display some message.

The background color of the message bar will change with the type of the message. An information message will have the default background color of a label. A yellow message bar background indicates a warning message. This type of message is displayed when a problem occurred that does not prevent the ClockClient from timing a show. A red message bar background indicates an error message. This type of message will be displayed

when a problem occurred that prevents the ClockClient from timing the show.

3.2 Connect A ClockServer

To connect a ClockServer go to the File menu and choose Connect... A small option pane appears as depicted in Figure 5. You can see all the ClockServers configured – that means all observeable rundowns – on the server you entered in the ClockClients configuration file. Select one of them and press OK.

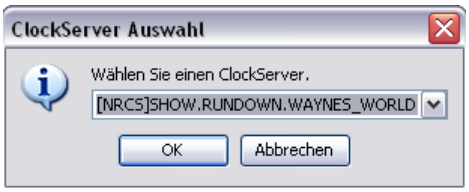

Figure 5: Connect Dialog

The name of the ClockServer[3] appears in the title bar of the ClockClient window and the ClockClient is waiting for the ClockServer sending information necessary for Showtiming. The time to wait may depend on some facts:

- If another ClockClient is already monitoring the same queue than this ClockClient just connects to the running ClockServer which should only take one or two seconds.
- If no other ClockClient is already monitoring the show then the ClockServer must initially download the whole iNEWS queue from the iNEWS server to the ClockServer. This may take up to 10 seconds.

If Showtiming has already been started in iNEWS[4] the ClockClient will display the three clocks with the same values as iNEWS Showtiming does. If Showtiming has not been started in iNEWS the ClockClient will show a message at the bottom of its window and will wait for Showtiming to start.

3.3 ClockClient Features

Full screen mode. The ClockClient can be set to full screen by choosing `Fullscreen` from the `View` menu. Click this menu item again to disable full screen mode. You can also use the key combination `ALT+Enter` to toggle full screen mode. The window cannot be resized if set to full screen. If

3 You can setup this name inside the clockconf.xml on the ClockServer (see ClockServer Configuration)

4 That means at least one story has a time stamp in its airdate field.

a popup menu or a dialog appears the window switches to normal window mode but displays itself as a maximized window.

Hiding the Real-time clock. The so called Real-time clock showing the actual system time can be hidden by selecting `Real-time clock` from the `View` menu. Select the same menu item again to make the Real-time clock visible again.

Appendix

1 ClockServer Error Messages

If you encounter an error message not listed here this may point to a non application specific problem. As the network is often a reason for problems check if:

- your network it is configured corretly.
- the ClockClient PC can establish a connection to the ClockServer machine.
- the ClockServer can establish a connection to the iNEWS client.
- the port used by the ClockServer is not used by another program on the ClockServer machine.
- the communication between ClockClient and ClockServer and ClockServer and iNEWS server is not blocked by a firewall.

3.4 Licensing issues

Error Message	Comment
You have no valid license for this software.	Either the license file `license.lic` could not be found in the ClockServer program directory or the license has expired. Obtain a new license and copy the `license.lic` file into the ClockServer program directory. For licensing issues contact Hmedia or visit our website www.hmedia.de.
Could not install or verify license.	For some reason the license file is corrupt. Contact Hmedia.

3.5 Configuration Issues

Error Message	Comment
The configuration file does not exist: <filname>	The configuration file `clockconf.xml` could not be found in the ClockServer program directory. Make sure it exists.
Cannot read port number from configuration. Must be an integer.	The clockserverfactory tag in the ClockServer configuration file has a variable named port. An integer value has to be assigned to this variable. E.g. `<clockserverfactory name="ClockManager" port="1099"/>`

Error Message	Comment
	See chapter ClockServer Configration for details.
This port is already in use. Choose a different one: <portnumber> or The RMI registry could not be created on port <portnumber> or ClockServerFactory could not be bound to registry.	The port with the given number is already in use and cannot be used by the ClockServer. Open `clockconf.xml` and choose another port in the `clockserverfactory` tag. See chapter ClockServer Configration for details.
Cannot startup because the configuration file cannot be copied: <filenmae>	Before launch the ClockServer stores a backup copy of the actual configuration file under the `/system` directory contained in the ClockServer program directory. This message appears if the user currently running the ClockServer has no write permission in the ClockServer program directory. The user running the ClockServer program has to have write access to the ClockServer program directory and its `/system` subdirectory.
The registry port cannot be read from configuration file or ClockServerFactory RMI name could not be read from configuration file	The ClockServer cannot access the configuration file to read the registry port. Make sure the configuration file exists in the ClockServer program directory and has been copied to the `/system` subdirectory of the ClockServer program directory on ClockServer startup.

3.6 iNEWS Issues

Error Message	Comment
The iNEWS Builder could not be configured.	Check if the iNEWS configuration file `inewsconf.xml` is contained in the ClockServer program directory. Check if the contents of `inewsconf.xml` are correct.
This iNEWS system is not configured: <iNEWS system name>	An iNEWS ClockServer in the ClockServer configuration file `clockconf.xml` is linked to an iNEWS system that is not configured in `inewsconf.xml`. Check if each iNEWS system given in `<clockserver system="..."` within `clockconf.xml` has a corresponding iNEWS configuration in `inewsconf.xml`.
Show-timing not started.	Not an error message. Just indicates that Show-

Error Message	Comment
	timing has not been started for the selected show.
Show-timing not started. Stories don't contain an air-date field.	This may indicate an error. If Showtiming for the selected show has been started and this message does not disappear the air-date field is not contained in the story form. Check the story form of the selected show within iNEWS and make sure it contains the air-date field.

4 ClockClient Error Messages

Some of the error messages displayed by the ClockClient originate from the ClockServer and can therefore be found in the previous chapter.

4.1 Configuration Issues

Error message	Comment
Error occured while connecting to ClockServerFactory.	The ClockClient could not connect any ClockServer. Check if the URL given in the client configuration `clientconf.xml` fits the ClockServer configuration.
The ClockClient configuration file could not be found.	The `clientconf.xml` file could not be found in the ClockClient program directory.
The ClockClient configuration file contains errors.	Check the syntax of the `clientconf.xml` file.

4.2 Client-Server Issues

Error message	Comment
No ClockServers found.	There are no ClockServers configured in the ClockServer configuration file. Check thec ClockServer configuratin file `clockconf.xml` in the ClockServer program directory. It has to contain at least one ClockServer (one `clockserver-configuration` tag containing at least one `clock-server` tag). See chapter ClockServer Configration for details.
Connection to ClockServer is broken.	The ClockClient has lost its connection to the ClockServer. If the reason is a temporary network failure the ClockClient can reconnect if the network is available again. If the ClockServer was stopped after the connection was broken, the ClockClient

Error message	Comment
	has to be restarted too.