



**Moodmixer™-Systems**  
provided by Moodmixer GmbH

Technical overview

## Automated playlisting



Playlist systems for

- Background music
- In-store radio
- In-cabin radio
- Internet radio
- Digital Radio

### Moodmixer™-Systems:

Automated audio broadcasts

for

- Internet radio
- Branding radio
- Instore Audio
- Background music in hospitality, leisure cruise and retail
- On demand playlist services on the internet
- In cabin/ in-room radio on cruise lines or in hotels

I love it  
 I love it  
 I love it  
 I love it  
 I love it  
 I love it  
 I love it  
 I love it  
 I like it a lot  
 I like it a lot  
 I like it a lot  
 I like it a lot  
 I like it a lot  
 I like it a lot  
 I like it a lot  
 I like it a lot

Filter based system

INDIVIDUALIZATION is one of the key words in the digital entertainment business. The customer wants individually compiled broadcasts for several purposes.

In most cases this calls for either manual input of the customer himself or editorial input on provider side.

In order to provide individual audio broadcasts to almost everyone across longer time periods this administration time becomes too large: In many business audio broadcasts are essential for the customers welfare and to enhance the business environment and ambience.

#### Automation is the solution: Ingest any Music meta data, add ratings and let it run.

Systems using shuffle/random selection for automation lack any control. Systems based on filtering properties such as music styles often lack variation within a music compilation. Classical format radio needs a lot of maintenance

Moodmixer GmbH has decided on a different approach called "preference based selection":

Preference based selection simply means that music styles , artists, single tracks or any other property available from meta data are given a rating value. Higher rated items are allowed to occur "relatively more often" than lower rated ones ( see on the left). Statistical and heuristic algorithms calculate the actual play frequency of each track in relation to the used title pool.

As a result Moodmixer™-Playlists provide highest variation over a long time, full control over the selection based on preference values and other distribution algorithms, and repeat prevention by using playlist logs.

I like it a lot  
 I love it  
 I like it less  
 I like it a bit  
 I like it a lot  
 I love it  
 I like it a lot  
 I love it  
 I love it  
 I like it a lot  
 I love it  
 I like it a lot  
 I love it  
 I like it a bit  
 I love it  
 I like it a lot  
 I like it less  
 I love it

Preference based system

### Benefits::

Moodmixer™-Systems offer a state of the Art web-technology and automation control:

The Moodmixer™System enables you to run any amount of internet radio channels or audio-broadcasts with least administration and minimal operating expense.

The automated generation of 24/7- nonstop running audio broadcasts saves more than 80% of the administration time needed normally for Playlist scheduling. At the same time the system provides optimal distribution of your tracks throughout a nonstop playlist.

- **Best music mix with highest variation:** Preference based music selection
- **Reduce operating costs:** Set the overall "Sound (playlist) concept" once and the system calculates the flow accordingly around the clock fully automated
- **Highest flexibility:** On the fly-production of short playlists just minutes before tracks are used add highest flexibility for settings changes, title pool updates or insertion of pre-planned playlists or audio events such as announcements or commercials.
- **Web-Remote control:** Web based system allows for maintenance and control of the system from any place in the world with internet access via Web-admin.
- **Surveillance by watchdog:** An Auto start system watches over Playout software and linked software such as audio encoders or DSP-plugin-ins. Systems are automatically re-started on re-boot and in case of corrupted sound files( max 10-20sec. offline).
  - Watchdog is connected to Web-admin- start, stop or restart Playout software remotely.
- **Easy data import- Independent of data format:** Moodmixer™-System can use any available data from tables in the format : TXT, XLS, MDB(MS Access) or XML as well as read Mp3 Tags. PWsoft can also provide an interface for data conversion of many leading databases
- **Easy updates:** When title pool is updated player will check for missing sound files and download automatically from a given FTP-Storage



Best mix  
Least work  
Most control  
Web - Remote  
Highest flexibility

## System description:

Moodmixer is a modular system, each of these modules can be used separately, the core technology is also available in several Auto playlist tools.

Moodmixer™-System full suite consists of three modules:

**1. Moodmixer™- Channelmanager to administrate title pools, and playlist settings:**

An offline software to administrate customers, channels and title pools, add ratings and set controls for global distribution. A scheduler with an MS-Outlook like interface allows for scheduling different programs at different day-parts. These settings and song pool information will be sent to the Moodmixer-web service. Moodmixer™-Channelmanager can also be used to schedule single audio events or pre-planned playlists for specific dates.

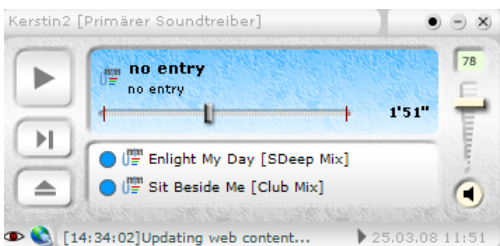
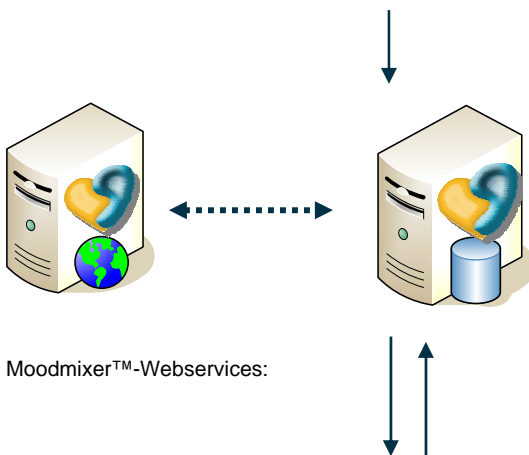
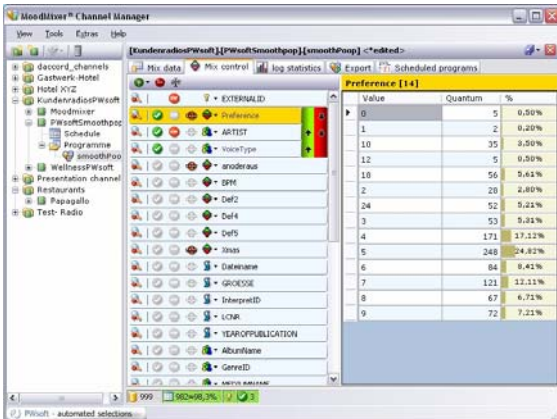
**2. Moodmixer™-Web services to store logs and produce playlists:**

Database service and playlist generator which automatically generate playlists on demand from the settings and ratings you have uploaded to the database. The incorporated playlist intelligence can be separated from the central web-service in order to host database and web-service locally. An online interface gives you all information about the running channel and informs you about each channel's status.

**3. Moodmixer™- Player + Watchdog to cross-fade and play tracks, log back played tracks to web service and download missing tracks:**

A Mp3-playout software which calls for new playlist information in regular intervals, calculates the best cross-fade between songs from handed over cue points and plays the tracks one by one. The Playout system also logs back all played songs to prevent repetition.

The Watchdog/ Auto start manager which can be addressed via internet website, watches over the system.

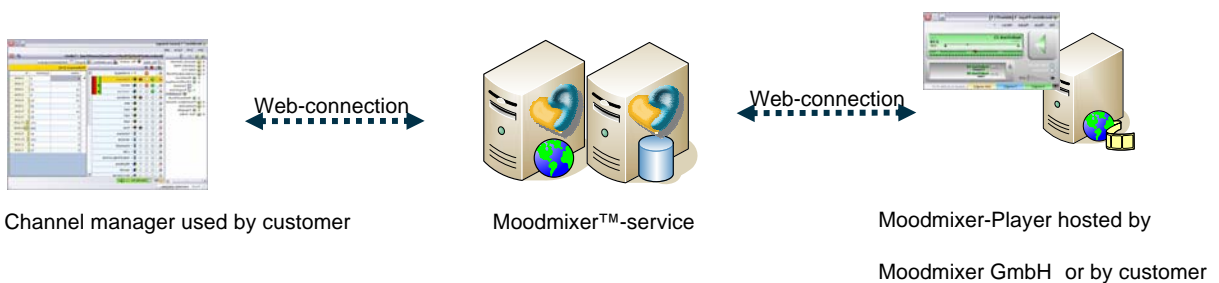


### Moodmixer™-Systems

can be offered for different environments and use cases:

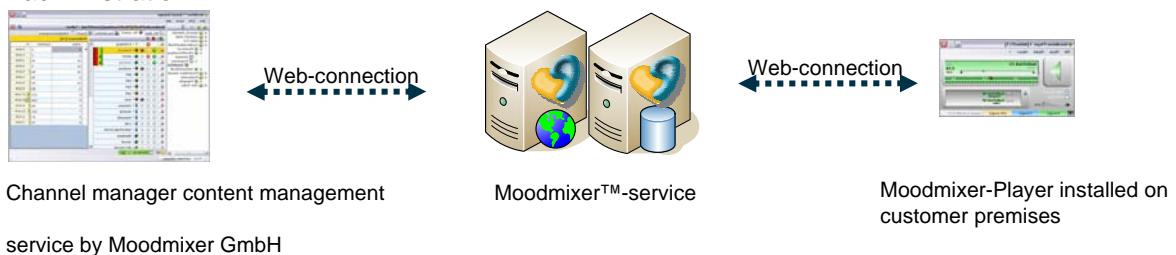
#### ■ Moodmixer™-Internet:

Moodmixer GmbH offers the system as service to control and produce Internet radio broadcasts. Moodmixer GmbH will support the installation process of Moodmixer™-Player and Channelmanager. The Moodmixer™-Web services are being hosted by PWsoft. Optionally PWsoft offers full service for Background music channels distributed via internet.



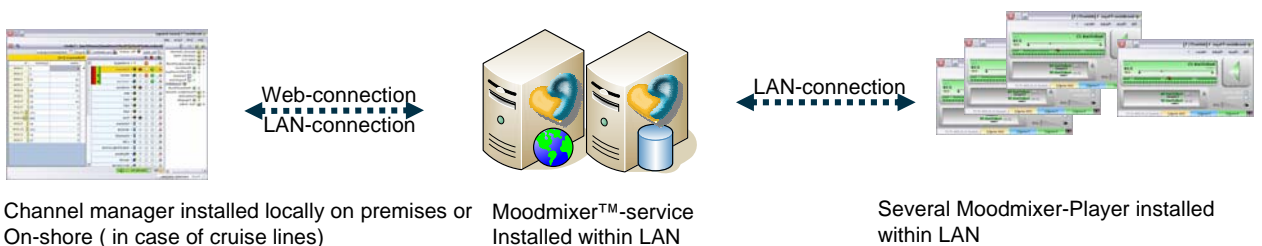
#### ■ Moodmixer™-Local:

Moodmixer GmbH offers full-service, as well as content management and playlist control. Only Moodmixer™-Player will be installed on the customer's premises. Moodmixer™-local can also be offered for self-administration.

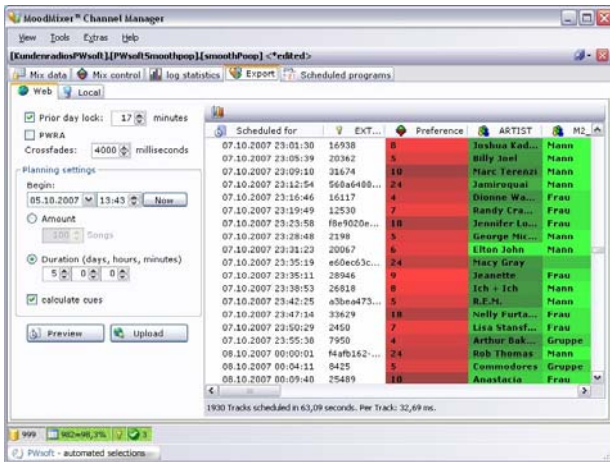


#### ■ Moodmixer™-Cruise:

Moodmixer GmbH offers full service, content management and playlist control or the system for self administration. For Cruise lines or holiday islands, the complete system including Moodmixer™-web service and playlist intelligence will be installed on the premises



## The future of web-based automation for audio entertainment



Preview analysis of playlist settings

### Automated Music selection:

Quite different to other systems, playlists will be produced dynamically, on-the-fly, shortly before actual play-time. This offers highest flexibility for program changes.

Instead of using filters and clocks with individual music events, in the Moodmixer™-System the overall "sound" and the general distribution of criteria, music properties or characteristics within a pre-selected title pool are being defined.

By rating single tracks, music styles, artists or any other available property or meta data, the relative frequency will be calculated within which a song is supposed to occur. The best distribution will be calculated by the system itself.

As result broadcasts generated by a Moodmixer™-System provides

- highest variation for weeks without "felt" rotation
- no empty music slots because of too narrow ruling
- no static rotation values



Analysis of preview: :Artist distribution of a whole week

# Features

## Details:

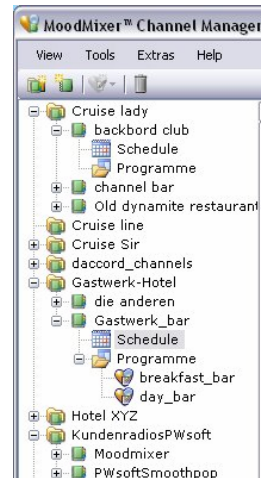
### Moodmixer™- Channelmanager: Control the Playlist generation

With the Channelmanager you can control numerous Clients (cruise vessels, retail chains, hotel or restaurant chains or other), outlets and channels and different title pools and their settings (programmes) in one software.

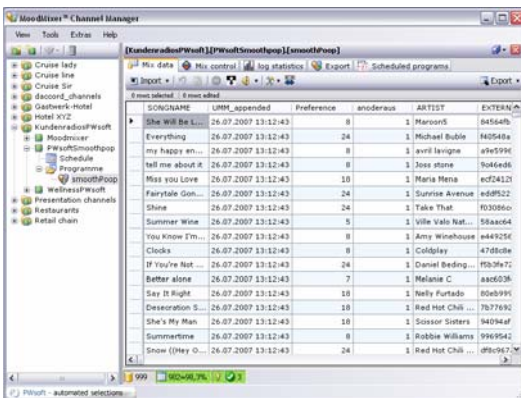
From a master title pool you can assign sub-title pools and their playlist settings to different channels.

In a Microsoft Outlook-like Scheduler, you can set programme-changes for different day-parts, schedule pre-planned audio events (commercials, announcements etc.) as well as by hand selected playlists.

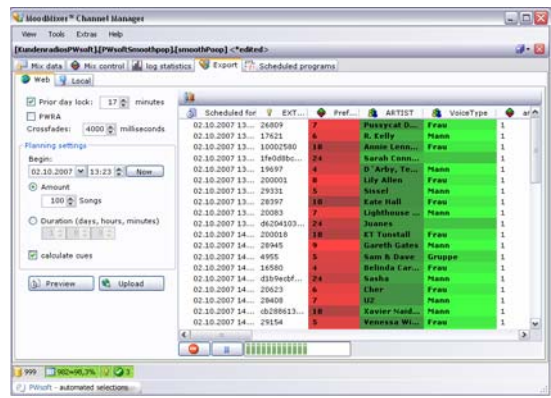
All settings will be uploaded to the web service scheduler, the information will then be waiting to control the automated Playlist generation.



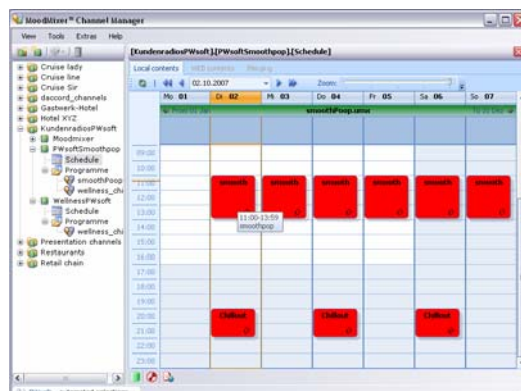
Multi-Channel support



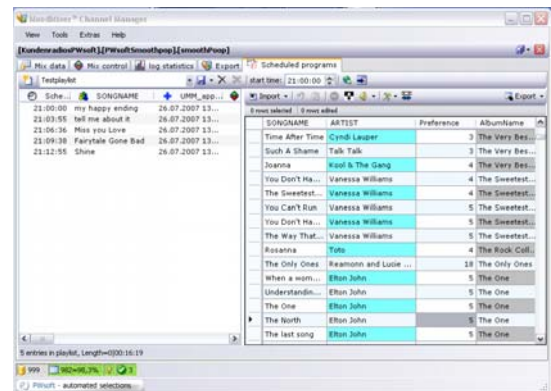
Easy Data handling



Result preview for playlist settings / Upload to web service



Daypart programme change scheduling



Pre planned playlists and audio event scheduling:

## Details:

### Moodmixer™- Playlist intelligence

The automated playlist generation is based on three different distribution controls which can be set for any available column:

- Ranking:** The principle of all Moodmixer™-Systems is a rating system. The higher a track is being rated, the "relatively" (in relation to the title pool used) more often it will be used in a playlist. The Channel-Manager has a preview functionality which gives you an indication how the playlist intelligence will distribute the tracks along a given timeline.

Ranking columns can also be used for temporary archiving of tracks (value 0 equals "not in use" if activated)

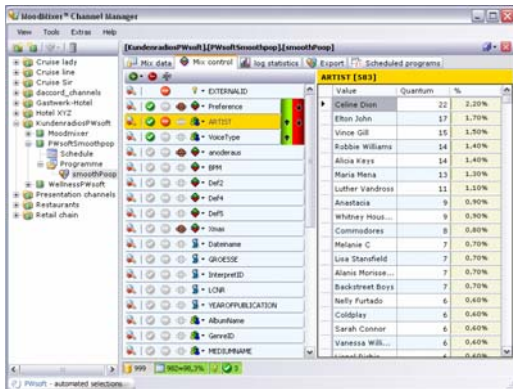
If you don't already have a rating column in your track table you can add new columns and ratings or other distribution values

- Group distribution (optional):** The group algorithm will take care of a homogeneous distribution of values that occur more often in a song library- i.e. if you have an artist in the library that owns many more songs than others you might want to distribute all of his titles evenly across the playlist- without a bulk of songs at one point- then you set "Group" to the Artist column. This is also a good way to control the distribution of i.e. voice type.

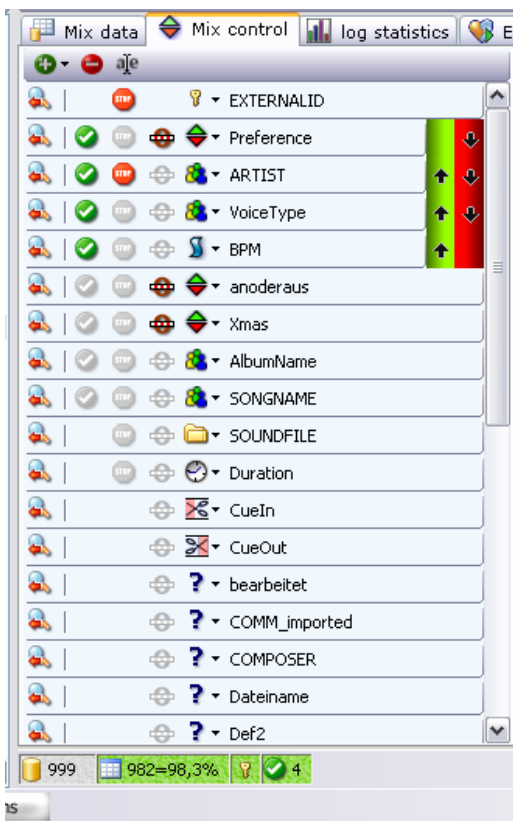
Group algorithms are "non-destructive"- if a title pool doesn't allow for this distribution it will carefully soften the rule.

- Smoothing (optional):** This control can be set for values such as BPM, Tempo/ felt tempo, Rhythm-description etc. it aims to prevent too large differences in value change from one track to the next. If the title pool allows it then tempo or rhythmic changes will be made in waves, slowly increasing and decreasing. This control is also non-destructive.

- Two hour block:** Each song is blocked for 2 hours for the next play if the title pool is large enough to allow this block.



Moodmixer™-Playlist-mix-control with statistical analysis



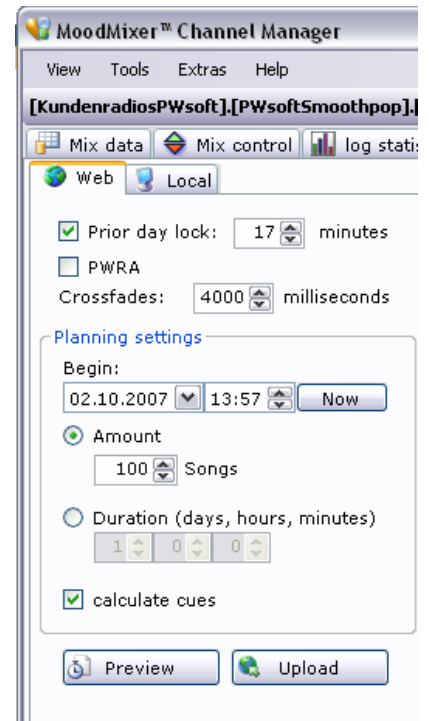
Playlist settings in detail

## Additional settings

All in all- The Moodmixer™-System tries to distribute all songs in a title pool as good as possible, with preferred tracks more often than less preferred tracks.

The following settings can also be made:

- Cues** (optional): CueIn and CueOut define a point at the beginning and at the end of a song where a cross-fade into a song ends or song starts to move over to the next song. Cues can be set generally or for each single song.
- Cross fade** time-(optional) : Average cross fading time- depending on CueIn- and CueOut settings, each Player will use the average cross fade length to calculate the cross-fading between songs.
- Prior day block delta** (optional): Period of time within which a song is not allowed to be played on consecutive days.
- PWRA** (optional): little support to produce highest possible variation in small title pools ( if below 200 tracks)

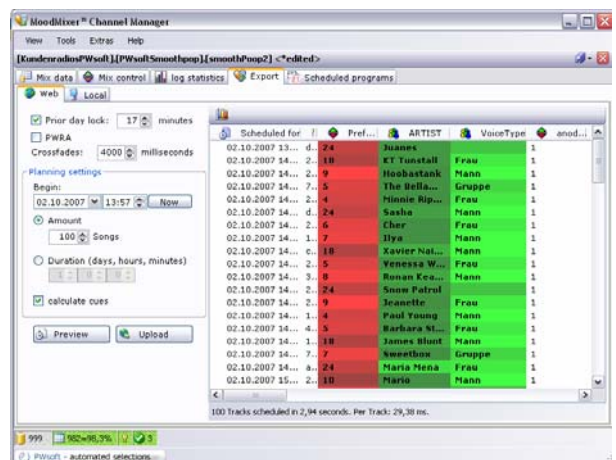


Moodmixer-Preview and Export playlist settings

## Playlist preview and analysis

In the preview you can check if the distribution of tracks and properties is the way you want it.

Preview can be made for any amount of tracks or time periods (up to 30 days), there are different ways of analyzing the distribution of tracks, artists or other values in a graphical Output.



Moodmixer-Playlist-Preview

## Playout , Watchdog and Web-remote:

### Moodmixer™- Player:

**Redundancy:** Internally Moodmixer-Player consists of three players in one- One is playing, the second will be also playing when cross fading the two songs and a third already loads the next song.

**Playercheck:** The player always checks if the songs are physically available

**Feedback:** Missing sound file are reported back to web service, if connection to web service is lost ( can happen in rare cases), an e-mail report will be sent. Also download and log protocols are being sent in set intervals.

**Fallback** If Player loses connection to web service it will automatically fall back to the safety solution and plays sound files at random from a local sound file folder ( repeats may occur) until connection is resumed.

The player knows four modes:

green: Web service is on and working - you can open a list of the upcoming tracks

blue: local stream( from a stored settings file

Purple: on demand

orange/yellow: Fallback

**Documentation:** For each player there is also a local database storing relevant information to be sent to administration ( state email address in settings)

Playlist logs ( for accounting to collecting societies)

download logs (for accounting with content supplier)

error logs

Status information of the player ( mode, if player has been muted etc.)

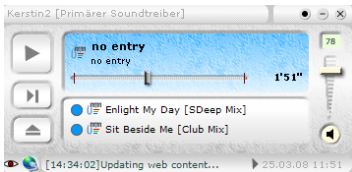
Fallback playlist

available Fallback songs

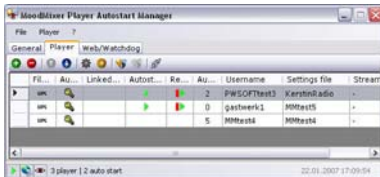
**Watchdog/ Auto start:** depending on how many Playout instances you are running and if you require auto start from system startup and surveillance via Web interface you can let the Auto start manager watch over all players on a PC or server- connected applications are controlled too.

### Playout monitoring:

If more than one instance of the Playout is running it might be helpful to start the monitor which shows the status of each channel, it's workspace and CPU consumption.



Moodmixer-Player



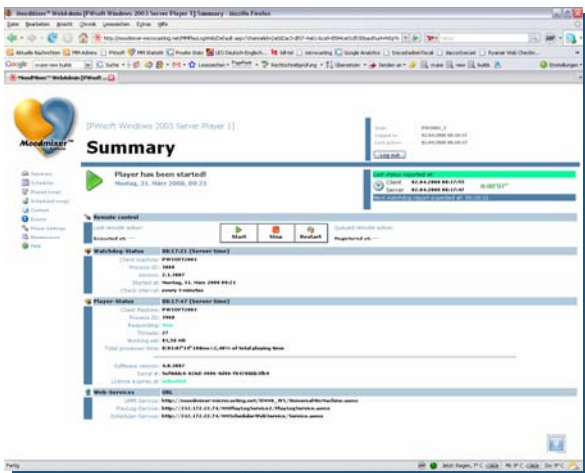
Moodmixer-Watchdog



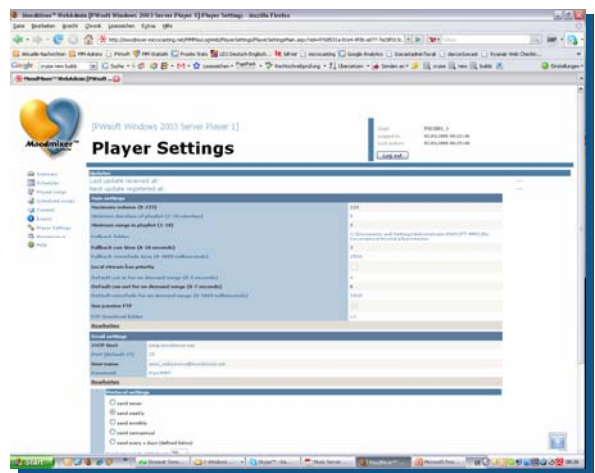
Playout monitoring

## Web administration, monitoring and remote control:

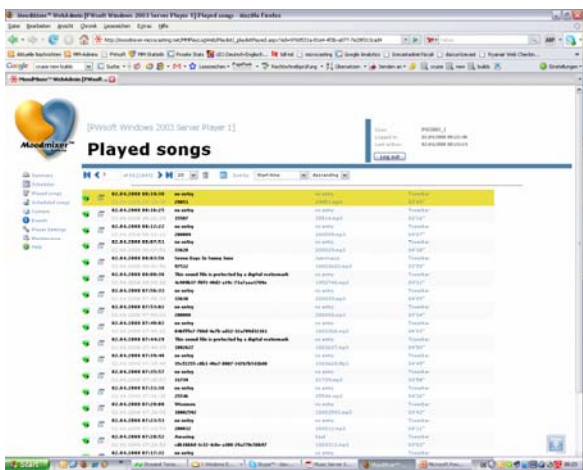
Moodmixer™ Web-services provide all necessary features for a centralized and constant surveillance and monitoring of all available BGM-channels



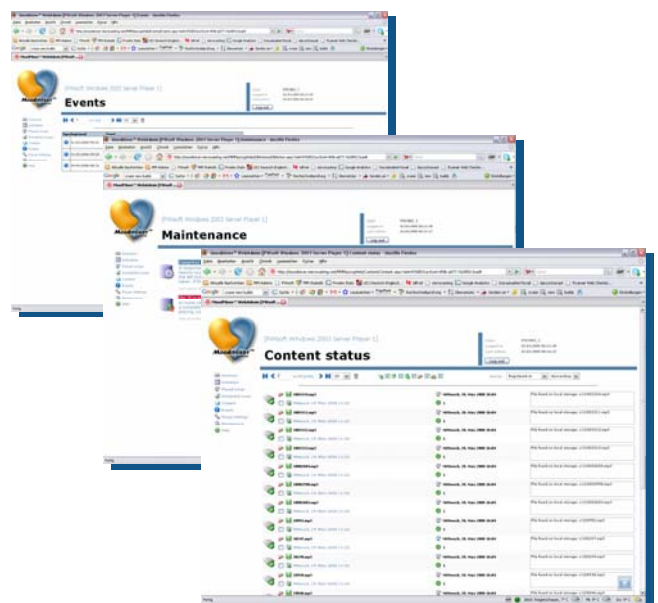
Player status monitoring, web-remote start/stop



Change Player settings (i.e. volume, routing etc) without direct access to the player server



Global and detailed list view of playlist log, currently playing track coming up tracks or scheduled items



Content overview, Remote Database maintenance and event log (i.e. logs of status changes of Player, error logs)

## Internet radio broadcasting

### Additional benefits and services:

#### 1. Commercials, StationIDs and Jingles:

Moodmixer-System offers several ways of handling specific audio events:

- Ads/ stationID rotation with a specific rating value, rotating like music tracks
- Ads/ stationID as pre-planned audio events with scheduled recurrences
- Announcements/ stationID linked directly to tracks

#### 2. Interface to professional radio music scheduling software:

Moodmixer GmbH already provides interfaces for export/import data from music scheduling systems like:

- REPertoire
- D'accord music library
- D.A.V.I.D / Digas

As well as auto playlist tools to be fully integrated into existing studio systems

#### 3. Charts, features, Interviews, user generated shows:

Schedule any archived or pre-produced shows, re-play podcasts, insert user generated shows, add and schedule User charts easily

#### 4. Add User rating / offer interactivity:

Let listeners rate music and actively influence the broadcast- generate community broadcasts. Please ask for details on interactive channels.

#### 5. Output data:

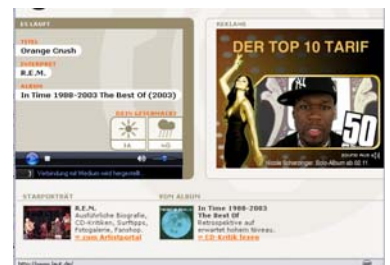
For other music scheduling systems export-import interfaces can easily be produced on demand

Connecting internet services, playlist display, downloads:

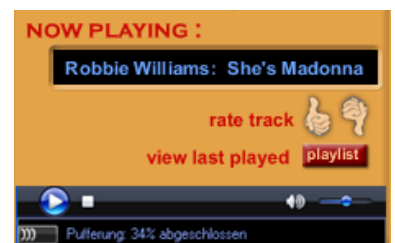
Moodmixer™-Systems offer XML or Text-output of playlist data to be used for connection to other services like Music Downloads, Ticket shops, Album+Artist information libraries etc.

**Commercial Broadcasters:**

Re-use your archived content to produce special interest channels with least administration, re-broadcast special shows and target exactly defined listener groups.



Web-player with ticket + tour info



User ratings / interactive player

Orange Crush von: <a href="#">R.E.M.</a>	(17:34 Uhr)	<div style="font-size: 2em; color: white; background-color: orange; border-radius: 50%; width: 60px; height: 60px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">▶</div>		<b>Downhill feat. Anouk</b> von: <a href="#">Postman</a>	
Take Me To The Riot von: <a href="#">Stars</a>	(17:30 Uhr)		(2007) <b>Green</b>	JETZT JETZT JETZT	
Surfin' Atari von: <a href="#">Console</a>	(17:26 Uhr)				

## Technical specifications

<p>Moodmixer™- Channelmanager</p>	<p>OS: MS Windows XP Home / XP Pro Min 2Ghz 512 RAM Installation requirements: .Net Framework 2.0 Data Formats for data ingest: XML, XLS, TXT, MDB, and Mp3 ID3 v2 Tag reader Data Formats for export: XML Playlist formats: TXT, M3u,PLS ,SMIL Format of Mixdata: Proprietary Format: .UMX</p>
<p>Moodmixer™ Webservice</p>	<p>OS: MS Windows 2000 server / 2003 Server Min 2,8Ghz 1024 RAM ( depending on amount of channel accounts) Installation requirements: IIS, .Net Framework 2.0, ASP.net MS Access Database</p>
<p>Moodmixer™ Player + Watchdog</p>	<p>OS: MS Windows XP Home / XP Pro / Windows 2000 server / 2003 Server Min 2,8Ghz 1024 RAM ( depending on amount of player instances) Soundcard: standard or multi-Channel For streaming output use of Software "virtual audio cable" for multi-channel digital output  Installation requirements; .Net Framework 2.0 , MS SQL-Express or MS Access  Data format: Mp3 Other Formats on demand</p>
<p>Encoding services</p>	<p>Any ( Windows Media, Real, Oddcast, Flash)</p>



**Moodmixer GmbH**  
Music automation systems  
Mittelkamp 31  
DE- 22043 Hamburg  
Germany

**Tel.:** +49(0)40 760 80 725  
**Fax.:** +49(0)40 760 80 727  
**E-mail:** [info@moodmixer.com](mailto:info@moodmixer.com)  
**Web:** [www.moodmixer.com](http://www.moodmixer.com)