

WonderCube[®]

TV BROADCASTING

TV program scheduling management.
365 days playlist.
Multiformat broadcast playout.

SD/HD

MW-N

JVC
The Perfect Experience



WONDERCUBE® TV BROADCASTING

SD/HD digital broadcast

The WonderCube® platform provides the ideal solution for the integrated management of a television broadcast, covering the whole process, step by step, from drafting program scheduling to broadcasting.

Program scheduling strategies are at the heart of television planning, both in terms of daily production and commercial management. In just a few quick and easy moves, WonderCube® allows you to go from annual planning to daily broadcasting, through the integration of the various system software.

The playlist compilation and program scheduling is a smooth, immediate process, thanks to the automation of the processes and access to the all-digital archives. The storage of each and every television program on the Blu-ray Library, means that planning hours and days of scheduling, is just a mouse click away.

Each software program is flanked by a series of functions that specifically help guarantee reliability, flexibility and durability of the system in any situation.

Program Schedule software.

The program Schedule software was designed to manage each step of program scheduling, from medium and long-term strategic development to the management of contract expiry dates.

The operator can decide the timescale he wishes to see: start from an annual planning of program scheduling and use the zoom control to highlight the details of a specific time of day.

By saving all the video archives of the broadcaster on the Blu-ray Library and sharing it on-line, authorized users can access real-time program files and relevant data (contract expiry dates, duration, target, etc.).

Whilst dealing with program scheduling, the operator can also choose to create themed evenings, by bringing together several films of the same type or by the same director, and immediately plan their broadcasting in the playlist. The software allows you to insert programs shown in episodes, highlighting any time gaps in scheduling, or pointing out the accidental scheduling of two different programs at the same time. Program Schedule is an advanced software that will allow you to analyze the quality and quantity of your programming.

This software is open to the outside world, it updates the broadcaster's website automatically and publishes the program schedule in real time, sending a copy of the broadcaster's programming to daily newspapers automatically.



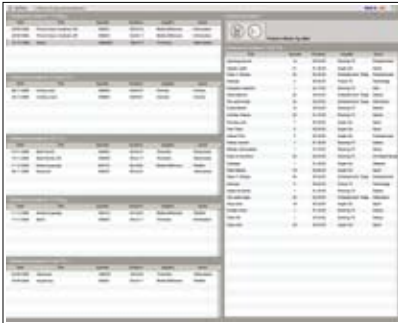
WONDERCUBE® TV BROADCASTING - WORKFLOW FOR AN ALL- DIGITAL TELEVISION BROADCAST

BROADCAST



PROGRAM SCHEDULING.

1. Identification through user name and password.
2. Planning and definition of program scheduling.
3. Management of television series and program expiry dates.
4. Management of program scheduling.



ARCHIVE CONSULTING AND DRAFTING OF THE PLAYLIST.

1. Program archives search.
2. Creation and management of commercials clusters.
3. Playlist compilation.



DIGITAL BROADCAST.

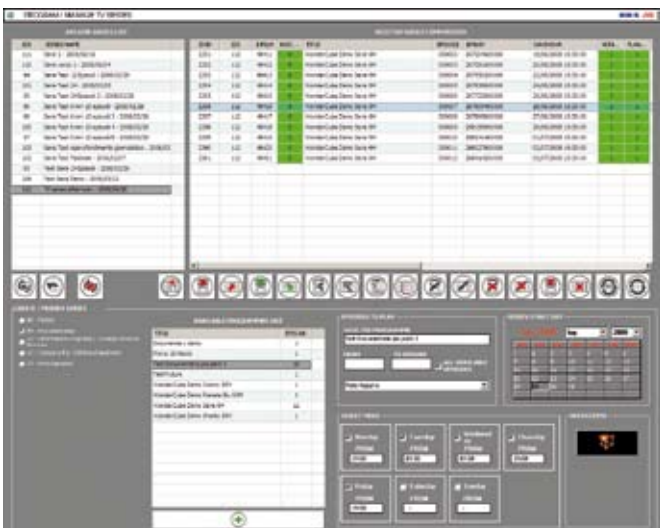
1. Transfer of playlist data to playout broadcasting.
2. Automatic transfer of video files in playout.
3. Broadcasting of programs according to playlist.
4. Broadcasting of any live broadcasts.
5. Automatic generation of ministerial records.

Playlist software.

This software makes it possible to program a 365 day playlist in no time at all. The playlist is automated, with the considerable advantage that compilation times are minimized, and the operator need not waste time on repetitive operations, preferring to strategically analyze the scheduling.

The interface of the software too has been designed for an immediate and intuitive use: the operator's screen shows all necessary commands, made simple by clear buttons and icons.

The more advanced functions of the Playlist software can be summarized up into these important features:



1. Automatic control of protected time slots.

The software automatically analyzes the target of the footage scheduled in the playlist, and highlights anything not in line with current legislation.

2. Horizontal playlist planning.

A playlist is usually compiled in sequence, by inserting one program after the other, until filling, minute after minute, the 24 hours of the day.

The Multi Add function gives you the chance to plan a playlist in a better way: 'horizontally'. In just a few minutes, you can program and include all episodes of a TV series into your playlist. Having inserted the start date and broadcast end, the times of the first showing and its re-runs, with one click, all episodes of the series will be programmed into the playlist, thereby saving days of work, and avoiding any possibility of making a mistake.

3. Automatic calculation of commercials crowding.

The software automatically calculates commercials crowding, distinguishing between display advertising and homeshopping, and showing the total daily amount of commercials in seconds, minutes and hours.

4. Spring Mode: put a program in where there simply isn't the space to do so.

The Spring Mode function is a patented WonderCube® function that shows the flexibility of the entire system. Spring Mode allows you to put a program in where there simply isn't the space to do so.

Spring Mode allows you, for example, to put a 32 minute long program into a 30 minute long space! The software automatically reworks the positioning of all programs previous to and following the insertion, re-programming them, in complete respect of the protected time slots, contracts and scheduled programming hours.

Spring Mode also works to make up for those little errors that can be created in a playlist, automatically closing any time spaces left between one program and another.

The Spring Mode function is useful to programming advertising. No longer need you work out the duration of footage, or remove items from the schedule to insert a new advert. Spring Mode does it all for you. Just choose the advert required and insert it into the chosen group of advertisements. Simply click, and the software will fit it in, the client is on air.

5. Copy and paste function.

This command is particularly useful for themed broadcasters wanting to repeat programs or parts of the playlist. The software simply 'copies and pastes' portions of the playlist, in just a few seconds.

6. Remote control of digital matrix.

Without moving, the software allows you to remote control and program all sources to and destinations of the broadcasting matrix. This function is useful for live broadcasts, satellite links, and links with other places.

7. Split function.

To make for different scheduling in different areas of the territory, the broadcaster can divide up the daily and commercial programming over different areas covered.

Cluster software.

The Cluster software makes it possible to manage the whole system of advertise programming easily and separately.

The software interfaces with the main archives, and shows you all existing clusters, providing their ID, name, year, duration and expiry date. Advertising slots and elements that can be added to a cluster, can be filtered according to name, by means of a text search field.

Duration / Target	Icon	Title	Start / End	TRAS	LOCK	STOP	TEMP	FTGT	CEX	C. OR	C. RIM	SPR	SPR	CR
00:00:24:23 All		IKONE Episode Nr.: 000003	Start: 13:00:15.24 End: 13:33:14.03	+00:00:00						00:00:00	00:00:00			
00:24:24:29 For children with parental control		Sunayah Episode Nr.: 000001	Start: 13:33:14.03 End: 15:33:14.03	+00:00:00			00:00:00	00:00:00						
0:14:04:23 All		Speak with... Episode Nr.: 000212	Start: 15:33:14.03 End: 14:09:04.06	+00:00:00						00:00:00	00:00:00			
00:26:20:06 All		Ikone Episode Nr.: 000005	Start: 14:09:04.06 End: 14:53:10.00	+00:00:00						00:00:00	00:00:00			
01:24:24:23 All		Sky contest Episode Nr.: 000001	Start: 14:53:10.00 End: 16:03:14.03	+00:00:00						00:00:00	00:00:00			
01:02:20:13 All		Milioner Episode Nr.: 000032	Start: 16:03:14.03 End: 17:00:19.43	+00:00:00						00:00:00	00:00:00			
00:15:14:00 All		Pokemon Episode Nr.: 000254	Start: 17:00:19.43 End: 17:23:14.03	+00:00:00						00:00:00	00:00:00			
01:31:05:23 Adults		Cartoon networks Episode Nr.: 000000	Start: 17:23:14.03 End: 18:59:01.05	+00:00:00						00:00:00	00:00:00			
00:20:24:55 All		Medical Episode Nr.: 000009	Start: 18:59:01.05 End: 19:33:14.00	+00:00:00						00:11:00	00:00:00			
00:19:03:13 For children with parental control		home and away Episode Nr.: 0000106	Start: 19:33:14.00 End: 20:00:00.03	+00:00:00						00:00:00	00:00:00			
00:03:24:23 All		Weather Episode Nr.: 000000	Start: 20:00:00.03 End: 20:33:14.03	+00:00:00						00:00:00	00:00:00			
00:11:03:04 All		Coming soon Episode Nr.: 000001	Start: 20:33:14.03 End: 20:53:48.06	+00:00:00						00:12:00	00:00:00			
01:24:24:23 Adults		Jungle boy Episode Nr.: 000096	Start: 20:53:48.06 End: 21:33:14.03	+00:00:00						00:00:00	00:00:00			
01:24:24:23 All		Music top ten Episode Nr.: 000003	Start: 21:33:14.03 End: 22:59:31.24	+00:00:00						00:00:00	00:00:00			
00:00:14:02 Advertising		Advertising Episode Nr.: 000000	Start: 22:59:31.24 End: 23:14:11.24	+00:00:00						00:00:00	00:00:00			
00:00:24:23 Advertising		Advertising Episode Nr.: 000000	Start: 23:14:11.38 End: 23:33:14.29	+00:00:00						00:00:00	00:00:00			

Mark	Start	End	Duration	Spot name	Duration	Ord.
14:47:09	14:14:24	14:18:58	0:04:34	Promo 2007 B Lets talk about	0:00:15	1
15:12:08	14:31:50	14:36:40	0:04:51	Jingle summer 2007	0:00:06	2
15:24:02	14:57:45	15:02:48	0:05:02	Spot 2007 C Unilever Lysolom	0:00:30	3
	15:31:17	15:35:57	0:04:40	Spot 2007 C Telecom	0:00:15	4
				Spot 2007 C Calgon	0:00:30	5

SD/HD Playout software.

SD/HD Playout software has all the potential of digital technology, guaranteeing independent programming even if disconnected from the rest of the platform.

In order to guarantee maximum security, each broadcast can be equipped with two playouts working in parallel, and synchronized on the same playlist. Should the first playout experience broadcasting problems, the software shifts automatically to broadcast the second. Those watching won't realize a thing.

The Playout software controls the switching into external programmed sources, such as satellite switches or live links. It can be controlled from control room, a necessary feature for live broadcasts. Once the live broadcast has finished, the software automatically synchronizes the programs in the playlist, with a smooth, continuous broadcast.

The WonderCube® system clock synchronizes automatically with the system server. The GPS option connects the platform to a satellite signal that maintains synchronization to the frame.

To meet legal requirements, the Playout software automatically generates legal records, complete and ready to file. These records can be consulted at any time by means of a computer connected to the system.

1. Single Player function.

The Single Player function is integrated into the Playout software. It is a multimedia reader fully compatible with all footage conforming to SD/HD standards, and has been specially optimized to reproduce clips acquired through the platform.

The Single Player function plays any footage from any network folder, adding control of audio levels, and showing you the time passed and the time remaining until the end of the clip.

It can be used in broadcasting to show a video file, without going

through the playlist programming. It can be used in direction too, to introduce contributions from a live broadcast.

It has a simple, dynamic interface and is complete with play and fast forward functions.

2. Agent function.

Agent is the alarm signal. It is the software designed to control that the system is functioning perfectly.

It alerts you in the event of playout or broadcasting problems, identifies the error and informs the administrator of all details in three, customizable, ways:

- via computer monitor: an animated figure appears on the screen and describes the problem;
- via e-mail: the system sends a message detailing the error to the administrator's e-mail;
- via SMS: a short text message is sent to the system administrator's cell phone, or to that of the maintenance technicians.

3. Graphic Titler.

The software works as a digital titler, and can be used both by control room and by remote broadcasting control. It is the ideal tool for the automatic insertion of logos (2D and 3D), crawls or information tickers, both created in the newsroom and supplied automatically by a press agency. It can show personalized graphics created independently and is compatible with the most common vector graphics programs. It also allows you to add effects like picture in picture, and to display analog and digital clocks.

The control of this tool can be programmed directly from the playlist, and synchronized with the playout, or can be used by the operator in real time.

The screenshot displays the playout software interface. At the top left is the 'playout' logo. The main area is divided into several sections:

- Audio Levels:** A window titled 'audio levels' showing 'OUTPUT' with two vertical meters for 'L' and 'R' channels, ranging from -15 to 15 dB.
- Channel I:** A central window showing a video feed of a woman in a business suit. Above the video is 'CHANNEL I' and 'ON AIR' in red. Below the video are two digital clocks: '12:57:34:12' and '-12:57:34:24'.
- Control Panel:** A vertical stack of buttons: 'LOGO ON', 'SWITCH', 'MATRIX', 'PLAYER', 'ALIGN', and 'LIVE END'. At the bottom are two circular icons.
- Playout Check:** A window titled 'playout check' with 'Service:' and 'Switch:' sections, each having 'ON' and 'OFF' buttons. Below are 'Live' buttons for 'ON AIR' and 'BROADCAST'.
- Playlist Tables:** Two tables at the bottom, 'LAST' and 'NEXT', showing program details.

LAST						NEXT					
Start	End	Date	Title	Episode		Start	End	Date	Title	Episode	
13:00:01	13:33:11	24-08-2007	Ikone	0000022		19:30:33	20:00:01	24-08-2007	Batman	0000029	
13:33:11	15:38:33	24-08-2007	Sunplash	0000001		20:00:01	20:36:06	24-08-2007	News	0000201	
15:38:33	14:09:29	24-08-2007	Speak with...	0000012		20:36:06	21:00:00	24-08-2007	Wheather	0000012	
14:09:29	14:53:09	24-08-2007	Ikone	0000063		21:00:00	21:28:37	24-08-2007	Coming soon	0000063	
14:53:09	16:03:03	24-08-2007	Sky contest	0000002		21:28:37	22:06:06	24-08-2007	Jungle boy	0000002	
16:03:03	17:00:33	24-08-2007	Milloner	0000002		22:06:06	22:42:00	24-08-2007	Music top left	0000002	
17:00:33	17:23:14	24-08-2007	Home and away	0000012		22:42:00	23:35:06	24-08-2007	Home and away	0000012	
17:23:14	18:59:39	24-08-2007	Cartoon networks	0000302		23:35:06	03:29:55	24-08-2007	Break point	0000302	
18:59:39	19:30:33	24-08-2007	Medical	0000002		03:29:55	04:09:00	24-08-2007	News	0000002	

Digital management of footage.

To be broadcast, footage must be digital and therefore acquired from tape and converted into files. Once it has been acquired, the clip can be shared on the network, reworked post production, or simply edited, marked, transferred to broadcast and saved

1. Cutting software.

Cutting software cuts a part of the video out of the whole film clip. The software cuts in real time, with frame accuracy. The file generated is ready to be archived or broadcast.

2. Marking software.

Marking software makes it possible to select the start and end of a clip, and choose specific 'insertion points' within, that will be the points of insertion of advertising clusters.

The marking function can associate a two- and three-dimensional logos to specific portions of the clip. The system operator may also request the automatic insertion of labels (e.g. red, yellow and green) indicating the target audience, the title or logo of the program and the digital clock.

The marking function is a useful tool in storage too. Key points of the footage can be 'marked' and associated with meta-data before being saved. In this way, browsing is quick and intuitive, and the user can access the portion of the footage he is interested in directly, without having to watch the whole thing.

3. Linking software.

The Linking software connects the identifying meta-data to each audio-visual clip of the footage. This is very important whilst saving, and makes searching the archive database easy and intuitive.

Each file is linked to a card or form. Each form contains all the information relating to the linked file/s, such as: the title, duration,

target, expiry date, date on which broadcasting rights expire, etc.. Once the link has been made, the file is available on the network and to all computers connected to the system. It is ready to be consulted, edited or broadcast.

Archive software.

This software is the Media Asset Management of the WonderCube® Platform.

It is the primary source for all activities connected to broadcasting, and holds information relating to programs that can be inserted into playlists and broadcast.

A simple, intuitive interface allows you to check the database and instantly access the thousands of pieces of information and footage contained in the broadcaster's video archives.

The software also allows you to personalize your archiving preferences, by altering the insertion fields set out by the database.

An archive search can be made quite simply through a free text search into the form, or alternatively in advanced mode, with crossed fields for more detailed and selective searches.

Unique file position.

Once it has been linked and marked, each file has completed its archive process, and receives an exact location (server, Library, other), so as to remain traceable. If the file is saved on the Library, it is given a Library number, the number of the cluster in which the media containing the file is located, and the position of the media within the cluster.

At any moment, the exact contents of each and every Library and cluster can be seen. You can find out the positions that are still available for archiving new files, and organize storage spaces in the best possible way.

The screenshot shows the 'archive' software interface. At the top left is the 'archive' logo, and at the top right is the 'MW-N JVC' logo. The main area is a table with columns: Idfilm, Icon, Title, Telec..., Year, Tipology, Duration, Genre, Natl..., Director, Supplier, Quality, and Tel R.E.D. The table lists various film entries such as 'Inside nature', 'History of a hero', 'News', 'Seven dollars', 'The wild', 'Jo Bear', 'Family Tales', 'Hit Parade', 'So sweet', 'Code Number', 'Mistry Tales', 'K-space', 'News', 'My name is nobody', 'Street of Chicago', 'Survive', 'Personage', 'Poppi', 'Hi Everyone!', 'People are strange', and 'Discover Africa'.

Below the table is a search and filter bar with options like '[Number of copies]', '[Search]', '[Filter by name]', and '[Secondary columns]'. At the bottom, there is a detailed view of a selected file (Idfilm 1542, Title 'Inside Nature. MPG', Duration 01:25:02, Dox 0, Dox pos 0). This view includes a table for 'Part' information, a section for 'Actors', and fields for 'Previous plan info' and 'Next plan info'.

Idfilm	Icon	Title	Telec...	Year	Tipology	Duration	Genre	Natl...	Director	Supplier	Quality	Tel R.E.D.
1542		Inside nature	000147	2003	Documentary	01:25:02	Adventure	--	--	Escape	--	03/01/2004
1670		History of a hero	000022	1998	Movie	00:55:14	Dramatic	--	Cardona Jr René	Thunder	--	19/02/2000
0785		News	000568	2006	News	00:31:23	Information	--	--	Infonews	--	09/12/2007
0689		Seven dollars	000001	1978	Movie	01:42:51	Western	--	Frank Slater	My Movie	--	02/11/1979
1954		The wild	000256	2008	Documentary	00:57:13	Adventure	--	--	Picture Present	--	18/06/2009
03215		Jo Bear	003265	2005	Cartoons	00:26:10	Comedy	--	--	Baby Movies	--	28/09/2006
94851		Family Tales	004895	2003	Sitcom	00:24:19	Comedy	--	--	Picture Present	--	20/04/2004
48795		Hit Parade	003665	2005	Show	00:52:27	Music	--	--	Recording	--	03/03/2006
34220		So sweet	003114	2007	Soap Opera	00:27:56	Dramatic	--	--	Home Movie	--	24/01/2008
00124		Code Number	003265	1997	Movie	01:57:13	Action	--	Aron C. FASTER	Thunder	--	27/07/1998
11844		Mistry Tales	001002	2000	Documentary	00:57:22	Biographical	--	--	Royal Documentary	--	07/08/2001
13006		K-space	000398	1984	Movie	02:02:18	Dramatic	--	Joy Voight	Epic Film	--	13/07/1985
0819		News	001289	2006	News	00:30:25	Information	--	--	Infonews	--	21/10/2007
99058		My name is nobody	000011	2005	Movie	01:43:17	Action	--	Michel L. Power	Thunder	--	11/005/2006
15673		Street of Chicago	001473	1992	Series	00:21:28	Comedy	--	--	Home Movie	--	19/02/1993
4618		Survive	000117	2007	Documentary	00:40:45	Adventure	--	--	Planet Hearth	--	25/11/2008
34270		Personage	009800	1999	Documentary	00:28:55	Biographical	--	--	Royal Documentary	--	14/01/2000
2746		Poppi	005212	2003	Cartoons	00:37:58	Comedy	--	--	Baby Movies	--	17/12/2004
1672		Hi Everyone!	000035	1979	Show	00:29:02	Comedy	--	--	Recording	--	01/01/1980
9754		People are strange	000698	1996	Sitcom	00:32:47	Comedy	--	--	Picture Present	--	29/06/1997
37246		Discover Africa	000021	2005	Documentary	01:07:10	Adventure	--	--	Planet Hearth	--	12/11/2006

Maximum security and complete copies.

The database contains an advanced file control and verification system.

When a file is saved, the system automatically generates a unique binary code (MD5) that is associated with and identifies the file. When footage is moved or copied, the system uses this code to check file integrity.

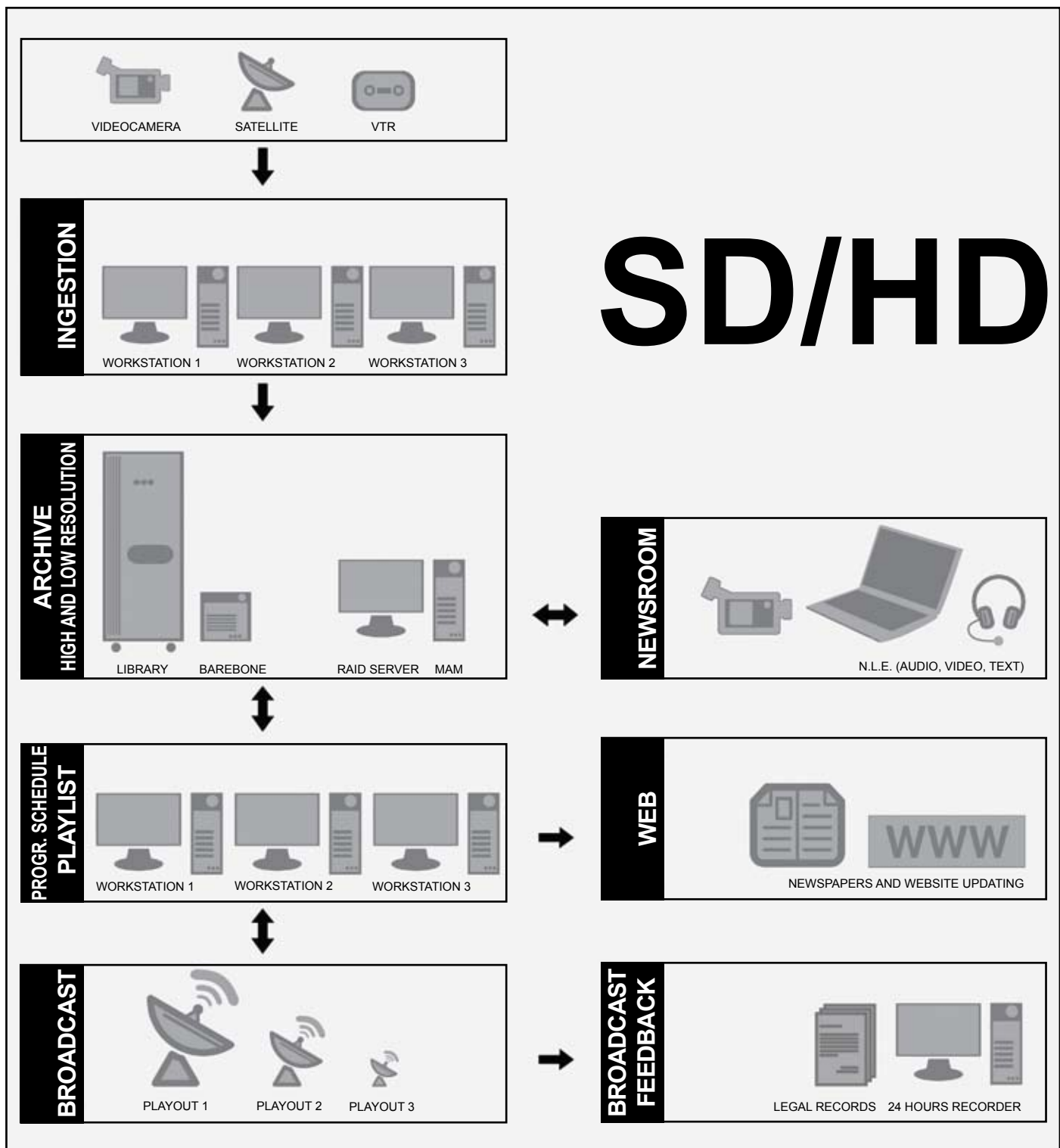
Details and statistics.

The association between a digital broadcasting system and a digital video archive makes it possible to share and crossover broadcasting data with archiving meta-data.

An immediate statistical analysis tells you instantly exactly how many times a certain program has been shown, when the last time it was scheduled was and when it will next be broadcast.



WONDERCUBE® TV BROADCASTING - SYSTEM WORKING AREAS



MAIN FUNCTIONS OF THE WONDERCUBE® TV BROADCASTING SYSTEM

Program scheduling
Creation, viewing and editing of program scheduling
Management of program information
Printout of program scheduling
E-mailing of program scheduling to a configurable mailing list
Automatic publication of the program scheduling on the web
Management of advertising breaks
Detailed viewing of program scheduling

Clusters
Integration with program archives
Editing of internal cluster order
Active control of promotions and adverts
Automatic updating in the playlist
Automatic jingle management
Automatic expiry date control

Legal records
Generation of legal records
Integrated calendar
Printout of records
Preview records
Edit records

Archive
Insert through forms
Form duplication function
Archive search
File archiving with MD5 code
Archive reports
User operation logs

Playlist
Integrated calendar
System times synchronized throughout the whole platform
Viewing of playlist program duration
Program shifting
Insertion of programs into the playlist
Switch
Manual transfer of the playlist to playout
Live broadcast management from the playlist
Automatic target management
Icon for each programme inserted into the playlist
Complete or partial programme block
Temporary insertion management
Spring mode function
Automatic advertising crowding control
Copy/cancel part of a playlist
Search playlist
Split function
Preview scheduled playlist
Automatic management of television series
Printout playlist
Advanced transfer playlist/playout
Countdown for the on air programme

SD/HD Playout
Video player with preview
Management of live broadcasts from playout
Synchronized time System
Diagnostic software and agent alert
Integrated manual player
Redundancy with second playout
Self-aligning
Indication of remaining free space
View broadcasting history
Integrated audio control
On-air programme countdown
Digital matrix management
Timed playlist transfer
Automatic management of disk space

SD/HD Single Player
Copy of footage from network folder
Integrated audio management
Countdown display

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