



Digital Archiving at BR television archives

Laying the fundament for additional values

by Dirk Brandhorst, Television Archives, Bayerischer Rundfunk

Agenda

1. The Szenario
2. The Ideas
3. The Values
4. The Practice
5. The Experiences
6. The Perspectives

1. The Szenario: conditions and tasks

Conventional tasks of the television archives at BR are:

- **storage** of broadcasted BR-programs and contributions
 - **provision of information** about these essences (content)
 - **provision and loaning of carriers** for rebroadcasting or reuse
 - **exchange of essence** between the german broadcasters of public law
 - **documentation of information about rights and restrictions**
concerning foreign media assets
- **value and role** of television archives in the production process ?!

1. The Szenario: successes and challenges

- **physical archive with more than 700.000 video tapes, films and sounds**
- **FESAD-Database: supply of structured textual information (formal, contentual, physical) on BR-programmes and contributions**
- **steady increase of retrievals and orders in the database FESAD**
- **Decrease of storage area for physical tapes**
- **Increasing deterioration of program assets**
- **High efforts in the investigation and reconstruction of metadata**
- **Lack of time-based rights informations**

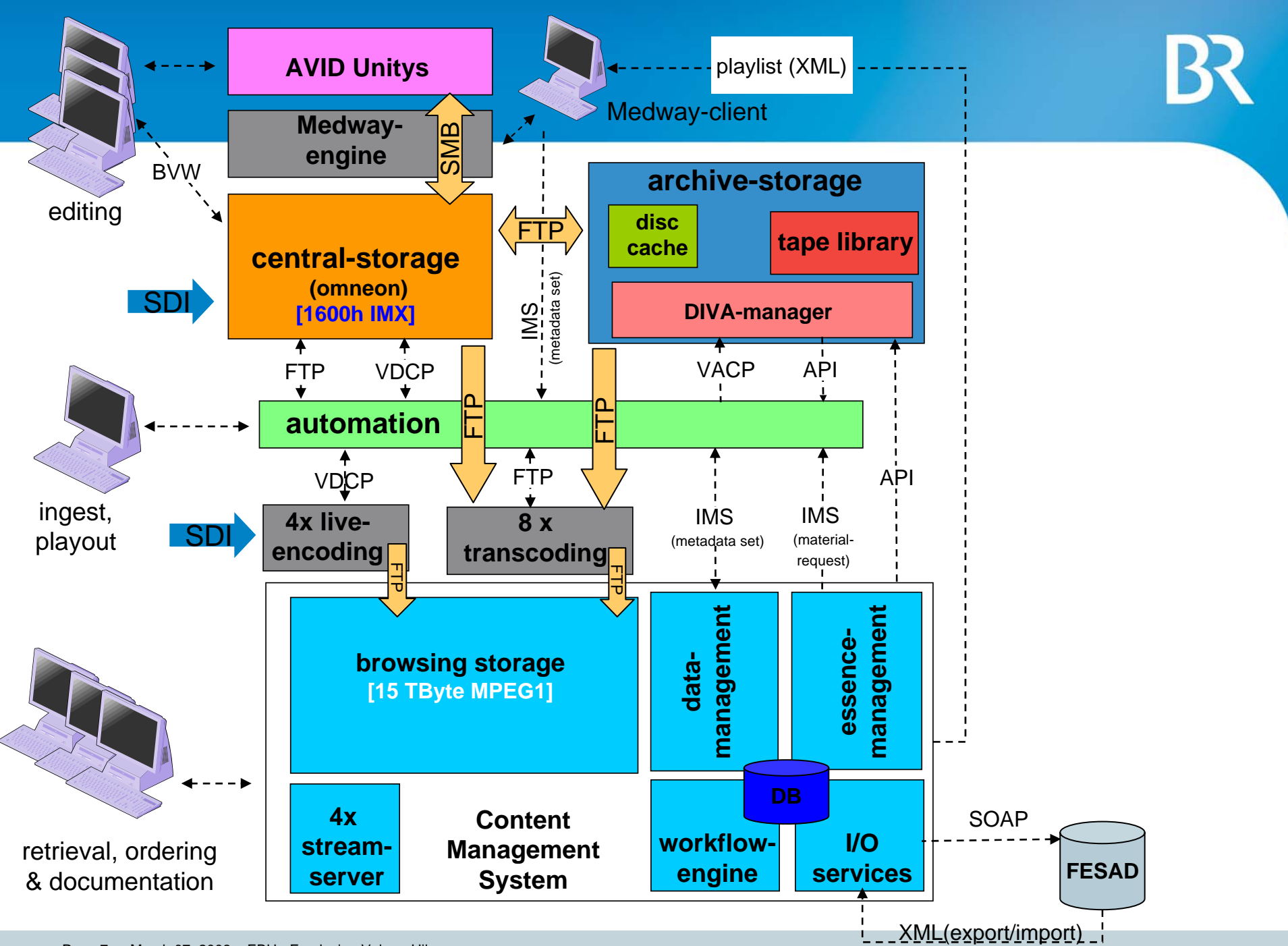
2. The ideas: a business model for digital archiving at SZFM

- Technical fundament for digital long-term preservation
- Higher degree and more efficient utilization of archived assets
 - close integration of the digital archive into the digital production environment
 - setup of a media asset management to provide more valuable informations and integrated tools for digital workflow support
- Data Mining: Prerequisites to capture metadata
 - from other applications
 - in earlier stadia of production workflows

2. The ideas: a business model for digital archiving at SZFM

Strategies and constraints of digital archiving and preservation:

- Priority: archiving of new broadcasted programs
 - including cleanfeed-versions
 - including rebroadcastings from digitized archive-tapes
- Digitization: high quality-requirements and limited resources:
 - instant reuse
 - only after colour-correction and quality control!
- Active preservation:
 - based upon unallocated resources of the technical staff
 - chances in the growing amount of rebroadcasted files



Jazz-Pfarrer - media archive@ Cataloging Client

File Edit View Options Help

Search: VWB Bildinhalt Text

ARD-Mittagsmagazin

1. Calpari Bericht
2. Nachfrage Rom
3. Prozeß
4. Tagesschau
5. Heuschrecken-Debatte
6. Ärztetag
7. Krankmeldung
8. Räubertrio
9. Pukapuka
10. Jazz-Pfarrer
11. der sport - Fußball Köln
12. der sport - Fußball Bielefeld
13. der sport - Tischtennis
14. Kinderasthma
15. geld & börse - meldungen
16. geld & börse - börse
17. der teletipp - PlusMinus
18. Capa-Fotos
19. Kaffeebohnen
20. Verbrauchernews

10. Jazz-Pfarrer

- ist Cleanfeed-Fassung von
- ist Sendefassung von

	TCR 13:29:59.07	TCR 13:29:59.09	TCR 13:30:05.24	TCR 13:30:08.00
Bildinhalt	[Progress bar]			
VWB Bildinhalt	[Progress bar]			
O-Töne	[Progress bar]			
VWB O-Töne	[Progress bar]			
VWB O-Töne Text	[Progress bar]			
VWB Bildinhalt Text	gesperrt			
	TCR 13:30:08.18	TCR 13:30:08.18	TCR 13:30:09.20	TCR 13:30:11.00
Bildinhalt	[Progress bar]			
VWB Bildinhalt	[Progress bar]			
O-Töne	[Progress bar]			
VWB O-Töne	[Progress bar]			
VWB O-Töne Text	[Progress bar]			
VWB Bildinhalt Text	[Progress bar]			
	TCR 13:30:12.09	TCR 13:30:15.09	TCR 13:30:15.10	TCR 13:30:17.12
Bildinhalt	[Progress bar]			
VWB Bildinhalt	[Progress bar]			
O-Töne	[Progress bar]			

Fertig

Frame: 13:29:59.07 | Segment: 13:27:51.02...13:30:05.24 (00:02:14.23) | NUM MOD

3. The Values: Services for production facilities

Enhancing the usage of archives – degree and efficiency

1. more precise and thus more valuable informations

- by timecode-based annotation of audiovisual documents
- retrieval leads directly to the searched content
- precise information on restrictions and rights per segment

Media Archive Retrieval Client

The screenshot displays the Media Archive Retrieval Client interface within a Microsoft Internet Explorer browser window. The browser title is "Frame - Microsoft Internet Explorer bereitgestellt von Bayerischer Rundfunk". The address bar shows the URL: [http://cms-ret-01.br-fs-pn.br-fs.int/MA/Net/WebApplicationMAFesad/\(fwsmlSvvmqy/xxo550cxwovv3\)/Frame.aspx?ID=3194182180254183161522402953320614015811157214867159928102051838898215212241&U](http://cms-ret-01.br-fs-pn.br-fs.int/MA/Net/WebApplicationMAFesad/(fwsmlSvvmqy/xxo550cxwovv3)/Frame.aspx?ID=3194182180254183161522402953320614015811157214867159928102051838898215212241&U). The interface is divided into several sections:

- Workspace:** A sidebar on the left contains a tree view with folders: "Redaktionen / Sendungen", "Privatbereich", "Meine EDLs", "Meine erledigten Bestellungen", and "Meine Bestellungen".
- Navigation:** A top menu bar includes "Browsing", "Cataloging", "M-Broker", "XXV", "WEB-TV", "Browse SOM", "Suchansicht", "Drucken", and "Hilfe".
- Segment Treffer:** The main content area displays a list of search results for the segment "Trefler". Each result is represented by a horizontal bar with a progress indicator and two thumbnail images. The results include:
 - 10:44:44.02...10:44:45.07 (00:00:01.05)
 - 10:44:45.08...10:44:46.11 (00:00:01.03)
 - 10:44:46.12...10:44:47.13 (00:00:01.01)
 - 10:44:47.14...10:44:48.17 (00:00:01.03)
 - 10:44:48.18...10:44:49.16 (00:00:00.23)
 - 10:44:49.17...10:44:55.07 (00:00:05.15)
 - 10:44:55.10...10:45:18.23 (00:00:23.13)
 - 10:45:18.24...10:45:21.03 (00:00:02.04)
- Bottom Bar:** A status bar at the bottom left shows "Fertig" and a "Vertrauenswürdige Sites" indicator.

3. The Values: Services for production facilities

Enhancing the usage of archives – degree and efficiency

1. more precise and thus more valuable informations
by timecode-based annotation of audiovisual documents
retrieval leads directly to the searched content
precise information on restrictions and rights per segment
2. more secure and purposefull selection and ordering
by support of keyframes, low-res and rough cut lists
3. more efficient transfer to target systems
by partial restore out of the archive
4. high availability of archived material: no lent tapes
5. automatical provision of metadata
information for editors, base for future metadata-workflows

Media Archive Browsing Editor

Right	V1	First Frame	Last Frame	Title	Record In	Record Out	Mark In	Mark Out	Duration	Comment
				(CF) Pfarrer Rainer Maria Schießler ar	00:00:00.00	00:00:08.12	00:02:32.23	00:02:41.10	00:00:08.13	
				(CF) Pfarrer Rainer Maria Schießler ar	00:00:08.13	00:00:10.20	00:02:43.01	00:02:45.08	00:00:02.08	
				(CF) Pfarrer Rainer Maria Schießler ar	00:00:10.21	00:00:12.02	00:02:52.19	00:02:54.00	00:00:01.07	

Media Archive Transfer Monitor

Transfer Monitor - Microsoft Internet Explorer

Adresse [http://cms-ord-01.br-fs-pn.br-fs.int:12314/TransferListSchedulingWS\(peo34rfk4rI5o453v0hka45\)/TransferMonitor/TransferMonitor.htm?accesskey=9021213511](http://cms-ord-01.br-fs-pn.br-fs.int:12314/TransferListSchedulingWS(peo34rfk4rI5o453v0hka45)/TransferMonitor/TransferMonitor.htm?accesskey=9021213511)

Media Archive Transfer Monitor

Suche Details

Typen: Bestellung Status: * Zielsystem: *

Datum: Creation date 04.10.2007 00:00:00 bis 04.10.2007 23:59:59

Attribute: TYPE

Max. Treffer: 30 (23) sortiert nach Creation Date in descending Suchen

Title	OrderID	Progress	State	Start Date	Creation Date	Delivery Date	Duration	Owner
AS Programmhinweis 04.10.07 - ck	0013201A		genehmigt	2007-10-04 14:00:00	2007-10-04 12:57:09	2007-10-04 14:00:00	00:07:08:05	cmsdoku
Wiesn Nici Behr 1	0013194A		Beendet	2007-10-04 11:30:00	2007-10-04 12:05:02	2007-10-04 12:30:00	00:02:02:20	SchoefbM
DVD Cazall Designerbrillen	0013191A		Beendet	2007-10-04 11:30:00	2007-10-04 12:03:46	2007-10-04 12:30:00	00:07:17:05	mehnertj
RS BenQ	0013189A		Allow	2007-10-08 10:00:00	2007-10-04 11:54:36	2007-10-08 10:00:00	00:01:13:20	schorrt
Zeit für Tiere - Zirkustiere	0013186A		Beendet	2007-10-04 11:30:00	2007-10-04 11:43:47	2007-10-04 12:30:00	00:03:51:13	asarkaye
Wiesn Nici Behr	0013175A		Beendet	2007-10-04 10:30:00	2007-10-04 11:34:52	2007-10-04 11:30:00	00:01:51:22	SchoefbM
Wiesn Nici Behr	0013174A		Beendet	2007-10-04 10:30:00	2007-10-04 11:31:18	2007-10-04 11:30:00	00:01:51:22	SchoefbM
BRW/ 04.10.07/ Nr. 1	0013173A		Beendet	2007-10-04 10:30:00	2007-10-04 11:30:20	2007-10-04 11:30:00	00:53:17:06	SteibJ
DVD Tracht und Handwerk	0013172A		Beendet	2007-10-04 11:30:00	2007-10-04 11:28:35	2007-10-04 12:30:00	00:08:18:05	mehnertj
Stationen	0013165A		fehlerhaft	2007-10-04 10:30:00	2007-10-04 11:18:43	2007-10-04 11:30:00	00:00:00:00	mehnertj
Milchbauern	0013163A		Beendet	2007-10-04 10:30:00	2007-10-04 11:12:57	2007-10-04 11:30:00	00:02:45:16	walterc
Zeit für Tiere - Wieviel Wolf steckt im Hund	0013162A		Beendet	2007-10-04 11:00:00	2007-10-04 11:09:39	2007-10-04 12:00:00	00:03:13:19	asarkaye
Kultur "Quer" 04.10.07 - kj	0013161A		Beendet	2007-10-04 10:30:00	2007-10-04 11:06:08	2007-10-04 11:30:00	00:11:34:05	cmsdoku
Unser Land: Damals: Almsommer	0013158A		Beendet	2007-10-04 11:00:00	2007-10-04 10:52:56	2007-10-04 12:00:00	00:06:17:06	Bassit
Menschen in Bayern	0013157A		Beendet	2007-10-04 10:00:00	2007-10-04 10:51:52	2007-10-04 11:00:00	00:43:31:11	mehnertj
Blickpunkt Sport: FC Bayern - Leverkusen	0013156A		Beendet	2007-10-04 11:00:00	2007-10-04 10:49:12	2007-10-04 12:00:00	00:05:21:02	Bassit
Quer Vier Feauste	0013155A		Beendet	2007-10-04 10:00:00	2007-10-04 10:45:25	2007-10-04 11:00:00	00:17:49:04	ZanetzelM
Die Abendschau: Sport: Fußball - Nationalmannschaft	0013154A		Beendet	2007-10-04 11:00:00	2007-10-04 10:42:38	2007-10-04 12:00:00	00:01:32:19	Bassit
AS - Bußgelder - Forderung nach Verdoppelung	0013153A		Beendet	2007-10-04 11:00:00	2007-10-04 10:41:39	2007-10-04 12:00:00	00:02:22:06	meitingm
Die Abendschau: Sport - Bundesliga	0013144A		Beendet	2007-10-04 11:00:00	2007-10-04 10:38:51	2007-10-04 12:00:00	00:01:52:12	Bassit
Boulevard Bayern Luca Toni 04.10.07 - ck	0013135A		Beendet	2007-10-04 11:00:00	2007-10-04 10:33:04	2007-10-04 12:00:00	00:06:30:01	cmsdoku
erfolgreiche Bauern	0013134A		Beendet	2007-10-04 08:30:00	2007-10-04 09:18:13	2007-10-04 09:30:00	00:04:59:01	KoppN
MM Wirtschaftsnews 4.10 - kj	0013133A		Beendet	2007-10-04 09:30:00	2007-10-04 09:16:13	2007-10-04 10:30:00	00:20:55:15	cmsdoku

Fertig Internet

3. The Values: Securing the Longevity of Cultural Heritage

Preservation of digitized assets - a technical solution:

- More efficiency in preservation by means of
 - monitoring of tape drives and media to prevent data loss
 - automatic migration of endangered essence to new media
- complete redundancy for disaster recovery and for load sharing

4. The practice: SZFM and CMS at work

- After a long period of planning, installing and testing: SZFM is operating since March 26/28, 2007
- filebased production and broadcasting of nearly the complete programmes of BFS and BR-alpha
- until now digital archiving of ca. 40.000 High Resolution-Clips
- archiving volume of ca. 350 TB until now, daily growth of 1 TB
- ca. 1.400 registered users for Media Archive
- Increasing number of orders via Media Archive: 60 per day in 02/2008
- Integration of a growing number of target systems, providing high resolution essence as well as low resolution essence and metadata

5. The Experiences: Archiving and Documentation

Transition from tape to file – a longer lasting period:

- limitations on the ingest facilities (high quality-requirements)
- remaining tape-based workflows
- investment in tapes and archive technology
- furthermore no preservation on tapes!

→ evaluate projects for external digitization!

→ evaluate concepts for Storage-on-Demand!

Migration to a timecode-based annotation:

- new workflows and additional efforts in documentation
- revision and adjustment of old-fashioned metadata
- manual work, no automatic proceeding

→ optimize usability, focus on the capturing of mass data!

→ implement tools for data mining!

→ Implement database-features (versioning)!

5. The Experiences: Editorial Workflows, Retrieval and Ordering

Media Archive is becoming a reference tool for editorial workflows:

- + getting information about all acquired essences
- + editorial approval
- + retrieve and browse assets (production or archive area)
- + ordering essences for digital transfer

→ design an open platform for archive and production!

Implementation of new order workflows for the editorial staff

- acceptance depending at a high degree on the usability and convenience of the retrieval and ordering tool
- acceptance depending on the functionality and stability of the different highly cohering transfer systems

→ optimize usability and workflows!

→ train and instruct of the archival and technical staff

6. The Perspectives

New requirements and challenges:

Provision of content for new targets, especially for Online-Use

- more flexible transcoding systems
- temporary storage of a MidRes-Format:

Supply of additional service for editorial staff, e.g. theme-oriented collections („Themenarchive“)

- new documentary strategies required?
- near-editing archive-storage required?

Tapeless acquisition

- registration and logging of essence and content at the beginning of the production chain
- archiving of selected and evaluated feeds

6. The Perspectives

Digital Intermediate Archiving:

Archiving of different types of intermediates in the production process

→ no playout on tape

→ advantages of browsing and ordering in the CMS

Rights Client:

software-supported capture and linking of rights informations to the annotated content in the CMS

→ easier annotation of rights via EDL-information out of the editing system

→ more valuable rights informations by integration with the BR-licence-database

→ supply of rights informations for soon reuse

→ necessary integration of the productions systems with planning units

Conclusions

In digital production environment television archives become even more service providers with the goal of optimal exploitation of assets.

The collecting, evaluating, selecting and providing of essence, content and asset is necessary all over the production and archive workflow.

The challenge is to find working concepts to manage the change and appropriate documentation to achieve the transition to this new role.

Automation skills and data mining may help to achieve these goals, but intellectual evaluation and adjustment will still be necessary!

Thanks for your attention!