

# Audiovisual Media Archive of the State Library Vorarlberg

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## 1 STARTING POSITION

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For a smallish State Library it is rather unusual to set up an audiovisual media archive as part of the department for regional studies. Such archives have if at all a shadowy existence, as written records have a far longer tradition in Western culture. (Goodale, 2011) Therefore such written collections have a traditionally well-founded priority. Hence it is even more striking for the State Library of Vorarlberg to have founded such an archive in 1987 and since then recorded and archived local TV productions and since 1993 local radio contributions continuously. Online media contributions have been added to the collection for a couple of years now as well.

The wise decision of 1987 was intuitive and not scrutinized, although personal and technical struggles followed the initial foundation of the audiovisual media archive. To begin with regional broadcasts by local radio and TV stations were taped; in 1997 the daily newscast by the regional and national public television transmitter was added. Although it was common practise for most regional branches of the national service broadcasting to archive documentations for years, newscast productions were not considered valuable, they were considered to have no source values, and therefore deleted without substitutions.

When the Austrian Media Centre (national sound archive in Vienna – part of the technical museum) recorded, catalogued and placed the daily national midday broadcast at everyone's disposal online, the merit of archived broadcasts was intensified. (Reder, 2015) Additionally to that, radio sound records by radio transmitter under public law display public perceptions on contemporary issues. Due to the cultural and educational character of the broadcasts, the journalistic quality and faith in the programme is considered high. Assumably owing to the public and legal structure and its reach, makers and users of radio share beliefs, opinions and sentiments.

Broadcasts by radio (and TV) have one major advantage compared to written media. Processes, moods and situations are far more tangible than in any written document. Probably this separate identity of radio broadcasts was the reason for the foundation of the audio-visual media archive of Vorarlberg, by the persons responsible. Keeping in mind as well that Vorarlberg has always had the drive to present itself self-confident towards its distant capital Vienna.

On the other hand audio-visual media are far more evasive than written documents, as things heard are as a rule more or less unreproducible. This volatile aspect is revoked by audio-visual media archives if recording, storage, cataloguing and access are at best. While one of a kind originals are usually kept in dark archives at broadcasting corporations, copies in audio-visual media archives are available for the

public, albeit under copyright law restrictions. Owing to Austrian law, if arrangements fail, broadcasts are only public good seventy years after the death of the copyright owner.

Vorarlberg is the westernmost and smallest federal state of Austria and has a border triangle with Switzerland, Liechtenstein and Germany. It has approximately 380.000 residents and a successful economy exporting globally. However it never had a university but plenty of other higher education institutions such as a university of applied science, colleges of education science, and various Open University courses. As a result the collection of the Vorarlberg State Library is twofold. On the one hand its collection focuses on regional studies and geography, with depository copies as well as other books, journals, magazines, newspapers, maps, postcards, pictures and more dealing in some way with Vorarlberg. On the other hand the Vorarlberg state library is an academic research library, replacing the lacking university library. More than 10.000 media are acquired each year and more than 1.000 continuing resources as well as a growing number of electronic media establish the Vorarlberg state library as the biggest in its area.

„Grüß Gott in Vorarlberg“<sup>1</sup> is the greeting voiced at the beginning of a regional news broadcast from Vorarlberg. Time and again community members have the privilege to utter this salutation. For its 25<sup>th</sup> anniversary the person in charge of the audio-visual media archive had the honour to vocalise the address of welcome, who in the course of this broadcast confessed that he is probably the only person who has seen each and catalogued most broadcasts.

The development of the audio-visual media archive may be summarised in a few crucial steps. It must be said that the archive has been managed by one person only since its beginning. This person has again and yet again shown high responsibility and dedication, thereby advancing the development enormously as well as gaining expert know-how. However the focus on one person only is dangerous as well.

- 1987: Recording starts, relevant TV broadcasts are recorded with the help of a two-header video-tape recorder. Cataloguing was done broadly and handwritten. (Video-Tape V0001 was recorded on October 1<sup>st</sup> 1987)
- 1993: Additionally radio records were recorded, too. Records were made with the help of a database programme called LARS, the format was DAT
- 2003: Migrating more than 120.000 data records, including audio, video and journal articles to Aleph (library software by ExLibris). Also begin of building the data set for all audio-visual media with regional background
- 2008: Begin of daily digital recording assisted by LOOP-Server, as well as on-demand-streaming via MAM-Server (Media Asset Management-Server)
- 2009: Digitising the analogue tape-archive (approximately 5.000 audio and audio-visual carriers, a total of 16.000 hours)
- 2010: Successful completion of digitisation
- 2012: New search engine Aquabrowser was implemented
- 2013: Launch of a modern media player, able to embed metadata from Aleph in real-time
- 2014: New hardware for LOOP-server
- 2014: Migrating 40TB data on new hard- and software
- 2015: Changing the format specification for archival units to .mpeg4 due to broadcasting companies using HD

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<sup>1</sup> „Hi from Vorarlberg“ is an address of welcome in regional slang

Already in 1987 it was established as a basic principle in Vorarlberg, that audio-visual media have to be part of a patrimonial media archive. Therefore the first recorded broadcasts are from 1987, however later older broadcasts contributed by collectors were included. The previous mentioned TV news broadcast “Vorarlberg heute” was recorded 2<sup>nd</sup> May 1988 for the first time. Since then it was recorded consistently every day. The news broadcast starts at 7.00pm and usually runs for 15 – 25 minutes. Up to date the audio-visual media archive of Vorarlberg is the only archive in Austria recording audio-visual media to that extent. A newly issued mission statement by the Vorarlberg State library states clearly that digital media are on an equal footing as part of the patrimonial collection.

Archives kept by broadcasting companies are in the majority of cases closed to the public. Recordings are if at all available for money only. The audio-visual collection in Vorarlberg is maintained with benevolence on both sides. Both profit if technical problems arise and alternate copies are needed. The staff of the Austrian radio broadcasting company even uses the Vorarlberg audio-visual media archive to search for their own material.

Obviously the audio-visual media archive has a well-defined focus collecting broadcasts that bear reference to the federal state of Vorarlberg. Commonly broadcasts deal with the county, with people who live in Vorarlberg and/or with products made in Vorarlberg. The following thematic groups can be distinguished:

- Events of the day (news broadcasts)
- Coverage of cultural events, i.e. literature and/or music broadcasts by local radio broadcasting companies
- Sporting reports
- Political events, i.e. regional elections etc.
- Broadcasts on persons born, living or producing in Vorarlberg or broadcasts people from Vorarlberg produced
- International large-scale productions, i.e. ZDF during the European soccer championship with Austrian participation (2008)
- Motion pictures who feature a film location in Vorarlberg, i.e. James Bond, Quantum of Solace, 2008
- Historical film and sound footage

Sources and producers of media contributions grow and vary more and more. Institutions attempting to collect all relevant material have more and more problems offering a representative cross section. Supply from online sources is rapidly growing. In Vorarlberg due to restrictive employee growth, gaps had to be acknowledged and accepted over time. Nonetheless steady resources being used are:

- Productions by the ORF from Vorarlberg and Vienna
- Productions by foreign established public television broadcasting companies (ARTE, ZDF, ARD, SWR, Bayerisches Fernsehen, and more)
- Productions by regional private television broadcasting companies (Ländle TV, VTV)

- Productions by regional online producers (vol.at)<sup>2</sup>

## 2 DIGITIZATION

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Changes in technics enabled digital records in 2006. The general condition and age of the existing tapes made it necessary to digitize the pre-existing collection. Until digitization, TV broadcasts were terrestrial and recorded on S-VHS (previous VHS). The Vorarlberg state library is situated in a bad reception area; therefore radio was picked up via satellite and recorded on DAT. The digitization was executed in 2007 and 2008.

Such digitization en masse required a thorough analysis of the existing analogue material. As a consequence of the variability of the original carriers, each and every tape was assessed individually. The assessment determined the existing sound and image quality; during digitisation deficiencies were compensated as good as possible. Afterwards each digital representation had to pass through a quality control; both the digital representation and the outcomes of the quality control were managed with a separate data base and if necessary reworked.

### 2.1 DIGITIZATION OF VIDEO RECORDS

The first TV broadcast was recorded on the 1<sup>st</sup> of October 1987; the oldest original record is from the 21<sup>st</sup> of March 1985. Records consist of self-made live recordings; live recordings by others, purchased tapes and DVDs. The quality of sound and images is non-homogenous. In the past twenty years merely the records by the Vorarlberg state library have changed recording equipment 10 to 15 times (2 to 6 head recorder), thereby differing in quality and condition of record. This results as well in a variety of band types, band width, position of a track, soundtrack, image-, colour-, and sound noise, etc.

### 2.2 DIGITIZATION OF AUDIO RECORDS

The first radio broadcast record as DAT was recorded on 24<sup>th</sup> of April 1993. Older records were migrated to DAT later. For in-house recordings six different machines were used over time. Since the beginning of recording the poor radio reception has caused problems, depending on weather conditions distortions are high. As a result of the recorders used, the index of refraction is low and normalisation of volume necessary.

Since March 2008 recording is done digitally. Workflows have changed but have always focused on integrity and implementing technical precautionary measures to reduce data loss.

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<sup>2</sup> <http://www.vol.at/> (01.04.2015)

## 3 WORKFLOWS

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### 3.1 RECORDING VIA TIMER

Broadcasts to come into consideration are pre-selected:

#### 3.1.1 Individual Timer:

A so called individual timer is used if a single broadcast has been selected to be relevant. Selection is done editorially with the help of television programme, online programme and or other references. Recurrent broadcasts that have been selected such need a single programming only.

#### 3.1.2 Auto-Timer

EPGs (Electronic Programming Guides) of selected broadcasting stations are searched through. Usually one or more search terms are used. Because of a scrupulous pre-selection of terms, the use of searching within EPGs has raised the number of hits tremendously. Search keywords are regional toponyms and patrimonial terms, for example "Vorarlberg", "Arlberg", "Bludenz", etc.

#### 3.1.3 Background Timer

So called 24/10 records are taped. The system is programmed to record specific broadcasting stations 24 hours for ten days. Every eleventh day the oldest 24hour record is deleted. Ten backdated days are at the disposal of the manager of the audio-visual media archive as back-up if something has slipped the attention or if beginning- or ending times have been changed. When programme changes or current events occur, nothing is lost.

### 3.2 NAMING OF BROADCASTING DATA FILES

Identification of the data files is straight forward and clear-cut. It consists of the source (Broadcasting station), date of broadcasting, and beginning- and ending time. For example:

- 20140604\_1856\_1927\_ORF2\_V.mpg

### 3.3 FILING SYSTEM FOR RECORDS

- Records recorded with the individual timer and the auto-timer are saved for 30 days. These records are ready for adaptation. After 30 days those records are deleted automatically. Records via the so called 24/10 system are filed for ten days for potential adaptation and as described above successively deleted.
- So called Clipboard filing: Here records which may contain regional relevant content are saved. Stories of relevance are extracted and saved in the final storage system.
- Immediate filing in end storage happens with records that are always of relevance and always broadcasted at the same time. Recording and filing is fully automated.

## 3.4 IMPORT IN MASS STORAGE

### 3.4.1 Calculation of sneak previews

Records are filed in original size and quality (.mpg, as well as .mpa as stream). Further zipped files (.mp4 and .mp3) that are ready for streaming are saved as well; this ensures a fast transport in sufficient quality for day to day use.

### 3.4.2 Calculation of Thumbnails

For every audio record filed, every 20 seconds a thumbnail is produced and filed, too. This enables fast navigation when researching within longer broadcasts. A photo album-like view permits jumping to the needed time within a file by clicking on the relevant thumbnail.

### 3.4.3 Filing Management

Audio- and video files are managed fully automated, too. Size and lengths of records are limited only by the file system. Technical implications make it necessary to edit records with overlength as file size is limited.

## 3.5 CATALOGUING AND DOCUMENTATION WITH ALEPH

VLC-player (for video) and mpsdirectcut (for audio) are used for play back. Unique when viewing records is the programme time-code that enables referencing particular positions within the record.

At first non-catalogued files are displayed in chronological order when searching inside the MAM-system. The media-asset-management-system is the storage location of all data files, MAM and Aleph are linked. Descriptive and subject cataloguing starts from there. All cataloguing is original cataloguing and consists of several individual production steps. All records are catalogued in Aleph.

- Indexing of metadata relevant for recorded broadcasts are broadcasting title, air date, series, title, contributors, key words including personal subject headings and topical subject headings. To represent the variety of media genres preserved by the Vorarlberg State Library in one catalogue, new terms update an internally kept authority file.
- Recording the shelf mark
- Recording the start time of a specific broadcast within a file
- Calculating a Link using the shelf mark and start time to enable the playback device to play broadcasts from the correct position within its record.

The data format is MARC21, the set of rules are RAK<sup>3</sup>, however adapted to fit the necessary conditions of the audio-visual media archive. For example cataloguing only a limited number of authors was abolished in favor of completeness.

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<sup>3</sup> Regeln der alphabetischen Katalogisierung – Rules of alphabetic cataloguing, the German set of rules for cataloguing in libraries. Predecessor of RDA (Resource Description and Access).

### 3.6 VIEWING AND LISTENING

The catalogue of the audio-visual media archive of the Vorarlberg state library is part of the OPAC and searchable via the internet. All records are searchable but a few are suppressed. Those records include those carrying possible infringements of personal rights. However viewing of any record is possible in the premises of the Vorarlberg State Library only.

## 4 STATISTICS

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Accumulated audio-visual media archive material from 2008 to 2014 in hours (totaled up)

2008	2009	2010	2011	2012	2013	2014
2850	12.299	19.296	20.806	22.200	25.522	27.424

Growth per year from 2008 to 2014 in hours audio

2008	2009	2010	2011	2012	2013	2014
512	10.030	1004	946	867	810	896

Growth per year from 2008 to 2014 in hours video

2008	2009	2010	2011	2012	2013	2014
510	880	536	564	527	560	769

Growth per year for all audio-visual material ranges between 2000 and 3000 hours. This is a daily growth of several hours each day.

The physical mass storage is situated at the data centre of the Vorarlberger Landesregierung.<sup>4</sup> The following chart shows its growth in terabyte. The biggest increase was between 2008 and 2009 when analogue data was digitized.

2008	2009	2010	2011	2012	2013	2014
7	21	32	33	34	37	39

Catalogued audio and video records in total

2008	2009	2010	2011	2012	2013	2014
116.672	125.255	134.096	145.753	151.920	167.005	178.618

Records available of the most important local broadcast "Vorarlberg Heute" in 2015

Short message broadcasts	55.320
Editorial contributions	44.418

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<sup>4</sup> The state government of Vorarlberg, situated approximately two kilometers away.

Studio interviews	3.097
Live coverage	1167
Telephone interviews	396

When using the OPAC of the Vorarlberg State Library all hits from the audio-visual archive are embedded in the hit list, showing the whole spectrum of media genres available. In that way a broad general public is aware of the material and uses it. The most frequent user group are the ORF Vorarlberg, but research scientists and especially departments of the Vorarlberg state government, most notably the public relations department are recurrent users, too.

Unfortunately by reason of copyright law and its restrictions the use of the audio-visual archive is possible only within the premises of the Vorarlberg State Library. Attaining written consent by originators has allowed handing out video and/or audio material to interested users.

## 5 INCLUSION OF ONLINE MEDIA

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Missions of the Vorarlberg state library are clearly to collect, catalogue, archive and make accessible all relevant patrimonial resources available. Daily experience shows most online available audio-visual material will not be available in the future. This emphasizes the need of professional archiving, unfortunately due to the audio-visual media archive being a one-person-library; online media are extracted based on significance.

Web-archiving is currently not an issue for the Vorarlberg state library, as the National Library in Vienna is responsible. All regional state libraries have access to the internet archive of the national library. The archive includes online issues of Austrian newspapers.

However borders between classical audio-visual media and online media are in fluent transition. Sources such as YouTube and the local news portal have more and more characteristics previously attributed to classical broadcasting companies (i.e. the state television). Common characteristics are:

- Patrimonial relevancy
- Up-to-dateness
- Occasionally almost periodical frequency of publication
- Exclusiveness of topics, neglected by other broadcast producing companies. To stand out from classical TV broadcasters new subject areas are explored
- Diversity of opinions are emphasized and seen as addition to the state-funded TV productions.
- Technical similarities as for example “air” date, channel, copyright owner or producers

### 5.1 LEGAL BASES

The Vorarlberg state library has the right to produce and keep a backup copy of any record, whilst none of those are allowed to be used for library users (public display, lending, etc.) A public display happens if more than two people read or listen to one document at the same time. As per expert opinion there is



basically no difference between audio-visual data contents distributed via internet and those data spread via traditional TV- and radio productions.

## 5.2 CATALOGUING

The catalogue has set cataloguing norms. They distinguish if the catalogue record is a TV-record, a radio record, an internet-video record or an internet-audio record. The date of the upload corresponds with the date the audio-visual content was published. Instead of the broadcasting company the (online-) portal and channel is given (i.e. "YouTube – LändleTVNews" or "YouTube – VOLNews").

## 5.3 TECHNICAL IMPLICATIONS

Content available through YouTube is downloaded with the help of the Firefox-Add-on "Downloadhelper"<sup>5</sup>. All formats supported by the Downloadhelper may be downloaded. Preferably the high resolution version is downloaded and then converted to the archiving format (currently .mpg in its manifestation .mpeg1\_layer2) used at the Vorarlberg state library. Between conversion loss and archiving requirements a happy medium is sought.

For example a 50minute long internet-video record (20140401\_LTV\_WM\_DL) is converted from .mp4 to .mpg; unfortunately doubling its size and taking a slight loss in quality. .mpg4 offers a more future orientated state-of-the-art technology; thereby changing the archiving format from currently .mpg to .mpg4 will improve the situation greatly, as size is kept smaller and data loss less distinctive.

# 6 PROJECT INTERNET STREAMING OF RADIO BROADCASTS

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"Kultur nach Sechs"<sup>6</sup> is the one-hour-long art magazine programme by ORF – radio Vorarlberg on working days. The Vorarlberg state library archives, indexes and makes the screening available for years. Usage is restricted to the premises of the Vorarlberg state library. For some time now a cooperative effort exists to make all broadcasts without restrictions available in the future. The ORF intends to hand over all rights reserved to the Vorarlberg state library. If it proves possible, other broadcasts could be added.

Admittedly there are still legal barriers in existence. Special attention must be paid to musical content which has a large proportion in quite a few broadcasts. An automated isolation of spoken and musical content is not realistic at present. Nevertheless there is a light at the end of the tunnel as an acceptable arrangement between the musical collection society and the ORF/Vorarlberg state library community is in discussion. For literary work another agreement is necessary with its responsible collection society.

If legal issues are clarified, it will be necessary to point out that all sounds available on the website are protected by copyright. The national Austrian audio-visual media archive already does it. They draw attention to the fact that downloading, analogue or digital duplication and/or any other further usage is prohibited and will be persecuted. Therefore the national Austrian audio-visual media archive adds non-removable and inaudible watermarks to its records.

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<sup>5</sup> <https://addons.mozilla.org/de/firefox/addon/video-downloadhelper/> (31<sup>st</sup> March 2015)

<sup>6</sup> "Art after Six" The word „Kultur“ includes not only art but intellectual structures such as religion, law, economy, scholarship and moral as well. However in this case art is meant, therefore the narrowly translation is used.

For the future a declared aim will be, not only to offer the metadata of available records worldwide, but as many original audio- and video broadcasts as possible. Then and there a far wider selection of users could decide – to use the words of Wolfgang Weber, a Vorarlberg based historian, – if the collection is a “mass of trash” or “veins of gold”<sup>7</sup>

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<sup>7</sup> cf. Weber, Wolfgang, “ ‘Mass of trash’ or ‘veins of gold’ an investigative report on the relationship between oral history and archives” (2000)