

# Synchronization in Germany

Heiner Niemann, Managing Director,  
F.E.G. Deutschland GmbH, Hamburg

A journey through its technological history

Gegen den Tonfilm!      Für lebende Künstler!

**An das Publikum!**

Achtung!      Gefahren des Tonfilms!

Viele Kinos müssen wegen Einführung des Tonfilms und Mangel an vielseitigen Programmen schließen!

**Tonfilm ist Kitsch!**

Wer Kunst und Künstler liebt, lehnt den Tonfilm ab!

**Tonfilm ist Einseitigkeit!**

100% Tonfilm = 100% Verflachung!

**Tonfilm ist wirtschaftlicher und geistiger Mord!**

Seine Konservenbüchsen-Apparatur klingt kellerhaft, quietscht, verdirbt das Gehör und ruiniert die Existenzen der Musiker und Artisten!

**Tonfilm ist schlecht konserviertes Theater bei erhöhten Preisen!**

**Darum:**

Fordert gute stumme Filme!  
Fordert Orchesterbegleitung durch Musiker!  
Fordert Bühnenschau mit Artisten!

**Lehnt den Tonfilm ab!**

Wo kein Kino mit Musikern oder Bühnenschau:  
Besucht die Varietés!

Internationale Artisten-Logo E. V.      Deutscher Musiker-Verband.  
Fossil      Karl Schlemenz

*As is always the case with social and cultural change, many people rejected this changeover. The stars of the silent film era - Buster Keaton, Charlie Chaplin, Asta Nielsen, Lil Dagover, Elisabeth Bergner, and Rudolph Valentino - became icons of cinematography despite their "speechlessness". So the subsequent reaction was not surprising.*

Voice dubbing was introduced in Germany (for example in the feature film 'All Quiet on the Western Front') in 1930, not long after the demise of the silent film era in 1926 (see picture 1). The first dubbing studios were built by MGM in Berlin in 1932. After the Second World War, dubbing companies with appropriate studios were set up in Hamburg (Alster-Stu-

dios), Berlin (Mosaik Film/Wenzel Lüdecke, DEFA), Remagen (IFU Remagen) and Munich (Geiseltal/Bavaria film studios), among other places. Since then, German cinema and TV audiences have been rather spoiled, living with the perfect illusion that all the actors on this planet are German-speaking. The fact that certain actors are even allocated a

dubbing voice of their own sometimes gives the process a character that has nothing to do with the personality of the actor in question. To get you in the mood for the topic covered by this special issue, I would like you to join me on a short, time-lapse journey that shows the technological development of the dubbing market.



*Heiner Niemann, born in Hamburg in 1960, worked in the development field at g.t.c. Film- und Fernseh- Studiotechnik GmbH for 10 years (1981-1991). His 'early works' included the products Edicom (ADR system), Editon (synchronizer), MSE (multi-slave editing system), and COCO (TC-oriented dynamic control of the HCC/XCC Bosch Color Corrector), for which he was primarily responsible. These were followed by Edicom II, a new generation of the legendary Edicom system, which is still being used in many studios around Europe to this day. There followed the development of the Editor-300 (4-machine video editing system), which was later marketed additionally in the USA as an OEM product by CMX under the name CMX-300, as well as the synchronizer product families Edisync, IDC-600, IFC-30, IFC-60, and Chaser. Protocols and interfaces for well over a hundred different video and audio machines were integrated into the synchronizer families. Exotic products such as BCN50C, FDL-60, M20, TD-9, APR5003, etc., could likewise be connected to other devices with sub-frame precision. As well as product development, Heiner Niemann was in charge of turnkey projects. The planning, on-site installation and training activities for the TRT project in Istanbul (3 dubbing studios, 2 video-audio transfer suites and a diversity of editing and taker units), for example, were within his area of responsibilities. After F.E.G. Future Equipment Service + Vertrieb in Deutschland GmbH had been set up in 1992, the company's Managing Director and partner Heiner Niemann introduced the idea of the digital dubbing studio based on*

*non-linear recording technology (audio/video solution) to the German market with great success. As a system house for the realization of holistic projects and as a distribution partner of Harrison, Sonic, Rosendahl Studiotechnik, Soundmaster, Manger, Mogami, and many other manufacturers of professional audio and video technology, F.E.G. serves a wide area. The dubbing of speech, though, remains Heiner Niemann's passion. This is a business segment in which, thanks to the latest information technology, there remains a great deal of optimization potential for enhancing the quality of synchronization.*

## 1952

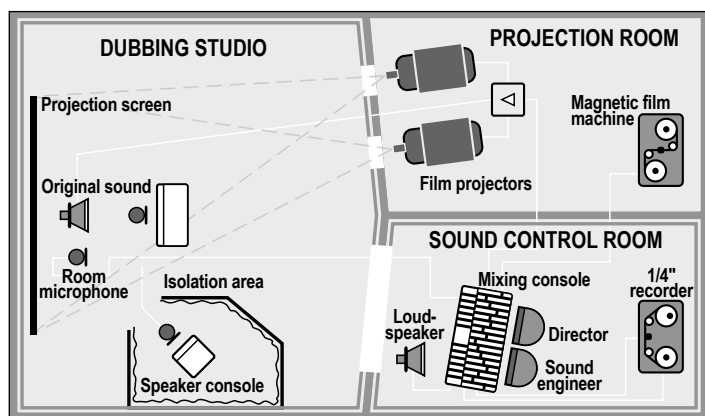
At the beginning of the 1950s, the switch was made from an optical track to magnetic tape recordings. The previous method, that of re-

## 1975

It wasn't until 25 years later that the changeover could be made from mechanical loop operation to the rock 'n' roll procedure.

## 1981

In the 1980s, time code-controlled taker systems radically changed the work processes in the dubbing studios. The picture now comes from video systems, usually U-matic machines, and is played into the studio via a monitor. The costly creation of a working copy of the film (video to film recording) can now be dispensed with.



*A typical recording studio for speech dubbing in the 1960s and 1970s*

Recording a voice take directly onto an optical track, was very costly and demanded the utmost attentiveness from everyone involved. Recording on magnetic tapes opened the way for ongoing adjustments and improvements, thereby laying the foundation for the perfection of German dubbing (see picture 2).

was now loaded on an act-by-act basis and the projector could be quickly moved to the beginning of the take (minus pre-roll) using a control system. Then the take gets played back, followed by a rewind back to the beginning of the take when the take ends.

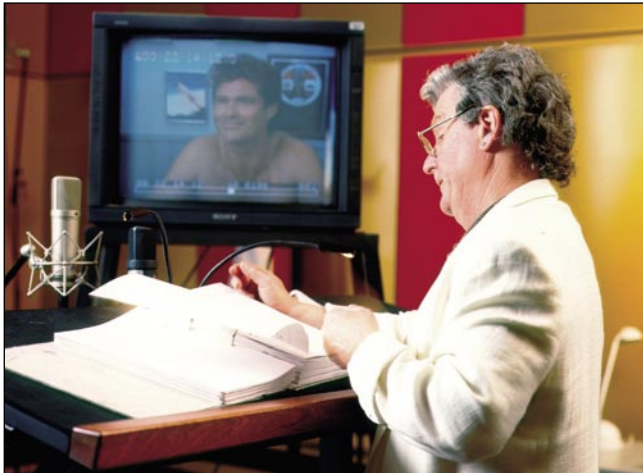
## 1982

The new buzz phrase 'direct dubbing' comes into circulation. For the first time, the dialog is recorded directly onto a multitrack tape recorder (8- to 24-track) using the A/B procedure and then mixed 'edit-free'. This development was a dramatic step backwards for the quality of German dubbing.

## 1985

The opening up of the TV landscape with the emergence of new commercial channels means that daily soap operas must now be dubbed quickly and cheaply. The direct dubbing of video material becomes a production standard for many of these series.

## HISTORY



*Studio Hamburg Synchron, David Hasselhoff is dubbed by Andreas von der Meden*

**1992**

Audio Solution and Augan, two digital audio recorders with an integrated editing function, are used in the dubbing process. Recording on magneto-optical data carriers guarantees a high level of data safety and short production switchover times. The most important point in favor of this new technology, however, is the fact that it facilitates the coupling of all dialogs, especially the 'labials'. The 'non-destructive edit mode' appears in the dubbing studios for the first time. Most German dubbing studios now work with the new digital technology and are distancing themselves from



*Pro Tools screen layout*

**1995**

The digital video recorder V-MOD100 replaces the U-matic as a playback medium. From now on, production switchover periods are calculated in seconds rather than minutes. Those high-volume days on which different actors have to dub a small number of parts for an entire series can now be dealt with effectively.

**2003**

Interface enhancements for EDICOM II and FEG-ADR systems, the 'centerpieces' of every dubbing studio, now facilitate the direct control of Pro Tools Mix+/HD systems as well. EDICOM II or, as the case may be, FED-ADR controllers deal with all the automation in dubbing recording operations, e.g. recording control, red light, speaker deployment (marker superimposed on the picture when the dialog starts off-screen), automatic start and end leader switchover, suppression of original soundtrack during recording, display of take timing in the picture, automatic track se-

lection, control of a safety recorder, logging the takes recorded (in order to calculate the fees) and, of course, the automatic handling of a daily workload (actors are scheduled for a certain time and the takes for the respective parts can simply be called up by pressing the 'Next' button). The integration of a Pro Tools system into the dub-

bing process is particularly important for dubbing firms which dub 'blockbuster' movies. Large production companies in Hollywood have made the Pro Tools system their production standard and want to be able to change audio and video content during the dubbing phase as well. This, however, presupposes that everyone works with the same audio system to avoid time-consuming rerecording processes (data compatibility). These audio and video files are now exchanged online over the Internet.

**2005**

Steinberg's Nuendo system can now be controlled by the studio controllers EDICOM II and FEG-ADR as well. The Nuendo system is an audio workstation that uses the efficiency of present-day PCs. These systems do not require expensive DSP technologies. An audio interface (analog, digital [AES/EBU, ADAT or MADI]) connects the Nuendo computer with the 'outside world' – video material can also be integrated with the help of the Apple QuickTime format. The Nuendo system also makes parallel production processes possible. Steinberg's aim is to facilitate near-parallel work using more than one Nuendo system on the same film. Nuendo software's value for money is unbeatable. The number of audio tracks is determined by the respective PC's computing power. Nuendo systems can be deployed in a diversity of ways: original soundtrack productions, live recording, dubbing studios (TV, DVD and cinema productions). For example, the cinema film '7 Dwarves - Men Alone in the Wood' had its soundtrack added at Studio Funk in Hamburg using only the Nuendo system.



*Studio Hamburg Synchron, the series "Designing Women" (Mann muss nicht sein) is dubbed by Dorothea Kaiser, Margrit Straßburger, Micaela Kreisler, and Katja Brügger*

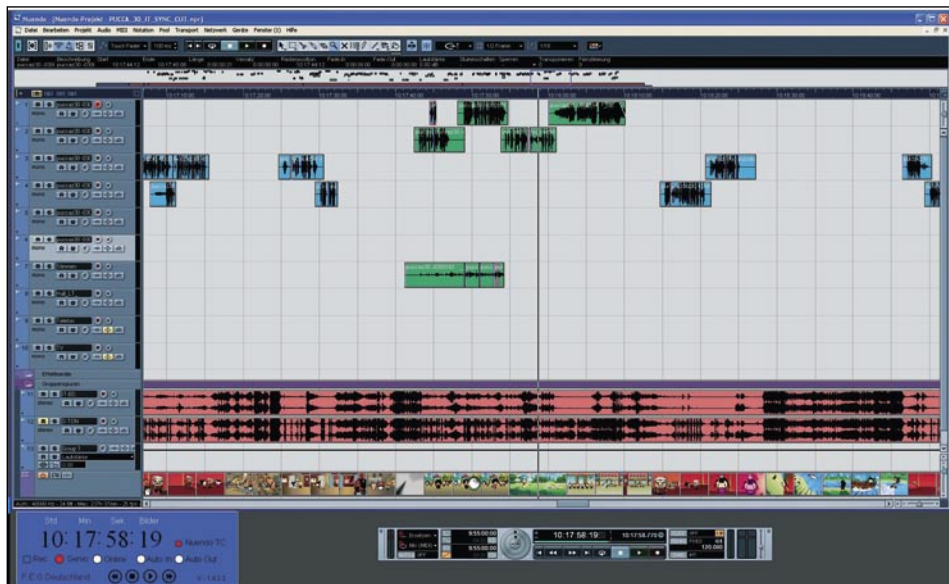
the problematic 'direct dubbing' operational method. Quality makes a welcome return and German dubbing work becomes the standard by which all others are judged. Many countries orient themselves to German dubbing techniques and adopt the German production processes (Hungary, Poland, Czech Republic, Italy, Spain and many others).

lection, control of a safety recorder, logging the takes recorded (in order to calculate the fees) and, of course, the automatic handling of a daily workload (actors are scheduled for a certain time and the takes for the respective parts can simply be called up by pressing the 'Next' button). The integration of a Pro Tools system into the dub-

This brief journey through time gives you an overview of the continuous enhancement of dubbing work in Germany. Not much remains to be optimized in the recording studios' working methods. The annoying need to turn the

re-enacted. The actor can concentrate totally on the mouth's movements in the original English version. 'Reading' the text does not allow this freedom. This is why German dubbing work leads the world!

the original screenplay is translated. Parallel to that, casting sessions are organized. Actors are scheduled for deployment. The 'rough' translation is converted into a dubbing translation by the dubbing author/director on the basis of the video material. This work is often performed with the help of a dictating machine and is typed accordingly by a script service. The finished dubbing translation is then 'taken' by a cutter. The 'taken' script (lines are drawn with a ruler and pencil and the take numbers are written down) is now taken in hand by a scheduler who draws up the individual take schedules. This is followed by another entry of take numbers in a scheduling program. When the day's schedule and all the actors have been booked, the voice recording begins in the dubbing studio. Frequently, however, the script is again revised by a script service beforehand in such a way that all the handwritten entries are removed. After recording has been completed successfully, the dialog is created in the editing suite and labials are edited in a manner synchronized with the lip movements. The actors are now paid using a fee calculation program, but sometimes using a different program, and takes are again entered manually into a PC. Parallel to the process described above, the internatio-



*Typical Nuendo configuration in a dubbing studio*

pages of a script will soon disappear; with the lines of dialogue instead being shown via TFT screens at the speaker's desk. Alternatively, the dialog can be superimposed onto the picture, although this is impractical with verbose passages because too much of the picture will be covered by text. The first demonstration of the new product is scheduled for the sound mixers' conference in Leipzig. FEG's DS-ADR system will be presented to the public for the first time there.

Even so, there is still some optimization potential in the dubbing process. The current situation is that in almost every dubbing studio, each individual take must be handled at least twice. The cost calculati-

In France and Canada, dubbing work has long been carried out using a system similar to karaoke known as *rhythmo-band* ([www.synchronos.fr](http://www.synchronos.fr)). The text to be spoken is superimposed as a ticker. Several attempts by me to establish this 'practical' working method in German dubbing studios failed. The reason for this, however, as consultation with directors, actors, cutters and sound mixers has revealed, is quite simple: the German language is very similar to the English language, and the lip movements in English dialog can be matched very accurately with a good German translation. The actor memorizes the current text of a take in his or her short-term memory, allowing every freedom to 'play' the character. All movements, contortions, and the like can be sensed or



*The control desk in a Pro Tools-based studio at VSI-Synchron Berlin*

on (the film is deliberately divided up into parts and takes and is evaluated) is followed by an offer, and after the contract is awarded the dubbing process begins:

nal sound version (without English dialog) is checked and, if necessary, supplemented. Foley artists insert any missing noises (steps, doors, shots, etc.). Music might be

# HISTORY



*The view from the control desk into the recording studio at VSI-Synchron*



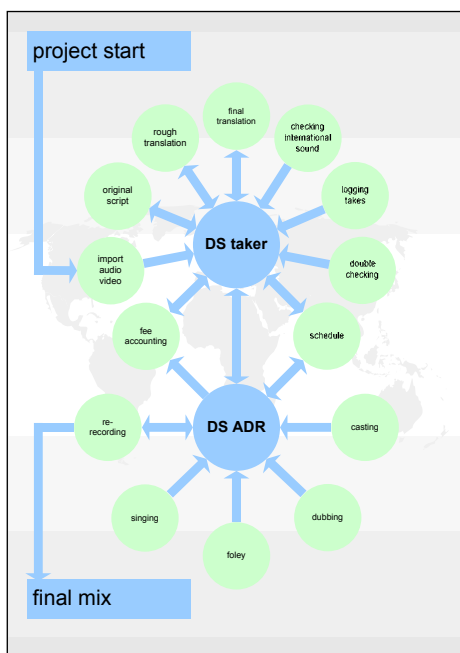
*Synchronous depiction of scrolling text in a French studio*

replaced. After all the work has been completed, the final mixing is done and the resultant version is then dubbed onto the original tape. In many cases, the creation of the German titles and credits is likewise part of the overall contract.

What is there to optimize in the process described above? Quite simply this: dubbing scripts and takes should be handled only once, and the pencil and ruler should disappear into the drawer. In the age of computers and the Internet, it should be possible to import dubbing scripts into a taker system so that the division into takes can then be carried out in a way that also includes the respective entry and exit times. The

picture when the dialog begins off-screen) and comments (for example c.e. [complex end], original, int. sound, etc.) should be saved right away in the dialog list. Automatic part recognition makes it possible to delimit the individual takes. After the 'taking' has been done, the cutter receives the information on how many takes each individual actor speaks and on how many takes, 2nd to nth tapes and A-takes (atmosphere takes without dialog) the production contains. With the help of various interfaces (Microsoft Excel, Sesam, DispoKing, Database, etc.), this information can be forwarded

to a scheduling program without the entire script having to be 'taken' again. In addition, the word count function makes it possible to state how much text each individual actor has to speak. FEG's DS-Taker has these advantages and makes it possible to optimize the dubbing process from the outset. The interfaces that the DS-Taker offers also permit step-by-step conversion. The generation of FEG-ADR and EDICOM II take lists is just as much part of the overall system as data import and export for scheduling. Image sources used can be either an external RS-422 Sony P2 device (Digibeta, U-matic, Pro Tools incl. Sync I/O), a MIDI device (e.g. bonsaiDRIVE), or the integrated Apple QuickTime player. These days



*The DS-Taker, the centerpiece in a dubbing workflow*

Episode	Take	Sub	To In	To Out	Spur
1	10	S1	01:00:55:12	01:01:00:07	04

Track	Take	Sub	In	Out	Spur	Marker	Anmerkung	Duration
01	1/0008	01:00:35:01	01:00:40:10	02				00:00:05:09
02	1/0009	01:00:40:10	01:00:49:00	01		Atmer		00:00:08:14
03	1/0010	01:00:49:00	01:00:55:12	02		Atmer		00:00:04:19
04	1/0011	01:01:00:07	01:01:02:22	01				00:00:02:15
05	1/0012	01:01:02:22	01:01:11:15	02	M2	M2 01:01:08:18	Sehr vernünftig... (vom OFF)	00:00:08:17
06	1/0013	01:01:11:15		01				

*The DS-Taker: the dialog window, the timeline and the EDL are shown simultaneously.*

## The case for synchronization

Excerpt from the book 'The bullets in our heads' by Max Goldt

'I detest going to watch films that are not dubbed. Films often contain a lot of slang expressions or deal with topics that one normally has nothing to do with. As a result, even though I speak pretty good English, there are plenty of things that I don't understand right away. Even an Englishman doesn't understand a word when an unskilled black flapjack turner from Kansas City talks about the trials and tribulations of her life. I'm amused, then, when I hear people who I know speak considerably worse English than I do saying that, as a matter of principle, they find it better to watch the original versions of films. By taking this stance, slavishly adherent to the dictates of cinematic snobbery, they deprive themselves of half the fun. The very fact that film is a visual medium means that we should have the pleasure of following the dialogue as effor-

tlessly as possible. Subtitling is nothing but a shabby compromise. It forces viewers to train their eyes persistently on the bottom margin of the picture, rendering them unable to devote their attention to the composition of the picture itself. Alfred Hitchcock said that a film loses fifteen percent of its power when it is subtitled, but only ten percent when it is skillfully dubbed. I would replace the first figure with fifty and the second with five.

In the literary world, a start has rightly been made on enhancing the status of the translating profession. The time has also come to reward the often outstanding work of German dubbing studios in the same way. Purists, though, start complaining as soon as a foreign film receives a German title for distribution purposes; incidentally «Auführer ohne eine Ursache», say, sounds far better than «Because They Don't Know What They Are Doing». The purists also like to adopt an admonishing tone when pointing out that in some countries films are, as a matter of principle, not dubbed. Well, it's certainly true that in the Faeroe Islands up the-

re in the Atlantic – given that Faroese is understood by fewer people than live in Bad Salzflun – the Terminator will in all likelihood be speaking English. The fact is that the time, effort, and expense poured into dubbing for a linguistic community of 90 million people is simply more «worthwhile» than elsewhere, and that «we», because «we» are so many in number, have come to benefit from this cultural head start. There have also been cases where, for example, a poor literary work has been transformed into a rather less poor one by a good translator, and in the pop music field a cover version or remix is occasionally better than the original. The fact that the classic Donald Duck stories drawn by Carl Barks are better in German should really remain unsaid these days because it has become such a truism, and the TV series «The Simpsons», too, is in my opinion much better in the German version than in the original American simply through its choice of dubbing artists: Elisabeth Volkmann shines as Marge Simpson, the role of her life.'

a great deal of dubbing work is outsourced by the studios, for example 'taking' or the creation of the dubbing script. We have integrated data encryption into our DS-Taker so that the material cannot simply be 'read' as it is being transmitted over the Internet. Data security must be a major priority in the current age!

In conclusion, I would like to deal with a new buzz phrase: 'centralized mixing / centralized dubbing'. In this age of globalization, internationally active rights holders increasingly find themselves desiring a central authority in which all foreign dubbing operations are monitored and coordinated. The German method of working is applied in similar fashion in most other countries (except in the French-speaking ones). The DS-Taker can export the 'taked' German dubbed version, for example as a Microsoft Word document, without losing the division into takes or the beginning and end of the respective time codes. Exporting the original English dialog would additionally

be possible if the English original was 'taked' with a continuity script. In this way, the beginning and end of the time codes often have to be entered only once. Other languages can simply be swapped in the Microsoft Word document. The different dialog lengths in the various languages naturally lead to dislocations, although these can be ironed out again right away during the translation process.

### Final remarks

Internationally, the 1080i/50 format is likely to prevail following the introduction of HDTV, although the formats 720P/50 and 1080P/50 will also have to be reckoned with because that is what our EBU has decided (EBU Route Map EBU-Tech 3298). The new Blu-ray standard should additionally lead to the consideration of film elements (e.g. making-of, TV trailers) which are supplied directly in NTSC format. This means that we will soon have two new time code formats: 30 and 50 images per second. In addition to all the optimization possibili-

ties within a dubbing process's workflow, then, there will soon also be other 'areas needing improvement' in the home-made 'battle of the formats'. Many systems, as well as FEG's DS product line, are equipped for HDTV and already support all the defined frame formats (23976 / 24 / 25 / 2997 / 48 / 50 / 5994 / 60). It will be exciting to wait and see which HDTV format will prevail and also establish itself in the popular series and daily soaps segment. It can be stated with certainty that the dubbing studios will not use this HDTV technology until customers specifically express this wish. Ultimately, TV and cinema consumers set the direction, although we Germans have so far been very much spoiled by the quality of the pictures and dubbing at our disposal (the author would not like to comment on the quality of individual schedules). All in all, then, we are looking into an innovative future with a consistently high standard of dubbing, maximum picture quality and optimized workflow processes... ■