

# Studio Hamburg is digitizing cultural assets with R&S®CLIPSTER



Studio Hamburg Postproduction is using R&S®CLIPSTER to digitize historical film material.

## At a glance

In late 2017, Studio Hamburg Postproduction won a major contract to digitize a German public TV broadcaster's film archive. The material consists of approximately 9000 hours of content covering everything from news broadcasts to sports, entertainment and feature films. It includes many historically valuable picture and sound documents, some of which are in poor condition. The Hamburg post production service provider won three of four bid lots in a pan-European call for tenders. The project duration is ten years.

## Summary

- **Customer:** Studio Hamburg Postproduction
- **Challenge:** To use IMF to digitize film material, some of which is in very poor condition.
- **Solution/product:** Using R&S®CLIPSTER, IMF files will be created in the IMF Application 2E standard, adapted to HD, and made available for online editing as ProRes4444 files.
- **Benefits and key features:** IMF is one of the many processing formats offered by R&S®CLIPSTER. IMF enables high quality in a wide variety of applications, from cinema to mobile devices. Studio Hamburg is using R&S®CLIPSTER to safeguard priceless cultural assets for future generations and make them usable for television broadcasters.

## About Studio Hamburg Postproduction

With over 40 years of experience in the film and television industry, Studio Hamburg Postproduction is the leading post production company in northern Germany. On a total of 5000 square meters of production space spread over four locations (Hamburg Tonndorf, Berlin, Lüneburg and Munich), the company offers solutions for the entire range of post production and archiving tasks. The currently more than 45 permanent employees are highly qualified, dedicated, and have many years of experience and expertise in their respective fields. The central storage system (SAN) ensures an efficient, end-to-end, file based post production workflow.

The film and archive services portfolio extends from incoming assessment of film material to cleaning and wet-gate scanning in resolutions up to UHD and 4K to digitization of all standard film and tape formats and subsequent digital restoration. Other services are also offered, including re-editing, color correction and digital remastering in the desired output format.

For both new productions and processing historical material, Studio Hamburg Postproduction offers customers a custom workflow with advanced technology and fully documented production stages. The company also carries out comprehensive quality checks in the form of internal acceptances in defined measurement environments in line with IRT specifications.

“According to the functional description in the tender, R&S®CLIPSTER was one of the possible mastering platforms. In the end, we chose it based on the successful preliminary tests and our years of positive experience working with Rohde & Schwarz.”

Tammo Steinmetz, Managing Director of Studio Hamburg  
Postproduction

## 9000 hours of film: a cultural treasure

Saving historical film documents from areas such as entertainment, sports, news, documentary and history is the challenge being tackled by the north German post production service provider Studio Hamburg Postproduction. The company competed in a pan-European call for tenders and won the bid. The aim of the project is to preserve the film archive of a public broadcaster – a priceless cultural asset. The project has a ten-year timeframe.

The material is in 16 mm and 35 mm format, and some of it is in poor condition. Approximately 9000 hours of film – about 50 000 films, contributions and film clips produced between 1950 and 2000 – need to be restored.

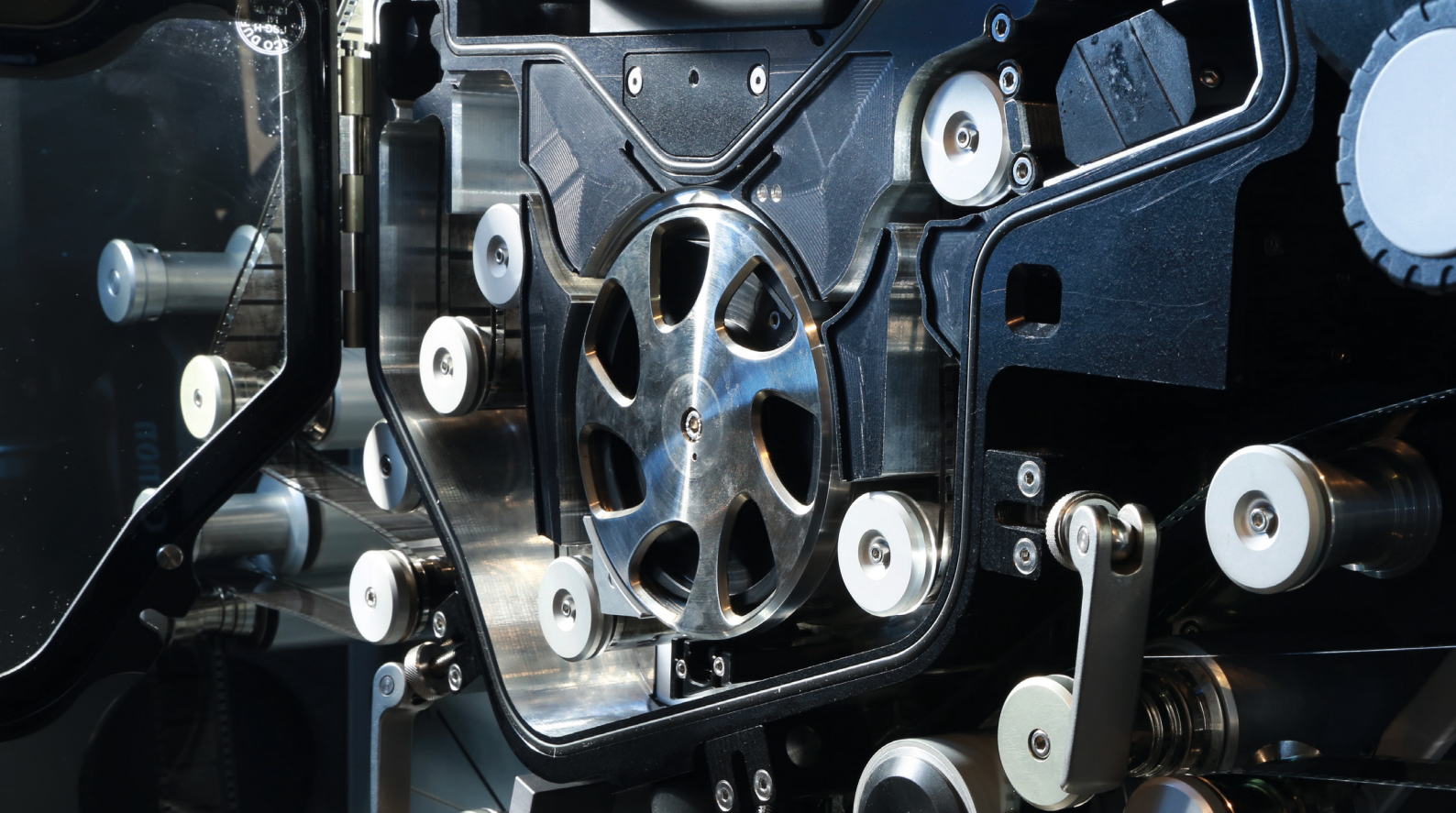
“An archive is a type of hidden treasure. We help to uncover and preserve it using advanced technology,” says Tammo Steinmetz, Managing Director of Studio Hamburg Postproduction. “We also ensure that the material can be used and reliably found. Mastering and archiving high-resolution digital media in the IRT standard is a trend-setting approach for similar projects.”

The broadcaster was familiar with the flexibility of the IMF standard and made file delivery in this format part of the tender requirements. Studio Hamburg chose R&S®CLIPSTER for the production of IMP files that are to be archived in IMF Application 2E. R&S®CLIPSTER creates the files, adapts them to HD, and provides them as ProRes4444 files for online editing.

Interoperable Master Format (IMF) is a set of standardized, continually enhanced file formats for A/V productions (SMPTE ST 2067). IMF targets the professional market and is intended as a contribution format for exchanging content between post production, rights holders and distributors. It replaces master tapes for the exchange of A/V program material. Interoperable Master Package (IMP), the corresponding data packet, allows content to be stored and transmitted in lossless quality with a small memory footprint. Hollywood film studios and SVOD providers like Netflix already use this technology.

A third of the films to be digitized have been severely damaged by the formation of acetic acid, and glue bonds have dissolved. To successfully implement this ten-year contract, Studio Hamburg Postproduction set up a facility for mechanical film preprocessing in Ismaning near Munich at the beginning of 2018.





The Hamburg location has been equipped with a storage area and a 4K film scanner – the dft Scanity HDR with wet-gate technology for 16 mm and 35 mm films. In the wet-gate method, the film passes through a tray of perchloroethylene. With a refractive index very close to that of the film, this chemical compensates for scratches and cracks in the material during scanning.

“This order has allowed us to optimally staff and organize our film and archive services so we are equipped to handle further projects,” points out Robert Dittrich, designated Studio Hamburg Postproduction project manager. “Together with our colleagues in Ismaning, we have a strong team of film restorers.”

#### **R&S®CLIPSTER – innovative and reliable**

Only top quality equipment was considered for the project. “For our work, and this project in particular, high availability and reliability of the chosen technology are always the deciding factors,” says Robert Dittrich. “We have a relatively high annual output in our post production services and in our film and archive services, and it is especially important that we deliver consistent quality for this long-term project.”

R&S®CLIPSTER has made a name for itself as a complete mastering and deliverable solution for premium content. Content creators can use new functions to master their feature films and TV content even faster and more reliably. The strengths of R&S®CLIPSTER are especially evident in productions with relatively high resolutions, high frame rates and wide color gamuts. It is easy to control the quality of the results thanks to the wide range of connectors, including AES/EBU audio connectors, 3G SDI video connectors and an HDMI™ 2.0a output with HDR support.



Studio Hamburg Postproduction relies on products from Rohde&Schwarz.

## R&S®CLIPSTER offers the feature set to cover all of the project's IMF requirements.

In order to deliver content in high dynamic range (HDR) and wide color gamut (WCG) format, R&S®CLIPSTER has long featured an HDR workflow for image processing with floating-point arithmetic. This workflow allows the wide dynamic range of the HDR material to be converted with mathematical precision, for example from a linear color space to ST 2086 PQ in the appropriate bit depth of the target color space.

An optimized architecture and hardware acceleration enable realtime image processing up to 4K 120p. In addition to generating HDR packages for digital cinema and IMF exchange, R&S®CLIPSTER HDR supports other formats and codecs designed for that purpose, such as DNxHR, ProRes, XAVC and HEVC.

"According to the functional description in the tender, R&S®CLIPSTER was one of the possible mastering platforms," explains Steinmetz. "In the end, we chose it based on the successful preliminary tests and our years of positive experience working with Rohde&Schwarz."

An enormous amount of data has to be digitized: 51 terabytes per week, the equivalent of around 400 Blu-ray discs per day.

In addition, everything is being cataloged. As part of the digitization process, keywords are assigned to the material to facilitate searching the archive. This allows journalists to enrich their videos with archive material.

"We have been working together with Rohde & Schwarz for many years, and once again we received expert advice. The system was quickly delivered and put into operation, and our employees were properly trained."

Tammo Steinmetz, Managing Director of Studio Hamburg

Postproduction

### Good cooperation, good interaction

Studio Hamburg is using a variety of technologies for this long-term project, and this also requires reliable partners. Cooperation between the partners and compatibility of the devices must be ensured.

"That worked out really well," claims Dittrich. "The new R&S®CLIPSTER was integrated into a high-performance online SAN cluster from Quantum. In the workflow, it interacts with the various systems for processing the archive material. We are also using the platform to play out DCP recordings for cinema application and to master HDR content for TV."

On the management side, they are also very pleased with Rohde&Schwarz as a business partner. "We have been working together with Rohde&Schwarz for many years, and once again we received expert advice. The system was quickly delivered and put into operation, and our employees were properly trained," says Tammo Steinmetz.

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# R&S®CLIPSTER

R&S®CLIPSTER is the gold standard for mastering and distribution of films and episodic TV. R&S®CLIPSTER is a powerful tool for editing any type of media in any resolution and for creating high-quality professional deliverables that meet stringent professional specifications. R&S®CLIPSTER provides a foundation for post production vendors to build their services on.



## Flexible color format

R&S®CLIPSTER uses a high-precision procedural color-processing pipeline to mix and match any color format in the timeline.

## Mix and match codecs

Whether working with compressed or uncompressed formats or multiple codecs, R&S®CLIPSTER can handle them all at the same time.

## Mix resolutions

If you need to process a mix of HD, 2K, UHD and 4K, each stream can be combined within the same timeline and converted to the desired output format.

## Input any file type or video signal

R&S®CLIPSTER natively supports an extensive list of file formats. It captures material from SDI inputs in extremely high quality.

## Conforming to nonlinear timeline

The R&S®CLIPSTER timeline works just like a nonlinear editor, including a conforming tool to aid in assembly.

## Customizable file based media

R&S®CLIPSTER outputs file formats through a customizable file output setup and can meet proprietary delivery specifications.

## Video tape based media

R&S®CLIPSTER has a tried and true I/O tool to create tape deliverables in SD and HD directly from the timeline.

## Standardized file based media

R&S®CLIPSTER has highly refined output wizards to simplify the creation of standardized formats such as DCP, IMP, AS02 and AS11.

## Service that adds value

- | Worldwide
- | Local and personalized
- | Customized and flexible
- | Uncompromising quality
- | Long-term dependability

## Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

## Sustainable product design

- | Environmental compatibility and eco-footprint
- | Energy efficiency and low emissions
- | Longevity and optimized total cost of ownership

Certified Quality Management

**ISO 9001**

## Rohde & Schwarz training

[www.training.rohde-schwarz.com](http://www.training.rohde-schwarz.com)

## Regional contact

- | Europe, Africa, Middle East | +49 89 4129 12345  
[customersupport@rohde-schwarz.com](mailto:customersupport@rohde-schwarz.com)
- | North America | 1 888 TEST RSA (1 888 837 87 72)  
[customer.support@rsa.rohde-schwarz.com](mailto:customer.support@rsa.rohde-schwarz.com)
- | Latin America | +1 410 910 79 88  
[customersupport.la@rohde-schwarz.com](mailto:customersupport.la@rohde-schwarz.com)
- | Asia Pacific | +65 65 13 04 88  
[customersupport.asia@rohde-schwarz.com](mailto:customersupport.asia@rohde-schwarz.com)
- | China | +86 800 810 82 28 | +86 400 650 58 96  
[customersupport.china@rohde-schwarz.com](mailto:customersupport.china@rohde-schwarz.com)

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