

Digital production enables 'Tagesschau' to go multimedia

Quantel powers ARD-aktuell's next-generation news workflow



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In early 2008, German television broadcaster ARD switched all of its news production to digital. As of the end of January, all news programs including the flagship 'Tagesschau' and 'Tagesthemen' were broadcast directly from ARD's Quantel Enterprise sQ server-based production system which has significantly accelerated the workflow. The successful integration of Quantel's sQ server technology with the existing Open Media newsroom system has enabled news editors to create additional products such as 'Tagesschau in 100 Sekunden' for mobile devices or flash video for the tagesschau.de website almost effortlessly.

By introducing new workflows to the newsroom and production department with a focus on enabling journalists to edit their footage themselves, ARD-aktuell has assumed a leading position among European news providers.

From its new system, based around four Quantel sQ servers, ARD supports multiple channels. Every day, up to twenty editions of 'Tagesschau' air on Erstes Deutsches Fernsehen, accounting for three hours of news programming. A further ten hours are broadcast on the digital news channel 'Eins Extra'. By the end of May, the airtime for news coverage on the digital channels will be increased by a further hour. "As of then, we will be producing 14 hours of news every day," says Kai Gniffke, Editor-in-chief at ARD-aktuell.

In July 2007, the mobile TV format 'Tagesschau in 100 Sekunden' joined the 'Tagesschau.de' website which offers flash based news content on the internet. "Only digital production enables us to offer as wide a variety of products as we do," stresses Gniffke. "Going digital was essential to making ARD-aktuell future-proof."

Gradual conversion

Before the final switch-over of all of its news production to digital in January 2008, ARD had been gradually converting its workflows to digital over a period of almost seven years. The foundations of this process were laid with the introduction of Dalet ANN's Open Media newsroom system, which was initially linked to Sony's NewsBase system. In a two-year pilot project, which commenced with ARD-aktuell introducing a digital news desk, the news channel 'Eins Extra' broadcast its six o'clock edition and its nine o'clock edition directly off the server.

As time-to-air with the Sony solution was significantly inferior to the tape-based system, ARD-aktuell started to examine other manufacturers' newsroom systems. "There is no noteworthy system on the market which we haven't checked," says ARD-aktuell Senior Managing Editor, Georg Grommes, who was one of the team that implemented ARD's digital strategy. With Quantel he finally found a system that met ARD-aktuell's demands.

"Quantel signalled very early on that their software could be integrated into our Open Media newsroom system and next to speed and reliability, this was a decisive factor for us," explains Gniffke. "The acceptance of the editors was very important to us as well, because the best system is worthless if those who are supposed to work with the system can't operate it."

Front cover: The ARD-aktuell newsroom

Right: News editor Norbert Illes at work

Far right: Lead journalists scheduling the news rundown





Integrated working

To this end, the Quantel editing interface was customized to ARD's requirements to integrate into the Open Media newsroom system as an Active X application. Quantel configured the system accordingly and delivered a tailor-made solution for ARD-aktuell which has now become a Quantel standard product. Close co-operation with Dalet ensured that both systems communicate with each other and remain stable. "A test array was arranged at Quantel headquarters in Newbury so that we could reproduce all our workflows using our own material," Gniffke explains. "Quantel realized everything we had envisioned."

In addition to the integration of the Open Media newsroom with the Quantel playout system, ARD contracted local media asset management supplier – Solutions For Media (S4M) to provide ingest and media management of the Quantel system. S4M manages recording of both live and scheduled feeds into the Quantel sQ system using its VPMS client. The recording application had to be specially adapted to meet ARD's demands for a mirrored production system. All feeds are simultaneously recorded to the two mirrored sQ production servers. Each zone features a redundant Quantel ISA database manager and ingest control interface. Edited clips for transmission are also published to the two mirrored Quantel playout servers.

Journalist editing speeds workflow

In 2006, following the project stage, the course was set for the collaboration that has now resulted in permanent use of the Quantel system. The innovative newsroom technology has helped to significantly accelerate the workflow at ARD-aktuell.

"The most dramatic change in the newsroom was to let the journalists edit their own material," says Gniffke. "This allowed us to streamline the workflow and re-design it so production and newsroom interact closely with each other, which in turn adds up to a better end result." The new workflow enables ARD-aktuell's 100+ news editors to preview incoming material, edit their stories, add voice-overs, and pass their contributions on for acceptance through the transmission schedule – all directly from their workstations.

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Kai Gniffke, Editor-in-chief, ARD-aktuell



Left: ARD-aktuell Editor-in-chief, Kai Gniffke

Easy to learn

ARD-aktuell editors began previewing incoming raw material on the Quantel system during the transitional stage in order to get acquainted with the new interface without the added stress of the production stage. "The colleagues got used to the graphical user interface (GUI) very quickly," says ARD-aktuell Senior Duty Editor, Ben Buck.

"Most of the elements are self-explanatory. I can choose the first frame by setting an 'In' marker, let the footage roll and then set an 'Out' marker. To edit the footage, I simply press return. The keyboard shortcuts are easy to memorize such as 'I' for 'In' and 'O' for 'Out'. Once a window is highlighted these commands simply apply directly to it." This ease of use has led to many editors starting using keyboard shortcuts instead of their mouse. This was not the case with the Sony system. "It has made us faster as we use our left hands for keyboard shortcuts more often while using the right hand for other tasks."

While a news story is being edited it is automatically locked for all other users. The ready-to-broadcast items that are approved by the managing editor are marked 'OK' in the transmission schedule. The transmission schedule, which links the news stories as well as still pictures, inserts and texts for the teleprompter to their appropriate position in the show, is compiled by media designers and programming assistants. As operations are carried out in a networked environment, every editorial change to the transmission schedule is immediately visible at all production-related workstations including the director's. Within this new production topology the media producers carry out tasks that are relevant to the broadcast process such as editing, triggering and playout while the technical staff take care of ingest and manage the content on the servers.

The fastest system on the market

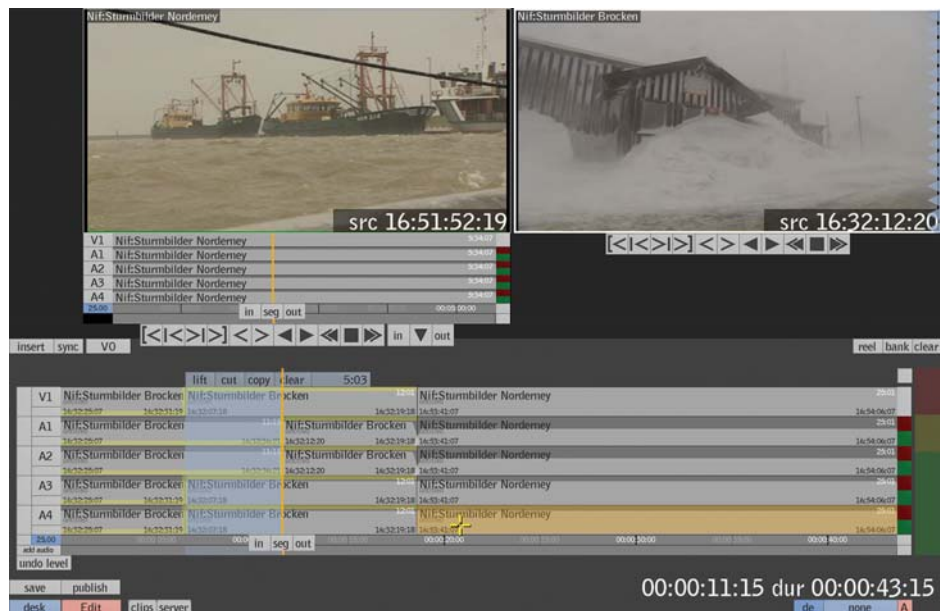
In order to be able to broadcast cutting-edge news around the clock when there are several major events going on simultaneously, the ingest-to-air time had to be at least maintained or improved. This is why the server-based system was tailored to meet the demands of the newsroom: new footage transmitted by correspondents or news agencies while the news program is on-air can begin broadcast even before ingest is completed. "This operational speed is not achieved by any other supplier in the market," Buck asserts. In fact, the limiting factor for ARD-aktuell is not the technology but the maximum speed at which its news editors can process the footage, he says. Most delays in the system which otherwise has a time-to-air latency of near zero are caused by its human components.

Right: ARD-aktuell's lead journalists monitor finished pieces for quality and check running orders in the newsroom in conjunction with their colleagues in the on-air gallery

Far right: The signal light in the newsroom clearly shows which of ARD-aktuell's two system zones is currently in use



Right: The Quantel editing interface is integrated into the Open Media screens as an Active X application



“We can start broadcasting the footage even before the ingest is completed,” states Grommes. “This is a major advantage of the Quantel system.” Quantel’s technology owes its speed to the ‘FrameMagic’ technology that manages every frame in the store as an entity in its own right. A single copy of the raw footage is kept on the server so all rendering processes are applied only to the delta frames (i.e. frames that are being modified in some way).

The Quantel system at ARD-aktuell offers a total storage capacity of 660 hours for incoming SD footage, stored as 50 Mbit IMX files. “This ensures that incoming footage can be edited and broadcast without any noticeable loss in quality,” explains Wolfgang Kuhlmann, Project Manager for systems planning/television.

Raw footage is previewed in low-rez at 1.5 Mbit/s making use of the progressive scan MPEG-1 format to offer excellent picture quality and to ensure that every detail in the frame is visible. All finished material is stored as 50 Mbit/s MPEG-2 files with standard IMX compression.

Stability and reliability guaranteed

As ‘Tagesschau’ has a reputation for absolute stability and reliability, the entire production system is designed so that broadcasts can continue uninterrupted even in the event of a complete server failure. “The system is structured so that all the footage is duplicated between two physically separate zones,” explains Grommes. “If one zone fails, the other one is always available in Hot Standby mode.” A signal light on the ceiling of the newsroom indicates which zone to use.

“This preventive measure against system failure, which was developed by Wolfgang Kuhlmann’s project group in collaboration with Quantel, is an exceptionally good solution,” says Grommes, “because ‘Tagesschau’ cannot afford any uncertainties.”

Because of this, the production of ARD-aktuell programs has gradually been switched to Quantel technology. Before the flagship ‘Tagesschau’ magazine and ‘Tagesthemen’ made the transition to server-based production, the entire system was subjected to an endurance test. “We have let the system run under full load several times, by simulating peak-level work-loads,” Gniffke explains. “It was only afterwards that we accepted the system as Quantel passed these tests with flying colors.”

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Nr.	nr.Quelle	Kanal	Titel	Quelle	Film	Text	Länge	Int.Länge	UsedD	TP	Halt	Fähilänge	M/S/L
25	O-TON		25 JINGLE Vorspann EinExtra Ak...			-----	00:06	00:06	00:06				MAZ
26	Studio HG		26 Begrüßung HANDY-TV			onair	00:08	00:03	00:09	ja			Studio
27	NIF ON	Au/Br	27 Uteile Coesfeld gesprochen	WDR Münster		onair	00:15	00:18	00:27	ja		00:00	MAZ
28	NIF ON	Br	28 Gabriel Flüge	ARD Berlin		onair	00:15	00:19	00:46	ja		00:31	MAZ
29	NIF ON	Br	29 Hamburger Bürgerschaft	NDR Hamburg		onair	00:15	00:17	01:03	ja		00:00	MAZ
30	NIF ON	Au	30 EU-Parlament	Euro: PUE		on air	00:15	00:17	01:20	ja		00:00	MAZ
31	NIF ON	Br	31 Sturm Deutschland	MDR Leipzig		onair	00:15	00:19	01:39	ja		00:23	MAZ
32	O-TON		32 JINGLE 01 EinExtra Aktuell			-----	00:06	00:05	01:44				MAZ
33	Studio HG		33 MOD EPDSS Begrüßung			on air	00:10	00:04	01:48	ja			Studio
34	Studio HG	Lü	34 Urteil Münster	TSu5, WDR Köln		onair	00:20	00:26	02:14	ja			MAZ
35	O-TON	Lü	35 Feld: Urteil Münster	TSu5, WDR Köln		onair	01:29	01:30	03:44	ja			MAZ
36	Studio HG	Lü	36 Überleitung			onair	00:20	00:10	03:54	ja			Studio
37	O-TON	Lü	37 O-Ton Robbe	EEA		onair	00:38	00:38	04:32	ja			MAZ
38	Studio HG	Lü	38 Gabriel Mallorca	x		onair	00:20	00:18	04:50	ja			Studio
39	O-TON	Lü	39 Heiden: Gabriel Mallorca	TSu5, ARD Berlin		onair	01:23	01:24	06:14	ja			MAZ
40	Studio HG	Bi	40 50 Jahre EU-Parlament + FM N...	ok		on air	00:20	00:38	06:14	ja	X		Studio
41	Studio HG	Bi	41 Erbschaftsteuer	ok		on air	00:20	00:25	06:39	ja			Studio
42	O-TON	Bi	42 Kreuzmann: Kabinett	ok TSu2		on air	01:23	01:24	08:03	ja			MAZ
43	Studio HG	Ch	43 Gendoping	x		onair	00:20	00:16	08:19	ja			Studio
44	O-TON	Ch	44 Spieler: Gendoping	TSu5, ARD Berlin		onair	01:18	01:19	09:38	ja			MAZ
45	Studio HG	Ch	45 Überleitung NEUTRAL			onair	00:08	00:04	09:42	ja			Studio
46	O-TON		46 JINGLE 08 Sport			-----	00:06	00:05	09:47				MAZ
47	Stud Real		47 UEFA Pokal Rückspiele	ok		ok	00:20	00:23	10:10	ja			Studio
48	Stud Real		48 Überleitung HSV Levekusen	ok		ok	00:20	00:21	10:31	ja			Studio
49	O-TON		49 Aufz: Schalle Käckell	ok		on air	00:43	00:42	11:13	ja			MAZ
50	Stud Real		50 Stigg Stuttgart	ok		on air	00:20	00:24	11:37	ja			Studio
51	O-TON		51 Wite: Cottbus gegen Stuttgart	ok TT		on air	01:05	01:06	12:43	ja			MAZ
52	Stud Real		52 Algarve Cup	x neu		onair	00:20	00:29	13:12	ja			Studio

“Quantel managed to create an intuitive interface that was readily accepted by our editors.”

Kai Gniffke, Editor-in-chief, ARD-aktuell

Multimedia news

“When implementing new technology, it is imperative that it runs smoothly in order to convince the staff of the benefits of a new way of doing things,” reflects Gniffke, summing up his experiences after four weeks of entirely server-based news production at ARD-aktuell. “Of course, four weeks are not sufficient to develop the kind of routine we have established in 55 years of film and tape-based production. However, Quantel managed to create an intuitive interface that was readily accepted by our editors.”

The transition from a tape-based solution to a server-based architecture has a historic significance for ARD-aktuell. “The real sensation is that the system is stable,” concludes Grommes, “after all, the server architecture is the only one of its kind in Germany.” Using network technology to integrate the workflows of the newsroom and the production stage created a significant advantage for ARD-aktuell because many additional products can now be created without much extra time and effort. The fundamental philosophy at ARD-aktuell is ‘produce it once and play it out in several formats’. “We want our brand to continue to reach our audience while they venture along other paths – be it online, on a mobile phone or on a laptop computer. It is our ambition that ‘Tagesschau’ be present wherever our audience benefits from it. With the Quantel system we are well equipped to pursue that goal.”

At a glance

- German broadcaster ARD has switched all its news production to digital
- The system is built around a Quantel Enterprise sQ integrated production system, closely integrated with ARD-aktuell’s Open Media newsroom system
- ARD-aktuell’s 100+ journalists and editors have taken easily to the Quantel system, finding the desktop editing and shot selection GUI particularly easy to use
- The system is now producing 14 hours of news programming every day, supporting multiple channels as well as ARD-aktuell’s website news service

Above: Transmission schedule for the ‘Tagesschau in 100 Sekunden’

Right: News Anchor Thomas Bade reviewing the rundown and preparing his linking scripts

Far right: Senior Duty Editor Ben Buck

