

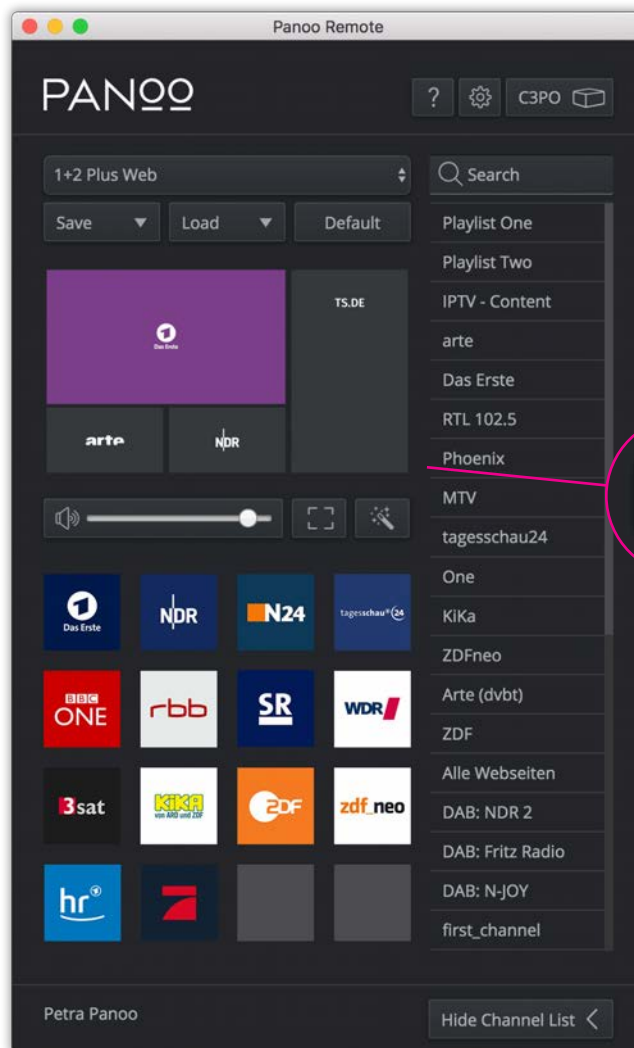


# PANOO

A Multi-View Set-Top Box  
for Editorial Programme Monitoring

# E pluribus unum\*

The multi-viewer for the newsroom:  
editorial programme monitoring has different  
requirements than studio technology



The personal **PANOO** remote control contains individual programme favourites and offers centrally managed layouts and programme lists.

Favourite channels can be saved and accessed at any time.

**PANOO remote** controls the box at the workstation as well as the monitor wall, the conference monitor, etc.

Simply switch the running programme to your desktop, with **PANOO remote** it's just a click away!



Out:



the good old remote control has had its day - **PANOO remote** can do it better!

\* Out of many - one TV

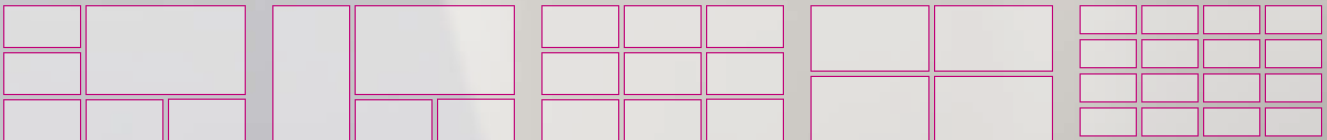
# PANOO

is the set-top box  
for editorial use

The **PANOO box** can show up to 16 channels station at the same time, which can be put together individually using IPTV, web stream and website channels.



Take your personal setup with you wherever you work – never lose your layout selections and channel assignments.





# Use case tagesschau

4=1 equips the ARD-aktuell newsroom with PANOO boxes

## PANOO at ARD-aktuell

In contrast to conventional SDI-IPTV multi-viewer solutions, PANOO is significantly cheaper per workstation, this means that more workstations can be equipped with PANOO and completely new areas of application are possible. This makes expensive special solutions for freely accessible multi-view displays in the newsroom unnecessary.

The central management of channels and layouts for each individual workstation considerably improve day-to-day use. In addition to TV programmes, websites and internal status screens can also be displayed in PANOO.

PANOO is easy for editorial staff to learn, which is why PANOO is immediately fully operational. In cooperation with the customer, 4=1 will continue to develop the product PANOO. Regular updates will deliver improvements and new features.

ARD-aktuell's new newsroom opened in November 2019. In order to work in a future-oriented cross-media and networked manner, the entire infrastructure was redesigned and the TV coverage in the newsroom was also converted to IP.

In cooperation with ARD-aktuell, 4=1 developed the multi-view set-top box PANOO, which revolutionises editorial programme monitoring at the workplace: every editor can individually compile his or her programme from a variety of sources (IPTV, web streams and websites) directly on the spot.

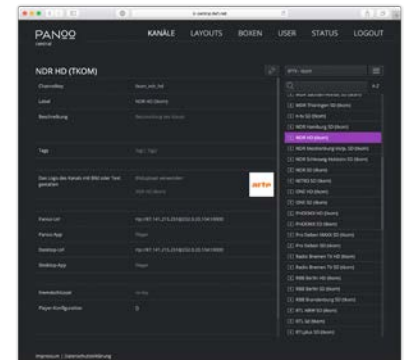
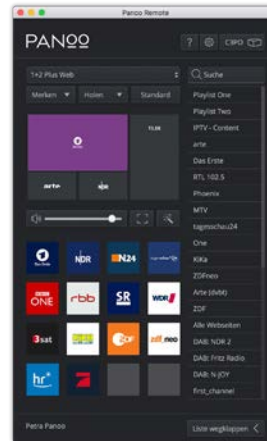
Security and standard conformity are of great importance to ARD-aktuell; the product therefore underwent thorough test procedures on behalf of ARD-aktuell regarding IT security, data protection and accessibility.

As of today, 180 newsroom workstations are equipped with PANOO boxes.



# A fine choice

## The PANOO family



### PANOO box

- Up to 16 parallel channels (IPTV, web stream, web page)
- Decoding of up to 16 parallel IPTV streams depending on the hardware used
- Operation with **PANOO remote**
- License management, updating and administration by **PANOO central**

### PANOO mini

- Up to four parallel channels (IPTV, web stream, web page)
- Decoding of up to two parallel IPTV streams
- Operation with **PANOO remote**
- License management, updates and administration by **PANOO central**

### PANOO remote

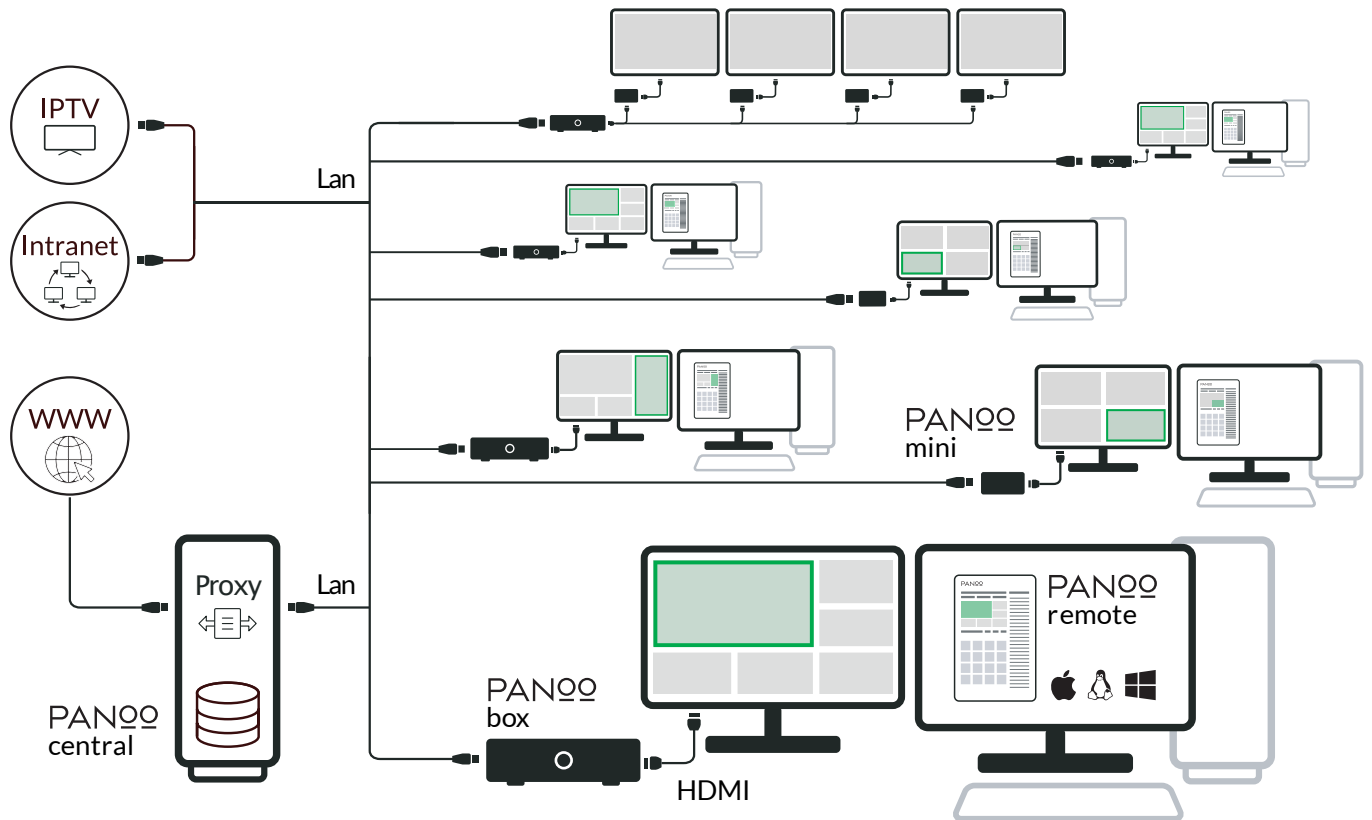
- Individual control centre on the desktop
- Layout and programme selection, programme favourites
- One-click operation for programme selection, change of audio source, full screen selection
- User interface in German or English
- „Easily accessible“ according to BITV (Barrier-free Information Technology Standard)

### PANOO central

- Central administration for channels, layouts, boxes, users
- Create additional boxes on your own
- License management

# From one to infinity

PANOO at the workplace and monitor wall



# What sets PANOO apart



Matthias Oelmann  
PANOO architect and managing director 4=1

## Hardware, operating system, box software

The **PANOO box** is a set-top box for the parallel use of multiple channels (IPTV and web streams, browser content), which the user can put together individually.

### Software:

Yocto-based Custom Linux as **PANOO** operating system. MPV and Chromium are used for content presentation.

### Hardware:

**PANOO box**: Intel NUC 8 (Intel Core i3, i5, i7)

**PANOO mini**: Raspberry Pi 4

The **PANOO box** is based on NUC and allows up to 16 IPTV / video streams depending on the hardware used.

**PANOO box** supports monitor resolutions up to 4K.

**PANOO mini** can display up to four contents (including up to two videos) simultaneously and offers HD resolution.

The **PANOO box** can be turned on using the **PANOO remote**.

Different hardware configurations are available upon request.

## Individually configurable

All of the settings entered in the **PANOO remote** such as programme selection, selected layout, programme preferences, volume, etc, are saved in the context of the registered user and can be easily accessed at any time. Even at a different workstation with a different **PANOO box**. All you need to do is register with your own e-mail address.

## Administration / Configuration / Setup

**PANOO central** is the communication centre where boxes and remotes register and retrieve configuration data. It manages the various layouts and the connected Panoo boxes.

**PANOO central** also enables administrators to create channel lists (of their own IPTV backend or specified by a provider) and to create web live streams and websites as programmes. Web content can be refreshed and playlist changes can be controlled via configurable time intervals.

## Privacy and Accessibility

GDPR compliant data protection

BITV (Barrier-free Information Technology Standard)  
„easily accessible“  
(Test 03/2020, Detlev Girke - BITV Consult)

## Licensing models

4=1 GmbH offers **PANOO** including hardware or as a software-only licence. Licences are managed in **PANOO central** where customers can also set up existing hardware as **PANOO boxes**.

# Contact

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