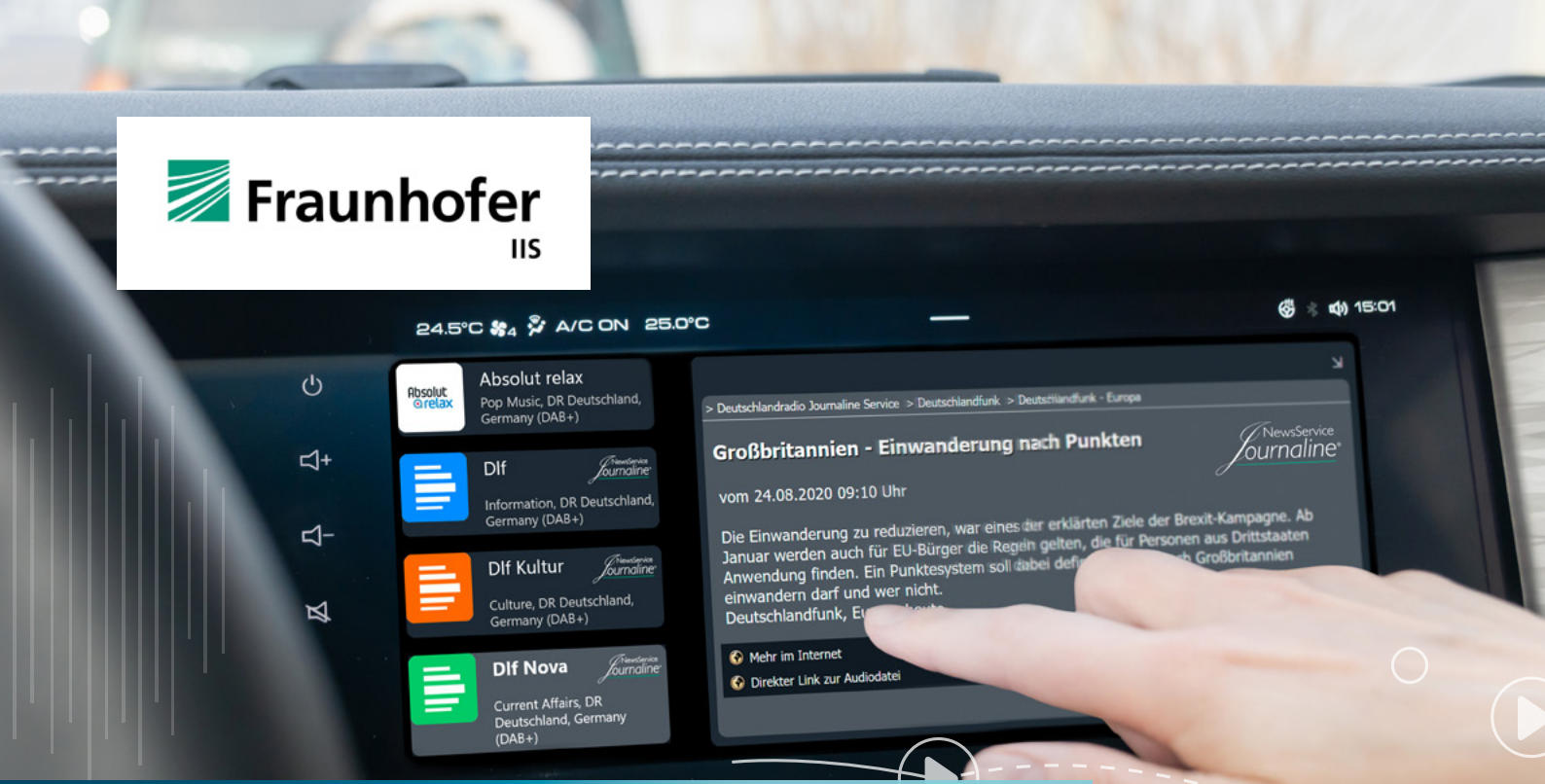
Fraunhofer IIS



Journaline

Advanced Text Service Built into Digital Radio

News, flight schedules or background information about the song on the radio: Journaline® lets digital radio listeners easily access the information they need – anywhere and any time. It provides up-to-date text-based information that is easily accessible through the user-friendly menu, which supports all types of radio receivers. Broadcasters benefit from a closer connection to their listeners and completely new revenue opportunities.

Easily Connect to Broadcasters' Existing Content Sources.
Journaline content is provided to the digital radio head-end in a standard XML format that can easily be connected to broadcasters' content management systems and web-based APIs.

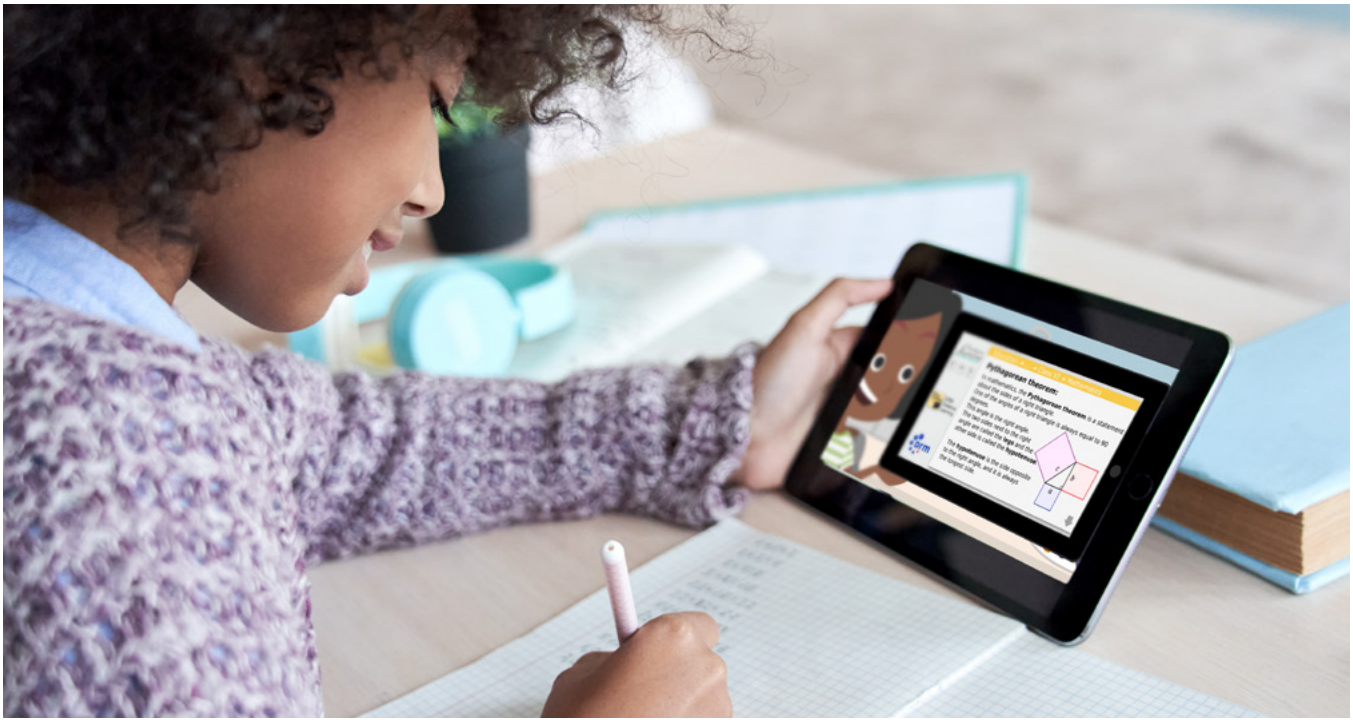
Optimized for Broadcast
Journaline is specifically designed for digital radio. It is an open international broadcast standard, operates at very low bitrates, and therefore does not affect audio quality. All information is transmitted in the broadcast stream and no internet connection is required. Broadcasters can easily connect their existing content management systems and news sources to the Journaline encoder for automatic on-air content updates.

New Revenue Opportunities
Broadcasters benefit from completely new revenue opportunities created by Journaline for their digital radio services.
They include:

- listener interactivity, engaging with the station or ad partners at the push of a button on connected devices,
- instant audience engagement measurements, and
- addressing highly targeted listener sub-groups e.g. by language, location or area of interest, for optimized listener engagement and ad-placements.

With this, Journaline is the tool to combine many of the former IP streaming benefits with the flat distribution cost and protected service areas of broadcasting.

www.journaline.info



Innovative Digital Radio Applications

Journaline enables a range of innovative applications for digital radio platforms, including:

Emergency Warning Functionality

Journaline is a key component of Emergency Warning Funcitonality (EWF and EWFplus), which combines the alarm features of a digital radio standard with audio and multilingual Journaline text content.

Journaline enables the following goals of EWF:

- on-demand delivery of detailed information and instructions at the radio set even without Internet connection
- multilingual content aimed at non-native speakers and travellers
- address and include hearing-impaired users

Public Signage

with instant content updates even in places without local infrastructure, and supported by Journaline's separation of content and flexible design elements.

RadioSchooling and Distance Learning

combines a teacher's live audio or video e-learning lessons with an interactive textbook provided via Journaline. Access is available both live and on demand. It supports rich media content with text and graphics elements in multiple languages at the same time as well as interactive quizzes and homework – all without the need for an internet connection.

Flexible receiver support

Journaline supports all types of receivers, including digital radio receivers with simple text or graphical screens, mobile devices, in-car receivers with voice control, and connected navigation systems.

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