

# Analysing DAB+ reception in vehicles to compare coverage simulations with real-world data

DAB+ planning, measurement and monitoring  
Desmond S. Fuller, Xperi

Geneva, March 2024

# What is DTS AutoStage?

Enhancing radio around the world by providing metadata linked to broadcasts via an IP connection

- Live station guides
- Higher-resolution images for new vehicles
- Lyrics
- Additional information about the artist and song

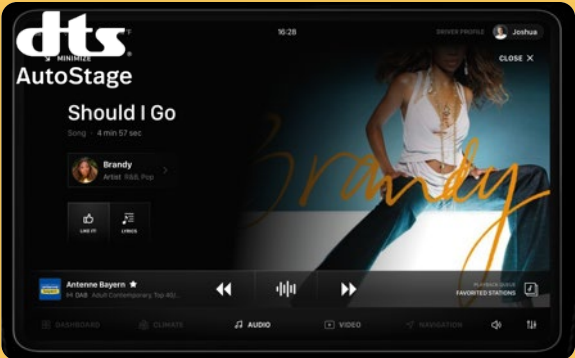


# Quick Stats | DTS AutoStage



**Global Broadcasters**

**49,688 Radio Stations**  
**142,530 Live Broadcasts**



**2.1 Billion Hours of Enhanced  
Discovery, Engagement &  
Measured Radio Listening**

**XPERI**



**Automakers**

**12 OEMs In Production**  
**6.5 Million Cars on the Road**

# DTS AutoStage: Automakers



6 In Final Development – Launching by 1Q 2025

Automotive brand - 13

Automotive brand - 14

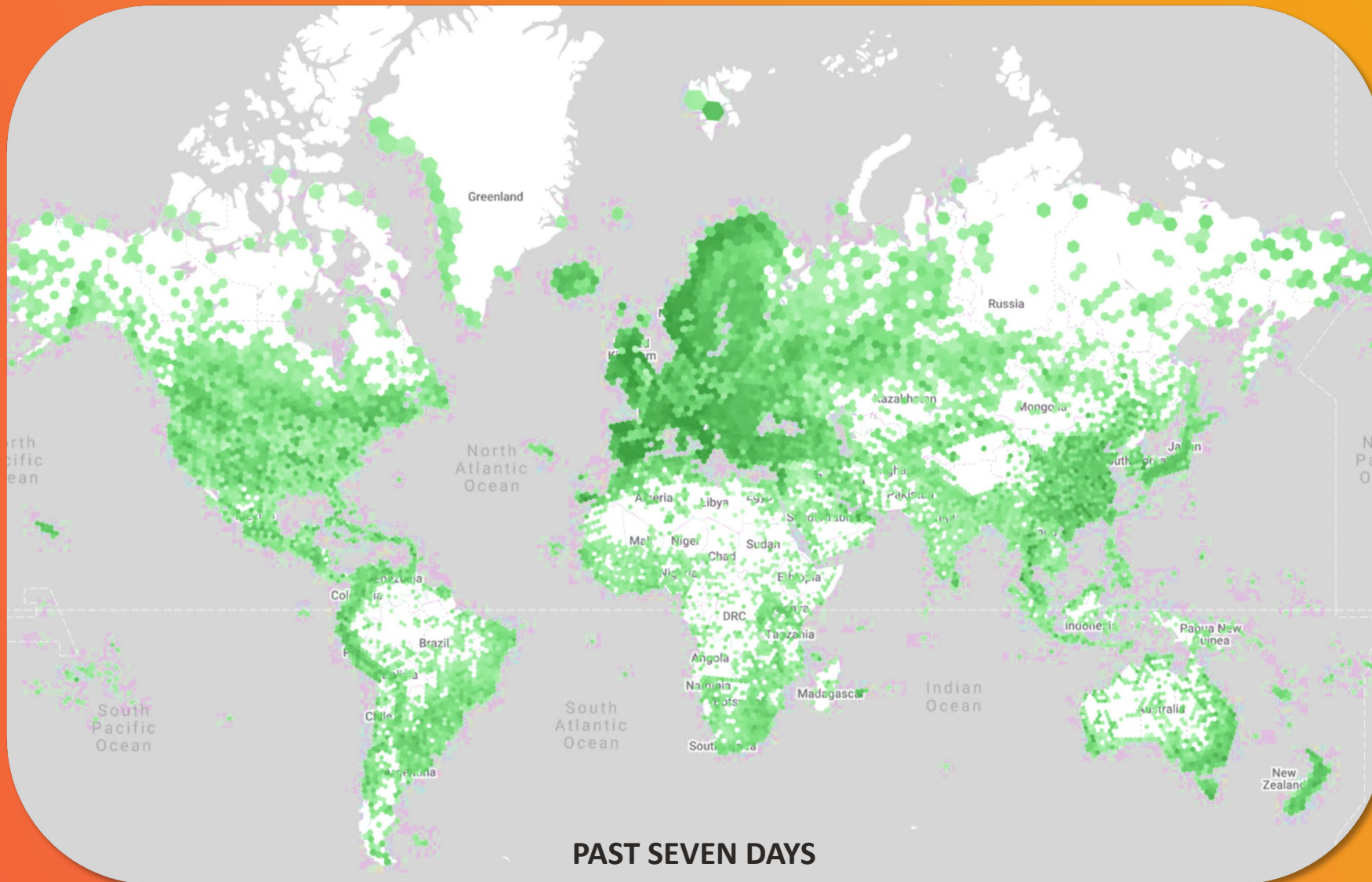
Automotive brand - 15

Automotive brand - 16

Automotive brand - 17

Automotive brand - 18

# RADIO'S GLOBAL IMPORTANCE



**159 Countries**  
**49,688 Stations**

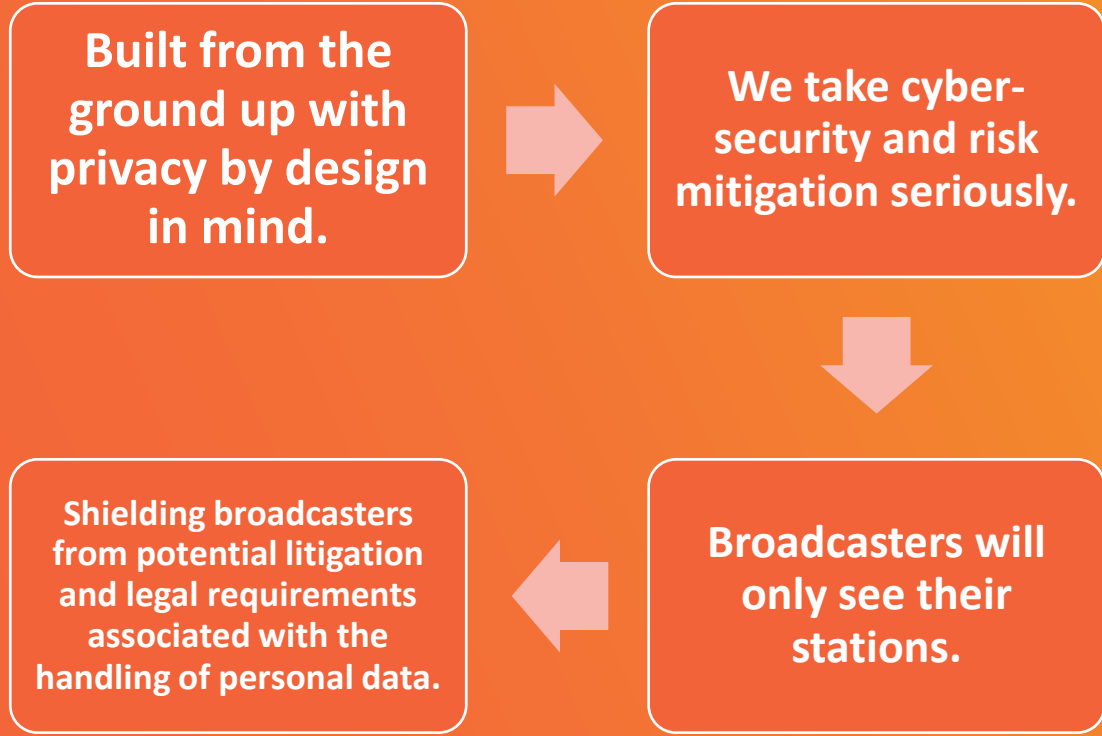


DTS AUTOSTAGE ANALYTICS

# STORY OF YOUR STATION IN THE DTS BROADCASTER PORTAL

# A PRIVACY-FIRST APPROACH TO DATA ANALYSIS

NO PERSONALLY IDENTIFIABLE DATA: GOOD NEWS FOR THE BROADCASTERS



# TAKE CONTROL: YOU DECIDE HOW YOUR STATIONS LOOK



**dts** BROADCASTER PORTAL

STATIONS ORGANIZATION

Bauer Media VIEWING AS... DTS ADMINISTRATOR

Stations overview

STATION NAME Find stations... 172 STATIONS

	<b>Magic Chilled</b> Pop + R&B, 90s - Now GB · London	STATION REACH CHANGE <b>-1.79%</b> (last 7 days) 53.34% of the market	<p><b>It's Not Right But It's Ok</b>                      Artist Whitney Houston                      Album Ultimate Grammy Collection: Contemp...</p>
	<b>Magic Radio</b> More of the Songs You Love GB · London · Greater London, London	STATION REACH CHANGE <b>+0.21%</b> (last 7 days) 2.84% of the market	<p><b>Fast Car</b>                      Artist Tracy Chapman                      Album Tracy Chapman</p>
	<b>Magic Soul</b> The Best of Soul and Motown GB · London	STATION REACH CHANGE <b>0.00%</b> (last 7 days) 0.95% of the market	<p><b>What's Going On</b>                      Artist Marvin Gaye                      Album Motown: The Complete #1s</p>
	<b>Mellow Magic</b> Timeless Relaxing Classics GB · London	STATION REACH CHANGE <b>-0.05%</b> (last 7 days) 0.85% of the market	<p><b>Emotion</b>                      Artist Samantha Sang                      Album Emotion</p>



# CONTROL + AUDIENCE AWARENESS: PROGRAMMING QUALITY + METADATA CONSISTENCY

The screenshot shows the 'Broadcast Metadata Manager' interface for station NOVA. The top navigation bar includes the 'dts BROADCASTER PORTAL' logo, 'STATIONS' and 'ORGANIZATION' tabs, and user information for 'Bauer Media' and 'DTS ADMINISTRATOR'. The main content area is divided into two columns. The left column, titled 'GENERAL INFORMATION', contains fields for 'LOGOTYPES' (with 'HIGH RESOLUTION' and 'STANDARD' options), 'STATION NAME' (NOVA), 'SLOGAN' (Lyden af i dag), 'STATION GENRES' (TOP 40/POP), 'FORMAT' (Not specified), 'CALL SIGN' (Not specified), 'COUNTRY' (DK (Denmark)), 'LANGUAGE' (DA (Danish)), 'REGION' (Hovedstaden), and 'CITY' (København). It also includes 'SHORT DESCRIPTION' and 'LONG DESCRIPTION' fields, both containing 'Lyden af i dag', and a 'CONNECTIONS' section for 'STREAMING URLS'. The right column, titled 'BROADCASTING OVERVIEW', shows 'NOW PLAYING' information for 'Don't Wanna Know' by Maroon 5 from the album 'Red Pill Blues'. Below this is a 'REACH (LAST 7 DAYS)' bar chart showing reach for each day from Feb 25 to Mar 2. At the bottom of this section is a 'REACH CHANGE (LAST 7 DAYS)' bar chart.

Broadcast Metadata Manager

The screenshot shows the 'Global Receiver Emulator' interface. At the top, it displays system status including 5G connectivity, 64.4°F, and the time 17:16. The main content area features a music player for 'Don't Wanna Know' by Maroon 5. The player includes a 'MINIMIZE' button, a 'CLOSE X' button, and a 'PLAYBACK QUEUE' section. Below the player are navigation icons for 'DASHBOARD', 'CLIMATE', 'AUDIO', 'VIDEO', and 'NAVIGATION'. The interface is designed to simulate a mobile device's user experience for a broadcast receiver.

Global Receiver Emulator

# TELLING THE STORY OF YOUR STATION AND AUDIENCE



## WHO

- ▶ Understand your audience in your markets.



## WHERE

- ▶ Where is your audience listening and the concentration in your market?



## WHEN

- ▶ When is your audience tuning in and tuning out during the course of the day?



## HOW

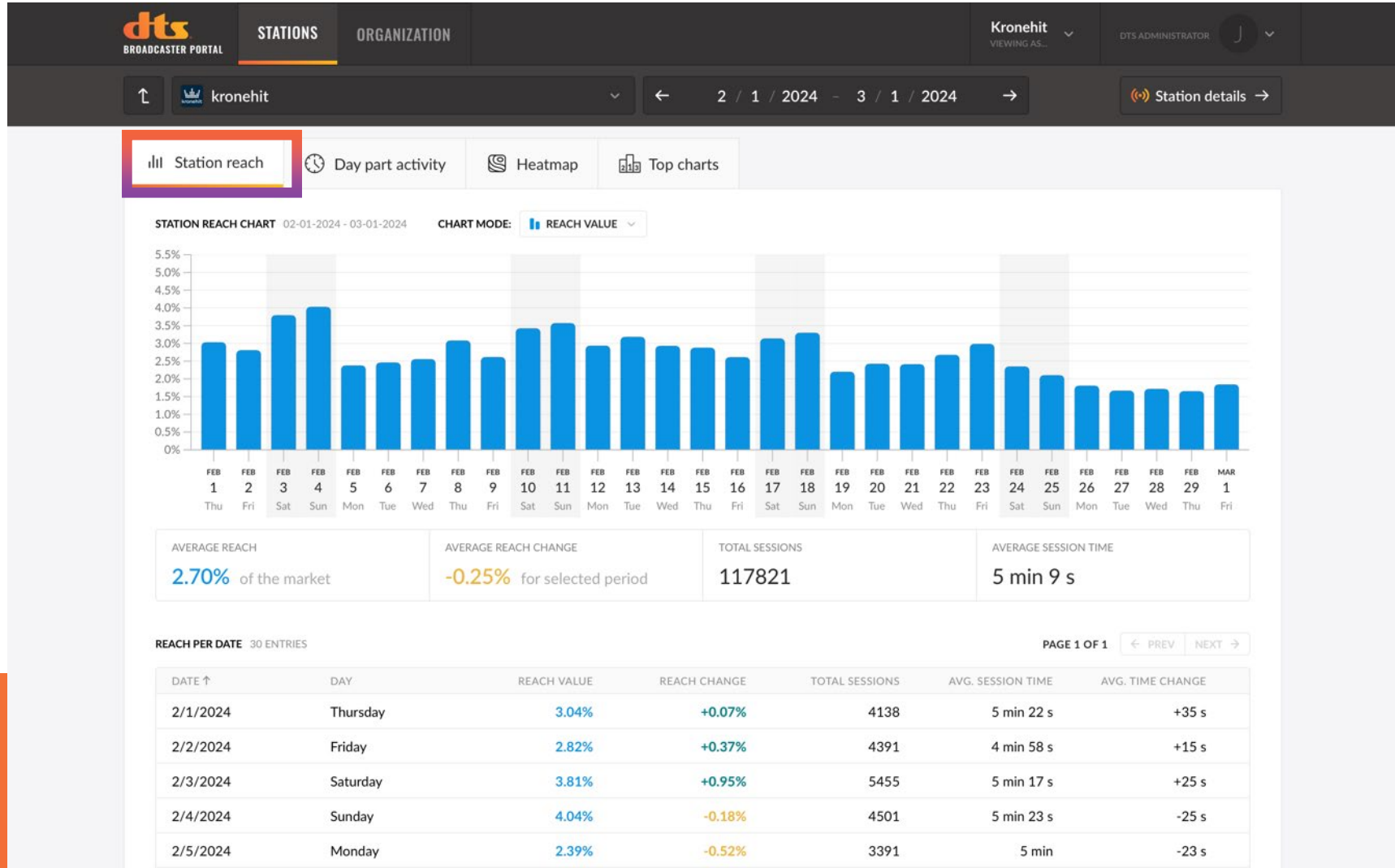
- ▶ How is your audience tuning into your station – analogue, DAB, HD Radio, etc.?



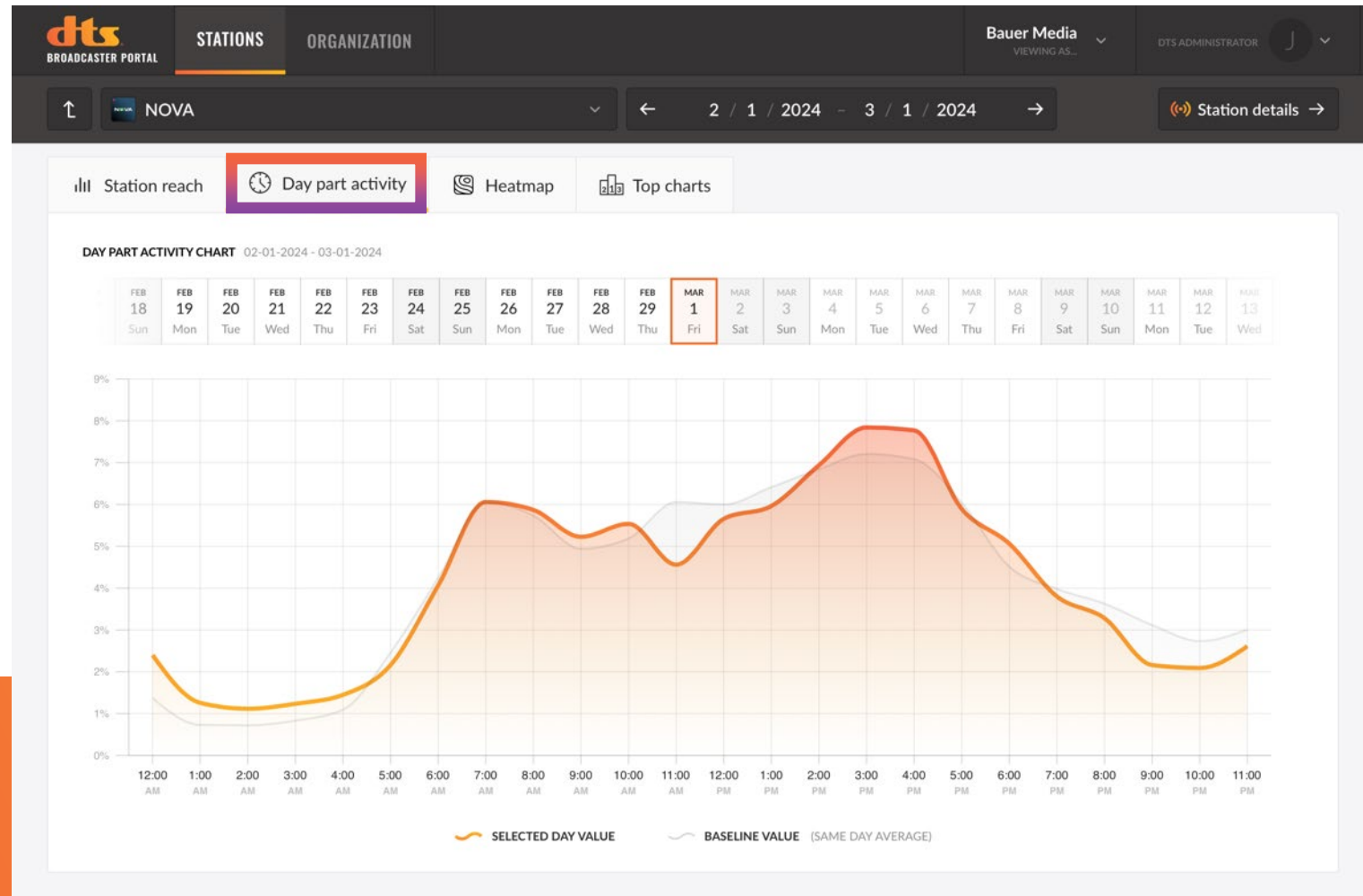
## WHAT

- ▶ What programming is attracting the largest audience, and how is content performing

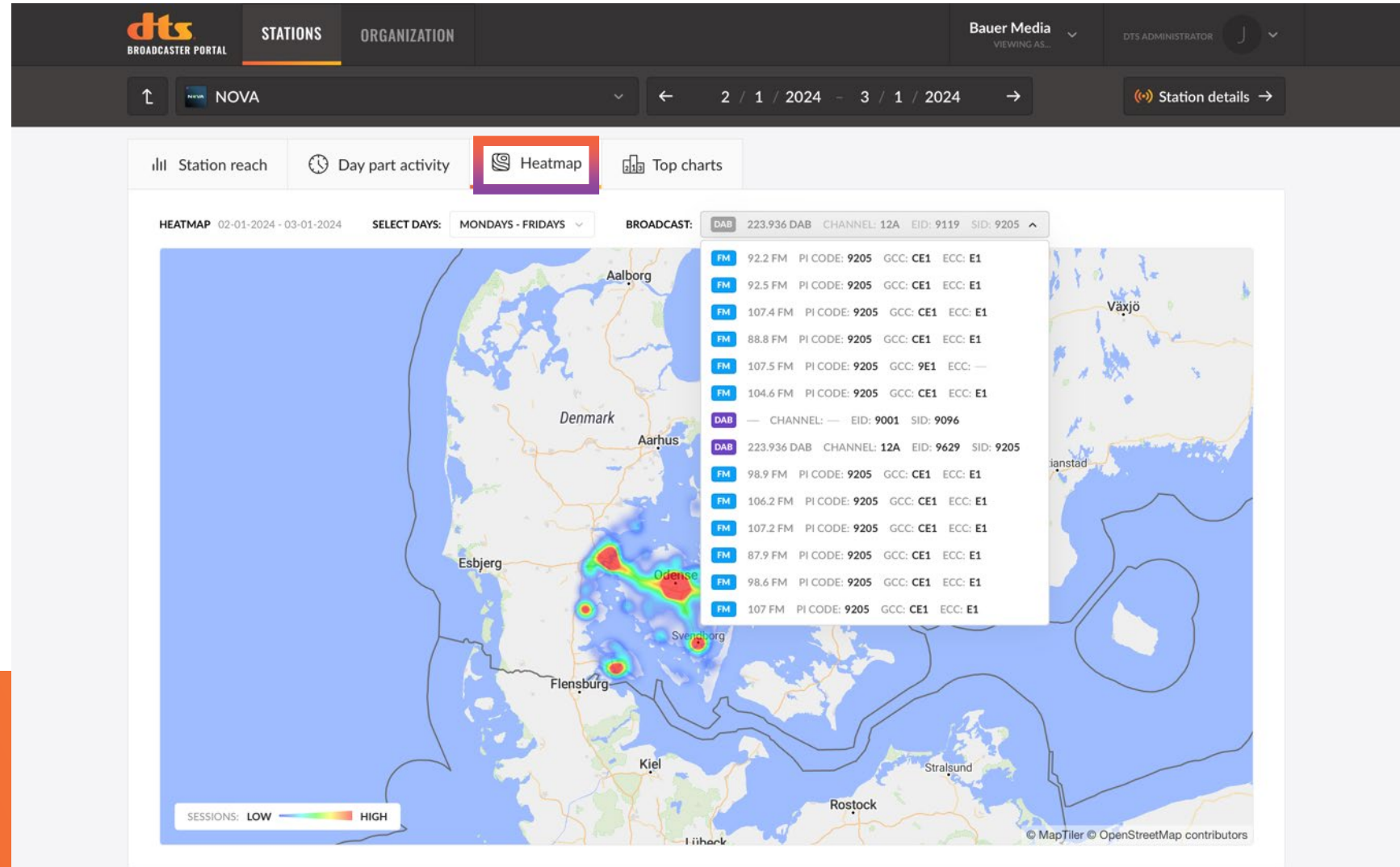
# WHO: STATION REACH AND MARKET PERFORMANCE



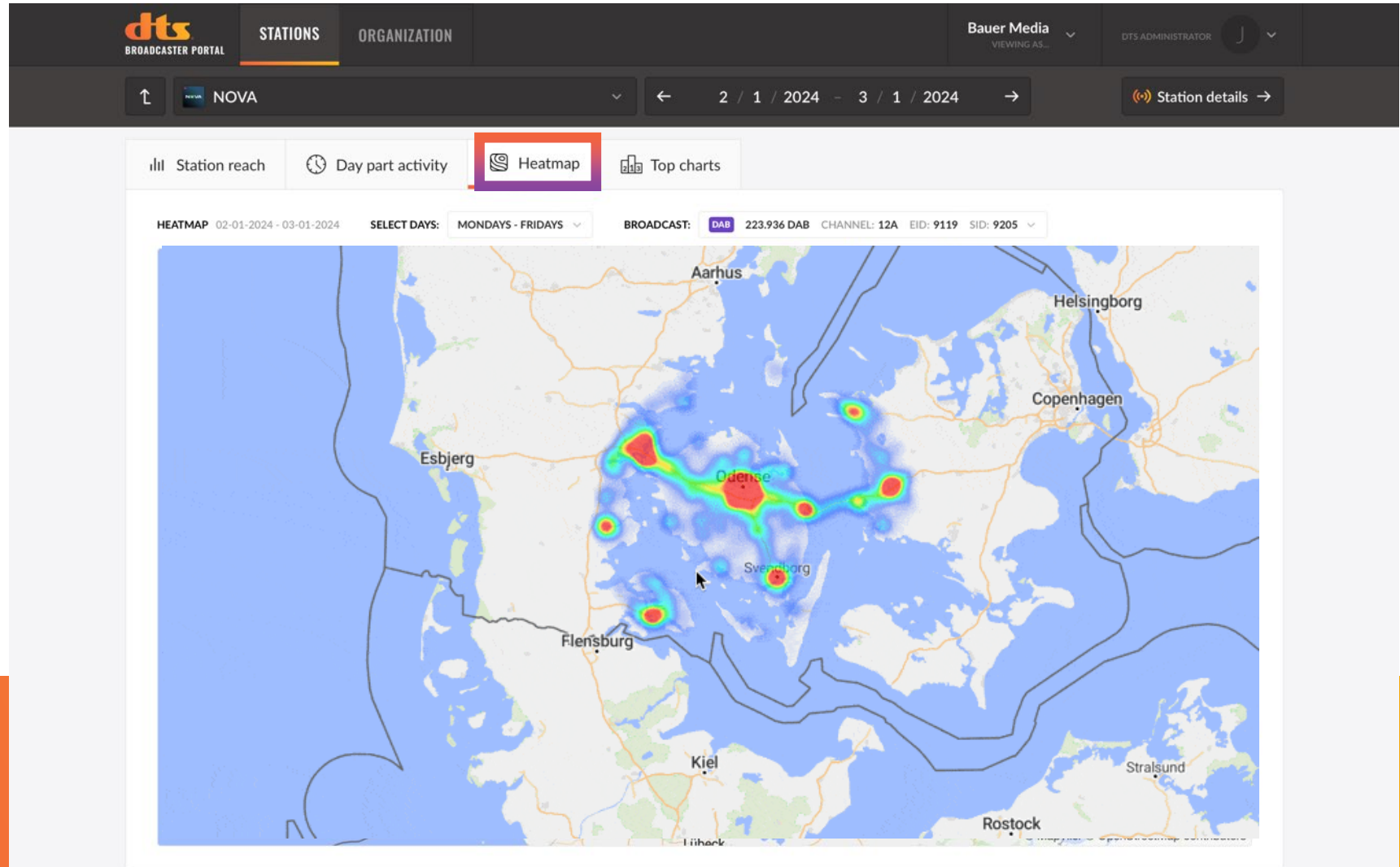
# WHEN: UNDERSTAND YOUR AUDIENCE THROUGHOUT THE DAY – ANY DAY



# HOW & WHERE: YOUR AUDIENCE LISTENS



# HOW & WHERE: YOUR AUDIENCE LISTENS



# WHAT: IS YOUR AUDIENCE LISTENING TO?



The screenshot displays the DTS Broadcaster Portal interface. At the top, there are navigation tabs for "STATIONS" and "ORGANIZATION". The "STATIONS" tab is active, showing "Kronehit" and "VIEWING AS...". Below this, there are navigation arrows and a date range "2 / 1 / 2024 - 3 / 1 / 2024". A "Station details" link is also visible.

The main content area shows a navigation bar with "Station reach", "Day part activity", "Heatmap", and "Top charts". The "Top charts" tab is selected and highlighted with a red box. Below this, there is a "TOP CHARTS WEEKLY AGGREGATION" section with a "TIMEFRAME" dropdown set to "WEEK 08 02/19/2024 - 02/25/2024".

#	+/-	TRACK	ARTIST	ALBUM
1	0	Stumblin' In	Cyril	Stumblin' In
2	NEW	Whatever	Ava Max	Whatever
3	0	Over	ClockClock	Over
4	+7	Runaway	OneRepublic	Runaway
5	-3	Cynical	Chris de Sarandy	Cynical
6	+6	Lifeline	Glockenbach	Lifeline
7	0	Single Soon	Selena Gomez	Single Soon
8	NEW	Blindside	James Arthur	Bitter Sweet Love
9	+6	Is It Over Now [From the Vault]	Taylor Swift	1989 [Taylor's Version]
10	+7	Alive	Declan J Donovan	Alive
11	+2	Gimme Love	Sia	Gimme Love

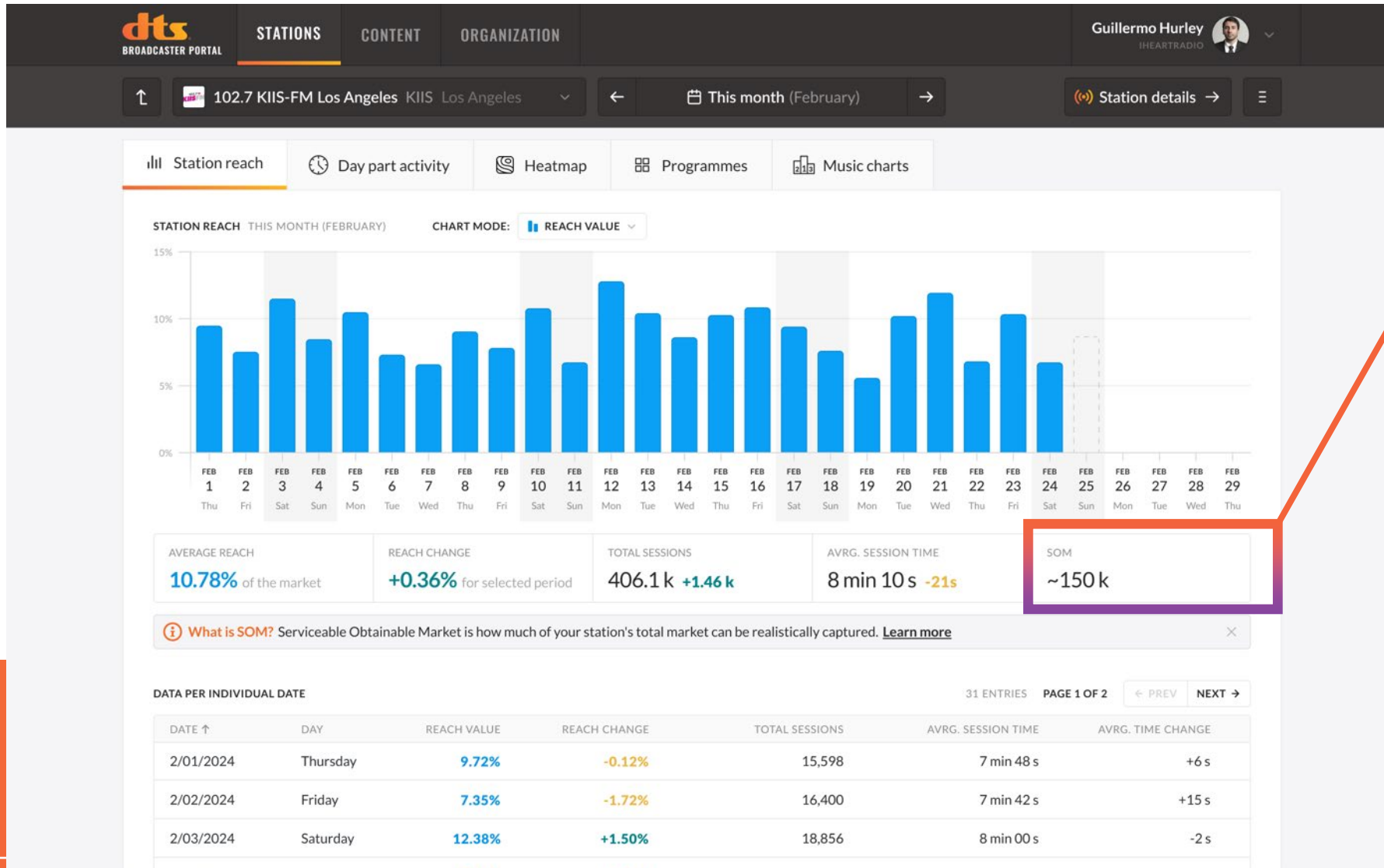


DTS AUTOSTAGE ANALYTICS

# DTS BROADCASTER PORTAL 2.0 – ENHANCED CONTROL AND FUNCTIONALITY



# NEW FUNCTIONALITY: DTS AUTOSTAGE RECEIVERS



Service Obtainable Market during observation period

# NEW FUNCTIONALITY: REGION ID & NETWORK SELECTION



dtS BROADCASTER PORTAL STATIONS CONTENT ORGANIZATION Anika Hoferle KRONEHIT

↑ kronehit Wien ← This month (February) → Station details →

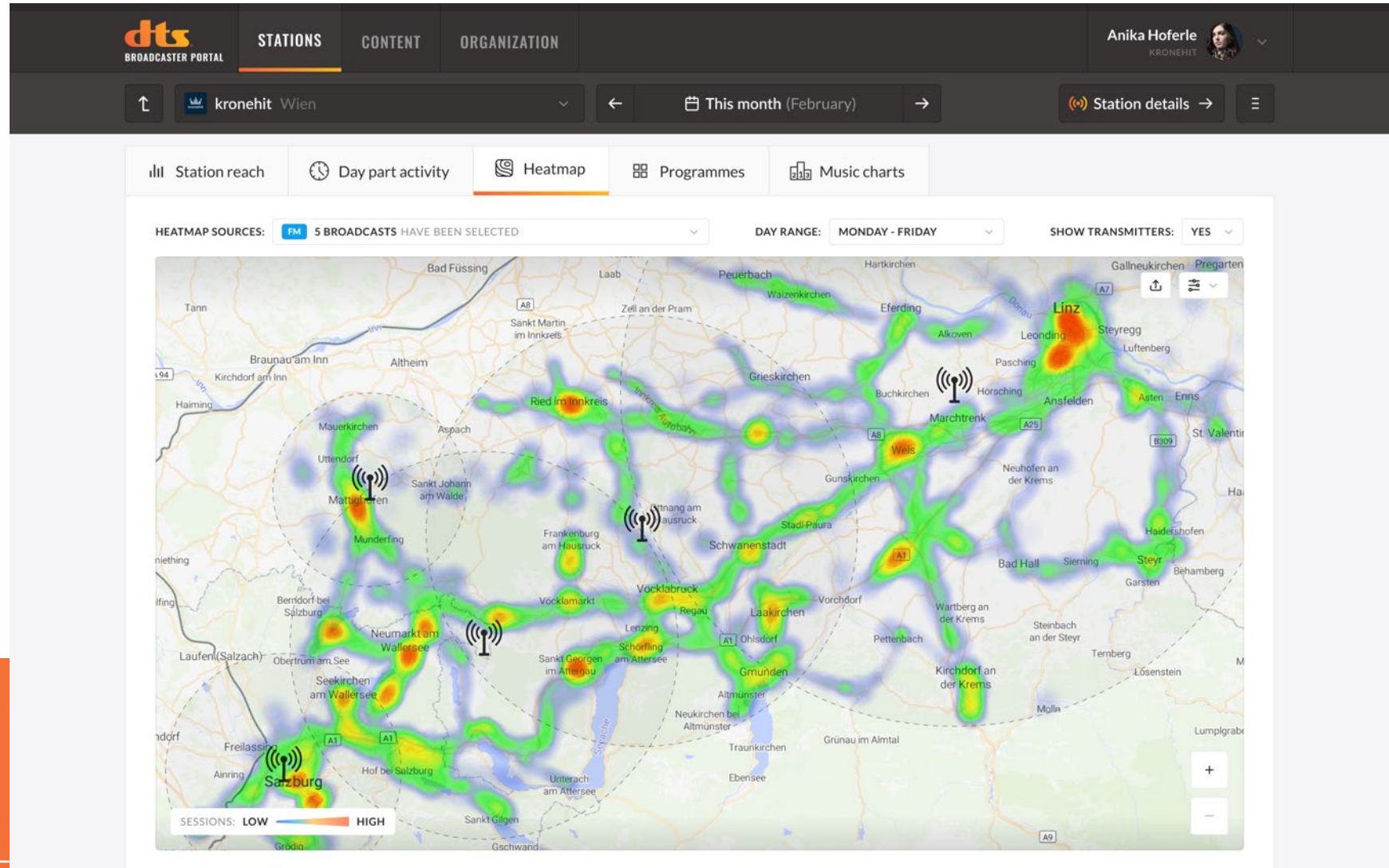
Station reach Day part activity Heatmap Programmes Music charts

HEATMAP SOURCES: Find a specific broadcast... DAY RANGE: MONDAY - FRIDAY SHOW TRANSMITTERS: YES

TYPE	FREQ	REGION	PI CODE	GCC	ECC	
FM	90.5 FM	Mattighofen	A3FF	AE0	E0	<input checked="" type="checkbox"/>
FM	92.6 FM	Marchtrenk	A3FF	AE0	E0	<input checked="" type="checkbox"/>
FM	92.3 FM	Neumarkt am Waller...	A3FF	AE0	E0	<input checked="" type="checkbox"/>
FM	103.5 FM	Silbertal	A3FF	AE0	E0	<input type="checkbox"/>
FM	100.9 FM	Gosauzwang	A3FF	AE0	—	<input type="checkbox"/>
FM	87.9 FM	Vöcklabruck	A3FF	AE0	E0	<input checked="" type="checkbox"/>
FM	87.7 FM	Umhausen	A3FF	AE0	E0	<input type="checkbox"/>
FM	92.3 FM	Salzburg	A3FF	AE0	E0	<input checked="" type="checkbox"/>
FM	105.3 FM	Schruns	A3FF	AE0	—	<input type="checkbox"/>

SELECTED: 5 BROADCASTS DESELECT ALL SELECT ALL

# NEW FUNCTIONALITY: REGION ID & NETWORK SELECTION

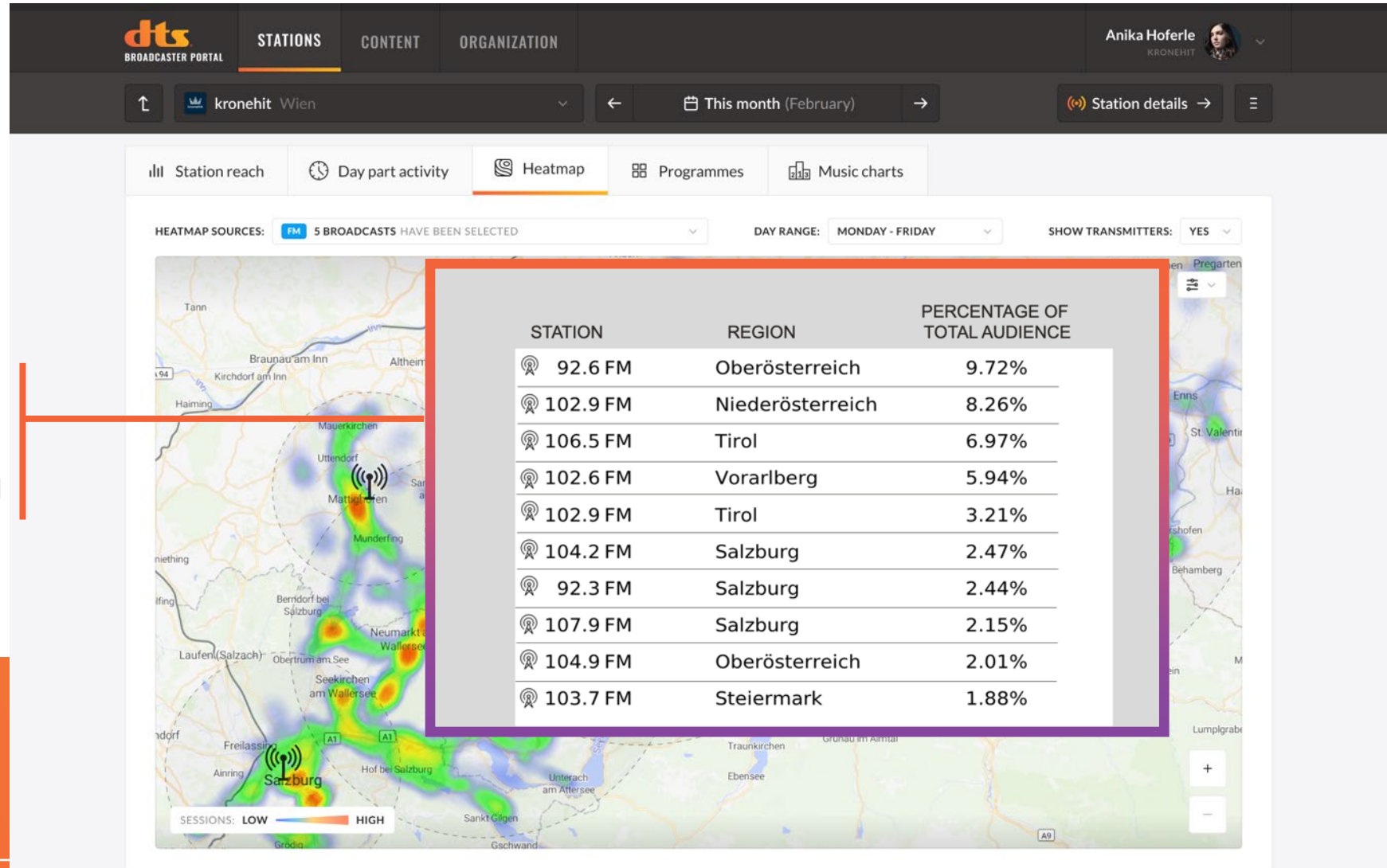


# NEW FUNCTIONALITY: REGION ID & NETWORK SELECTION



## Top 10 Stations

45.05% of total listening





DTS AUTOSTAGE ANALYTICS

# OTHER INSIGHTS

# WHICH TEN COUNTRIES LISTEN ON DAB THE MOST?

IN ALPHABETICAL ORDER

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Australia

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Belgium

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France

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Germany

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Italy

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Netherlands

---

Norway

---

Sweden

---

Switzerland

---

United Kingdom

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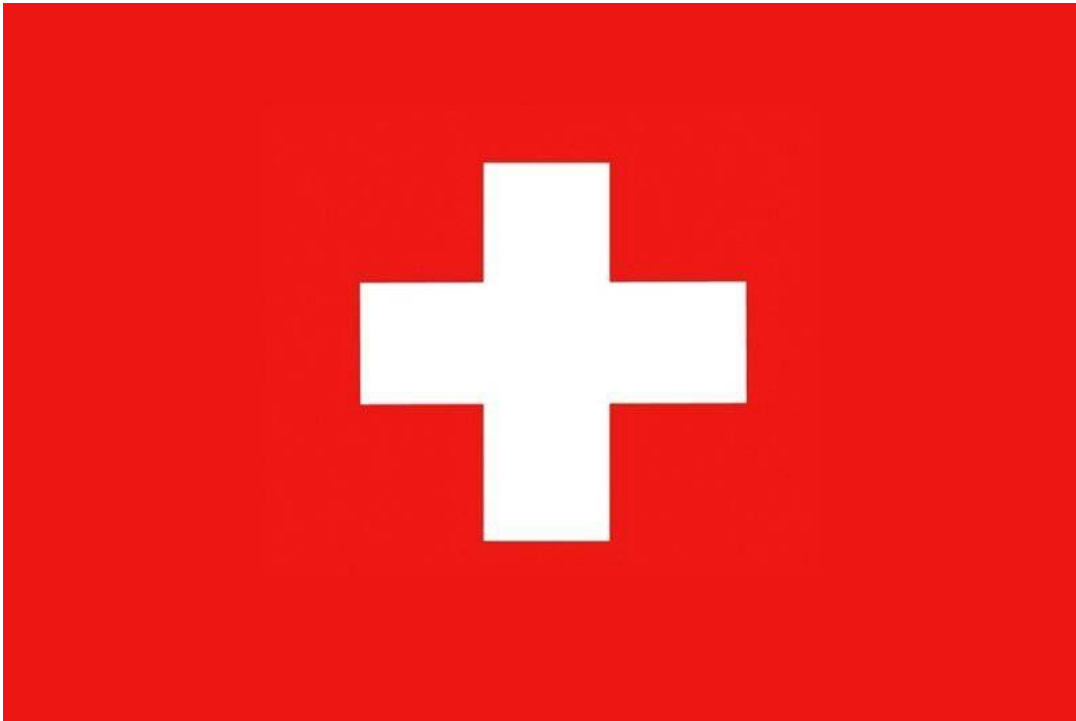
# TOP 25 STATIONS: SPAIN



TYPE	MARCH 2023	MARCH 2024
DAB	4	5
ANALOGUE	21	20

# TOP 25 STATIONS: SWITZERLAND

Note: As of March 2024, 65% of radio listening in the country is still on analogue



TYPE	MARCH 2023	MARCH 2024
DAB	25	25
ANALOGUE	0	0



# DAB: TWO MULTIPLEXES AND AN FM STATION



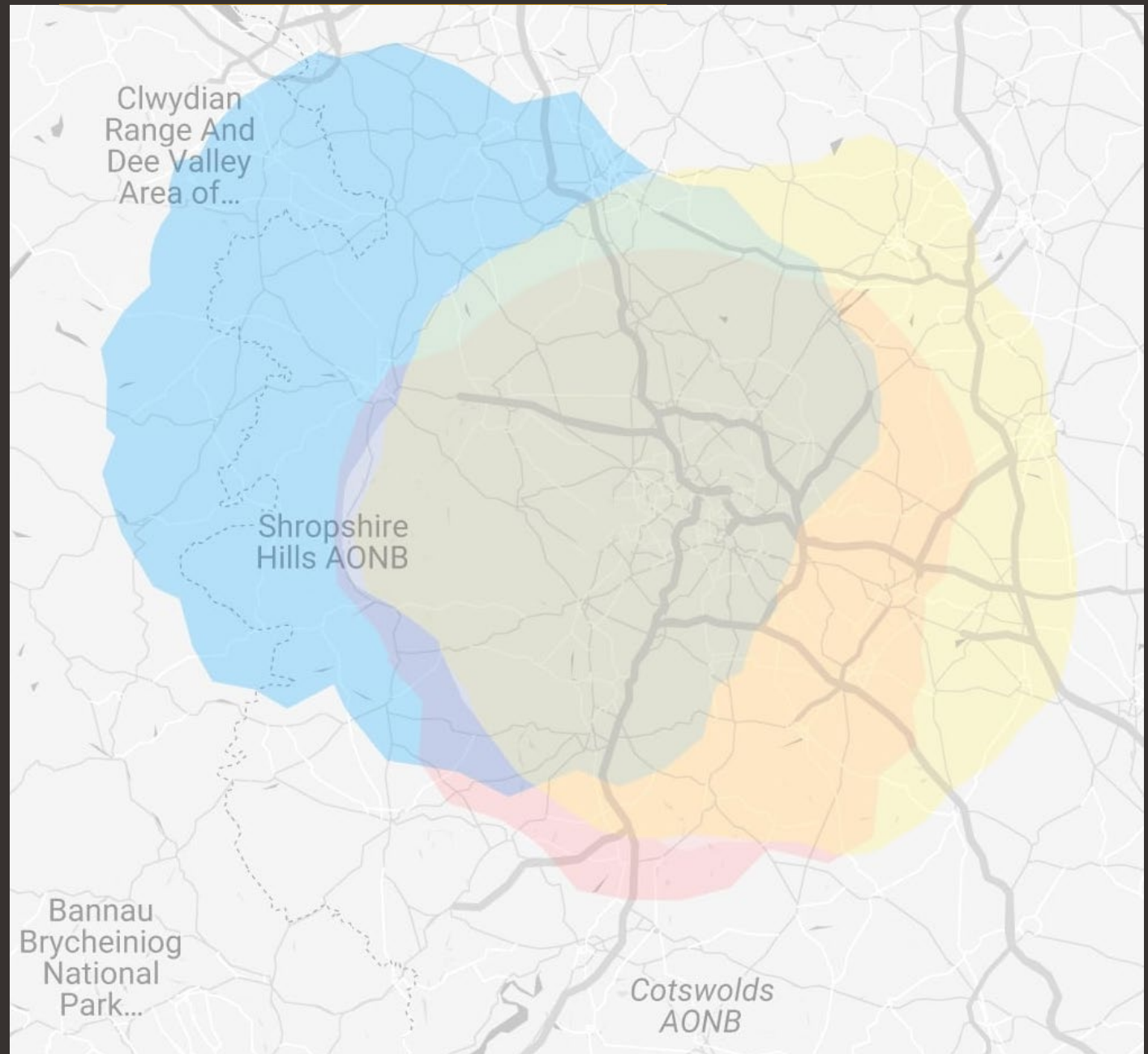
PINK (DAB): 65% OF LISTENING



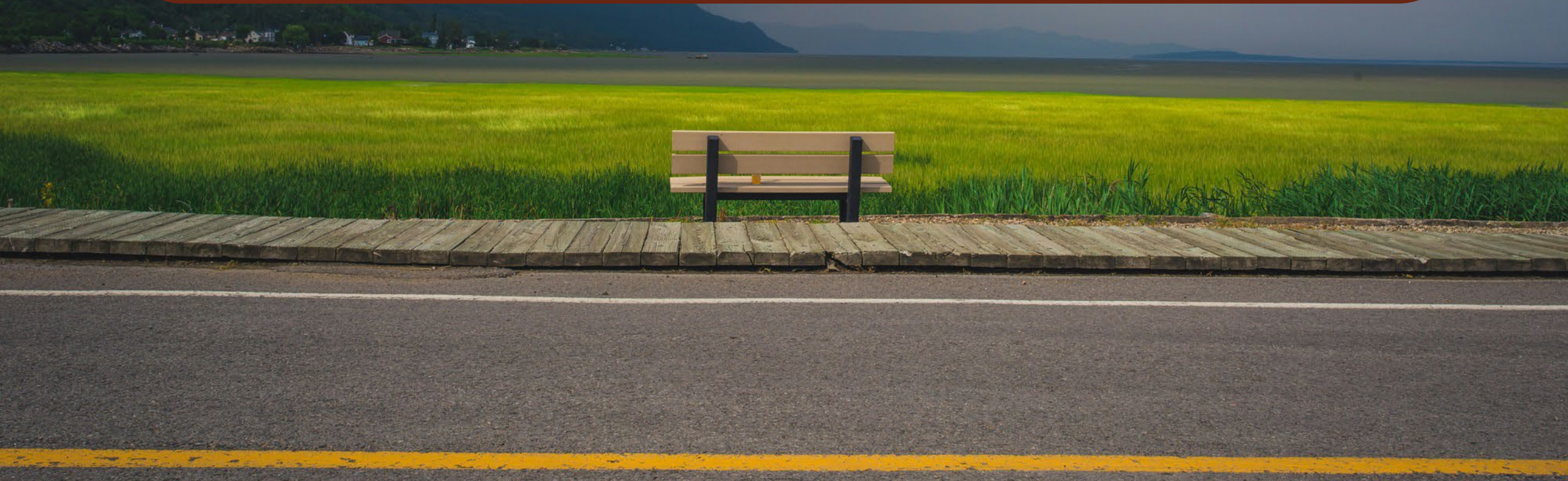
BLUE (DAB): 29% OF LISTENING



YELLOW (FM): 6% OF LISTENING



**Big Data has changed every industry. Why should RADIO be left behind?**



<https://onboarding.connectedrad.io>

## Provide Xperi with:

1. **Static data:** Station call letters, logo, name, slogan, etc.
2. **Streaming URL:** When your over-the-air signal fades, the listener transitions to your stream.
3. **Live data from the station's programming system:** Title and artist of songs, name of advertisers from ads running, DJ name/photo





**Thank you!**