

MENTZ

MAGAZINE

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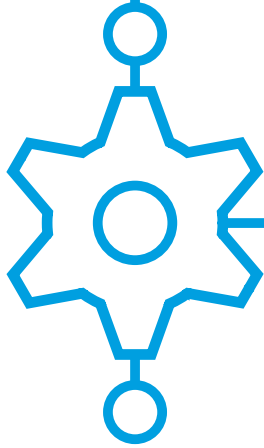
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yes – but for everyone!



Christoph Mentz
Managing Director
MENTZ GmbH

Networked Visions – Mobility Takes New Directions

Dear Readers,

Approx. 16,000 straight-line kilometers separate our headquarters in Munich, Germany from the Australian metropolis of Sydney. In earlier times, travelling from Europe to the land down under would take months. Now, we are able to improve the mobility of millions of people from this side of the globe in milli-seconds from the cloud. In this issue of our magazine, we report on how we have pushed the boundaries of what is currently possible with our intelligent timetable planning and innovative spirit.

Our main article takes you to Australia, where we took a true leap forward in modernization with EFA 11. Switching to a Linux-based container architecture helped improve response times for routing by an impressive 65%. Thanks to autonomous, AI-powered scaling, the system now reacts like a quick-twitch reflex to peak loads and guarantees an availability of 99,99% – a new global benchmark for next generation trip planning systems.

Behind the scenes, we are attempting to redefine efficiency for operational planning. Using the theme »batchfile-ade,« our colleague Christoph Fulga presents MENTZ Workflow. This modularly-designed solution turns rigid processes into automated workflows and provides our customers with a totally new flexibility for data supply.

Our project with the VRN region proves that digitalization can be made to serve people, both young and old. Using the new parent-child function and the unique straight-line fare for children, we have literally made public transport »child's play.« Minors can now check in on their own, while parents maintain full control of the costs in real-time – an innovation that reduces barriers and helps the next generation of passengers reach their destinations.

We continue to prioritize transparency in duty planning. In collaboration with the Transport Authority of Innsbruck (IVB) we developed a comparison for total workloads that immediately visualizes deviations in blocks, providing a massive help to planners dealing with road/track work or timetable changes. Similarly, with its new display of parallel services, the EFA trip planner ensures that passengers get a clear overview of their options by loss of connection.

This issue is topped off with two of our most recent milestones both abroad and in Germany: we celebrated a significant technological success with the premiere of the MENTZ Event Management Systems (EMS) in Great Britain, and took the next big step for digital mobility in Germany by marking the successful start of VGN's »egon« check-in-check-out system.

The entire MENTZ team wishes you inspiration while reading this issue about the mobility of tomorrow.

Sincerely,
Christoph Mentz



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»Deviations Front and Center«
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comparison brings more transparency
to duty schedule planning

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INTELLI- GENT TIME- TABLE PLANNING

Next generation mobility: the evolution of our EFA in Australia



Our EFA 11 Trip Planner, a state-of-the-art platform designed to meet the growing demands of one of the world's most dynamic and modern cities. This new system leverages cutting-edge technology and deep institutional knowledge to offer Australian commuters, residents, and visitors a seamless, accurate, and highly personalized travel planning experience. Australian commuters, residents, and visitors a seamless, accurate, and highly personalized travel planning experience.

Topic
EFA 11 in Australia

Technology
Cloud-based, real-time trip planning for global cities

Focus
Scalability and Security

Contact
Pascal Schwarz

Re-Engineering for Elasticity: The Shift to Linux and Containerization

While MENTZ's EFA system has a proven history of powering transit data in major Australian cities, the next phase of mobility required a modern leap. Current regional requirements now call for a cloud-native architecture designed to handle the complexities of a sophisticated metropolitan network.

Containerization and Orchestration

One of the most significant technical upgrades in the EFA 11 system is the move away from a traditional Windows-based server setup. By switching to a Linux-based container strategy using Docker, MENTZ has fundamentally changed how the trip planner handles the massive data loads. The key benefits are described in the following paragraphs.

Performance Gains

The shift to Linux and docker based deployment resulted in a 65% improvement in trip planning response times and therefore, providing a better customer experience.

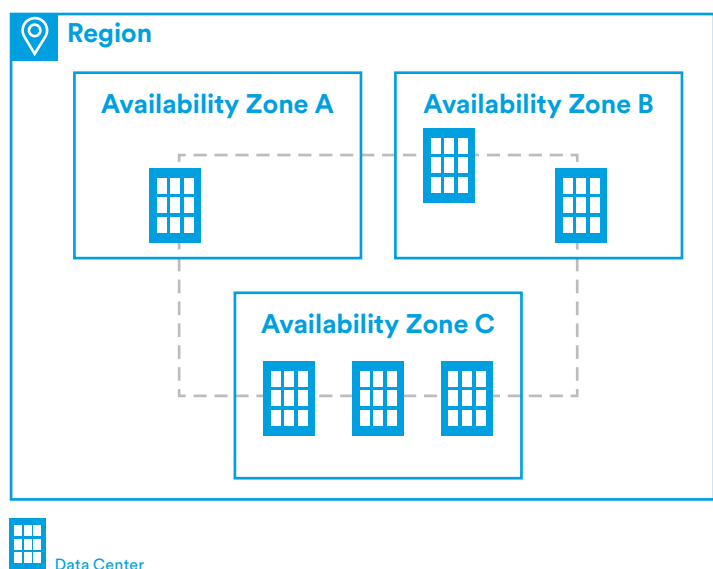
Scaling

The scaling of the system works completely autonomously without the need for any human intervention. The scaling strategy consists of two pillars. We combined AI-driven predictive scaling with Load-based Dynamic Scaling. By combining these two policies, the auto scaling group acts with both »foresight« and »reflexes«.

- The AI predictive scaling uses Machine Learning to analyze historical data. It forecasts traffic patterns and proactively launches instances before a predicted spike occurs.
- The dynamic scaling uses real-time CPU information of the cluster to trigger scaling events. This policy ensures the CPU stays below the configured 50% target guaranteeing best response times and a system with no hiccups.

With that setup in place the system can easily handle well over the 300 million requests received per month that are distributed unevenly depending on the time of the day, weekday or due to special events or disruptions in the network.

»The collaboration between Australia and MENTZ serves as a model for how established public transport operators can modernize without losing decades of experience.«



99.99% Availability

The architecture is distributed across multiple AWS Availability Zones (AZs) within the local region. The Auto Scaling Group (ASG) is configured to balance the fleet across these zones. If a single data centre (AZ) experiences a technical failure, the ASG automatically detects the »unhealthy« instances via Route 53 health checks and the Application Load Balancer (ALB). It then re-provisions the necessary capacity in a healthy zone, maintaining 99.99% service availability without manual intervention. That means the system guarantees less than 52 minutes of downtime per year.

Lightweight Efficiency

Traditional Windows setups require a full, »heavy« operating system for every EFA instance of the trip planner. Therefore, under the previous Windows-based setup, preparing a new server instance to handle extra traffic often took more than 10 minutes. Linux containers are much more streamlined because they share the core of the host system. With the new Linux containers, the system can prepare new EFA instances in less than two minutes. This allows the network to respond almost instantly to sudden spikes in demand.

Reduced Carbon Footprint

The enhancements in performance paired with efficient resource allocation lead to a reduced carbon footprint. Optimizing system operations means that computational tasks are completed faster and with less energy consumption. The move towards more streamlined and sophisticated Docker containers running on Linux ensures that every cycle of processing power is utilized to its maximum potential, reducing wasted energy. Automatic scaling of infrastructure ensures that resources are only used when they are needed which contributes significantly to energy savings. The holistic result is a demonstrably smaller ecological footprint for the entire system.

Infrastructure as Code with OpenTofu

MENTZ has transitioned from »ClickOps« (manual setup and management of cloud infrastructure) to a full Infrastructure as Code (IaC) strategy using OpenTofu.

The OpenTofu (the open-source successor to Terraform) implementation ensures consistency and repeatability. Every load balancer, VPC subnet, and EC2 instance in the AWS region is defined in declarative code. This eliminates »configuration drift,« where manual tweaks over time make a system unpredictable.

Another big advantage is that by using OpenTofu modules, MENTZ can rapidly replicate tested environments. If a new experimental transit mode is launched within the jurisdiction, the infrastructure to support its trip-planning logic can be deployed in minutes, following the exact security and performance blueprints of the core system.

A Multi-Layered Security Architecture

When handling millions of requests daily for a government entity, security needs to be a top priority. The MENTZ SaaS solution adheres to a »Defense in Depth« strategy. This approach focuses on high availability, automated threat response, and strict network isolation to handle millions of real-time transit queries securely.

Amongst others the following are the key pillars of the implemented security strategy:

Perimetric Protection with AWS WAF

AWS WAF (Web Application Firewall) is deployed at the load balancer level to filter malicious HTTP/HTTPS traffic. It protects against common exploits like SQL injection (SQLi) and Cross-Site Scripting (XSS). Furthermore, WAF is specifically tuned to manage automated scrapers and bots that attempt to harvest real-time transit data, ensuring API availability for legitimate human users.

Intelligent Threat Detection with GuardDuty

Amazon GuardDuty serves as the »eyes« of the environment, using machine learning to analyze Virtual Private Cloud (VPC) Flow Logs, DNS logs, and AWS CloudTrail events. It has built-in anomaly detection and identifies suspicious activities

such as unusual API calls, compromised IAM credentials, or potential data exfiltration.

Service Health & Event Monitoring

AWS Health Events are used to monitor the underlying infrastructure, allowing the team to receive proactive notifications about service degradations or scheduled maintenance that might impact SaaS uptime. On top of that, the monitoring tool CloudWatch provides dashboards and triggers alerts in case of performance issues.

Network Isolation & Segmentation

The architecture is strictly segmented into three tiers to limit the impact of any potential security event. A 3 tier segregation is best practice and a defacto industry standard for cloud deployments. The tiers consists of:

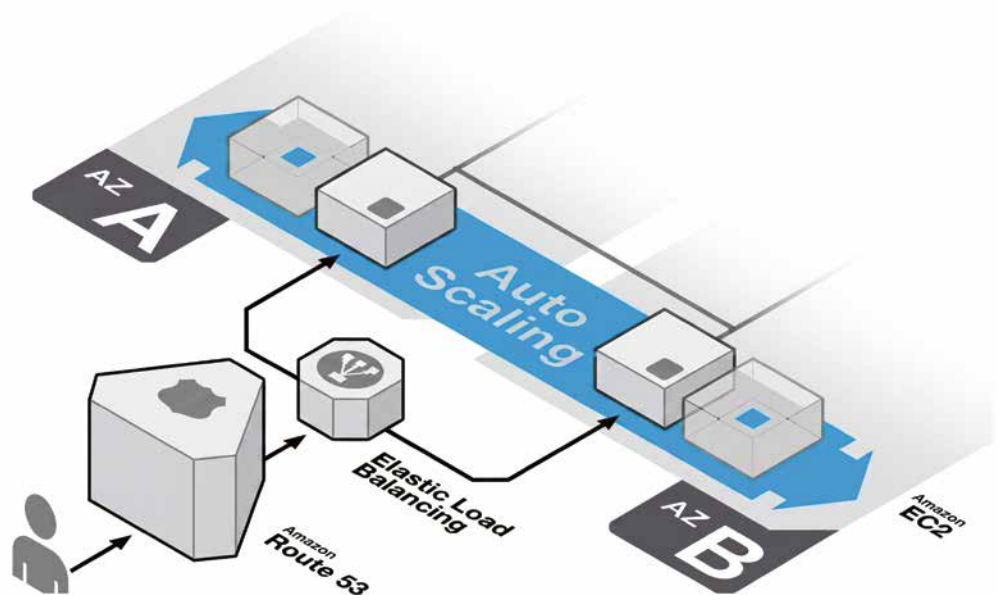
- Public Frontend: Contains only the Application Load Balancers (ALBs) and NAT Gateways, acting as the only controlled entry points.
- Private Frontend & Backend: All application servers (where the EFA containers are running) and Lambda functions (serverless functions which run bespoke jobs, such as deleting files) reside in private subnets with no direct route to the internet.

- Private Backend: The elastic file system (EFS) also resides in private subnets with no direct route to the internet.

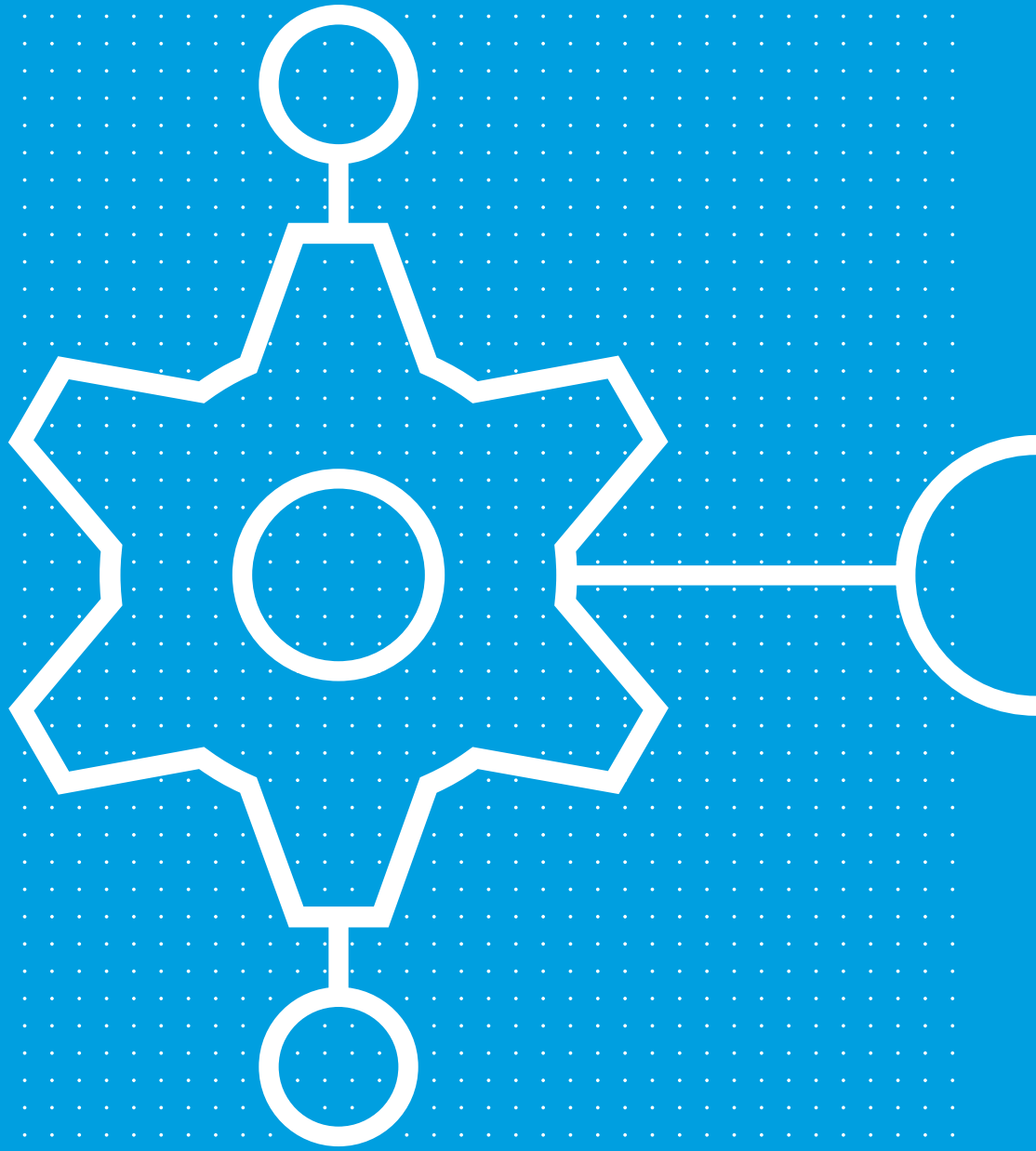
The VPC is isolated using Network Access Control Lists (NACLs) and Security Groups to enforce the principle of least privilege for all traffic between microservices.

A Blueprint for Global Cities

The collaboration between MENTZ and its partners serves as a blueprint for how well-established public transport authorities can modernize without discarding decades of accumulated domain expertise. By combining the proven logic of the EFA engine with the stability, efficiency and agility of cloud-native SaaS and the intelligence of OpenSearch analytics, we are setting a new global standard for what a »Next Generation Trip Planner« should be.

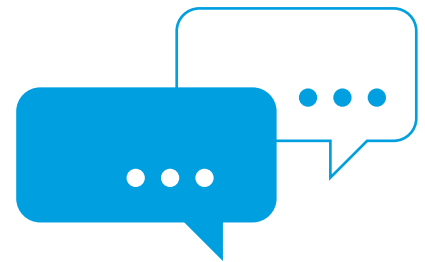


PROCESSES



RE- DESIGNED

Batchfile-ade – due to its modular design, MENTZ Workflow simplifies customer-specific supply of trip planning systems. Starting in 2027, it will require a license. Our in-house expert Christoph Fulga has been creating new process chains in Austria for several years. In the following interview, he explains what this background tool is all about.



Topic
Automated process control

Product
MENTZ-Workflow

Contact
Christoph Fulga

The interview was conducted
by Rainer Hennig.

Even if the MENTZ Workflow module is widely used, users might have never heard of or seen it. So the most important question first: what are we actually talking about?

Christoph Fulga: To be candid: we are talking about a background program that over the years has converted a number of standard process chains from fixed batch file settings to an automated ›trick box.‹

What is a typical example of a standard process chain?

Christoph Fulga: Something like scheduled or manually triggered daily routines on a DIVA app server. For instance, a data import could be programmed at 8 am, followed by quality control processes, and subsequent conversion to EFA. An automatic email concerning process success would confirm the flow of information. Beyond that, individual processes can be additionally monitored in logs.

»There's a lot of brainwork behind this new automation technology.«

Starting in 2027, the MENTZ Workflow module will require a license. Why now, when it has been in productive use for some time?

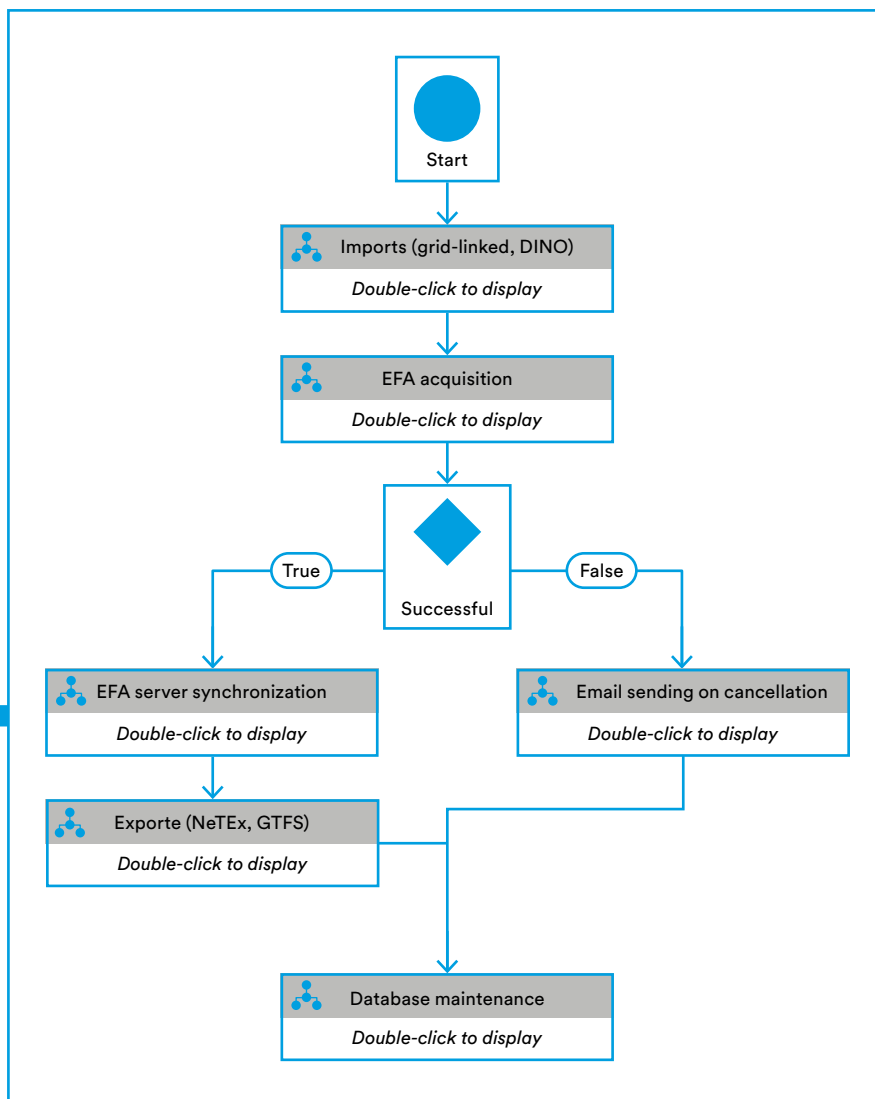
Christoph Fulga: Even though MENTZ Workflow has not required a license while being used, new software does have its price. There's a lot of development and brainwork behind this new automation technology. The product has now reached a range of functions that enables standardized use. For this reason, we decided to require a license for it.

For many years, batch files were a proven tool to automate various processes. What benefits have emerged in customer support when utilizing the new module?

Christoph Fulga: The truth is that batch files are pretty complex, error-prone, and require a high degree of maintenance. Once a batch file is created, it's not usually modified. In fact, with MENTZ Workflow, these static, one-and-done created processes belong to the past. Even when designing a process, later modifications are already ›preprogrammed.«



Christoph Fulga
Project Manager and Support
at MENTZ in Austria



MENTZ Workflow is a powerful tool to automate processes. Its modular design lets users create custom dataflow processes and keep them flexible to accommodate future modifications. The development project was greenlighted back in 2018 and is currently utilized most frequently in DIVA. It is, however, generally compatible with other MENTZ software environments.

Example of a process chain using MENTZ Workflow

Less static – what does that mean in practice for current and future dataflow processes?

Christoph Fulga: If necessary, MENTZ Support can modify subprocesses with much less work than before. This results in increased flexibility and greatly assists troubleshooting and bug fixing.

And finally, I have a more personal question: among support colleagues you are known as »Mr. Workflow.« How did you come to receive this honor?

Christoph Fulga: First off, even though support colleagues do sometimes call me

»Mr. Workflow,« our products always involve a lot of teamwork. Technical development is our backbone, so I might put it this way: I helped shape the technical aspects of the tool. And this is closely connected to my time at MENTZ because I have been part of the company for about eight years. In my first few months on the job, we rolled out a workflow process chain for an Austrian data collection system. Since then, I have been considerably involved in the operation, support and development of the system's dataflows. Currently, the chain is quite complex and basically works around the clock. And finally, I can say that I have a certain fondness, even outside work, for technical optimization.



MOBILITY AS CHILD'S PLAY

Digitalization in public transport: yes – but for everyone!

The Transport Authority of Rhein-Neckar has reached a new milestone in the digitalization of public transport with two new products: the straight-line fare for young people and the new parent-child-function in the myVRN app.



Topic
Check-in-check-out system
in the VGN region

Customer
Transport Authority of Greater
Nuremberg (VGN)

Project/Product
Ticketing, check-in-check-out

Contact
Julia Lebert, Frank Merkel

Who Invented it?

On 1 January 2015, the Transport Authority of Rhein-Neckar (VRN) introduced an electronic fare for smartphone users (e-fare) based on the Touch&Travel system that was used in Heidelberg at that time. Trips within Heidelberg were no longer to be billed at the flat rate for a fare zone, but related to the distance per straight-line kilometer between origin and destination stop. On 11 March 2015, this nationwide unique pilot project was awarded the 2015 Innovation Prize for Public Transport at the 7th Congress of the State Government of Baden-Württemberg in Freiburg, Germany.

Two years later, the innovative straight-line fare was rolled out in the entire Rhein-Neckar network area and received a network-wide daily and monthly price cap. In the meantime, this pricing model has been successfully used in many other parts of Germany.

As part of the pricing reform of 2022, a new best price principle was added to the VRN straight-line fare, mainly due to the fact that there were a few exceptions when the straight-line fare was not less expensive than the regular ticket price. Applying a best price guarantee per trip ensures that passengers no longer need to consider which fare might be the best final price

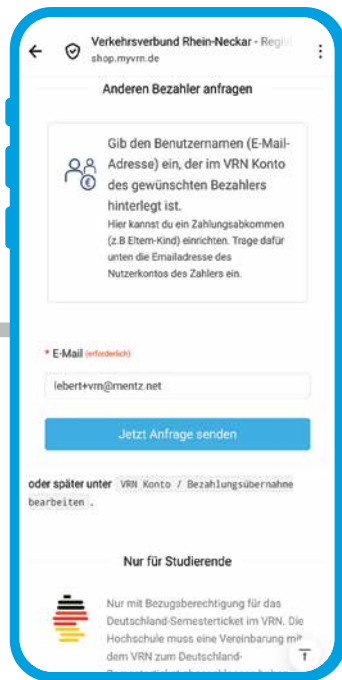
for their specific route: the fare charged is always the least expensive option for passengers. Combined with the daily and monthly price cap, occasional riders receive a digital product offer that is simple and flexible, and an unbeatable deal.

And that is not all: up to four people over six years old can ride with the main ticket holder for half price, regardless of their age – thus the straight-line group ticket was born.

One For All – the myVRN App

At the same time, the new straight-line fare with a best price guarantee was offered in the myVRN app using the check-in/check-out function. Previously, this had only been possible using a separate app. So, from that moment on, mobility trip planning and digital payment with best price guarantee was all in one app.

Our product took a back seat when nationwide flat-rates, like the 9-Euro-Ticket and the Deutschland-Ticket were politically initiated. Having to face such strong competition meant that our product was not used as readily. For all its advantages, it still had two shortcomings: age restrictions meant that children and young people travelling alone could not use it and access restrictions associated with digital payments meant that it found limited use among older adults.



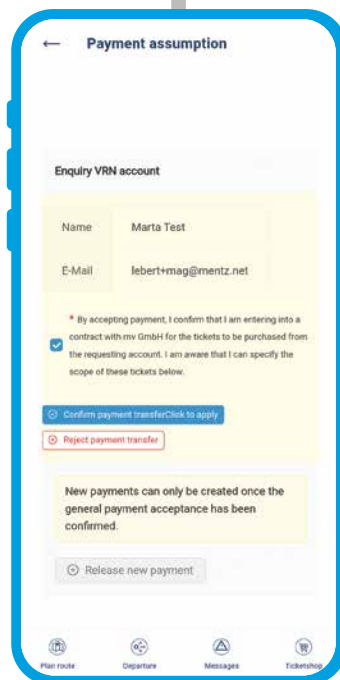
01

Child sends
parent request
at registration

The First National Straight-line Fare for Young People Travelling Alone with Self-check-in and Parent-Child Function

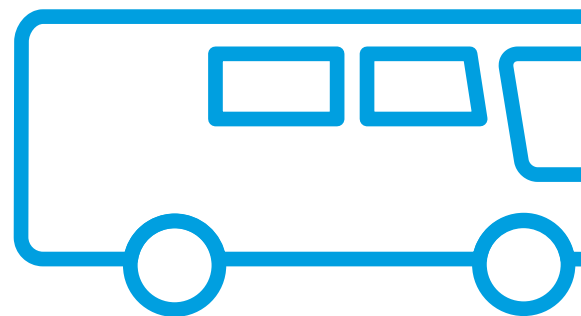
Young people should be able to ride public transport as easily as adults. This is why, in 2025, the VRN and MENTZ implemented a new payment transfer function in the myVRN app. It works like this: a child account is linked to a parent account for payment. A parent has full control over the budget and product access and can manage everything in real time. One can choose between a fixed budget per day (or another period of time), a subscription to the Deutschland Ticket, and the straight-line fare with best price guarantee using check-in/check-out.

Now in 2026, the VRN continues to lead innovation in the public transport sector. Unique in Germany is the new straight-line fare for young people, which includes a 30% discount on the adult price for all children under 14. It can also be used independently by those under 18 with the check-in/check-out function. For most kids under 18, using a smartphone is easy – and using public transport should be too. Always the lowest price, no consideration of different ticket types and their underlying price calculations, full flexibility, limitless mobility, and absolute security.



02

Parent confirms payment
transfer



On 1 January 2026, the VRN introduced a new, unbeatable monthly cap to use the VRN straight-line fare. This deal is only 5 Euros more than the price of a Deutschland Ticket. It lets anyone who wants to ride spontaneously, but remain inside the VRN network, and not regularly use public transport, enjoy more freedom of movement.

The parent-child-function is a big step forward for seniors too. If someone does not have their own PayPal account or a credit card, their (adult) child can take on payments in the myVRN app using the parent-child function.

These are only family examples. Of course, one does not need to be related to another user in order to take advantage of the payment transfer function.

Payment assumption

× Create payment

Amount Subscription **Direct route fare**

Validity

From
03/06/2026

Until
03/07/2026

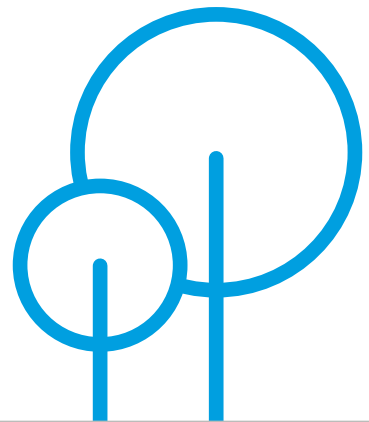
Payment will be made in accordance with the applicable airfare rates. The best price per trip and the maximum prices will be applied. Passengers and the use of first class are excluded. Further information: <https://www.vrn.de/luftlinienentart>

Abbrechen Create payment

Plan route Departure Messages Ticketshop

03

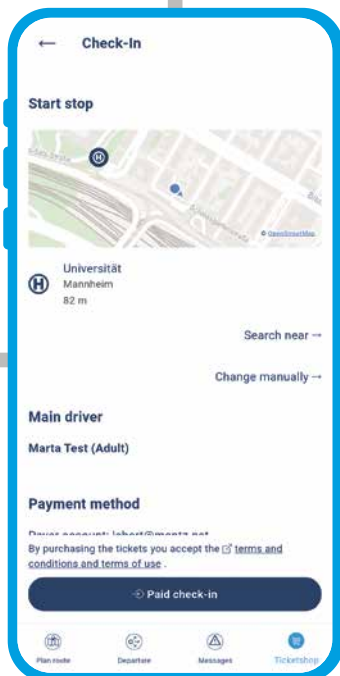
Parent sets payment
for straight-line fare





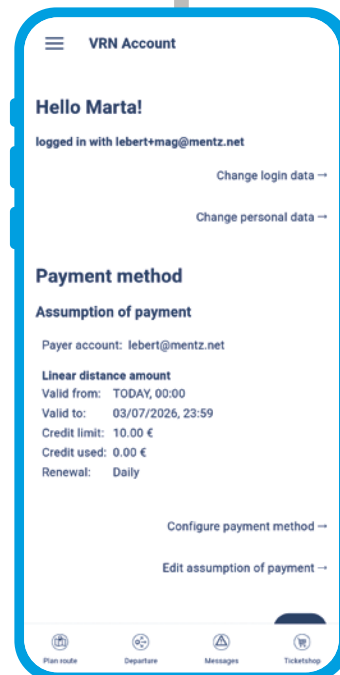
05

Child views ticket on the details page



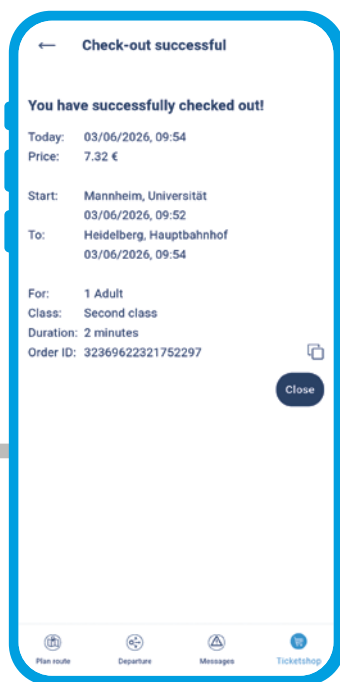
04

6-year old child checks in to the s-l fare



06

Child views past purchases through the ticket shop



Child receives
information
about successful
check out



MENTZ NEWS



VGN Starts with Check-in-Check-out System egon

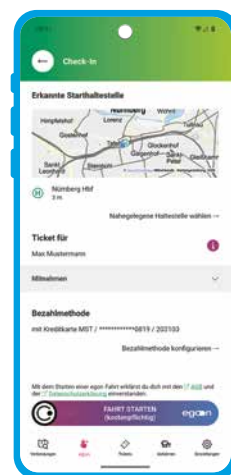
One swipe and the trip begins: in collaboration with the Transport Authority of Greater Nuremberg (VGN), MENTZ has successfully launched »egon,« a check-in-check-out ticketing system. Although the system is simple as can be for passengers, be assured that the latest made-by-MENTZ ticketing technology is working in the background.

With egon, the VGN is using a proven method in the MENTZ Gullivr app:

- **Integrated customer retention:** frequent riders are rewarded with monthly discounts.
- **Intelligent tracking:** after check in, the app automatically recognizes a user's location and tracks the route. No further action is required.
- **Transparent straight-line fare:** the price for a trip is determined from a daily base rate plus the kilometers travelled. Kilometers are calculated from the straight-line distances between the individual route sections.

- **Integrated customer retention:** frequent riders are rewarded with monthly discounts.

The successful launch of egon proves the meaning of innovative and transparent solutions for public transport authorities. The long-term partnership between the VGN and MENTZ has passed yet another significant milestone.



Translink Starts with MENTZ Ticketing in Northern Ireland

About a year after launching the Gullivr app, Translink and MENTZ have officially rolled out an integrated ticket shop. The app has developed into a key companion to public transport use in Northern Ireland.

Rail travel is now more convenient than ever. Passengers benefit from a true one-stop-shop experience:

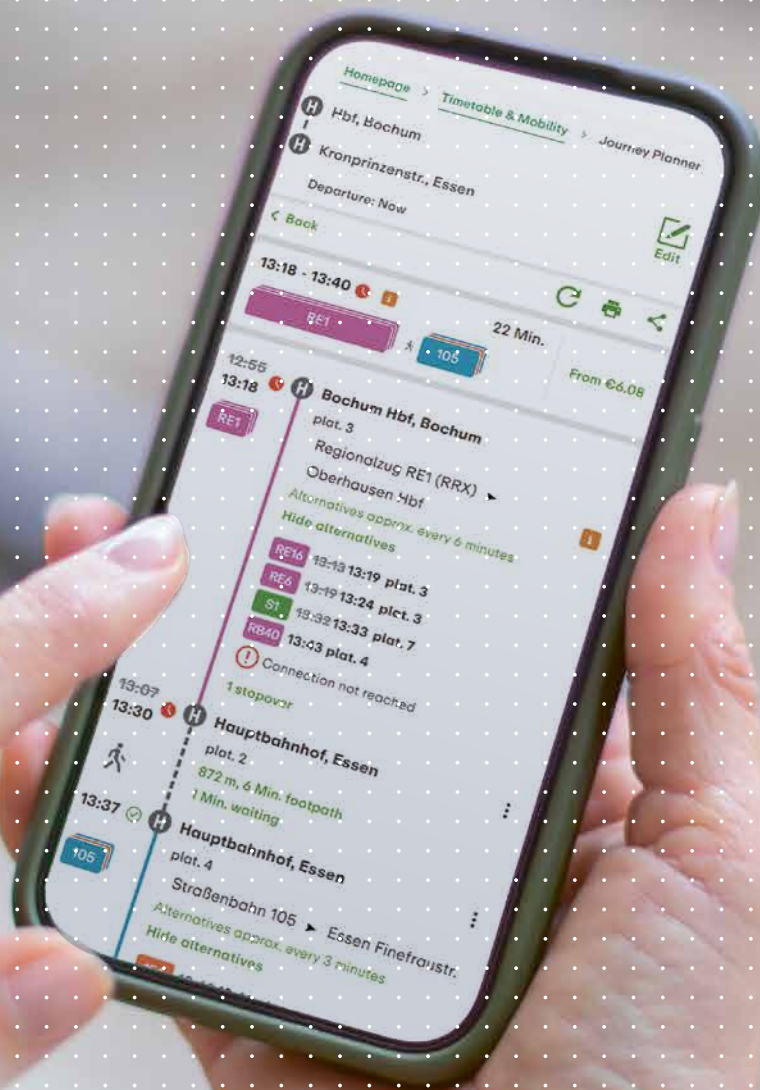
- **Ease-of-purchase:** tickets can be purchased directly in the app – no login required.
- **Diverse methods of payment:** full flexibility with integrated PayPal, credit card, Apple and Google Pay options.
- **Secure & transparent:** purchased tickets are directly stored in the app and sent by e-mail.

With this upgrade, MENTZ has underscored its ability to seamlessly integrate complex ticketing solutions in existing trip planning systems. Later this year, the range of available tickets will be expanded.

For passengers in Northern Ireland, this reinforces the main point: planning, information, and purchase are all combined into a single app.



EFA: PARALLEL SERVICES



The EFA trip planning system now displays dynamic alternatives to more accurately show the robustness of routes. Passengers thus receive direct information about service frequencies and parallel trip options – especially for losses of connection or route bundles.

More Information to Meet Expanded Passenger Needs

Beyond the classic origin-destination trip planning, the system now responds to additional requests:

- **Robustness of connection:** displays alternatives on individual route sections of the trip
- **Loss of connection:** for delays, determines the next available option along the planned route
- **Route alternatives:** display of parallel services with identical interchange or exit points

- **Multiple services on a (partial) route:** display of the next departures of all relevant alternatives

Each trip update also automatically adjusts the information about service frequency. Passengers are thus in a better position to assess whether they should wait for a specific trip or should remain flexible and switch to a better option.

Note

These new paid features are available in EFA and for display in SL3+ and Gullivr. If interested, please contact our MENTZ support.

Topic
Parallel services and frequencies

Customer
VRR

Project/Product
EFA, trip planning

Contact
Katharina Kanne,
Dr. Christiane Steinhoff

Technical Background and New Features

EFA integrates alternative trip options directly in the trip planner and takes both individual user options and real-time data into account.

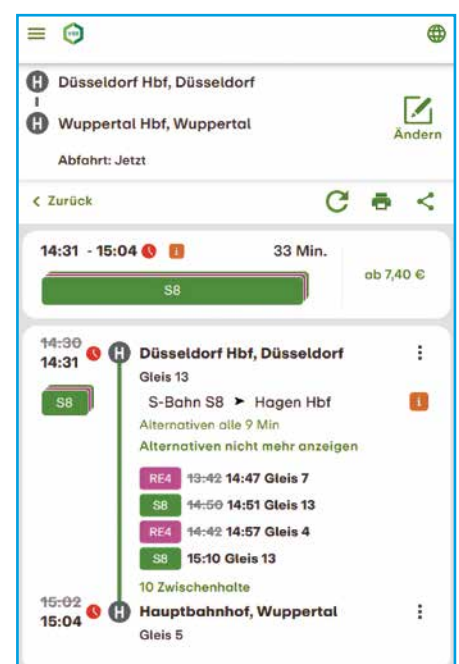
The previous function of »frequency services« was revamped and expanded:

- **Intermodal alternatives:** parallel connections of different means of transport are displayed together on route sections
- **Main line logic:** route bundles are detected and grouped as related alternatives

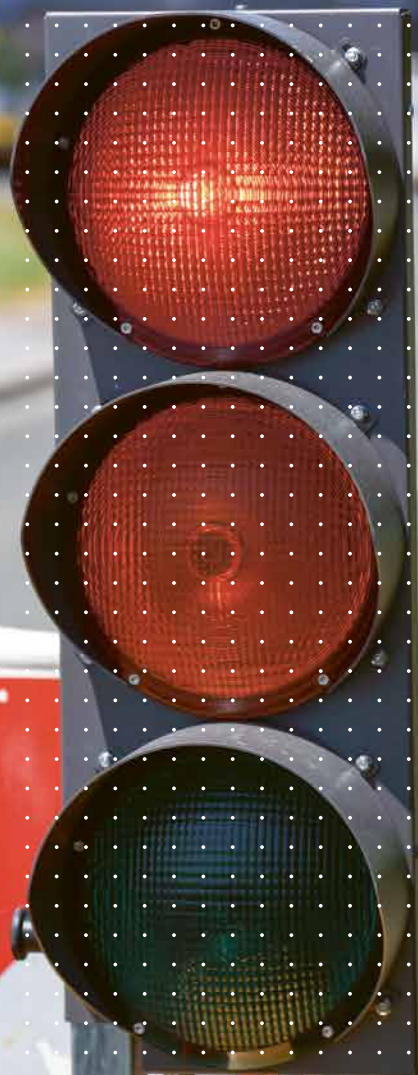
Display of Information

Depending on the situation, information is displayed in two variations:

- **Single service on a (partial) route:** display of service frequency



DEVIATIONS FRONT AND CENTER



Development of the total workload comparison brings more transparency to duty schedule planning

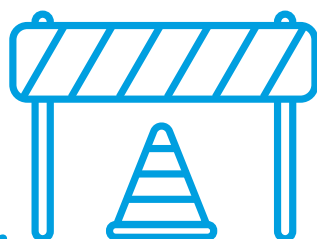
In the volatile world of duty scheduling, road/track work and timetable changes can quickly result in a great deal of administrative effort. In collaboration with the Transport Authority of Innsbruck (IVB), MENTZ developed a solution that perfectly applies to the situation described above: the new total workload comparison immediately visualizes changes to vehicle blocks across workspaces and thus optimizes the entire process, all the way to the printing of run timetables.

Topic
Comparing total workloads
for duty schedule planning

Customer
IVB-Innsbruck

Products
DIVA, duty comparison plugin

Contact
Elena Waldburger, Tobias Angles



When planning the duty schedule, the IVB bases their template on a workspace for the yearly timetable with corresponding day types. When road/track work or a special event occurs which effects duties, a new workspace is created with the same day types. This enables a direct comparison of day types with identical codes. Previously, planner Thomas Angerer and his colleagues were forced to perform time-consuming and meticulous work to determine whether a workload had been planned in different duties and if the relief point or relief time had remained the same.

Focus on the Most Essential

Planned workloads may only change in nuances, like by having minimal time differences, different relief points, or different duty numbers. The rest might remain the same. The newly developed tool provides a targeted list of block numbers and compares them based on defined criteria across the workspace. The comparison parameters can be freely selected: duty number, start time, end time, first stopping point, last stopping point, relief point, and relief time.

Poster workspaces < Compare total workload >

Details

Drag a column header and drop it here to group by that column

Status	Timetable project	Workspace	Day type	Block number	Start time	End time	Duty number	Relief point	Relief time
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	201	04:53:18	23:51:06	1108, 1276, 1215	REM, ANI, ANI	04:53:18, 08:14:12, 12:35:00, 15:55:00
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	201	04:53:18	23:51:06	1108, 1276, 1215	REM, TMP, TMP	04:53:18, 08:14:12, 12:35:00, 15:55:00
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	202	05:01:42	20:09:48	1280, 1272, 1231, 1114	REM, TMP, TMP, TMP	05:01:42, 10:05:00, 13:25:00, 15:44:12
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	202	05:01:42	20:09:48	1280, 1272, 1231, 1114	REM, TMP, TMP, TMP	05:01:42, 10:05:00, 13:25:00, 15:44:12
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	206	05:31:18	23:29:48	1272, 1244, 1267, 1213	REM, TMP, TMP, TMP	05:31:18, 08:54:12, 12:14:12, 15:34:12
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	206	05:31:18	23:29:48	1272, 1244, 1267, 1213	REM, TMP, TMP, TMP	05:31:18, 08:54:12, 12:14:12, 15:34:12
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	208	06:01:18	23:21:06	1267, 1266, 1215	REM, TMP, TMP	06:01:18, 11:04:12, 15:25:00
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	208	06:01:18	23:21:06	1267, 1266, 1215	REM, TMP, TMP	06:01:18, 11:04:12, 15:25:00
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	210	06:16:18	20:54:48	1264, 1280, 1244, 1231	REM, TMP, TMP, TMP	06:16:18, 10:45:00, 13:04:12, 16:24:12
Differences	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	210	06:16:18	20:54:48	1264, 1280, 1244, 1231	REM, TMP, TMP, TMP	06:16:18, 10:45:00, 13:04:12, 16:24:12
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	501	04:40:18	23:30:42	1108, 1276, 1212	REM, ANI, ANI	04:40:18, 11:29:54, 15:05:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	501	04:40:18	23:30:42	1108, 1276, 1212	REM, ANI, ANI	04:40:18, 11:29:54, 15:05:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	502	04:48:06	20:40:42	1119, 1117	REM, ANI	04:48:06, 12:59:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	502	04:48:06	20:40:42	1119, 1117	REM, ANI	04:48:06, 12:59:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	503	04:57:18	22:54:54	1112, 1269, 1219	REM, ANI, ANI	04:57:18, 12:19:00, 15:19:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	503	04:57:18	22:54:54	1112, 1269, 1219	REM, ANI, ANI	04:57:18, 12:19:00, 15:19:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	504	05:01:18	20:10:42	1118, 1102	REM, ANI	05:01:18, 12:29:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	504	05:01:18	20:10:42	1118, 1102	REM, ANI	05:01:18, 12:29:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	505	05:08:06	20:04:54	1304, 1110	REM, ANI	05:08:06, 12:39:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	505	05:08:06	20:04:54	1304, 1110	REM, ANI	05:08:06, 12:39:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	506	05:09:18	23:19:54	1277, 1134, 1216	REM, ANI, ANI	05:09:18, 12:09:54, 14:39:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	506	05:09:18	23:19:54	1277, 1134, 1216	REM, ANI, ANI	05:09:18, 12:09:54, 14:39:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	507	05:23:06	23:49:54	1273, 1262, 1211	REM, ANI, ANI	05:23:06, 12:49:54, 15:19:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	507	05:23:06	23:49:54	1273, 1262, 1211	REM, ANI, ANI	05:23:06, 12:49:54, 15:19:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	508	05:41:18	19:54:54	1270, 1240	REM, ANI	05:41:18, 11:19:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	508	05:41:18	19:54:54	1270, 1240	REM, ANI	05:41:18, 11:19:00
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	509	05:42:06	20:34:54	1269, 1234	REM, ANI	05:42:06, 11:19:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	509	05:42:06	20:34:54	1269, 1234	REM, ANI	05:42:06, 11:19:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	510	06:11:18	14:08:54	1265	REM	06:11:18
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	510	06:11:18	14:08:54	1265	REM	06:11:18
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	511	06:21:06	20:20:42	1262, 1239	REM, ANI	06:21:06, 11:59:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	511	06:21:06	20:20:42	1262, 1239	REM, ANI	06:21:06, 11:59:54
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	512	12:53:06	20:24:54	1238	REM	12:53:06
Not available	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	512	12:53:06	20:24:54	1238	REM	12:53:06
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	521	04:40:18	23:21:06	1108, 1276, 1215	REM, ANI, ANI	04:40:18, 11:29:54, 15:05:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	521	04:40:18	23:21:06	1108, 1276, 1215	REM, ANI, ANI	04:40:18, 11:29:54, 15:05:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	522	04:48:06	20:40:42	1119, 1117	REM, ANI	04:48:06, 12:59:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	522	04:48:06	20:40:42	1119, 1117	REM, ANI	04:48:06, 12:59:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	523	04:57:18	23:30:42	1112, 1269, 1219	REM, ANI, ANI	04:57:18, 12:19:00, 15:19:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	523	04:57:18	23:30:42	1112, 1269, 1219	REM, ANI, ANI	04:57:18, 12:19:00, 15:19:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	524	05:01:18	20:10:42	1118, 1102	REM, ANI	05:01:18, 12:29:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	524	05:01:18	20:10:42	1118, 1102	REM, ANI	05:01:18, 12:29:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	525	05:08:06	20:04:54	1304, 1110	REM, ANI	05:08:06, 12:39:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	525	05:08:06	20:04:54	1304, 1110	REM, ANI	05:08:06, 12:39:54
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	526	05:09:18	23:04:54	1277, 1134, 1216	REM, ANI, ANI	05:09:18, 12:09:54, 14:39:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	526	05:09:18	23:04:54	1277, 1134, 1216	REM, ANI, ANI	05:09:18, 12:09:54, 14:39:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	A_Jahresdienstplan (26)	11 - Mo-Do Schule	527	05:23:06	23:29:48	1273, 1262, 1211	REM, ANI, ANI	05:23:06, 12:49:54, 15:19:00
New	26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)	Ba_Rauchmühlbrücke 07-29-01, (26)	11 - Mo-Do Schule	527	05:23:06	23:29:48	1273, 1262, 1211	REM, ANI, ANI	05:23:06, 12:49:54, 15:19:00

50 elements

Filter total workload

Plan 1

Project:

26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)

Workspace:

A_Jahresdienstplan (26)

Optimization workspace:

Not selected

Workload groups:

Event:

All

Day type group:

1 - Schule

Day type:

11 - Mo-Do Schule

Plan 2

Project:

26 - abweichender Fahrplan (12/14/2025 - 12/12/2026)

Workspace:

Ba_Rauchmühlbrücke 07-29-01, (26)

Optimization workspace:

Not selected

Workload groups:

Event:

All

Day type group:

1 - Schule

Day type:

11 - Mo-Do Schule

General

Depot:

All

☒ Only display discrepancies

Comparison arguments

☒ Duty number

☒ Start time

☒ End time

☒ First stopping point

☒ Last stopping point

☒ Relief point

☒ Relief time

Options for selecting comparison arguments

Display Reset

Comparison view with colored status column and highlighted deviations

A key advantage for daily work is the color display of the status column:

- Differences (Orange):** marks workloads that are available in both workspaces, but are different in selected criteria. These deviations are highlighted in color for quick identification.
- Not available (red):** immediately shows which workloads are missing in the comparison workspace.
- New (green):** marks additional workloads that have been added to the comparison workspace.

Seamless Integration

In order to maximize its use, the new function was integrated into the existing duty comparison license. This enables planners to use the new comparisons in a way that is familiar to how they work with duty comparisons. The icon of the new comparison can be found in the ribbon bar under »total workload.«

The comparison can be easily exported to Excel or to a run timetable, if print marks are set. In sum, a solution was developed that provides long-lasting relief for duty schedulers.

Would you like to learn more about the total workload comparison, or how it can be optimally integrated into your work flows? Please get in touch!

Overview
 Bar chart
 Compare work quantities

Comparing total workloads
Opens the comparison view

Direct access to the ribbon bar

14-15 JULY

6TH INTERNATIONAL
USER GROUP IN
LONDON

3-5 NOVEMBER

SMART CITY
EXPO WORLD
CONGRESS
BARCELONA

EVENTS 2026

25/26 JUNE

DIVA/EFA
USER GROUP
IN MANNHEIM,
GERMANY

22-25 SEPTEMBER

INNOTRANS INTER-
NATIONAL TRADE FAIR
FOR TRANSPORT
TECHNOLOGY
BERLIN, GERMANY

MENTZ WORLD WIDE

London

Great Britain

Melbourne

Chicago

Dubai



Premiere in Great Britain: A Milestone for British Public Transport

On 31 March 2026, MENTZ celebrated a significant technological achievement in the United Kingdom: the MENTZ Event Management System (EMS) was launched. In partner networks like the NPTI and Merseytravel, the system now functions as a central module to improve the quality of passenger information to a new level.

Technological Bridge Building Through Open Data

System implementation followed the British Open Data strategy, aiming for maximum standardization. In this setup, the EMS assumes the role of a high-performing, automated converter. Using a REST API, the system retrieves incident information in the national SIRI-SX 1.1 Standard from Bus Open Data Service (BODS) – a central

platform of the Department for Transport (DfT). The EMS filters these data according to the specific requirements of the regions, automatically transforms them, and exports them directly to the EFA trip planner.

Seamless Information – Efficiently Delivered

For passengers, the result is a consistent chain of information that runs from the national data feed to their smartphones. In order to render this project resource-efficient and highly scalable, MENTZ provides the EMS as an essential Software-as-a-Service (SaaS) solution. Thanks to its multi-client architecture, various partners can share the same technological infrastructure.

Looking into the Future

By successfully completing this project in Great Britain, MENTZ continues to prove its competency in making complex data-flows useful for both transport authorities and the Open Data community. But this roll out only marks the beginning: our successful and productive collaboration with NPTI and Merseytravel laid the groundwork for other innovations related to digital incident management in the United Kingdom.

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