The customer is king, even with regard to public transport. If it were left up to an individual passenger, the bus would pick them up at their front door and take them directly to their destination, making as little detour as possible, and the whole operation would be no more expensive than a coffee. In the past, this expectation of service was incompatible with the economic parameters in place for public transport providers. More recently, transport authorities and transport companies have had to cover their costs for personnel, vehicle fleet and infrastructure in the face of a decrease in funding and high elasticity in prices. But it is here that digitalization provides a path forward, making it possible to offer on-demand transport with more efficiency. Using an app for booking as well as having completely automated deployment in the control center, less personnel is required on the backend. At the same time, state-of-the-art optimization algorithms get the most out of vehicle scheduling. What sounds more like a research project has been in regular operation since last year’s timetable change at the Munich Transport and Tariff Association. This success story can be read starting on page 9.

Up to the time of printing, cross-border transit has remained temporarily and drastically reduced. The current conditions imposed by the virus stand in stark contrast to the long-term trend of neighboring countries becoming more closely knit together. An example is the Léman Express in the Geneva area, which transports commuters across the French-Swiss border every day. Despite the border crossing, phone reception remains strong. Starting this year, comprehensive passenger information with real-time data is also possible. Read how it was implemented beginning on page 5.

Munich’s public utility company (SWM) is also concentrating on providing comprehensive passenger information. Instead of dealing with international border crossings, the focus here is on consistency of information across a variety of output channels. When an interruption of service occurs at a station, information on visual displays may differ from what is announced over station speakers. This is not the case in Munich, where “alternative facts” are prevented: the PA system, the visual displays and the web are all fed by a common source. How these various elements are thread together in the event management system supplied by MENTZ is described starting on page 15.

I hope you enjoy reading this issue. Stay healthy!

Sincerely

Christoph Mentz
All European countries have economically benefited from the free exchange of goods and the freedom to travel. Ideas, concepts, people and businesses today can move effortlessly across national borders. MENTZ has developed a new data hub for the exchange of timetable and real-time data for the border region between Switzerland and France.

The project makes cross-border ticket offers a distinct future possibility. The basis for this optimism is two products developed by MENTZ: the “Dynamic Data Integration Platform” (DDIP) and the “Dialogue-controlled Information and Transport Information” system (DIVA).

Just in time for the timetable change on December 15, 2019, the largest cross-border commuter train network in Europe at 230 kilometers began operation in the region around the Lake of Geneva (French: Lac Léman). It includes six lines that operate under the name “Léman Express” (LEX). A core component of the network is a new line that provides a better connection between Geneva in Switzerland and Annemasse in France.
MENTZ developed the data hub required for exchange between the country-specific systems.

In order to ensure optimal passenger information, both railways have agreed to a direct exchange of timetable and real-time data – not only for their own train journeys, but also for the neighboring local transport services, which include buses, trams and cable cars. It was agreed to use European CEN standards NetEx (Network Timetable Exchange) for timetable data and SIRI (Service Interface for Real-Time Information) for real-time information.

Because timetable data in Switzerland is exchanged via “Hafas Raw Data Format” (HRDF) and real-time data via VDV format, MENTZ was commissioned to convert between the different standards.

Real-time data exchange via MENTZ DDIP

The SBB operates the nationwide real-time data platform “CUS” (Customer System). The MENTZ DDIP collects the real-time data for all of Switzerland and supplies it to the French partner system SNCF. On the SNCF side, there are two source systems for real-time: one for the train data – this is directly linked to CUS – and one for the bus data. The latter still has to be implemented on the SNCF side and in the future will be linked to CUS as a source through the DDIP.

Converting between data formats

In order to supply journey planners with real-time data, VDV has a data processing service called AUS for actual data and SIRI has the estimated timetable service (ET). In DDIP, the input or output format can be defined for each coupling partner. The incoming data is converted into an internal data model and can then be converted upon output into a format suitable for the recipient. Because the SIRI and VDV formats differ in certain small details, improvements were made to the DDIP data model to make the conversion as precise as possible.

Easy conversion through defined rules

The metadata supplied via VDV must be converted to make the SIRI real-time deliveries as compatible as possible with the NetEx data. As an example: a VDV stop ID “858884102”. In NetEx and thus SIRI, the stop is designated as “ch:1:ScheduledStopPoint:858884102”. Normally conversion would have to be done through cumbersome maintenance of conversion tables. But a newly developed feature in the MENTZ DDIP makes it easier by allowing precise rules to be defined on how to convert the data. In this simple case the rule states: “Put ‘ch:1:ScheduledStopPoint:’ in front of the stop ID”, but more complex rules across various metadata are also possible.

Timetable data exchange between Switzerland and France through DIVA

In the Swiss Confederation, INFO+ serves as a collection system for the target data of public transport from various sources. The data is imported into DIVA in HRDF format as a yearly timetable. It is then possible to uniquely assign NetEx specific elements (e.g., the NetEx offer category) to the data from HRDF, so that they can then be exported in NetEx format and supplied to the French railway SNCF.

From France, NetEx data is supplied from two different sources: one dataset contains the rail data from SNCF, the other includes data from various bus companies in the region. Both data sets are imported into DIVA using the newly developed NetEx import. Each data set is also made available to INFO+ and enables the SBB to include French target data near and across the border in its timetable.

Handshake with the Swiss DiDok interface

DiDok is the stop directory of the Swiss Federal Office of Transport and is operated by the SBB. All stops in Switzerland are documented with a unique ID consisting of a country suffix and DiDok number. This number is also used in other systems, e.g., INFO+. Through conversion of the French NetEx data, new stops are added to the Swiss INFO+ system, which would subsequently have to be entered into the DiDok. However, the DiDok interface now provides the option to directly control the DiDok system in DIVA. For example, it is possible to check whether a stop already exists in DiDok or directly transfer it to DiDok. A unique ID is assigned to the stop.

Hosting in the AWS cloud

The entire project is covered by MENTZ as a service called “Saas” (Software as a Service). In this arrangement, MENTZ takes on responsibility for technical management and the implementation is cloud-based. The software is operated using computers and services provided by Amazon Web Services (AWS).

To secure the exchange of real-time data over the internet, the OAuth procedure was implemented in addition to the existing option using a VPN tunnel.

Anecdote:
The software was fully implemented and productive right in time for the timetable change and the opening of the commuter train network. Just when railway operations were to begin, a general strike broke out in France. Some things are and remain out of our control...
All call-a-taxi operations in the district of Fürstenfeldbruck are now managed by MENTZ’s vehicle deployment system: from registering a passenger’s journey request over the journey planner (EFA) and MVV app, followed by fully automatic vehicle deployment, including capacity management of vehicles available, to relaying the route to the driver and response to the passenger. MENTZ was able to gain expertise with fully automated deployment of on-demand transport during a research project in the town of Schorndorf, Baden-Württemberg. The real-world experience from the project was incorporated into the solution for the MVV and now benefits the on-demand service in FFB.

Known issues with on-demand transport – the MENTZ solution

On-demand transport has grown significantly in recent years, not only in the district of Fürstenfeldbruck. It is regarded as one of the keys to the mobility of the future because it complements regular operation. In the district of FFB, tens of thousands of on-demand trips have been booked per year. Yet with such great success, on-demand transport operations have reached their limits. The issue: on-demand transport is seemingly difficult to plan.

It is challenging to predict when people need to be transported. Transport companies have to react on short notice and ensure that sufficient capacity is available. The planning effort involved in this endeavor is cumbersome. Previously, hundreds of daily trip requests had to be managed in a calendar, and drivers had to be called about each trip and informed where and when they should pick up which passengers.

In addition to operational hurdles, other challenges needed to be overcome like empty runs or multiple trips for just a single passenger. The procedure after a trip, to create an invoice and then check it, is very time and cost intensive. This is where the MENTZ vehicle deployment system is most advantageous: every step of an on-demand booking can be optimized and automated.

One-click on-demand transport – flexible and convenient

The common data of on-demand transport, operating times and public transport stops are stored in the MVV’s EFA journey planner. If a user sends a request through the MVV Companion 5 app or the MVV website, EFA automatically offers ideal routes that make use of on-demand transport. Now all it takes is one click to request on-demand transport and the booking is automatically processed and effected. Immediate feedback is provided whether the request can be fulfilled.

In addition to using digital media, passengers can also request a trip by calling the MVV call center. An agent will then book the individual trip request using a customized interface. In order for customers to be properly informed of the precise time the trip will occur, the telephone bookings can even be checked in the app or on the website. The call center can also cancel trip requests made over the phone. If necessary, every trip request can be also accessed and adjusted through all the various media channels. Booking of trip requests is seamlessly integrated into the existing EFA system. This means that customers are not forced to switch to an external website or app and reenter their details.

Since 15 December 2019, the Munich Transport and Tariff Association (MVV) has been using a fully automated MENTZ vehicle deployment system for on-demand transport. To this end, the MVV cooperates with the district of Fürstenfeldbruck and has integrated the former call-a-taxis into its digital timetable and booking platform.

»(...) the long-term goal was to introduce a smartphone app which enabled central booking and payment for all local transport services in the region.«

Hermann Seifert
Head of
Public Transport Division
on-demand transport in
the FFB district office
Alois Mühl and Martin Stöckle work at the MVV Munich Transport and Tariff Association. Their comments on the project can be found below.

Mr. Stöckle, what was the intention behind using the on-demand deployment system in its current form for the MVV’s call-a-taxi? This kind of transport has grown exponentially under the terminology “on-demand”. With the MVV’s call-a-taxi, the MVV has been offering a service for years that is flexible and integrated into the normal timetable and fare system. Previously, bookings were mostly made over the telephone. It was important for the MVV to be able to offer a simple “one-click” registration function for this service in EFA or the MVV app. In addition to intuitive usability, other important factors were seamless integration into existing channels (online journey planner, app), system compatibility with EFA and DEFAS, the cooperation with call center and (tele)booking system. Previously, automated deployment was focused on the essential system components and functionalities. Although MENTZ GmbH proved to be very flexible during the implementation phase, delays could not be completely avoided. That said, initial feedback from the associated companies and the political realm has been very positive!

How satisfied are you with the on-demand deployment system and are you already planning enhancements? The core functionalities of booking and deployment are very stable. However, we are quickly proceeding to make further improvements, to clear up smaller issues, to address yet to be implemented functionalities (like recurring booking), to develop improvements in cooperation with the timetable planners and based on initial experience in daily operations, and also to use the product to benefit other areas. The system will be implemented for other routes and clients later this year and will successively be expanded throughout the MVV network. In the intermediate term, we are also planning to integrate timetable-independent on-demand services.

Mr. Mühl, what insights do you have from the project’s development? The project timeframe was ambitious right from the start, as the new system was to go live on 15 December 2019. For this reason, development was focused on the essential customized to the operator’s requirements, like routing speed, vehicle transfer time, wait per stop, booking period, and when the trip is set.

The system only requires a few basic parameters to work properly. The software then automatically performs the tasks of deployment, optimization and pooling. One of the most important specifications is the general availability of vehicles and their seating capacities. Availability intervals can be entered for each individual vehicle, from weekdays from 4 a.m. to 6 a.m. to special days, holidays or major local events such as public festivals, soccer games, etc. These intervals form the basis for capacity management for future trip requests. It is also possible to fix the availability of individual vehicles to specific on-demand routes. For complete flexibility, the software also allows unrestricted deployment of routes. In this case, all vehicles are simply available as “spares” for all on-demand trips.

Barrier-free, also in on-demand transport To ensure that trips are fully accessible, vehicles equipped for wheelchairs are deployed on-demand. This means that an already pooled booking is automatically cleared and a suitable vehicle is subsequently deployed. An example: a normal minibus is deployed for a trip request that was received. A subsequent request from a passenger in a wheelchair could be covered by the previously booked trip, but the deployed vehicle is not equipped for wheelchair users. There is, however, an adequate vehicle in the available pool.

This equipped vehicle from the pool is then rescheduled and deployed differently, the previous request is transferred to the second vehicle. The originally scheduled minibus is now available for other booking requests. Throughout the process, the seating capacities of the individual vehicles are always taken into account.

Consistent information for all passengers of a trip If a cancellation is received, the route can be recalculated for the existing trip requests, when necessary. This up-to-date information is available to everyone – passenger, dispatcher and driver – at any time.

Shortly before the start of the trip, the planning, which had been flexible, is “frozen”. The trip is set, incoming trip requests are no longer considered for this trip. This feature ensures the stability and reliable processing of the booked on-demand trip. Passengers are informed about the exact time of the trip.

Perfectly customized web layout for the call center The results of the received trip requests and auto-deployed trips are visible for call center agents at all times. For this purpose, MENTZ gave the on-demand deployment system its own web-based access, customized to aid dispatchers, to display the calculated trips, as well as for driver feedback. The system is fully client-capable and perfectly integrated into the system. Operators are provided a full overview at all times, including all

Alois Mühl and Martin Stöckle, MENTZ Munich Transport and Tariff Association
Mr. Seifert, what was the thinking behind Fürstenfeldbruck using MVV on-demand transport in its current form?

On-demand transport has been with us for a while. It started in 1998 with an agreed fare and soon became an extensive system for all 23 district communities. In 2015, it was integrated into the MVV fare. Along with the MVV busses, we now offer public transport services >round the clock< with a standard fare. One of our focal points is the digitalization of public transport and our long-term goal was the introduction of a smartphone app in which centralized booking and payment was possible for all public transport services in the region. By implementing the on-demand transport app with MVV and MENTZ, an essential component of this project has been successfully completed.

What kind of feedback have you received from passengers so far?

In the District of Fürstenfeldbruck, an existing system was converted. Have passengers already got accustomed to the new booking process? The existing system was intelligently augmented. Passengers who prefer personal contact when booking can still book by telephone. The new feature is the exclusive deployment of vehicles for trips through the booking tool, both when booked by telephone and from the app or internet. The app is a hit with passengers that use their smartphones for everything. But as can be expected, some passengers have to get used to the new specified route without special requests every now and again.

How satisfied are you with the MVV on-demand transport system and are you already planning enhancements?

The booking tool has already significantly increased the efficiency of trip planning after only a short period of time. Continuous development as part of regular coordination meetings is important to us. It is also expedient to set up similar systems throughout the entire MVV area and network them in a way that is attractive to customers.

Mr. Seifert, thank you for answering our questions.

Details of individual bookings and calculated times at the respective stops. The overview page also shows when drivers already en route have seen and accepted the trips planned for them, or whether they gave reasons for rejecting them.

An additional tab conveniently creates a list of all individual trip requests. To protect sensitive data, user details such as the names are hidden for call center agents. Only administrators are able to view user details to be able to contact passengers directly in case of unforeseen events like a vehicle breakdown. For this and similar types of emergencies, there is a useful filter option to trace how vehicles were deployed and what to do if a vehicle suddenly needs to be taken out of service.

Always in direct contact with the driver thanks to the driver app

The MENTZ on-demand deployment system also includes its own driver app that is optimized for use on tablets. The app clearly lists the routes to be driven. The currently status of deployment is always visible. This can change up until the time routes are “frozen.” The driver taps to send feedback to the control center and confirms the trip. If incidents like vehicle failure occur, trips can also be subsequently rejected so that the dispatcher can intervene and order another vehicle.

Automized statistics – accounting without the effort

Drivers see the calculated trip route and other details, such as whether the user is boarding or alighting. They can also view the individual stops in a table or see them displayed on a map. Even more practical: the map can always be centered on the current location or a stop to be approached. Beyond that, drivers can confirm that the trip is productive, meaning with passengers, or is an empty trip. These routes are stored in the backend to enable precise and automated trip accounting. It is possible to connect each individual trip to kilometers travelled. This statistic can be directly used for automated accounting of all on-demand trips. It is exported regularly and automatically in CSV files to safeguard additional digital processing of the accounting.

What’s up next for on-demand transport?

The deployment software has been successfully completed. Have passengers already got accustomed to the new booking process? The existing system was intelligently augmented. Passengers who prefer personal contact when booking can still book by telephone. The new feature is the exclusive deployment of vehicles for trips through the booking tool, both when booked by telephone and from the app or internet. The app is a hit with passengers that use their smartphones for everything. But as can be expected, some passengers have to get used to the new specified route without special requests every now and again.

How satisfied are you with the MVV on-demand transport system and are you already planning enhancements?

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Mr. Seifert, thank you for answering our questions.

What is your takeaway from this project?

We are planning to not only work inside the district of FFB with the on-demand system, but to extend the technical requirements to cover the entire MVV network (…).«

»We are planning to not only work inside the district of FFB with the on-demand system, but to extend the technical requirements to cover the entire MVV network, (…)«.

Dr. Andreas Hanitzsch is transport engineer in planning area R (regional bus) of the MVV. He is responsible for conceptual planning of the MVV on-demand transport system in the districts of Fürstenfeldbruck and Starnberg.

Dr. Hanitzsch, what did the MVV want to achieve by converting to the MENTZ on-demand deployment system?

A goal for both the District of Fürstenfeldbruck and the MVV was to achieve a more efficient and thus faster and more economical bundling of vehicle trips as compared to the previous manual system through use of a software-controlled deployment of vehicles to fulfill trip requests.

What insights did you gain during the project?

The changeover to digital deployment with several actors – the transport company, the call center, MENTZ and the MVV – and the general complexity of on-demand transport raised issues during the course of the project that did not occur in the previous system. This presented us with a number of challenges. The launch date was fixed, so we had to work with great intensity and effort to complete the system in time for the timetable change in December of 2019. To be fair, a few adjustments are now being made to the deployment software. But this is not unusual for such a major change.

How satisfied are you with the MVV on-demand transport system and are you already planning enhancements to the software?

Due to the fact that this project is new and also wide-ranging for all parties involved, there are going to be some initial difficulties during the trial phase. In close cooperation with our project partners, we systematically address each issue by regularly adjusting both the software and the timetable structure.

We are planning to extend the MVV on-demand transport system not only to the FFB district, but that the technical requirements will be put into place in the entire MVV network in order to quickly introduce the system in other transport areas. In particular, the districts of Munich and Starnberg have shown great interest in an expansion of on-demand transport so that the deployment tool will have to process a significantly higher volume of requests, and thus data volume, in the near future.

Dr. Hanitzsch, thank you for the interview.
With the MENTZ Event Management System (EMS), reliable information is quickly and easily accessible on the current traffic situation or on operational changes to a planned trip. The Munich Public Utility Company (SWM) has recently and successfully started using the EMS on the routes of the Munich Transport and Tariff Association (MVV).

Passenger information on all channels thanks to central EMS

Passenger information on all channels
The EMS is a true control center, a passenger information hub for various output media: existing audio systems, modern, intelligent devices and communication media of the future. The many decentralized individual solutions for customer information have thus become a real media center for the simultaneous use of diverse channels.

Employees at the central control center in Munich’s Emmy-Noether-Straße relay current passenger information to be displayed on a screen using MENTZ’s Content Management System (CMS). Development has already proceeded quickly: at the same time a message is displayed on the yellow ticker in all Munich subway stations, announcements and other indications can be replayed centrally, easily and consistently over each station’s audio speakers. Bus, subway, and tram drivers will also receive information from the control center through the EMS.

EMS is a trendsetting information hub for various media
The system developed by MENTZ is also well equipped for the future because it can centrally manage all passenger information – across all transport and media channels: delays, safety information or redirections through construction sites can be centrally created and electronically distributed.

This is what the future looks and sounds like:
In the near future, both visual and audio passenger information will emanate from a single, central source. Via the EMS event management system, an employee can quickly select the stops to receive the audio message, receive information on speaker status, like whether it is in use or free, and can play the message live. Messages can also be played periodically at specific stations as well.

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MENTZ developers are proud to report on the successful integration of what is probably the most important source of information for passengers: by integrating various social media, passengers are kept up to date through their smartphone.

For example, the MVV has connected its Twitter platform using the EMS that serves as an interface. It releases real-time information on a silver platter. Another planned feature is the integration of the MVV’s operational control interface, the website that is exclusively reserved for service disruptions and where commuters can monitor their own route. The Stuttgart Public transport and Tariff Association (VVS) also relies on e-mails that it sends to its customers. It is precisely these proactive push notifications that are very well received because it prevents passengers from having to wait on the platform to find out that their originally planned trip has been rerouted. Notifications on Facebook or WhatsApp are also possible.

The EMS serves as a control system for various communication channels and is such as ready for what comes next in modern communication. In the near future, this could also include passenger information systems that are still in the development phase, like smart public displays (SmartMMI) on the windows of buses and trains, or social media channels that do not yet exist today, but will quickly become established means to source information.

Consistent information is good for the company image
During exceptional operational circumstances, passengers expect fast, accurate and comprehensive information about the latest rerouting of services, their duration and the options available to them. It is important that passengers receive consistent – and therefore reliable – and easily digestible information through all media channels, because contradictory or confusing messages are bad for the company image. MENTZ’s EMS enables customers to be informed more precisely and reliably and offers passengers immediate solutions when things do not go as planned.

The system consistently follows the "two-senses-principle" and ensures wide-ranging accessibility: both audio and visual information is provided in a central location. The provision and distribution of public transport information is dynamic, automatic and always consistent.

Quick and more efficient transfer of information for passengers and drivers
Thanks to central data management (CDM), transport authority employees develop scenarios in advance, which are repeatedly used on all information media to inform passengers about recurring events. This is particularly useful, for example, during planned construction work or during major events with an increased number of passengers. The CDM regularly supplies the EMS with master data, which makes an employee's job in the control center much easier: the employee selects a cause, an impact, and affected stop(s), information is mainly generated automatically and can therefore be delayed within a few seconds. At the same time, the EMS is so flexible that it can also react quickly to unplanned events. An audio management system (AMS) can play customized, prepared information modules over various audio channels (station speakers). An employee can quickly select the stops to receive the audio message, receives information as to whether the unit is currently in use or free, and can then connect the selected speaker(s) to a live microphone. Alternatively, a text-to-speech (TTS) module can be used to relay texts entered on short notice or render standard, pre-made texts as speech at a speaker on the platform. Cyclical use of public address systems at varying stations is no longer cumbersome.

MENTZ’s EMS is especially integrated into an existing system landscape and augments the systems intended for operational control by enabling a central option to coordinate and relay passenger information. It requires commonly used systems, the IMS (information management system) and the AMS (audio management system). The EMS is thus a real control center, a passenger information hub for numerous output media: existing audio systems, modern, smart terminals, and communication media of the future.

Research & Development
The transport division of the Neuss public utility company (SWN) is introducing a new planning system for the duty and vehicle scheduling of its twelve bus lines and six night express routes. The company chose the DIVA system and the integrated duty and vehicle schedule optimization with GENIOS, MENTZ’s optimization framework. The system will be introduced in 2020 with the new DIVA Client and the latest version of DIVA, and will be operated entirely in the cloud. This setup will ensure that maximum availability and performance are available for the new planning environment. SWN transports approximately 35 million passengers per year on its 160-kilometer network.

Events
Dates for user groups, working groups and trainings by MENTZ
Our greatest concern is for the health and well-being of our customers and colleagues. Dates for training courses, working groups and user groups organized by MENTZ may therefore be postponed due to the current corona crisis. We will initially keep all to planned dates and decide on their realization, postponement or cancellation at least six weeks in advance of the actual scheduled date. We ask for your understanding in this matter.

All affected scheduled events can be viewed at www.mentz.net/en/news/.

News
KVG Lippe launches Lippemobil App
The Communal Transport Authority of Lippe (KVG) is now operating a journey planning and ticketing app developed by MENTZ. Using the Lippemobil app, passengers can plan journeys with public transport throughout Germany using their smartphone and also buy their ticket without exchanging cash. In the current situation, making a cashless payment is both practical and helpful because Lippemobil bus drivers – like those at many other transport authorities – cannot accept cash in accordance with the protective measures stipulated to combat COVID-19.

At KVG’s request, the launch of the Lippemobil app was brought forward in order to protect passengers and drivers from infection and to minimize a foreseeable decline in ticket sales. During ticket controls, app users show a QR code on their phones instead of a paper ticket from a machine. The app provides notifications for planned routes and an overview of all purchased tickets, but there are also many other practical features. According to their own statistics, Lippemobil transported almost 25 million customers last year.

DIVA is the new planning system for the public utility company in Neuss
The transport division of the Neuss public utility company (SWN) is introducing a new planning system for the duty and vehicle scheduling of its twelve bus lines and six night express routes. The company chose the DIVA system and the integrated duty and vehicle schedule optimization with GENIOS, MENTZ’s optimization framework. The system will be introduced in 2020 with the new DIVA Client and the latest version of DIVA, and will be operated entirely in the cloud. This setup will ensure that maximum availability and performance are available for the new planning environment. SWN transports approximately 35 million passengers per year on its 160-kilometer network.

Text output
The EMS interface enables a range of text output options

»EMS means fast, consistent and precise passenger information when things don’t go as planned.«
Duty schedule optimization (not only) in times of crisis

Winterthur Bus Company (CH) transports per year over 30 million passengers with its approx. 90 vehicles. Since the first quarter of 2020, the CH, which is integrated into the Zurich Transport Authority (ZVV), has been using MENTZ’s GENIOS duty schedule optimization. This choice was a wise decision – and its timing even better – in retrospect. Only four months after GENIOS was introduced, the corona crisis kept the world firmly in its grip, which required a rapid response by the timetable and duty schedule planners in “Winti”, as the Swiss affectionately call their city. Winterthur-born Andreas Marthaler, a project manager at MENTZ, is proud that his work and the excellent cooperation paid off so quickly for the bus company: “The crisis has hit all aspects of life significantly. I am pleased that we were able to support Winterthur Bus during this time. The company was able to quickly react to the current situation”, said Marthaler.

“We were very fortunate to have the optimization software in these times of crisis”, added Matjas Hess, duty and personnel planner at Winterthur Bus Company (CH), about the MENTZ optimizer. Within a very short amount of time, CH was able to adapt duty schedules to this unusual situation, which also needed to meet the Swiss company’s high standards of quality: optimal duties, no long breaks between shifts, not too many mixed duties with urban/rural routes, enough early duties for the roster and many duties times that have longer working hours that are popular with drivers. Meinrad Schmid, Head of Operations at CH also expressed his satisfaction, “the corona crisis is an unusually stressful situation. During this quite particular stress test, the GENIOS duty schedule optimizer immediately proved its value. Schedule changes had to be made on short notice and deployment with reduced driver personnel became necessary. Using the optimizer, we were able to take some acute pressure off and significantly relieve our planners”.

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