



**FBS** is a programme for railway conception, which has been developed since 1993. Naturally, it combines the opportunities of today's computer technology with scientific calculations and the knowledge of daily railway operation. FBS represents an efficient tool with regard to creating timetables and utilization of obtained data. With FBS you command a programme package, which **iPLAN-modules**, additional programmes and interfaces offer you as the user an impressive wide range of functionality.

Apart from eliminating the practice of creating graphic timetables manually, FBS also makes the manual adoption of timetable data into the building process, which one may still encounter today, unnecessary. Until now, integrated planning processes have been disrupted by a change of media. Likewise, the danger of transmission errors or non-current data because of interminable tuning processes did not correspond with the unsteady railway market, especially with regards to the public transport.

FBS supports the user right from the first conception to the daily printout of timetables. FBS suggests complex solutions and carries out feasibility studies without making all decisions for the user. FBS is by no means intended to replace the experienced railway agent. The time-saving search for traces indeed provides more freedom for creativity and flexibility to fulfil customer's requests.

FBS transfers science to everyday life. Complex formulas and methods of calculation of travelling times, which have solely been used in railway research so far, can now be applied to the planning process.

At this time, decisions for investments in vehicles or tracks can be verified. Thus, computer-aided railroading becomes a true opportunity.

One of the great advantages of the **iPLAN module graphic timetable** is that it offers the search for slots and calculation of running times while it is identifying conflicts at the same time. The evaluation of the timings, which is done according to approved scientific standards, provides neutrality regarding the practicability of timings.

Provided statistic results out of the **statistic module**, such as quantities of train-kilometres (mileage), represent an important basis for business management calculations.

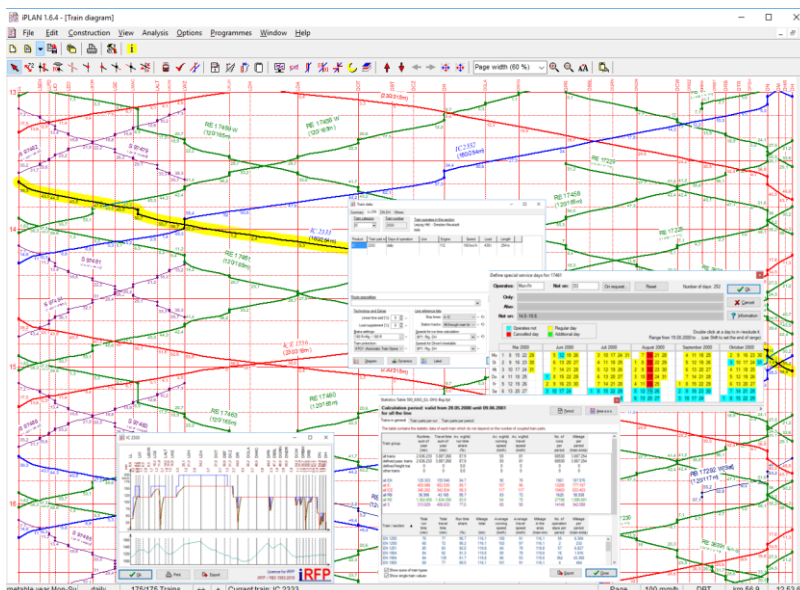
The **iPLAN module station timetable**, it is possible to create clear graphic timetables for stations, track occupation diagrams and similar train sequence table documents from train diagram with the help of data transfer with only a few working steps.

In iPLAN the created train diagrams and train sequence tables are transferred into the daily needed documents, motive power units or wagons are planned economically: The module **Customer's Timetable** easily compiles booklets and leaflets upon short-term request. This way, customers may be attracted while attending events and in case of track construction understanding can be attained – principles which are indispensable in today's commuter traffic. **Driver's Timetable** compiles the necessary working timetables for train driver and personnel at low cost on standard computer programmes.

With the **iPLAN module arrival and departure posters** you can easily create an overview over all arrival and departure times at a station.

An **interval graphic** can visualize the clockface timetable system in traffic areas very efficiently.

Vehicles are used to the optimum in the entire network with **Circulation plan**. Working independently, urgent repairs or fixed connections are as easy to handle as complying with given target criteria such as well-balanced distribution of running mileage or avoidance of empty runnings. Circulation Plan suggests variations and lets the user know about conclusions on the optimization of timings with the Graphic Timetable.



The Graphic Timetable is the most important document when conceptualizing a new timetable. Here, position and sequence of trains are being fixed. When creating timings, two kinds of difficulties may occur: firstly, calculation of timings depend on a host of different factors which need to be taken into account, secondly, drawing a train diagram is time-consuming. The module is capable of solving both problems in succession. After estimating the running

time for a desired train, the train is pictured in the diagram. Following the estimations for each train, the train diagram can be printed instantaneously.

Besides the data of engines which are contained in the programme, the following infrastructure data has to be imported or entered in order to use the Graphic Timetable's ability of estimating running times:

- Position and character of operating stations
- Number of stations and line tracks
- Gradient ratio between stations/gradient profile
- Regulations for station and main tracks

After choosing the train properties as headcodes, travelling time supplement, stop-off points and departure times the available train slots may be determined.

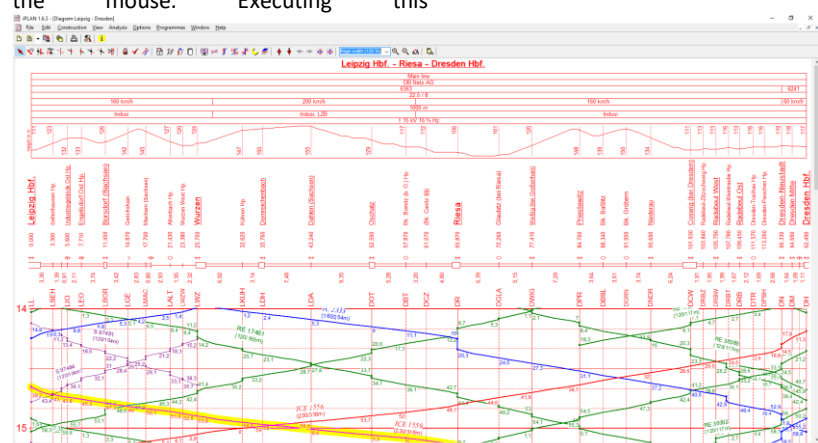
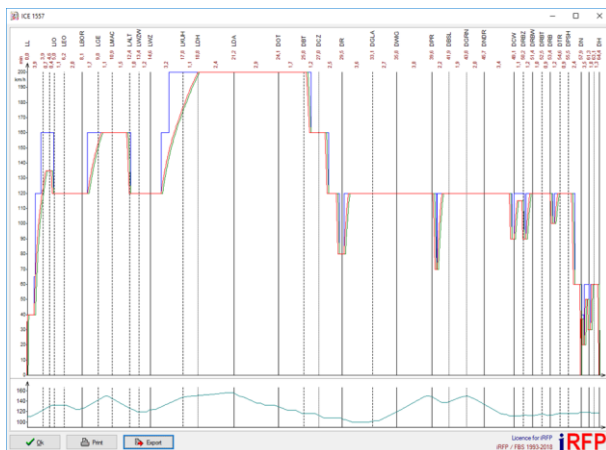
The more complicated the timetable, the more indispensable the module is for the user. Inserting train data into the computer does not only determine possible arrival and departure times, it also suggests the next available train slot or train crossing on single track lines. If the position of the train is not suitable, the line can be moved effortlessly with the mouse. Executing this

procedure, the Graphic Timetable always checks whether the desired train slot is available every day, not only on weekdays but for the whole operating period. Current methods of modern forms of traction such as the so-called train-coupling and sharing do not represent any problems for the programme, any number of parts per train may be entered while considering different sections and days. Thus, different loads or several tractions may be taken into account easily. Compiled timetable data such as running times or train position may be directly taken over into the other FBS components. It goes without saying that copying times or other data are not needed anymore.

The module provides timetable statistics for business management calculations, including train mileage and storage balance, which can be transferred into text processing or spread sheet analyses. Balances and orders are simplified and changes in quantity of business evaluation decides whether timetable versions are practicable regarding their quality, moreover, it compares the debit sides, which were tracked and manifested in the disposition mode of the Graphic Timetable, with the credit sides in timings. Those factors turn out to be of growing importance to the increasingly regional commuter traffic market.

In order to employ the module's current knowledge of driving dynamics, one has to know about the technical data of the particular motive power units. The programme comes with an extensive database, containing many European manufacturers and engines. These data may be edited upon request.

When calculating running times, employed types of brakes are considered as well as the effects of different ATP and ATO devices on running and braking conditions.



Train circulation plans control the sequence of trains, which are formed by certain vehicles. These lists are indispensable with respect to economic railway operation as well as increasingly to obtaining vehicles and strategic planning of offers, for example local passenger traffic invitations for tender.

Circulation Plans represent a problem when intending an economical and technical optimum as they allow close to endless combinations of single runnings. Besides, diverse target criteria of different weight have to be taken into consideration. Technical aids of sound scientific basis must be utilized in order to establish sensible variations or the optimum train allocation.

iPLAN is able to solve these problems. It checks some hundred thousand train allocation possibilities within minutes. While compiling this, the programme makes sure that train allocations are confined within themselves along with the fact that those allocations are correct for different days and weekdays.

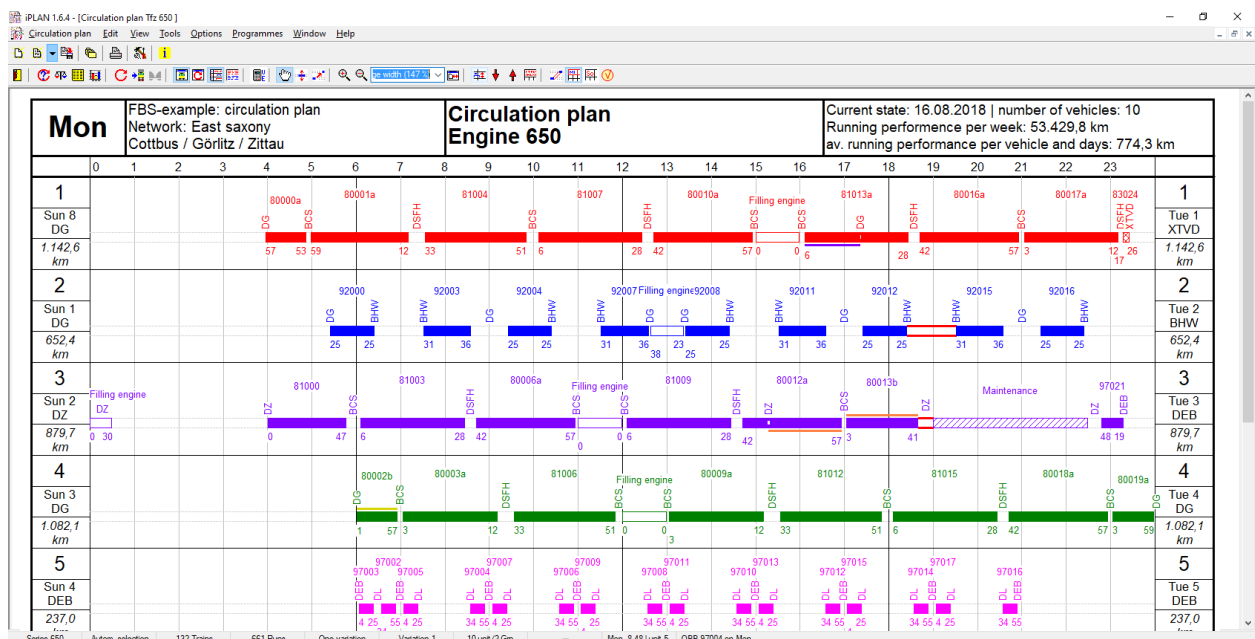
Various iteration phases of the well-known Hungarian method, which has been developed for the circulation programme, provide excellent allocation results. This way, the number of required vehicles together with a well-balanced train mileage and combined grouping of vehicles is optimized.

Thereby, iPLAN fulfils today's requirements of railway operation. Additionally, iPLAN is capable of optimizing the allocation by exhaustion.

Various calculated allocation variations of the same value are presented to the designer. Whatever he chooses can be distributed either as a clear graph or in table form. Upon request, preventive maintenance or cleaning times may be set and therefore included in the optimization process. Furthermore, the consumption of operating supply items is displayed by two running mileage counters; for all circulation variations statistics can be read off directly.

Specific operating conditions are included by considering fixed connections. Fixed Connections interrupt the optimization for the reason of automatically assigning connections if this is deemed sensible by the employee.

Thereby, every possible peculiarity can be depicted, for example, the turning of coupled train parts in head terminuses.

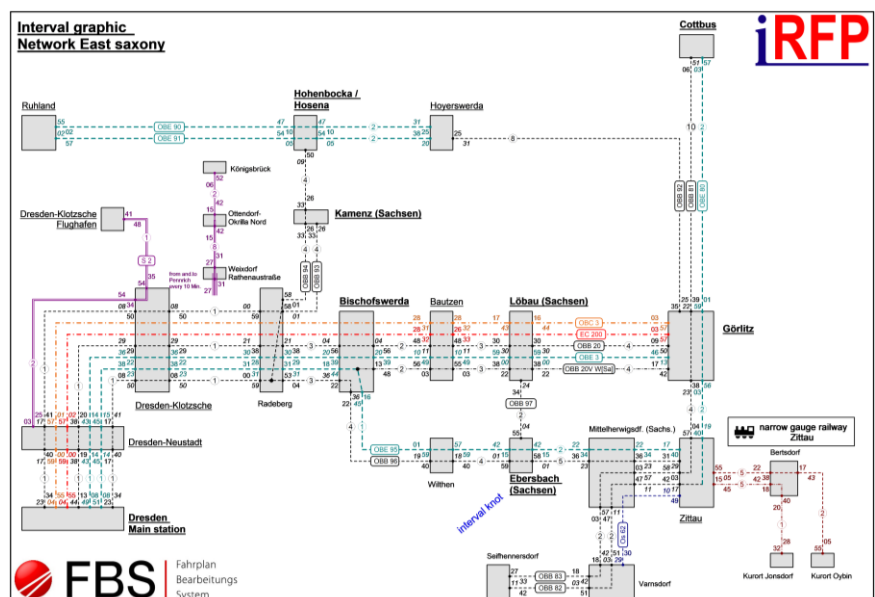
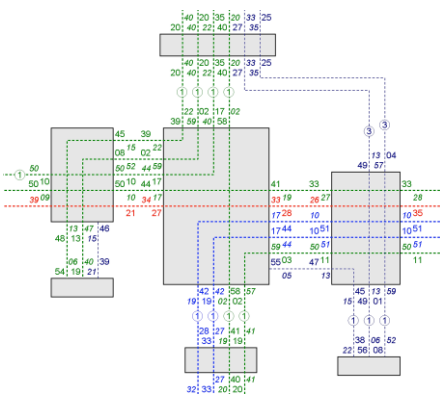


FBS offers an extensively automated possibility to create interval graphics. The module Interval Graphics, part of FBS, is a component of the iPLAN programme. Prerequisite for creating an interval graphic are the graphic timetables for the individual lines and their combination in a FBS network.

After the creation of a new interval graphic in an FBS network, the programme proposes the knot station and the train in intervals. The user may change or adapt the proposals of the programme manually. When selecting the route, the programme orientates itself by the interval group information of the graphic timetables, in order to identify trains in intervals and their interval times. Alternatively, it is possible to set exemplary interval trains manually, when the graphic timetables do not contain the interval group information. In this case a single train with its arrival and departure times is given symbolically for a train in interval. The interval time has to be entered by hand.

This way, interval graphics can be created from simple exemplary interval graphic timetables (they only contain trains for one single interval period). The position of interval knots on the interval graphic is also proposed automatically by the programme, provided that geographic coordinates are included in the station directory (the exemplary station directory, supplied with FBS, contains geographic coordinates for most of German stations). That is why stations do not need to be positioned manually when creating a new interval graphic. FBS Interval Graphics may be revised by hand in every respect, but usually most of the possible manual settings are not needed. Regular improvements are restricted to line corrections between junctions by entering or relocating of the so-called drawing points, in order to avoid overlapping. Furthermore, inscribing with individual information or headings for instance may be part of the general corrections.

Interval graphics may be printed or plotted on every printer, configured under Microsoft® Windows®, in every format from DIN A4 upwards. FBS offers a print preview, a print-out ("diversion") in different graphic file formats and an independent creation of PDF-files (Portable Document Format, PostScript® Page Description Language).



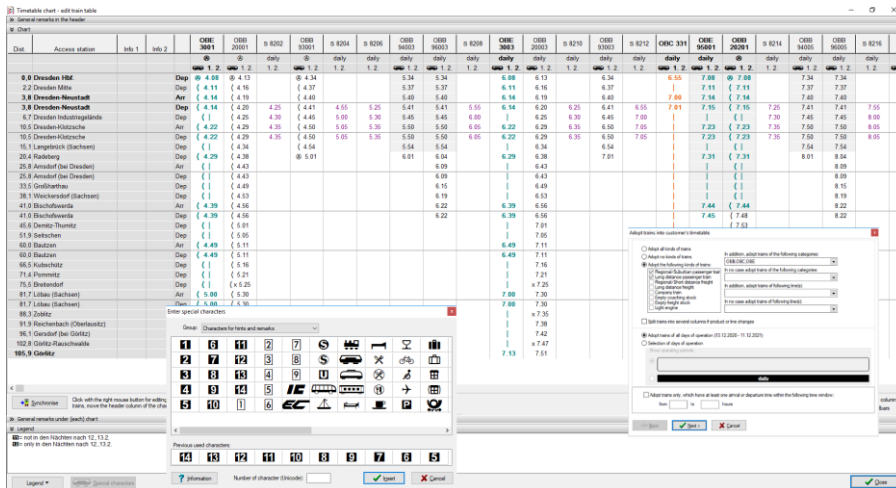


In iPLAN, customer's timetables of any size either hot type or photo lettering, can be compiled according to UIC guideline 411. The earlier hot type has been used in German timetables until the beginnings of the nineties. Its creative power is remarkable, adapting flexibility to individual needs. With the advent of electric data processing photo lettering came into existence, which had been difficult to configure with the software until then. Unfortunately, this caused difficulty among passengers who had a hard time reading the timetable. Furthermore, photo lettering was intensely time-consuming for the employees.

In iPLAN, the timetable's layout is rather adaptable for the user. Elements of both types may be combined, individual variations of timetable type and adaption concerning transport authorities become possible. Timetable charts comprising various lines from the graphic timetable are compiled with the aid of an assistant. In the course of this, diverted lines may be added and clearly arranged. In case that timings are subject to change, arrival and departure may be kept up-to-date and separate trains or buses (replacement services) may be entered manually.

Printing the timetables can be conducted with any printer at low cost, making sure that passengers can be informed effortlessly in the event that changes in timings occur. In addition, timetables can be exported as graphics file (e.g. arrangement of web pages) or as postscript file for exposure in printing houses. The timetable's whole range of symbols is available to both layout types. In the process, the usual symbols for days on which trains run are assigned automatically. Trains can be equipped with any foreground or background colours so passengers know about different periods of time, types of trains or exceptions immediately and clearly.

iPLAN provides an additional general and chart-related legend, individual arrangement can be carried out by an integrated text editor and a reading aid can be adjusted in both hot type and photo lettering.



N11 Angerapp - Treuburg - Osterode		Cranz - Darkehmen - Eylau		all trains with 1. + 2. class	
RE 51 Eylau - Darkehmen - Schirwindt - Kudowa		RE 52 Eylau - Darkehmen - Angerapp			
FBS		Zug			
km So macht man Fahrpläne!		von		nach	
0,0 Angerapp Hbf.		7.11		7.32	
6,8 Radiumbad Quedau		7.24		7.44	
12,4 Nesselbeck Hp.		7.25		7.56	
19,6 Treuburg		7.33		8.01	
25,0 Laptau		7.39		8.06	
30,7 Bledau		7.39		8.09	
37,1 Cranz-Neustadt		7.39		8.31	
40,4 Cranz		7.39		8.39	
9,0 Osterode (Nadrauen) Ost		6.38		7.38	
11,8 Rautenberg (Kr. Bartenstein)		6.43		7.46	
16,0 Nautzen-Pronitten ob. Hp.		6.49		7.52	
20,6 Ragel		7.00		8.02	
25,6 Nautzen-Pronitten unt. Hp.		7.07		8.09	
30,8 Tharau		7.14		8.16	
36,5 Cranzbeek		7.31		8.31	
40,4 Cranz		7.36		8.36	
40,4 Cranz		7.40		8.10	
45,3 Cranz Süd		7.45		8.15	
53,6 Weischkitten		8.23		8.23	
60,3 Mollehen		8.31		8.31	
63,9 Fischhausen oberer Bf.		8.34		8.34	
65,5 Darkehmen Nord Hp.		8.38		8.38	
71,2 Darkehmen Angerappbrücke		8.42		8.42	
78,2 Darkehmen Hbf.		8.04		8.53	
91,8 Insterburg		8.11		8.55	
106,1 Bad Schönfelde Hp.		8.19		9.11	
116,9 Mehlanen		8.28		9.19	
131,9 Eylau		8.35		9.28	
131,9 Eylau		8.44		9.35	
nach		Berlin Ostbf.		9.44	

With this iPLAN module arrival and departure posters, with the help of which the passengers on site at the stations and halts can catch up on the arrival and departure times, can be created effortlessly in only one step.

To create arrival and departure posters, the FBS user has to select for which operating point the poster is desired and if it involves the notice for the arrivals or the departures. Precondition of course is also here, that the concerning tracks with the driving positions of the trains are integrated in the respective network over the in the graphic timetable processed timetable files. The programme takes the information for the arrival and departure posters out of this data source.

The presentation takes place in the classic way, that means in chronological ordered, line by line consecutive disclosure of the trains. For the management of the contentual amount of the posters to be created the programme iPLAN offers various options: So the train types to be considered can be selected differentiated, for the time indications there are also the rounding rules known from other FBS modules available. Did the trains in the graphic timetable get already the correct use of tracks, this information can be recorded in the arrival and departure poster, too. For the presentation of the days of run, at which the trains drive, you can choose between the usage of symbols by UIC411 or the general common shortcuts.

Here iPLAN also enables specifications in regard to the indication of further (departure posters) or previous (arrival posters) stops for the particular trains – this stops can be released selective by amount, importance or random selection. Moreover the creation of such timetables isn't limited on stations in the tourist traffic, that means by absorption of further information of for example the including of freight trains you can facilitate also a usage for official business or intern purposes.

Different to the remaining documents and plans created by iPLAN (that means circulation plans, customer's and driver's timetables, interval graphics), the programme doesn't drop the arrival and departure posters in the object list of the iPLAN main window. Instead of this the posters are saved immediate as independent documents in the Rich-Text-Format and then can be opened and edited in a word processing programme. So the opportunities for the contentual and creative processing pursuant to individual ideas and demands of the users (like e.g. usage of another typeface, insertion of company specific logos, including of additional information and remarks) have no limits.

The print on customary printers and plotters upon the engrossment of large-sized copies can be realized uncomplicated.

## Arrival Bautzen

valid from 13.12.2020 to 11.12.2021

Time	Train	from	Track	Time	Train	from	Track	Time	Train	from	Track
4.48	DBB 20	Kubischütz 4.43 - Pommitz 4.58 - Breitenbrunn 4.55 @ - Ger- litz 4.09	11.56	DBB 20 V	Kubischütz 11.51 - Pommitz 11.45 - Breitenbrunn 11.43 @ -	18.03	DBB 20 V	Seltschen 17.58 - Demitz-Thumitz 17.53 - Bischofswerda 17.48			
4.49	DBB 20000	Bischofswerda 4.39 - Radeberg 4.29 - Dresden-Hörsing 4.22	12.03	DBB 20 V	Seltschen 11.58 - Demitz-Thumitz 11.53 - Bischofswerda 11.48	18.04	DBB 2001	to Bischofswerda as DBB 20 V DBB 95011 from Dresden- Neustadt 17.15 - Dresden Hbf 17.04			
4.49	DBB 3001	Dresden-Neustadt 4.14 @ - Dresden Hbf 4.08	12.03	DBB 20020	to Bischofswerda as DBB 20 V DBB 95005 from Dresden- Neustadt 11.15 - Dresden Hbf 11.08	18.04	DBB 20	Kubischütz 18.43 - Pommitz 18.38 - Breitenbrunn 18.35 @ -			
5.10	DBB 3	Lobau (Saahren) 4.59 - Gerlitz 4.46 @	12.28	DBB 3	Kubischütz 12.43 - Pommitz 12.38 - Breitenbrunn 12.35 @ -	18.04	DBB 20	Kubischütz 18.43 - Pommitz 18.38 - Breitenbrunn 18.35 @ -			
5.11	DBB 20	Seltschen 5.05 - Demitz-Thumitz 5.01 - Bischofswerda 4.55 @	12.28	DBB 3002	Gerlitz 12.09	18.04	DBB 20014	Gerlitz 18.09			
5.11	DBB 20001	Dresden-Neustadt 4.20 - Dresden Hbf 4.13	12.48	DBB 20	Bischofswerda 12.39 - Radeberg 12.29 - Dresden-Hörsing 12.22 - Dresden-Neustadt 12.14 @ - Dresden Hbf 12.08	18.05	DBB 3	Bischofswerda 18.39 - Radeberg 18.29 - Dresden-Hörsing 18.22 - Dresden-Neustadt 18.14 @ - Dresden Hbf 18.08			
5.48	DBB 20 V	Kubischütz 5.43 - Pommitz 5.38 - Breitenbrunn 5.35 @ - Ger- litz 5.09	12.49	DBB 3	to Bischofswerda as DBB 20 V DBB 95007 from Dresden- Neustadt 12.15 - Dresden Hbf 12.08	18.05	DBB 3004	Lobau (Saahren) 18.59 - Gerlitz 18.46 @			
5.48	DBB 20	Kubischütz 5.43 - Pommitz 5.38 - Breitenbrunn 5.35 @ - Ger- litz 5.09	13.01	DBB 3	Lobau (Saahren) 12.59 - Gerlitz 12.46 @	18.11	DBB 20	Seltschen 18.05 - Demitz-Thumitz 18.01 - Bischofswerda 18.56			
5.49	DBB 3003	Bischofswerda 5.39 - Radeberg 5.29 - Dresden-Hörsing 5.22	13.11	DBB 20	Seltschen 13.05 - Demitz-Thumitz 13.01 - Bischofswerda 12.56	18.11	DBB 20015	Dresden-Neustadt 18.01 - Dresden Hbf 18.13			
5.49	DBB 3003	Dresden-Neustadt 5.14 @ - Dresden Hbf 5.08	13.12	DBB 20020	Dresden-Neustadt 13.02 - Dresden Hbf 12.55 @	18.11	DBB 3	Dresden-Neustadt 18.01 - Dresden Hbf 18.13			
7.10	DBB 3	Lobau (Saahren) 7.09 - Gerlitz 6.48 @	13.56	DBB 20 V	Kubischütz 13.51 - Pommitz 13.46 - Breitenbrunn 13.43 @ -	18.11	DBB 20	Kubischütz 18.51 - Pommitz 18.46 - Breitenbrunn 18.43 @ -			
7.11	DBB 20	Seltschen 7.05 - Demitz-Thumitz 7.01 - Bischofswerda 6.55 @	14.03	DBB 20	Gerlitz 13.17	18.11	DBB 20014	Gerlitz 18.12			
7.11	DBB 20003	Dresden-Neustadt 7.01 - Dresden Hbf 6.55 @	14.03	DBB 20020	Seltschen 13.58 - Demitz-Thumitz 13.53 - Bischofswerda 13.48	18.11	DBB 20 V	Seltschen 18.58 - Demitz-Thumitz 18.53 - Bischofswerda 18.48			
7.51	DBB 3	Kubischütz 7.51 - Pommitz 7.46 - Breitenbrunn 7.43 @ - Ger- litz 7.17	14.03	DBB 20020	to Bischofswerda as DBB 20 V DBB 95007 from Dresden- Neustadt 13.15 - Dresden Hbf 13.08	18.11	DBB 20	to Bischofswerda as DBB 20 V DBB 95011 from Dresden- Neustadt 18.15 - Dresden Hbf 18.08			
7.51	DBB 20 V	Kubischütz 7.51 - Pommitz 7.46 - Breitenbrunn 7.43 @ - Ger- litz 7.17	14.27	DBB 20	Gerlitz 14.03 @	18.11	DBB 3	Lobau (Saahren) 18.11 - Gerlitz 18.03 @			
8.03	DBB 20 V	Seltschen 7.58 - Demitz-Thumitz 7.53 - Bischofswerda 7.48 @	14.48	DBB 20	Kubischütz 14.43 - Pommitz 14.38 - Breitenbrunn 14.35 @ -	18.11	DBB 20	Kubischütz 18.51 - Pommitz 18.46 - Breitenbrunn 18.43 @ -			
8.03	DBB 20021	to Bischofswerda as DBB 20 V DBB 95001 from Dresden- Neustadt 7.19 - Dresden Hbf 7.08	14.48	DBB 3	Bischofswerda 14.39 - Radeberg 14.29 - Dresden-Hörsing 14.22 - Dresden-Neustadt 14.14 @ - Dresden Hbf 14.08	18.11	DBB 30016	Lobau (Saahren) 18.51 - Gerlitz 18.46 @			
8.20	DBB 3	Lobau (Saahren) 8.17 - Gerlitz 8.03 @	15.10	DBB 3	Lobau (Saahren) 14.59 - Gerlitz 14.46 @	18.11	DBB 20	Seltschen 21.05 - Demitz-Thumitz 21.01 - Bischofswerda 20.56			
8.48	DBB 20	Kubischütz 8.43 - Pommitz 8.38 - Breitenbrunn 8.35 @ - Ger- litz 8.09	15.11	DBB 20	Seltschen 15.05 - Demitz-Thumitz 15.01 - Bischofswerda 14.56	18.11	DBB 20017	Dresden-Neustadt 20.20 - Dresden Hbf 20.13			
8.48	DBB 3	Bischofswerda 8.39 - Radeberg 8.29 - Dresden-Hörsing 8.22	15.11	DBB 20011	Dresden-Neustadt 15.01 - Dresden Hbf 14.53	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
8.48	DBB 3005	Dresden-Neustadt 8.14 @ - Dresden Hbf 8.08	15.31	DBB 3	Dresden-Neustadt 15.31 - Dresden Hbf 15.25 @	18.11	DBB 20018	Gerlitz 22.09			
9.10	DBB 3	Lobau (Saahren) 9.09 - Gerlitz 8.48 @	15.31	DBB 3005	Kubischütz 15.51 - Pommitz 15.46 - Breitenbrunn 15.43 @ -	18.11	DBB 3	Bischofswerda 22.39 - Radeberg 22.29 - Dresden-Hörsing 22.22 - Dresden-Neustadt 22.14 @ - Dresden Hbf 22.08			
9.11	DBB 20	Seltschen 9.05 - Demitz-Thumitz 9.01 - Bischofswerda 8.55 @	15.56	DBB 20 V	Kubischütz 15.51 - Pommitz 15.46 - Breitenbrunn 15.43 @ -	18.11	DBB 30017	Lobau (Saahren) 22.58 - Gerlitz 22.46 @			
9.11	DBB 20005	Dresden-Neustadt 9.01 - Dresden Hbf 8.55 @	16.03	DBB 20	Seltschen 15.58 - Demitz-Thumitz 15.53 - Bischofswerda 15.48	18.11	DBB 3	Seltschen 23.05 - Demitz-Thumitz 23.01 - Bischofswerda 22.56			
9.33	DBB 200	Kubischütz 9.33 - Pommitz 9.28 - Breitenbrunn 9.25 @ - Ger- litz 9.01	16.03	DBB 20020	to Bischofswerda as DBB 20 V DBB 95009 from Dresden- Neustadt 15.15 - Dresden Hbf 15.08	18.11	DBB 20019	Dresden-Neustadt 22.20 - Dresden Hbf 22.13			
9.56	DBB 20 V	Kubischütz 9.51 - Pommitz 9.46 - Breitenbrunn 9.43 @ - Ger- litz 9.17	16.26	DBB 3	Lobau (Saahren) 16.17 - Gerlitz 16.03 @	18.11	DBB 20	to Bischofswerda as DBB 20 V DBB 95011 from Dresden- Neustadt 22.20 - Dresden Hbf 22.13			
10.03	DBB 20 V	Seltschen 9.58 - Demitz-Thumitz 9.53 - Bischofswerda 9.48 @	16.48	DBB 20	Kubischütz 16.43 - Pommitz 16.38 - Breitenbrunn 16.35 @ -	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
10.03	DBB 20023	to Bischofswerda as DBB 20 V DBB 95003 from Dresden- Neustadt 9.15 - Dresden Hbf 9.08	16.48	DBB 3	Bischofswerda 16.39 - Radeberg 16.29 - Dresden-Hörsing 16.22 - Dresden-Neustadt 16.14 @ - Dresden Hbf 16.08	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
10.27	DBB 200	Gerlitz 10.03 @	17.10	DBB 3	Lobau (Saahren) 17.09 - Gerlitz 16.48 @	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
10.48	DBB 20	Kubischütz 10.43 - Pommitz 10.38 - Breitenbrunn 10.35 @ -	17.11	DBB 20	Seltschen 17.05 - Demitz-Thumitz 17.01 - Bischofswerda 16.56	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
10.48	DBB 20006	Gerlitz 10.09	17.32	DBB 20	Dresden-Neustadt 17.02 - Dresden Hbf 16.55 @	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
10.49	DBB 3	Bischofswerda 10.39 - Radeberg 10.29 - Dresden-Hörsing 10.22 - Dresden-Neustadt 10.14 @ - Dresden Hbf 10.08	17.32	DBB 20020	Dresden-Neustadt 17.02 - Dresden Hbf 16.55 @	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
11.10	DBB 3	Lobau (Saahren) 11.09 - Gerlitz 10.48 @	17.56	DBB 20 V	Kubischütz 17.51 - Pommitz 17.46 - Breitenbrunn 17.43 @ -	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
11.11	DBB 20	Seltschen 11.05 - Demitz-Thumitz 11.01 - Bischofswerda 10.56	17.56	DBB 20 V	Kubischütz 17.51 - Pommitz 17.46 - Breitenbrunn 17.43 @ -	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			
11.31	DBB 3	Dresden-Neustadt 11.01 - Dresden Hbf 10.55 @	17.56	DBB 20 V	Kubischütz 17.51 - Pommitz 17.46 - Breitenbrunn 17.43 @ -	18.11	DBB 20	Kubischütz 22.43 - Pommitz 22.38 - Breitenbrunn 22.35 @ -			

The timetable is created, vehicles and tracks are fit for service and the passengers informed of the timings. But still, some internal documents are missing to make the service complete: timetables for the engine and train staff.

With iPLAN driver`s timetables can be compiled and printed in different layouts.

Timetable documents are compiled with various files from the graphic timetable in a simple way. All the user has to do, is entering the used routes and the interconnection stations in the railway network:

iPLAN automatically arranges the necessary driver`s timetables by employing the train numbers. In these timetables, the programme independently detects and marks possible crossings and passings as well as the train sequence.

Moreover, manual modification along with adding information or footnotes can be performed comfortably (reference to expected interchanges or specific operating conditions), providing adaption to potential operating conditions, hence preserving flexibility.

A complete driver`s timetable is created in an instant, which can be printed with standard printers quite easily, while particular functions facilitate, for example, making one A4 page out of two A5 pages.

RB 7712 Angerapp Hbf. - Heilsberg

nur 21.3. - 18.9.

Tfz. 253

Last 350 t

Brh. min 98 R+Mg

Hg. 100 km/h

Brh. soll 140 R+Mg

1	2	3a	3b	4	5	6	7	8	9
Betriebsstellen									
Zulässige Geschwindigkeiten	Tunnelanfang und -ende, verkürzter Vorsignalabstand ▼, von 40 km/h abweichende Geschwindigkeiten auf Signal Hfz, Zugfunk			Vor der Trapeztafel hält Zug	Ankunft	Abfahrt	Kreuzung mit Zug	überholt wird überholt durch Zug	Zuglaufmeldung durch Art
ab km	km/h		Lage in km						
40	Angerapp Hbf.	-0,3			8 03			Edl. En	
1,0	¥	1,0							
100	Angerapp Bbf. Ah	2,0							
5,1	¥	5,1							
5,6	¥	5,6							
100	Beynuden	6,0							
	¥	7,0							
	Awanst. Sodehnen	7,0							
	Spirokeln	11,0							
	¥	13,0							
	Friedrichsruh (Nadr)	14,0							
	Launingken	18,0							
	Klimken	21,0							
	Awanst. Schirwindt Stadt	22,0							
	Schirwindt West Gbf.	25,0							

Train 12

Friday

Lilloot - Seton

Max. speed 40 mph

Engine RDC-1

1	2	3	4	5	6	7	8	9	10
Position of station	Permitted speed	Station, Position of speed change	Arrival	Departure or run through	Crossing with train	overtakes train is overtaken by train	Entering station track	Stop before entering station	Report by
157,6	40	Lilloot.....		1552					
	25	154,5							
		153,6							
152,3	40	MacNeill.....		1609					
	25	152,1							
	40	151,8							
	25	150,9							
		150,6							
149,2	40	Retaskit.....		19					
	35	147,7							
		146,8							
143,6	40	Ohin.....		1635					
139,5		Seton.....	1648						

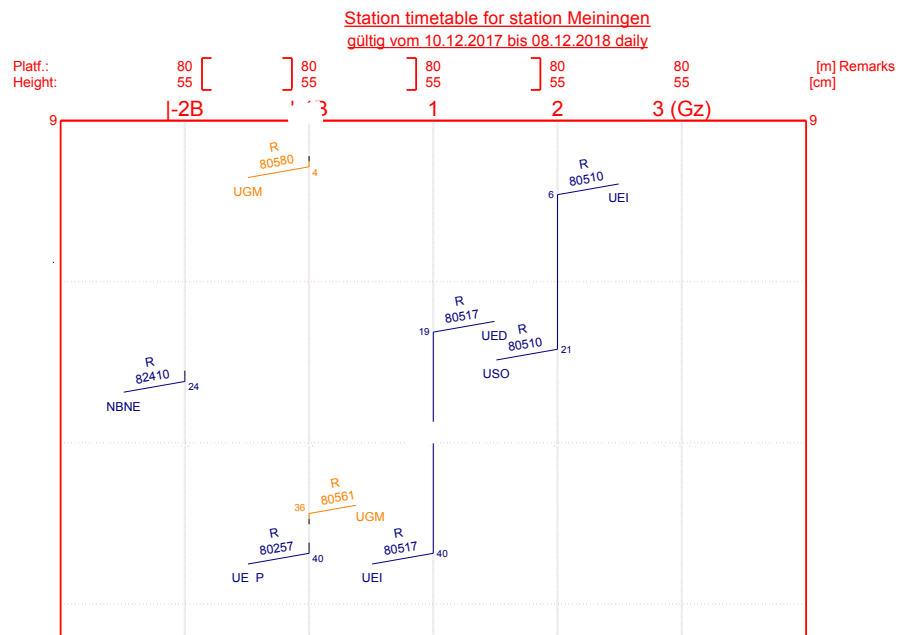
It is quite easy to keep an overview of a station with two tracks, usually, there is one direction running or there are simple rules for the use of tracks. On the other hand, a variety of timetable documents to secure track occupation are used at larger stations.

The module station timetable provides these documents by importing train data from the graphic timetable train diagram files. In case these files are not complete, train data may also be entered manually. Besides that, the module is capable of independently assigning trains according to a defined rule for the use of tracks. This proves that modern and clear timetable documents need not to be reserved to the main stations. The programme creates train sequence tables and track-occupation charts within minutes!

Track-occupation charts used in the initial planning process may be shown according to the local conditions either vertically or horizontally by a click of the mouse.

The familiar train sequence tables are illustrated in colour for the staff in signal boxes or signalling centres. By doing so, subordinated locations may be assigned, either jointly or separately. The station timetable module facilitates the compilation of additions or changes to the station timetable or to an entire special operation orders.

The module carries out troubleshooting, for example if a track has been assigned for two trains on a certain day or if platform or track lengths are insufficient. By doing so, problems can be detected far in advance.



Station timetable for station Meiningen - valid from 10.12.2017 until 08.12.2018 daily

Station	Arrival	Departure	Train	Track	From	To	Trainset switchover	Engine switchover	Remarks
UM		9.04	R 80580	-1B	Meiningen	Grimmenthal			Engine 650
UM	9.06	( 9.21)	R 80510	2	Eisenach	Sonneberg (Thüringen) Hbf.			Engine 3x650/2x650
UM	9.19	( 9.40)	R 80517	1	Eisfeld	Eisenach			Engine 650/2x650
UM	( 9.06)	9.21	R 80510	2	Eisenach	Sonneberg (Thüringen) Hbf.			Engine 3x650/2x650
UM		9.24	R 82410	-2B	Meiningen	Bad Neustadt (Saale)			Engine 642
UM	9.36		R 80561	-1B	Grimmenthal	Meiningen			Engine 650
UM	( 9.19)	9.40	R 80517	1	Eisfeld	Eisenach			Engine 650/2x650
UM		9.40	R 80257	-1B	Meiningen	Erfurt Pbf.			Engine 650



With interfaces a further use of the data out of the timetables created with FBS becomes possible:

Here we recommend the usage of the common RailML®-interface, which is supported by FBS in version 2.0 and 2.2 and whose development is attended intensively by iRFP.

An import of the thereby exported data can be made in every RailML®-compatible programme, for example:

- Personnel-/vehicle management *IVU.plan*
- Timetable simulation *OpenTrack*
- Personnel-/vehicle management *Trapeze*
- Demand simulation *VISUM*
- Customer information *PSIttraffic*

FBS also supports the user in case of special interface conditions:

- Train paths portal of DB Netz: TPN
- Train paths portal of ÖBB Infra: M-AMA
- Microsoft Excel®
- Infrastructure / timetable data bases

**Compatibility is guaranteed – making it easier for you to switch!**

**System requirements:**

- Core i5 processor or compatible
- 2GByte RAM; 64 Mbyte HDD
- XVGA graphic card (1440x900); if applicable graphic card for two monitors
- Operating system Windows XP oder 7
- USB or ExpressCard connection for the license plug
- A3 printer or colour plotter

FBS is available in different languages (German, English, French, Czech). Further localizations are possible, therefore please contact us.

The delivery of FBS usually includes:

- Programme iPLAN in seven modules
- Editors for train types and operation points
- FBS file management programme *Dispatcher*
- Manual in German and English
- Motive power unit data of various international manufacturers
- Example Operating points directory (D)
- Extensive exemplar data

We provide technology guarantees for FBS for the duration of one year and also updates for trouble shooting within the legal limits. These services may be expanded by an additional maintenance contract, including prompt help via phone or email.

Furthermore we offer:

- Regular FBS user conferences and trainings
- Courses for introduction into the timetable construction and for creation of operating concepts in the public transport
- Engineer studies, e.g. for transport and operating concepts for conventional and tilting trains, infrastructure and travel time investigations, construction of integral interval timetables
- Supply of route data files as basis for the timetable construction
- Conception and creation of railway-related software
- programming and maintenance of interfaces to third systems



### Projekte in Deutschland



### Projekte außerhalb Deutschland



### Transport authorities in the local transport

Bayerische Eisenbahngesellschaft  
Landesnahverkehrsges. Niedersachsen  
Verkehrsserviceges. Schleswig-Holstein  
Nahverkehrsservice Sachsen-Anhalt  
Nahverkehrsserviceges. Thüringen  
Verkehrsverbund Berlin-Brandenburg  
Mitteldeutscher Verkehrsverbund  
Verkehrsverbund Mittelsachsen  
Verkehrsverbund Oberl.-Niederschlesien  
Zweckverband Verkehrsverbund Vogtland  
Niederösterreichische Verkehrsorg.ges.  
KORDIS JMK, a.s., Brno  
SALZBURGER VERKEHRSVERBUND GmbH

### Engineering and planning offices

Albrecht & Partner AG, Luzern  
Bombardier Transportation,  
Derby/Hennigsdorf/Aachen/Västerås  
IPE GmbH, Wien  
SCETAURROUTE S.A., Paris  
SNCF International S.A., Paris  
SYSTRA S.A., Paris  
DE Consult GmbH, Berlin  
ETC Transport Consultants GmbH, Berlin  
Obermeyer Planen + Beraten GmbH, Munich  
Rail Consult GmbH, Cologne  
Railistics GmbH, Wiesbaden/Dessau  
RegioRail GmbH, Mannheim  
TransportTechnologie-Consult, Karlsruhe  
Jaakko Pöyry Infra BPI-Consult, Hannover  
VerkehrsConsult D-B GmbH, Dresden  
Ernst Basler + Partner AG

### Railway companies

Griechische Staatsbahn [OSE], Athen  
Lettische Staatsbahn [LDZ], Riga  
Matterhorn-Gotthard-Bahn, Brig  
Österreichische Bundesbahnen [ÖBB] – PV,  
Wien and other locations  
Régie autonome des transports Parisiens [RATP]  
Réseau Ferré France [RFF], Paris  
Saudi Railways Organisation, Dammam  
DB Regio AG, various regional areas  
Zentrale Netzentwicklung  
Regionalbahn Westfalen GmbH  
RegioNetz Verkehrs GmbH  
S-Bahn München GmbH  
Usedomer Bäderbahn GmbH  
Dehli Metro Rail Corporation

### KEOLIS S.A.

Eurobahn Verkehrsgesellschaft mbH  
Freiberger Eisenbahngesellschaft mbH  
Graz-Köflacher Eisenbahn GmbH  
Raab Ödenburg Ebenfurter Eisenbahn AG  
Salzburger Lokalbahn  
Stern & Haffner Verkehrsgesellschaft mbH  
Vöest-Alpine Stahl – Logistikservice GmbH  
AG der Wiener Lokalbahnen

### Abellio GmbH

Abellio Rail NRW GmbH  
Abellio Rail Baden-Württemberg GmbH  
Abellio Rail Mitteldeutschland GmbH  
Albtal-Verkehrs-Gesellschaft mbH  
AKN Eisenbahn AG  
NETINERA Deutschland GmbH  
metronom Eisenbahngesellschaft GmbH  
Ostdeutsche Eisenbahn Gesellschaft  
Die Länderbahn GmbH DLB  
Regentalbahn AG  
Berchtesgadener Land Bahn GmbH  
VLEX GmbH  
ERIXX GmbH  
TRILEX  
Vogtlandbahn

### BeNex GmbH

Cantus Verkehrsgesellschaft mbH  
Agilis Verkehrsgesellschaft mbH & Co. KG  
BVO Verkehrsbetriebe Erzgebirge GmbH  
CityBahn Chemnitz GmbH  
Rurtalbahn GmbH  
Erfurter Bahn GmbH  
Südthüringenbahn  
EV Elbe Weser GmbH  
Go-Ahead Verkehrsgesellschaft Deutschland GmbH  
Häfen und Güterverkehr Köln AG  
Hamburger Hochbahn AG / BeNEX GmbH  
Regio Infra Nord-Ost GmbH & Co. KG  
Regio Infra Service Sachsen GmbH  
Sächsisch-Oberlausitzer Eisenbahn GmbH  
Städtebahn Sachsen GmbH  
Südwestdeutsche Verkehrs-AG  
Ortenau S-Bahn GmbH  
Breisgau S-Bahn GmbH  
Thüringer Eisenbahn GmbH  
Transdev group (früher Veolia Deutschland GmbH)  
CONNEX Zentrale Betriebsplanung  
Trans Regio Dt. Regionalbahn GmbH  
NordWestBahn GmbH  
LausitzBahn GmbH  
Ostmecklenburgische Eisenbahn GmbH

We would be pleased to send you contact information about contact persons in the companies using FBS.

### Teaching and research institutions

Tschechische Technische Hochschule, Prague  
Eidgenössische Technische Hochschule Zürich  
DLR – Verkehrsforschung, Braunschweig  
Fachschule Bau, Wirtschaft & Verkehr, Gotha  
Fraunhofer-Gesellschaft – IVI, Dresden  
Technische Universität Berlin  
Technische Universität Braunschweig  
Technische Universität Dresden  
Universität Hannover  
Technische Hochschule Wildau  
Universität Stuttgart



## Station's timetable

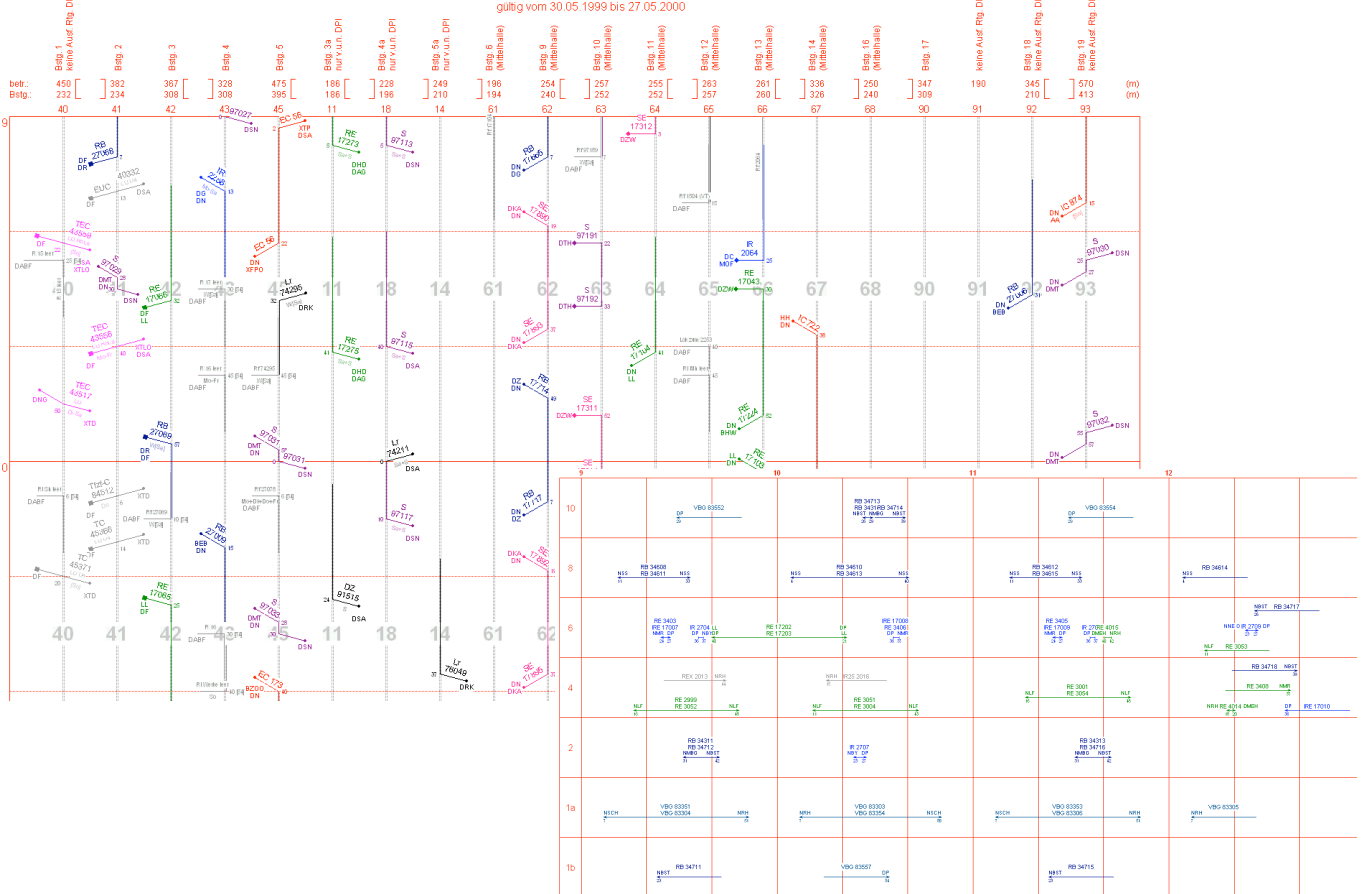
Fahrplan für Zugmeldestelle Pleinfeld - gültig vom 30.05.1999 bis 27.05.2000

	Ankunft	Abfahrt	Zug	Gleis	von	nach	Wg.- Übergang	Tfz.-Übergang	Bemerkungen
NGE	7.23	7.24	RB 5147	203	Leipzig Hbf.	Weißenburg (Bay)	5148	5148	
NPLF	7.29	7.30	W[Sa]	3	über Nürnberg Hbf.				
NWG	7.35			104					
NPLF	7.25	( 7.30)	RE 4184	5	Roth	Georgensgmünd	4185	4185	ähnlich nicht 13.0 -
NGE	7.35		VT	202					
NGE	7.23	7.24	RB 5147	203	Leipzig Hbf.	Weißenburg (Bi)			
NPLF	7.29	7.30	W[Sa]	3	über Nürnberg Hbf.				
NWG	7.35			104					
NPLF	( 7.25)	7.30	RE 4184	5	Roth	Georgensgmünd			
NGE	7.35		VT	202					
NGE	7.23	7.24	RB 5147	203	Leipzig Hbf.	Weißenburg (Bi)			
NPLF	7.29	7.30	W[Sa]	3	über Nürnberg Hbf.				
NWG	7.35			104					
NPLF	7.25	7.30	RE 4184	5	Roth	Georgensgmünd			
NGE	7.35		VT	202					
NWG	→	7.40	IC 828	102	München Hbf.	Berlin Zoologischer Garten			
NPLF	→	7.45		2		über Leipzig Hf.			
NGE	→	7.50		204					
NWG	→	7.40	IC 828	102	München Hbf.	Berlin Zoologischer Garten			
NPLF	→	7.45		2		über Leipzig Hf.			
NGE	→	7.50		204					
NWG	7.45	( 7.50)	Rf 5147						
			W[Sa]						

Fahrplan für Zugmeldestelle Dresden Hbf. - gültig vom 30.05.1999 bis 27.05.2000

	Ankunft	Abfahrt	Regelzug	Bedarfszug	Gleis	von	nach	Wg.- Übergang	Tfz.- Übergang	Bemerkungen
	7.16		Lr 74299		14	Dresden-Reick	Dresden Hbf.	97111	97111	bis 31. X. und ab 01. IV.
			Sa+So							
	7.16		S 97020		18	Pirna	Dresden Hbf.	Rf nach DA	Rf nach DA	nicht am 17. XI. Tfz. 143
			W[Sa]							
	7.18		S 97184		63	Dresden Hbf.	Tharandt	97179	97179	nicht am 17. XI.
			W[Sa]							
	7.19		SE 17886		62	Kamenz (Sachsen) über Dresden- Neustadt	Dresden Hbf.	17889	17889	Tfz. 234
	→	7.21	TEC 43557		40	Dresden- Friedrichstadt	Lovosice über Bad Schandau			
			B+Mo-Do							
			LU RoLa							
	→	7.21	TEC 43557		40	Dresden- Friedrichstadt	Lovosice über Bad Schandau			
			Fr+Sa							
			LU RoLa							
	7.22		IC 556		93	Dresden Hbf.	Frankfurt (Main) Hbf. über Dresden- Neustadt	Rf von DGBF	620	"GOTTFRIED SEMPER"
	7.22		S 97181		63	Tharandt	Dresden Hbf.	97188	97188	nicht am 25. XI. und 01. I.
	7.25		IR 2668		65	Dresden Hbf.	Karlsruhe Hbf. über Chemnitz Hbf.	Rf von DGBF	69468 von DN	"Vogland"

9 Uhr

Gleisbesetzungsplan Bahnhof Dresden Hbf.  
gültig vom 30.05.1999 bis 27.05.2000



## Driver's timetable

STB 82845 Zella-Mehlis - Wernshausen

Tfz. 650

Hg. 60 km/h

Last 0 t

Brh. min 79 R+Mg

Brh. soll 165 R+Mg

1	2	3a	3b	4	5	6	7	8	9
Betriebsstellen									
Tunnelanfang und -ende, verkürzter Versignalaustand ☐, von 40 km/h abweichende Geschwindigkeiten auf Signal HfZ, Zugfunk									
ab km	km/h		Lage in km	Vor der Trapeztafel hält Zug	Ankunft	Abfahrt	Kreuzung mit Zug	Überholt wird Überholt durch Zug	Zuglaufmeldung durch Art
	60	Zella-Mehlis	0,0			20,10			Fdl Fe
		- kein ZF -							
		☐	0,1						
1,2	20								
1,3	60	Zella-Mehlis West	2,7		20,13	14			
		Benshausen	6,3		X	18			
		Viernau	10,1		23	23			
12,7	40	Steinbach-Hallenberg	12,7						
			13,2		27	30	W[sa] 82664		Fdl Ak Fe
13,3	20		13,3						
13,5	60	Altersbach	13,5						
			14,6		X	33			
20,3	50		20,3						
21,3	20		21,3						

3353, 3355  
Tfz. 2x612

Mbr 215 R+Mg

160 km/h

3c		4/5	4/5
Betriebsstelle, Hinweis auf Geh und Mbr		3353	3355
Ank.	Abf.	Ank.	Abf.

Erfurt Hbf.

Erfurt-Bischleben

Neudietendorf

Neudietendorf Ds

Süßenbrücken

Haarhausen

Arnstadt Hbf.

Arnstadt Süd

Plaue (Thüringen)

Gräfenroda

Dörrberg

Ült. Gehlberg

Gehlberg

Oberhof

(Thüringen)

Zella-Mehlis

Suhl

Suhl-Heinrichs

Dietzhausen Bstg. 2

Dietzhausen

Rohr (Thüringen)

Grimmenthal

Ritschenhausen

Völkershausen

Bibra

Rentwertshausen

Mellrichstadt

Bahnhof

Erfurt Hbf. - Grimmenthal - Ritschenhausen - Schweinfurt Hbf.

Mg. 160 km/h

Mbr 215 R+Mg

1	2	3a	3b
Betriebsstellen			
Tunnelanfang und -ende, verkürzter Versignalaustand ☐, von 40 km/h abweichende Geschwindigkeiten auf Signal HfZ, Zugfunk			
ab km	km/h		Lage in km
	40	Erfurt Hbf.	108,4
	60	☐	109,1
109,4	160	Sbk. 2403	110,8
8,00	113,3	ESig A703	113,3
	130	Erfurt-Bischleben	114,2
.04	114,2	☐	115,0
.10	140	Sbk 2543	117,1
		ESig A763	120,1
		Neudietendorf	121,0
.21	121,3	☐	121,7
	80		0,6
.38		☐	0,8
8.45	1,3	100	Neudietendorf Ds
		☐	1,5
	2,0	120	Süßenbrücken
			3,4

STB 82921  
Sonneberg (Thür.) Hbf. - Eisenach

Hg. 100 km/h

Tfz. 650

Last 0 t

Brh. min 105 R+Mg

Brh. soll 165 R+Mg

1	2	3	4	5	6	7	8	9	10
Lage der Betriebsstelle (km)	Be-schränkung der Höchstgeschwindigkeit (km/h)	Betriebsstellen, ständige Langsamfahrstellen	vor Trapeztafel hält Zug	An-kunft	Ab-fahrt oder Durch-fahrt	Kreuzung mit Zug	überholt Zug wird überholt von Zug	Ein-fahrt in Gleis	Zug-lauf-meldung durch
32,9	40	Sonneberg (Thür.) Hbf.			1003	82908			
		- kein ZF -							
	32,60								
	60								
	31,27								
	20								
	31,18								
30,5		Sonneberg (Thür.) VWest		1006	07				
26,9	60	Mengersger.-Hämmern Ost		11	11				
26,55									
	25,70								
25,4	40	Mengersgereuth-Hämmern							
	25,01								
21,5	60	Effelder (Thüringen)							
	20,29								
20,2	20	Seltendorf							
	20,19								
	60								
15,9	40	Rauenstein (Thüringen)							
	15,45								
13,7		(Grümpen) §§							
11,2		Schalkau Mitte							
11,15									
11,14									

Train 12 Friday Lilloet - Seton									
Max. speed 40 mph Engine RDC-1									
1	2	3	4	5	6	7	8	9	10
Position of station	Permitted speed	Station, Position of speed change	Arrival	Departure or run through	Crossing with train	Overruns train as overruns by train	Entering station track	Stop before entering station	Report by
157,6	40	Lilloet.....		1552					
	25	154,5							
		153,6							
152,3	40	MacNeill.....		1609					
	25	152,1							
	40	151,8							
	25	150,9							
		150,6							
149,2	40	Retaskit.....		19					
	35	147,7							
		146,8							
143,6	40	Ohin.....		1635					
139,5		Seton.....		1648					

ICity 23 "ΟΛΥΜΠΙΑ" ΠΥΡΓΟΣ - ΚΙΑΤΟ (K)

Κινητήριο 6501

Μέγιστη ταχύτητα 90 χλμ./ωρ.

EAIYAE

Ελάχισ. πείδη 93 P  
Πραγμ. πείδη 125 P

1	2	3a	3b	4	5	6	7	8	9
Θέσεις Κυκλοφορίας									
Επιτεταμένη Ταχύτητα	Θέσεις Κυκλοφορίας	Βραχεία προσημάνση ☐	Χαλκομετρική > βέση	στοθ-μεύει προ-αίχμων	Ανα-χώρηση	διασταύ-ρωση με σιμας	υπερ-βαίνει υπέρ-βαίνεται από σιμας	διατυ-πώσεις από είδος	
από x8	χλμ/ώρα	Τροχιά εισόδου							
98,0	30	ΠΥΡΓΟΣ	>1	0,0					
	90	ΛΑΣΤΕΙΚΑ		94,9					
91,4	60	ΣΚΟΥΡΟΧΩΡΙ		91,2					
91,2	60								
91,1	60								
89,8	70	ΜΥΡΤΙΑ		89,3					
88,0	90	ΜΙΡΑΜΑΡΕ		87,8					
				86,4					
				86,1					
				83,4					
				80,5					
				77,7					
				77,4					
				72,2					
				67,0		23	24	1352	
				64,6		26	26		
				61,1		30	30		
				57,8		33	33		
				51,3					



*Customer's timetable and arrival and departure posters*

[illegible][illegible]

ΠΥΡΓΟΣ			
Αναχώρηση			
ισχύει από 9/12/2007 μέχρι 13/12/2008			
Χρόνος	Αμαξ/χία	Τροχιά	σε
1.06	D 309	1	ΛΑΣΤΕΙΚΑ 1.11 - ΣΚΟΥΡΟΧΩΡΙ 1.14 - ΜΥΡΤΙΑ 1.17 ◊ - ΑΜΑΛΙΑΣ 1.32 - ΚΑΒΑΣΙΛΑ 1.46 - ΒΑΡΔΑ (ΜΑΝΩΛΑΣ) 2.06 - ΑΧΑΪΑ 2.28 - ΠΑΤΡΑ 3.00 - ΑΪΓΙΟ 3.54 - ΔΙΑΚΟΠΤΟ 4.10 - ΞΥΛΟΚΑΣΤΡΟ 4.56 - <b>ΚΙΑΤΟ (Κ) 5.10</b>
4.57	D 308	1	ΑΛΦΕΙΟΣ 5.04 - ΕΠΙΤΑΛΙΟ 5.11 - ΚΡΕΣΤΑΙΝΑ 5.17 ◊ - ΖΑΧΑΡΩ 5.34 - ΚΑΛΟΝΕΡΟ 6.00 - ΚΥΠΑΡΙΣΣΙΑ 6.09 - ΚΑΛΟΝΕΡΟ 6.23 - ΖΕΥΓΟΛΑΤΙΟ 7.15 - <b>ΚΑΛΑΜΑΤΑ 7.54</b>
6.11	R 1353	1	ΛΑΣΤΕΙΚΑ 6.15 - ΣΚΟΥΡΟΧΩΡΙ 6.19 - ΜΥΡΤΙΑ 6.22 ◊ - ΑΜΑΛΙΑΣ 6.37 - ΚΑΒΑΣΙΛΑ 6.51 - ΒΑΡΔΑ (ΜΑΝΩΛΑΣ) 7.11 - ΑΧΑΪΑ 7.35 - <b>ΠΑΤΡΑ 8.06</b>
6.55	R 1380	1	ΛΑΜΠΕΤΙ 6.58 - ΚΟΛΥΡΙ 7.00 - ΒΑΡΒΑΣΑΙΝΑ 7.03 ◊ - <b>ΟΛΥΜΠΙΑ 7.24</b>
8.01	R 1381	1	<b>ΚΑΤΑΚΩΛΟ 8.20</b>
8.14	R 1350	1	ΑΛΦΕΙΟΣ 8.21 - ΕΠΙΤΑΛΙΟ 8.28 - ΚΡΕΣΤΑΙΝΑ 8.33 ◊ - ΖΑΧΑΡΩ 8.54 - ΚΑΛΟΝΕΡΟ 9.19 - ΖΕΥΓΟΛΑΤΙΟ 10.06 - <b>ΚΑΛΑΜΑΤΑ 10.43</b>
8.54	ICity 21 1. 2. ㊟ ㊞	2	ΑΜΑΛΙΑΣ 9.12 - ΓΑΣΤΟΥΝΗ 9.20 - ΚΑΒΑΣΙΛΑ 9.23 ◊ - ΒΑΡΔΑ (ΜΑΝΩΛΑΣ) 9.41 - ΑΧΑΪΑ 10.01 - ΠΑΤΡΑ 10.31 - ΑΪΓΙΟ 11.12 - ΔΙΑΚΟΠΤΟ 11.25 - ΞΥΛΟΚΑΣΤΡΟ 12.03 - <b>ΚΙΑΤΟ (Κ) 12.14</b>
8.56	E 382	1	ΑΛΦΕΙΟΣ 9.03 - <b>ΟΛΥΜΠΙΑ 9.16</b>
8.58	E 481	3	<b>ΚΑΤΑΚΩΛΟ 9.17</b>
9.50	R 1383	2	<b>ΚΑΤΑΚΩΛΟ 10.09</b>
9.51	E 482	1	ΑΛΦΕΙΟΣ 9.58 - <b>ΟΛΥΜΠΙΑ 10.11</b>
10.43	R 1385	1	<b>ΚΑΤΑΚΩΛΟ 11.02</b>
11.08	ICity 20 1. 2. ㊟ ㊞	1	ΕΠΙΤΑΛΙΟ 11.21 - ΚΡΕΣΤΑΙΝΑ 11.26 - ΖΑΧΑΡΩ 11.41 ◊ - ΚΑΛΟΝΕΡΟ 12.01 - ΖΕΥΓΟΛΑΤΙΟ 12.46 - <b>ΚΑΛΑΜΑΤΑ 13.20</b>
11.10	R 1357	2	ΛΑΣΤΕΙΚΑ 11.14 - ΣΚΟΥΡΟΧΩΡΙ 11.18 - ΜΥΡΤΙΑ 11.21 ◊ - ΑΜΑΛΙΑΣ 11.36 - ΚΑΒΑΣΙΛΑ 11.50 - ΒΑΡΔΑ (ΜΑΝΩΛΑΣ) 12.10 - ΑΧΑΪΑ 12.32 - <b>ΠΑΤΡΑ 13.05</b>
11.26	R 1386	1	ΛΑΜΠΕΤΙ 11.29 - ΒΑΡΒΑΣΑΙΝΑ 11.33 - ΑΛΦΕΙΟΣ 11.35 ◊ - <b>ΟΛΥΜΠΙΑ 11.52</b>

[illegible]

### Circulation plan

Mon		Railway of Nadraulia Depot Agerapp Site: Cranz, Osterode, Darkehmen			Circulation plan Engine BR 646			FBS So macht man Fahrpläne!		Current state: 17.08.2018   number of vehicles: 9 Running performance per week: 34.997,2 km av. running performance per vehicle and days: 573,7 km																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1 Sun 9 OA 997,1 km																										1 Tue 1 OC 997,1 km
2 Fri 1 OC 414,1 km																										2 Tue 2 OC 414,1 km
3 Sun 2 OA 602,8 km																										3 Tue 3 OD 602,8 km
4 Sun 3 OOO 323,5 km																										4 Tue 4 OOO 323,5 km
5 Sun 4 OD 697,4 km																										5 Tue 5 OA 697,4 km
6 Sun 5 OC 953,4 km																										6 Tue 6 OA 953,4 km

*interval graphics*

