

# SYSTEMS FACTFILE

No. 163 Chemnitz,  
Germany

Tony Streeter explores the tramway in this forward-looking Saxon city, the home of an ambitious and developing tram-train programme with planned growth over a multi-decade plan.



**F**ew places have such far-reaching transport plans that a whole model is named after their concept. One such city is Chemnitz, a conurbation of just over 245 000 people (2020) in Saxony, Germany.

In this case the term – *Chemnitzer Modell* – describes a multi-decade programme to bind the tramway of Chemnitzer-Verkehrs AG (CVAG) into its surrounding railway system through a mixture of new-build routes and the taking over of heavy rail services; key to this is the use of tram-trains, with Stadler *Citylink* vehicles having entered service in 2016.

Such ideas work because Chemnitz has a substantial tramway – the former Karl-Marx-Stadt boasts 34km (21 miles) of network, with a continuous history dating back to the first opening of a horse operation in 1880 and steady development ever since.

An imperial city in the 12th Century, from the 1800s Chemnitz became an industrial powerhouse;

▲ This trio at Chemnitz Hbf on 16 September 2016 gives a good representation of the scope of the city's networks. From left is *Variobahn* 613 on a line 4 service to Hutholz, then 413 which will run over the pilot tram-train stretch to Stollberg (C11), and on the right *Citylink* 431. The Stadler tram-train is not in public service, but will nevertheless shortly run 'through the wall' and onto the city streets.

All images by Robert Bartkowiak unless stated.

the 'Saxon Manchester' was home to a world-famous locomotive builder among others. A somewhat lengthy name didn't stop 'Sächsische Maschinenfabrik vormals Richard Hartmann' from delivering equipment to railways both at home and overseas.

However, such an industrial background ensured the city's heavy destruction in World War Two. It also – after the formation of the German Democratic Republic – led to the decision to rename it after one of the fathers of Socialism in 1953. Restoration of the historic title came in 1990, just months before East Germany ceased to exist upon its unification with the Federal Republic that October.

By that time the tramway had already seen years of modernisation, not least as part of the drive to create a modern city centre out of the ruins of the old one. Part of that process brought the steady conversion

or abandonment from 1958 of a Chemnitz oddity: its 925mm narrow-gauge network. This was a relic from the tramway's formation when British concessionaire William Roebuck decided on a gauge of 3ft (915mm) – later increased by 10mm. The last narrow-gauge services ran in 1988.

Reconstruction has continued in the decades since unification, overseen since 1990 by CVAG, formed out of the previous East German transport company. In addition to the tramway, CVAG also runs the city's buses, while the whole organisation falls under the Verkehrsverbund Mittelsachsen transport authority and tariff union, formed in 1997 and which covers the city and surrounding area.

Early changes under the CVAG aegis included upgrading the system's Tatra T3D vehicles (which first ran here in 1969) and acquisition of the first low-floor ADtranz *Variobahn* (prototype 601 was officially rolled out in early 1994); construction of a new depot at Adelsberg which opened in 1995 on a





▲ ABOVE: Tatra T3D-M 527 turns into Bahnhofstraße from Rathausstraße in September 2016. Tony Streeter

◀ LEFT: Despite Allied bombing during World War Two, areas of Chemnitz retain a 19th Century feel. Recent Škoda ForCity Classic delivery 911 heads for Zentralhaltestelle on a line 2 service at Augsburgs Straße. December 2019.





◀ LEFT: Chemnitz relies heavily on its *Variobahn* trams both on the tramway itself and C11 services to Stollberg. Vehicles 602 and 607 cross at Ernst-Wabra-Straße, the last stop before the southern line 4 terminus at Hutholz.



▲ ABOVE: Regular use of CVAG's Tatra T3D-M vehicles (a designation from 1990s modernisation) ceased in 2020, while line 6 has also been discontinued. In September 2016 T3D-M 527 is at Hbf. Tony Streeter



▶ RIGHT: Rebuilding of part of the Hbf allowed the tramway and railway to be joined through the wall of what was once a section of station serving bay platforms. In September 2016 Citylink 433 has just left Hbf, while 431 behind is on a C14 service to Mittweida. Tony Streeter



▲ ABOVE: *Variobahn* 607 at the Bernsdorf terminus of line 2 in January 2019; in the south-east of the city, Bernsdorf is home to the technical university and notable for its student life.

two-hectare site big enough to be future-proofed for increasing demands; and modernisation of stops as exemplified by the complete rebuilding of the main hub, Zentralhaltestelle, completed in 1999. More recently, further fleet renewal has brought delivery of Skoda *ForCity Classic* vehicles, which entered line service in September 2019.

At the northern end of the tramway is the loop that serves the Hauptbahnhof (Hbf) and bus station (ZOB) and south of there a complex web of routes, all of which pass through the Zentralhaltestelle. From this hub lines radiate out roughly west to Schönau (line 1), south-west to Hutholz (lines 4 and 5 via different routes), south to Technopark (line 3) and to Bernsdorf (line 2), and in a more easterly direction to Gablenz (line 5).

Post-unification expansion included the major scheme to bring line 4 from the airport to Hutholz. This began in 1993 and continued for more than a decade: completion of the last section in 2004 allowed trams to run from there directly into the city centre. However, the most ambitious aspect of development is the Chemnitzer Modell tram-train initiative. *TAUT* has covered this programme in detail before (see *TAUT* 952 and 907) and as of early 2021, the initial steps have already been delivered, with other stages either under construction or planned. Tram-train services are operated by the municipally-owned Citybahn-Chemnitz under the branding Chemnitz Bahn.



◀ LEFT: This view at Roter Turm belies the presence of the nearby historic tower of the same name; much of central Chemnitz was reconstructed during the GDR years and has been renovated and modernised since. *Variobahn* 603 on line 4, 16 September 2016. Tony Streeter

## THE FLEET

The most recent vehicles to arrive are the five-section Skoda *ForCity Classic*, with deliveries completed and all 14 (911-924) running in public service since July 2020. The 31.71m-long and 2.65m-wide vehicles have capacity for 187 passengers and have been allocated the fleet numbers 911-924.

Arrival of the Czech-built trams has meant vehicles from a similar source that were a big part of the city landscape for decades have now been put in reserve: the classic Tatra T3D, which ran

from the early 1990s onwards in modernised T3D-M form. These 14.95m-long and 2.5m-wide vehicles run as coupled motor cars, with a capacity of 166 (59 shared across the two cars); three sets remain as an operational reserve. As of February these were 517/507/519-509/529-530, though the latter was to be exchanged for 515-516.

Two forms of *Variobahn* run in the city - single-ended 6NT-LDE (601-614) and double-ended 6NGT-LDZ (901-910). Deliveries

began with prototype 601 in 1993, with series deliveries in 1998-2000. Both versions are 31.38m long and 2.65m wide, with capacity of 199/189 respectively.

Also to be seen on the CVAG network are the Chemnitz Bahn Stadler *Citylink* tram-trains - hybrid vehicles able to use the overhead electric supply, and with diesel engines to run on non-electrified routes. An original order for eight was later followed by one for another four; the first entered service in 2016.





**“Since 2017 the C11 route south as far as Alchemnitz has only been operated by tram-train vehicles.”**

Since 2017, the year a revised network (known as Netz 2017+) was introduced, the C11 route south as far as Alchemnitz (formerly also served by tramline 6) has only been operated by tram-train vehicles.

Peak-time services on the city system run up to ten-minute headways.

### A multi-stage model for Chemnitz

The tram-train pilot (known as Stufe 0, or ‘stage zero’) was completed in 2002 with electrification of the railway to Stollberg and, since then, the running of CVAG *Variobahn* vehicles over what has become line C11.

Work on the next stage, the EUR37.2m Stufe 1, began in 2009. This resulted in the connection of the tramway and railway at Chemnitz Hbf – a scheme that required substantial rebuilding at the city’s main station – followed by introduction of tram-train services over the three lines to Burgstädt (line C13), Mittweida (C14) and Hainichen (C15) respectively. These routes, which brought with them the introduction of the *Citylink*

vehicles, represent the future of the ‘Modell’ more clearly than the pilot stage.

Realisation of Stufe 1 came in steps – trams first ran ‘through the wall’ and into the Hbf in 2013, but it was October 2016 before the new routes ran over their full length beyond the main station and over tramway tracks into the city centre.

Stufe 2 is currently in the delivery phase. It includes construction of a new 2.2km (1.4-mile) section of tramway along Reichenhainer Straße to the campus of the city’s technical university, as well as a new connection to the railway to Thalheim and Aue. The scheme also includes further modernisation of the Zentralhaltestelle for barrier-free access, which was undertaken in 2018.

Completion of the entire Chemnitzer Modell, which covers a further three stages, is not anticipated to take place before 2030. These remaining steps are not expected to be delivered in numerical order. The next is to be Stufe 5, effectively



◀ LEFT: Gotha/LEW ET54 car 801 can be hired for special events and is seen at Hbf. The vehicle arrived from Dresden in 1986 and initially served as a winter works car before being converted for special use.

▶ RIGHT: The busy Zentralhaltestelle with Škoda ForCity Classic 915 and Tatra trailer 526 visible on 9 December 2019. Behind the Škoda tram is a bus – demonstrating the smoothness of intermodal transfer.



◀ LEFT: CVAG’s Tatras were repainted in blue/yellow after their modernisation, but 519 has since been returned to the more traditional red/cream. This is one of three T3DM sets to be retained as an operational reserve.

▶ RIGHT: Impressive tram/bus signal near Theaterplatz. Tony Streeter







All 14 Škoda low-floor trams are now in service, reducing the remaining Tatra trams to reserve. ForCity Classic 917 has just left the southern terminus of line 3, Technopark, on 9 December 2019.

## NETWORK FACTS

- > **Opened:** 1880 (first electric lines 1893)
- > **Length:** 34km (21 miles)
- > **Lines:** 5 (plus four tram-train)
- > **Depots:** 1
- > **Stops:** 62
- > **Approx. weekday hours:** 04.30-00.00
- > **Line frequency:** 10 minutes (typical peak)
- > **Gauge:** 1435mm
- > **Power:** 600V dc, overhead supply
- > **Operator:** Chemnitz-Verkehrs AG - [www.cvag.de](http://www.cvag.de)
- > **Civic information:** [www.chemnitz.de](http://www.chemnitz.de)





an extension of the original pilot from Stollberg.

Initially this was expected to take the tram-train network as far as Oelsnitz (12km/7.5 miles), but it will now extend another 10km (six miles) to St Egidien following a decision taken in 2020. It will be electrified throughout, with delivery expected in 2025.

Preparations are also underway for Stufe 4, a planned 17km (11-mile) connection to Limbach-Oberfrohna that is expected to cost around EUR120m, with completion aimed for 2030. An initial stretch of new city tramway is to be delivered in 2025-27, with a tender process launched in 2020; this is to start at the Hartmannstraße/Leipziger Straße crossing and run to

Stadthalle, before splitting there with one branch running to Falkeplatz to join the existing network and the other to the Straße der Nationen where it is to do the same. With that it will create a city ring.

› We are grateful to CVAG's Juliane Kirste for assistance in the preparation of this Factfile. **TAUT**

▲ Mittweida is the end point of tram-train route C14. Citylink 438 arrives from Chemnitz in September 2016. Tony Streeker

**“An initial stretch of new tramway, to create a city ring, is to be delivered in 2025-27, with a tender launched in 2020.”**



▲ Tatra T3D vehicles, more recently in modernised form, have been part of the Chemnitz operation since 1969. T3D-M 519 carries advertising for the city's tram museum.

## ESSENTIAL FACTS

**Local travel:** CVAG has a customer centre (Mobilitätszentrum) adjacent to the Zentralhaltestelle (closed as of February 2021 due to pandemic restrictions). A single zone day ticket at EUR4.60 is among a range of other options; Chemnitz falls within VMS zone 13. Ticket machines can be found on trams and at stops, and a number of outlets such as shops and petrol stations offer ticket sales as well.

**What is there to see?** Chemnitz is home to a variety of museums and art galleries, and the city centre includes a number of reconstructed and restored historic buildings - these include the Roter Turm (red tower) which dates from the 12th Century. The tram museum at Zwickauer Straße 164 ([www.strassenbahn-chemnitz.de](http://www.strassenbahn-chemnitz.de)) has examples of both narrow- and standard gauge cars. The Sächsisches Eisenbahn Museum Chemnitz-Hilbersdorf ([www.sem-chemnitz.de](http://www.sem-chemnitz.de)) and 381mm-gauge park railway ([www.parkeisenbahn-chemnitz.de](http://www.parkeisenbahn-chemnitz.de)) are other rail-related attractions.

However, perhaps the most striking sight for overseas visitors is the roughly 13m-high monument to Karl Marx on what is now Brückenstraße in the city centre. The 1971-inaugurated monument features a bronze head on a plinth, with the words 'workers of the world, unite!' in multiple languages on the wall of a building behind. Despite the rededication of the city to no longer honour its former namesake, the statue remains a symbol of Chemnitz more than 30 years after the end of communism.