

SBB's First Giruno EMUs Commissioned

In October 2014 SBB ordered 29 11-car, 200 m long EMUs with an option for 92 more from Stadler, for international services. These EMUs are designated EC250 by Stadler, and Class RABe 501 by SBB, which also refers to the trains as Girunos.

The first five-car formation made its public debut at InnoTrans 2016, only 23 months after the order was placed (see R 5/16, p. 36), subsequently being returned to Bussnang for completion. By February 2017 it was ready for testing, and was then sent to Stadler's IBS (Inbetriebsetzungszentrum - commissioning centre) in Erlen.

While the **bodyshells** for the Girunos are built at Bussnang, the bogies are built at Winterthur. The logistics for uniting these two main components involve three or four complete bodyshells being moved on low floor platform wagons, the type used by Stadler for moving metre gauge trains, from Bussnang to the IBS complex, with the factory's own locomotive takes over haulage. The two establishments are about a quarter of an hour apart by rail.

The **bogies**, meanwhile, are moved by road from Winterthur to the IBS. Here they are placed on one of the seven tracks in the 200 m long hall, ready to receive the bodyshells, which are craned into position. This whole operation could be realised at Bussnang, in theory, but with the latter factory being so busy it would place an extra strain on resources and space. Not only in the main IBS testing hall, but also on the test track outside the building can testing take place under 25 kV 50 Hz, 15 kV 16.7 Hz and 3 kV DC.

Testing of the Girunos is expected to take around 18 months, since authorisation in various countries will be necessary. Of the 29 trains, six are to be used for testing purposes and authorisation. Four are to be used for authorisation testing in Germany, Austria and Italy, and the other two for Swiss authorisation. Tests and commissioning for 250 km/h running have to be realised in Germany. One Giruno is scheduled to visit the VUZ Velim test centre in July 2017. To ensure that everything runs smoothly, the first type tests will involve the ATP systems.



Two halves of the first Giruno at the IBS on 16 February 2017. The blue Class Eea shunter, 97 85 1936 133-8, is used for haulage of new stock between Bussnang and Erlen. Note the dual gauge track (1,435/1,000 mm), necessary for testing new trains, especially for the Swiss market.



On 16 February 2017 the Class Eea shunter, running on battery power, shunts the 6th and 7th bodyshells for the first Giruno into the smaller hall at Erlen for mounting on bogies and coupling up to the rest of the train.



A detail of a low floor platform wagon 84 85 991 7 000-0 Uaikk CH-STAG.

A Giruno bodyshell is being craned off the rake of very low floor platform wagons at the IBS Erlen onto its bogies, ready for coupling up to the four completed cars on the right. This activity takes place in the smaller, three track, 100 m long hall.



In Switzerland and Germany authorisation is to be requested for use on all lines electrified at 15 kV AC. In Austria this is to be granted for all such lines too, but with the one exception of the Semmering line. In Italy, authorisation will cover lines electrified at 3 kV DC and 25 kV AC.

In **Switzerland** three stages are involved in the authorisation procedure. First a provisional operating certificate is granted for running at a top speed of 200 km/h, for a single train. Then a second certificate, enabling multiple operation at this speed is issued. Finally a third certificate enables running at 250km/h, including operation in multiple.

In Germany and Austria, authorisation involves a one-stage procedure. In Italy the first stage of authorisation involves a single EMU running under 3 kV

DC, followed by 25 kV AC, and then finally authorisation for multiple operation under both voltages.

The Girunos are being built for compliance with the TSI HS RST, TSI CR LOC&PAS, TSI SRT, TSI PRM, TSI CCS and TSI NOI specifications. Risk assessments are to be carried out according to CSM (Common Safety Method) documentation. The Swiss company Scorail will act as Notified Body, the German company AEBt will act as both Designated Body and Assessment Body. However in Italy the Notified Body will be Firma Rina Services. The various authorisation procedures involve the fulfilment of over 5,000 different requirements by February 2019.



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Photos by author

Final assembly of the Giruno cars at Stadler Bussnang factory on 15 February 2017. On the right is a bodyshell for one of the Junakalusto FLIRTs.

Testing Of WESTbahn KISSes Continues



As reported in R 5/16; p. 13, KISS 4110 009, the first of the ten new Class 4110 WESTbahn EMUs started authorisation testing in August 2016. Involved in the programme for Germany, Austria and Switzerland are DB Systemtechnik, TÜV-Süd, AEBt and ERC. Starting in October 2016 DB Systemtechnik took over the verification of safety against derailment and the brake tests on behalf of Stadler Altenrhein.

The lower photo, taken on 14 October 2016, shows one half of four-car 4110 009 at DB Systemtechnik's Minden testing establishment, where safety against derailment was measured. Bogie test runs were then realised mainly in Austria and Germany (in the latter country between Würzburg and Fulda). Testing is currently running to schedule, all partners (Stadler, WESTbahn, DB Systemtechnik) working in close co-operation regarding the test programme and the use of measurement systems, so as to surmount any possible difficulties.

Brake tests were completed by mid-February 2017, using 4110 010. Then will follow a series of tests using six-car 4010 008, and finally both the four- and

six-car KISSes will be tested running in multiple in Austria.

The upper photo was taken on 22 October 2016 near Wachenhofen on the Würzburg-Treuchtlingen line, showing 4110 009, together with RailAdventure's 103 222 and Alpha Trains' 186 202 (2810) and Railpool's 187 316, forming train 79181, a special working en route from Bebra to Salzburg.

In Salzburg 4110 009 was handed over to WESTbahn for tests in Austria, where test runs were made during the first half of November on the new Westbahn HSL between Wien-Hütteldorf, Tullnerfeld and St. Valentin, the train reaching a maximum speed of 220 km/h. On 14 and 15 November 2016 the train made test runs on the line between Unzmarkt and Fentsch-St. Lorenzen (north of Klagenfurt am Wörthersee),

the objective here being to assess running stability. Then starting on the 16th more test runs were made, this time between Unzmarkt and St. Veit an der Glan, the purpose of the tests again being running stability.

4110 009 departed for Switzerland early in December 2016, hauled by a Class Re 4/4 II locomotive from St. Margrethen to Lausanne, for a series of test runs over pointwork on the nights of the 15th/16th and 16th/17th. On 17 December 2016 the train was hauled back to St. Margrethen to be returned to WESTbahn. In January and February 2017 further tests for running stability were realised between Innsbruck and Ötztal.

Once authorisation has been completed, WESTbahn plans to phase the nine four-car (4110 009 to 017) and one six-car (4010 008) KISSes into regular service starting in summer 2017.



Photo: Tim Christian Buscher

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Upper photo:
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