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|| **Swedes question need for speed**  
Key decision looms for high-speed project

|| **Passenger progress**  
Brazilian projects battle on in face of political and economic headwinds



# Contents

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International Railway Journal (Print ISSN 2161-7376, Digital ISSN 2161-7368), is published monthly by Simmons-Boardman Publishing Corp, 55 Broad Street, 26th Fl, New York, NY 10004-2580, USA. Printed in Great Britain by Buxton Press and distributed in the USA by Mail Right International, 1637 Stelton Road B4, Piscataway, NJ 08854, USA. Periodicals postage paid at Piscataway, NJ and additional mailing offices. COPYRIGHT © Simmons-Boardman Publishing Corporation 2016. All rights reserved. Contents may not be reproduced without permission. For reprint information please contact Editor-in-Chief. For subscriptions & address changes, please call +1 402 346-4740. Fax +1 402 346-3670. Email: internationalrailwayjournal@omeda.com or write to: International Railway Journal, Simmons-Boardman Publishing Corp, 555 Huehl Rd, Northbrook, IL 60062 USA. POSTMASTER: Send address changes to International Railway Journal, PO Box 3135, Northbrook, IL 60062-3135 USA.



IRJ December 2017

December 2017 Volume 57 issue 12

## News

- 4 This month
- 6 News headlines
- 10 Transit
- 14 Financial
- 16 Analysis

## South America

- 18 Passenger projects fight on despite delays  
Brazilian cities continue to back rail to curb congestion
- 24 Santiago metro network enters era of expansion  
Plans to expand network to eight lines and 174km

## High Speed

- 28 Swedish high-speed faces date with destiny  
Major government decision expected in spring 2018
- 32 California high-speed edges closer to reality  
United States' first high-speed railway takes shape

## Track

- 37 New track equipment on show in Hamburg  
Vossloh displays new milling machine and other equipment
- 40 Finger on the pulse  
Fibre optic cables detect infrastructure issues

## Also in this issue

- 44 Rendezvous
- 45 Full contact list
- 45 Advertisers index
- 46 The last word



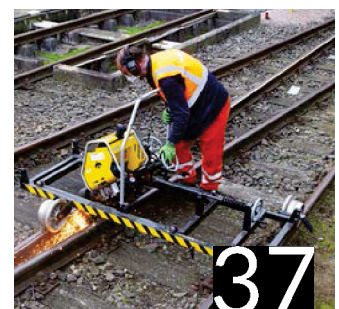
6



18



28



37

### Front cover

The Linsinger SF02-FS Truck combines flexibility with efficient rail treatment. The ability to mill switches in a single pass minimises track possessions while the self-powered bidirectional vehicle is able to easily cover the distance from site to site. With cutting depths of (0.1) 0.3mm - 1.2 (1.5)mm possible, the vehicle can perfectly restore the profile of main line tracks and switches.



# Passenger projects fight on despite delays

Despite continuing political problems, the Brazilian economy is beginning to recover after two years of recession, with a 2.4% increase in GDP predicted for 2018. As **Renata Passos** reports, the return to economic growth is expected to lead to the revival of stalled passenger rail projects and the launch of new schemes.

**T**HE political and economic crises faced by Brazil in the last few years significantly impacted railway investment. Some of the passenger projects designed to cater for the 2014 Soccer World Cup and the 2016 Olympic Games did not even get off the drawing board, while others were not completed in time.

Ms Roberta Marchesi, superintendent of the National Association of Passenger Rail Operators (ANPTrilhos), says it is vital to complete the projects underway and to advance studies for new lines to provide transport networks appropriate to the population and size of Brazilian cities.

Brazil's urban rail networks comprise 44 lines totalling 1034km with 557

stations. ANPTrilhos expects these networks to grow by about 200km during the next five years, while a study by the National Transport Confederation (CNT) shows that at least 850km of new lines are needed in Brazil, ranging from light rail and monorail to metro and commuter rail.

While the states of São Paulo, Rio de Janeiro and Bahia stand out at present in terms of the number of projects and volume of work, progress has been frustratingly slow elsewhere. For example, a date has yet to be agreed to start work on a 13.6km light rail line in Goiânia, construction of a 22km two-line light rail network in Cuiabá has been suspended due to fraud, and work on the 13.2km East Line metro project in

Fortaleza has been halted since 2015 due to a lack of resources.

The economic situation certainly looks a lot brighter. According to the International Monetary Fund (IMF) and the Central Bank of Brazil, Brazilian GDP was expected to grow by 0.7% in 2017, while for 2018, the Central Bank forecasts GDP growth of 2.4%.

This assurance of growth is leading to the revival of some rail schemes such as the state of São Paulo's Reais 20bn (\$US 6.1bn)

Rio de Janeiro's light rail network was one of the few passenger rail projects successfully delivered in time for the 2016 Olympic Games.



InterCity Train (TIC) project. This is being developed as a Public Private Partnership (PPP) by a consortium of Estação da Luz Participações (EDLP) and the Infrastructure Fund of BTG Pactual. The concession will cover civil works, purchase of rolling stock and operation of TIC for 32 years.

TIC will consist of two lines totalling 477km with 24 stations centred on São Paulo. A north-south line will link

Quintella, CEO of EDLP and chairman of the International Union of Railways (UIC) Latin American region, the great advantage of this project is that 100% of the network will use existing rights-of-way, which means that no land expropriation is required, and the project should have minimal environmental and geological impacts. In addition, 23 of the 24 stations will make use of existing buildings,

although they will require modernisation and adaptation to improve accessibility.

“The Americana - São Paulo section should be the first of many passenger rail systems to be revived in Brazil,” says Quintella. “This will create a great opportunity for investors, operators and industries in the sector.”

Quintella expects tendering for the initial 135km section

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The Americana - São Paulo section should be the first of many passenger rail systems to be revived in Brazil.

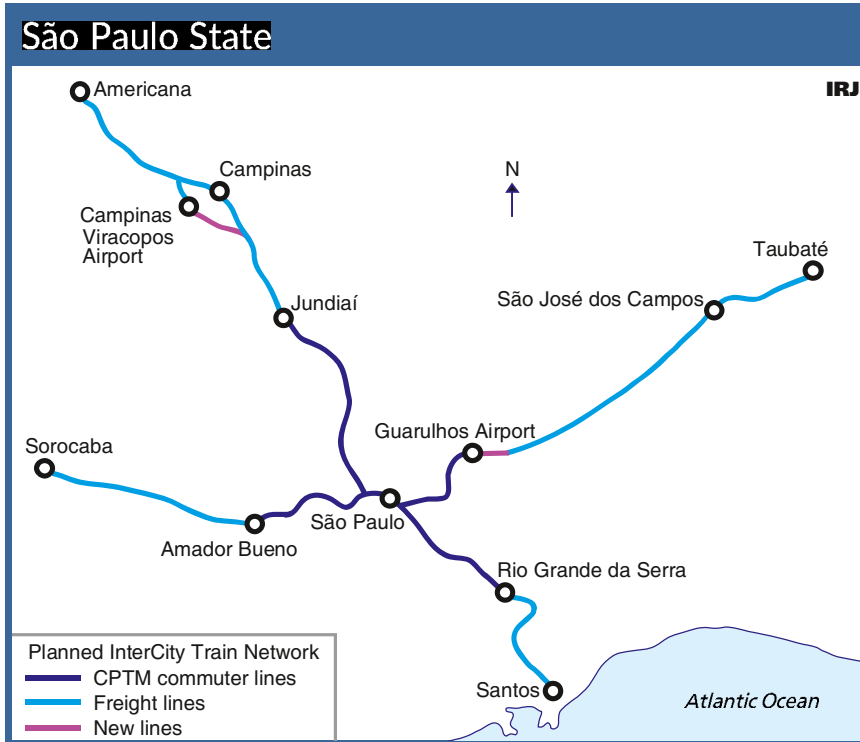
Guilherme Quintella

Americana with Santos while an east-west line will run from Sorocaba to Taubaté.

TIC will serve around 30.5 million people directly or indirectly, which is about 70% of the state’s population, and it will link to two major airports - Guarulhos in São Paulo and Campinas Viracopos, as well as the port of Santos, an important cruise ship terminal. The network is expected to carry more than 170,000 passengers a day initially.

According to Mr Guilherme





linking Americana, Campinas and São Paulo to begin in the first half of 2018 with construction starting by the end of the year. The first phase, between Americana and Campinas is expected to open in 2020, with the second phase, from Campinas to São Paulo, following in 2021. This section is expected to carry 60,000 passengers per day.

The first section is expected to cost Reais 5.4bn, of which Reais 1.8bn will come from the São Paulo state government. Annual concession charges will be Reais 262m for 32 years.

TIC trains will use Paulista Metropolitan Trains' (CPTM) Line 7/Ruby from São Paulo to Jundiaí, while a new line will be constructed parallel to an existing freight line between Jundiaí and Americana.

This first section will be included in the federal government's Investment Partnership Programme (PPI) so that it can receive funding from Brazil's

National Bank for Economic and Social Development (BNDES). Additionally, representatives of the World Bank have received information to help define their role as a partner in the project.

### São Paulo

São Paulo Metro's expansion plans include six new metro and monorail lines (6/Orange, 17/Gold, 18/Bronze, 19/Sky Blue, 20/Pink, and 22/Burgundy, of which the latter three metro lines are still on the drawing board), as well as extensions to four existing lines (2/Green, 4/Yellow, 5/Lilac and 15/Silver). This should more than double size of the network from 80.4km to 175.1km by 2025 while the fleet will grow from 169 to 249 trains. By 2030, the metro could grow to 271km, with 237 stations and a fleet of 395 trains.

According to Mr Paulo Sérgio Amalfi Mecca, director of engineering and



construction with São Paulo Metro, capital investment of Reais 25.8bn was planned between 2011 and 2017, while a further Reais 25.3bn should be invested between 2018 and 2025. However, a 30% reduction in annual spending from Reais 3.3bn in 2015 to Reais 2.34bn in 2016, caused some works to be delayed to this year, which has impacted the 2017 Reais 3bn investment budget.

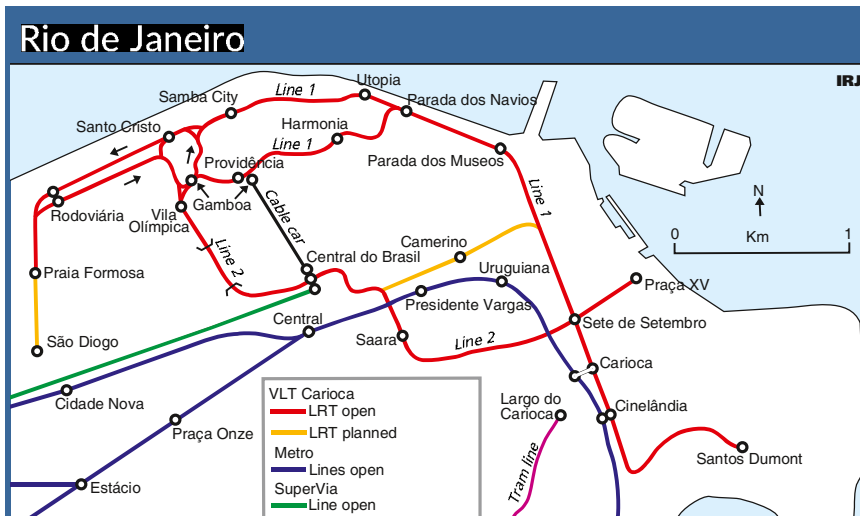
To make matters worse, the Line 17/Gold monorail project was delayed following problems with the consortia responsible for the three construction lots on the priority section. However, São Paulo Metro was able to resume construction by hiring new contractors, and it is now expected to complete the first 7.7km section of the 17.7km line, from Morumbi to Congonhas Airport, in the second half of 2019.

The first 2.3km section of monorail Line 15/Silver, between Vila Prudente and Oratório, has been in operation since 2014, and work is concentrated on the 10.1km priority extension from Oratório to São Mateus, which is expected to open in the first half of 2018. A one-station extension to Iguatemi should follow in 2020. The cost of the project is Reais 6.4bn and the



A 30% reduction in annual spending from Reais 3.3bn in 2015 to Reais 2.34bn in 2016, caused some works to be delayed to this year, which has impacted the 2017 Reais 3bn investment budget.





line is expected to carry 550,000 passengers per day.

The Reais 9.97bn 11km extension of metro Line 5/Lilac from Adolfo Pinheiro to Chácara Klabin is expected to open this month, apart from Campo Belo station - the interchange with Line 17/Gold - which will follow next year. The project includes the acquisition of 26 new trains and the installation of CBTC throughout the line.

Line 4/Yellow is the first metro line in São Paulo to be operated by a private concession. The first section opened in 2010, but the final four of the line's 11 stations are only now being completed. Higienópolis-Mackenzie station in the city centre will be inaugurated this month, followed by Oscar Freire in March 2018, São Paulo-Morumbi in July 2018, and Vila Sônia, at the end of the line, in 2019.

Some more good news is the possible resumption of works on the 15.3km Line 6/Orange linking Brasilândia and São Joaquim. Move São Paulo, which is responsible for implementing this PPP project, started work in January 2015, but decided to stop construction in September 2016 alleging difficulties in obtaining long-term financing from BNDES. By that point, Reais 2.7bn had been invested.

In October, São Paulo's Secretariat for Metropolitan Transport (STM) announced that negotiations were underway with an Asian consortium, comprising China Railway Capital and China Railway First Group together with Mitsui, Japan, which is a partner in Move São Paulo, to take over the concession contract.

The companies have 90 days to present all the documents necessary for the transfer of the concession, such as guarantees for long-term loans from

BNDES, financial structure, and certificates of technical competence. It is hoped to resume construction in January 2018.

"We are very pleased with the success of these negotiations, with the prospect of resuming work soon for implantation of this line which is of vital importance for the improvement of São Paulo's mobility," says STM secretary Mr Clodoaldo Pelissioni.

A third monorail is in design. The first phase of Line 18/Bronze will be 15km long, and will connect Tamanduateí on Line 2/Green with Djalma Dutra, in the centre of São Bernardo do Campo, one of the three cities comprising the ABC region. The monorail is expected to transport around 314,000 passengers per day. The Reais 3.5bn project will be carried out as a PPP, with funding coming from the state, federal and private sectors.

CPTM's commuter rail network is also being expanded, and the Reais 2.3bn Line 13/Jade is expected to be completed in the first half of 2018. The 12.2km line will provide the first rail connection to São Paulo Guarulhos International Airport, the busiest in the country, and is forecast to carry about 130,000 passengers per working day. Eight eight-cars trains are being supplied by the Chinese Temoinsa-Sifang consortium.

## Rio de Janeiro

Brazil's second largest city, Rio de Janeiro, plans to extend its two-line city-centre light rail network, the first section of which was completed in time for the 2016 Olympic Games. The final station on Line 2, which is located next to the Central do Brasil commuter rail station and a bus terminal, was

inaugurated in October. As a result, traffic on the two lines is expected to increase by around 40% or 20,000 passengers per day.

Construction of the 8.1km Line 3, which will connect Central station to Santos Dumont Airport via an alternative route to the existing Line 1, is scheduled to begin in March 2018. However, plans for a light rail line in the southern part of Rio de Janeiro were dropped earlier this year due to a lack of resources. Another project awaiting funding is the extension of metro Line 4/Yellow. The branch to Gávea is due to open in 2020, and the idea is to extend the branch towards the city centre via Jardim Botânico, Humaitá and Laranjeiras. There is also a more ambitious project to extend the metro by 20km beyond Barra da Tijuca to Recreio dos Bandeirantes.

## Salvador and Bahia

The Salvador and Lauro de Freitas Metro System (SMSL) PPP project is considered the largest urban mobility project in Brazil, with an investment budget of Reais 5.6bn to build two lines eventually totalling 41.5km. The PPP is being implemented by CCR Metro Bahia, which was set up together with Bahia state under a 30-year concession awarded in 2013.

The metro has opened in stages since 2014 and currently carries an average of 125,000 passengers per day. Line 2 will be extended to Salvador Airport this month which is expected to boost traffic to around 500,000 passengers a day.

Bahia state government invited bids in May to build and operate an 18.5km light rail line in Salvador. The 21-station line will use part of the alignment of the 13.6km suburban line from Calçada to Paripe and construction will be carried out in two phases: Comércio - Plataforma (9.4km) and Plataforma - São Luiz (9.1km).

According to the president of Bahia Transport (CTB), Mr Eduardo Copello, the project, is budgeted at Reais 1.5bn and will be implemented as a PPP scheme under a 20-year concession. However, the tender has been delayed by a series of judicial measures.

While several of Brazil's PPP projects have encountered difficulties, Marchesi still believes the partnerships between government and private enterprise are important for the development of infrastructure projects in Brazil, and she regards private investors as an ally for the rapid development of urban rail projects. **IRJ**