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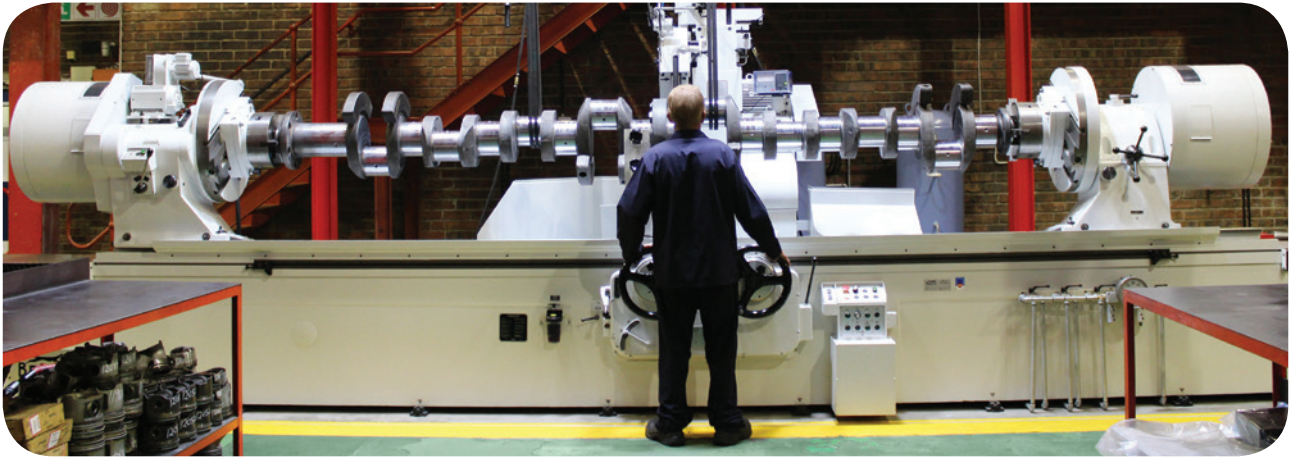
ISSUE 1:2019



**Traxtion Launches Rail Hub To Service  
Locomotive Fleets Across Africa**

THE AUTHORITATIVE AFRICAN RAILWAY PUBLICATION

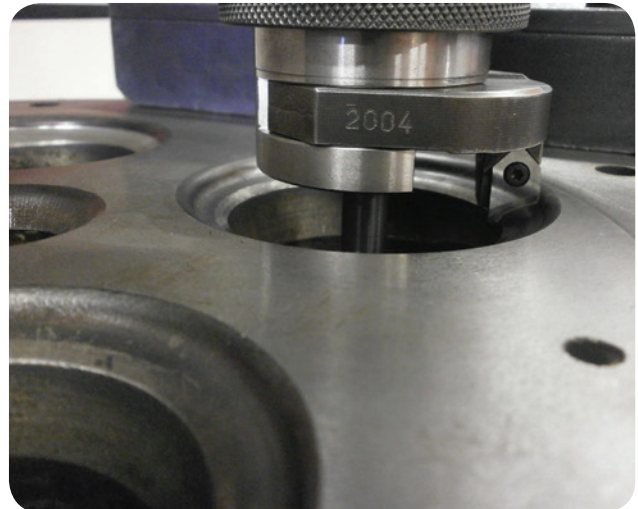
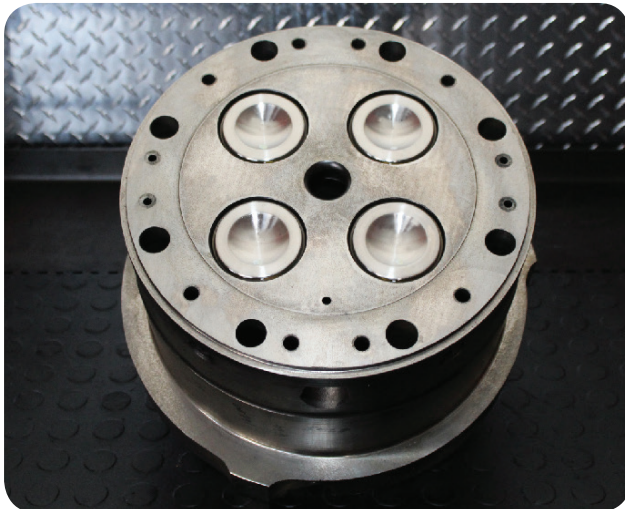




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Welcome to issue 1:2019, the first issue for the year and five more to go! Don't forget that we publish weekly online – we have a freemium (free version) and we also offer the Premium (paid version) platform.

I flew down to Cape Town recently, landed at 8am. With no luggage I was out the door and ready to be transported to the 1st African Rail Digital Summit... Two hours later, I finally arrived.

*So, as all disgruntled people do, I took to my social media channel... "Sitting in traffic, now running late... it really is time the City of Cape Town built a version of Gautrain! I am sure it would be viable. What are your views? #publictransportation #highspeedrail #rail."*

I have had some interesting feedback.

**Charles Nel - Mankovect (Pty) Ltd. Owner and Engineering Manager, mechanical. Independent Contractor, suggested:**

*Possibly a more versatile light rail system with road rail capability?*

*Thinking about it and all the new technology it would be the perfect opportunity for Virgin Mobile (train and telecom) to be part of.*

*Alternately an Elon Musk hyperloop.*

*The immediate option is to enter a PPP with a 30 year concession.*

**Daphney Vunguvungu - AfriGIS. Freelance GIS Technician. Mapper. Spatial Data Analyst, asked:**

*Will it not run into the same financial woes Gautrain is currently facing? Struggle to attract new customers after a short number of years? It sounds like a much-needed solution to a long overdue problem, but is it sustainable?*

**Boetie Zandberg - Senior Railway construction/operational/maintenance manager, noted:**

*Everything is possible Phillippa. If other countries can have such trains why not us. I think we got all it takes. From engineering people right down to execution staff and resources. It's just a matter of what the vision is for our country. Deteriorate further or uplift.*

**Sherief Khan - Director at WC Perway**

*Been saying that for ages. Traffic is a nightmare nowadays no matter what time you leave. Possible suspended rail line in the middle of the N1 towards cape town. Imagine all that traffic off the road. Another line from the south M5 into Cape Town and another 1 from the west coast marine drive.*

However, it was **Daphney Vunguvungu's question that had me thinking.**

Sustainability comes down to reliability and safety. The key issues, I believe that impact that reliability and safety portion is as follows: First and last mile – remain an issue, for example – you can drive yourself, but the parking is full. You can catch a bus, if the stop is within walking distance, but, only if the buses are operational (the industrial action really impacted Gautrain here). Or, you can Uber and or meter taxi there – and this is the biggest crunch! Catching an Uber at a station is no longer considered safe, and having had first-hand experience of being hauled out of an Uber, at a station, with Gautrain guards looking on, it was unpleasant to say the least!

However, in the planning phase for this system many years ago, there was no Uber, so development around safe drop and collection zones was not included in the plan.

Going forward, I am sure that the Gautrain Management Agency team will be taking this into consideration – unlike shopping centres who continue to overlook customers who arrive and leave in this way.

Reliability and or predictability in service means that users need confidence in the system, that it will be working. I believe, after the industrial action where, the train was not operational for an extended period of time, people returned to their cars. I get really nervous about using the airport link

*Phillippa Dean*

Phillippa Dean  
Railways Africa™ - Editor

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because, I have heard all about being stuck on the line – thankfully, I have never experienced that! We have a way of telling the stories, and it is in the amplification of these stories that one thinks it happens all the time, when in reality, it does not. Gautrain's statistics are testament to this.

There are so many outside factors that impact, such as - theft, or power issues and industrial action – not all of this is within the operator's control. So, this requires the "will" of all stakeholders to address these issues and minimise the risk, in so far as possible – to regain as well as maintain user trust.

Capacity is also an issue – specifically at peak times. Which is understandable – South Africa never had a system like this and therefore, who would have been able to predict the up take? The challenge is around how this is being addressed, it is not a simple case of going to the shops and buying it off the shelf... And, considering we are already two years behind on the current procurement of additional cars having to restart the process again, will cause further pressure and less demand.

But, back to Cape Town, I am sure that if they took the lessons from Gautrain and took the next 40 months to build and not talk, it will change Cape Town for the better.

But it is easy to talk about this, it is easy to say "build it they will come!" Without really understanding all the factors involved, money aside! CEO of the Gautrain Management Agency, Jack van der Merwe, in a recent *Coffee with the Editor*, took the time to explain the cost implications and facts to consider for Cape Town and Durban. He also touched on Gautrain 2 and outlined their thinking around the next steps, for the much needed additional rolling stock. Enjoy!

There are cities all over the world where public transport (trams, light rail, mono rail, sky rail, high speed as well as busses) is the preferred transport method, with trains that are mind-blowingly beautiful never mind fast! We as a continent need to get there.

## Local Participation

So, I have a question, but first let me give context and perhaps it is more than one question.

The Namibian TIIP – Transport Infrastructure Improvement Project, which obtained funding from the African Development Bank and went out for international competitive bidding last year, for the upgrading of the 210km Walvis Bay-Kransberg railway section, as well as, for rail replacement and turnouts.

The Metal and Allied Namibian Workers Union (MANWU) have petitioned the ministry for the immediate halt or stop of these projects and for the process to be restarted, as there are sufficient local contracts who can execute the required work. In other words, the work can and should be done by local businesses employing local people. Sounds similar to what the South African industry has been saying. But – I'm wondering if our thinking in terms of funding and projects should be looked at differently from conception?

Each country regardless of continent, knows what needs to be done. Surely, as projects are tabled there is a need to understand the in-country capacity first, as part of the planning phase?

owned company – already has a clear understanding of what is available in order to negotiate the terms with the funding agency, in respect of procurement and participation at that time and not retrospectively.

I am aware that all funding agencies have their own requirements, especially in terms of benefiting the origin of where the funding has come from. I learnt this through both Eskom and Transnet in the early days of local content. It was the regular excuse used in terms of not supporting local – "we cannot do that because the money comes from the World Bank and therefore we have to comply to those rules and not our public procurement rules." Despite desperately trying to stimulate the manufacturing sector and create employment.

I am curious on two fronts. First, all funding agencies like to develop these spectacular graphs of how their money has improved the lives of people in the countries where they have provided funding. Hard to believe when the local industry is locked out, in-so-far-as project participation and employment. It would be interesting to align, imports and unemployment figures and debt numbers for pre, during and post project funding reporting.

Two, surely a bank like the African Development Bank, the key word being African, would have an interest in promoting those on the continent and matching the gap with foreign participation? Surely, their goal is to see the prosperity of the continent, or am I missing something?

### Okay moving on to other interesting things:

The Rand Merchant Bank (RMB) recently released a "Where to invest in Africa" report. Specifically, we only look at the areas that involve and or impact rail. However, you can download the full report from the link provided at the end.

The report notes that nearly a third of African countries are landlocked, which results in the demand or need for robust, efficient and high-capacity transport corridors. However, due to poor infrastructure the cost of transportation is around 50-175% higher than other parts of the world.



These projects take years to develop, so it is therefore possible to develop skills in conjunction with a country's development plan, or am I wrong?

By the time the government has approved the project for implementation, in order to seek funding, the procuring entity/ministry and or government state



It also notes that for the transport sector – annual costs are USDBN (preliminary figure) at between 35-47 – where 80% by 2025 will be spent on preservation and 20% on development.

## Extracts From The Report:

### The Importance Of Ports

Most of Africa's trade is seaborne. Ports are therefore critical to Africa's trade make-up. Generally speaking, sub-Saharan Africa's (SSA) port infrastructure has limited capacity when it comes to terminal storage, operation and maintenance – some countries without even the ability to handle large vessels. The lack of adequate investment, inefficient land-based logistics and stringent government policies and regulations are the key challenges facing African ports.

The World Economic Forum's (WEF) analysis on infrastructure development shows that a 25% improvement in ports' performances could reduce the price of imported goods in SSA by as much as US\$3.2bn annually. And that as much as US\$2.6bn could be added to the value of exports. It could also add 2% to the region's GDP. Further to this, PwC estimates that a massive US\$2.2bn in logistics costs could be saved annually if the average quantity of goods coming in and going out of ports doubled. The top ten African ports, per the report:

- Durban
- Cape Town
- Ngqura
- Abidjan
- Mombasa
- Djibouti
- Lagos-Apapa
- Tema
- Dar es Salam
- Dakar

### Roads And Railways

According to The Programme for Infrastructure Development in Africa's (PIDA) Priority Action Plan, US\$75bn is needed for transport projects between 2012 and 2020: US\$16.5bn is to be spent on rail projects and US\$11bn on roads, highlighting the deficiency in road and rail links.

### Roads: The Main Route For Trade

Eighty to ninety percent of passenger and freight traffic in Africa is by road. The World Bank estimates that US\$200bn of trade in Africa is carried by road networks. But, regardless of its importance, the road network density is much lower in Africa than that of other regions. The infamous Trans-African Highway (TAH) might be rejuvenated if initiatives like the Continental Free Trade Area (CFTA) are introduced. The TAH is the largest road network connecting major African cities. The project was launched in 1971, and the African Union (AU), the AfDB and the United Nations Economic Commission for Africa (UNECA) are the major donors to the 60,000km road network project.

### Railways

Only 84% of Africa's 82,000km (some report suggest that Africa has 90,000km) rail network is operational. And most of the rail lines are low-speed, small-scale and undercapitalised networks that carry minimal volumes.

The biggest challenge to the development of the railway industry is that some firms struggle to transform themselves from subsidy-dependent legacy companies into more efficient commercial undertakings. Poor economic, technological and institutional conditions have further aggravated the situation in Africa. These have ensured that railway infrastructure is at the bottom of the infrastructure-financing list.

Interest in investing in railways has, however, re-emerged, underpinned by the sector's capacity to move large volumes of freight or passengers in an energy efficient way. Railways could also help curb congestion costs: the rapid pace of urbanisation on a continent without effective mass-transit systems (such as railways), means significant congestion costs.

*As was mentioned in a recent Coffee with the Editor session during the 1st African Rail Digital Summit in Cape Town, hosted by the International Union of Rail (UIC), Nepad and the African Union – with the investment in Rail will come a greater demand for power generation and energy projects to meet the needs of the transport sector.*

### Recent Railway Developments

The report notes - One exciting development is the introduction of Africa's first cross-border and longest electrified railway service, which connects Ethiopia and Djibouti. Commercial operations began in 2018, with each train able to carry a load equivalent to 200 trucks – and able to cover the 750km route in 12 hours, compared to three days by road. Freight capacity is expected to reach 24,9m tonnes by 2025.

Another big project is the US\$14bn East African Rail Master Plan – to connect the cities of Mombasa, Nairobi, Kigali, Kampala and Juba. Kenya has finished the first phase of the Mombasa-Nairobi Standard Gauge Railway (SGR) that will reach Uganda, with construction works for Phase II connecting Nairobi to Kisumu already underway.

The issues around financing remain and let's not forget the rumours around the debt and the potential of losing ownership of their port. Which, I hear, there is now an official enquiry underway, as to how the port could possibly have been used as security in the first place. We will wait and see...

### New Developments Per The Report;

*Please note that the report provided no status to the projects mentioned. If you are a Premium Online Subscriber please consult our project pages.*

Regional – Burkina Faso, Côte d'Ivoire (US\$700m) Burkina Faso-Côte d'Ivoire railway rehabilitation programme, in planning phase.

Regional – Mozambique, South Africa (US\$321,4m) Ressano Garcia railway line rehabilitation programme, in planning phase.

Regional – Rwanda, Tanzania (US\$900m) Isaka-Kigali Standard Gauge railway, in bankable feasibility phase.

The report continues - Building Bridges Across Africa: Regional Infrastructure Programmes;

In recognition of the fact that limited infrastructure poses continental rather than a country-specific challenges, several programmes have been established to further regional development efforts. Agenda 2063 – a strategic framework adopted by African leaders in 2015 to drive socioeconomic transformation over the next 50 years – identifies 12 flagship programmes that focus largely on infrastructure build.

The Continental African High Speed Rail is one of the 12 flagship projects and in the issue, we have an outline of the project as well as as "Coffee with the Editor" session with Mr Adam Deen of Nepad who is heading up the project.



Other highlighted Transport projects, which are framed within - The Programme for Infrastructure Development in Africa (PIDA), formulated by the African Development Bank (AfDB) alongside the African Union Commission (AUC), New Partnership for Africa's Development Agency (NEPAD), United Nations Economic Commission for Africa (UNECA) and Regional Economic Communities (RECs) – per the report, include;

*(not all are represented here, these are the ones I selected out of the report – again, the link to download the full report is at the end).*

### Northern Multimodal Corridor

Modernise the high-priority multimodal African Regional Transport Integration Network (ARTIN) corridor in East Africa. Will facilitate travel of people and goods across the borders between Kenya, Uganda, Rwanda, Burundi and the DRC, with a spur to South Sudan.

### North-South Multimodal Corridor

Modernise the high-priority multimodal ARTIN corridor in Southern Africa and facilitate the cross-border transport of people and goods between South Africa, Botswana, Zimbabwe, Zambia, Malawi and the DRC.

### Central Multimodal Corridor

Modernise the priority ARTIN corridor in East Africa and facilitate travel for people and goods across the borders between Tanzania, Uganda, Rwanda, Burundi and the DRC.

### Southern Africa Hub Port and Rail Programme

Develop sufficient port capacity to handle future demand from both domestic sources and landlocked countries.

### Djibouti-Addis Corridor

Revive the rail system in the high-priority multimodal ARTIN corridor in East Africa and increase the flow of goods across the border between Djibouti and Ethiopia.

### Lamu Gateway Development

Develop sufficient port capacity to handle future demand from both domestic sources and landlocked countries, with priority given to the Lamu project in Kenya.

### Beira-Nacala Multimodal Corridors

Modernise and upgrade the rail and port systems serving a major coal export area at Moatize, Mozambique. This is part of the Beira and Nacala corridors.

### Smart Corridor Programme Phase I

Develop model smart-corridor technology and design/implement a continental and regional corridor-efficiency monitoring system.

### Abidjan-Lagos Coastal Corridor

Modernise the heavily-travelled ARTIN corridor in West Africa to promote trade facilitation, one-stop border posts (OSBPs), capacity enhancement and implementation of Public-Private Partnerships (PPPs) in five countries.

### Dakar-Bamako-Niamey Multimodal Corridor

Modernise the heavily-travelled ARTIN corridor in West Africa to promote trade facilitation, OSBPs, capacity enhancement and implementation of PPPs in four countries.

### Praia-Dakar-Abidjan Multimodal Corridor

Improve marine transport and connectivity between island and mainland countries by creating a new maritime service between regional ports, as well as a modern information system to link the maritime service with ports and roads in the Dakar-Abidjan Corridor.

### Abidjan-Ouagadougou-Bamako Corridor

Modernise and rehabilitate the multimodal corridor damaged by civil war in Côte d'Ivoire. Côte d'Ivoire, Burkina Faso Sitarail – Chemins de Fer en Côte d'Ivoire, Société Internationale de Transport African par Rail.

### West Africa Hub Port and Rail Programme

Address future capacity problems in West African ports with two components – a regional hub port and rail-link master plan, and port expansion.



## Kinshasa-Brazzaville Bridge Road/Rail Project, and rail link to Ilebo

Improve regional transportation and trade systems by building a crossing that links Kinshasa and Brazzaville, ensuring continuity in railway traffic from Matadi and Pointe Noire to the eastern border of the DRC and eastern and southern Africa.

Programme for Infrastructure Development Africa (PIDA) – notes the project as "The project to build the Kinshasa-Ilebo railway line aims to ensure the continuity of rail transport between the port of Matadi and the centre, east and south-east of the DRC, and beyond with Zambia, Zimbabwe and South Africa. The long-term goal is to enable interconnection and interoperability in Central, Eastern and Southern Africa."

Towards the end of February, the Congolese Government, in partnership with the Economic Community of Central African States (ECCAS) and the African Development Bank (AfDB), held the first meeting of the organising committee of the round of technical and financial partners for the raising of the funds necessary for the realisation of the three projects including the construction of the Ouessou-Bangui-N'djamena road, the road-rail bridge between Brazzaville and Kinshasa with the extension of the Kinshasa railway to Ilébo and navigation on the Congo River and its tributaries Oubangui and Sangha.

In a press release issued by the ministry, it is noted that the next round table of technical and financial partners that will take place June this year in Brazzaville, hopefully for final sign off.

*Provision has been made to incorporate the extension of the railway to Ilebo (800km distance) into this project. Doing so will link the Southern African and Central African rail networks as a prelude to connection with the North African network in the direction of Libya. According to a 2008 report - Source: [https://www.icafrica.org/fileadmin/documents/Transport\\_Meeting/S4-Congo-River-Road-Rail-EN.pdf](https://www.icafrica.org/fileadmin/documents/Transport_Meeting/S4-Congo-River-Road-Rail-EN.pdf)*

## Douala-Bangui Douala-N'djamena Multimodal Corridor

Modernise the highest-priority multimodal ARTIN corridor in Central Africa and facilitate travel for people and goods across the borders between Cameroon, Chad and the Central African Republic.

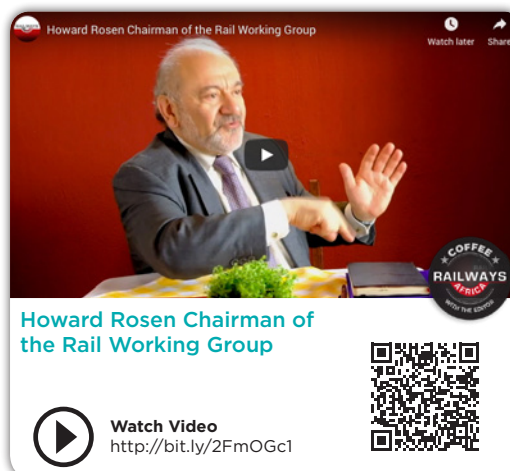
## Central Africa Hub Port and Rail Programme

Address Central African port-capacity constraints through a regional hub, a rail-link master plan and port expansion.

## Trans-Maghreb Highway

Improve travel for people and goods across the Maghreb, where trade and travel are limited by artificial barriers. This includes designing and implementing a smart-corridor system along the highway. (there is also a rail segment to this, but was not listed in the report).

<https://www.rmb.co.za/landing/where-to-invest-in-africa#contact>



Howard Rosen Chairman of the Rail Working Group

Watch later Share

COFFEE RAILWAYS AFRICA

Howard Rosen Chairman of the Rail Working Group

Watch Video <http://bit.ly/2FmOGc1>

But one must not forget that finance might become easier all-round if Africa ratifies / endorses the The Luxembourg Protocol – watch the interview with Howard Rosen to get the full picture.



# Africa's Busiest Railway Stations Have Been Commissioned With A New Signalling System

Siemens Mobility commissions three of the busiest railway stations in Africa

**This new signalling system help will increase operational capacity, provide a higher level of flexibility and reduce train delays**

As part of the Passenger Rail Agency of South Africa (PRASA's) drive to deliver a world class commuter railway system, Siemens Mobility was commissioned to install a new signalling system across the PRASA network in the Gauteng region as well as the construction of a modern control centre, the Gauteng Nerve Centre (GNC).

Between December 2018 and January 2019, Siemens Mobility

has commissioned three of the busiest railway stations in Africa, Johannesburg Park Station, Braamfontein station and the eastern portion of Pretoria Station with the Siemens Sicas S7 electronic interlocking system. Johannesburg Park Station and Braamfontein are the busiest stations in the South of Gauteng province while Bosman Station and Barracks in Pretoria, is considered a mega station in the north of Gauteng.

The project forms part of a multi-billion Rand national re-signalling programme being undertaken by PRASA. Most of the rail network in the Gauteng area consists of old signalling systems that are far

beyond their life expectancy, with some of them dating back to the 1930's.

"This is a major achievement and milestone event for the South African rail industry because of the size and importance of these stations. Johannesburg Park Station consists of 114 sets of points, 129 signals and 16 operational platforms, making it one of the largest railway stations in Africa. Braamfontein consists of 87 signals and 67 sets of points and Pretoria consists of 105 signals and 69 sets of points. Both Johannesburg and Braamfontein stations were commissioned in less than one month while under operational conditions. This required





a tremendous amount of work and advanced preparation to ensure that the passenger service was still safe and reliable with minimum disruptions to commuter service. The planning works started months ago with continuous technical and operational coordination between the PRASA project team, the PRASA Gauteng regional team and Siemens," says Kevin Pillay, CEO of Siemens Mobility (Pty) Ltd, Southern Africa.

To date, 40 of the 89 stations in Gauteng have already been commissioned with the new Siemens electronic interlocking system. New Canada station is the next big station planned for commissioning later in 2019. The new system provides a modern interlocking platform for the next level of Automatic Train Protection (ATP) that will further

enhance safety and reliability in the passenger rail network. The whole project is underpinned by stringent testing and safety processes in line with world standards. Siemens delivers a local content greater than 60% on the project, with the engineering, manufacturing and testing taking place at the Siemens South Africa facility in Northriding, Johannesburg.

Various training is provided to PRASA technical, operational and maintenance personnel in order to bridge the skills gap between the existing technologies to the electronic based signalling system. In addition to this formal training, on the job training is being provided to young technicians and engineers at the Siemens Mobility local facility and on the project sites. This new signalling system will help increase

operational capacity, provide a higher level of flexibility and reduce train delays. The completion of the rail signalling project will see the Gauteng railway network aligned with modern rail networks across the world and Siemens is extremely proud to be involved in this significant project.




Coffee with the Editor - The Siemens Mobility Team discuss the implementation of this project and the impact it will have for commuters.





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<http://bit.ly/2Fpj7hF>



**Traxtion - Update On The Rail Services Hub And Positive Outlook For Rail In Africa**

 **Watch Video**  
<http://bit.ly/2IKuQuw>



## Traxtion Launches R68m Rail Hub To Service Locomotive Fleets Across Africa

Private locomotive and rail operator, Traxtion has opened its new Rosslyn-based maintenance facility for business. The company known in the industry for the quality of its rail freight services offering, now has the capacity to provide locomotive rebuild and overhaul services at scale.



"This facility enables us to increase the number of locomotives that we are able to refurbish from three - at our old workshops - to fifteen at any one time."

James Holley, CEO, Traxtion

The industrialised area of Rosslyn, a suburb of Tshwane, is the manufacturing centre of Gauteng, best known for its automotive industry. "The opening of this facility signals a giant leap as we solidify our position as Africa's pre-eminent private rail operator," says Traxtion CEO, James Holley, who highlights that the business has been providing rail services and solutions across the continent for 31 years.

The deciding criteria for Traxtion making such a significant R68-million investment in this particular location is threefold. "The pool of skilled artisans available in the region to facilitate rapid growth was a very important factor," explains Holley. "This, along with the opportunity to do a cost effective refurbishment of an existing facility, and the outstanding rail access infrastructure into Rosslyn were drivers behind the investment."

Locomotives for refurbishment will be transported directly into Rosslyn via rail from as far afield as the DRC, Tanzania, Namibia, Zambia, Mozambique, Malawi and Zimbabwe. By collaborating with complementary rail services providers, Traxtion now offers its clients a full-service destination at the Rosslyn workshop and is able to provide rolling stock refurbishment solutions for mining, industrial,





freight and state-owned enterprises throughout Sub-Saharan Africa. Locomotives from West and East Africa are shipped to the port of Durban, and either railed or trucked up to Gauteng. "Regardless of where the locomotives are from, we have the expertise and capacity to refurbish and service them here in Rosslyn," says Holley.

It is a lesser known fact that South Africa has one of the top ten largest railways in the world and moves in excess of 220 million tonnes of rail freight per year. The problem seen on South Africa's roads, is that road transportation still enjoys a disproportionately large share of the freight market, creating truck congestion and dangerous driving conditions.

### On Track

Two years ago, the Department of Transport released a white paper on rail which, called for the introduction of private sector operators to operate on the tracks alongside Transnet. "Traxtion has the backing of some very large shareholders who have started to make significant capital investments into projects like the Rosslyn workshop," says Holley. "This means that when the government is ready for a credible, local high-quality private operator in South Africa - Traxtion will be ready."

The new 7,370m<sup>2</sup> premises which employs 50 highly trained people, gives Traxtion the capacity to match its inherent capabilities as a specialist in the repair and maintenance of diesel and electric locomotives.

"This facility enables us to increase the number of locomotives that we are able to refurbish from three - at our old workshops - to fifteen at any one time," explains Holley. "The full property size at 50,883m<sup>2</sup>, gives us a lot more room for future development. We are currently installing five of the eight intended railway lines into the workshop, and that's before we start developing the rest of the site," adds Holley.

Current refurbishments on the premises include twelve locomotives from Traxtion's own fleet of 59 locomotives which will take nine months to refurbish. "All the key component parts have been procured and are in our store on the premises," says Holley. He explains that the major parts of a locomotive such as the engine, the alternator, traction motors and other key component parts are refurbished and not replaced. "It's what we've done for more than 30 years and it's what Traxtion is extremely good at. This is exactly what our new Rosslyn rail hub is going to be focussed on doing," adds Holley.

"We intend to collaborate with the industry to advance our on-site offering. This will result in knock-on job opportunities," says Holley.

The Traxtion Rail School offers training to five trainee artisans a year and with the larger workshop, this is geared for growth. To date, 45 highly technically trained diesel electric fitters have gone through the rail operator's TETA accredited training centre, all attaining a 'red seal' trade test certificate. "Our training is of a world-class standard - an uncompromising requirement when dealing with equipment that takes a lot of skill, understanding and knowledge."

At the time of going to press, Traxtion had just received a discretionary grant from TETA, allowing them expand their programme to ten people.

"As far as we know, we are the only ISO 9001:2015 certified private operator and locomotive and wagon maintenance company in Africa," concludes Holley.

Traxtion is a level 3 BBBEE company and is a Rail Safety Regulator (RSR) permit holder.

# The Luxembourg Rail Protocol:

## Making The Railways Work For Africa



Dr. Vera Songwe is the United Nations Under Secretary General and Executive Secretary of the United Nations Economic Commission for Africa.

### It's The Perfect Storm

Africa's growth will increasingly come from its cities. However, rapid migration from rural areas to cities across Africa is squeezing local resources. At the same time, congestion in its major cities has never been worse, the roads cannot take the strain, and the cities endure deadly congestion and pollution. Very few African cities are connected with each other by rail transport, limiting the trade potential between cities.

A recent report from the UN Economic Commission for Africa (UNECA) states that intra-African trade stands at 15%, compared with Europe (67%), Asia (58%) and North America (48%). African economies remain predominantly commodities based, so they suffer whenever prices fall. Even getting commodities to market is a struggle. 16 of Africa's 55 states are landlocked.

All this is against a background of continuing underinvestment in African infrastructure. Indeed, poor infrastructure is estimated to cost Africa up to 2% of GDP annually. The most recent estimate from the African Development Bank is that the continent's infrastructure needs amount to USD\$130 - USD\$170 billion a year, but its financing gap is USD\$67.6 - USD\$107.5 billion.

State resources are limited, and there's a rise in public debt across Africa. The median debt level Africa is now over 50% of GDP, compared to just 30% of GDP in 2012. This is a high figure, as African states have relatively little tax income (compared to more developed economies), and this debt level could start to strangle economies as interest rates rise in future years. An alternative solution is needed.

With the launch in March 2018 of the African Continental Free Trade

Area (AfCFTA), Africa took a major step forward towards achieving the 2030 Agenda for Sustainable Development and Agenda 2063 (The Africa We Want). By boosting intra-regional and international trade, pan-African economic integration will spur development, create wealth, and ensure economic benefits for all citizens. The question now is how to achieve these noble goals.

Connectivity and improved logistics through better rail infrastructure are at the core of this agenda. Economic growth, and environmentally sustainable development in Africa, will depend on having an efficient and expanded rail network. Rail transport is the only cost-effective and safe way to move large volumes of freight while delivering greater energy efficiency and lower greenhouse gas emissions. There are numerous opportunities ahead:

- When AfCFTA comes into full force, large volumes of goods and bulk commodities, including mining outputs, will be generated, creating huge markets for rail transport.
- Africa's vast size and landlocked countries encourage the development of high-speed, high-capacity transport corridors.

The future opportunities are many, but where do we stand today? Existing railway infrastructure and rolling stock in many African countries is sub-optimal. Africa currently has one kilometre of rail track for every 650km<sup>2</sup> of land. The comparable figure for Asia is 225, and for Europe 118. And, as rail coverage in Africa uses three different gauges (namely 20% standard gauge, 60% cape gauge and 18% metre gauge), with some systems electrified and some operating diesel locomotives, incompatible networks across the continent are



Howard Rosen is Chairman of the Rail Working Group, based in Zug, Switzerland, a not-for-profit association focused on the implementation the Luxembourg Rail Protocol, working with governments and international organisations as well as with financiers, operators, manufacturers and professional advisers in the global rail industry.



hindering free movement, trade and regional integration.

So, the African rail sector clearly requires significant investment in infrastructure, facilities and rolling stock. The costs involved are enormous. For example:

- The recently commissioned 34km Addis Ababa Light Rail Transit will cost USD\$475 million.
- The bill to renovate the Ethiopia to Djibouti line was over USD\$4 billion.
- The new high speed rail project in Morocco is estimated to have cost USD\$2.4 billion.
- The cost of close to USD\$4 billion for the new standard gauge Mombasa to Nairobi line is one of the most expensive rail projects in Africa to date.

Estimates for converting South Africa's over 20,000km of cape gauge rail track to standard gauge are quoted at over USD\$110 billion. It won't happen. But the new plans for a high-speed standard gauge passenger rail and freight network linking key centres in South Africa probably will be realised, at a cost of many billions of dollars.

Some of the costs can be covered through concessional lending, but this is limited. Understandably, African governments are unable or unwilling to take on more debt. So the solution has to be to bring in the private sector to provide innovative financing and expertise.

Infrastructure can be built and financed by governments in partnership with the private sector, with some risks and costs borne by the private sector. But, what about operating the railways? All governments build roads, but they don't finance or underwrite the cost of every truck, bus or car that runs on the roads. Why should the railways be different? Operational

costs and the necessary rolling stock can be financed by the private sector without recourse to government. Africa must look to adopting this approach.

With rolling stock often accounting for up to a third of the total cost of a new rail project, the attractiveness of funding this via the private sector, rather than taking precious resources from the state, is obvious. The financing is available: in banks, leasing companies, pension funds and private equity funds. But private investors will not invest unless the conditions are right and they have security for their loans.


Every perceived risk adds to the cost, and few countries currently have laws in place that provide such security. The public and private

sectors need to work together to find a solution.

Such a solution now exists for African governments. Not only is it cost neutral, it also promises to deliver billions of dollars in direct benefits to governments and state-owned enterprises over and above the valuable support it will give to the development of the African rail industry and overall economy.

#### **The Luxembourg Rail Protocol to the Cape Town Convention on International Interests in Mobile Equipment**

Is a new international treaty due to enter into force in late 2019, which will protect private investment in the rail sector. It creates a new worldwide legal framework to recognise and regulate the security



Howard Rosen Chairman of the Rail Working Group


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### Howard Rosen Chairman of the Rail Working Group

Howard Rosen Chairman of the Rail Working Group provides an outline of the Luxembourg Rail Protocol and what it means to the rail industry in Africa.

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interests of lenders secured by, and lessors of, railway rolling stock, and it will allow creditors to repossess financed assets on the default or insolvency of the debtor, subject to public interest safeguards.

The new Rail Protocol applies to all railway vehicles on tracks or guideways, from high speed train sets to conventional freight or passenger locomotives and wagons, as well as to metro trains, trams, and even cable cars. Not only will it give governments a ready-made legal solution to attract private investors, it will also create a common African legal regime that secures private creditors financing railway equipment. It thus makes investment much more attractive and understandable for external private investors, and provides previously unavailable protection for owners and financiers, and indeed operators, as trains move across national borders within Africa.

A further benefit of the Protocol is that for the first time, it will create unique global identifiers for rolling stock, with an international public registry established in Luxembourg that will allow financiers to register their interests, and prospective creditors and purchasers to check any rival claims to the equipment being financed. Thanks to the internet, the registry will be available for searches 24/7. The international public registry also means that states will not have to set up their own registries of rolling stock, with all the costs and administration involved. The unique numbering system will make it easier to track the physical location of rolling stock in real time, facilitate customised maintenance programmes, and support governments as they set up regulatory structures for monitoring increasing cross-border operation and interoperability of railway equipment.

And there's more. By reducing risk for rail equipment financiers, the Protocol will:

- Attract more private sector lenders and lessors into the market, resulting in cheaper finance for non-state-guaranteed operators, as the risks for private sector funders and export credit agencies decrease and more funders come into the market.

- Create choice for operators in relation to the cost and types of funding, and open the way for governments to deleverage the state operators' portfolio of rolling stock by refinancing it with private capital.
- Facilitate the provision of finance to customers where up to now, their poor credit and/or lack of a legal infrastructure has discouraged creditors.
- Attract capital investment, which will in turn promote and support the expansion of African rolling stock manufacturing.
- Facilitate short-term operating leases of rolling stock, not just into railways operators from financiers, but also between operators, ensuring more efficient use of rolling stock.

In recent studies for the Rail Working Group (an international non-profit working on implementation of the Luxembourg Rail Protocol), independent economists Oxera calculated the direct micro-economic benefits of the Protocol in 20 states across Europe at EUR 19.4 billion, and in relation to South Africa alone, EUR 1.3 billion. The additional macro-economic benefits will also be considerable.

We can also expect lower barriers to entry into the industry for private sector operators, more efficient and competitive existing operators, and as a result, a more dynamic industry. State and private operators will no longer need to request state funding or guarantees (which are often not available). Governments can focus their resources on financing infrastructure, not rolling stock.

By underwriting secured financing without state guarantees, not only will the Protocol ensure more attractive financing rates, it will also allow public and private operators to invest in rolling stock when the need arises, not when the funds are available. By underwriting operating leasing, the Protocol will:

- Open the way for sharing risk between the public and private sectors.
- Create an economic driver towards the standardisation of equipment and economies of scale.

- Provide a mechanism for operators in different countries to share capacity, as it will be less risky for private financiers to permit rolling stock to move across borders.

The Luxembourg Rail Protocol will cost governments nothing - except the time involved for the process of adopting the Protocol. The opportunities, the investment, and the cost savings the Protocol will bring to Africa will be immense. This is a valuable and practical new tool to support free trade and sustainable development in Africa through building a common system for African railways. The UN Economic Commission for Africa and the Rail Working Group are working to assist countries both to ratify the protocol and to structure deals to maximize its benefits.

The Luxembourg Rail Protocol is not yet in force but is expected to begin to operate in late 2019. As of writing:

- The Protocol has been ratified by: the European Union (in respect of its competences), Luxembourg, Sweden and Gabon.
- France, Germany, Switzerland, Mozambique, Italy and the UK have signed the Protocol and are proceeding to ratification.
- Malta, Finland, Ukraine, Mauritius and South Africa are actively focused on adoption of the Protocol.
- Kenya, Senegal and Burkina Faso, with the support of UNECA, are working to ratify.
- China, Spain and Hungary have launched studies into its adoption.

The African Continental Free Trade Area will significantly improve the lives of tens of millions across Africa. But it will be the railways, quite literally, that deliver the goods - as long as Africa can mobilize the resources to (re-)build and operate them. The Luxembourg Rail Protocol is an important part of the solution to do this, so that railways can transport goods and people in an environmentally and financially sustainable way across Africa, moving the AfCFTA from dream to reality.





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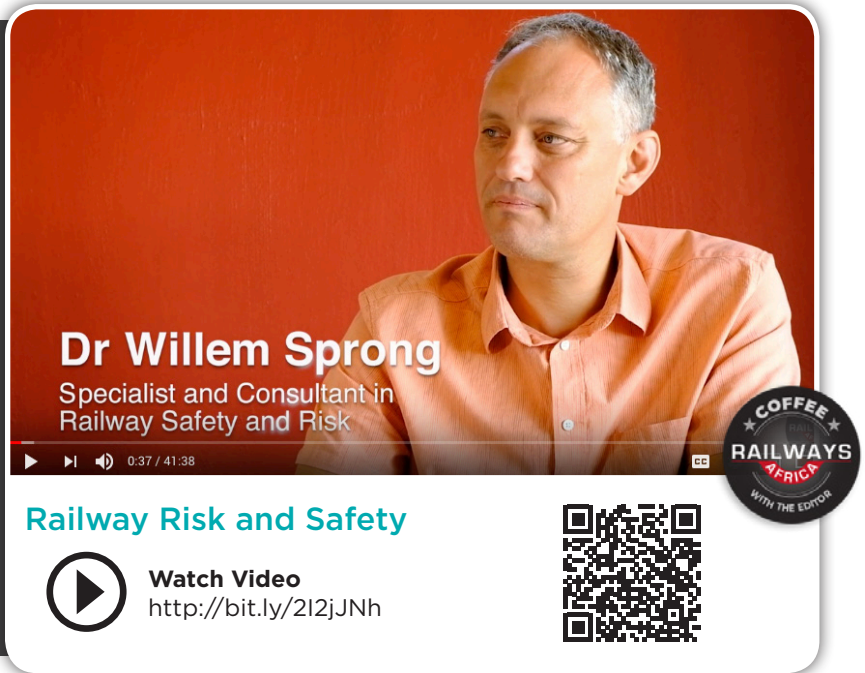
Dr Willem Sprong, is a consultant in the area of railway risk and safety. In our "Coffee with the Editor" series, Dr Sprong talks about the current state of railway safety. For many years, PRASA was viewed as safe and then all of a sudden there was a drastic increase in accidents and fatalities.

In the last review PRASA only had 45 incidents whereas Transnet contributed almost 1000 incidents. The reason we focus on PRASA is because the general public is impacted. The RSR act is about avoiding not just impact to human life but also the environment. Outside of the main operators in South Africa the RSR has issued over 260 operating licences.

The RSR act is about avoiding not just impact to human life but also the environment as well as the loss of commodities and impact on the network.

Dr Sprong talks about:  
New technology to investigate accidents, going so far as to predicting accidents. As well as the recent Mountain View incident.

Explains the process of manual authorizations in detail and the stress of over 1000 manual authorizations in one shift and the safety net that is in place for Train Control Officers.  
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**Dr Willem Sprong**  
Specialist and Consultant in  
Railway Safety and Risk

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0:37 / 41:38

COFFEE WITH THE EDITOR  
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## Achieving Vision Zero For Railways

*Dr Sprong, wrote a paper in 2017, which he has kindly given permission for reproduction.*

**Vision Zero** is fast becoming a term associated with the international aim, or focus, of achieving zero death or serious injury involving road traffic. During the annual Future in Transportation World Conference that was hosted in Cologne, Germany, in 2017 it was also one of the main topics. Now the question must be asked – Can there really be scope to create a zero-fatality transport environment?

"It's one thing to look at the incidents and accidents, it would be another if we could look at the statistics around near misses."

### Introduction

Vision Zero is based on an underlying ethical principle that "it can never be ethically acceptable that people are killed or seriously injured when moving within the transport system".<sup>[1]</sup> According to Tinvall and Haworth, Vision Zero is a philosophy of road safety that eventually no one will be killed or seriously injured within the road transport system. This philosophy is just as applicable to other transport systems such as air, water and rail. Vision Zero provides a vision of a safe transport system which can be used to guide the selection of strategies and then the setting of goals and targets.

In road transport there is a general understanding, supported by rules and laws, that the user should behave in such a way that accidents are avoided. If an accident occurs, at least one road user has, by definition, broken the general rule and the legal system can therefore act. The opposite view is taken in most countries when accidents occur in the railway system. Generally the operator will be held liable for the safety of the users.

Where the road and rail systems interface, this becomes quite interesting in that case law in most instances dictate that the railway operators are responsible to safe guard the users.

According to the report that was developed by Whitelegg and Haq in 2006, the responsibility of safety should be shared. They mention in their report that safety in the road system, for example, should be the responsibility of road users, vehicle manufacturers and infrastructure owners.<sup>[2]</sup> They acknowledge that there are a large number of stakeholders with decision making powers, or acting in an economic, social or representative function that have a role to play. The responsibility of safety has traditionally been place on the individual users rather than on the designers of the system.

Vision Zero requires a paradigm shift in addressing the issue of transport safety. This article takes a look at the application of Vision Zero in the railway industry and how the different modes of transport should interact in a systemic approach to safety. Is achieving Vision Zero possible?



## The Different States Of Railway Safety

The traditional way of understanding safety in the railway environment would be to classify a system either as being safe or not. With the advancement in risk management principals, it became apparent that we need to create a new way of understanding the state of safety for a railway system. This approach can also be adopted for other modes of transport. The fundamental shift is that an absence of incidents or accidents is not necessarily an indication that a system is safe. It is important to understand the definition for hazards, dangers, occurrences, incidents and accidents in the context of railway safety.

There are almost as many definitions as there are authors on the topic. Dangers, in the railway context, are often related to the exposure to harm or risk and where hazards become unavoidable dangers or risks. There seems to be a very small, if any, difference between the two. In **Figure 1**, it is understood to be something that has potential to cause harm to people, property, or environment.

The difference between an accident and an incident is more important. The word accident has a negative implication that can cause loss to life or damage to goods. It means a mishap, an unforeseen event or a unplanned circumstance that occurred with a negative outcome.

The word 'accident' is defined by Merriam Webster as:

- an unforeseen and unplanned event or circumstance;
- lack of intention or necessity: chance;
- an unfortunate event resulting especially from carelessness or ignorance;
- an unexpected and medically important bodily event especially when injurious; and
- an unexpected happening causing loss or injury which is not due to any fault or misconduct on the part of the person injured but for which legal relief may be sought.<sup>[3]</sup>

An occurrence or incident on the other hand can refer to any event that happens; it could be positive or negative. In many instances, an incident is often interchanged with accident, if it has a more positive implication. It is used to describe any incidents in general. Incidents usually have adjectives before the word, in order to explain the type of incident it is.

The word 'incident' is defined as:

- something dependent on or subordinate to something else of greater or principal importance
- an occurrence of an action or situation that is a separate unit of experience: happening
- an accompanying minor occurrence or condition
- an action likely to lead to grave consequences especially in diplomatic matters

In **Figure 1** the logic starts by asking the question if there are any dangers or hazards present. Inherently no system exists without these and the answer of "NO" does not exist in reality. This statement is supported by the fact that the probability of an incident occurring can never be 0 or 1.<sup>[4]</sup> These hazards and dangers exist in the system and can cause incidents, which in this case will be seen as negative.

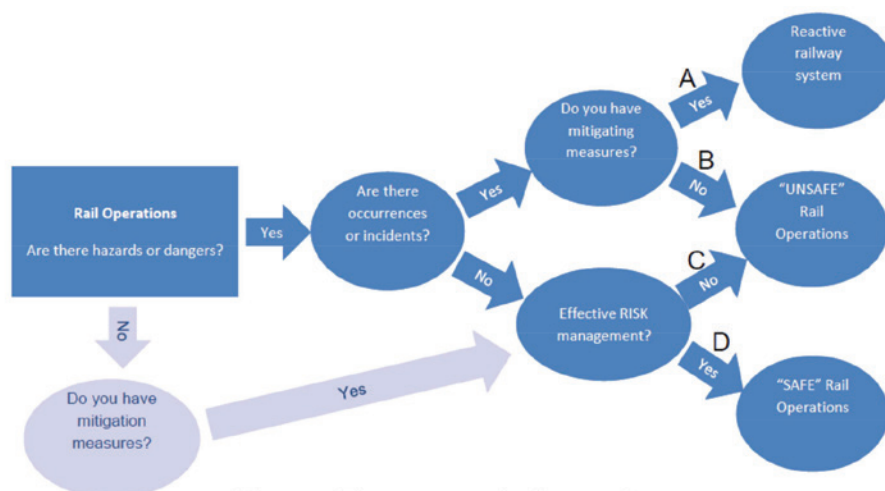


Figure 1: Three states of railway safety.

The hazards in the railway system, are activated by incidents, undesired events that hinders the completion or safe execution of a train movement mission (Mission Critical Activities, MCA) and may cause injury, illness, or property damage or some combination of all three in varying degrees of impact in which case, it will be referred to as an accident. A chain of events will lead to an accident and the consequent impact on the system and environment as shown in **Figure 2**.



*Figure 2: Chain of events and RISK elements*

It must be noted that some action from the human interface is required to activate the hazard into an incident. A chain of incidents is required for the accident to occur.

**Figure 1** illustrates that in order to limit the impact of an incident, there needs to be mitigating measures in place. If there are, the system will be in state A, as shown in the diagram. This is called a reactive system. Measures are in place for the operator's reaction to be efficient and effective. In other words, the reaction to incidents will prevent further loss of life or damage to property and the environment and will enable quick return to normal. If there are no or insufficient measures in place, the system will be in state B, it will be an unsafe system. In this state very little mitigating measures are in place to limit the impact of incidents in a system with a very high probability of it occurring.

There are two reasons, according to **Figure 1**, for a low probability of incidents occurring. If it is due to effective risk management, the system will be regarded as being safe, or in state D. Probability can never be zero, and therefore one would expect to see a combination of state A and D in reality. Mitigating measures should be in place despite a very low probability of incidents.

The system will be in state C, if the absence of incidents is not due to the risk management. It means that a system is not necessarily safe if there are no incidents. This is a very dangerous situation to be in since it will lead to complacency. It might be, for example, that the system is very new and due to its age will have a high tolerance to hazards influencing the operations.

The previous models for understanding risk have been very useful but, limit the view on the importance of human factors when activating hazards into incidents. A new model, the balanced riskbeam, describes the impact of human factor on risk and the systemic approach.

### The Balanced Risk-Beam Model

The view on preventing accidents is presented through the Swiss-Cheese Model, developed by Professor James Reason. It illustrates that accidents involve successive breaches of multiple system defences. These breaches can be triggered by a number of enabling factors such as equipment failures or operational errors.<sup>[5]</sup>

Breaches in safety defences can be a delayed consequence of decisions made at the highest levels of the system, which, may remain dormant until their effects or damaging potential are activated by specific operational circumstances. Under such specific circumstances, human failures or active failures at the operational level, act to breach the system's inherent safety defences. The Reason Model, proposes that all accidents include a combination of both active and latent conditions. Hazard Activated into incident, Negative impact on MCA Occurrence/Accident is caused impact of damage.

This linear system, presented in **figure 3**, illustrates the importance of the human factor in preventing accidents in the aviation industry where the first five barriers are human related. The limitation of the Swiss-Cheese model is that it presents risk management as spate silos in an organisation.

According to Reason<sup>[5]</sup>, the basic premise in the system approach is that humans are fallible and errors are to be expected, even in the best organisations. Errors are seen as consequences rather than causes, having their origins not so much in the perversity of





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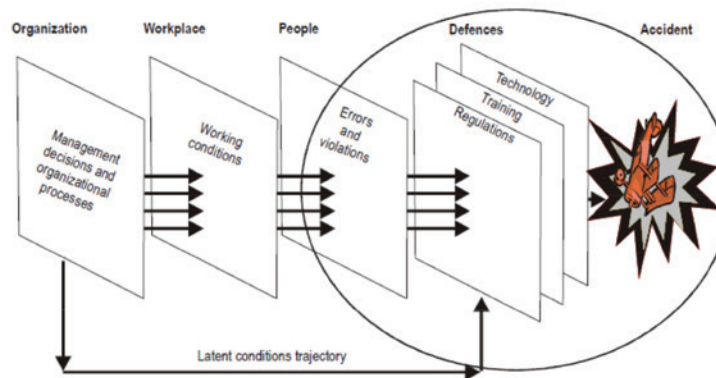


Figure 3: The concept of accident causation <sup>[6]</sup>

human nature as in upstream systemic factors. These include recurrent error traps in the workplace and the organisational processes that give rise to them. Countermeasures are based on the assumption that, though we cannot change the human condition, we can change the conditions under which humans work. A central idea is that of system defences. All hazardous technologies possess barriers and safeguards. When an adverse event occurs, the important issue is not who blundered, but how and why the defences failed.

The balanced risk-beam model illustrates the impact of human on risk, by showing that risk balances on the impact that humans have on a system. **Figure 4** shows that hazards exist in the system without having an impact on the risk balance. It requires and action by a human for it to become a weight on the beam increasing  $\Theta \approx \text{Window of Opportunity} \approx \text{RISK}$ . The weighted impact that an incident has on the risk ( $\Theta$ ) varies as shown in the different areas it impacts on the beam. Some incidents will have less of an impact, while others might cause the beam to tilt beyond the tolerance point for the system, causing an accident.

Every incident or accident will not just have a probability (P) that it will occur, it will also have an impact (I) as shown in formula 1.

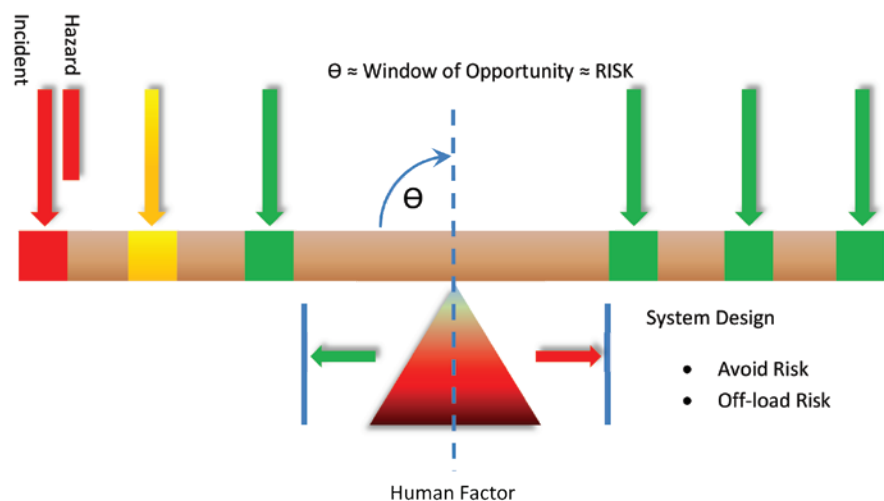


Figure 4: Balanced risk-beam model

$$\text{RISK (R)} = \text{IMPACT (I)} \times \text{PROBABILITY (P)} \quad [1]$$

A hazard exists as a potential incident, but until it is transferred to the balance beam by the actions of a human, it has no effect on the potential risk. Once human intervention, or error, causes the hazard to turn into an incident, it starts to affect the balance. This balance ( $\Theta$ ) indicates the probability of an accident occurring. Each hazard that turns into an incident will have an impact (I) and a probability (P).



The triangle below the beam is the influence of human factor. This influence will shift the balance. It can cause incidents to have a different effect on risk.

All mitigating efforts are placed on the opposite side of the beam. **Figure 4** shows that mitigating efforts will have a variable impact on the balance as well. This can also be described as the efficiency and effectiveness of the mitigating input. The balance of the system can already be influenced during design.

### Human Factor

The human interface is very important in the prevention and mitigation of incidents. The balanced riskbeam model describes this influence and shows how a change in culture can improve safety.

According to the Rail Safety and Standards Board, human factor is defined as "All the 'people' issues that need to be considered to assure the lifelong safety and effectiveness of a railway system or organisation."<sup>[7]</sup>

Human errors are intimately involved in accidents. In fact, they are considered to be so involved that it seems reasonable to blame them for all accidents that happen. The railway industry will only operate at its best condition of safety if it attends to all the human factors that can affect its performance.

In particular, the timely application of human factors knowledge and techniques will:

- reduce the potential for error;
- increase the margin for safety;
- reduce the potential for expensive re-design;
- increase the efficiency and effectiveness of training;
- reduce the potential for expensive staff turnover; and
- increase the productivity of the whole organisation.

All the above mentioned approaches centre on the human factor. The occurrence of accidents must be seen not just as a bad occurrence that happened to railway operators, but as products that impact on how the systemic operations of the mission critical activities of the railway system functions. Although accidents tend to be the result of a complex chain of contributory events, cognizance must also be taken that some of the factors contributing to an accident (hazards being manifested by incidents), are permanently present in normal working conditions.

The safety culture of an organisation is a combination of values, beliefs, vision, purpose, policies, objectives and leadership styles, that impact on an organisation's condition of safety and reliability in order to mitigate hazards and incidents. A positive safety culture is characterised by an organisation's awareness, assessment and action on safety matters in all its areas and is supported by an open communications style throughout the whole of the organisation.

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The safety climate in a railway organisation is the visible manifestation of the surface features of the safety culture in the organisation. Resulting from the workforce's attitudes and perceptions at a given point in time. The distinction can be made between culture and climate as the invisible and visible portions of an iceberg respectively. Safety climate, the visible part of safety culture, only represents the visible tip of the iceberg. The actual problems of culture might be invisible and hidden deep beneath the organisation's safe condition or bureaucracy. Instead of reactively treating the visible manifestations of hazards post event in the form of incidents or occurrences, real improvements can only be made by changing the underlying safety culture. A positive enabling action will need to be developed and will need to include amongst others, excellent communications and team work as well early warning systems.

To achieve a positive human culture and climate in the organisation, the following must be taken into account as a start.<sup>[7]</sup>

### Training

People need to be developed in ways that fulfil their own potential as well as the needs of the organisation for which they work. Training should be seen as a continuous process by which organisations get the most out of people – and vice versa. In order to be cost effective, organisations need to gauge the right time to train the right skills in the right people in the right way.

### Staffing

Organisations need the right numbers of people doing the right jobs at the right time – and once they've got them, they need to keep hold of them. Recruiting, selecting and retaining the right people are all crucial to the success of an organisation. Getting it wrong, is very expensive and can lead to organisational weakness and even collapse.

### Culture

Each organisation automatically develops its own culture. Culture is both a product and a cause of the way people behave with each other. An organisation's culture is apparent in the behaviour of its leaders, its teams and its managers, and in the style and expectations with which its people communicate with each other. It's also responsible for how easily, or not, an organisation can change. An organisation can't change culture directly. But it can find ways of influencing people's behaviour – which then influences its culture and (hopefully!) encourages more of the desired behaviour.

### Conditions

Of course, standard conditions of work are usually defined in appropriate detail by legislation and employment contracts. The human factors approach is concerned with the impact of workload, shift work, morale, motivation and stress on performance and wellbeing.

### Conclusion

Vision Zero aims to prevent death or serious injury to users of transportation systems. Understanding the risk in railway operations is cause for questioning this vision. Is it possible to have a railway system where there is no injury to humans and no loss or damage to property and the environment? Risk management is the most effective tool to strive toward Vision Zero in the railway industry. Managing risk related to the human factor is important in this quest. Safety culture and safety climate must be addressed to move the balance of risk positively. Reducing the window of opportunity for the beam to tilt in the wrong direction.

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# Wabtec Completes Successful Merger With GE Transportation

Wabtec Corporation (NYSE: WAB) announced on 25 February, that it had completed its merger with GE Transportation, a former business unit of GE (NYSE: GE). This merger establishes Wabtec as a Fortune 500, global transportation and logistics leader by combining Wabtec's broad range of freight, transit and electronics products with GE Transportation's best-in-class equipment, services and digital solutions in the locomotive, mining, marine, stationary power and drilling industries. Wabtec has also been notified that it will now be included in the S&P 500 Index.

Raymond T. Betler, Wabtec's president and CEO, said: "We are very excited to complete the merger of our two companies. This is a once-in-a-lifetime opportunity to bring together nearly four centuries of collective experience to create a technologically advanced leader with a highly complementary set of capabilities to move and improve the world. Our teams have made significant progress in integration planning, and this process has only strengthened our confidence in the value creation potential of the combination. Today, we are a stronger, more diversified company ready to better serve customers across the globe and capitalize on new growth opportunities at an attractive point in the cycle."

The combined company, which is expected to have revenues of more than \$8 billion in 2019, has a compelling growth profile, especially as market conditions improve in the industries it serves. Wabtec brings to market a robust installed base of more than 23,000 locomotives globally, an expanded global reach, a strong mix of products and services, as well as enhanced capabilities to drive innovation faster in key growth areas. The company's culture and experienced

global workforce will leverage the common values of innovation, collaboration, inclusiveness, and Lean and continuous improvement, to help solve its customers' toughest challenges.

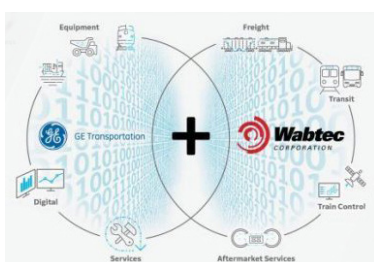
Rafael Santana, who served as president and CEO of GE Transportation and is now president and CEO of Wabtec's Freight segment, said: "Our shared focus on innovation, collaboration and continuous improvement will enable us to unlock new value for our shareholders, customers, employees and the industry. Together we are well positioned to take advantage of the opportunities created by industry trends toward efficiency and improved performance and, with the merger complete, we are focused on leveraging our complementary portfolios to spur growth."

The strategic combination of complementary portfolios is expected to:

- Create a leading equipment, aftermarket services and digital solutions provider across the transportation sector: The company can accelerate lifecycle solutions for the transportation industry and unlock significant productivity for customers by improving interoperability, efficiency and competitiveness. Wabtec expects to benefit from the cyclical tailwinds the industry saw in 2018, including volume growth of 38 million carloads and intermodal units.
- Improve utilisation and accelerate path to automation: The seamless combination of GE Transportation's digital solutions and analytics systems with Wabtec's electronic systems and Positive Train Control (PTC) capabilities, is expected to improve safety, efficiency and productivity across the

transportation industry and accelerate railroads' path to advanced train automation. According to the Association of American Railroads, automation will help improve network velocity and fluidity, potentially saving railroads billions of dollars annually.

- Deliver improved customer outcomes through expanded monitoring and services. Together, the combined company will have an expanded footprint of skilled technicians and repair shops that will result in a simpler customer interface and a more streamlined services experience. This enhanced capability is expected to drive significant productivity for customers by delivering improved cycle time, lower production costs and better asset performance. Proactive performance monitoring can also be improved by integrating Wabtec products within locomotive control systems and by leveraging GE Transportation's expansive remote monitoring and diagnostics systems. Combining GE Transportation's constant monitoring of messages from 17,000 locomotives with monitoring of Wabtec's passenger and shunter locomotives can make for a smarter, more efficient and safer transportation system.
- Drive increased value for shareholders: Investors are expected to benefit from ownership of a stronger, more diverse business better positioned to perform through the cycle, with expanded margins, expected average double-digit EPS growth and synergies of about \$250 million. The combined company has a multi-year backlog of more than \$23 billion.



## TRANSACTION DETAILS

With this transaction, GE sold a portion of GE Transportation assets to Wabtec, spun off a portion of GE Transportation to GE shareholders and then GE Transportation merged with a wholly owned subsidiary of Wabtec. Wabtec shareholders own approximately 50.8% of Wabtec on a fully diluted basis and GE shareholders own approximately 24.3% of Wabtec on a fully diluted basis. GE owns common stock and non-voting convertible preferred stock, which together represent approximately a 24.9% economic interest in Wabtec on a fully diluted basis. GE also received approximately \$2.9 billion in cash at closing.



## Coffee with the Editor

come join me and find out what industry is up to.



### Coffee With The Editor - Jack Van Der Merwe, CEO Of Gautrain Management Agency

It is always such a pleasure to spend time with Jack, his knowledge and expertise in transport is incredible! So, you can imagine that our coffee session was not just focused on Gautrain but transport as a whole, including his view on Africa and his opinion on distributive technologies and the hyperloop. I also asked Jack his opinion on why Cape Town and Durban do not have a version of Gautrain yet!



### Ticketing Systems And Automated Fare Collection For Transit Systems

Vix Technology - a company that specialises in ticketing systems and automated fare collection for transit systems globally. Aaron, talks about what Vix does best, which is deliver an improved customer journey through seamless transit. Vix, has a broad range of products and services, making it possible for customers to have certain elements based on their needs at the time and allowing for scalability as the customer grows and requirements change.



### Unique Transportation Of Bulk Liquids And Dry Bulk For Rail

Flexitank systems provides a unique method for the transportation of bulk liquids and dry bulk in specialised bags. With the ability to offer additional economies of scale through double volume loads, not achievable in traditional containerised cargo.



### Seeing Steam In Action - Susan Celebrating 100

We seem to focus on new technology and new locomotives, but a few weeks ago we wrote about the upcoming 100th celebration of steam locomotive Susan.



### Timken South Africa

Coffee with the Editor - Kevin Holloway - Managing Director - Timken South Africa. We talk about the history of Timken in South Africa, products for different applications narrowing down to rail, meeting local content requirements in their local market, servicing Africa and meeting customers needs. As well as, innovation and the potential impact for rail operators.



### Ghana Railway Development Authority Update

Ghana Railway Development Authority (GRDA), CEO, Mr Richard Dumba has "Coffee with the Editor" Railways Africa Magazine - by the end of the conversation, I had a better understanding of Ghana's expansive railway vision and the role of the GRDA. In addition, Richard, provided insight into current and future projects both narrow and standard gauge, touching on freight, mining and passenger projects.



### Rail Operators - Developing Human Capacity To Meet Operational Needs

Fiona Stewart-Knight BA (Joint Hon), Pg Dip Assistant Vice Principal Business Partnerships and Director School for Work Based Education at the Glasgow Caledonian University, talks about the incredible professional education and development work that they are doing with Transnet Freight Rail (TFR), in association with The Institution of Railway Operators (IRO) and in partnership with the University of Johannesburg and TFR's School of Rail campus in Esselenspark.



### Reduce Wear And Increase Life Span Of Critical Rolling Stock Components

"Coffee with the Editor" with the Vesconite Bearings team, MD Dr Jean-Patrick Leger and Zand Easton and Thomas Uttermarck, Pg Eng - discussing the impact of their products in wheel/rail interface and how wear impacts operations both track and rolling stock applications, highlighting their Superlube Load Pads and what they look like after two years in operation on the Sishen-Saldanha line. Vesconite manufactures in South Africa and supplies a global market a variety of products in the mining, shipping, agriculture and construction sectors.



### TransNamib Limited: The Future

TransNamib CEO Johny Smith "We can't change the past but we can change the future" Johny, discusses the business plan that was launched a few weeks ago. TransNamib is roughly 25 years behind in terms of where it should be - within the next five years, revenue and volumes need to be doubled as well as accountability. He talks about the positive impact of the new Board and their various projects and freight logistics strategy with regional interconnectivity.



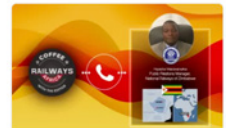
### Marechal Electric: rail products - for wagons, coaches and depot environments

Mandy Poels Business Development Manager for Marechal Electric, South Africa / Africa office. Talking about their products for the rail sector - for wagons, coaches, depot environments and on site use - specifically their MARECHAL® DECONTACTOR™ - plug and socket, integrated switching, combining power and insulation in one unit.



### Railroad Association Building Rail Capacity In South Africa

Mesela Nhlapo CEO of the Rail Road Association - we talk about the rail industry, the role of the RRA, issues and progress regarding designation, localisation / local content and verification. The new board and the activities of the association going forward.



### National Railways of Zimbabwe - update on the recapitalisation programme

Nyasha Maravanyika, Public Relations Manager for the National Railways of Zimbabwe, provides an update on the recapitalisation programme, passenger train services, and upcoming projects.



### Salvaging Major Components Through Remanufacturing. In The Long Term - Make More Sense!

Andrew Yorke, Operations Director of METRIC AUTOMOTIVE ENGINEERING discussing the advantages of component remanufacturing for heavy Diesel engines, and their advanced capabilities in meeting OEM standards.



### New Technology To Impact Heavy Haul

Brian Monakali, who is the Chairman of the International Heavy Haul Association and General Manager - Capital Planning at Transnet Freight Rail an operating division of Transnet SOC Ltd - speaks about the upcoming International Heavy Haul Association - IHHA conference in Norway 10-14 June - as well as new technology, the challenge for heavy haul operators globally and in Africa as well as collaboration in Africa with SARA.



### Transnet International Holdings - An Update

Transnet International Holdings (TIH), Senior Manager, Ravi Thaver had "Coffee with the Editor" Railways Africa Magazine. Topics covered include the, North South Corridor, the Maputo corridor, and general activities in Africa. TIH, the concept stems from the African union strategy regarding regional integration and connecting economies - ensuring trade.



### Thermitrex - Improving Rail Operators Reliability

Henry Sanbani - MD, Thermitrex, a member of the Goldschmidt Group - Discusses how their products improve rail operators reliability, why quality is important and their growth and success in Africa. Henry, maintains a positive outlook for the rail sector in 2019 on the African continent.



### The African Storyteller - Branding and Expanding into Africa

Thulile Phiri - MD - The African Storyteller. Thuli comes from the rail industry and two years ago founded The African Storyteller - we chat about the journey so far, the importance of storytelling, branding and expanding into Africa.



### The Importance of Paint in Industrial Applications

Rene Du Preez - Kansai Plascon - I must be honest and tell you that when I think of paint, it really is for home use and before I had coffee with Rene, I knew nothing about the importance of paint in industrial applications - specific to rail - aside from rust coatings! So for me personally, I found this very informative. I was especially taken with the size of their footprint in Africa and...



## Advanced Railway Solutions





[www.railways.africa/coffee-with-the-editor](http://www.railways.africa/coffee-with-the-editor)



#### Zambia Railways – expansion, signalling and rolling stock

Christopher Musonda, CEO Zambia Railways Limited, discusses the investment over the next five years – expansion, signalling and rolling stock.



#### Update on Various Rail Activities in Egypt

Coffee with the Editor at the recently held 1st African Rail Digital Summit, the Minister of Transport, Egypt – Dr. Eng. Hisham Arafat Mahdi – Gave a detailed update on various rail activities in Egypt, both passenger and freight. Including their high speed rail project which will be the second in Africa, referencing Morocco. Increased container traffic, new locomotives and new lines.



#### Gabon's freight and passenger rail development

Jean-Aimé Nziéngui – Directeur Technique et de l'Exploitation Ferroviaire – ARTF, Gabon. A wonderful conversation on both freight and passenger rail development in Gabon. The goal of doubling their current tonnages and digital applications.



#### Status Update on the African Continental High Speed Rail Project

Mr Adama Deen, Senior Advisor NEPAD, provides a status update on the African Continental High Speed Rail project, which is a flagship project of Agenda 2063. In addition Mr Deen touches on the revival of the Union of African Railways as stakeholder platform in order to support the agenda of rail development on the African continent.



#### UIC African Rail Digital Summit

Jean-Pierre Loubinoux, General Director of the International Union of Railways (UIC), Talking about the possibilities that digital brings to the rail sector, globally. The African region is particularly interesting as there are many projects, and digital will be the technical revolution to breach the barriers for true interoperability. As well as general information on the role of the UIC.



#### Naledi Inhlanganiso – developing a black-owned engineering firm of significance

Sibusiso Maphotlane, talks about the challenges in the South Africa business environment, the development of their export strategy. Investment into their foundry business known as Naledi Foundry, and the acquisition of both DCD Ringrollers now Naledi Ringrollers and DCD Metpro now CBC – Composite Brake Components.



#### TAZARA

Tanzania-Zambia Railway Authority (TAZARA) CEO, Bruno Tazara Ching'andu – Bruno discusses the current state and progress in operations and the next 12 months with a number of procurement opportunities open to the market.



#### Pandrol

Dean Lincoln, GM Pandrol, Don Nellmapius, Technical executive – who is coming up for retirement after nearly 40 years with the company and newly appointed Steve Mkhize, who is no stranger to the rail industry! We spoke about the industry and the products that they provide to South Africa and sub-Saharan Africa.



#### Michael Howard

Michael Howard, A Railway Specialist And Consultant with GmarH. We talk about the impact of commodity prices on the rail sector, the revival of projects in Africa, Angola's railway unbundling which, may open up access to private operators. We have a Hypothetical conversation on Transnet based on recent news around Eskom, GmarH, also has the local agency for National Railway Equipment (NRE).



#### voestalpine VAE SA

Massimo Del Grosso – CFO – Voestalpine VAE SA (Pty) Ltd – an integral supplier of a turnouts and a number of other track related products. Massimo, talks about the company and why they are supporting the upcoming African Track & Technology Symposium taking place in South Africa, later this year.



#### SIEMENS – New Signaling System for Gauteng's PRASA Network

As part of the Passenger Rail Agency of South Africa (PRASA) drive to deliver a world class commuter railway system, Siemens Mobility was commissioned to install a new signalling system across the PRASA network in the Gauteng region as well as the construction of a modern control centre, the Gauteng Nerve Centre (GNC).



#### Howard Rosen Chairman of the Rail Working Group

Howard Rosen Chairman of the Rail Working Group provides an outline of the Luxembourg Rail Protocol and what it means to the rail industry in Africa.



#### The Partnership between McCulloch Rail and Unipart Rail Impacts the African Market

Mike Smith – Head of New Products – Unipart Rail & Roelf Alberts, CEO, Gear Rail – last week we published the press release regarding the partnership between McCulloch and Unipart Rail, and as Gear Rail is a partner in the African market for Unipart, I decided that it would be a good idea to have Mike explain the partnership in a bit more detail and for Roelf to unpack the impact this partnership will have for their customers in Africa.



#### Galison Group – Local Manufacturer of Rail Wagons

Coffee with the Editor – Andrew Thorburn, CEO of the Galison Group. Galison is a major manufacturer and supplier of railway rolling stock and underground mining equipment including underground and surface rolling stock, transfer chutes, hoppers, scrapers, grizzlies, drilling consumables and general steelwork. Andrew talks about the market and the incredible system that they developed for a mine in China. The future of tech – driverless to autonomous, made in South Africa!



#### Sbhukuza Rail – Branch Line Concessionaire

I wasn't actually aware that anything concrete had come out of the many branch line initiatives that Transnet has had over the years, so I was thrilled to interview Thandi Hille of Sbhukuza Rail, who have actually signed a branch line concession agreement with Transnet. It turns out that Sbhukuza Rail, is one of three concessions that have been concluded in principle.



#### TMH Africa – Local and Global Strategy

Jerome Boyet – CEO, TMH Africa. Now that TMH Africa has moved into their new facility, we touched on their local and global strategy, current deliveries, new build and servicing the freight and passenger market.



#### Knorr Bremse – The 1064 Locomotive Programme

Andrae Nieuwoudt – Knorr-Bremse. A general and somewhat somber conversation on the 1064 locomotive programme, their product range, investment in their facility in SA and the markets they serve.



#### Railway Risk and Safety

Dr Willem Sprong – Consulting Specialist in the area of Railway Risk and Safety. A topic that currently is the forefront of the industry as derailments and accidents continue to make headlines, not only in South Africa but Africa in general. Dr Sprong, takes us through the recent Annual state of safety report, discusses accident prevention, new technology methods that are...

# Finding Rail Solutions That Are Fit For Purpose

By Andre van der Walt, Technical Executive at GIBB

Africa's conditions are perfectly suited to rail transport solutions – vast distances, interspersed with rich mineral deposits and dense population centres. The fact that our rail infrastructure is somewhat lacking is testament to past policy and implementation failures, but rail still offers vast opportunities for our continent.

The question is how to unlock these potential benefits for the good of our people without the process becoming derailed by the inefficiencies that have bedevilled earlier developments. The answer lies in developing policy and finance solutions that encourage all stakeholders to make the system work.

In general, Africa's rail infrastructure is poor – a view echoed by the African Development Bank's 2015 report *Rail Infrastructure in Africa: Financing Development Options*. However, as that report also found, there remains a crucial role for rail to play in the sustainable development of the continent.

Personal experience in West Africa has born this out. There are policy moves to reinvigorate the region's infrastructure, to return national lines to service and to build regional integration between the Economic Community of West African States (Ecowas) countries through a coastal rail link.

The existing state of rail is mixed. However, the objective potential for rail to assist in the African renaissance cannot be denied.

In South Africa, there has been an element of policy inertia, which has slowed down planning momentum, but also astonishing innovations in

public-private partnerships and network design that led to the great success of the Gautrain commuter system.

Across Africa, the most successful design and funding models are those tailored for their own particular purpose.

Funding might be state or public-private or foreign investors. In some cases, government will substantially contribute to the infrastructure side of capital funding, while private investors will fund the operations and the rolling stock.

This plays to the respective strengths of what government and the private sector do best and allows the two to then build financing models around these competences. The funding may come from debt or equity structuring, but it is crucial to the viability of the projects.

It's interesting that in many projects across the continent, the determining factor in who wins a major rail contract will be which consortium can secure the best interest rate on their debt. This is where Chinese groups can have the advantage, with their banking and engineering firms all aligned to an overarching state policy – the China 2030 vision.

This policy coherence holds lessons for national governments across Africa.

If China can apply its vision across the planet in service of its national goals, our governments should be able to build regional partnerships that serve our passenger and freight needs more effectively, at greater scale and more sustainably.

Sustainability is one of rail's defining advantages. It has a fraction of the carbon footprint of road transport, and large projects allow for training and upliftment of large numbers of young professionals.

Ambitious rail projects are on the table such as the Trans-Africa railway from Senegal to Djibouti. The North-South Rail Corridor from Durban to Zambia link is another. Whether these make the transition from planning to implementation is the province of national policy.

Policy is driven by political will. Political will, in turn is driven by the mood of the people and the market. Here the prospects of a more successful rail implementation become apparent.

In terms of public transport, people are becoming more sensitive to the external cost of transportation. They consider how long it takes them to drive to work, and the costs in terms of health and less time with their families.

As these considerations gain in relevance, pressure builds on the city and national planning departments to improve the rail service and the frequency of trains along commuter routes.

Similarly, where there is a business case for high-capacity freight corridors, the demand for rail solutions will increase. This will provide the impetus to link landlocked African countries to the coast and to other markets.

People are more environmentally and socially sensitive. Such sustainability considerations will in the medium term see moves towards rail as a transport solution.

Rail in Africa has a future. There are obstacles that need to be overcome, and several countries need to be more effective, but there is likely to be demand for rail solutions that are fit for purpose – particularly in urban and inter-city transport and along established trade corridors.

Foreign investors stand ready to assist in a mutually beneficial way. Regions are building relationships and there is growing social demand for more sustainable solutions. The key is to align policy and funding models with these demands.





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# Railroad Association (RRA) – Annual General Meeting

## Railroad Association (RRA) – Annual General Meeting, Presidents Report



Outgoing President of the RRA, Kevin Holloway, MD, Timken SA.



Download  
President's Report

<http://bit.ly/2Ftv2LE>



Mesela Nhlapo, CEO,  
RailRoad Association



Download  
CEO's Report

<http://bit.ly/2FIVUNs>

The outgoing President of the RRA, Kevin Holloway who is also the MD of Timken locally, delivered an interesting "Presidents Report". The key message, iterated at least eight times during his presentation, "The manufacturing and services industry in South Africa is present and ready to support these efforts." This is poignant at a time where Transnet is expanding into Africa and Alstom through Gibela is currently building some 3,600 passenger cars – the rail industry in South Africa is ready to deliver. He made specific reference to a few key activities of Transnet Engineering, who have set their sights on a number of engineering developments such as:

- The SMART Wagon utilising IRIS - Intelligent Real-time Information Services
- Design and development is under way of a standard gauge bogie for passenger applications
- Design and develop locomotive propulsion and traction system technologies to further localise critical intellectual property for locomotive technology
- Variable Gauge Bogie technology
- Hybrid gas-power systems for locomotive applications
- The Baluleka coach which is a top line executive coach
- Research and development of composite material applications in rolling stock.

### Railroad Association (RRA) – Annual General Meeting, CEO - Report Highlights

RRA's current CEO, Mesela Nhlapo, titled her report back as **"THE RAIL INDUSTRY IN SOUTH AFRICA: A SLEEPING GIANT."** Below are extracts:

"During the past financial year, as an association, the Railroad Association of South Africa (RRA) has continued to solidify its position as a key player in the rail industry within Africa, and more specifically, in the South African sphere.

"As an association consisting of operators, original equipment manufacturers and suppliers, the RRA is

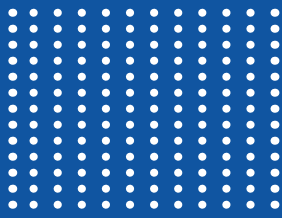
committed to transformation, which, it views as a critical industry imperative, not only for the association's sustainability but also as a means of making a meaningful contribution in the country and continent in which we operate.

"We undertake to continue to speak with one voice and to act collectively to transform the industry, promote our interests and achieve positive results in our rail industry. The African continent has been identified as the "Last Frontier" where the most development and economic growth need to come from.

"With Africa's economy growing by 5% a year on average, without good roads and rail network, such impressive economic growth may not translate into real socio-economic development for Africans. As you are all aware, African leaders established the Programme for Infrastructure Development in Africa (PIDA). An initiative of the African Development Bank (AfDB), PIDA is an ambitious effort to boost African infrastructure, including rail and roads. Most railway networks in Africa date back some 100 years since they were first constructed in colonial days. Many have not been upgraded due to lack of funds and as such cannot meet the demands of modern times. Africa desperately needs more investment in its railways; both infrastructure and rolling stock.

"The problem is of course how to pay for it. Many countries are embarking on road-to-rail initiatives in line with their sovereign infrastructure development objectives, however, due to the size of investment required there are existing limitations on their procurement abilities. State-owned railways are also dependent on government support and private rail operators find it difficult to raise funds at affordable rates without highly creditworthy third party guarantees. Private capital is the obvious answer, particularly for the financing of the purchase of railway rolling stock but it is not available, or it is too expensive, because of the lack of legal security provided to private lenders or lessors.





"Moreover, railway operators and creditors in Africa can be reluctant to allow rolling stock to move across national boundaries because of the inherent risks that their rights in the equipment could be overridden under another legal system.

"As an association, we are glad to announce that we have indeed grown by leaps and bounds in terms of our membership and we hope to continue to play our role in galvanizing the rail industry to be cognizant of the vast challenges facing us. The RRA also believes that in the foreseeable future we need – as the rail industry, a bench-marking exercise in order to investigate our capabilities."

The organisation welcomes the appointment of the RRA's new Chairperson of the Board – Mrs Babalwa Dlodlu. The RRA wishes to thank Gibela Transport Consortium, ETION, Azon Rail and Timken SA for their generous donations which have assisted achieving their key objectives.



### Railroad Association Building Rail Capacity In South Africa

Mesela Nhlapo CEO of the Rail Road Association – we talk about the rail industry, the role of the RRA, issues and progress regarding designation, localisation / local content and verification. The new board and the activities of the association going forward.

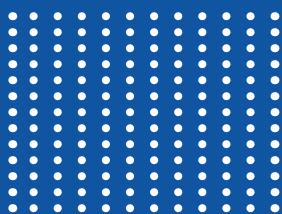


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## Activities And Outcomes For The Period 2018/2019

Below are some of the key highlights of the past financial year by the RRA:

- In January 2018, the Department of Trade and Industry (the dti) received a request for exemption from the CRCC. The RRA requested the applicant to prove his claim and further requested a meeting. The meeting took place at the Birchwood Conference Centre in Benoni in March 2018.
- Through our intervention, Transnet's 1,064 locomotives tender was finally implemented with strict local content and supplier development obligations. This helped a lot in terms of job creation and prevented CRCC from importing material to the tune of R5 billion.
- In May 2018, the association exhibited at the SARA Railway Conference held at the Gallagher Estate in Johannesburg. As an association we were able to negotiate discounted exhibition fees for our members.
- In June 2018, the RRA hosted a successful workshop at the Sandton Convention. The workshop focused on localisation in the SA rail manufacturing industry. The workshop was addressed by representatives from the office of the Gauteng MEC for Economic Development Mr Lebogang Maile as well as the Department of Trade and Industry. Other workshop partners and participants included the SA Electrotechnical Export Council (SAEEC), represented by its CEO Chiboni Evans as well as the Engineering and Technological Grouping of Export Council (ETGEC). The workshop received positive media coverage on eNCA, PowerFM and Classic FM, among others.
- Shortly after the localisation workshop, the dti made funds available to conduct local content verification.
- In July 2018, the RRA was represented at various engagements including the Ghana State visit, BRICS Breakfast Roundtable at the Presidential Guest House in Pretoria and, lastly, the Africa Infrastructure Africa (October 2018) and the African Investment Forum (November 2018).
- The RRA arranged and hosted an emergency meeting in July 2018 where companies facing retrenchments were assisted by introducing OEM's to save the businesses. The companies assisted by RRA included IEC Holden and DCD Rolling Stock.
- In July 2018, RRA assisted the dti to conduct an OHTe industry capacity assessment.
- In August 2018, RRA and the SAEEC hosted the inaugural Africa Investment Strategy Breakfast in Centurion, Pretoria, to discuss ways to unlock export opportunities in Africa's rail and energy sectors including opportunities presented by the African Continental Free Trade Area (AfCFTA).
- The RRA and SAEEC are now representing private sector at the Africa Strategy Steering Committee under the auspices of the DPE.
- The breakfast was followed by a Golf Day at the Centurion Golf Estate, Pretoria.
- In October 2018, the RRA actively participated in the outward selling missions sponsored by the dti to Djibouti, Cote d' Ivoire, Ethiopia, Egypt, Angola, Zambia, Mozambique and Germany for the 53<sup>rd</sup> BME symposium allowing SA manufacturers to showcase their products and capabilities.
- After the infrastructure meeting in Djibouti, Ethiopia, sales leads were passed onto Transnet Engineering.
- Angola's outward trade and investment meeting has now paved the way for South African companies who would like to export valuable added products and services to Angola.
- Zambia and South Africa have now formed a formal partnership to advance the rail sector and facilitate trade through rail by providing a full logistic chain of commodity or services between the two countries.
- The outward trade and investment mission to Mozambique also paved the way for local companies to invest in Mozambique and made it possible for them to export their value-added goods and services.
- The RRA also took part in the first IATF 2018. The export councils' main objective was to maximise African content in African projects.



## PORT OF MAPUTO INVEST IN OPERATIONAL EQUIPMENT

Two new mobile harbour cranes have joined MPDC's operational fleet at Maputo Port. The objective of this new acquisition is to improve productivity, responding to the growing demand, especially regarding bulk minerals.

"In addition to the two mobile harbour cranes, we have recently acquired 14 payloaders, 8 tractors, 8 forklifts and 2 rail excavators (for wagon unloading operations). This investment is in line with the need to improve the berth usage and the rehabilitation and deepening works that are taking place at the moment," said Chief Operations Officer, Marla Calado.



The acquisition of this new equipment represents a total investment of about USD\$19 million. The new fleet - larger and more modern - will allow higher productivity rates to be achieved, given the large vessels (capesize ships) that have been calling the port more frequently since the dredging of the access channel completed in January 2017.

"Our turnaround times have been improving (and are often faster than in the region). We believe this new equipment will enable us to further increase our operational efficiency, our competitiveness and our volumes in terms of cargo handling," explained the COO.

The investment in equipment also includes the training of several operators and technicians for the handling and maintenance of the new machines, as well as the maintenance contracts with the manufacturer, which will guarantee greater reliability and availability of the equipment.

In 2019 the port expects to increase its handling capacity with the completion of the rehabilitation works of berths 6, 7, 8 and 9. The rehabilitation will not only create berths with a depth of up to -15 meters, but will improve the occupancy rate of the berths by creating a larger mooring area. The completion of the works is scheduled for the last quarter of this year.

## NRZ ANNOUNCES NEW FARE STRUCTURE FOR COMMUTER TRAIN

The National Railways of Zimbabwe (NRZ) has issued a new fare structure for the City-Cowdray Park Commuter Train service. From the 4 February 2019, there will be separate fares for children and adults. Single ride fares for adults will go up from 50 cents to \$1. Children and school children in uniform will continue paying 50 cents.

Students at tertiary institutions of learning will pay \$1 while a multiple ride budget ticket will go up from \$4,50 to \$9. The multiple-ride budget ticket is valid for 10 trips.

The adjustment in the prices of fares has been necessitated by an increase in the organisation's operational expenses which have been caused by high cost of spares.

The NRZ re-introduced the commuter train service in Bulawayo in November 2018 and all fares were pegged at a flat rate of 50 cents per ride for all passengers, irrespective of age. The 10 trip multiple ride ticket was \$4,50, a discount of 10% which has been maintained on the new fares.

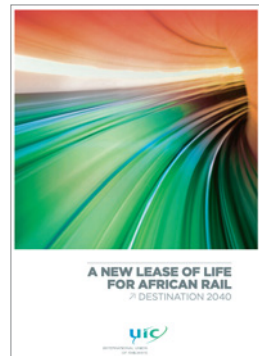
## A NEW LEASE OF LIFE FOR AFRICAN RAIL - DESTINATION 2040

As part of its regional outreach programme, UIC plans to concentrate efforts on Africa in particular to contribute to the development of its railway network. Of the 35 African countries with an operational railway network, only five (including Libya) are presently UIC active members, while others are affiliate members.

While the immediate benefit of becoming an active member of UIC for African railways is clear, there are other untapped advantages to be gained as well, such as forging links in intermodal transport chains. A number of these countries (including small countries) could serve as essential building-blocks in international intermodal channels across Africa.

Cooperation through a body such as UIC, by developing a strategy for the future for Africa, should therefore be seen as critically important. The "Africa Rail 2025" strategy for Africa's railways, which was finalised and adopted in October 2012 at the 9<sup>th</sup> Regional Assembly in Tangiers, has reached a crucial stage. Africa is currently going through massive demographic growth and economic, political and social upheavals, marked by a sea change in communications infrastructure development.

Following the recent, 1<sup>st</sup> UIC African Digital Rail Summit held in Cape Town, the UIC and Nepad with the support of the African Union has signed a cooperation agreement, which will enable the mobilisation of resources and to work towards the establishment of partnerships with the international community.



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## PRESIDENTIAL INFRASTRUCTURE CHAMPION INITIATIVE PROGRESS

The Presidential Infrastructure Champion Initiative (PICI) was adopted to accelerate regional infrastructure development that is enabled through the political championing of projects. The role of the champions is to bring visibility, unblock bottlenecks, coordinate resource mobilisation and ensure project implementation. Most of the PICI projects, if not all, have made tremendous progress since its inception.

The 8th Technical Task Team workshop for the PICI was held in Windhoek, Namibia from the 23 to 24 January. The workshop was co-hosted by the Government of Namibia (Ministry of Works and Transport) and the African Union Development Agency (AUDA-NEPAD).

Namibia's Permanent Secretary Ministry of Works and Transport, Mr Willem Goeiemann gave a description of the Namibian International Logistics Hub PICI project. Through its Transport Master Plan, Namibia aims to establish a development framework and strategies to make the country the regional logistics centre. Namibia will structure this PICI project within the context of the PICI protocol and modalities.

Representing the AUDA-NEPAD CEO, Dr Ibrahim Mayaki, Mr Symerre Grey-Johnson, NEPAD Agency's Head of Partnerships, Regional Integration, Infrastructure and Trade said that, "PICI technical workshops not only provide a platform for knowledge sharing with all of the respective experiences, but through the active participation of all focal points, they also aim to define an implementation strategy enabling our Heads of State and Government to be actively involved in the development of these projects."

The Champions of infrastructure in PICI include:

- H.E President Abdelaziz Bouteflika of Algeria for the missing link of the Trans-Sahara Highway, as well as the Optic Fibre from Algeria via Niger to Nigeria;
- H.E President Macky Sall of Senegal for the Dakar-Ndjamena- Djibouti Road/Rail;
- H.E Muhammadu Buhari, President of Nigeria for the Nigeria- Algeria Gas Pipeline: Trans-Saharan Gas Pipeline;
- H.E President Denis Sassou Nguesso of the Republic of Congo champions for the Kinshasa-Brazzaville Bridge Road/Rail;
- H.E President Paul Kagame of Rwanda champions the Unblocking of Political Bottlenecks for ICT Broadband and Fibre optic projects;
- H.E President Abdel Fattah El Sisi of Egypt champions the Establishment of a Navigational Line from Lake Victoria to the Mediterranean Sea via the River Nile Project (VICMED);
- H.E President Cyril Ramaphosa of South Africa for the North- South Corridor Road/Rail Project;
- H.E President Uhuru Kenyatta, of Kenya for the Lamu Port South Sudan, Ethiopia Transport Corridor Project (LAPSSET);
- H.E President Hage Geingob, of Namibia champions the International Logistics Infrastructure Hub Projects.

The Technical Task Team workshop provided a platform for effective brainstorming and round table discussions on the best and innovative solutions for infrastructure delivery for Africa ranging from infrastructure financing solutions, enabling environment, private public partnership delivery solutions based on international best practices.



## SITARAIL - REVISED CONCESSION AGREEMENT RATIFIED BY GOVERNMENT OF BURKINA FASO

The Government of Burkina Faso, through the National Assembly has ratified the revised concession agreement signed between the states of Burkina Faso and Côte d'Ivoire in 29 July 2016, on Tuesday 4 December 2018. The revised concession agreement had already been ratified by the Ivorian government, which enabled the

launch of rehabilitation work in Abidjan on 4 December 2017.

The aim is to ensure that the railway is preserved and to reduce the length of travel journeys (from 36 to 20 hours). The next few months will see the renovation of the railway. The ministry of Transport noted that 262 billion (currency not disclosed)

will be invested to rehabilitate rail infrastructure and provide better conditions for workers.

The National Assembly also made recommendations regarding the construction of the Kaya-Tambao Railway.

## NAMIBIA -MINISTRY OF TRANSPORT RESPONDS TO MANWU OVER ROAD AND RAIL CONSTRUCTION PETITION

5 March - The Metal and Allied Namibian Workers Union (MANWU) handed over a petition to the Road Authority and the Ministry of Transport demanding a stop to the current bidding process for the Walvis Bay railway project and the Hosea Kutako dual carriage road project.

The Transport infrastructure improvement project is one of the governments initiatives for achieving their national development goal, in terms of Namibia, becoming a regional logistics hub for Southern Africa.

To support this goal, Namibia has recognised the need to initiate the transport infrastructure projects under the TIIP - Transport Infrastructure Improvement Project. This project includes, for the rail sector - the upgrading of the 210km Walvis Bay-Kransberg railway section. The Ministry of Transport is the executing agency for aspects of the TIIP project that involves rail, whilst, the Roads Authority will execute the road aspects that make up the total TIIP project.

To implement the project the government approached the African Development Bank for a loan to

complement its own resources and thereby mobilising the required funding for the projects. The loan agreement totalling N\$5,522,000,00 was signed on 28 March 2018, by the Ministry of Finance.

As with all loan agreements of this nature they come with certain procurement requirements and the African Development Bank (AfDB) is no different. The loan agreement specified that the procurement of goods, works and services are to be done according to the AfDB Procurement Methods and Procedures and the agreement specifies the procurement packages. In order to comply with national laws, the Minister of Finance granted an exemption from the Provision of the Public Procurement Act (Act 15 of 2015) and Regulations in terms of section 4 (1)(2) in order for the TIIP components of rail and road to be procured in line with the signed agreement.

Per the loan agreement requirements, the Ministry of Transport as the executing authority advertised for International Competitive Bidding for the procurement of rail goods and international re qualification for rail and road works. Specifically, the tender for the supply of rails and turnouts, which closed on the 21/11/2018 - Six bids were received. The bids comprised of Namibian companies in joint ventures with

foreign companies. The ministry has completed the evaluation of the bids and has received no objection from the AfDB for the award to the successful bidder. (Not named in the media statement).

In terms of the pre-qualification for rail works, nine firms complied with the requirements and will soon be requested to submit their bids. Two Namibian firms in joint ventures with foreign companies are among those that bid.

In September last year the Ministry of Transport following the local industry uproar, regarding the criteria and requirements for bidding and pre-qualification - resulted in the Ministry of Transport engaging with the AfDB, in order to relax some of the stringent procurement requirements.

Whilst the Ministry understands the objection of the Union with regard to the development of the local construction industry, the Ministry, like all other ministries in countries that loan money for development, must take into consideration the requirements of the agreement. Hence the encouragement of Joint Ventures between local and foreign entities.

Further meetings are to be held between the Ministry of Transport and the Union.

## KCM COMMISSIONS US\$95,000 RAILWAY WEIGHBRIDGE

Konkola Copper Mines(KCM) in December commissioned a railway weighbridge worth \$ 95,000 at its Nchanga Plant in Chingola. Speaking at the commissioning of the railway weighbridge, KCM chief financial officer Giridhar Venkatesen said the investment will go a long way in enhancing efficiency in the operations of KCM.

"KCM has spent about \$95,000 on this investment ,and I am pleased to mention that the use of rail transport will save the company US\$500,000 per year. Zambia Railways will be assured of cargo from KCM and income of US\$2 million per year," revealed Mr Venkatesen.

Mr Venkatesen reaffirmed KCM's commitment in complying with the Statutory Instrument(SI) No. 7 of 2018 on heavy and bulk commodities.

"The railway weighbridge is key to KCM because this is where all the materials such as concentrates, lime, sulphur, coke, copper cathodes and anodes as well as starter sheets pass" noted Mr Venkatesen.

Meanwhile Zambia Railways Limited acting regional manager - Interim Emmanuel Mwango said the installation of the Weighbridge has come at the right time when the SI on bulk cargo is in full swing.

"Before the installation of the railway weighbridge, KCM and Zambia Railways faced countless challenges in weighing goods. The double handling of cargo was the normal practice where goods on the wagons were being offloaded onto the trucks for weighing. This was not only time consuming, but also a cost to both KCM and ZRL. But with this new facility, there will be no double handling of cargo," Mr Mwango said.

The dynamic weighbridge is linked to the network and it is able to automatically provide a Verified Gross Mass (VGM) record for cargo.

This facility will improve the movement of cargo between KCM mines and support the growth of the railway sector in Zambia.





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- Rail bogies
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- Locomotive UTEX components
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## 1<sup>ST</sup> UIC AFRICAN RAIL DIGITAL SUMMIT

### From Vision to Implementation

*In the framework of its Digital Platform actions, UIC, the worldwide railway organisation, has organised the 1<sup>st</sup> African Rail Digital Summit in Cape Town from 25 – 27 February 2019. This event, co-organised with UIC, African Union and NEPAD and co-sponsored by 4Tel and Huawei, attended by over 100 participants from over 20 African countries as well as representatives of China, Indonesia, Europe and Australia.*



This Summit, focused on the various aspects and the importance of the Digital Transformation of Railways, is the first ever event in Africa, and has been organised with the aim to:

- Develop Africa Digital Railways for the future for the continent
- Bring together for the first time, railway sector stakeholders, politicians, representatives of industry, railway experts, economists, universities, the supply industry and digital ecosystems
- Identify the major projects to be launched
- Support the coordination of the activities developed under the 2040 vision for railways aligned with the aspirations of AU Agenda 2063 with respect to the railway sector
- Encourage the design and development of a real African digital rail strategy.

The opening was delivered by UIC Director General Jean-Pierre Loubinoux, followed by Dr Hisham Arafat, Minister of Transport of Egypt, whose presence underlined importance of the Summit in the view of Egypt taking over the presidency of African Union in February 2019.

Further opening speeches were made by Adama Deen, NEPAD, and Rokia Belkebir, ONCF, representing Mohamed Rabie Khlie, Director General of Moroccan Railways ONCF and Chairman of the UIC African Region.

A statement was made by Mr Karidio, Minister of Transport of Niger, the landmark country of the summit.

Further presentations were made by the World Bank, the African Union, then Tunisian Railways SNCFT, the current President of the Union of African Railways, the supply industry and African start-ups.

Four workshops were held within the summit:

- Digital chart for African Rail vision 2030
- Identification of major digital railway projects to be launched
- Set up of profitable synergies between rail, industry and African digital ecosystem.

As Africa has already launched mobile communication services, what is the prospect for a "leap frog" approach for a digital rail in Africa?

François Davenne, UIC Deputy Director General, presented the main outputs of the workshops and drafts of the proposed strategic outcomes for a digital rail in Africa.

Among these:

- The strategic need to align the deployment of fibre optic cable for a high-speed telecom network with the realisation of the rail network
- The creation of a digital platform dedicated to exchanges and sharing for the African Rail companies with UIC

Africa Region and Union of African Railways

- Africa shall endeavour to implement new digital services based on real-time interactions with customers (e.g. real time localisation of trains implemented by ONCF)
- Mutation/transition to support continuous digital changes with a view to scalable implementation
- Management of the interfaces to ensure interoperability and inter-modality on the African continent.

Jean-Pierre Loubinoux underlined the four reasons why this event had been decided and why in Cape Town:

1. The UIC Digital Platform is leading its actions around three well-known principles: "Share - Open -Connect". South Africa and especially Cape Town reflect these key principles
2. UIC believes in rail as a backbone of mobility for our new societies
3. UIC believes in inputs of the Digital Revolution to improve rail's rapidity, reactivity and connectivity
4. And finally, UIC believes in Africa and its young generations to create rail of the future to answer new through pan-African web and network.



## CAMRAIL RECEIVES FIVE NEW LOCOMOTIVES

On Thursday 17 January 2019, Camrail a subsidiary of Bolloré Railways, received five new locomotives manufactured in the United States by General Electric, at the Autonomous Port of Douala.

The Bolloré Transport & Logistics' teams carried out the unloading and docking operations. Each of these new locomotives has a power of 3,300HP and is equipped with the latest technology. A dozen employees have been trained to handle the new equipment onsite at General Electric facilities in the United States.

The delivery of these five locomotives marks Bolloré Railways' intention to keep investing in rail transportation in Central Africa despite the current weakness of the freight market.

These new acquisitions are part of a nine locomotives order made by Cameroon. They were financed by Camrail for CFAF12,3 billion.

According to Pascal Miny, CEO of Camrail, the five new locomotives will be in service by February. They will strengthen the pulling capacity of Camrail and improve the quality of services offered to rail customers.



## MOZAMBIQUE - LINE OF CREDIT USD\$95 MILLION FOR THE PROCUREMENT OF ROLLING STOCK



*Mr. Rudra Gaurav Shrestha, High Commissioner of India, exchanging Line of Credit Agreement with Mr. Adriano Isais Ubisse, National Director of Treasury, Ministry of Economy and Finance, Government of the Republic of Mozambique.*

The Export-Import Bank of India [Exim Bank] has, on behalf of the Government of India, extended a Line of Credit [LOC] of USD\$95 million for procurement of railway rolling stock including locomotives, coaches and wagons to the Government of the Republic of Mozambique.

This restricts the majority of the CAPEX to Indian companies, leaving only a small percentage of the spend for companies registered outside of India!

Once the LOC agreement has been operationalised the Exim Bank will Invite Expression of Interest and undertake the necessary pre-qualification exercise for the selection of Indian companies / entities based on the pre-qualification criteria provided by the borrower country.

It may be noted that this pre-qualification exercise is open to only Indian applicants. An Applicant shall be deemed to be Indian if the Applicant is constituted, incorporated or registered in, and operates in accordance with the provisions of the laws of India, as evidenced by its articles of incorporation and its registration documents, as the case may be.

With the signing of the above LOC Agreement for USD\$95 million, the Exim Bank, to date, has extended 13 (Thirteen) Lines of Credit to the Government of the Republic of Mozambique, on behalf of the Government of India, taking the total value of LOCs extended to USD\$734,44 million. Projects covered under the LOCs extended to the Government of the Republic of Mozambique include rural electrification projects, transfer of water drilling technology and associated equipment, IT Park project, enhancing productivity of rice-wheat-maize cultivation, solar photovoltaic module manufacturing plant, Rehabilitation of Road between Tica, Buzi and Nova Sofala and construction of 900 houses in Mozambique.

The Exim Bank has now in place 238 Lines of Credit, covering 63 countries in Africa, Asia, Latin America and the CIS, with credit commitments of around USD\$23,05 billion, available for financing exports from India. Besides promoting India's exports, Exim Bank's LOCs enable demonstration of Indian expertise and project execution capabilities in emerging markets.



## WEGH GROUP SIGNIFICANT ORDER IN ETHIOPIA

WEGH Group confirms its role as an international partner, reliable and involved through several large companies in diversified projects worldwide. Just in these days, the TD96/2 level crossing machines, which stand out for their safety, robustness, ease of maintenance and which reach a reliability index of 98%, were installed in Ethiopia on the newly built line Awash - Kombolcha - Hara Gebaya.

The construction of the new line, with normal and electrified gauge, was entrusted to the Turkish general contractor Yapi Merkezi, who recently completed the Dubai metro, the Casablanca tram and the high-speed line Ankara-Konya.

A project involving Bombardier signalling. The Canadian company's technicians chose the WEGH Group's level crossing machines, recognised as one of the sector's leaders and adopted not only in Italy but also by various railway networks around the world (the latest being Vietnam and Ghana).

The railway line is one of the cornerstones on which the new network of transport infrastructure wanted by the Ethiopian government for the revival of the economy is based and serves the northern part of the country, connecting it to the new line, already in operation, Addis Ababa - Djibouti.

The technical characteristics of the new railway are: 392km long, standard gauge, electrification 25kV AC/50Hz safety and traffic control system ETCS-2 (Sil-4) through 12 radio towers, 5,300mm maximum speed for passengers of 120km/h and for freight trains of 80-90km/h. It is designed to transport 8.5 million tonnes of goods per year in addition to passenger traffic.

## THE STATE OF AFRICAN CITIES 2018

The African Development Bank announces the publication "The State of African Cities 2018, The Geography of African Investment," a major report produced by UN Habitat in collaboration with the Bank and the UK Department of Development (DfID). The state of African cities aims to inform African policymakers, especially at the local government level, to enable them to seize the many opportunities for investment and growth.

In a world where multinationals and FDI are increasingly determining the future of cities through their contribution to finance, employment, knowledge, deployment of technology, human capital and infrastructure there is a strong interdependence between cities and their attractiveness in terms of investment.

Based on extensive research conducted by the University of the Witwatersrand in Johannesburg and the Institute of Housing and Urban Development Studies of the HIS-Erasmus University Rotterdam, the report explores the various ways in which Africa could finance its development. development strategy for cities through FDI.

The report makes recommendations at the country, regional and continental levels, drawing lessons from case studies. Green competitiveness is an important factor in attracting FDI. In Kigali, for example, the study reveals that its excellent ranking among the cleanest and liveliest cities in Africa has contributed to its success in FDI. Given that Africa is still at the first stage of industrialization, the continent could seize this opportunity to choose a model of industrialization and growth respectful of its natural resources and its environment, favouring energy sources.

Shanghai chairs the ranking of FDI globally. Johannesburg stands out as the "capital of business FDI in Africa," followed by Nairobi, Lagos and Cairo. The latter also host major financial centres, significant commercial activities and an international stock exchange. In addition to its historical links with Europe, Johannesburg is characterised by modern infrastructure and a relatively favourable environment for domestic and international companies, which makes the city attractive to foreign investors. Industrial and commercial clusters are catalysts for industrial growth in Africa as they help companies overcome growth constraints. Grouping facilitates the sharing of knowledge between companies.

Amadou Oumarou, Director of the Bank's Infrastructure and Urban Development Department, points out that, over the last ten years, the Bank has invested more than USD\$35 billion in transport infrastructure to connect African cities to the economy.



## KENYA TO INCREASE PASSENGER SERVICES

Kenya Railways - Following various media report surrounding the intended procurement of second hand DMU's, Esther Koimett - Principal Secretary for the state department of Transport - has noted that - (sic - per twitter quote) "Cost for the 11 DMUs is Ksh1,5 billion NOT Ksh10 billion. They should serve us for another 20 - 25 years. When the full complement is in they'll enable us to transport around 132,000 people a day compared to the 13,000 we do today." The DMU's will be coming from Serveis Ferroviaris de Mallorca (SFM).





## CIM IN TUNISIA: DELIVERY OF THE FIRST 10 EMD GT42AC LOCOMOTIVES

On 22<sup>nd</sup> and 23<sup>rd</sup> December 2018, 10 EMD GT42AC locomotives were unloaded at the port of SFAX in Tunisia, for the contract signed between SNCFT and EMD Progress Rail, for the supply of 20 locomotives, which are intended for use in transporting phosphate.

CIM, EMD's representative in Tunisia, is fully supporting EMD in the fulfilment of this contract. Providing services and technical assistance during commissioning, as well as a full after-sales service.

The combined benefits of the power of these 3,250HP GT42ACs and the use of automatic couplers will, in 2019, increase phosphate transportation on the metre gauge track between GAFSA and SFAX.

Delivery of the first 10 locomotives is the result of a strong and effective collaboration between SNCFT, EMD and CIM.

## UNTU NOW RECOGNISED BY THE RAILWAY SAFETY REGULATOR

The United National Transport Union (UNTU) has announced that it has signed a recognition agreement with the Railway Safety Regulator (RSR) and will now be able to exercise its organisational rights and represent newly recruited members at the railway watchdog.

"It is an honour for UNTU, as the majority union in Transnet and the Passenger Rail Agency of South Africa (Prasa), to now also represent the interest of our members at the RSR. The RSR oversees and enforces rail safety in South Africa," says Steve Harris, general secretary of UNTU.

UNTU has 114 years of experience in the rail industry with the establishment of one of its five merger unions dating back to 1905.

## AVENG ANNOUNCES SALE OF INFRASET

Aveng has announced, the sale of 100% of its manufacturing business unit, Aveng Infraset, including the Infraset businesses in South Africa, Zambia, Mozambique, Swaziland and Zimbabwe, as going concerns to Colossal Africa Consortium for a total value of R200 million.

The transaction will be structured on a cash and debt-free basis with R180 million to be settled in cash on the effective date and a further cash top up of R20 million payable within two years (if certain conditions are met), both of which are fully funded.

The Colossal Africa Consortium is a newly formed, 100% black-owned special purpose investment vehicle made up of Isongo Investments (Pty) Ltd and Colossal Africa Infrastructure (Pty) Ltd. Colossal Africa Infrastructure is a company with interests in the materials supply sector and Isongo is a rail company providing specialised services and products for railway industries.

Infraset has over 85 years' experience in the manufacturing of infrastructure products. Infraset manufactures a diverse range of precast concrete products to world-class quality standards. The company is a competitive player in all categories, including civil engineering, landscaping, poles and masts and roof tiles, and is a leader in the rail sleeper industry.

This sale forms part of Aveng's strategic disposal process announced in February 2018 when the company shared the results of its strategic review. The outcome of the review was the adoption by the Aveng Board of a new and focused strategy to become an international infrastructure and resources group operating in selected fast-growing markets and capitalising on its considerable knowledge and experience. As part of this process, the Group announced that it would sell businesses and assets that did not support its overall long-term strategy. The individual Aveng Manufacturing business units were among those identified for sale.

Aveng executive chairman, Eric Diack, commented: "The disposal of non-core assets is a key part in the delivery of our strategic action plan and is receiving significant attention from the Aveng management team. Not only have we been able to realise acceptable value for our shareholders through this sale, but we are confident that the Infraset business will be successful in the hands of the new owners, ensuring a sustainable future for employees and customers."

Proceeds from this transaction will be used to strengthen Aveng's financial position and reduce overall debt. The transaction is expected to close no later than 30 April 2019 after all conditions have been met.

## THE DAKAR REGIONAL EXPRESS TRAIN

The first section of the Regional Express Train (TER) was received by His Excellency Mr. Macky Sall, President of the Republic of Senegal on January 14 as part of the "Emerging Senegal Plan" launched in 2014 for the economic and social development of the country. The President launched the construction of the first phase of the Regional Express Train between Dakar and Diamniadio in December 2016.

Once completed, the 57km line will connect Dakar's Central Station to its airport in less than one hour. Much awaited by Senegalese people, the TER will have 14 stations and will provide better access between the suburbs of Dakar and the centre of the capital. The entire line is to be built by 2020. The TER will be able to carry up to 115,000 passengers a day and travel at a speed of 160km/h.

The railway is composed of two lines for passenger transportation, plus an additional line for freight transportation.

### 1<sup>st</sup> Tranche Of Dakar TER: ENGIE Ineo And Thales Meet Their Commitments

ENGIE Ineo (agent) and Thales mobilised their teams and their expertise in the design and construction of rail electrification, ticketing, signalling and telecommunication systems in connection with the APIX - (delegated contractor for the TER) and all the project partners.

### The Best Expertise Within Tight Deadlines

ENGIE Ineo and Thales confirm their rank among the leaders in the fields of energy and railway systems for which they were chosen.

ENGIE Ineo has overseen all of the general studies from the design stage, providing project management and overseeing the TER global integration tests. The teams of ENGIE Ineo and Thales are involved in the realisation of all technical systems, including, the TER railway electrification, the station and train stations power stations, WiFi in stations and trains, passenger safety systems at railway stations, as well as the ETCS (the European train control system) level 2 speed

control system, the computerised switch points. The centralised traffic control station (PCC), train detection by axle counters, the passenger information system.

The conditions of the construction site, which crosses the dense area of the capital, testify to the know-how of the ENGIE Ineo and Thales teams who in a particularly limited time put into operation the electrical systems on a significant part of the line and related equipment needed for the January 14<sup>th</sup> event. In connection with the Nantes, Paris and Toulouse design offices, more than 360 employees have been mobilised; 252km of unrolled cables, 2,700m<sup>3</sup> of poured concrete and 2,000 laid masts.

Senegalese engineers and technicians have been integrated into the project since the design phase and several local companies have been involved in the project by ensuring a transfer of skills between the teams.

### Harmonious And Constructive Collaboration Between The Different Partners At The Service Of The Project

A harmonious collaborative activity among the many companies participating in the project. The holding of the deadlines was the business of all in the different batches of the project. Coordination, particularly with APIX, the delegated contracting authority and Senelec (National Electricity Company of Senegal) proved particularly effective.

Yann Rolland, CEO of Engie Ineo, said: "We have been able to manage the complexity of the site and design a new generation TER for Senegal. We welcome the expertise and commitment of APIX. We will continue in this dynamic for the second part connecting Diamniadio to the international airport, 19km. Our aim is to continue our growth and to participate in projects in our areas of expertise which are part of the ENGIE Group's development strategy."

For Yves Joannic, general manager of Thales mainline signalling activities, "As a leader in rail



signalling systems, Thales puts all its expertise and innovative capacity at the service of this major project, that is the TER of Dakar. Thales provides its latest generations of products for optimal and safe operation of the line. Eventually, the TER will connect the center of Dakar to the new airport Blaise Diagne in 45 minutes, thus contributing to the economic and social development of the country."

### The Underside of Dakar Regional Express Line

As mentioned earlier in the article the railway is composed of two lines for passenger transportation, plus an additional line uniquely used for freight transportation. Consolis, a European leader in precast concrete solutions, delivered all the sleepers to build up these tracks, thanks to a unique logistics solution.

Precast concrete products are innovative modular construction elements, made in specialised industrial plants and delivered to the construction site for assembly. Consolis' expertise encompasses three key steps of the construction value chain: design, manufacturing and assembly of construction solutions both for building and infrastructure. The Group has posted sales of more than €1.4 Billion a year. One of the worldwide leaders in concrete sleepers, Consolis has over





a century of rail supply and its yearly production is equivalent to over 3 million sleepers per year.

For the Dakar Regional Express Train, Consolis leveraged its specific know-how with a unique logistics lifting system. Its Portuguese subsidiary Satepor, which is particularly well positioned in terms of exports, has developed a unique system which optimises sleeper handling, knowing that a monoblock weighs about 280kg each. This solution allows direct loading and unloading of sleepers in standard 20' DRY container, starting at Freixianda plant where they were produced in between Lisbon and Porto. And in one handling action, a container goes from truck to boat and vice-versa.

In total, 230,000 monoblock sleepers have been sent from Portugal in 2,800 containers, out of which 1/3<sup>rd</sup> of metric track to the benefit of TSO, the company installing the freight line, and 2/3<sup>rd</sup> of standard track to the benefit of Eiffage in charge of the passengers' lines.

Consolis has long term partnerships with its customers, such as 40 years of high speed sleeper supply to SNCF in France (involving a total delivery of 5.5 million high speed line sleepers) and 10 years to TRANSTU

in Tunisia. The Group has been involved in major rail projects in Africa, from Algeria to South Africa. The Group has contributed to all sorts of railway: urban (metros and trams), interurban and freight lines.

Consolis stands out for its flexible approach to meeting the needs of its customers, including a wide range of solutions (e. g. metric or standard lines), via export or by developing new plants locally. The Group aims to be a long term partner to support projects in Africa.

### **Systra Plays Major Role In First Trial Run Of Senegal's Regional Express Train, An Unprecedented Project In West Africa**

Since 2015, SYSTRA has worked side by side with APIX, the national agency that promotes investment and major works in Senegal, to create the country's first regional express train. Numerous technical challenges were involved in order to meet the needs of the region.

This train is a great success and the result of a joint effort between SYSTRA and Senegal, as Macky Sall, President of the Republic of Senegal confirmed in his address: "Without the outstanding support of SYSTRA, we may not have been where we are today."

### **Focus on a selection of recent examples of railways made with Consolis know-how in Africa:**

- In Algeria, Consolis provided INFRARAIL 2 turnkey factories to produce monoblock sleepers (the plants of Hassi Baba and Bouti Sayah)
- In Morocco, the Group supports the development of the rail network (development of a factory locally) and has ensured local production of twin block sleepers for Rabat and Casablanca tramways
- In Guinea, the Group supplied 30,000 monoblock sleepers for the heavy haul line connecting Kamsar to the bauxite mines
- In Mozambique more than 60,000 metric gauge monoblock sleepers were exported from Portugal for the rehabilitation of Sena line linking the Moatize coal basin to the port of Beira
- In South Africa, 300 linear metres of bearers for switches and crossings were imported from Europe.

To ensure this capacity, and the necessary reliability, Senegal has chosen 21<sup>st</sup> century technologies, constituting a first for Senegal and even for West Africa:

- 25,000 Volt electrification
- International UIC standard track gauge (1,435mm)
- ERTMS radio-based and fibre optic signalling to facilitate interoperability
- Electric and diesel dual-mode trains for greater flexibility.

The new infrastructure will also increase safety for the entire population, with the removal of numerous level crossings, replaced by 18 bridges and 33 pedestrian bridges.

The project in a few figures:

- More than 8,000 people mobilised
- 137km of track
- 14 stations
- 22 dual-mode trains
- 51 large infrastructures
- A 25MW substation.

### Alstom Celebrates Coradia Polyvalent's First Journey In Senegal With Apix

In 2016, after an international tender process, APIX awarded Alstom a contract for the supply of 15 regional trains. The first Coradia train for Senegal was successfully received by the customer last September at the Alstom site in Reichshoffen, France, where it was manufactured. Since then, three trains have already arrived in Dakar.

The Coradia Polyvalent train for Senegal is dual-mode electric and diesel and can travel at speeds of 160km/h. The train is 72m long in total and consists of four cars, providing the capacity for 400 passengers, and includes a first and second class. The passenger is of primary concern for the Coradia Polyvalent trains for Senegal, designed to meet Dakar's growing mobility needs. Suited to the climatic and environmental conditions of the country, they are equipped with a highly efficient air conditioning system, and their low floor facilitates access and movement on board, in particular for passengers with reduced mobility.

Coradia Polyvalent belongs to Alstom's Coradia range of modular trains, which has sold more than 2,800 trains to date with nearly 2,300 currently in circulation, and benefits from over 30 years of expertise and proven technical solutions.

### AFRICAN DEVELOPMENT BANK CONTRIBUTES €182,9 MILLION TO LANDMARK PROJECT

At an official ceremony for the handover of the first coaches for the railway in January, Senegalese President Macky Sall remarked that: "This is the first railway project in an independent Senegal after the Dakar-Rufisque line was built in 1883."

The first phase of the €1 billion project received funding from the African Development Bank, the Islamic Development Bank, the French Agency for Development, the French Treasury and Senegal.



"We chose to position ourselves at the forefront of progress, right from the invitation to tender for the TER. Every carriage in this dual-mode electro-diesel train has air-conditioning and WiFi. The people of Senegal deserve to travel in comfort and safety, and to save both time and money," said Sall.

Work on the second phase, linking Diamniadio with Blaise Diagne International Airport, will start immediately after completion of the first section in June 2019.

According to the President of the African Development Bank, Akinwumi Adesina, "This outstanding and transformative railway project makes Senegal a pioneer in the development of modern high-speed urban transport systems in West Africa."

Senegal is the second country in West Africa, after Nigeria, to adopt a dual-mode (electric and diesel) mass rail transit system. When the Regional Express Railway becomes fully operational, it will take just 35 minutes to travel from Dakar to Diamniadio, half the time the 55km road trip currently takes during peak traffic hours.

"This is the largest-ever investment by the Islamic Development Bank in a Sub-Saharan Africa project, and it bears witness to our confidence in the country," said Islamic Development Bank President Bandar Al Hajjar.

With a population of approximately three million, Dakar is home to 25% of Senegal's total population. An efficient, safe and fast mass transit system, is a strategic response to the development challenges of the Senegalese capital.

Speaking at the event, French Secretary of State in the Ministry of European and Foreign Affairs, Jean-Baptiste Lemoyne, said: "Senegal is a model of emergence. With this train link, you have shown that 'impossible' is not in the Senegalese vocabulary. What the people of Senegal have now, is an advanced Regional Express Train that is on the cutting edge of technology."

The African Development Bank is committed to strengthening urban connectivity and financing road networks and public transport infrastructure.

Since the Bank started operations in Senegal in 1972, it has supported 108 operations with an estimated value of USD\$2,9 billion.



## BMG'S NORD-LOCK WEDGE-LOCKING WASHERS SAFELY SECURE BOLTED JOINTS IN THE RAILWAYS SECTOR

BMG's Nord-Lock bolt securing system is based on advanced wedge-locking technology, designed to safely secure bolted joints that are exposed to severe vibration and dynamic loads in extreme conditions - including the railways industry.

Nord-Lock wedge-locking washers ensure there is no bolt loosening in safety-critical areas of railway bogies, coupling devices, brake systems, rail dampers and housings. This bolt securing system improves personal safety, reduces the risk of lost production or material damage due to bolt failure and also lowers maintenance requirements.

"The two reasons why bolted joints normally fail, are spontaneous bolt loosening and slackening," says Maryna Werner, business unit manager, Fasteners, BMG. "Bolted joints in heavy industries like the railways sector, are constantly subjected to external forces, which results in spontaneous loosening, due to vibration and dynamic loads. With the development of new materials and techniques in modern engineering - for example, corrosion-resistant composites - the problem of slackening is a challenging consequence of settlement and relaxation.

"The multi-functional design of the Nord-Lock X-series offers the highest security against spontaneous bolt loosening and slackening - even at the highest levels of vibration caused by rail traffic, which normally put bolted joints at risk. This wedge-locking construction prevents spontaneous bolt loosening and is enhanced by an integrated spring-effect that compensates for the loss of preload due to slackening."

Nord-Lock washers are being used by many rail companies globally to replace conventional locking-wire mechanisms on wheel sets, providing maximum bolt security. With previous bolt systems, vibrations cause bolts to loosen, resulting in significant safety concerns.

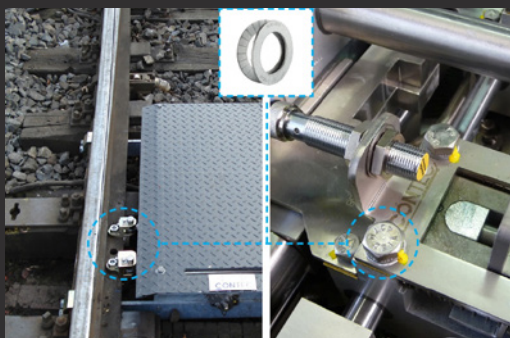
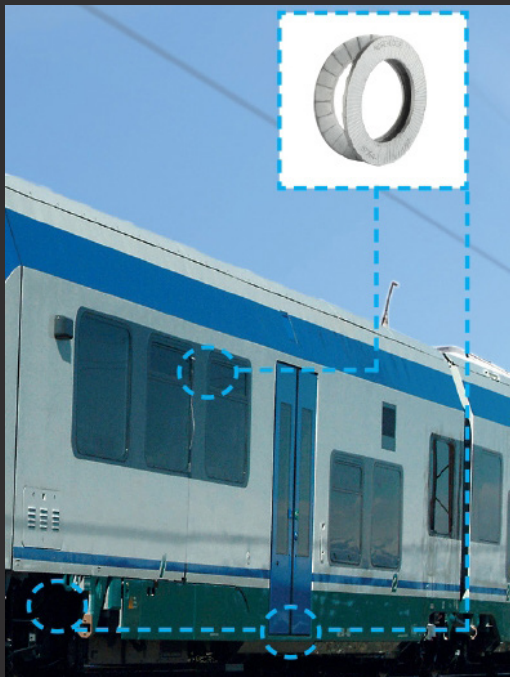
The Nord-Lock X-series, which is quick and easy to install and remove with standard tools, has been certified for quality and safety by TÜV, a leading international institute in quality and safety certification.

Each washer pair has cams on one side and radial teeth on the opposite side to secure the bolted joint with tension, rather than friction. The conical shape of these washers creates an elastic reserve in the bolted joint to compensate for the loss of preload and prevents slackening.

On tightening the fastener, the washers flatten and the serrations engage the contact surfaces. Since the cam angle ' $\alpha$ ' is greater than the thread pitch ' $\beta$ ', the wedge-locking effect will prevent any rotation of the fastener. Directly after tightening, the joint settles and the fastener sinks into the surface material. The washers immediately deflect and the spring-effect counteracts the slackening movement of the bolt, thereby preventing loss of preload of the joint.

These multiple functions continuously act on the bolted joint to maintain preload and prevent spontaneous bolt loosening, providing an effective solution for vibration, dynamic loads, settlement and relaxation.

BMG offers a technical advisory service to determine the dimensions and load conditions of existing or required bolted joints. Current tightening methods are evaluated and bolt preloads, for absolute reliability and durability, are calculated by the highly-skilled team.



## EGYPT

### Not Privatising The Metro / Subway

According to a statement from Cairo Metro – the reports of government's intention to privatise the subway are incorrect, but rather, that the ministry would like to involve the private sector in order to improve services.

### NAT and RATP Dev Sign A Pre-Contractual Agreement For The Operation And Maintenance Of Cairo's Metro Line 3.

On January 28th, 2019, RATP Dev, an RATP Group subsidiary, and NAT (National Authority for Tunnels, authority owning the Cairo metro network), signed a pre-contractual partnership agreement for the operation and maintenance of Cairo's metro line 3 for a 15-year period.

Cairo's metro network, which consists of 3 lines, now carries over 4 million passengers daily. Opened in 2012, line 3 is currently 12km long and has 9 stations. It will eventually include 34 stations and cover 41km, the majority of which will be underground. The ridership may reach up to 1.5 million passengers daily.

With the signing of this agreement, the first step in a strategic partnership has been taken and follows the memorandum of understanding that was signed by RATP Dev and NAT in October 2017. This marks a new step in the collaboration between the Egyptian authorities and RATP Group, which has been present in the country since the beginning of the construction of Cairo's metro network approximately 40 years ago, notably with regards to engineering.

### The French Invest in Egypt

During the Economic Forum for Investment that was co-organised by of the Ministry of Investment and International Cooperation and the French Chamber of Commerce, the French Embassy in Egypt and Ministry of Trade and Industry with the presence of 10 Ministers, sectors included; Transportation, Health, Social Protection, Supply, Entrepreneurship, Women's Empowerment.



### Update on Various Rail Activities in Egypt



**Watch Video**  
<http://bit.ly/2Fn7OXI>



The Minister of Investment and International Cooperation: number of signed agreements during the visit of the French President reached 40 agreements amounting 1.6 Billion Euros.

### Rail related activities included:

Declaration of Intent between Dr. Sahar Nasr - Minister of Investment and International Cooperation- and the State Secretary at the French Ministry for the Economy and Finance in the field of cooperation to uplift the security of the Egyptian railway network.

Dr. Hesham Arafat, minister of transport, stressed that a memorandum of understanding between Egyptian National Railways and SNCF France's national state-owned railway company aiming to provide joint cooperation framework and outline the basic principles to assess the safety, pointing out that the main objective for this cooperation is to study the modality to increase the safety of passengers and the railway's sliders through enhancing the safety which includes reducing accidents, train readiness in the stations before the start of the journey, reducing the risks during the corrective and preventive maintenance of signal systems, rail tractors and Cargo train readiness, improving work procedures on routes and workshops as well as developing training programs for the local staff.

### ENR Signalling Update

Egyptian National Railways is embarking on an ambitious programme to modernise its rail network. Signalling upgrades are a key part of this programme: high-performance signalling makes it possible to improve safety, capacity and reliability at the same time.

Modernisation of the 208km Cairo-Alexandria corridor – Egypt's busiest line – highlights what can be achieved. Thales' signalling upgrade has made it possible to increase train speeds by 20km/h to 160km/h and has reduced the time interval between trains from 10 minutes to 5, boosting the frequency of services. The solution includes electronic interlocking, wayside equipment, telecommunications and a Centralised Traffic Control system.

Cairo / Alexandria line for 208km at a cost of 70 million euros.

According to the ministry of transportation Facebook page, it is worth mentioning that the Ministry of Transport according to its plan to increase the safety and safety rates on the railways, a number of signal electrification projects are on the cards, with a total length of 1,100km. They include the development and modernisation of signal and communication systems on the Cairo / Alexandria, Beni Suef / Assiut, Benha / Port Said, Abu Kabir, Assiut / Nagaa Hammady line, Naga Hammady / Luxor line, Tanta / Mansoura / Damietta line and the total cost of these projects is 12,6 billion pounds.



Coffee with the editor - We interviewed the Minister of Transport for Egypt - who elaborated on a number of upcoming railway projects. In addition during his presentation at the 1<sup>st</sup> African Rail Digital Summit - He presented on the vision of the Egyptian Railways, which included the establishment of:

- New legislation to open the market to the private sector in areas of - Operations, Maintenance, Workshop Management
- The establishment of regulatory bodies for safety and competitiveness
- Expansion of logistics centres and dry ports
- Establishment of technical school and institute specifically for railways.

#### Projects Include:

- High Speed Rail Project from Ain Sokhna - Alamein Line - 250km/h design, 500km line.
- Monorail project from Nasr City - New Administrative Capital Line (54)
- Electric Train, from El-Salam - 10<sup>th</sup> of Ramadan - New Administrative Capital - total length of 67km at USD\$1,2 billion. (contract signed)
- The October - Asam and Luxor - Hurghada Line - total line 1,000km, the first portion at 800km designed to 250km/h speed and the balance 200km at 200km/h speed.

#### Connecting Egypt to Sudan

According to the Ministry of Transport in Egypt, there are two options when it comes to connect Egypt to Sudan. The first, is from Aswan to Wadi Halfa with a total line length of 480km.

The other option, Aswan to Abu Hamad at a length of 609km. Relocating the Wadi Halfa station to be closer to the Egyptian border.



## QUALITY AIR BRAKE COMPONENTS



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## GRINDROD REPORTS POSITIVE RESULTS

Grindrod has released its final results for the year ended 31 December 2018. Renewed focus on Freight Services, following Shipping's spin-off in June 2018, has yielded positive results. Furthermore, while its repositioning is ongoing, earnings growth generated by Financial Services is pleasing.

Performance from continuing operations – Freight and Financial services.

Earnings from continuing operations for the year ended 31 December 2018 are R803,4 million, an increase of 24% compared to earnings of R646,3 million achieved in 2017. Headline earnings from continuing operations are R716,6 million compared to headline earnings of R570,8 million achieved in 2017, a 26% improvement on the prior year.

Port of Maputo achieved record volumes of 19,6 million tonnes, a 7% improvement on the prior year. In 2019 the port expects to increase its volume handling capacity with the completion of the rehabilitation works of berths 6, 7, 8 and 9. The rehabilitation will not only create berths with a depth of up to -15 metres but will improve the occupancy rate of the berths by creating a larger mooring area. The completion of the works is scheduled for January 2020. The Port recently acquired two mobile harbour cranes and ancillary equipment to improve efficiencies.

Also noted is the good dry-bulk terminal utilisation with a marked improvement in volumes handled during the second half of 2018. In the month of December 2018, Terminal de Carvão da Matola Lda (TCM) reported a new loading record for the terminal since its inception of 580 214 tonnes. The record loading rates, noting some quay dry time, show consistency to load at a rate in excess of seven million tonnes per annum, confirming the Terminal's name plate capacity.

TCM's boom extension project which commenced in January 2019 on Ship loader 1, will allow better utilisation of the ship loader and allow the use of both ship loaders improving vessel turnaround time. During the first quarter of 2019, TCM will also be commissioning Stacker Reclaimer 3 that is under rebuild. This will increase receiving and shipping capacity

in line with the terminal's current growth strategy.

The Logistics Division expanded its footprint with the completion of the 60,000m<sup>2</sup> cross-docking facility in Nacala in 2018. It is expected that at full production the Nacala facility will be containerising 30,000 tonnes of bagged graphite each month. The auto carrier business acquired 27 hectares of land adjacent to the N3 highway from Gauteng to Durban for the development of a vehicle storage facility. The acquisition and integration of the Novagroup, strengthened the division's position in the niche marine technical market and in container storage.

The Agri businesses benefitted from the improved yields and the higher carry-over stock volumes ensuring good handling and storage income.

In summary, the Freight Services division will continue to develop its facilities to enhance capacity and service offerings. The buoyant minerals market is expected to boost African trade, positively impacting the operations.

The Financial Services division reported solid results with an increase in earnings over the same period in the prior year. Core deposits (excluding retail) increased by 14% to R8.9 billion compared to R7,8 billion in 2017. Advances grew by 8% to R7,8 billion compared to R7,2 billion in 2017.

Strong performance of the UK Property Portfolio was reported. The first phase of investments have been realised and re-investment will occur on a selective basis. Grindrod remains committed to providing the support required during the final phase in the transition of the SASSA bank accounts and distribution of payments.

Said Andrew Waller, Grindrod Limited CEO, "Grindrod Freight Services' focus is on unlocking trade corridors. We will therefore continue to invest in strategic assets, enabling efficient logistics chains at competitive prices and overall improving Africa's global competitiveness. The Financial Services business is focused on continued steady growth, developing a new retail business and increasing its focus on small and medium enterprises in South Africa."



## PRASA SHOWCASES NEW SOUTH AFRICAN-BUILT COMMUTER TRAINS IN THE MOTHER CITY

Gibela's new South African-built trains were introduced to the people of Cape Town at a recent event held by PRASA. The two trains were unveiled by President Cyril Ramaphosa, who is already well acquainted with the train-building project – Ramaphosa inaugurated Gibela's factory in October 2018.

Gibela's CEO, Thierry Darhout says: "It's our honour to be part of the train unveiling in Cape Town – but it's about so much more than just showcasing our new trains, it's about being part of a project that is revitalising rail transport for South Africans. And in doing so, I might add, Gibela is contributing to the economic development of South Africa. We believe the future is rail."

A total of 580 are being built by Gibela for PRASA in South Africa. The first 18, currently operating in Pretoria, were manufactured at Alstom's Lapa factory in Brazil.

Gibela's new, world-class train manufacturing facility at Dunnottar in Ekurhuleni, has started the production of the South African trains – by South Africans. The first three locally-built trains were delivered to PRASA between December 2018 and March 2019.

The manufacturing facility has the capacity to produce 62 six-car trains a year at peak production, one of the fastest production rates in the world. Innovative technology and processes are used throughout the production process.



## TALGO WINS ENR CONTRACT

The Egyptian National Railway company ENR, has confirmed the award to Talgo, for the supply and maintenance of six complete latest generation Talgo trains for an amount close to 158 million euros, which will provide service on the main route of the country, connecting the cities of Alexandria in the Mediterranean with the capital, Cairo, and the southern city of Aswan.

The six complete units are composed of; a diesel-electric locomotive, a technical car or power car and 14 passenger cars. The order also includes the integral maintenance of the Talgo units for at least eight years, using foresee ably local labour trained by the Spanish manufacturer.

The new trains, which will be operated at a maximum commercial speed of 160km/h, will be equipped with the exclusive and efficient technologies currently used by Talgo in conventional railway environments as varied and technically demanding as Spain, the United States, Kazakhstan or Russia, and will have capacity for 492 passengers distributed between first and second class, a cafeteria, as well as specifically designed areas for travellers with reduced mobility.

The interior design is based on Talgo's experience in high-comfort long-distance trains and services such as those supplied for the Meca-Medina Very High Speed line in Saudi Arabia, with certified indoor climate control for extreme temperatures, onboard WiFi connectivity throughout the train, and infotainment systems with LED screens in each of the seats located in first class.

The national company ENR launched the purchase process in August 2016 as part of a project financed by the European Bank for Reconstruction and Development (EBRD) and the final phase of bid submission closed in October 2018.

Although Talgo is mainly known for its very high speed systems for operation at more than 300km/h, Talgo has more than 75 years of experience in the manufacture and maintenance of conventional rolling stock.

Once full ramp up is achieved, the GAC project is expected to produce some 12 million tonnes of bauxite per year.

The Guinea project is part of EGA's strategic drive to expand its business upstream in the aluminium value chain and internationally. EGA is also building the UAE's first alumina refinery at Al Taweelah in Abu Dhabi. The plant will refine bauxite into alumina, which is the feedstock for aluminium smelters.



Image: Emirates Global Aluminium

## MILESTONE FOR EGA'S GUINEA PROJECT AS FIRST BAUXITE TRAIN TRAVELS FROM MINE TO COAST

United Arab Emirates: Emirates Global Aluminium, the largest industrial company in the United Arab Emirates outside oil and gas, has announced a milestone at its under-construction Guinea bauxite mining project - as the first loaded train travelled from its subsidiary Guinea Alumina Corporation mine to the coast.

The 80-wagon train carried some 6,800 tonnes of bauxite ore from GAC's mine to the company's facilities at Kamsar. The ore will be used to begin building a base-layer of bauxite at GAC's new stockyard.

First bauxite exports are expected during the second half of 2019. GAC has a total budgeted project cost of approximately \$1.4 billion and is the largest greenfield investment in Guinea in the last four decades.

GAC has completed rail loops, and spurs to connect its facilities to an existing nearby railway track that is used by other companies. GAC's locomotives, which were made in the United States, and Chinese-made wagons, arrived in Guinea last year. The train took just under three hours to complete the 90km journey from the mine to the coast.

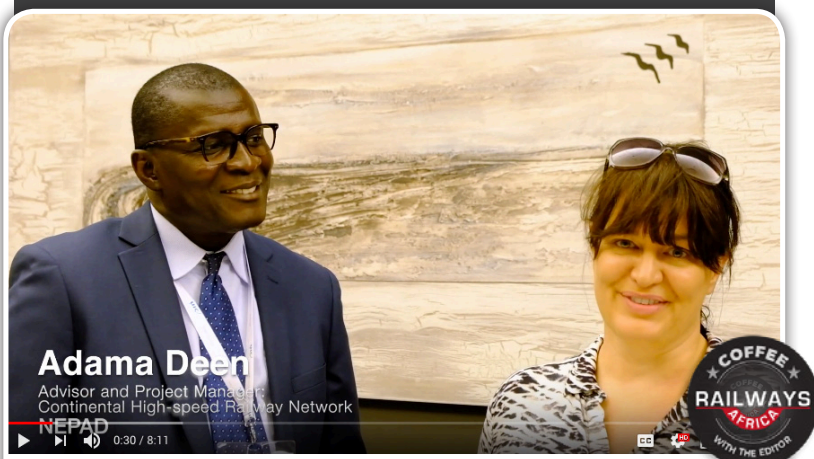
GAC is also building port facilities including the unloading yard and an export pier at Kamsar, a well-established bauxite port. Once the GAC project is fully-operational, up to six loaded bauxite trains a day are expected to make the journey from the mine to the port.

Abdulla Kalban, Managing Director and Chief Executive Officer of EGA, said: "This milestone is the result of many thousands of hours of planning and teamwork in Guinea involving GAC, train operator Compagnie des Bauxites de Guinée, the owner of the existing rail infrastructure ANAIM, and other rail partners. I would like to thank everyone for their contribution to the safe and successful completion of this first journey as well as our neighbours. We are making good progress in Guinea, and look forward to first bauxite exports later in the year."

Guinea is the world's largest bauxite resource holder, and EGA's project will contribute significantly to the country's exports of the ore from which aluminium is derived. Bauxite from the GAC project will be sold to aluminium producers around the world.

Once full ramp up is achieved, the GAC project is expected to produce some 12 million tonnes of bauxite per year.

The Guinea project is part of EGA's strategic drive to expand its business upstream in the aluminium value chain and internationally. EGA is also building the UAE's first alumina refinery at Al Taweelah in Abu Dhabi. The plant will refine bauxite into alumina, which is the feedstock for aluminium smelters.

**Adama Deen**Advisor and Project Manager  
Continental High-speed Railway Network

## Status Update on the African Continental High Speed Rail Project

In Coffee with the Editor, during the 1<sup>st</sup> African Rail Digital Summit hosted by the UIC, African Union and Nepad - Mr Adama Deen, Senior Advisor at Nepad, gave more detail on the status of the project and the next steps.

**Watch Video**<http://bit.ly/2FlN72K>

## INTERCONNECTING AFRICAN CAPITALS THROUGH HIGH SPEED RAIL

Following the signing of the High Speed Rail Detailed Scoping Study contract in December 2018 and the submission of the final Inception Report to AUDA-NEPAD, CPCS Consultants held a meeting with the AUDA-NEPAD team, to discuss the status of the high speed railway network consultancy project. During the meeting, the key milestones and way forward were mapped out.

A key objective of the African Integrated High Speed Railway Network is the connectivity of Africa's capital cities and megacities, including but not limited to, commercial hubs/economic zones and tourist destinations, among others.

This initiative is aimed at interconnecting African capitals with one another across the continent, using appropriate high speed rail technology and other complementary power, transboundary water, and information and communications technology broadband infrastructure and services.

The African Integrated High Speed Railway Network will complement the Programme for Infrastructure Development in Africa and enable the realisation of the African-wide frameworks such as: Boosting of Intra-African Trade; the African Continental Free Trade Area and the Accelerated Industrial Development for Africa, among others.

An initiative of the continent's Agenda 2063, the African Integrated High Speed Railway Network will be developed with a phased approach, with the first phase (from 2013 to 2023) setting out an implementation plan for two regional high speed rail projects.

*Results of the recent scoping study will feature in Railways Africa issue 2:2019.*

## EGIS HAS WON A NEW PROJECT IN NAIROBI, KENYA FOR KENYA RAILWAYS CORPORATION

Feasibility studies for the rail link between the city centre and Jomo Kenyatta Airport in the Kenyan capital. The project is carried out within the framework of a FASEP (Private Sector Study and Assistance Fund), a tool set up by the French State to finance feasibility studies for upstream projects of interest to established companies in France, and to give developing countries the benefit of the know-how of French industrialists and engineering companies.

This project responds to a need to decongest traffic in the city centre. The city today has more than 4 million inhabitants (5 million are expected by 2030) but does not yet have a high-performance transport network (no structuring mode).

Most of the trips are in matatus, quasi-independent minibuses organised by lines. Road traffic is very congested and journeys can be made at an average speed of 6 or 7km/h during rush hour.

There is, however, a railway network (single-track, metric), but it carries only 12,000 passengers a day with a frequency of one to two trains a day in each direction.

Egis, agent and its partners, STOA, TRANSDEV, VINCI (SOGEA-SATOM, ETF) and Alstom, were commissioned to carry out feasibility studies to connect the city centre and the airport by extending and improving existing lines. The mission is divided into 5 major tasks:

- The diagnosis of the existing network
- Functional studies
- Technical studies
- Environmental, social, economic and financial studies
- The study of the different options for financing and setting up the project.

A mission that will allow the city of Nairobi, in full development, to structure its transport scheme for the future.



## HIMA HELPS MAKE LEVEL CROSSINGS SAFE IN SOUTH AFRICA

HIMA, the world's leading independent provider of smart safety solutions, has helped ERB Technologies save money and increase safety in an advanced electronic level crossing system. Using HIMatrix safety systems from HIMA, it is South Africa's first COTS (Commercial-Off-The-Shelf) level crossing to meet CENELEC SIL 4. Following a successful level crossing pilot project near Rosslyn, South Africa, the company plans to roll out this technology across South Africa's rail network in a bid to make level crossings safer.

A recent report by the country's Railway Safety Regulator (RSR) indicates that inadequate level crossing signage one of the main attributes to the recent 25% increase in fatalities and injuries. To address this, RSR is currently updating the (South African National Standard) SANS 3000 technical standard for level crossings, which was introduced in 2012. In order to guarantee radical safety improvements, the new -2-2-1 version refers to European IEC standards and CENELEC.

Responding to these changes, ERB Technologies approached HIMA to work with them in developing a new safety system for level crossings to replace the old relay-based system. The ERB evoCROSS is based on HIMA's HIMatrix safety system, which the company found to be the market's best-suited product, meeting all the requirements.

The level crossing for the pilot project is right in front of the main entrance of a busy factory. Previously it was protected by a stop sign only. Although train traffic is low, in the order of 1 to 2 trains per day, its use by vehicle traffic and pedestrians is very heavy. During a recent factory upgrade, the company initiated an upgrade to the level crossing.

Though the physical layout of the level crossing is complex,

with 4 lanes of traffic, a pedestrian rail crossing and a pedestrian road crossing, the newly adopted traffic light system is very effective – this is a very new requirement in South Africa, hence its uniqueness to the pilot project.

The ERB/HIMA system offers many advantages to rail operators. While being cost-effective and readily available due to its COTS (Commercial-Off-The-Shelf) status, the HIMA hardware's SIL 4 (CENELEC) certification meets EN 50126, 50128 and 50129. This certification is backed by a proven track record in rail and other industries. In addition, the RSR was involved during the complete project lifecycle.

Operators also enjoy great flexibility and freedom, as the HIMA system complies with open standards for easy interface with another vendors' equipment, while avoiding vendor lock in. The system is modular and configurable and, with an MTBF (Mean Time Between Failure) of over 100 years, it is highly reliable, helping to reduce costs throughout the operating life.

Further savings are achieved as the system is easier and faster to troubleshoot, while being easy to maintain – unlike relay systems, which required extensive physical work. During operation, Sequence of Events can also be automatically recorded. Reliability is further enhanced through ERB Technologies' extremely sturdy vandal-resistant steel cabinet design, which features a double skin and forced air cooling.

Commenting on the project, Brad Ogilvie, Sale Manager for Sub-Sahara Africa at HIMA said: "Full SIL 4 compliance and COTS availability, enabled ERB to reduce costs, while ensuring environmental resilience, high reliability, full modularity and easy, open standard interfacing to other vendors' equipment."

## YAPI MERKEZI CHOOSES FRAUSCHER FOR TRACK VACANCY DETECTION

The Tanzania Railway Corporation has commissioned the Turkish company Yapi Merkezi to implement a new railway line in the African country. The first of a total of five sections will cover some 205 kilometres. From Dar Es Salaam on the coast to Morogoro.

Yapi chose the Frauscher Advanced Counter FAdC and the Wheel Sensor RSR180 for the planning of the track vacancy detection system. The contract was signed in early October 2018 by Michael Thiel, CEO Frauscher Sensor Technology, and Orze Arioglu, CEO Yapi Merkezi Global Construction Group. In total, around 450 counting heads will be installed on the first two construction phases alone.

The modularity and flexible interfaces of the FAdC allow Yapi the greatest possible independence in infrastructure design. The axle counter can be easily and quickly integrated into various interlockings. The RSR180 has already proven its reliability in various markets around the globe.

## TECHNICAL ASSISTANCE FOR SITARAIL IN ABIDJAN

Transurb is providing technical assistance by reviewing Sitarail's network design study to understand the implications of the Right-Of-Way (ROW) involving the project of the Abidjan Metro Line 1.

### Context

SITARAIL, a subsidiary of Bolloré Africa Logistics, has the concession to operate Ivory Coast railway lines. The private company seeks an external input able to assess the exploitation of the network by ensuring the following aspects:

- Routine maintenance of the track in optimal conditions for railway workers
- Operation of the track under satisfactory conditions.

For this multidisciplinary project, Transurb provides technical assistance by consulting the regulations in force both national and international concerning:

- Geometric characteristics of railways
- ROW transport of hydrocarbons by tank wagons
- Operation of a single track of a railway network.

## RAILWAYS COULD PROVIDE MUCH GREATER BENEFITS FOR ENERGY AND THE ENVIRONMENT, ACCORDING TO IEA REPORT

Rail is among the most energy efficient modes of transport for freight and passengers, yet is often neglected in public debate, according to a new report by the International Energy Agency prepared in cooperation with the International Union of Railways (UIC).

The Future of Rail is the latest in the IEA series shining a light on "blind spots" in the energy system, which are issues that deserve more attention from policymakers. It was released today in New Delhi by IEA Executive Director, Dr Fatih Birol, at an event opened by India's Minister of Railways, Shri Piyush Goyal.

The transport sector is responsible for almost one-third of final energy demand, nearly two-thirds of oil demand and nearly one-quarter of global carbon dioxide (CO<sub>2</sub>) emissions from fuel combustion. Therefore changes in transportation are fundamental to achieving energy transitions globally. While the rail sector carries 8% of the world's passengers and 7% of global freight transport, it represents only 2% of total transport energy demand, highlighting its efficiency.

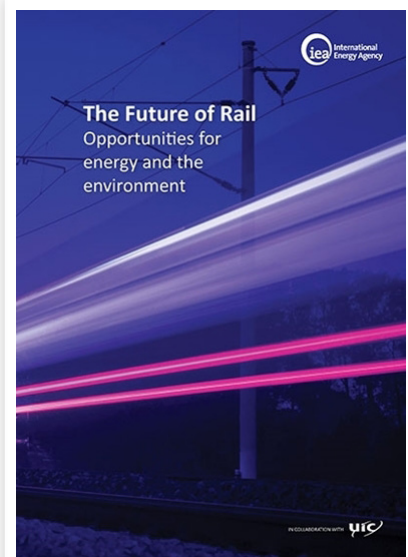
"The rail sector can provide substantial benefits for the energy sector as well as for the environment," said Dr Fatih Birol. "By diversifying energy sources and providing more efficient mobility, rail can lower transport energy use and reduce carbon dioxide and local pollutant emissions."

The Future of Rail includes a Base Scenario that projects the evolution of the railways sector to 2050 on the basis of announced policies, regulations and projects. It also includes a High Rail Scenario to demonstrate the energy and environmental benefits of a more significant shift of passengers and goods to rail transport. While the High Rail Scenario requires about 60% more investment than in the Base Scenario, global CO<sub>2</sub> emissions from transport peak in the late 2030s, air pollution is reduced and oil demand is lowered.

The report includes a specific focus on India. "Rail serves as a vital lifeline of India, playing a unique social and economic role," said Dr Birol. Rail remains the primary transport mode in the country, providing vital connections within and between cities and regions, and guaranteeing affordable passenger mobility that has long been a government priority. Rail passenger traffic in India has increased by almost 200% since 2000 yet prospects for future growth remain bright. Construction has started on India's first high-speed rail line, the total length of metro lines is set to more than triple in the next few years, and two dedicated freight corridors are on track to enter operation by 2020.

In all countries, including India, the future of the rail sector will be determined by how it responds to both rising transport demand and rising pressure from competing transport modes.

Rising incomes and populations in developing and emerging economies, where cities are growing exponentially, are set to lead to strong demand for more efficient, faster and cleaner transportation, but the need for speed and flexibility tend to favour car ownership and air travel. Rising incomes also drive demand growth in freight, where higher incomes, have sharply increased demand for rapid delivery of higher value and lighter goods.



<https://webstore.iea.org/the-future-of-rail>







# Wheelset of the Future: an Integrated System.

The International Wheelset Congress is among the most influential and vibrant worldwide conferences in the railway sector.

The theme of this event is to look not only to wheels and axles, but to consider also those components that interact with them, generating an integrated system to be taken into account as a whole during activities like design, production, testing and maintenance.

Manufacturers, assemblers, integrators, users and maintainers of components like brake discs, bearings, housings, sensors, gearboxes and suspension systems are warmly invited, along with Universities and Research Centres, to join in the conference and to share their experience with wheel and axle experts.

[www.iwc2019.com](http://www.iwc2019.com)

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