ADDRESS BY MR F.A MBALULA, MP, MINISTER OF TRANSPORT, FOR THE SOUTHERN AFRICAN TRANSPORT CONFERENCE (SATC), SCHEDULED TO TAKE PLACE FROM MONDAY 8TH TO THURSDAY 11TH, JULY 2019, AT THE COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR) INTERNATIONAL CONVENTION, PRETORIA

Programme Director

Conference Chairman: Prof. James Maina

Chairman of the ATC Board: Mr. Phillips Hendricks

Members of the Board of the SATC

Panellists of the Conference

Distinguished Delegates

Members of the Media

Invited Guests

Government officials

Ladies and Gentlemen

I am deeply honoured for the privilege to address the Southern African Transport Conference for 2019 in my capacity as the Minister of Transport. I must also thank the Organising Committee for their hard work in organising this event, as well as the moderators for their commitment to rigour and evidence-based knowledge production as defined by the process of paper selection for the Conference.

As South Africa, we are somewhere between being pioneers in information technology based mobility disruption and being later responders and adopters. However we need to recognize that technology is transforming the sector with speed and scale that are hard to comprehend.

The transport systems of today and tomorrow will be connected, data-driven, shared, on-demand, electric, and highly automated. Ideas are moving swiftly from conception, research and design, tested to early adoption, and, finally, mass acceptance. According to the World Bank, the pace of innovation is only going to accelerate.

As government, we acknowledge the international trend towards applying the growing power of information and communications technology in transforming mobility services. They provide us with an opportunity to maximize the opportunities and harness the potential of these new technologies to better plan and provide for our cities' future mobility.

In public transport the application of these technologies forces public transport to become innovative and efficient. This in turn has the potential to result in benefits such as an increase in public transport service quality, increasing user satisfaction, and as a consequence, increase in the Public Transport market share, reduction in congestion and negative environmental impacts and improving the quality of life.

Ride sharing or e-hailing services that use online-enabled platforms offer the facility to order taxis often at a cheaper price than conventional taxis. Google maps can now incorporate live speed flows on the roads, so you can see where congestion is developing

and what alternative routes are available to you. The benefits to this are also enabling governments to plan and construct new roads infrastructure based on good intelligence data.

Whilst there are benefits and opportunities, the World Bank in 2018 acknowledged that ***"these disruptive technologies could also exacerbate existing transport and land use problems, and create new challenges. For example, from a public transport perspective, by removing some of the key constraints of commuting, these new transport solutions will lessen the appeal of building compact cities where people live close to jobs and services, instead paving the way for more and more urban sprawl, and governments in turn will need to build more intelligent transport infrastructure to respond to the new connectivity needs of its citizens. Like any other digitally-enabled technology, the threat of cyberattacks and privacy breaches to these smart and connected transport systems is real."***

We have had some experience of disparate Intelligent Transport Systems projects over the past 12 years or so, including:

- The publication of standards by government for interoperable smart card technology in public transport using the nationally integrated banking payment system. Related to this, government also pioneered the implementation of a pre-paid

bank industry compatible smartcard for use in public transport by those without access to bank accounts.

- There are multiple start-up companies that are developing innovative approaches to mapping and tracking the tens of thousands of informal minibus taxis and their routes which form the bulk of public transport services in the country.

- e-hailing services like Uber and Taxify have begun to grow and challenge the limited coverage of the metered taxi industry in several cities, with disruptive competitive impact.

- Apps that are user-friendly mobile applications using real-time data so commuters can plan their journey in advance are available for use in some of the municipalities implementing integrated public transport networks.

Despite the various initiatives in new technologies, we need to acknowledge that the next wave of information technology innovation over the next 10 to 20 years has the potential to further transform access and mobility services and make them efficient and seamless. The next wave of shared and connected mobility solutions will impact the manner in which we provide integrated and seamless public transport services for our people.

Areas of short to medium term potential that we are presented with include:

- Promoting demand-based services like car sharing, bike sharing, ride sharing schemes.

- Promoting e-hailing initially and then shared vehicle schemes as alternatives to private car use with the related saving in especially parking space in urban areas,

- Linking e-hailing schemes to assist in first/last mile solutions to access public transport networks in our cities which are not as dense as the global average,

- Utilising the data warehouse capability developed by the South African National Roads Agency to provide a data platform for tracking public transport operations and contracts

- Utilising SANRAL infrastructure and platforms for hosting a mobility account for all travellers which can then be utilised in public transport in addition to the current toll roads. In the near future, the same account can also allow users to pay for all mobility services from parking, public transport to tolls using this account rather than having to pay separately to multiple municipal or private vendors. This data platform and transaction processing and account hosting infrastructure of national government can also serve to enable the implementation of Account Based Ticketing in public transport services for full fare integration across different operators and travel modes.

- Cities working closely with minibus taxis to use information systems to manage operations better and to ultimately consolidate informal sector owners into medium sized operating companies.
- Companies developing innovative apps to aggregate passengers and to offer shuttle type mobility solutions to large employers in lieu of them providing parking for employees.

The challenge going forward is how fast policy makers, regulators and users will adapt and keep up with the new changes and the excessive speed they are occurring. Another step forward is to start planning our cities and public transport systems with the upcoming changes in mind. As a country, we are still a long way off to transition from driver-operated to autonomous technology such as autonomous buses system.

We must admit that the papers that will be presented are indeed insightful and present depth and scope of research and analysis that remains pivotal in the evolution of transport policy and as a consequence the environment of its application.

I must state beforehand that the variety of topics to be covered during this conference are indeed thought provoking and undoubtedly lay bare the exciting choices and trade offs we will be confronted with as we grapple with the disruptive nature of the 4th industrial revolution in transport.

Ladies and Gentlemen, some of you may not know that I am a prolific user of the internet, Social Media to be exact. One of the interesting topics in our country was what is our general understanding of this 4th Industrial revolution we talk of. This question arose when our president, His Excellency Cyril Ramaphosa addressed an audience in Rustenburg while in Midrand, broadcasted to the audience live via hologram. So here is our understanding and history, lets call this a Mbalula Lecture –

The 4th Industrial Revolution began at the turn of the 21st century. It is an expansion of the digital revolution, and information technology mainly through the internet of things. Digital technologies are becoming more sophisticated, as well as integrated with the physical and biological fields. Major breakthroughs are being experienced in gene sequencing, nanotechnologies, quantum computing, 3D printing, advanced robotics, artificial intelligence, genetic engineering, communications, manufacturing, services and so forth – so indeed the hologram broadcast of the President fits right into this.

The World Bank suggests that transport in the near future will be characterised with being **"connected, data driven, shared, on-demand, electric and highly automated".** It is also expected to be more sensitive towards climate change pressures, and for externalities to be internalised by respective sources.

These changes in transport technologies are consequently in tandem with the notion of global climate change, as a consequence of the combustion of fossil fuels by most vehicles. This remains a major environmental challenge currently facing Southern Africa and the world at large. The large-scale combustion of fossil fuels also contributes to the change in the composition of the earth's atmosphere. The result is a general process of global warming and, if continued unattended, will lead to significant changes in rainfall patterns and frequent, extreme weather events.

To respond to these disruptive factors, the government is committed to significantly reduce transport's contribution to national Green House Gases emissions, through the implementation of the Green Transport Strategy (GTS). The Strategy aims to minimise the adverse impact of transport on the environment, while addressing current and future transport demands.

The pace at which Industry 4.0 innovation-breakthroughs are occurring is unprecedented, and foreseen to grow faster, and so is the diffusion world-wide. The speed of diffusion compels companies and governments to change from the 'business as usual' way of doing things. For instance, government had to make speedy provision to regulate e-hailing. It also provided temporary permits for autonomous vehicles during The Federation International de L' Automobile (FIA) conferences, this year at Sun City. The very fast pace and frequency at which new technologies emerge, and their diffusion across the world, leave the question of whether Southern Africa is ready, or whether it will ever be ready.

My concern with the pace is that we must not be relagated to catching up. We must be part of the innovators. We must not only respond to what others have produced as dictates because that will often give rise to additional challenges. Research and Development funding has to be prioritized by the sector, especially governments.

On the negative side, the revolution will need a broader discussion of a "Just Transition Process" as the disruptions would entail fewer employees per unit of profit generated. Innovations of technologies will bring about structural unemployment, which may be resolved if workers are reskilled.

Let us ask ourselves - Are the workers in the transport industry in Southern Africa reskilled or ready to be reskilled? If in South Africa, competition for employment in the trucking business could generate violence amongst the people, what would the squeeze by driveless trucks do?

New technologies will fundamentally change the nature of work across industries. Southern Africa needs to mitigate against additional unemployment, income and gender inequality.

Acceptance of driverless cars is still a dilemma to many potential customers. Automated systems may fail, and are susceptible to cyber-attacks. There is a risk of misusing the generated private data. Construction of infrastructure, such as that which relates to autonomous vehicles, is very expensive – this is an issue I would like SANRAL, RTMC, RTIA and all our entities across modes to be seized with. Government planning and strategies must be proactive and actively engage with these issues.

This dilemma is the reason this gathering is particularly important as it requires that government, business, academia, and civil society; local and international, work together to understand and adapt to the emerging transport technologies and trends.

Government's role is to speedily come up with new policies and laws that will render transport disruptive technologies beneficial to all, and easily adaptable to the abruptly changing environments. The different spheres of government have to (for instance) regulate the collection of data, as well as determine what can be shared and what remains private.

Ladies and Gentlemen

The government is therefore committed to making a significant impact in reducing GHG (green house gasses) emissions, by addressing the significant contribution of transport to national total emissions, through the implementation of the Green Transport Strategy (GTS). The strategy aims to minimize the adverse impact of transport on the environment, while addressing current and future transport demands.

As a stepping stone, as government, we need to actively promote investment in the production of biogas, the use of Compressed Natural Gas (CNG), Liquid Natural Gas (LNG), as well as fuel cell and solar powered Electric Vehicles (EVs). In addition, there is currently no policy or regulatory framework that determines the requirements, norms and standards for cleaner fossil fuels in South Africa.

There is also no policy or incentive scheme that rewards users of cleaner fuels and cleaner fossil fuels. This is perhaps an area we need to pay particular attention to across government.

Recent transport technologies are evolving at such a rapid pace, the future modes of transport can be defined as those transport inventions that will be developed in the future or are currently under development such as:

- Air Propelled Trains.
- Flying Drone Passenger cars.
- Dual Mode Transportation Systems,
- Passenger Autonomous Vehicles, and
- Hyperloop

These kinds of "newer" modes being introduced in the transport sector, will require operational regulations, as they will also need to be mandated to use clean, green, and safe energy sources as alternatives.

It is vital that transport regulations be revised to accommodate technological innovations. Hydrogen may be produced on a large scale using water, coal, natural gas or plant matter. Thus, much as the final product involves lesser levels of pollution, the benefits are watered down if production uses fossil fuels.

Hydrogen fuel cell technology is advantageous in that it has a low carbon footprint - therefore contributing to cleaner air and better health for the South African citizenry. It also involves minimal noise when used in fuel cells.

The African continent is home to more than 1bn people of which two-thirds are consumers, and Africa will most likely double its population by 2050. The household consumption rate was $1.4 trillion in 2015 and it is projected to grow at a rate of 3.8 percent in the period to 2025 to reach nearly $2.1 trillion.

Africa is the world's fastest urbanizing region. Between 2015 and 2045, an average of 24 million additional people are projected to live in cities each year, compared with 11 million in India and 9 million in China.

Urbanization has a strong correlation with the rate of real GDP growth, because productivity in cities is higher, Africa's urban GDP per person was $8,200 in 2015, compared with $3,300 in rural areas. Higher productivity translates into higher incomes and cities offer better access to infrastructure and new markets, resulting in more rapid growth in consumption by households and businesses.

With your permission Chairperson, I wish that we reflect on the transport context within the continent and narrow down to South Africa as a player within that context.

As for the latter we will be forced to think deeply on how what we do will impact sustainable African integration, and how we allow ourselves to think more intensely about the implications of a largely youthful and urbanising African labour and skills pool.

Ladies and Gentlemen, what does the Southern African Transport Conference propose as priority interventions in relation to our continent?

How much do we as government interact with the subjects covered in these conferences and how much do we follow up on the outcomes? This certainly calls for the strengthening of government's contribution to the work of the SATC.

This should entail continuous, if not frequent interactions even at the level of the Board to share views on matters of common interest. This will lead to qualitative conversations on matters that require further scrutiny and interrogation by academics and transport researchers for purposes of evidence-based choices and trade offs in the policy formulation process.

Ladies and gentlemen,

These are our times. These are our challenges. We can only find solutions to these disruptive technologies, and we can never turn back from tackling these challenges head-on. Let us connect the region, connect and integrate the continent taking a cue from the AU agreements and vision.

Tomorrow in Cape Town in Parliament I will be tabling my departments Budget Vote for the period 2019 to 2020. Later in the week I will also be travelling to the United Kingdom to lobby for South Africa's re-election onto the Council and retention of our seat at the International Maritime Organisation (IMO). These engagements compel me to apologize to your Chairman and our guests and participants that I will not be able to be with you during deliberations but senior government officials shall remain here with you.

I wish you well in your deliberations, and may we find lasting solutions in tackling pervasive challenges.

I Thank you all.