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Building a
Digital World
**Consumers
Can Trust**



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**Building a Digital World in
Trinidad and Tobago
that Consumers Can Trust**



DR. JOHN PRINCE
CEO, TATT

Six months in, Dr. John Prince, new Chief Executive Officer (CEO) of the Telecommunications Authority of Trinidad and Tobago (TATT) says he is back at the organisation to work towards building a digital world in Trinidad and Tobago that consumers can trust.

Author and crafter of the Telecommunications Authority back in 2003/2004, Dr. Prince was the first Executive Director of the organisation. Over the intervening years, he has contributed solidly to the local and international telecommunications community working with both the International Telecommunications Organisation and the Commonwealth Telecommunications Organisation, amongst others.

In addition, to being CEO of TATT, he is currently the Chairman of the team working to set up the National Statistical Institute of Trinidad and Tobago; Chairman of the Tobago Information Technology Limited; and Chairman of the Accreditation Council of Trinidad and Tobago.

According to Dr. Prince, everything is a matter of trust. Consumers and operators alike must trust that they are fairly treated. Consumers in particular must trust that the industry is regulated to ensure that they get good service at a good price whilst being confident of the safety of their person and information.

Noting the Government as a key stakeholder, Dr. Prince stressed that TATT also has an obligation to ensure that all licensing and concession fees are collected and the requisite surplus passed on to the consolidated fund.

Looking ahead, Dr. Prince said he will be focusing soundly on ensuring digital inclusion of all underserved persons and communities, especially persons with disabilities (PWDs). The establishment of a third mobile provider and the change of the spectrum band plan that Trinidad and Tobago is currently using from the North American Band Plan to the implementation of the Asia Pacific Band Plan that will allow the equal distribution of 700 MHz spectrum to all three mobile providers. This will allow for the smooth implementation of LTE across the country.

Dr. Prince stressed that TATT's role is to regulate the industry to the optimal benefit of all customers.

Noting that the broadcasting sector faced its own challenges, Dr. Prince said he intends to work assiduously towards the implementation of the long overdue Broadcast Code. He also aims to ensure that all broadcasting operators meet their local and international intellectual property rights obligations whilst maintaining harmony between the subscription television market and the free-to-air broadcasters.

Smiling and saying that there are many issues on his agenda, Dr. Prince gave a commitment to ensuring the stability, growth and development of the local telecommunications and broadcasting sectors.

Prior to his work in the telecommunications sector, Dr. Prince had a long and illustrious career in the Public Service and has served as Permanent Secretary to Ministries such as the Office of the Prime Minister; Ministry of Finance and the Economy and advisor to the Minister of Local Government, amongst others.

Charting the Next Chapter in T&T's Telecommunications and Broadcasting Sectors

TATT Strategic Plan 2016 – 2019

Over the next three years, we will strive to institutionalise further international best practices to enable TATT to become a "global exemplar empowering people through ICT sector development."

In 2019, TATT will celebrate its 15th Anniversary – marking a decade and a half of operations facilitating the continuing development of the telecommunications and broadcasting sectors in Trinidad and Tobago.

Over the next three years, TATT will be charting the next chapter in T&T's Telecommunications and Broadcasting Sectors.


TATT will strive to institutionalise further international best practices to enable the organisation to become a "global exemplar empowering people through ICT sector development".

To fulfil this vision, the Strategic Plan 2016 – 2019 will focus on implementing strategic initiatives that will realise benefits to the citizens in the following areas:

- Increasing access to broadband;
- Aiding in closing the digital divide;

MR. GILBERT PETERSON, S.C.
CHAIRMAN, TATT





The new vision which TATT will be working steadfastly to achieve is to become a:

**“Global Exemplar,
Empowering People
through ICT Sector
Development.”**

- Facilitating access to efficient online government and business services;
- Promoting investment in ICTs by modernising our legal and regulatory framework; and
- Facilitating innovation in business development through encouraging their use of ICTs.

TATT will also work towards improving its position in the ICT Development Index (IDI) within this strategic period, focusing on infrastructural development and

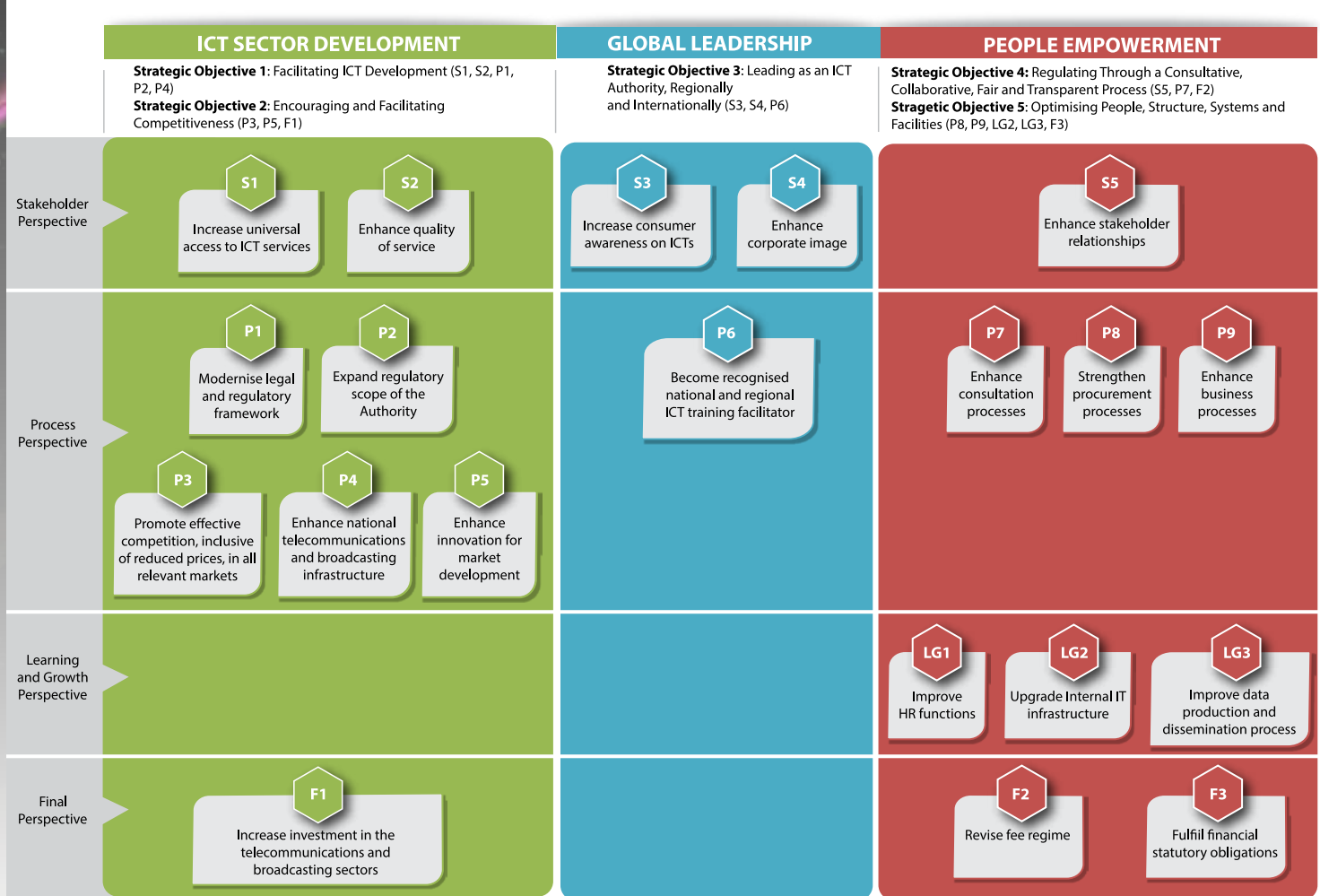
the roll-out of telecommunications services throughout Trinidad and Tobago. This progression of the ICT revolution in Trinidad and Tobago is possible only with continuous collaboration, innovation and consultation among all key stakeholders.

It is the agility with which TATT functions over the next three years that will propel this country towards becoming an ICT advanced nation. This process is unveiled in the organisation's recently published Strategic Plan 2016 – 2019.

TELECOMMUNICATIONS AUTHORITY OF TRINIDAD AND TOBAGO

CORPORATE STRATEGY MAP

2016 – 2019



TATT intends to achieve this vision through its mission:

“Fostering a competitive ICT environment using competent, fair, transparent, forward-thinking and responsive approaches for the benefit of all.”

Moving Full Steam Ahead

Commenting on the pathway to be taken during the period covered by the plan, Mr. Gilbert Peterson, S.C., Chairman of the Board of Directors, said TATT will “take advantage of the solid foundation it has built in the last 12 years, and utilise this strength to propel Trinidad and Tobago into a future where ICT is a major catalyst for social and economic development”.

Expanding our Impact at Home and Abroad

Three main imperatives – people empowerment, ICT development, and global exemplar – are critical to the goals charted in the plan. Now the tenets of the new vision for the organisation, these imperatives represent the critical areas of TATT’s focus and according to Dr. John Prince, Chief Executive Officer at TATT, “the new strategic direction will ... further facilitate ICT sector development, empower citizens by promoting Universal Access” and promote TATT “as a global exemplar within the ICT landscape.”

Mobilising the Vision

The road map for advancing each of these three imperatives is detailed in five strategic objectives as follows:

1. Facilitating ICT Sector Development
2. Encouraging and Facilitating Competitiveness
3. Leading as an ICT Authority, Regionally and Internationally
4. Regulating through a Consultative, Collaborative, Fair and Transparent Process
5. Optimising People, Structure, Systems and Facilities.

These objectives, once achieved, will increase ICT connectivity, infrastructural strengthening, and enhanced stakeholder relations. Other strategic outcomes are outlined in the Corporate Strategy Map (See previous page).



Mr. Keith Sinclair, Senior Director, Marketing, Adaptrum (a member of Dynamic Spectrum Alliance (DSA)) responds to a question from a member of the audience. On Mr. Sinclair's left are Ms. Michelle Baptiste-Williams, Telecommunications Strategy and Services Manager at the Ministry of Public Administration and Communications and Dr. Sean Rocke, Lecturer, Communications, The University of the West Indies, who also presented at the event.

WHITE SPACES DEVICES

T&T's Response to Improving Broadband Access

In the last two decades information and communications technologies (ICTs), particularly the Internet, have assisted in driving personal development goals; leapfrogging national development; satisfying the almost insatiable global thirst for data; providing affordable entertainment options and making the world more connected than ever before.

In spite of its widespread global use, even in the most developed countries, many persons remain out of the worldwide grid. This, of course, also holds true in the Caribbean region.

In Trinidad and Tobago, most mobile phones allow access to the Internet and as at September 2016, the subscription figure for mobile phones stood at 2.1 million in a population of 1.4 million. These figures clearly represent a scenario of dual or triple mobile phone ownership by a single individual.

Despite this handsome mobile phone subscription figure, the mobile Internet penetration rate for the same period stood at 50%. This represents active mobile Internet users using mobile data plans.

On the other hand, the fixed Internet penetration rate for the same period, according to TATT's statistics, stood at 20% of the total population and 66% of total households in the country.

Thus, while TATT ultimately envisions 100% Internet penetration, a number of challenges lie in the way of that achievement. These challenges range from socioeconomic and geopolitical issues to topology obstacles – with the cost of broadband Internet being the most significant challenge affecting this lag in adoption.

Trinidad and Tobago, like other countries, is seeking workable solutions to counter this challenge and further bridge the digital divide.

White Space Devices a Possible Solution

"White Space Devices are new; exciting; powerful and adaptable with significantly greater penetration than traditional Wifi broadband options." So said TATT's Deputy Chairman, Dr. Kim Mallalieu, who delivered the feature address at a recent TATT ICT Open Forum titled 'White Space Devices: Opportunities for Trinidad and Tobago'.

This forum was part of a wider consultation on TATT's proposed Authorisation Framework for the Accommodation of White Space Radiocommunications Devices.

White Space Devices (WSDs) operate on unassigned or underutilised spectrum not commonly allocated for use by mainstream fixed and mobile broadband technologies.

Dr. Mallalieu noted that broadband signals from WSDs can travel up to 10 kilometres, through vegetation, buildings, and other obstacles and service many more customers at one time, whilst typical home Wifi can only travel through two walls.

She explained that White Space refers to the unused broadcasting frequencies in the wireless spectrum band. Television networks leave gaps between channels for buffering purposes and to reduce the chance of interference between channels. This buffer space in the wireless spectrum band is similar to what is used for 4G. WSDs can use this buffer space to deliver widespread Wifi broadband Internet.

Dr. Mallalieu described WSDs as game changers that provide Trinidad and Tobago with an ideal option to improve nationwide broadband access including those areas that are currently underserved rural areas, where the distance between households, mountainous terrain, and trees have affected the availability and quality of fixed and mobile broadband access. They are also very useful in densely populated urban areas and city centres where demand and high-rise buildings reduce the quality of broadband available.

Dr. Kim Mallalieu, Deputy Chairman, TATT makes a statement during the discussion segment. Dr. Mallalieu also delivered opening remarks at the start of the event.



Mr. Nigel Cassimire, Telecommunications Specialist at Caribbean Telecommunications Union directs a question to the panel.





Members of the audience address the panel at TATT's ICT Open Forum.

WSDs also present operators with an alternative to mainstream technologies used to provide broadband services in associated spectrum bands, which may be heavily utilised. Their ability to provide point-to-multipoint broadband connectivity over long distances and difficult terrain provide increased opportunity for the provision of LTE services. Dr. Mallalieu noted that this suggests that WSDs using Television White Spaces (TVWS) are a potential solution for the provision of broadband services to rural areas. TVWS is the common reference for the unused or unutilised spectrum in the Television (TV) broadcasting band.

WSD signals can also powerfully penetrate commercial buildings even in the most densely populated cities. Dr. Mallalieu said it therefore creates the opportunity for improved service even in these currently "well served" areas.

Changing the State of Play in T&T's Broadband Deployment

It is this potential to change the state of play in broadband deployment that has led TATT to be currently engaged in consultation on the more widespread use of these devices to bridge the gap of increasing demand for broadband in the country.

Presenters at the ICT Open Forum enlightened the mixed audience about WSDs and their potential to be one of the key operatives in meeting the last mile challenge in rural areas.

Kirk Sookram, Executive Officer – Technical Services & Development at TATT, explained that the consultative document highlighted the benefits of WSDs as an option to provide broadband and other innovative services to underserved markets in Trinidad and Tobago. He added that through the consultation process TATT hopes to harness the views of a wide cross-section of society towards the fine-tuning of a process for licensing WSDs.

He indicated that the framework establishes the technical and operational rules and guidelines for the deployment of WSDs in Trinidad and Tobago. Specifically, the framework provides the Terms of Reference for TATT's regulatory oversight; outlines measures for protecting existing incumbent services operating in bands that will be made available for WSD operations; as well as reassures potential users that a carefully planned and regulated environment has been created for the deployment of WSDs.

The framework, Mr. Sookram told the audience, also ensures incumbent telecommunications and

broadcasting services will not be disrupted by harmful interference from WSDs and reassures both incumbent operators and potential users of WSDs that a regulated environment has been created for safe and effective deployment of WSDs.

Feature speaker Mr. Keith Sinclair, Senior Director, Marketing, at Adaptrum, which is a Board Member of DSA, provided the audience with an international perspective. He stated, "most spectrum in the world is unused, in most places, most of the time." Pointing out that today's allocation system is based on a 100-year-old model designed to prevent interference. He explained how white spaces can be used for fixed wireless access and highlighted that in addition to applications in municipalities there is great benefit for domestic users.

Mr. Sinclair stressed that the efficiency with which today's ICT technologies function make the use of WSDs an intelligent option in the Caribbean as the rate of spectrum use, especially in the TV band, makes the white space option feasible.

Speaking in a similar vein, Dr. Sean Roche, Lecturer, Communications, The University of the West Indies noted that Caribbean nations with their independent island jurisdictions and geography are particularly good national candidates for white space technology. The suitability, he highlighted, is also based on the Caribbean's relatively low population and population density.

Another presenter, Ms. Michelle Baptiste-Williams, Telecommunications Strategy and Services Manager, Ministry of Public Administration and Communications in her presentation 'Leveraging TV White Spaces in Trinidad and Tobago - Opportunities in the Age of Disruption' told the audience of pilots earmarked for Trinidad and Tobago which had been scheduled to commence in April 2017. These pilots are designed to capture data on the local economics of TVWS.

Comments received from this first round of consultation on TATT's 'Authorisation Framework for the Accommodation of White Space Radiocommunications Devices', would be taken into consideration in reviewing the document before it is released for another round. Subsequent to the second round, TATT will be in a position to commence the licensing of WSDs.



Consumer Complaints Statistics

During the fiscal period October 2016 to March 2017, a total of 276 consumer complaints were received and processed by TATT. The majority of complaints received within the period to date were attributable to billing issues.

Section 18 (1)(m) of the Telecommunications Act gives the Authority the power to: Investigate complaints by users, operators of telecommunications networks, providers of telecommunications and broadcasting services or other persons arising out of the operation of a public telecommunications network, or the provision of a telecommunications service or broadcasting service, in respect of rates, billings and services provided generally and to facilitate relief where necessary.

Consumers of telecommunications and subscription broadcasting services who are dissatisfied with the outcome of complaints lodged with their service providers may lodge a complaint with TATT. The services referred to are:

- Fixed line telephone
- Mobile telephone
- Internet (dial up and broadband)
- Cable television (non-content-related complaints)
- Satellite television (non-content-related complaints)
- Data services (e.g. private or leased line services)

Type of Complaint	No. of Complaints Received	Complaints Resolved	Complaints Under Investigation
Billing Issue	75	9	66
Defective Equipment	15	0	15
Loss of Service	58	17	41
Quality of Service	58	11	47
Wrongful Disconnection	7	2	5
Other	63	3	60
Total	276	42	234

Complaints may be made to the Authority by the following means:

- Call our toll-free number **800-TATT (8288)**
- Make an online submission via **www.tatt.org.tt**
- Visit us in person
- Write us (letter, fax or email **info@tatt.org.tt**)

Commonwealth Professional Fellowship Experience:

Supporting Career Development

The Commonwealth Professional Fellowship provides a wonderful opportunity for persons from developing Commonwealth countries to spend about three months at a United Kingdom (UK) host organisation, working in their field, in a fully funded programme of professional development. These fellowships are offered by the Commonwealth Scholarship Commission (CSC).

Jerome Lynch, Regulatory Officer at TATT was successful in securing a Commonwealth Professional Fellowship from the CSC and tenable at the Commonwealth Telecommunications Organisation (CTO) Headquarters in London, for 14 weeks, between March and June 2016.

What do applicants need to know?

Lynch: "The selection process can be rigorous and highly competitive, but the experience is fruitful. The programme at the CTO enhanced my knowledge and skill set in ICTs.

"For example, I was able to develop and deliver an ICT knowledge-base which enabled the CTO to administer enhanced technical support and consultancy to its 53 member countries and organisations."

What were your most memorable moments during your tenure?

Lynch: "As part of my Professional Fellowship, I was granted exclusive access to a Policy and Strategic Meeting of Commonwealth ICT Ministers 2016, held

at Marlborough House in London, where I also had the pleasure of meeting the Commonwealth Secretary-General Mr. Shola Taylor.

"Another highlight was when I was granted the official title of 'Commonwealth Professional Fellow' – with a mandate to significantly contribute to ICT policy and strategic development locally, regionally and internationally before an executive audience, which included the Trinidad and Tobago High Commissioner to the UK."

Why did you apply to the Professional Fellowship Programme?

Lynch: "The impetus to contribute more meaningfully on matters of policy and strategic development, provision of access to a growing compendium of cutting-edge ICT research on topics such as the Internet of Things, Big Data and Applied Innovation, are among the many reasons that I pursued this training programme."

Do you have any last words for our readers?

Lynch: "Suffice it to say, the Professional Fellowship has given me invaluable experience and as such, I want to encourage more persons in Trinidad and Tobago to apply for the Fellowship. This experience is guaranteed to open your intellectual vistas, if not new career doors."

More information on the Commonwealth Professional Fellowship can be obtained at <http://cscuk.dfid.gov.uk/apply/professional-fellowships/>



Mobile Phone Use – Keep Your Child Safe

The recent increase in serious crimes against children and young people in Trinidad and Tobago has prompted TATT to publish the following guidelines for parents/guardians and other individuals, encouraging the use of mobile phones can be used as another line of defence in the fight against crime.

Mobile phones are useful for texting, voice calling and communicating with friends and family. This technology can also be used to help protect your child from persons who may attempt to do them physical harm.

Here are some useful tips:

1 INVEST IN A MOBILE PHONE

- Invest in your child's safety by providing them with access to a mobile phone that can make/receive calls and send/receive text messages.
- Ensure that sufficient credit is maintained at all times. Make a rule that credit on the phone does not go below a specific amount.
- Make sure that your child's phone is fully charged before leaving home. Also, ensure your child always has access to a charger.

2 TEXT VITAL INFORMATION TO YOU

- If your child is travelling alone and uses public transportation, he/she should take note of following:
 - the make, model and colour of the vehicle that they are entering;
 - the registration number (licence plate number) of the vehicle;
 - a brief description of the driver of the vehicle; and
 - details on the exact time and location that the vehicle was boarded.
- A few minutes after this information is received, you should call or send a text message asking for details of the trip, for example, the child's current location.
- In the event of an emergency, you can provide the police with the information you already gathered.

3

SHORT CODES AND TRACKING FEATURES

- If your child's phone has a tracking feature, you may want to activate same so that you can keep track of your child's location at all times, particularly while the child is using public transportation or walking on the street. There are tracking applications (apps) that are available free of charge. Some of these apps allow users to press a panic button to alert a relative in case of emergency. Having a GPS tracking facility will prove beneficial as you will be able to know your child's location at all times.
- There are short codes available in Trinidad and Tobago that can be used in case of an emergency. It is advised that these codes, such as the number for the Trinidad and Tobago Police Service and the Trinidad and Tobago Fire Service, be placed on speed dial and the child be shown how to use it. Calls to these short codes can be made even if there is no credit on the child's phone.
- It is also a good idea to place other mobile phone numbers such as your number and or that of other trusted relatives and/or friends on speed dial.

4

TELEPHONE CONVERSATIONS WHILE WALKING

- You should try to avoid having your child walk along lonely roads. However, if this is unavoidable, have him/her contact you and start a telephone conversation at the start of the trek. Teach your child to be aware of his/her surroundings describing everything around them.
- If the credit on the mobile phone is running low, teach him/her how to either flash your mobile phone (call and hang up) or ask that you call them back. When you return the call, continue the conversation until the child arrives at his/her intended destination.

5

CODED LANGUAGE

- You may want to develop a coded language system with your child that can be used to alert you if there is an emergency. Should the child be placed in a situation where he/she senses danger or feels uncomfortable, this system can be used and only you and your child would know and understand what each word, phrase and or action means.

For example, if the child is travelling home and the vehicle goes off the normal route, the child can call or send a coded text message, "Mummy/Daddy, I left my pencil case in class, what should I do?" that would immediately tell you that something is wrong.

- It is also important that you do some role-playing exercises with your child at home acting out different scenarios that may happen. These exercises would build confidence in your child and would also help him/her to better know and understand what they should do in the event that something goes wrong.
- Teach your child that if the driver or any passenger in the vehicle starts a conversation with them that makes him/her feel uncomfortable, your child should dial your number and leave the line open so that you can hear what is being said or, dial 999 (short code for the police) and leave the line open.
- Teach your child, if there is no danger, to turn off the phone after a while and call you back. If the phone is not turned off and/or if you do not receive a call, your child may be in danger.



Bridging the Standardisation Gap



Dr. the Honourable Keith Rowley, Prime Minister of Trinidad and Tobago, listens to Mr. Gilbert Peterson, S.C., Chairman of TATT, at the opening ceremony of the ITU Regional Standardisation Forum on Bridging the Standardisation Gap (BSG) for the Americas.

"An e-ready country necessitates that ICTs must be seen as tools to be used in all aspects of social, educational and business life. We must see ICT learning as not merely learning how to use computerised machines and manipulate software. It must be seen as a mechanism for providing solutions to both mundane and complex problems." Dr. the Honourable Keith Rowley, Prime Minister of Trinidad and Tobago, speaking at the opening ceremony of the 'ITU Regional Standardisation Forum on Bridging the Standardisation Gap (BSG) for the Americas' on March 6th, 2017 at the Parliament Building, Port of Spain.

The forum, which was co-hosted by TATT, was an International Telecommunication Union (ITU) event to assist developing countries to expand their standardisation capacity and provided a platform for the Caribbean and Latin-American countries to share lessons learnt in their efforts to build standardisation capacity at home. Participants shared insight into how they were tackling key ICT policy and regulatory challenges, as well as ICT operations and management demands.





TATT has been guided by the standards set by the ITU through the work of its study groups.

Mr. Gilbert Peterson, S.C., Chairman of TATT

Also addressing the audience at the opening ceremony were Dr. Amine Mcharek of the ITU; Dr. John Prince, CEO of TATT and Mr. Gilbert Peterson, S.C., Chairman of TATT.

Mr. Peterson informed that TATT has been guided by the standards set by the ITU through the work of its study groups. He added that TATT used such standards in developing its current 2016 – 2019 Strategic Plan, which he hoped would propel Trinidad and Tobago into a future where ICT will be one of the major catalysts for social and economic development.

The forum was followed by meetings of the Regional Group for the Americas within ITU-T Study Group 2



(Operational Aspects) and the Regional Group for Latin America and the Caribbean within ITU-T Study Group 3 (Economic and Policy issues) from March 6 – 10th 2017. The ITU convenes a number of study groups to conduct research and consider its direction and that of its member states on a large number of telecommunications and broadcasting-related issues.

The ITU-T Study Groups deal with Standardisation. The ITU-T Study Group 3 deals particularly with International Standards in the areas of Policy, Tariffs, Economic and Financial issues. The ITU Study Group 3 Regional Group for Latin America and the Caribbean (SG3 RG-LAC) deals with issues common to the region.



Members of TATT's Board, presenters and participants at the ITU Regional Standardisation Forum



**Telecommunications Authority
of Trinidad and Tobago**
*Regulating Telecommunications and Broadcasting
in Trinidad and Tobago*

**Building a
Digital World
Consumers
Can Trust**

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