Government’s Vision For The Sector

Given the importance of the telecommunications sector to the Kingdom, and the increasing links with ICT, the Government’s vision for the sector, as set out in the Fifth National Telecommunications Plan (NTP5), is as follows:

1. To ensure that world leading, resilient, and future-proofed telecommunications infrastructure and services are available and accessible to, and used by, all Bahraini businesses and consumers, with the infrastructure and services being able to meet the growing demand for data connectivity at reasonable prices and a high quality of service.

2. To ensure that the consumer is placed at the forefront of all policy measures, with the consumer being able to rely on sustainable and competitive markets delivering high quality data connectivity at reasonable prices, while being protected from cyber threats.

3. To support the Kingdom’s digital economy and the development of digital transformation across all sectors and the growth of new sectors such as AI, so that the telecommunications and ICT sector are able to support growth across all sectors of the Kingdom’s economy and make an increasing contribution to economic growth.

4. To support the Kingdom’s role as a regional hub for telecommunications and ICT, by ensuring the Kingdom has the network infrastructure and policies necessary for it to enhance its role.
NTP5
A New Chapter in the Kingdom’s Digital Transformation

“A number of steps will be implemented over the next three years in order to achieve the policy objectives set out in NTP5. The TRA will cooperate with the Government and work closely with industry participants, and relevant stakeholders and organizations to ensure the successful implementation of all initiatives for the benefit of all licensees, the Bahraini consumers and enterprises. The collaboration will also ensure that the Kingdom retains its leading position in digital developments, regionally and globally.”

H.E. Eng. Mariam Ahmed Jumaan
Chairperson, Telecommunications Regulatory Authority Bahrain

The year 2020 saw adoption of the Fifth National Telecommunications Plan (NTP5) by the Government of the Kingdom of Bahrain. Issued on October 25, 2020, the NTP5 sets out the Government’s strategic plan and general policy for the Kingdom’s telecommunications sector for the next three years (until October 2023).

Key Policy Highlights

National Fibre Infrastructure in the Kingdom

• Completion of the National Broadband Network (NBN) initiated under NTP4 such that its coverage is close to ubiquitous for all households and businesses in the Kingdom.
• All aspects of NBN separation are completed, ensuring Equivalence of Inputs (EoI) is implemented fully and within the required timeframes.

Supply of international connectivity to and from the Kingdom

• Encourage and enable stakeholders to invest in diverse international cable routes landing in the Kingdom, including, if relevant and necessary, taking forward changes to the licensing framework for international connectivity facilities and services.
• Identify suitable subsea corridors for cable routes and appropriate land to locate landing stations to assist in timely investment.
Developing the Digital Economy and the Telecommunications and ICT Ecosystem

- Identify necessary measures to hasten the Kingdom’s digital transformation, making the telecoms and ICT infrastructure resilient to meet the challenges of COVID-19 pandemic, and any similar future challenges.
- Develop a national digital transformation strategy, and a national strategy on Artificial Intelligence (AI) to foster investment and innovation in AI technologies; develop skills to maximize the opportunities from AI; develop measures to ensure appropriate policies on data sharing and AI ethics within the Kingdom.
- Identify capacity building needs and undertake actions to provide skills relevant to sustained growth of the Kingdom’s telecommunications and ICT ecosystem and digital economy.
- Promote and support facilities for research and precommercial testing of technolgies, including 5G or Narrow Band (“NB”) IoT technologies, as well as identify relevant initiatives to encourage innovation in telecommunications and ICT ecosystem and digital economy.
- Support and encourage appropriate initiatives led by the ICT sector stakeholders to establish a carrier neutral Internet Exchange (IX).
- Ensure that the majority of consumers in the Kingdom have access to 5G networks and services.
- Promote, support, and incentivize 5G Networks deployment in the Kingdom.
- Develop a strategy roadmap to ensure the Kingdom’s readiness for the “second and third phases” of 5G services: M2M / IoT services and specialized low latency services using 5G networks.
- Produce demand forecasts and identify and release spectrum to meet the growing demand for spectrum for mobile telecommunications services.
- Identify usable spectrum and determine the most appropriate way of making this spectrum available to promote rapid innovation in emerging 5G and IoT use cases.
- Regularly review and enhance the processes for approvals regarding installation, upgrade and maintenance of sites, to ensure the most efficient deployment of infrastructure, consistent with the Government objectives.
- Identify necessary measures to hasten the Kingdom’s digital transformation, making the telecoms and ICT infrastructure resilient to meet the challenges of COVID-19 pandemic, and any similar future challenges.
- Develop a national digital transformation strategy, and a national strategy on Artificial Intelligence (AI) to foster investment and innovation in AI technologies; develop skills to maximize the opportunities from AI; develop measures to ensure appropriate policies on data sharing and AI ethics within the Kingdom.
- Ensure that consumers benefit from improving average download speeds over time, to satisfy their evolving requirements.
- Enable consumers in the Kingdom to make informed decisions about their telecommunications services, by provision of relevant data (such as on price-terms, contractual periods, notice of end contractual period and QoS).
- Promote awareness relating to the safe use of online services and the protection of consumers in the Kingdom through initiatives and information awareness campaigns such as Safesurf.
- Study the needs of groups with special requirements and consider implementation of support measures to enable access to, and usage of telecommunications services, including by way of Universal Services.

Consumer Experience

- Ensure resiliency of national telecommunications infrastructure.
- Implement telecommunications sector-specific emergency and disaster recovery plan to complement the Critical Telecommunications Infrastructure Risk Management Regulation.
- Carry out regular drills to test cybersecurity preparedness of the telecoms sector, including consideration of risks amplified by emerging or innovative technologies used within the sector.
- Set out requirements for the telecoms sector to identify, detect, protect and respond to cyber security threats alongside recovering from related incidents.
- Ensure implementation of appropriate regulatory and information & awareness measures and training to mitigate cyber security risks.

National Security of Electronic Communications Networks and Services

- Complete the review for the service licensing framework and template licenses, and make recommendations for consideration and approval of any required amendments necessary to ensure that this framework and any template licenses are fit for purpose in light of sector developments.
- Conduct study on the appropriate length of frequency licenses for Mobile Telecommunications services.
- Support and encourage the telecoms sector to increase use of IPv6 while ensuring sufficient IPv4 addresses to meet the sector’s needs during the transition to IPv6.
The year 2020 highlighted the transformative potential of ICT in shaping the digital economy and fostering Industry 4.0. As never before, the ongoing COVID-19 pandemic demonstrated the strength and potentials of ICTs. Whilst the pandemic has had a sweeping effect on economic activity, the ICT sector on the other hand, experienced an exceptional surge. Workforces around the world have switched to telework and online conferencing to conduct their business, supported by a range of digital technologies.

Bahrain has reached an advanced stage in the digital transformation journey in the ICT sector, digitally positioning Bahrain in the ranks of advanced economies. The TRA has enabled the establishment of an efficient telecom infrastructure, and defining the responsibilities and obligations of Licensees in relation to timely detection of and timely response to security incidents and security breaches. Bahrain is a leading regional ICT platform that ranks high in various crucial areas. According to the United Nations e-Government Readiness Report of 2016, Bahrain was ranked 11th in the telecommunications infrastructure index worldwide and led the ICT Index of the Arab region. In addition, The Global Information Technology Report 2016 of the World Economic Form ranked Bahrain 24th in the ICT Use Sub-index worldwide, which evaluates the readiness of the three pillars to use ICT (individuals, industry and the government).

The TRA is actively contributing to the Kingdom’s vision of making the private sector the primary driver of economic growth and to develop a robust knowledge-based economy, the ICT sector is of strategic importance towards achieving it. The sector is not only a crucial facilitator for entrepreneurship, but also presents a significant field of economic potential in terms of innovation and sustainability, including but not Limited to 5G Networks, Fintech, Internet of Things, Artificial Intelligence and Machine Learning, AR, VR, Nano Networks, Blockchain, and an endless chain of ICT Innovations.

The TRA supported the government’s efforts to enable online education and remote working by enabling high penetration rate of internet services in the Kingdom. The availability of high-speeds and large data capacity has helped support the implementation and use of the applications necessary to perform the tasks of virtual education and remote working. The Kingdom’s internet traffic usage was previously at 75% of available capacity. However, since operators increased Bahrain’s capacity, usage is now at 59%, which is more than enough to cover Bahrain’s needs and we can continue to increase the limits if necessary.

Telecom services are crucial to every sector’s growth, and this trend will continue to be true. The smart phone age continues to confirm its relevance in daily life, and we have reached an era where advanced ICT services will shape economies and nations fundamentally. Our reliance on connectivity will become more prevalent than ever before, paving the way for 5G or the Internet of Things, as the world welcomes fiber optics networks and begins to invest in Post-4G technology. Via the Internet of Things (IoT), our ICT infrastructure would also expand cyber-physical services, such as driverless vehicles, smart traffic management systems, smart factories, etc.

The TRA has enabled the establishment of an efficient telecom infrastructure which led to the vast accessibility of the internet. This was done by setting high standards for operators to abide by in order to protect the infrastructure and make it more resilient. Towards this direction, the Authority enabled the establishment of a uniform and coordinated approach to assess and protect the security and availability of Critical Telecommunications Infrastructure, and defining the responsibilities and obligations of Licensees in relation to timely detection of and timely response to security incidents and security breaches. Bahrain is a leading regional ICT platform that ranks high in various crucial areas. According to the United Nations e-Government Readiness Report of 2016, Bahrain was ranked 11th in the telecommunications infrastructure index worldwide and led the ICT Index of the Arab region. In addition, The Global Information Technology Report 2016 of the World Economic Form ranked Bahrain 24th in the ICT Use Sub-index worldwide, which evaluates the readiness of the three pillars to use ICT (individuals, industry and the government).

Building on its success in the telecommunications sector, the TRA aims to build on the Fifth National Telecommunications Plan, as approved by the Government. The NTP5 will expand on the momentum of the NTP4, in particular with the success of building up the National Broadband Network, exploiting fiber optics technologies to serve other markets and businesses, providing prospects for development through fiber optics and post-4G developments that will be based on IoT and AI usage cases. The TRA aims to publish its Data Protection Regulation next year, which shall contribute to our data protection measures and will be crucial in helping to deter cybercrime by ensuring that data such as accounts, emails and contact information are secure from fraud.

I take this opportunity to thank all the hardworking TRA team members, the management, and the board members for their utmost dedication and commitment to the cause of the TRA; the Continuous betterment of telecom services for the Kingdom’s welfare and prosperity. Together we continue to emerge better and stronger.
Board of Directors

Eng. Mariam Ahmed Jumaan
Chairperson

Brigadier General, Eng. Mohammed Abdullatif Al-Mahmoud
Member

Khalid Ibrahim Humaidan
Member

Shaikh Salman bin Mohammad Al Khalifa
Member

Amal Ahmed Al-Abbasi
Member
From what we’ve seen and realized this past year, we can all agree that “going digital” isn’t optional, it’s necessary. The continuity of life and commerce depends on a robust and inclusive strategy backed by a resilient ICT infrastructure.

Technology keeps changing, populations rising, and demand for data growing. In order to keep up with this dynamic demand, we need data-driven solutions that simplify and automate business, and provide access to essential services, wherever needed. TRA has been making tremendous strides in this direction; the fibre-based National Broadband Network (NBN) has progressed rapidly since its roll-out in June 2020, passing more than 78% households in the Kingdom, with the target to achieve 100% penetration of ultra-fast internet at affordable prices. This growth is credited to the creation of BNet as the access provider of the national broadband network to all licensees in the Kingdom, facilitating smooth distribution of uninterrupted, ultra-fast internet services, and changing the market dynamics from being infrastructure-based to one based on service competition, thus giving customers the choice to get the best service. The BNet infrastructure and services are the foundations supporting businesses across various sectors, whereby high capacity connectivity has become an essential input across many sectors of the economy, whether for data centers; large content firms who require ultra-high speeds increase and become more affordable. Between 2011 and 2020 mobile and broadband subscriptions in the Kingdom have witnessed an increase by 61%. Between 2011 and 2020, prices for fixed residential broadband went down 60% whilst business fixed broadband prices dropped by 73%. During the same period mobile broadband prices went down by 42%. This is a clear indication that uptake is becoming higher as speeds increase and become more affordable to all. TRA also remains committed to lowering roaming prices across the GCC. The latest reduction in GCC roaming prices in January 2020, reflected a combined decrease of 68.8% for both the wholesale and retail prices over the last 5 years. As a result, consumers are able to benefit from new Data Roaming price cap of 1.38 fils in 2020, further lowered from the previous limit of 1.88 fils in 2019.

“According to the International Telecommunication Union’s data for the year 2019, Bahrain ranks first in the region in the percentage of Internet users.”

A key enabler for the mentioned achievements has been the collaboration of the TRA with other local, regional, and international organizations. The decrease in GCC roaming rates, the legal separation of Batelco in a record duration of 36 months, are prime examples of the recent successful outcomes owing to the active collaborations and relationships TRA maintains with other regulatory bodies and government authorities.

TRA firmly believes that consumers and businesses will continue to reap the rewards of the new framework, expecting operators to compete based on enhanced services, and for the impact of the new national broadband network to be felt for generations to come, across all sectors.

Sh. Nasser bin Mohamed Al Khalifa
Acting General Director, TRA

Technology is changing, populations rising, and demand for data growing. In order to keep up with this dynamic demand, we need data-driven solutions that simplify and automate business, and provide access to essential services, wherever needed. TRA has been making tremendous strides in this direction; the fibre-based National Broadband Network (NBN) has progressed rapidly since its roll-out in June 2020, passing more than 78% households in the Kingdom, with the target to achieve 100% penetration of ultra-fast internet at affordable prices. This growth is credited to the creation of BNet as the access provider of the national broadband network to all licensees in the Kingdom, facilitating smooth distribution of uninterrupted, ultra-fast internet services, and changing the market dynamics from being infrastructure-based to one based on service competition, thus giving customers the choice to get the best service. The BNet infrastructure and services are the foundations supporting businesses across various sectors, whereby high capacity connectivity has become an essential input across many sectors of the economy, whether for data centers; large content firms who require ultra-high speeds increase and become more affordable. Between 2011 and 2020 mobile and broadband subscriptions in the Kingdom have witnessed an increase by 61%. Between 2011 and 2020, prices for fixed residential broadband went down 60% whilst business fixed broadband prices dropped by 73%. During the same period mobile broadband prices went down by 42%. This is a clear indication that uptake is becoming higher as speeds increase and become more affordable to all. TRA also remains committed to lowering roaming prices across the GCC. The latest reduction in GCC roaming prices in January 2020, reflected a combined decrease of 68.8% for both the wholesale and retail prices over the last 5 years. As a result, consumers are able to benefit from new Data Roaming price cap of 1.38 fils in 2020, further lowered from the previous limit of 1.88 fils in 2019.

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Sh. Nasser bin Mohamed Al Khalifa
Acting General Director, TRA

The launch of 5G services led to witnessing a surge in peak download speeds: over 15 times faster than 4G. Comparison between 4G and 5G performance shows average speeds of approximately 80 megabits per second compared to 5G’s average of approximately 600 megabits per second, though records higher than 1 GB per second were observed.

With such powerful network capacity and speed, we have a duty to unearth all possible beneficial uses of 5G and 5G+ to tap the immense potential, which can catalyze Bahrain’s as well as the region’s progress in the age of the digital economy.

The vision of our Kingdom’s wise leadership, His Majesty The King, and HH The Crown Prince and Prime Minister, and their continuous support towards the pursuit of excellence is reflected in the constant rapid development of the telecommunications sector and evolution of its technologies. The technological strategies under the NTPs ensure availability and accessibility of world-leading, resilient, and future-proofed telecommunications infrastructure and services in the Kingdom, supporting the Kingdom’s role as a regional hub for telecommunications and ICT.

Ever since the liberalization of the telecoms market by TRA in 2002, there have been significant changes in the telecoms sector and the next three years will be critical in shaping the Kingdom’s National digital transformation strategy, as the Authority consults on how to address these changes in its policies and laws. As part of the 5th National Telecoms Plan, the Government will review our recommendations to ensure our legal frameworks in the ICT and Telecommunications sectors allow innovators, investors and entrepreneurs to unlock their full potential.

Through its initiatives, the authority seeks to achieve the strategic purpose of ensuring the Kingdom remains the global front-runner in trade and ICT, and a regional point of innovation. The efforts and hard work of the TRA workforce in this direction are highly commendable, constantly pushing boundaries to position TRA Bahrain as an exemplar regulator, both regionally and internationally.
Overview 2020

The term resilience was revisited in the year 2020, dominated by the COVID-19 pandemic, and the TRA’s efforts were marked by the focus on advancing the Kingdom’s ICT readiness to face any future challenges, as the Kingdom prepared to step into the post 4G technology era.

The Coronavirus pandemic highlighted the strength and capabilities of the Kingdom’s ICT sector, as the Kingdom emerged from the crisis without any negative impact. Facilitating high penetration rate of internet services within the Kingdom, TRA actively supported the Government in adopting the latest trends in digital transformation.
Sharing Success of the National Broadband Network Project

As Bahrain became the first country in the MENA region to have successfully separated the incumbent (Batelco) into two entities to create an independent National Broadband Network (NBN) access provider to licensees, in a record time of three years, regulators from the GCC expressed keen interest in benefiting from Bahrain’s experience. The TRA organized a high-level workshop in February to shed light on the success of the NBN project and share its experience with other regulators from around the region, including delegates from TRA UAE, CITC in Saudi, TRA Oman and CITRA in Kuwait.

An Upward Trend in Telecoms Services

The Kingdom’s telecom services continued to improve on both the performance and price aspects, offering residents and businesses alike with better options and choices.

Uptake is becoming higher as speeds increase and become more affordable. Between 2011 and 2020 mobile & broadband subscriptions in the Kingdom have witnessed an increase of 61%. Between 2011 and 2020, prices for fixed residential broadband went down 60% whilst business fixed broadband prices dropped by 73%. During the same period mobile broadband prices went down by 42%.

The broadband prices witnessed a decrease of up to 47% between 2019 and 2020, while thresholds increased up to 65% during the same period. The consumer choice with fiber broadband availability saw an upsurge in service providers from having one to more than 20 providers, a direct outcome of the TRA’s efforts towards enhancing competition, the most significant being the Batelco separation.

The broadband penetration rate by the end of 2020 reached 137%, whereas Internet data usage in 2020 increased by 66% compared to 2019. Due to ease of accessibility at affordable prices of internet services for citizens and residents of Bahrain, 100% of people in the Kingdom are Internet users.

According to the 2020 Arab Telecommunications Retail Price Benchmarking Report, the fixed and mobile broadband prices in Bahrain are shown to be the lowest among GCC and Arab countries; the average fixed broadband prices in Bahrain are 39% lower than the GCC average. Likewise, with regard to mobile services, telecom operators in Bahrain offered competitive prices at the GCC and Arab level, specifically in high-usage packages.
TRA Connect App

To provide easy access of its key services to customers, TRA successfully launched the TRA Connect application in November 2020. Offering a plethora of TRA Services, including network speed test, complaint/suggestion making, coverage map, etc., on smartphones. The App supports both the Android and iOS platforms.

Ever-improving Consumer Experience

With customers at the very center of its policy, TRA constantly strives to improve customer experience with the Kingdom’s telecom services.

TRA’s call center has received over 44,000 calls since its formation, with an average of 94.02% success rate of responses to the calls. The TRA witnessed a 121% increase in complaints since 2018, where a total of 2084 consumer disputes were received in 2020. The majority of cases were settled and resolved amicably and were further supported by mediation or settlement between the parties.

The initiatives undertaken with regards to consumer complaints and needs have been managed in a more proactive way ensuring the accessibility and quality of subscription services through the awareness and use of tools and services mentioned herein and in which the authority has observed gradually through the use of its digital tools and services herein that helped empower consumers and increase consumer education and awareness. TRA also takes an additional step by conducting a yearly consumer experience survey to assess the level of consumer’s satisfaction with their service providers and enhance user’s experience within the telecommunications sector in the Kingdom of Bahrain.
Self-service Kiosks for sale of SIM-Cards

Following the Authority’s approval of the SIM-Card Point of Sale through Kiosks for prepaid SIM-Cards, about 90 such kiosks have been installed by the MNOs at various locations across Bahrain.

The kiosks enable the consumers of these MNOs to purchase prepaid sim-cards without waiting in long queues thereby reducing their wait time and effectively completing the registration process for purchase of prepaid SIM-Cards.

Enhanced Digital Channels for Consumers

The Authority introduced enhanced consumer portal for handling consumer complaints, focused on improving experience and data management; giving the consumers a friendlier and more intuitive interface and reducing the steps required to report a case.

With the aim of increasing the channels to reach TRA during online and offline hours and support consumers with their requests and queries, the Authority launched an AI Chatbot on the TRA’s website to provide consumers with instant feedback & communication. It also enables and connects the consumer with appropriate tools and channels to redress complaints and queries instantly.

The Authority attained significant increase in the use of the digital channels by consumers and attained more than 70% engagement for the period of 2020.
Mitigating COVID-19 Impact

The availability of high speeds and large data capacity has helped support the implementation and use of the applications necessary to perform the tasks of virtual education and remote working.

Throughout the COVID-19 pandemic the usage traffic of Bahrain’s total available internet capacity did not exceed 74%, despite the fact that data consumption increased manifolds during the period. This was largely made possible due to the increment in the Kingdom’s capacity by the operators, bringing down the usage percentage to a further efficient 59%.

The Growth of Applications Utilization by Consumers

<table>
<thead>
<tr>
<th>Application</th>
<th>Usage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaming</td>
<td>52%</td>
</tr>
<tr>
<td>Netflix</td>
<td>49%</td>
</tr>
<tr>
<td>Whatsapp</td>
<td>16%</td>
</tr>
<tr>
<td>Facebook</td>
<td>15%</td>
</tr>
<tr>
<td>Instagram</td>
<td>11%</td>
</tr>
<tr>
<td>YouTube</td>
<td>15%</td>
</tr>
</tbody>
</table>

Supporting National Initiatives in Combating COVID-19

In support of the national efforts in combating the spread of COVID-19, TRA circulated official guidelines issued by the Ministry of Health to all of the Kingdom’s telecom operators to ensure the disinfection of their facilities, in order to make sure that retail locations are safe for citizens and residents. The TRA oversaw the telecom sector’s implementation of the health guidelines and ensured that efforts were being taken to safeguard the general public.

TRA Human Resources Department also launched a Covid-19 Public Awareness campaign to contribute to a broader response that embeds TRA organization’s mission, values, and societal impact with a focus on the well-being of TRA staff, stakeholders, and the community.

The TRA HR department was one of the first entities to enforce 50% capacity in the workplace to mitigate the risk of the spread of the virus. HR issued sanitization kits, face masks, automated all doors, distributed touchless tool for employees to avoid touching shared surfaces (door handles & elevator buttons). The HR department continues to organize biweekly disinfection treatments in all TRA premises. In addition, all TRA staff are required to take PCR swab tests in times of surges in Corona cases, ever since the start of the pandemic.

Uninterrupted Internal Operations

Prior to the COVID-19 pandemic, the Authority’s I.T. Department had proactively invested in collaboration services such as: Microsoft’s Office 365 cloud services, VOIP technologies and virtual meetings. During the early days of the pandemic the internal portal ‘iTRA’ was launched, paving the way for digital signatures, reducing paper-based workflows and increasing the overall productivity of both the remote, and in-office employees. Throughout the pandemic while in compliance with the Kingdom’s direction plan, TRA systems have begun migrating to AWS, this includes: Servers (EC2), Databases (RDS), and Cloud Storage (S3).

The Human Resources Management System (HRMS) mobile application was launched by the HR department to digitalize HR practices and create a platform for TRA employees to easily complete any internal HR requirements while working remotely.

A TRA – Social Committee was also launched to engage staff members during times of social distancing. The committee provides a schedule of inclusive, evolving, enjoyable events to foster engagement among TRA staff.
A Testament of Excellence

TRA Awards & Recognition in 2020

ISO 9001:2015 Certification
by Bureau Veritas, for international best practices in quality management and excellence.

European Foundation for Quality Management “Recognized for Excellence 4 Star Level” Award
for commitment to excellence. The first organization in Bahrain to win the award.
Seef District, Kingdom of Bahrain (Tuesday), 1 September 2020

ISO 27001 certification
for Information Security Management System (ISMS) for the third consecutive year.
A Culture of Inclusiveness

Localization of Talent Pool

Local – Expat Ratio
89% Bahrainis
11% Expats
Ratio: 7.75 : 1

Ever-increasing Female Participation

Male – Female Ratio
54% Male
46% Female
Ratio: 1.19 : 1

Total Number of Employees: 70

Overview 2020
The year of innovative transformation

TRA Annual Report 2020
Bahrain Telecoms in Figures 2020

Mobile Services
- **Mobile Subscribers**: 1,748,672
  - Penetration: 119%
- **Average Int. & Domestic minute per month mobile subscription**: 245
- **Average data usage per mobile broadband subscription**: 12.8 GB
- **Mobile Postpaid Subscribers**: 554,659
  - % Of Postpaid of Mobile Market: 32%
- **Mobile Prepaid Subscribers**: 1,194,013
  - % Of Prepaid of Mobile Market: 68%
- **Mobile Postpaid Subscribers**: 554,659
- **Mobile Prepaid Subscribers**: 1,194,013

Fixed Telephony Services
- **Fixed-telephony Subscribers**: 220,435
  - Penetration: 15%
- **Domestic monthly average minutes per line**: 50
- **International outgoing minutes (mobile)**: 284,619,123
- **International outgoing minutes (Fixed-telephony)**: 956,855
- **Fixed wired telephone subscribers**: 92%
  - Fixed wireless telephone subscribers: 8%

Broadband Services
- **Total data usage**: 299 petabyte
- **Fixed broadband subscriptions**: 148,595
  - Fixed broadband penetration: 10%
- **Mobile broadband subscriptions**: 1,861,010
  - Mobile broadband penetration: 126%
- **Fixed broadband traffic**: 156 petabyte
  - Average Fixed broadband traffic per month: 351 GB
- **Mobile broadband traffic**: 142 petabyte
  - Average mobile broadband traffic per month: 26 GB
- **Average Traffic per broadband subscription per month**: 50 GB
- **Average Traffic per broadband subscription per month**: 50 GB
- **Average data usage per mobile broadband subscription**: 12.8 GB
An Upward Trend in Telecoms Services

CHAPTER 1

A Dedicated Focus on Quality of Services (QoS Initiatives)

Market Indicators – Subscriptions and Traffic

Telecom Services Price Benchmarking

“Working on a number of strategic projects, TRA continues to enhance competition in the Kingdom’s telecom market, in order to improve quality and decrease prices simultaneously for the telecom services, as well as granting more freedom of choice and better options to consumers on a regular basis. The latest market data reiterate that the regulatory framework adopted by TRA Bahrain and its competition-building initiatives continue to achieve more benefits for users.”

Sh. Nasser bin Mohamed Al Khalifa
Acting General Director, TRA
# 1-1 A Dedicated Focus on Quality of Services

A number of quality of services (QoS) initiatives were executed during 2020.

## QoS Monitoring & Reporting Framework

<table>
<thead>
<tr>
<th>QoS Fixed Probes Platform</th>
<th>QoS Drive Test</th>
<th>QoS Crowdsourcing “TRACONNECT” App</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed Test</td>
<td>Mobile &amp; Billing Audit</td>
<td>Quarterly Operations QoS Submissions</td>
</tr>
</tbody>
</table>

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An Upward Trend in Telecoms Services
Stationary Probes are deployed at 7 locations to test Fixed BB connections and Mobile services from stationary locations. Stationary Probes are also used for Ad-hoc customer complaints to measure specific consumer experiences.
Daily Drive Test

To monitor the quality of services and coverage provided by the mobile network operators (MNOs), as well as for monitoring mobile services complaints, the TRA launched a fleet of cars.

Each car was equipped with 9 handsets; to visit the Kingdom’s various regions and perform tests on a regular basis.
TRA CONNECT mobile App was launched in November 2020 with Speed test features allowing the TRA to gather data on the ISPs from complaining customers.

- The App has the latest crowdsourcing technology to allow backend ISPs gathering for customers facing issues, to monitor changes in the performance of their services.
- The App also enables availability of prominent TRA consumer services on the smartphone for user
Web Speed Test

In addition to the mobile app, the web speed test portal has been made available to users on the TRA website to test their connection performance, thus giving them the ability to make better informed decisions for PC devices.
Internet Performance Report

In light of the current situation and the growing dependence on internet services from homes, especially due to the COVID-19 pandemic, TRA requested top 3 ISPs to submit monthly updates on the traffic internet performance. Thirteen (13) submissions have been provided by the 3 top ISPs since March 26, 2020.

Growth of top OTT Applications post schools suspension (week 9)
### Annual Mobile Quality Of Service Report

TRA conducts the annual audit with the aim of evaluating and benchmarking quality levels offered by Mobile Network Operators in the Kingdom of Bahrain, Batelco, STC Bahrain and Zain from an end-user perspective, for the following set of services:

- **Voice**
- **Short Message Services (SMS)**
- **Smartphones data tests (Web surfing, HTTP file transfers)**
- **Smartphones data tests on hotspots** *(HTTP file transfers)*
- **Video streaming assessment using Smartphones**

*all operators meet their license obligations to cover at least 99% of the population*

<table>
<thead>
<tr>
<th>Service Type</th>
<th>5G</th>
<th>4G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population Coverage</strong></td>
<td><strong>99.7%</strong> of the kingdom is covered for outdoor use*</td>
<td><strong>99.9%</strong> of webpages downloaded within 10 seconds</td>
</tr>
<tr>
<td><strong>Voice Quality</strong></td>
<td><strong>98.8%</strong> of voice calls with a perfect quality rate</td>
<td><strong>84.7 Mb/s 99.2%</strong> of files downloaded with a throughput of more than 2Mbps</td>
</tr>
<tr>
<td><strong>SMS Service</strong></td>
<td><strong>99.6%</strong> of SMS received within 15 seconds</td>
<td><strong>28.5 Mb/s 94.9%</strong> of files uploaded with a throughput of more than 2Mbps</td>
</tr>
</tbody>
</table>

#### 5G Statistics
- **5G Web Browsing**: 100% of webpages downloaded within 10 seconds
- **5G Download Avg. Speed**: 440.36 Mb/s, 74.0%
- **5G Upload Avg. Speed**: 65.8 Mb/s, 96.0%

#### 4G Statistics
- **4G Web Browsing**: 99.9% of webpages downloaded within 10 seconds
- **4G Download Avg. Speed**: 84.7 Mb/s, 99.2%
- **4G Upload Avg. Speed**: 28.5 Mb/s, 94.9%

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*TRA Annual Report 2020
An Upward Trend in Telecoms Services*
Voice and Messaging Services

Voice

- The three networks offered the same excellent level of service as 2018, with an average setup and held calls rate of 99.4% with improved quality of 0.7 point.

SMS

- All networks offered very good SMS service within two minutes with 99.6% of messages received within 15 seconds.
- A new indicator, RS5 was also introduced in 2020, which is SMS received within 5 seconds.
- The average observed SMS reception delay was under 2.5 seconds, which is the best performance since 2010.

Voice Quality

- Rate of perfect quality 2 minute calls

<table>
<thead>
<tr>
<th>Network</th>
<th>2020</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>96.6%</td>
<td>94.5%</td>
</tr>
<tr>
<td>STC</td>
<td>94.1%</td>
<td>93.8%</td>
</tr>
<tr>
<td>Zain</td>
<td>96.3%</td>
<td>98.2%</td>
</tr>
</tbody>
</table>

SMS

- Rate of SMS sent and received within 15 seconds

<table>
<thead>
<tr>
<th>Network</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>99.5%</td>
<td>99.4%</td>
</tr>
<tr>
<td>STC</td>
<td>99.3%</td>
<td>99.1%</td>
</tr>
<tr>
<td>Zain</td>
<td>98.8%</td>
<td>98.8%</td>
</tr>
</tbody>
</table>

Evolution since 2010

- Voice service
- SMS

Evolution of KPIs since 2011

- % Rate of received SMS (RS15)
## Smartphone Data Measurements

### 5G Handset Data Transfers Throughputs (Mb/s)

<table>
<thead>
<tr>
<th></th>
<th>Download</th>
<th>Upload</th>
<th>Web Browsing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>640.3 Mb/s</td>
<td>75.5 Mb/s</td>
<td>2.4 sec</td>
</tr>
<tr>
<td>STC</td>
<td>667 Mb/s</td>
<td>73.4 Mb/s</td>
<td>1.9 sec</td>
</tr>
<tr>
<td>Zain</td>
<td>458 Mb/s</td>
<td>46.6 Mb/s</td>
<td>1.8 sec</td>
</tr>
</tbody>
</table>

### 4G Handset Data Transfers Throughputs (Mb/s)

<table>
<thead>
<tr>
<th></th>
<th>Download</th>
<th>Upload</th>
<th>Web Browsing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>133.9 Mb/s</td>
<td>34.1 Mb/s</td>
<td>3.1 sec</td>
</tr>
<tr>
<td>STC</td>
<td>12.5 Mb/s</td>
<td>33.5 Mb/s</td>
<td>3.7 sec</td>
</tr>
<tr>
<td>Zain</td>
<td>75.5 Mb/s</td>
<td>18.1 Mb/s</td>
<td>3.1 sec</td>
</tr>
</tbody>
</table>

### 3G Handset Data Transfers Throughputs (Mb/s)

<table>
<thead>
<tr>
<th></th>
<th>Download</th>
<th>Upload</th>
<th>Web Browsing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>12.5 Mb/s</td>
<td>2.1 Mb/s</td>
<td>1.8 sec</td>
</tr>
<tr>
<td>STC</td>
<td>7.1 Mb/s</td>
<td>2.8 Mb/s</td>
<td>4 sec</td>
</tr>
<tr>
<td>Zain</td>
<td>53.5 Mb/s</td>
<td>3.1 Mb/s</td>
<td>4.2 sec</td>
</tr>
</tbody>
</table>

### Average throughput evolution in Mbps

- **5G**: 829 Mbps in 2019 increasing to 640 Mbps in 2020
- **4G**: 62 Mbps in 2014 increasing to 65 Mbps in 2020

### Web Browsing % successful sessions

- **5G**: 100% in 2020 for the three Mobile Operators.

### Average delay by webpage

- **5G**: 2.4 sec, 2.6 sec, 2.2 sec
- **4G**: 3.1 sec, 2.0 sec, 2.2 sec
- **3G**: 3.7 sec, 4 sec, 3.7 sec

### An Upward Trend in Telecoms Services

5G Web browsing is only conducted in 2020 for the three Mobile Operators.
Broadband Performances

Operators have deployed Enhanced Technologies (ET) at certain areas in Bahrain to reach much higher speeds; the average throughput on Enhanced Technologies cell sites was more than twice higher than in random locations.

5G Handset

2020 5G measurements include the three Mobile Operators, BATELCO, STC and ZAIN. Comparing to 2019, where only BATELCO and STC had been measured.

### HTTP DL (Mbps)

<table>
<thead>
<tr>
<th>Year</th>
<th>ET Cell Sites</th>
<th>Random Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>332</td>
<td>169</td>
</tr>
<tr>
<td>2021</td>
<td>903</td>
<td>533</td>
</tr>
</tbody>
</table>

### HTTP UL (Mbps)

<table>
<thead>
<tr>
<th>Year</th>
<th>ET Cell Sites</th>
<th>Random Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>66</td>
<td>33</td>
</tr>
<tr>
<td>2021</td>
<td>207</td>
<td>113</td>
</tr>
</tbody>
</table>

4G Handset

### HTTP DL (Mbps)

<table>
<thead>
<tr>
<th>Year</th>
<th>ET Cell Sites</th>
<th>Random Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>62</td>
<td>36</td>
</tr>
<tr>
<td>2020</td>
<td>238</td>
<td>451</td>
</tr>
</tbody>
</table>

### HTTP UL (Mbps)

<table>
<thead>
<tr>
<th>Year</th>
<th>ET Cell Sites</th>
<th>Random Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>43</td>
<td>75</td>
</tr>
<tr>
<td>2020</td>
<td>43</td>
<td>70</td>
</tr>
<tr>
<td>2021</td>
<td>27</td>
<td>66</td>
</tr>
</tbody>
</table>
### International Benchmark to Reference Operators

**Voice Quality**
Rate of successful calls set up

<table>
<thead>
<tr>
<th></th>
<th>Bahrain 2020</th>
<th>Bahrain 2019</th>
<th>France 2020</th>
<th>Morocco 2020</th>
<th>UAE 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Rate</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SMS Service**
Rate of SMS received within 10 seconds

<table>
<thead>
<tr>
<th></th>
<th>Bahrain 2020</th>
<th>Bahrain 2019</th>
<th>France 2020</th>
<th>Morocco 2020</th>
<th>UAE 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success Rate</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
<td>99.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4G Handset

**HTTP DL Throughput (Mbps)**

<table>
<thead>
<tr>
<th></th>
<th>Bahrain 2020</th>
<th>Bahrain 2019</th>
<th>France 2020</th>
<th>Morocco 2020</th>
<th>UAE 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughput</td>
<td>84.7</td>
<td>80.8</td>
<td>66</td>
<td>15</td>
<td>14.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL Throughput</td>
<td>27.1</td>
<td>15</td>
<td>14.8</td>
<td>24.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 5G Handset

**HTTP DL Throughput (Mbps)**

<table>
<thead>
<tr>
<th></th>
<th>Bahrain 2020</th>
<th>Bahrain 2019</th>
<th>France 2020</th>
<th>Morocco 2020</th>
<th>UAE 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughput</td>
<td>440.6</td>
<td></td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- Results for Bahrain are the average combined results achieved by the 3 Mobile Operators.
- 5G in France is commercially open since end of 2020 and no official audit has been performed on 5G networks. These results come from Operators’ tests and are subject to variations in time.
- Saudi data is provided by the licensees and not gathered on the field and so may be more optimistic than TRA’s approach.
**Annual International Capacity Report**

Assessing the overall status of the telecommunications connectivity between the Kingdom and the rest of the world.

**International Capacity**

- **1,879 Gbps** 28% increase
  - International available capacity

- **976 Gbps** 21% increase
  - International provisioned capacity

- **726 Gbps** 12% increase
  - International used capacity

- **39% in 2020** compared to 44% in 2019
  - Available capacity used

- **54% in 2020** compared to 63% in 2019
  - Provisioned capacity through the West

- **80% owned by BTC**
  - Available capacity ownership

- **BTC 68% | STC 20%**
  - Provisioned capacity ownership

**Internet Protocol Telephony (IPT)**

- **330 Gbps in 2020** compared to **239 Gbps in 2019** 38% increase
  - IPT available capacity

- **STC 43% 141 Gbps**
- **BTC 39% 130 Gbps**
  - IPT ownership

- **78% Of IPT towards West**
- **89% excluding BTC**

- Other smaller licensed operators obtain their IPT from Bahrain OLOs
The TRA closely monitors critical KPIs related to the various services throughout the year to ensure fair competition in the markets and these work well for the benefit of consumers.

Market Indicators

Subscriptions and Traffic

An Upward Trend in Telecoms Services
Mobile Services

Mobile subscribers reached 1.749 Million in 2020, with a penetration rate of 119%.

### Mobile Number Portability Summary

| Month | Porting Requests | Accepted | Rejected | Dropped
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2020</td>
<td>1,647</td>
<td>1,310</td>
<td>186</td>
<td>141</td>
</tr>
<tr>
<td>Feb 2020</td>
<td>1,297</td>
<td>970</td>
<td>180</td>
<td>11</td>
</tr>
<tr>
<td>Mar 2020</td>
<td>1,206</td>
<td>951</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>Apr 2020</td>
<td>1,147</td>
<td>915</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>May 2020</td>
<td>1,187</td>
<td>958</td>
<td>150</td>
<td>18</td>
</tr>
<tr>
<td>Jun 2020</td>
<td>1,206</td>
<td>951</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>Jul 2020</td>
<td>1,147</td>
<td>915</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>Aug 2020</td>
<td>1,187</td>
<td>958</td>
<td>150</td>
<td>18</td>
</tr>
<tr>
<td>Sep 2020</td>
<td>1,206</td>
<td>951</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>Oct 2020</td>
<td>1,147</td>
<td>915</td>
<td>128</td>
<td>19</td>
</tr>
<tr>
<td>Nov 2020</td>
<td>1,386</td>
<td>1,128</td>
<td>258</td>
<td>6</td>
</tr>
<tr>
<td>Dec 2020</td>
<td>1,291</td>
<td>1,072</td>
<td>186</td>
<td>56</td>
</tr>
</tbody>
</table>

*graph sources: 2020 Market Indicators Report – Q4, ICT End of Year Report*

### Mobile Number Portability

- 15,058 porting requests compared to 15,675 porting requests in 2019, with an average of 1,255 per month.
- A total of 12,455 mobile porting requests were accepted in 2020.
- The average porting time for subscribers to successfully transfer their number to a new mobile operator was 26 minutes.

### Total outgoing traffic

- Total outgoing traffic (Domestic + International) in minutes:
  - Jan 2020: 1,240,807,111
  - Feb 2020: 1,280,768,814

- Total outgoing mobile voice traffic (Domestic + International):
  - Jan 2020: 1,245,476
  - Feb 2020: 1,205,477
The total number of fixed telephony subscriptions reached 220,435 in 2020, with a penetration rate of 15%. The total fixed line domestic and international outgoing traffic reached 33.91 million in 2020, with the monthly average per subscription reaching 50 minutes.

### Fixed Telephony Services (PSTN & Wireless)

The total number of fixed telephony subscriptions reached 220,435 in 2020, with a penetration rate of 15%.

#### Number of fixed lines

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Wired</td>
<td>178</td>
<td>178</td>
<td>180</td>
<td>180</td>
<td>191</td>
<td>199</td>
<td>203</td>
<td>206</td>
<td>210</td>
<td>198</td>
<td>220</td>
<td>263</td>
<td>242</td>
<td>234</td>
<td>237</td>
<td>226</td>
</tr>
<tr>
<td>Fixed Wireless</td>
<td>66</td>
<td>58</td>
<td>60</td>
<td>61</td>
<td>61</td>
<td>63</td>
<td>69</td>
<td>71</td>
<td>67</td>
<td>65</td>
<td>85</td>
<td>115</td>
<td>124</td>
<td>128</td>
<td>129</td>
<td>120</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>236</td>
<td>240</td>
<td>241</td>
<td>252</td>
<td>262</td>
<td>272</td>
<td>277</td>
<td>278</td>
<td>263</td>
<td>305</td>
<td>378</td>
<td>366</td>
<td>362</td>
<td>366</td>
<td>346</td>
</tr>
</tbody>
</table>

#### Fixed Number Portability

- **Year 2020** featured 7,712 porting requests compared to 8,644 requests in 2019, with an average of 642 per month. This was a decrease of 10% from the previous year.
- A total of 2,052 fixed-number porting requests were accepted in 2020.
- The average porting time for subscribers to successfully transfer their number to a new fixed operator was 188 minutes.

#### Fixed Number Portability Summary

- **Accepted:** 64%
- **Rejected:** 24%
- **No response:** 9%
- **Others:** 9%

#### Fixed line Domestic and international outgoing Traffic

The total fixed line domestic and international outgoing traffic reached 33.91 million in 2020, with the monthly average per subscription reaching 50 minutes. The average porting time for subscribers to successfully transfer their number to a new fixed operator was 188 minutes.

*Graph sources: 2020 Market Indicators Report – Q4, ICT End of Year Report*
Total number of broadband subscriptions reached 2.009 million in 2020, with a penetration rate of 137%
Machine to Machine (M2M)

M2M subscribers (Thousands)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Zain</th>
<th>STC</th>
<th>BATELCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2019</td>
<td>49</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Q2 2019</td>
<td>46</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>Q3 2019</td>
<td>49</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Q4 2019</td>
<td>49</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>134</td>
<td>41</td>
</tr>
</tbody>
</table>

The total M2M subscribers reached 308,000 in 2020, with the total M2M traffic reaching 18 Terabytes by Q4 2020.

Domain Names

Total Number of Domain Names by suffix

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>.bh</td>
<td>2855</td>
</tr>
<tr>
<td>.com.bh</td>
<td>2713</td>
</tr>
<tr>
<td>.arg.bh</td>
<td>379</td>
</tr>
<tr>
<td>.net.bh</td>
<td>356</td>
</tr>
<tr>
<td>.edu.bh</td>
<td>66</td>
</tr>
<tr>
<td>.biz.bh</td>
<td>14</td>
</tr>
<tr>
<td>.info.bh</td>
<td>13</td>
</tr>
<tr>
<td>.cc.bh</td>
<td>3</td>
</tr>
<tr>
<td>.co.bh</td>
<td>1</td>
</tr>
</tbody>
</table>

Number of Registered Domain Names in 2020

- .bh: 2855
- .com.bh: 2713
- .arg.bh: 379
- .net.bh: 356
- .edu.bh: 66
- .biz.bh: 14
- .info.bh: 13
- .cc.bh: 3
- .co.bh: 1

*Graph sources: 2020 Market Indicators Report – Q4, ICT End of Year Report

TRA Annual Report 2020
1-3 Telecom Services Price Benchmarking

Compared to GCC averages, the cost of telecoms services in Bahrain are typically below or on par with the GCC average. Similarly, telecoms costs in Bahrain are typically below or on par with the Arab average.

### Fixed Broadband Prices in Bahrain are Lowest Regionally

- **Fixed Broadband average prices in 2020**
  - Bahrain: 76
  - GCC: 106
  - Arab: 119

- **Average Fixed Broadband Prices in Bahrain are 39% lower than GCC**

- **Fixed Broadband Drop in price**
  - Bahrain: 56%
  - GCC: 85%

- **Fixed Broadband Data Usage**
  - Bahrain: 88%
  - GCC: 64%

- **Fixed Broadband Subscriptions (2016-2020)**
  - Bahrain: 85%
  - GCC: 75%

- **Mobile Subscriptions (2016-2020)**
  - Bahrain: 35
  - GCC: -59

### Bahrain results compared to GCC averages
- Fixed Voice (low usage)
- Fixed Voice (high usage)
- Mobile (low data)
- Mobile (high data)
- Fixed Broadband (low speed)
- Fixed Broadband (high speed)
- Mobile Broadband (low usage)
- Mobile Broadband (high usage)

### Bahrain results compared to Arab averages
- Fixed Voice (low usage)
- Fixed Voice (high usage)
- Mobile (low data)
- Mobile (high data)
- Fixed Broadband (low speed)
- Fixed Broadband (high speed)
- Mobile Broadband (low usage)
- Mobile Broadband (high usage)

### Bahrain results compared to OECD averages
- Fixed Voice (low usage)
- Fixed Voice (high usage)
- Mobile (low data)
- Mobile (high data)
- Fixed Broadband (low speed)
- Fixed Broadband (high speed)
- Mobile Broadband (low usage)
- Mobile Broadband (high usage)

An Upward Trend in Telecoms Services

TRA Annual Report 2020
OECD (Organization for Economic Cooperation and Development) Fixed Voice Basket Time Series for Bahrain

• Fixed voice pricing in Bahrain was broadly static over the period 2016 to 2018 for most users. This is a typical trend with fixed voice in many countries.
• For business baskets, prices have remained static.

OECD Mobile Voice and Data Basket Time Series for Bahrain

• Prices were much more stable over 2020, with no or limited increases. Most changes were small adjustments to prepaid packages.
• For the low data baskets, it was the 300 calls + 1GB basket that saw the biggest increase – just over 9%, while the other two baskets saw either no or only very small changes.
• A similar trend was observed for the high data basket, with the increase being seen for 300 calls + 5GB, again at just over 9%.
OECD Fixed Broadband Time Series for Bahrain

- Since 2016, higher speed residential fixed broadband prices in Bahrain have generally fallen, while lower speed prices have either increased or remained flat. This is a typical trend, and one which was observed over 2020 as well.
- The lowest speed business fixed broadband prices in Bahrain have remained generally static over time. The only change to business pricing from 2019 to 2020 was the introduction of pricing for the high speed, >= 100 Mb/s basket.

OECD Mobile Broadband Time Series for Bahrain

- There were limited changes to mobile broadband pricing since 2019 that impacted the basket costs. Residential pricing increased slightly across all baskets, driven by increases in connection charges.
- For business services, pricing also remained static, with no change over the past year that had an impact on the basket costs. This is a typical picture in many countries, where mobile broadband prices rarely change.

*Graph source: Bahrain Telecom Pricing International Benchmarking Report 2020*
CHAPTER 2

Ever-improving Consumer Experience

2-1 Building Smart Surfers through Awareness
Ever Improving Consumer Experience

“TRA is constantly making significant progress towards protecting consumers in the telecommunications sector by implementing and improving its regulations and enhancing its consumer-related systems to maintain effective communication between TRA, consumers and the telecommunications service providers, and improve the level of services provided to them, as well as expanding the scope of knowledge through cooperation with various entities.”

Sh. Abdulla bin Humood Al Khalifa
Director of Consumer Affairs and Media, TRA

The TRA call center has received over 44,000 calls since its formation in 2014, with an average of 94.02% success rate of responses to the calls.

Consumers were fairly satisfied with TRA’s role in 2020

The corporate sector also witnessed improved satisfaction with respect to TRA’s role in comparison to 2019

The awareness among consumers about the provision of submitting complaints on the TRA website increased by 16% to 72% in 2020, compared to 56% in 2019.

2020 Complaint Statistics

Complaint Categories

- Broadband Services: 932 complaints (61.7%)
- Mobile Services: 353 complaints (41%)
- Fixed line Services: 220 complaints (15.5%)
- Others: 10 complaints (3.8%)

A significant increase in the number of complaints substantiates the increasing consumer awareness, confirming the efficacy of TRA’s communication efforts.

121% increase in number of reported complaints since 2018

The TRA Annual Report 2020
Encouraging active community participation in the telecommunication sector, and creating awareness regarding key telecom areas, especially cybersecurity, TRA launched a number of initiatives throughout the year in line with its SafeSurf Initiative, aimed at promoting awareness in the field of cyber safety and innovation. The most notable were the digital threats and the online learning campaigns, along with the cyber safety award and the online workshop in collaboration with Google, encouraging students to achieve a safe cyber culture in a creative manner.

Cyber Safety Award
Aiming to encourage members of the society to create awareness content in the field of cyber safety and promote national creativity, the award seeks to promote awareness about safe cyber practices and internet safety among the Kingdom’s internet users.

Online Learning Campaign
With schools having shifted to virtual learning mode, owing the current COVID-19 pandemic, SafeSurf introduced a campaign highlighting tips to follow when using online platforms during distance learning, while also introducing many features to be used during distance learning, most importantly adjusting children’s privacy setting on different platforms.

Smartphone Safety Awareness
SafeSurf participated in the Mother & Child Exhibition held at Bahrain Exhibitions & Conventions Center. With more than 20 participants from different government and private sectors, SafeSurf promoted “smartphone safety” during its participation to ensure that parents, kids, and schools across the Kingdom of Bahrain can safely and securely use communication devices and applications. The exhibition has been held with over 10,000 attendees.

Virtual Workshops about Online Safety for Educational Institutions in Collaboration with Google
Under its SafeSurf initiative, the TRA, in cooperation with Google, held an interactive workshop for school representatives across the Kingdom nominated by the Ministry of Education. This workshop aimed to spread awareness and support digital safety education by discussing the latest National Internet Safety Review study conducted by TRA in 2020 as well as introducing Google’s “Abtal Al Internet” program. Through this program, the educators were introduced and trained to use the program’s curriculum designed to educate and equip children with the required skills to use the internet safely and are then accredited by Google as a certified “Abtal Al Internet” trainer.

ABTAL AL INTERNET, Google certification program for internet educators
Enhanced Digital Channels for Consumers

The Authority introduced an enhanced consumer portal for handling consumer complaints, focused on improving experience and data management; giving the consumers a more friendly and intuitive interface and reducing the steps required to report a case.

With the aim of increasing the channels to reach TRA during online and offline hours and support consumers with their requests and queries, the Authority launched AI Chatbot on the TRA’s website to provide consumers with instant feedback & communication. It also enables and connects the consumer with appropriate tools and channels to redress complaints and queries instantly.

The Authority attained significant increase in the use of the digital channels by consumers and attained more than 70% engagement for the period of 2020.
CHAPTER 3
Advancing Telecoms Infrastructure and Security

3-1 Advancing
3-2 Protecting
3-3 Setting the Stage for a Digital Future
“TRA will continue its efforts to strengthen its telecommunications security in the interest of providing a safe and effective IT environment in the Kingdom of Bahrain. Throughout the year, TRA focused on executing several critical initiatives that would set its mission to promote a secure and trusted cyber environment that supports Bahrain’s national security and economic well-being, through a stronger, ever-evolving telecommunications infrastructure.”

Eng. Mohamed Abdulla Alnoaimi
Director of Technical & Operations and Acting Director of Cybersecurity, TRA
Advancing New PRS Rectification Plan

The Authority successfully issued the modified PRS Rectification plan with a significant cost reduction in the PRS rectification. This cost reduction (around 68%) will minimize the financial impact on the Mobile Network Operators.

<table>
<thead>
<tr>
<th></th>
<th>Physical</th>
<th>Paperwork</th>
<th>Cost (BH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Rectification plan</td>
<td>1286</td>
<td>203</td>
<td>50 millions</td>
</tr>
<tr>
<td>Updated Rectification plan</td>
<td>325</td>
<td>1164</td>
<td>16.2 millions</td>
</tr>
</tbody>
</table>

**68% Cost Reduction**

Issuance of the In-Building Telecom Access Facilities Guideline

The Guideline will be included in the Municipality Unified Guidelines, and is to be followed by the real estate developers to ensure the provision of telecommunications infrastructure within new buildings and development projects.

Separated Electricity Meters for PRS

For PRS located inside the premises of private houses, the Authority proposed installation of dedicated meters to power the PRS, that are separate from the main meters of properties, to address the issue of deployment, rectification and upgrading of such PRS due to joint electricity meters (of PRS and the host properties).
Approval to use the Dimensional certificates as an alternative to title deeds for telecom plots located in new housing projects

The approval has facilitated deployment of new PRS in new housing projects in Salman city, Khalifa city, East Hidd and Ramli District where deployment was not possible due to the land registration process.

Total of 47 Legacy PRS Rectified in 2020

<table>
<thead>
<tr>
<th>Operator</th>
<th>PRS Rectified in 2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batelco</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>STC</td>
<td>16</td>
<td>72</td>
</tr>
<tr>
<td>Zain</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>114</td>
</tr>
</tbody>
</table>

Modified 27  Removed 20  Remaining 59

TRA Annual Report 2020
Advancing Telecoms Infrastructure and Security
Key Performance Indicators

PRS Applications

Temporary, Wall Mounts & Small Scale PRS
211 Applications were processed in 2020 with average processing time 7.1 days (Internal KPI 10 days, official KPI 19 days).

Camouflaged, Monopole & Lattice PRS
58 Applications for macro sites were processed in 2020 with average processing time 33.4 days (KPI 44 days).
Infrastructure Wayleaves

Total of 9723 wayleaves were processed in 2020 with average processing time 3.6 days (Internal KPI 5 days, official KPI 7 days).

Utilities Consultation Applications

Total of 714 CPO consultations were processed in 2020 with average processing time 8.1 days (Internal KPI 13 days, official KPI 30 days).
Spectrum Revenues

SMD team collected BHD 13.2 million from different streams. Spectrum usage right fees contributed to approximately 45% of this amount. 30% were collected from the Fixed Links Frequency Licence Fees. The remaining amount is divided between Annual Spectrum Fees, Type Approval Certificates, No Objection Certificates and Interference Investigations.

Signal Measurements of Telecom Networks

Acquisition of New EMF Measurement Device – SRM-3006

The SRM-3006 device has significantly reduced the time spent by the Spectrum Management Department (SMD) when performing safety measurements in the field as SRM can provide (actual, max, min, average) readings in each single measurement. SRM reading range is wide (up to 140 V/m) and report generation is instantaneous. Moreover, the training provided by the device manufacturer enabled SMD team to see and test SRM’s special features like (calculating the summation of total exposure, creating special scripts depending on the user requirement).

EMF Measurements: were conducted across all Bahrain covering 1500 base stations (IBS included) per year. The highest reading captured was 74% below the threshold while the average is 92% below the threshold.
Acquisition of 5G Scanning Device

Besides the (2G, 3G and 4G) spectrum scanning, 5G has been added by purchasing the new scanner (R&S 5G scanner).

Such scanner will enable SMD to scan the spectrum granted to the MNO’s assuring that there are no interference signals caused by neighboring countries or operator-to-operator/unauthorized devices in Bahrain. Moreover, having this device help TRA to study and analyze the adequate threshold to be set in the cross-border agreements. The provided training sessions equipped SMD members with the adequate knowledge to perform spectrum scanning measurements (the equipment usage, features, creating workspace and analyzing the results).

Spillover

Spill-over tests are conducted in the Bahrain border areas to ensure that signals from the networks of the neighboring countries are in compliance with the agreed thresholds. Such measurements service the interest of both the service provider and the end user.
No Objection Certificates (NOC)

Taking the initiative to reduce the customs clearing burden on importers, TRA white-listed and removed the NOC requirements on the importation of smart gadgets from 5 well-known manufacturers. The average processing time per application has reduced from 1.16 days in 2019 to 0.08 days in 2020.

Type Approval of Telecom Equipment

Enhancing the reporting of the approved equipment list, TRA’s Spectrum Management Department added new information for readers, enabling them to know about the telecom equipment that have restricted usage (i.e. for operators only). The average processing time per application reduced from 3 days in 2019 to 0.8 days in 2020.

Fixed Links Processing

The average processing time for the applications reduced from 3.07 working days in 2019 to 1.3 working days in 2020 (Feb-Nov). In January, SMD processed approximately 300 links from stc. During December, SMD in cooperation with another directorate managed to process 286 links, noting that the average number of links during Feb-Nov was 72 only.

International Coordination

TDD Synchronization with KSA (International Coordination)

Through extensive coordination with CITC, TRA in cooperation with MNOs in Bahrain successfully managed to bring consensus to the frame structure settings of the TDD networks in Bahrain and KSA that are operating in the 2600 & 3500 MHz band which provide both 4G & 5G services. Such settings and measures have considered the co-existence of 4G & 5G networks, and contributed to the reduction of the interference between the networks of both countries.

Registration of MNOs BTSs in ITU Database

The exercise, conducted by the SMD in coordination with Directorate of Wireless Licensing, Frequency, & Monitoring (DWM) aimed at protecting Bahrain’s rights in the usage of certain frequencies to help in addressing cross border interference complaints. The database in ITU’s master frequency registry was updated end of March 2020.
3-2 Protecting

The Cyber Security Directorate (CSD) of the TRA also implemented several key initiatives during 2020, to safeguard critical telecommunications infrastructure of the Kingdom.

Study on IoT Security
Understanding the challenges and given the changing pace and technological developments, the Authority conducted a study to identify the technical, security and regulatory challenges of IoT with a proactive approach, and offered recommendations and options to meet future demands, in line with the global trends and international best practices.

The study addressed key aspects of IoT which were grouped into four pillars of the regulatory domains:
1. Infrastructure and Technologies
2. Devices and Ecosystems
3. Technical Aspects
4. Security and Data Privacy

Implementation of Critical Telecommunications Regulation
CTI Risk Management Regulation has been successfully implemented with majority of the telecom licensees complying with their obligations within the regulation. The Regulation is enforced across all the relevant licensees (IMTL and IFL Holders) in the sector.

Feasibility Study on the implementation of SIEM within the Telecom Sector
TRA carried out a comprehensive study to charter out a feasible operating and deployment model (including technology, tools, processes, and resources) to implement a Central Security Information and Event Management System (“SIEM”) in the telecom sector for real-time detection and alertness to cyber-attacks, threats and data breaches etc. of the Kingdom of Bahrain.

An approach and plan were also provided to implement cyber essentials and good security practices in the telecom sector such as running an effective penetration testing and vulnerability assessment program, conducting cybersecurity drills, providing situational awareness, investigating advanced types of cyber security attacks.

Self-service Kiosks for sale of SIM-Cards
Following the Authority’s approval of the SIM-Card Point of Sale through Kiosks for prepaid SIM-Cards, about 90 self-service kiosks have been installed by the MNOs at various locations across Bahrain.

The kiosks would enable the consumers of these MNOs to purchase prepaid sim-cards without waiting in long queues thereby reducing their wait time and effectively completing the registration process for purchase of prepaid SIM-Cards.

Study on Mobile Threats
The Authority conducted a study on mobile threats that intended to help key stakeholders understand the presence and potential impact of a range of mobile threats on Telecom Service Providers, end-users, and other relevant stakeholders in the Kingdom of Bahrain.

As part of this initiative, an assessment of the current mobile threats in Bahrain was carried out followed by benchmarking the results against other leading practices from around the world. This included reviewing 42 global threats in consultation with the telecom and other critical sectors. In doing so, 11 focused threats were identified as relevant to the current situation in Bahrain based on high, elevated, or moderate risk ratings.

The outcomes resulting from the study are intended to be used to understand the risk levels associated with each mobile threat in Bahrain and derive an action plan that consists of, both, short-term and long-term goals.

Sector wide Critical Telecommunication Infrastructure Asset Inventory established by the Authority.

Audit conducted on the IMTL Holders. All the risk areas were successfully captured and a detailed plan has been established to mitigate all the risks.
3-3

Setting the Stage for a Digital Future

In tandem with the Kingdom’s vision to make the private sector the primary driver of economic growth and develop a robust knowledge-based economy, TRA actively collaborated with regional and international regulatory bodies in the sector to make progress on development of the ICT sector in terms of innovation and sustainability, including 5G Networks, IoT, and Artificial Intelligence and Machine Learning, among others in an endless chain of futuristic ICT Innovations.

TRA Annual Report 2020

Advancing Telecoms Infrastructure and Security

ARAB ICT FORUM 2020

• Delineating the Relevance of 5G & IoT
  SAMENA Convergence to Bahrain 2020 Conference

• Harnessing 5G Across Industries for Investment Revival
  Samena Leaders’ Summit 2020, Dubai UAE

• Unlocking the ICT Potential
  Arab ICT Forum 2020
Appendix

Financial Statements

- Board of Directors’ Report
- Independent Auditors’ Report To The Board Of Directors'
- Statement of Cash Flows
- Statement of Financial Position
- Statement of Income and Expenses
Telecommunications Regulatory Authority

Financial Statements
31 December 2020

Registered office
5th Floor, Building 852
Road 3628, Seef 436
P.O. Box 10353
Manama, Kingdom of Bahrain

Board of Directors
Eng. Mariam Ahmed Jamaan, Chairperson
Brigadier General, Eng. Mohammed Abdullatif Al-Mahmoud
Khalid Ibrahim Humaidan
Shaikh Salman bin Mohammad Al Khalifa
Amal Ahmed Al-Abbasi

Acting General Director
Shaikh Nasser Bin Mohamed Al Khalifa

Director of Finance, Information Technology & Human Resources
Shaikh Mohamed Bin Salman Al Khalifa

Bankers
Bank of Bahrain and Kuwait
Khaleej Commercial Bank
Al Salam Bank
GFH Financial Group
Bahrain Development Bank

Auditors
KPMG Fakhro, Bahrain
The Board of Directors present their Annual Report and Financial Statements of Telecommunications Regulatory Authority (the "Authority") for the year ended December 31, 2020.

Principal Activity
The Authority is an independent body and its duties and powers include, among other matters, protecting the interests of subscribers and users and promoting effective and fair competition among existing and newly licensed operators in the telecommunications sector in the Kingdom of Bahrain.

Review Of Operations
The results for the year are set out on page 5 of these financial statements.

Transfer Of Surplus
The movement of surplus and transfers to the Ministry of Finance and National Economy are shown on page 6 of these financial statements.

Auditors
A resolution proposing the re-appointment of KPMG Fakhro as auditors of the Authority for the year ending December 31, 2021 and authorising the Directors to fix their remuneration which will be put to the Authority’s Board of Directors’ Meeting.

On behalf of the Board

Eng. Mariam Ahmed Jamaan
Chairperson

Shaikh Nasser Bin Mohamed Al Khalifa
Acting General Director

4 April 2021
Independent Auditors’ Report To The Board Of Directors’ Of
Telecommunications Regulatory Authority
Manama
Kingdom of Bahrain

Financial Statements
31 December 2020

TRA Annual Report 2020

Report on the audit of the financial statements

Opinion
We have audited the financial statements of Telecommunications Regulatory Authority (the “Authority”), which comprise the statement of financial position as at 31 December 2020, the statements of income and expenses, accumulated surplus and cash flows for the year then ended, and notes, comprising significant accounting policies and other explanatory information.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Authority as at 31 December 2020, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRS).

Basis for opinion
We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditors’ responsibilities for the audit of the financial statements section of our report. We are independent of the Authority in accordance with the International Ethics Standards Board for Accountants International Code of Ethics for Professional Accountants (including International Independence Standards (IESBA Code), together with the ethical requirements that are relevant to our audit of the financial statements in the Kingdom of Bahrain, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information
The board of directors is responsible for the other information. The other information obtained at the date of this auditors’ report is the Board of Directors’ report set out on page 3.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion in respect of the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed on the other information obtained prior to the date of this auditors’ report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the board of directors for the financial statements
The board of directors is responsible for the preparation and fair presentation of the financial statements in accordance with IFRS, and for such internal control as the board of directors determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the board of directors is responsible for assessing the Authority’s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the board of directors either intends to liquidate the Authority or to cease operations, or has no realistic alternative but to do so.

Auditors’ responsibilities for the audit of the financial statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors’ report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of our audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

• Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
• Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority’s internal control.
• Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors.
• Conclude on the appropriateness of the Board of Directors’ use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors’ report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors’ report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
• Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the board of directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

4 April 2021

KPMG Fakhra
Partner registration number 137

KPMG

### STATEMENT OF FINANCIAL POSITION

as at 31 December 2020

<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-current assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property and equipment</td>
<td>1,097,910</td>
<td>1,349,450</td>
</tr>
<tr>
<td>Total non-current assets</td>
<td>1,097,910</td>
<td>1,349,450</td>
</tr>
<tr>
<td>Current assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade and other receivables</td>
<td>917,130</td>
<td>2,645,151</td>
</tr>
<tr>
<td>Cash and bank balances</td>
<td>28,686,457</td>
<td>28,926,283</td>
</tr>
<tr>
<td>Total current assets</td>
<td>29,603,587</td>
<td>31,571,434</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>30,701,497</td>
<td>32,920,884</td>
</tr>
</tbody>
</table>

| **ACCUMULATED FUNDS AND LIABILITIES** | | |
| Accumulated Funds | | |
| Accumulated surplus | 11,091,353 | 13,553,692 |
| Total accumulated funds | 11,091,353 | 13,553,692 |
| **Non-current liabilities** | | |
| Employee end of service liabilities | 31,484 | 24,494 |
| Lease liabilities | 561,196 | 825,376 |
| Deferred income | 13,234,688 | 11,392,037 |
| Total non-current liabilities | 13,827,368 | 12,241,307 |
| **Current liabilities** | | |
| Deferred income | 3,891,651 | 5,483,239 |
| Lease liabilities | 264,180 | 251,323 |
| Trade and other payables | 1,626,945 | 1,390,723 |
| Total current liabilities | 5,782,776 | 7,125,285 |
| **Total liabilities** | 19,610,144 | 19,367,192 |
| **Total accumulated funds and liabilities** | 30,701,497 | 32,920,884 |

The financial statements consisting of pages 4 to 24 were approved by the Board of Directors on 4 April 2021 and signed on its behalf by:

Eng. Mariam Ahmed Jamaan  
Chairperson

Shaikh Nasser Bin Mohamed Al Khalifa  
Acting General Director

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### STATEMENT OF INCOME AND EXPENSES

for the year ended 31 December 2020

<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>License fees</td>
<td>3,988,199</td>
<td>3,499,157</td>
</tr>
<tr>
<td>Frequency and spectrum fees</td>
<td>8,071,787</td>
<td>10,201,489</td>
</tr>
<tr>
<td>Numbering fees</td>
<td>1,075,310</td>
<td>1,064,288</td>
</tr>
<tr>
<td>Other regulatory income</td>
<td>2,535,082</td>
<td>2,265,294</td>
</tr>
<tr>
<td>Interest income</td>
<td>785,602</td>
<td>768,923</td>
</tr>
<tr>
<td>Other income</td>
<td>223,100</td>
<td>375,585</td>
</tr>
<tr>
<td><strong>Total income</strong></td>
<td>16,679,100</td>
<td>18,174,653</td>
</tr>
<tr>
<td><strong>EXPENSES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff costs</td>
<td>(2,173,785)</td>
<td>(2,138,871)</td>
</tr>
<tr>
<td>General and administrative expenses</td>
<td>(1,334,326)</td>
<td>(817,453)</td>
</tr>
<tr>
<td>Consultancy and legal fees</td>
<td>(1,404,756)</td>
<td>(1,669,231)</td>
</tr>
<tr>
<td>Advertising and publicity</td>
<td>(120,384)</td>
<td>(120,395)</td>
</tr>
<tr>
<td>Lease interest expense</td>
<td>(506,369)</td>
<td>(665,448)</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td>(5,587,747)</td>
<td>(5,471,758)</td>
</tr>
<tr>
<td><strong>Surplus for the year</strong></td>
<td>11,091,353</td>
<td>12,702,895</td>
</tr>
<tr>
<td><strong>Other comprehensive income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total surplus for the year</strong></td>
<td>11,091,353</td>
<td>12,702,895</td>
</tr>
</tbody>
</table>

The financial statements consisting of pages 4 to 24 were approved by the Board of Directors on 4 April 2021 and signed on its behalf by:

Eng. Mariam Ahmed Jamaan  
Chairperson

Shaikh Nasser Bin Mohamed Al Khalifa  
Acting General Director

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### STATEMENT OF CASH FLOWS

for the year ended 31 December 2020

<table>
<thead>
<tr>
<th>Note</th>
<th>2020</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPERATING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surplus for the year</td>
<td>11,091,353</td>
<td>12,702,895</td>
</tr>
<tr>
<td><strong>Adjustment For:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>506,369</td>
<td>665,448</td>
</tr>
<tr>
<td>Provision for employees’ benefits</td>
<td>6,990</td>
<td>5,564</td>
</tr>
<tr>
<td>Adoption of IFRS 16 Impact</td>
<td>-</td>
<td>(1,315,787)</td>
</tr>
<tr>
<td>Amortisation of deferred income</td>
<td>(1,445,343)</td>
<td>(2,873,414)</td>
</tr>
<tr>
<td><strong>Total working capital changes:</strong></td>
<td>6,139,397</td>
<td>9,186,706</td>
</tr>
<tr>
<td><strong>INVESTING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase of property and equipment</td>
<td>(2,173,785)</td>
<td>(2,138,871)</td>
</tr>
<tr>
<td><strong>Total cash generated from / (used in) investing activities</strong></td>
<td>(166,993)</td>
<td>(885,457)</td>
</tr>
<tr>
<td><strong>FINANCING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer made to the Ministry of Finance and National Economy</td>
<td>(13,553,692)</td>
<td>(8,514,746)</td>
</tr>
<tr>
<td><strong>Net cash generated from operating activities</strong></td>
<td>13,568,695</td>
<td>19,667,785</td>
</tr>
<tr>
<td><strong>Total cash generated from / (used in) investing activities</strong></td>
<td>(7,968,917)</td>
<td>166,993</td>
</tr>
<tr>
<td><strong>FINANCING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer made to the Ministry of Finance and National Economy</td>
<td>(13,553,692)</td>
<td>(8,514,746)</td>
</tr>
<tr>
<td>Net cash used in financing activities</td>
<td>(11,091,353)</td>
<td>(8,514,746)</td>
</tr>
<tr>
<td><strong>Net (decrease) / Increase in lease liability</strong></td>
<td>12 (251,323)</td>
<td>1,076,699</td>
</tr>
<tr>
<td><strong>Net increase in deferred income</strong></td>
<td>12 (573,378)</td>
<td>10,647,180</td>
</tr>
<tr>
<td><strong>Net cash generated from operating activities</strong></td>
<td>13,568,695</td>
<td>19,667,785</td>
</tr>
<tr>
<td><strong>Total cash generated from / (used in) investing activities</strong></td>
<td>(7,968,917)</td>
<td>166,993</td>
</tr>
<tr>
<td><strong>FINANCING ACTIVITIES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer made to the Ministry of Finance and National Economy</td>
<td>(13,553,692)</td>
<td>(8,514,746)</td>
</tr>
<tr>
<td><strong>Net cash generated from operating activities</strong></td>
<td>13,568,695</td>
<td>19,667,785</td>
</tr>
<tr>
<td><strong>Total cash generated from / (used in) investing activities</strong></td>
<td>(7,968,917)</td>
<td>166,993</td>
</tr>
</tbody>
</table>

The accompanying notes 1 to 27 form an integral part of these financial statements.
ANNEX
Licenses, consultations, regulations, orders, decisions, determinations, position papers and guidelines issued in 2020

Licenses
• Class License for Value Added Services granted to iWire Global – Bahrain W.L.L
• Individual License for International Telecommunications Services granted to iWire Global – Bahrain W.L.L

Consultations
• Consultation paper on Bnet’s discount proposal on Residential Wholesale Bitstream Service
• Public Consultation on Draft Position Paper on the Principles for the costing methodology for services supplied by the National Broadband Network of the Kingdom of Bahrain
• Award of Spectrum in the C-band (3400 – 3700 MHz)
• Consultation Paper on the Guidelines to the TRA’s Approach to Impact Assessment
• Treatment of Intra-group Revenues in Relation to Licence Fees
• Public Consultation on OTT Position Paper
• Public Consultation on the position paper on the treatment of intra-group revenues in relation to licence fees
• Public consultation on the Authority’s proposed amendments to the Access Regulation (Regulation No. 1 of 2005)
• Consultation Report on the draft Guidelines for In-Building Telecommunications Access Facilities

Regulations
• International Roaming Services Regulation
• Revenue Reporting Regulation

Orders
• Order No 5 of 2020
• Article 35 Order No.7 of 2020

Decisions and Determinations
• Decision No. 1 of 2020
• Decision No. 2 of 2020
• Decision No. 4 of 2020
• Decision No. 6 of 2020
• Decision No. 7 of 2020
• Decision No. 10 of 2020
• Final Determination of Significant Market Power and Dominance in International Connectivity Markets

Position Papers
• Position Paper issued by the Telecommunications Regulatory Authority on the treatment of intra-group revenues in relation to licence fees

Guidelines
• Guidelines for In-Building Telecommunications Access Facilities