

# 2017 Annual Report

# تليمتما

02

Vision, Mission and Corporate Values

04

Chairman Message

06

Director General Message

08

Overview

10

Highlights of local, regional and international achievements of 2017

11

Internal audit and risk management

12

Development Department - Information and mGovernment Sector

13

Technology Development Affairs (TDA)

14

Regulatory Affairs Department (RAD)

15

International Relations Section

16

Customer Happiness Section

17

Domain Administration (.aeDA)

18

Legal Affairs Department (LAD)

19

قالسپام قيقيا قيسسوما صيقام

20

بيعة قيامعا تلخا لثما ٧١٠٦

21

ليجها مئتا ييمعتا نهقشا قاعا

22

صالحا راه

23

ولجا رصمة

24

داغلا بيعة ولجا رصمة

25

نهقشا قاعا قيميلختا

26

نهقشا قاعا قيميلختا

27

صيقام قالسپام قيقيا قيسسوما

28

ثللمتسما قيلم قملعا

29

رقية عتا قاعا بللغما قاعا بللغما

30

ييمعتا قاعا تلمه مئتا (رقية عتا قاعا بللغما)

31

بيعة قاعا تاعليه الصتبا بهش

32

بيعة قاعا تاعليه الصتبا بهش

33

ريعتا تالجا

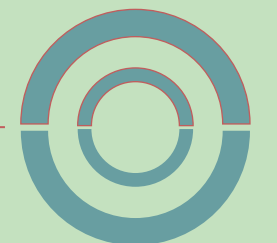
34

دلمسا قاعا رصمة سننننننن

35

لعلسا رصمة نيللمعتما

36



# Vision, mission and values

## TRA Vision

The UAE is a global leading country in ICT.

## TRA Mission

We strive to be a leading ICT sector organization in the United Arab Emirates, committed to maintaining positive competition to protect the interests of subscribers, and promoting the electronic transformation of federal entities and their services, by relying on national competencies to apply best international standards and practices in supervision of the sector and encourage innovation and investment.



## Corporate Values

### Leadership

We nurture innovation and creativity, assume leadership and effectively influence the support and development of the Sector.

### Customer Happiness

We strive to improve our customers' happiness through our commitment to the continuous improvement and development of the quality of our services.

### Empowerment

We endeavor to empower our employees in decision-making and participation in achieving our goals within inspiring work environment.

### Collaboration and Interaction

We work constructively with the concerned to develop and implement work mechanisms (internally and externally).

### Commitment

We are committed towards our responsibilities to the UAE in providing best available technologies for the Sector.



## Director General Message

Reaching the end of 2017, the TRA is writing a new chapter in a 14-year long success story. The TRA, together with other government entities, has achieved on a series of successive milestones, driven by dedication to the higher national goals and in accordance with the directives of our wise leadership.

As we put a point at the end of the line, we start a new line, a new page and a new chapter of the renewed march towards realizing UAE Vision 2021, which aims to make the UAE one of the best countries in the world, and to be a leader in the global ICT sector.

Many are the milestones reached by the TRA during the past year. The UAE has achieved a quantum leap in the ICT world, and the government of the UAE has adopted the Artificial Intelligence Strategy and commenced the implementation of the fifth generation technology. Hence, the TRA embarked on processing and preparation of plans and strategies to optimize the implementation of these paradigm shifts.

Since the dawn of the first day of 2017, the TRA has been working diligently and systematically to optimally activate the sector, as it has a significant impact on the overall development process in the UAE. Additionally, the TRA has made every effort to bring latest technologies in the field and innovate new techniques and applications that are tailored to the requirements of our beloved country.

We have not only wanted to be importers of latest technology, but we have had our share of creative initiatives in this area, hence the activation of Centre of Digital Innovation (CoDI), which seeks to instill and encourage innovation in order to improve government performance and enhance UAE's competitiveness on the international map. Our participation in GITEX Technology Week 2017 has reflected the high level of technical innovation in the TRA, offering a range of innovative and viable projects that will play a major role in advancing the country's progress.

This year saw TRA's launching of the new cycle of the Smart Government Enablers 2017, and the addition of the 'Service Integration' indicator. The TRA has also launched the phase of Internet Protocol Version 6 (IPv6) for the first time in the UAE as an important step in meeting the requirements of Internet protocols in light of the global strategic trend of the country in smart transformation, transition to knowledge economy, Big Data era, Internet of Things (IoT), eCommerce, or what is known as moving towards the future.

At the international level, the year 2017 witnessed great international mobility, where the TRA participated in key ICT-related events and initiatives in order to learn about the experiences of others and introduce our unique experience in this field. As such, the TRA participated in the High-level International Joint Committee on Sustainable Development 2017, ITU Telecom World 2017, Global Symposium for Regulators (GSR-17), World Telecommunication Development Conference (WTDC-17) and the ITU Council 2017.

As usual every year, the TRA was not behind with sponsoring and hosting relevant events in this vital area, where it hosted SG20: Internet of things (IoT) and smart cities and communities (SC&C) and the ITU Forum on Data Management. It also hosted the General Assembly of the Arab Regulators Network 2017, Commonwealth ICT Investment Forum for Emerging Markets, and the first meeting of the Arab Working Group to prepare for the Plenipotentiary Conference (PP-18).

Through its success in hosting these kinds of events, the TRA has undoubtedly proven its great prowess in organizing and hosting the largest ICT events. Such readiness comes as a result of the nature of TRA's long years of working experience in this field, during which it relied on young national cadres. The TRA has committed itself to the Emiratisation policy, in its belief in young Emirati cadres and the potential they possess, through whom it can keep abreast of all technological, scientific and administrative developments. The TRA has been keen on attracting, training and qualifying national competencies to assume the highest leadership positions. Through the Be'tha Program, the TRA prepared these cadres with the aim of enhancing the role and status of the national education sector by supporting and nurturing scientifically distinguished Emiratis, in order to drive the education process in ICT related disciplines in the UAE.

In 2017, the TRA had left many clear prints, and today it renews its promise to the wise leadership to move forward with realizing UAE Vision 2021, a vision that knows no boundaries, a vision that carries us from the blue planet to Mars and beyond.

In conclusion, I would like to express my sincere thanks to my brothers and sisters in the TRA and commend them on their great efforts to bolster the country's position in the ICT arena. I assure them that what they achieved today was impossible a few years ago and what is impossible today will be within their grasp before long. We are the people of the UAE who do not wait for the future, but make it following the wisdom and guidance of our leadership.

**Hamad Obaid Al Mansoori**  
Director General

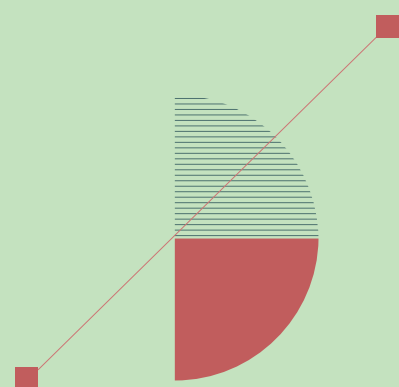
## Overview

The TRA has launched a new ICT era in the country by using the 5G technology and has continued leading this vital sector with a high degree of efficiency. This, in turn, has contributed to the country's leapfrogging in the ICT world, qualifying it to lead the great development process in ICT, and perhaps hosting the Plenipotentiary Conference is a testimony to that.

In October 2017, the TRA officially announced that the UAE would host the 2018 Plenipotentiary Conference (PP-18), the most important ITU meeting, and the occasion for adopting policies and strategies governing the world's ICT sector.

TRA's achievements in 2017 are almost endless, as it was an eventful year full of success, and this year was but the culmination of it. The last days of the year saw TRA's announcement of the introduction and use of International Mobile Telecommunications for the year 2020 (IMT2020), known as the fifth generation (5G), in a move that marks a practical launch of a new era of telecommunications in the UAE.

This development facilitates the application of UAE's top strategic directions, including the advent of the Fourth Industrial Revolution (4IR), at the heart of which are artificial intelligence, smart cities and IoT, as well as handling the massive data flow from machine-to-machine (M2M) and the Internet. The application of 5G would allow for better browsing and usage speeds of up to several gigabits per second, to accommodate new services in line with digital transformation and smart government.



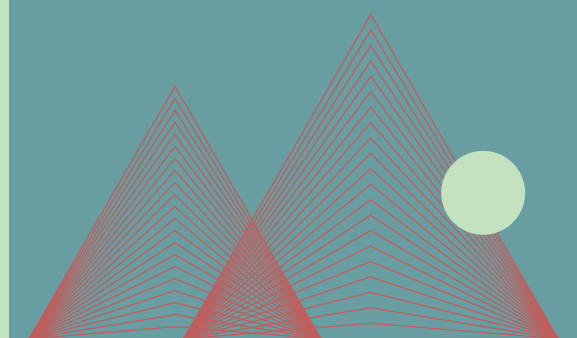
## Highlights of local, regional and international achievements

# 2017



### The General Authority for Regulating the Telecommunications Sector (TRA) hosts the 3rd Annual Middle East and North Africa Spectrum Management Conference

The importance of this type of forum stems from the exceptional importance of the ICT sector, which has become the nervous system of development and progress in various fields in accordance with a number of prospective studies that glimpse the future of humanity in the coming years and decades. If the telecommunications sector is this important, the spectrum system lies at the heart of this importance in terms of being a vital natural resource of countries, as well as in terms of overlapping with many of the economic, social and security considerations."



**The TRA receives the ITU delegation entrusted with reviewing the preparations of the 2018 Plenipotentiary Conference (PP-18)**

The visit came to review the ongoing preparations for hosting the 20th Session of the ITU Plenipotentiary Conference, which will be held at Dubai World Trade Center in late 2018. The delegation included a group of experts in the fields of information technology, protocol, safety, security, and matters relating to the technical aspects and consultations of media, among others.



■ **TRA wins membership in the general assembly board for computer emergency response teams in the Organization of Islamic Cooperation**

Winning the membership of the board of the CERT's general assembly in the OIC is an important achievement added to the track record of the TRA during 2016. The TRA looks forward to further coordination and cooperation between the various Islamic countries and board members in order to reach the desired goals and objectives in exchanging experiences with all OIC countries and helping them develop future strategies and plans in this area.

### Hosting the Activities of the UAE Drones for Good Award

This event has a particular importance for being a special meeting platform for drones and Artificial Intelligence (AI) experts, allowing them to compete and share experiences on how to use modern technologies for the best of humanity. This goes in line with the vision of our wise leadership aimed at enhancing the country's position on the global innovation map, as well as developing national talents to be competitive in this field on the international level.

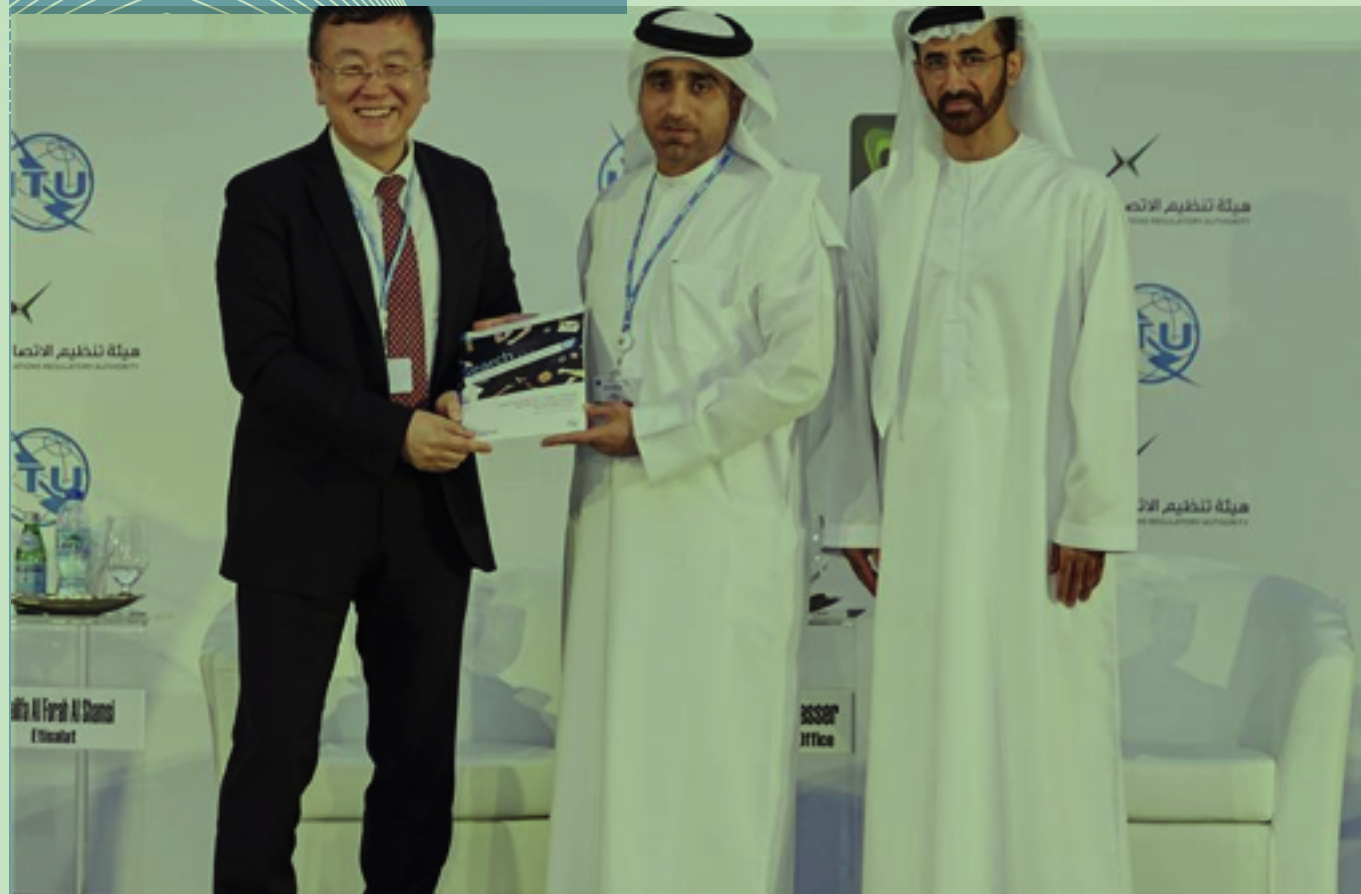


### TRA Represents the UAE in the Fifth GCC eGovernment Ministerial Committee Meeting

This meeting is an important milestone in a long path that we hope will contribute to achieve the directives of our leaders and aspirations of our peoples. The initiatives and projects discussed by the committee during this meeting reflect the interest of GCC eGovernments in coordinating efforts for everyone's interests. These initiatives are of a strategic nature, such as the eGovernment Excellence Centers, studies of business continuity plans in emergencies for GCC states.

### TRA Participates as a Strategic Partner in the Mohamed Bin Zayed International Robotics Challenge

TRA's participation in this event reflects its commitment to the wise leadership vision aimed at enhancing the dissemination of innovation culture among the younger generation in the country, as well as enhancing UAE's position as a regional and global hub to incubate talents and competencies, and encouraging them to innovate solutions that would benefit the process of scientific and technological development nationally and internationally. TRA is committed to develop and enable the creative capabilities of youth since they are the tool for change and development as well as the ultimate goal of all sustainable development plans in the country.



### TRA Hosts the 1st Forum on Data Management

The picture drawn by experts for the world in 2020 is a truly extraordinary one. It features a world interconnected by 50 billion smart devices, with a busy atmosphere with data streaming in all directions; and where billions of sensors would be communicating in digital languages to achieve unprecedented system of services and solutions in the daily course of life. The world we live in today is a world driven by data, which is co-produced by six billion people with a daily average of more than 2.5 quintillion, knowing that 90% of the existing data in the world today is data generated during the last two years only.

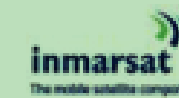


### TRA Hosts the Arab Spectrum Management Group Meeting

The meeting agenda included the discussion of several important points and issues related to spectrum and radiocommunication matters, such as the next generation of broadband services, and topics related to the introduction of small satellites and their use in the provision of telecommunications.



الرابعي الفضوي



الرعاة الذهبيون



### TRA hosts the Fast Forward Summit

The Summit agenda included a range of topics in support e-commerce, including the basic tools for developing e-commerce for business owners, identifying demand and consumption patterns in the Middle East, currency and e-payment.

### TRA Heads the UAE's Delegation to WSIS

The official delegation of the UAE, chaired by the TRA, participated in the World Summit on the Information Society (WSIS) held at the ITU headquarters in Geneva, Switzerland, from June 13-16. This participation resulted in the winning of Khalifa Students Empowerment Program 'Aqdar' of the WSIS Prize for online safety at schools.



### TRA gets three ISO certificates in Business Continuity, Quality Management and Environmental Management

The TRA's ISO certification in Business Continuity (ISO 22301:2013) confirms the readiness of the ICT sector to respond to all emergencies, crises and natural disasters that may occur. TRA has also been able to obtain the new version of the Quality Management System (ISO 9001: 2015), which confirms the compatibility of all procedures, plans and strategic projects implemented by TRA with the International standards in this field. Additionally, it has obtained the certificate of Environmental Management System (ISO 14001: 2015) on global standards for the preservation of environment in the buildings and facilities of TRA as well as its internal environment.

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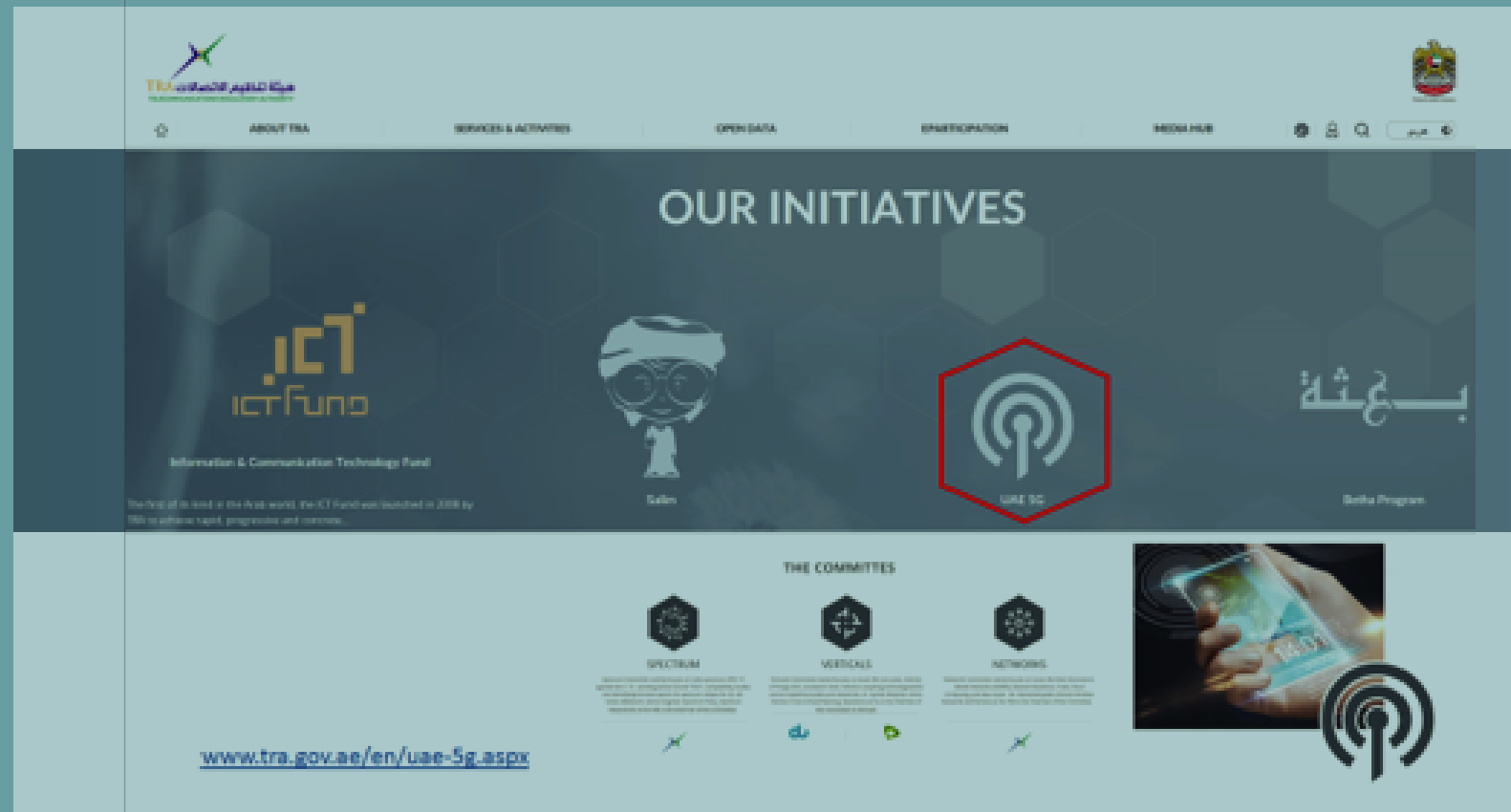


### TRA Sings the PP-18 Hosting Agreement in Dubai

The TRA has officially announced that the UAE will host the Plenipotentiary Conference 2018 (PP-18), the ITU's most important meeting, and the event in which the adoption of policies and regulatory strategies of the global ICT sector takes place.

# Initiatives of 2017

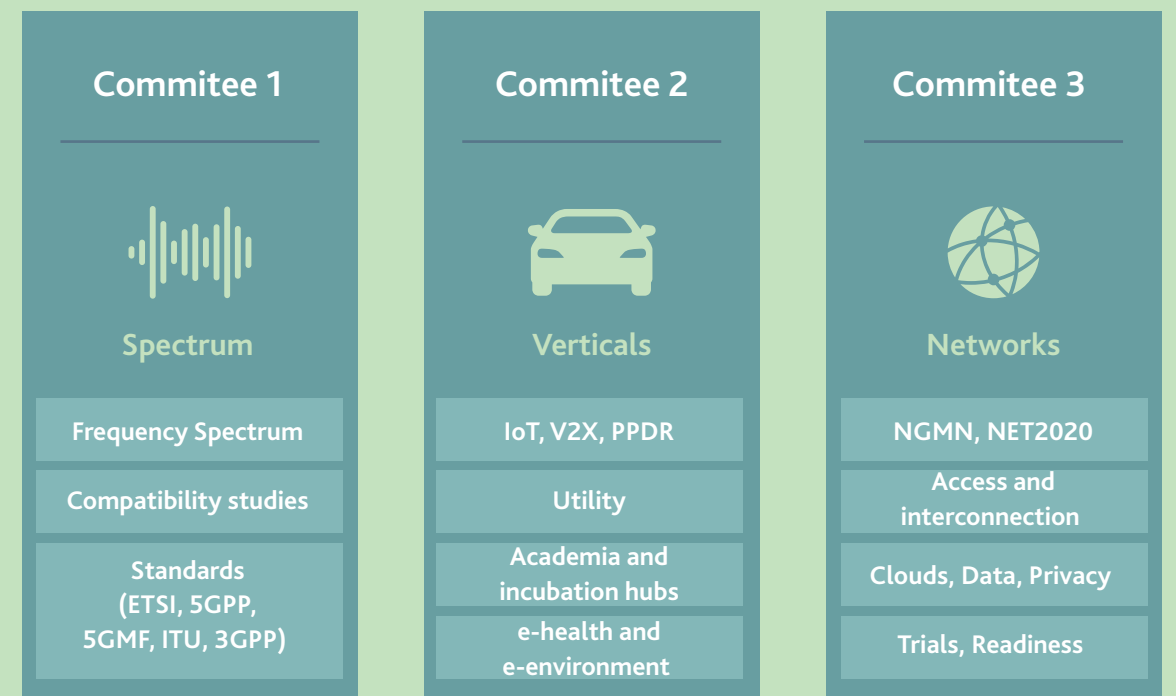
## Future Foresight



## International Mobile Telecommunications Governance in the UAE for 2020 (UAE IMT5) (2020-G)



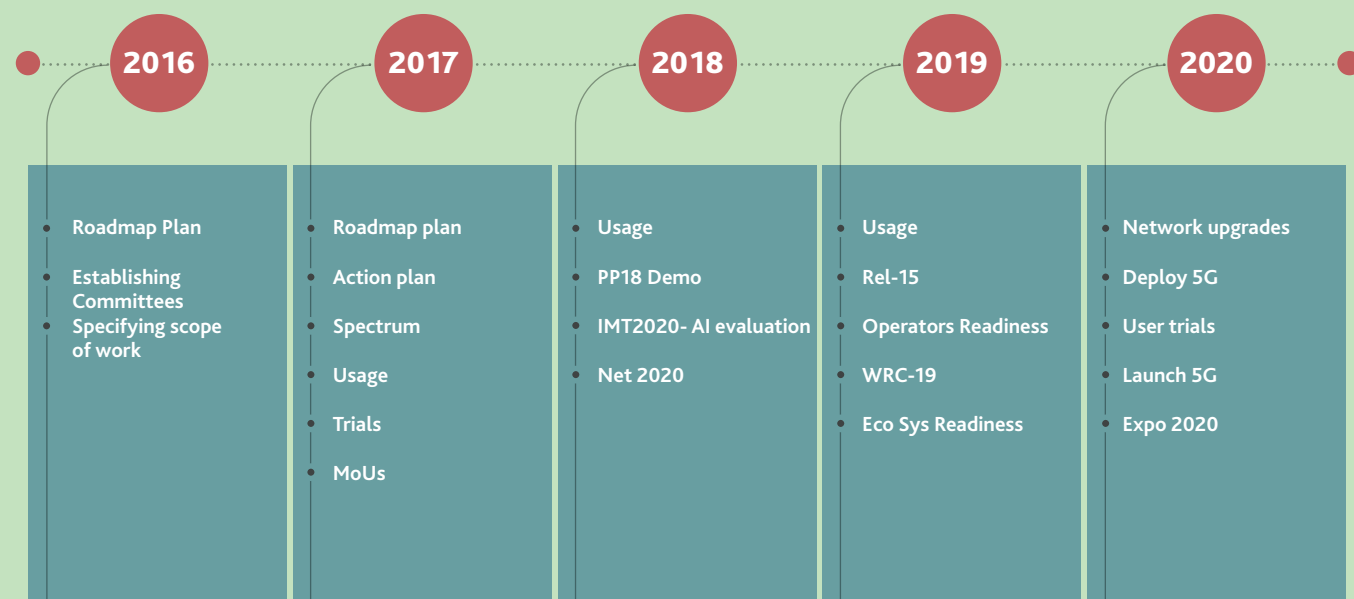
## Committees of International Mobile Telecommunications Governance in the UAE for 2020 (UAE IMT5) (2020-G)



## Committees meetings



## The Roadmap of (UAE IMT5) (2020-G)



## UAE 5G in the media



## Projects of 2017

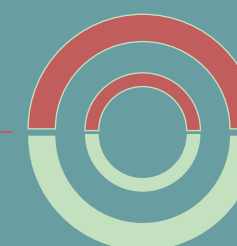
### Leadership and support

Chairing the Arab Spectrum Management Group (ASMG) preparatory work for World Radiocommunication Conference 2019 (WRC-19)

TRA chairs the Arab Spectrum Management Group (ASMG), the preparatory meeting of CPM-19, two ASMG working groups (WG1 & WG5), and one Gulf working group.

For the preparations of the World Radiocommunication Conference, TRA identified a team of 8 employees to follow-up on the agenda, develop the government centers based on the latest studies and discussions with the concerned entities, and to assist the ASMG Chairman in all the team's meetings.

A workshop was held in July with the UAE stakeholders to discuss and update specific topics and issues of the WRC-19 Agenda.



# TRA Spectrum Regulations



# Future Foresight

## Drones Market Evaluation

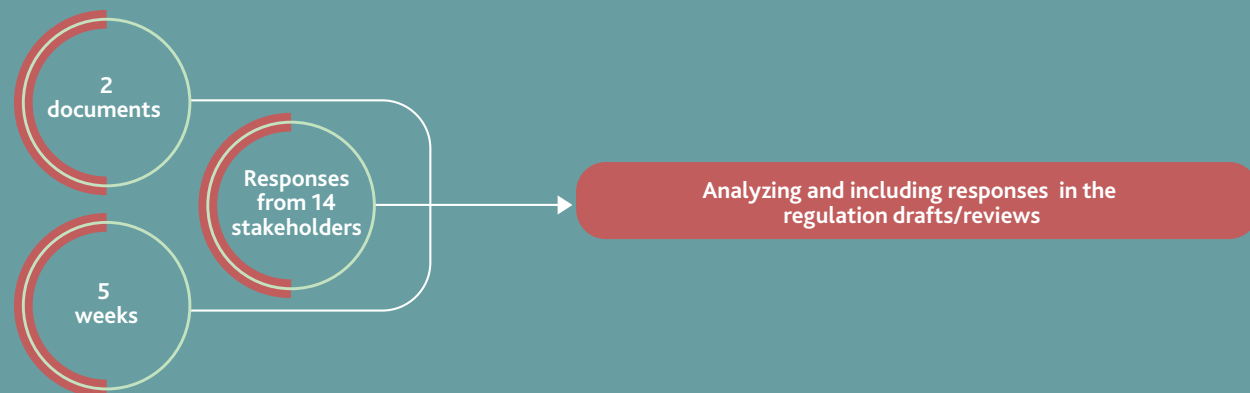
Percentage of drone trips in various sectors	optimistic scenarios 2025	Base establishment in the UAE	2020	2025	2030
Cinematography and photography	15-25%	Slow basic technological developments			
Precision agriculture	1-5%	Professional Drones	by hundreds	by thousands	by tens of thousands
Surveying and mapping	10-20%	Prosumer drones	by tens of thousands	about 100 thousands	by hundreds of thousands
Surveillance and monitoring	45-60%	Fast optimistic technological developments			
logistic services - cargo drones	5-10%	Professional Drones	about 1000	by tens of thousands	about 100,000
Traffic monitoring and 3D mapping	10-15%	Prosumer drones	by tens of thousands	by hundreds of thousands	by hundreds of thousands
Entertainment (races, Drone clubs)	10-15%				
Initial response (such as medical response, search and rescue operations, fire response)	5-10%				

# TRA General Consultations



## ICT Systems Market Evaluation

UAE Connected Vehicles Expectations				UAE Autonomous Cars Expectations			
Demand rate	2020	2025	2030	Demand rate	2020	2025	2030
Passenger cars				Passenger cars			
e-calls	13%	34%	90%	Advanced Driver Assistance Systems (ADAS) level 1 & 2	16%	37%	85%
Road charges	100%	100%	100%	Self-driving at fast pace	0.1%	2.3%	17.2%
Commercial vehicles				Self-driving in reality			
e-calls	N/A	to be determined	to be determined	Self-driven - At slow pace	0%	0.5%	5.3%
Road charges	100%	100%	100%				
Commercial automatic information processing	26%	46%	65%				

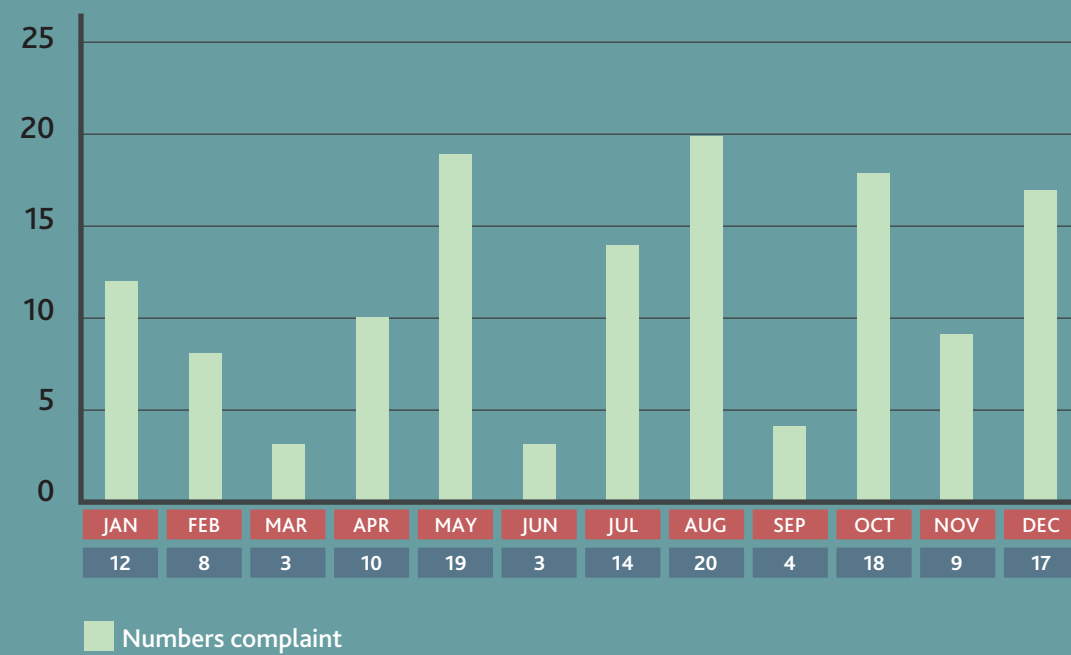




## Monitoring and implementation

### Interferences in 2017

2017 Monthly interference complaint



The number of interference complaints received in 2017 reached 138 complaints. They were addressed on timely manner in accordance to the KPIs.

## Space and Broadcast

### Satellite Network Filing

- The Number of files submitted to the ITU reached 17 files in 2017
- As per the KPI, all the files received by the operators were assessed and submitted to the ITU.

Operator / Entity	Files submitted to the ITU	Filing type
ALYAH SAT	15	N (5), CR (10)
Thuraya	1	CR
Masdar	1	API (NGSO)





# Studies and research

## Decision Support

### Satellite Networks Coordination Meetings

- To coordination meetings have been conducted during 2017. The first was with the Indonesian Administration in TRA building (February), and the second was with the Russian Administration in ITU headquarters in Geneva (April).
- Al Thuraya and ALYah Sat participated in both meetings as UAE operators.
- The meetings resulted of successful agreements between the operators.



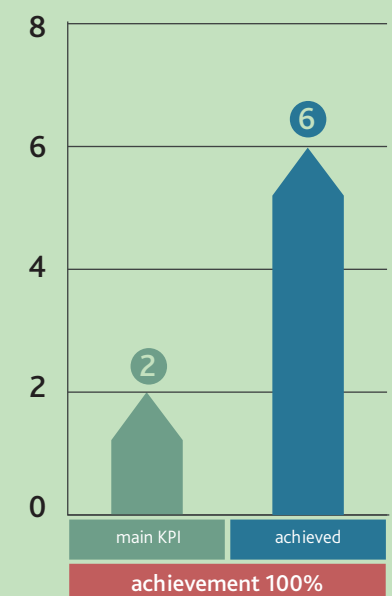
### Enhancing Communication with the ITU and the operators:

- An email address has been created: space@tra.gov.ae included all employees related to space services communications and correspondence .
- Amending TRA fax number and email address published on the ITU website to facilitate communication on space services. Additionally, requesting the ITU to send all satellite networks related communication via this email.
- Sending all communication to ITU to the BR email address , with requesting receipt notification.
- Corresponding with the departments on the fax number and email address, with requesting receipt confirmation.
- All involved operators should be copied in the correspondence.

### Frequency Spectrum Technical Studies

#### Subject

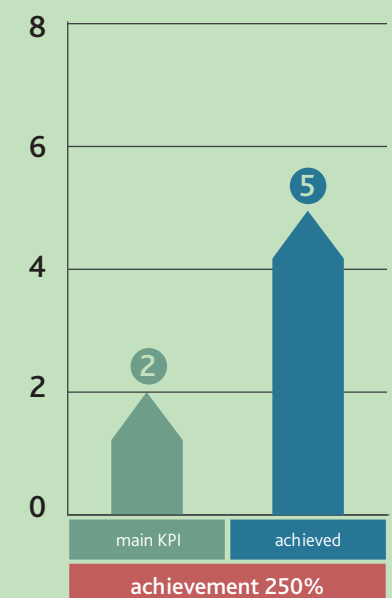
- Reviewing the frequency spectrum and the regulatory situation to update the regulations of the aeronautical radio systems
- Future foresight for identifying the UAS spectrum needs
- Future foresight to identify the ITS spectrum needs
- Reviewing the regulatory framework of the UAE space services
- Technical study of Inmarsat's S-band of the European Aviation Network (EAN)
- Draft report of the PMR channels group



### Benchmark Study of Frequency Spectrum Affairs

#### Subject

- Benchmarking of space services licensing
- Benchmarking of UAS
- Benchmarking of ITS
- Benchmarking of IMT
- Benchmarking of space services frequency charges

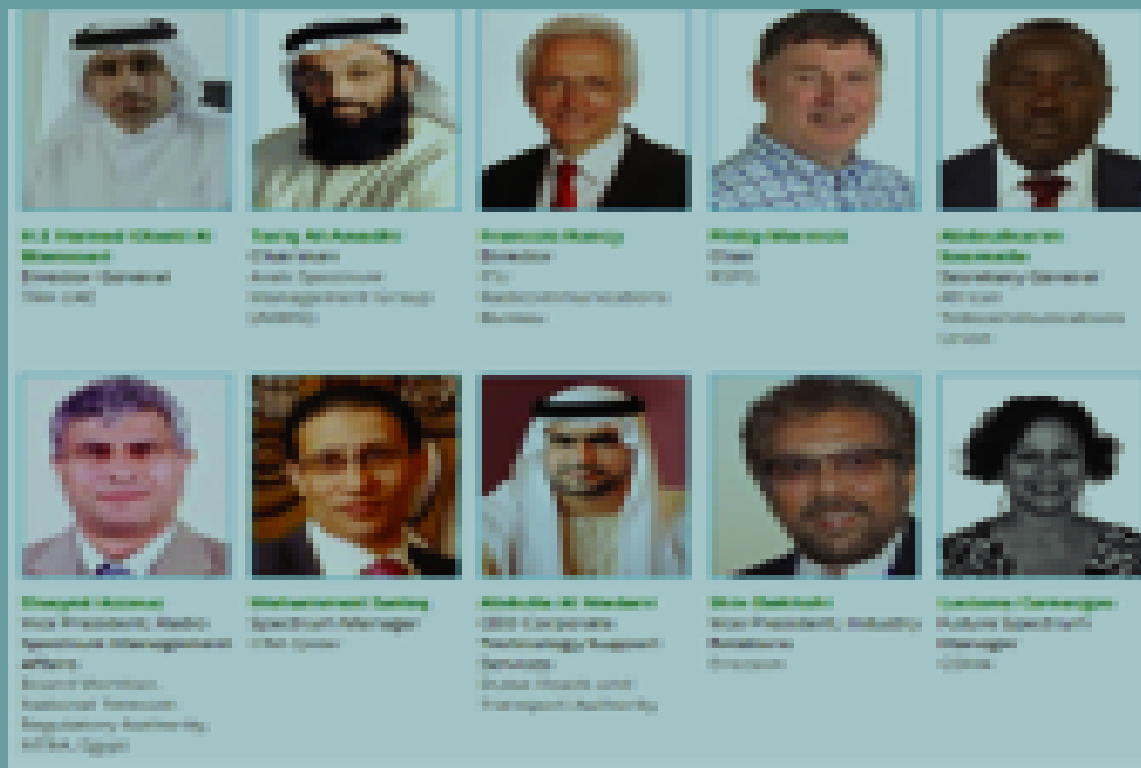


# Workshops and conferences in 2017

## knowledge exchange

### The Middle East and North Africa Spectrum Management Conference

- TRA hosted the 3rd Annual Middle East and North Africa Spectrum Management Conference, during 24 and 25 of January.
- It provided a meeting point for spectrum stakeholders to come together and discuss topical issues relating to the management and co-ordination of spectrum policy across the region.
- It included presentations and discussions on spectrum management.
- Presentation on 'Paving the way for the 5G revolution in the Arab world'.



### The ITU Regional Workshop on Cross-Border Frequency Coordination

- TRA hosted the ITU Regional Workshop on Cross-Border Frequency Coordination in Arab Region in 27 January 2017.
- It aimed to enhance knowledge and understanding on cross-border frequency coordination.
- It included presentations and discussions on the principles of cross-border frequency interference.



### The Arab Regulators Network (AREGNET) Workshop on 5G

- TRA hosted a workshop on 5G and its impact on the Arab countries on 18 December 2017.
- The workshop targeted policy makers and regulators in the Arab region, to introduce IMT2020 technology.
- It was held in partnership with the ITU Telecommunication Development Sector and AREGNET.
- Presentations covered penetration modules, importance and benefits of 5G in the Arab region.



## Workshops and conferences in 2017

### Workshop on Intelligent Transportation System (ITS) and Unmanned Aerial System (UAS)

- TRA hosted a workshop to present the study outcomes of the ITS and UAS frequency evaluation.
- Stakeholders from various sectors (Government, suppliers, operators and academics) have participated in the workshop.
- It included an interactive discussion session on the results of the future foresight of spectrum needs.



### Workshop on ITS with relevant entities

Future Foresight workshops with relevant entities "RTA" and "Etihad Rail" to present latest developments in the work of the Radiocommunications Study Groups on Intelligent Transportation System (ITS), and frequencies allocated by other countries for RSTT and ITS.

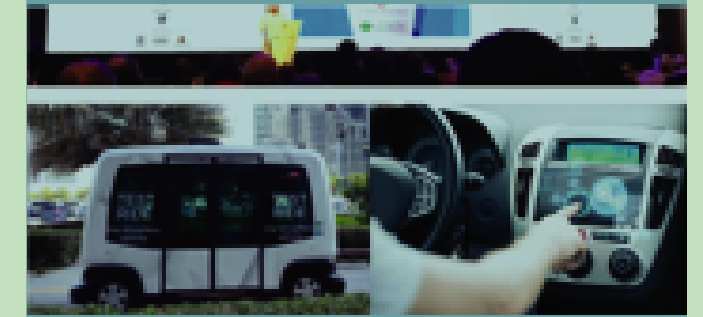
### UAS Forum, Dubai 17-16 October 2017

- Participation in the Forum and conference hosted by Dubai Police and Dubai Civil Aviation Authority (DCAA).
- Reaching all ITS relevant entities to share the outcomes of the ITS market evaluation study.
- Inviting all relevant entities to respond to the public consultation about ITS and UAS.



### The International Conference of Future Mobility

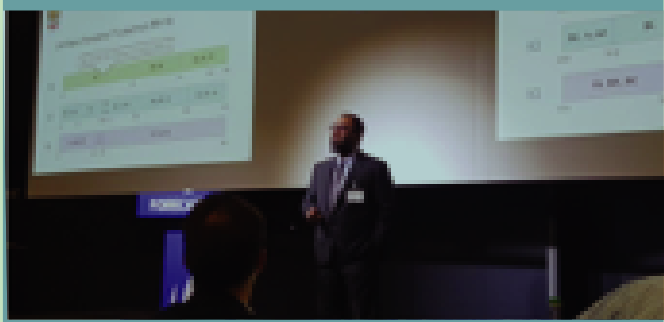
- TRA participated in the International Conference of Future Mobility, Dubai 8-7 November 2017.
- Participating in the experts round table meeting and reviewing the outcomes of the ITS Spectrum needs study.
- TRA membership in the Emirates Authority for Standardization and Metrology Committee on ITS standards.
- The 5G Committee has a working team on ITS.



## Workshops and conferences in 2017

### The European Broadcasting Union (EBU) Annual Conference of Future Foresight

- TRA participated in the EBU Annual Conference for Future Foresight (23-24 November).
- The Spectrum Management Affairs Director presented the options of means distribution in the ultra-high frequency bands range.
- The event focused on highly-strategic addressing of means distribution technologies
- TRA presented their perspective on challenges facing the terrestrial broadcast and adopting to changes



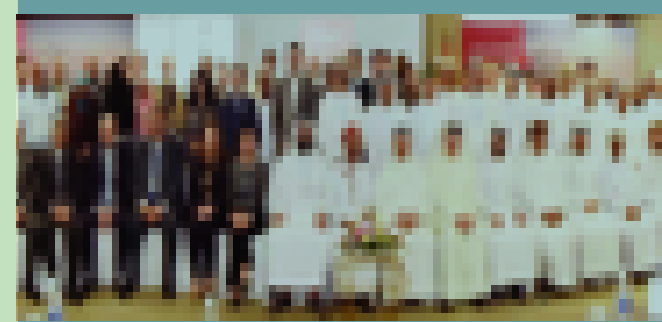
### 5G Conference in Korea

- TRA participated in the 5G Conference in Korea.
- The event included presentation of the preparations for 5G In the Olympic Games location.
- The UAE delegation included TRA, Etisalat and du for the aim of launching the 5G in the UAE.



### The Regional Radiocommunication Seminar 2017 for Arab Countries (RRS-17-Arab),

- TRA participated in the RRS-17-Arab, held in Muscat, Oman, from 10 to 14 December 2017.
- The seminar covered concepts related to spectrum management as well as the procedures associated with the recording of frequency assignments in the Master International Frequency Register (MIFR), ITU notification procedures as well as the software and electronic publications made available by the Radiocommunication Bureau.
- TRA had a main speaker in the last forum on: "WRC-19 Agenda: challenges and opportunities for Arab Countries"



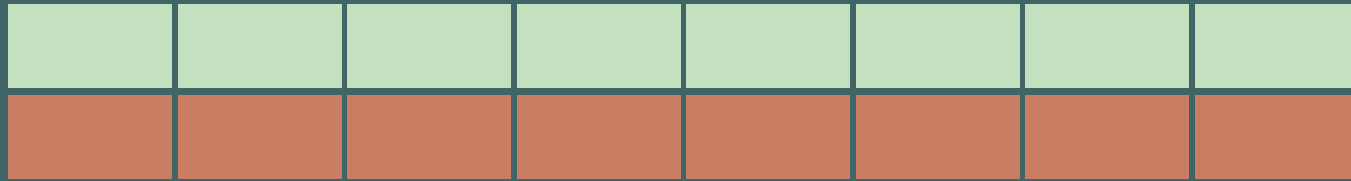
### The First ITU Inter-regional Workshop on WRC-19 Preparation

- TRA chaired and participated in the First ITU Inter-regional Workshop on WRC-19 Preparation, held in the ITU Headquarters in Geneva, on 21 and 22 November 2017.
- The workshop provided participants with the opportunity to exchange views and have a better understanding of the most challenging WRC-19 agenda items and issues, with draft preliminary common views and/or positions of the concerned entities.
- The Arab Spectrum Management Group (ASMG) chairman participated in the workshops, and presented the ASMG views and positions on the main proposed issues and agenda of WRC-19



# International participations in 2017

International participations



# Other achievements in 2017

Extra-round

## TRA Spectrum Fees Regulations - version 3

Applicable starting  
1<sup>st</sup> of January 2017

Revenue increase  
analysis

Issuing spectrum  
fees guidelines

## Spectra Chart in the National Frequency Allocation Plan

- Check each range plan and set channels in the Spectra chart.
- Channel groups are compatible with TRA updated regulations and the National Frequency Plan.
- The set of channels defined in the ASMS system facilitates frequency selection by applicants.
- The correct frequency distribution and channel operation will reduce interference.

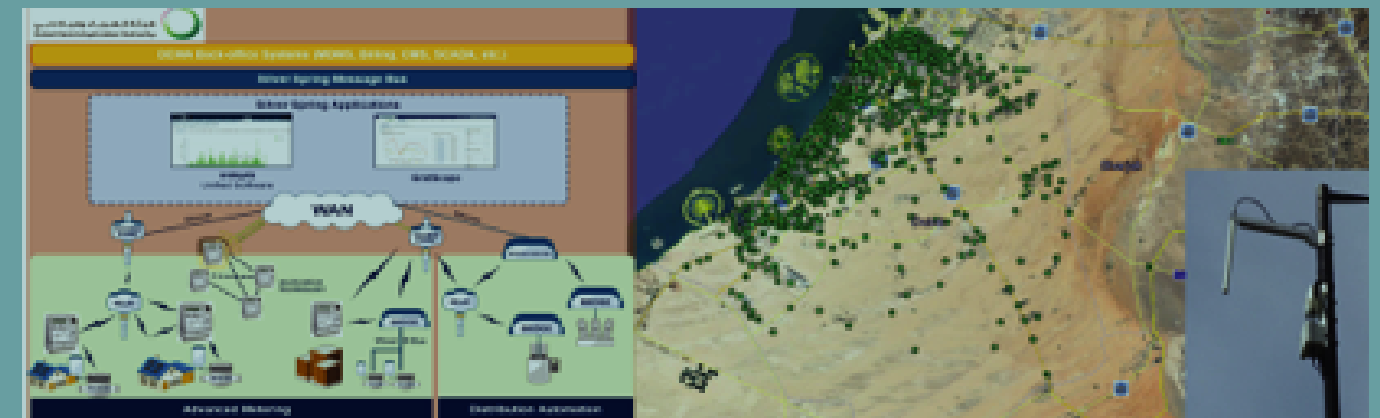
Frequency Range (MHz)	Channel Width (MHz)	Number of Channels	Bandwidth (MHz)	Guard Band (MHz)	Notes
10.000 - 10.005	0.005	1	0.005	0.005	Channel 1
10.005 - 10.010	0.005	1	0.005	0.005	Channel 2
10.010 - 10.015	0.005	1	0.005	0.005	Channel 3
10.015 - 10.020	0.005	1	0.005	0.005	Channel 4
10.020 - 10.025	0.005	1	0.005	0.005	Channel 5
10.025 - 10.030	0.005	1	0.005	0.005	Channel 6
10.030 - 10.035	0.005	1	0.005	0.005	Channel 7
10.035 - 10.040	0.005	1	0.005	0.005	Channel 8
10.040 - 10.045	0.005	1	0.005	0.005	Channel 9
10.045 - 10.050	0.005	1	0.005	0.005	Channel 10

## GCC States Coordinated Frequency Plan

- TRA suggested a joint frequency allocation plan for GCC states according to the WRC19- outcomes.
- The plan aims to enhance cooperation and to set unified GCC standards for this sector to achieve greater value.
- From 9 KHz to 3000 GHz, in addition to using the range of terrestrial and space services, to meet the needs of every state.
- All GCC states have welcomed this suggestion.



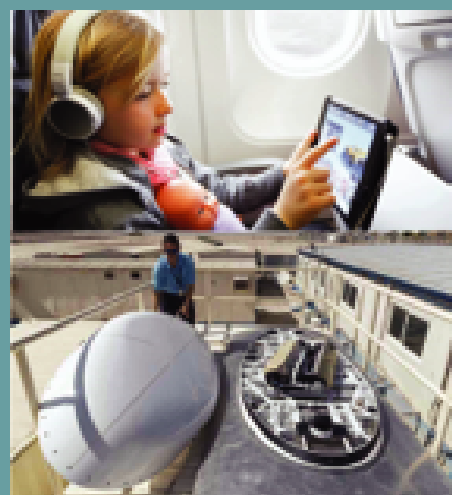
## Supporting the Smart Meters and Grids project by DEWA



Installing 172 APS units, and 447 Relays

## AL YahSat Space Internet Services

- TRA has facilitated testing Etihad Airways and Al Yah Satellite Communications for communications services in the air during The Dubai Airshow.
- High-speed satellite communication via Yahsat2 Ka band on an Etihad flight test aircraft.
- A 50 Mbps data connection was achieved from the first time.
- The TRA continues to support wireless broadband on land, air and sea.

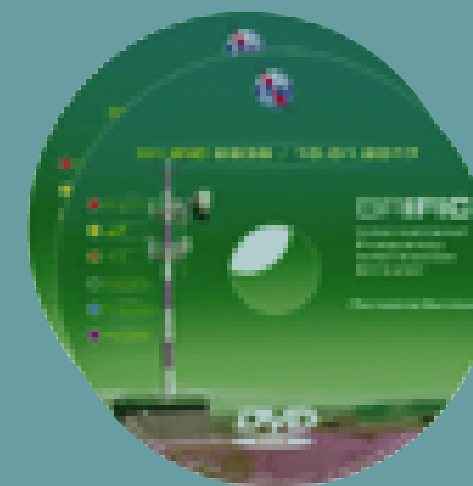


## Notification of the Master International Frequency Register (MIFR)

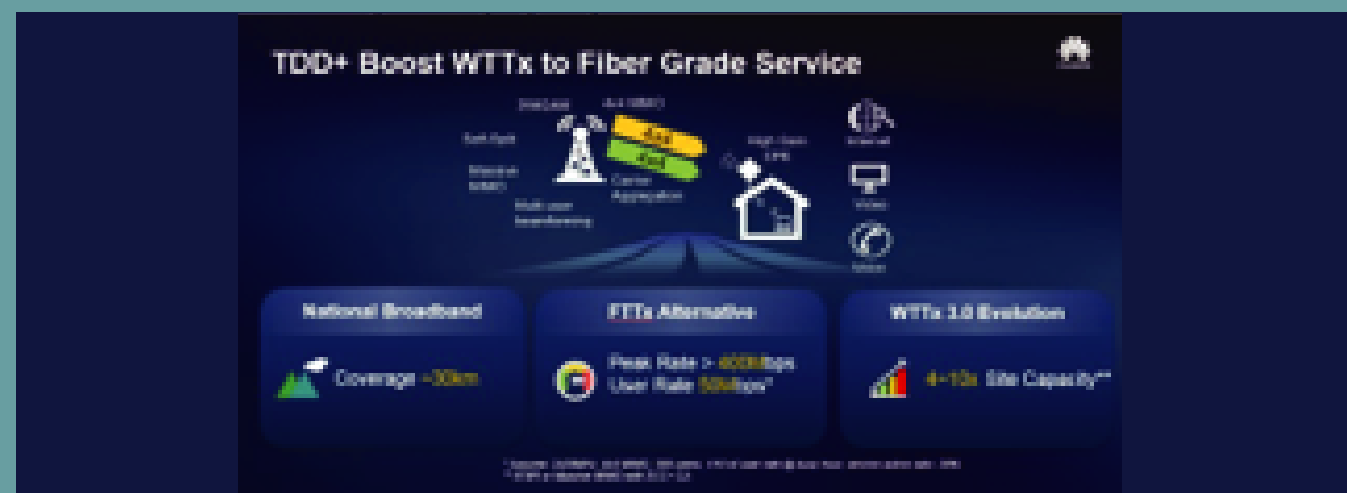
- TRA submitted 9299 notifications on Fixed service stations to the ITU from:

Etisalat  
Du  
The Government

- The ITU processed and registered 8684 notifications so far.
- These frequencies are now protected by the ITU.



## Du experiments of WTTx technologies



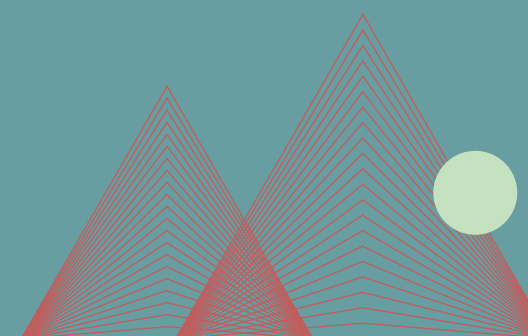
- TRA facilitated du experiments of WTTx technology (wireless to x).
- Band system 41 TDD (from 2575 to 2635 MHz).
- Multiple inputs and multiple outputs bus (MIMO), wide range, includes 16 downlinks and 8 uplinks multi-user data links with beamforming feature.
- Beamforming Multi-user technology can achieve download speed of 720 MB per second and upload speed of 80 MB per second on 20 MHz band TDD-LTE.

## Upgrading FM monitoring system

- Installing two new systems in the broadcasting vehicle:

DDF007 of Rohde & Schwarz  
Audemat of WorldCast Systems

- These new systems will allow us to enhance our analysis and increase our monitoring efficiency of FM waves.
- Training has been conducted on operating these new systems.

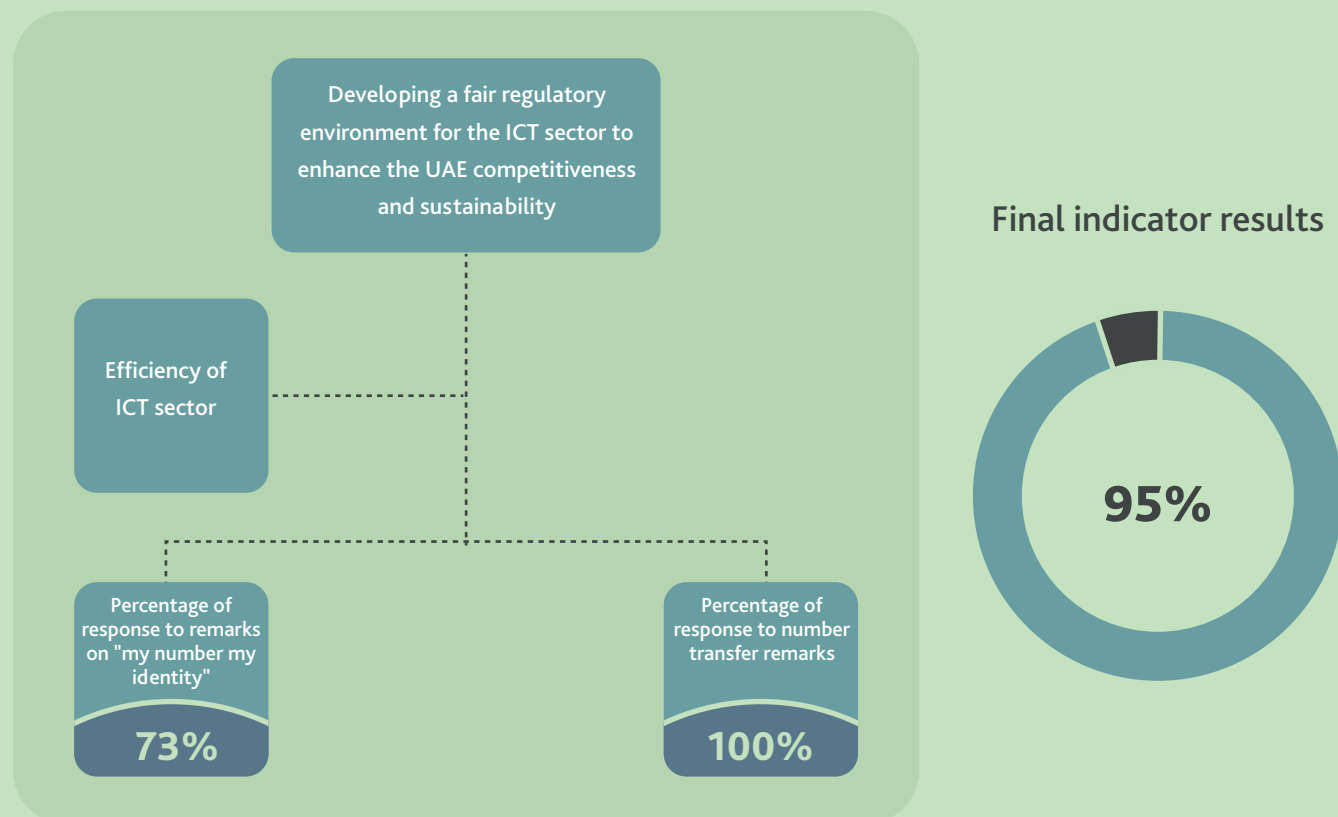


# Technology Development Affairs

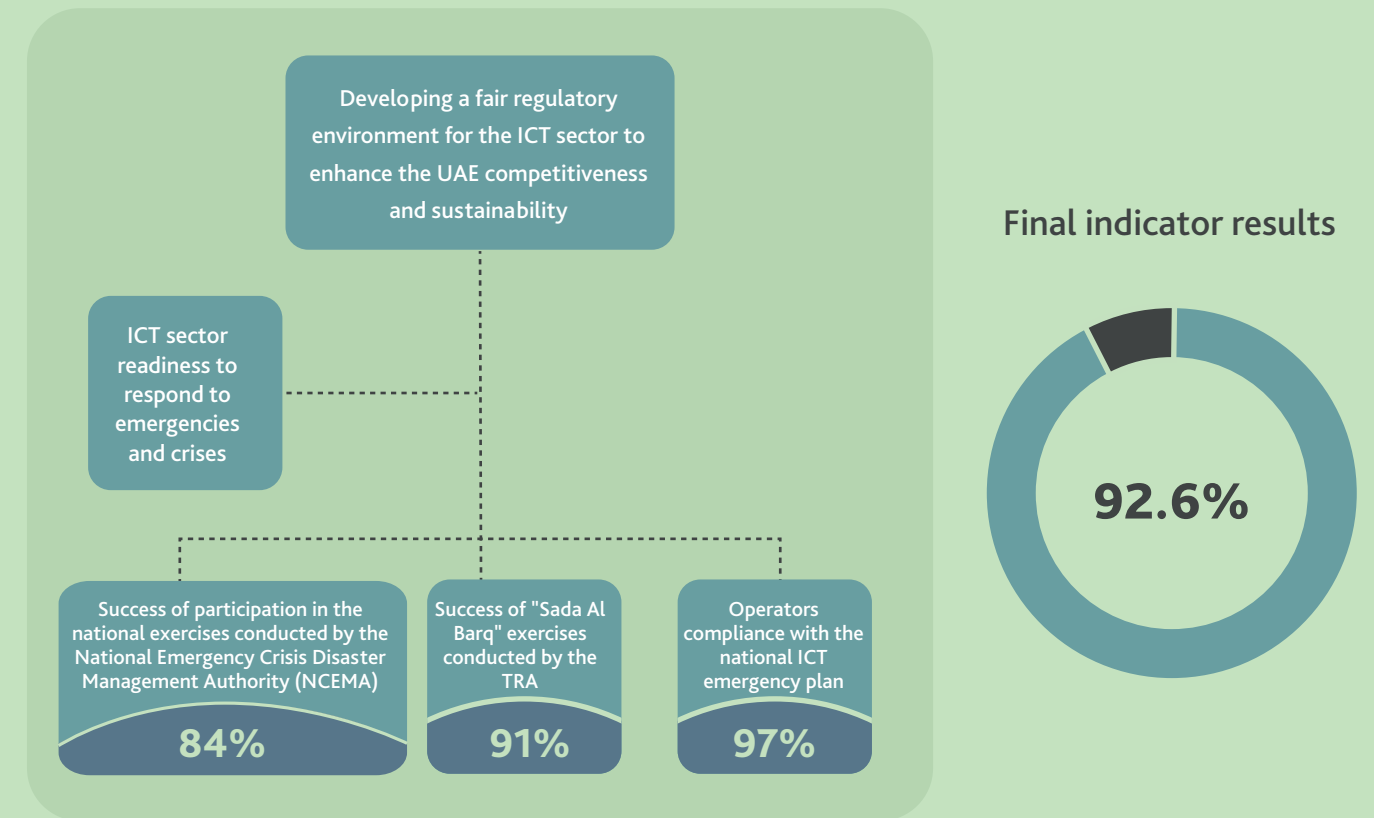
## Strategic indicators



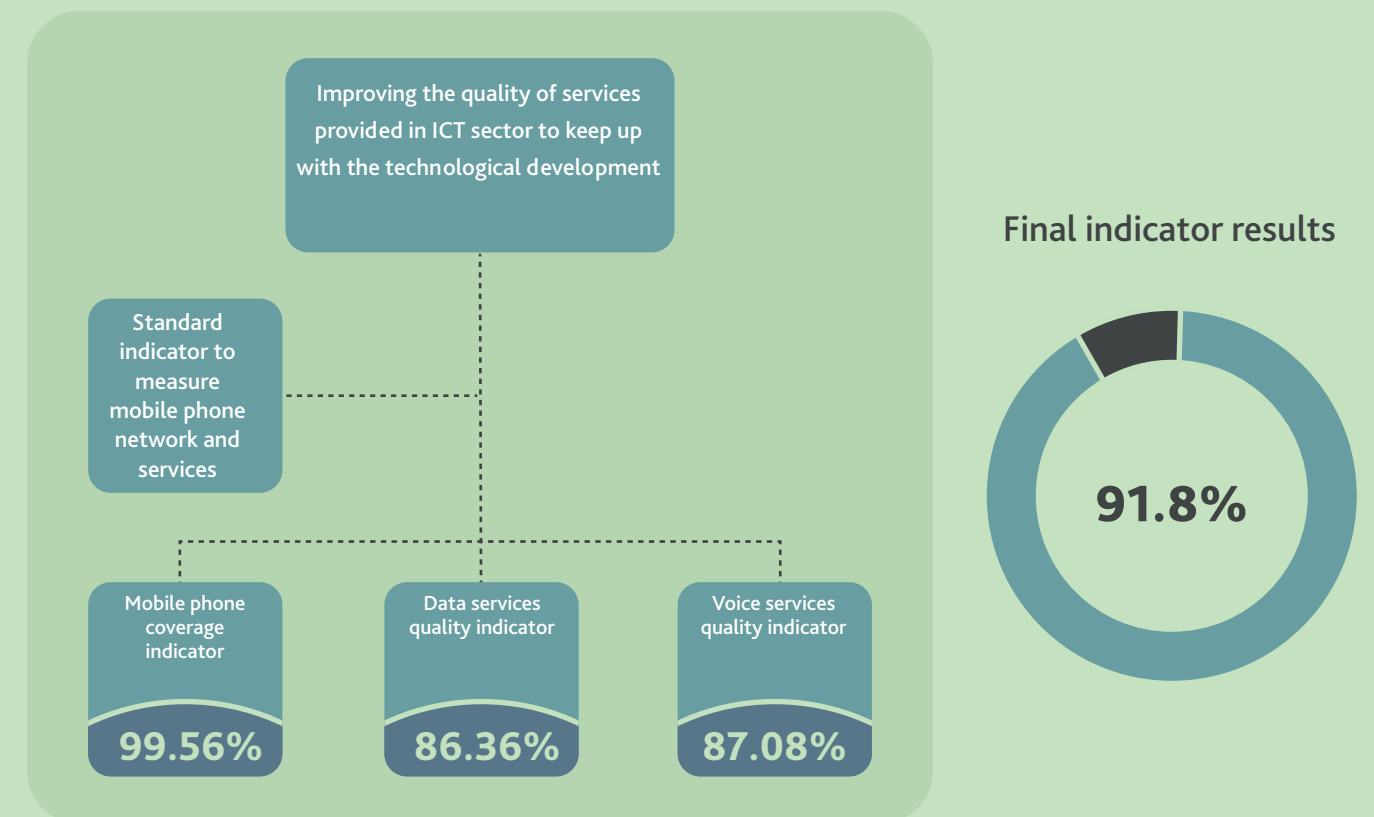
## Efficiency of ICT sector



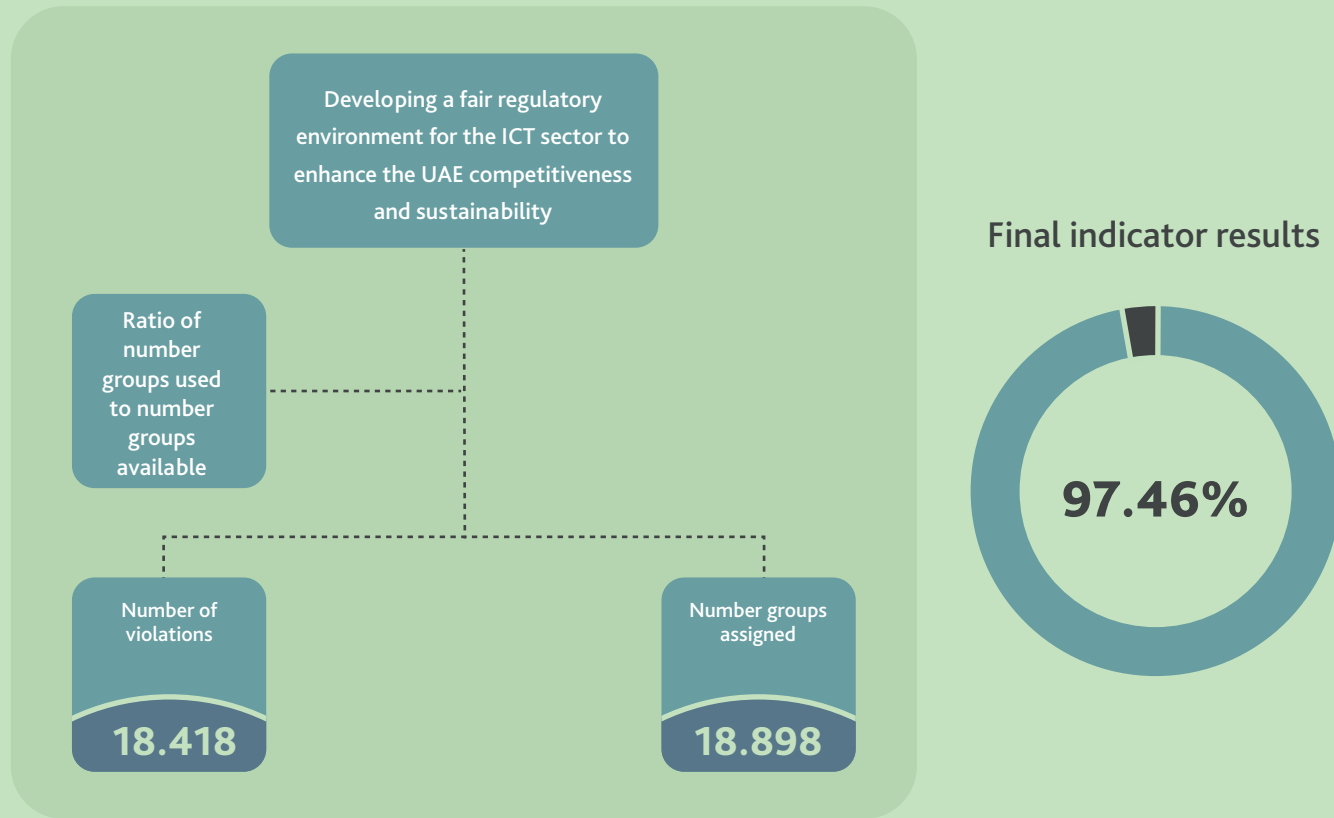
## ICT sector readiness to respond to emergencies and crises



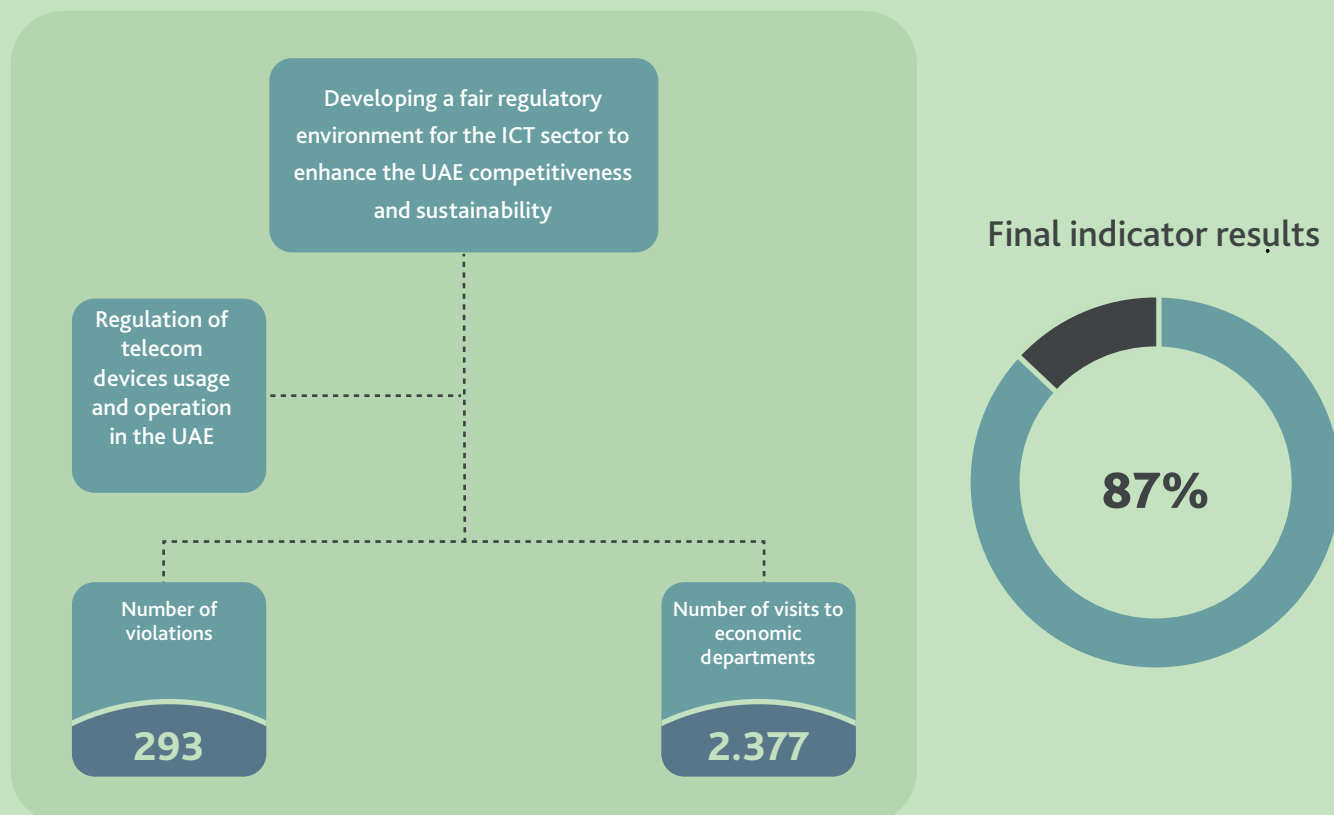
## Standard indicator to measure mobile phone network and services



## Ratio of number groups used to number groups available



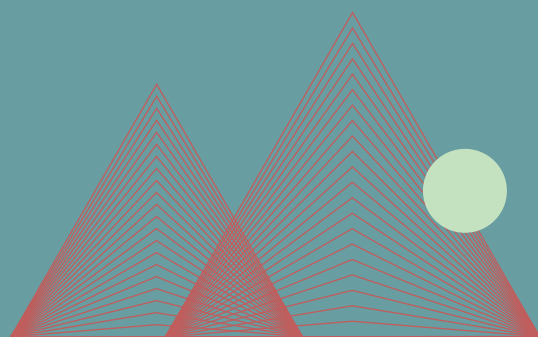
## Regulation of telecom devices usage and operation in the UAE



	2014	2015	2016	2017
Total land applications submitted by the licensed operators	608	617	473	460
Total operators' signal boosting locations	199	156	169	128
A huge number of international phishing spams was blocked:	231,538,378	306,658,390	106,292,380	91,546,995
Total applications processed for telecom devices registration:	2,965	4,640	3,137	3,053

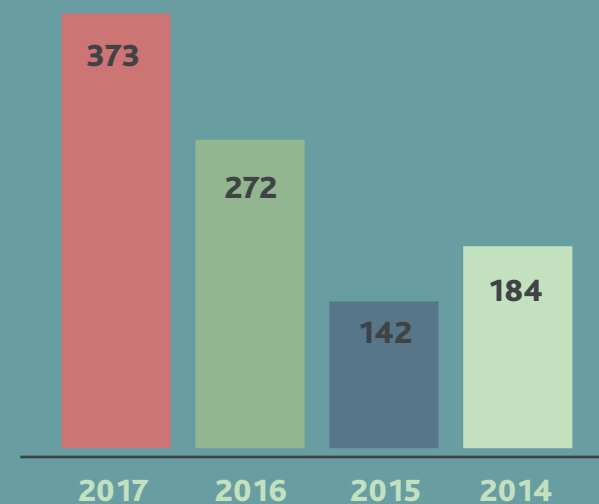


	2014	2015	2016	2017
Total applications processed to register telecom suppliers:	1,260	2,301	2,259	1,273
Total applications processed for customs clearance	5,469	10,605	13,522	19,181
Regarding numbers, number groups assigned to the licensed operators amounted to:	3,698	1,824	3,212	2,929

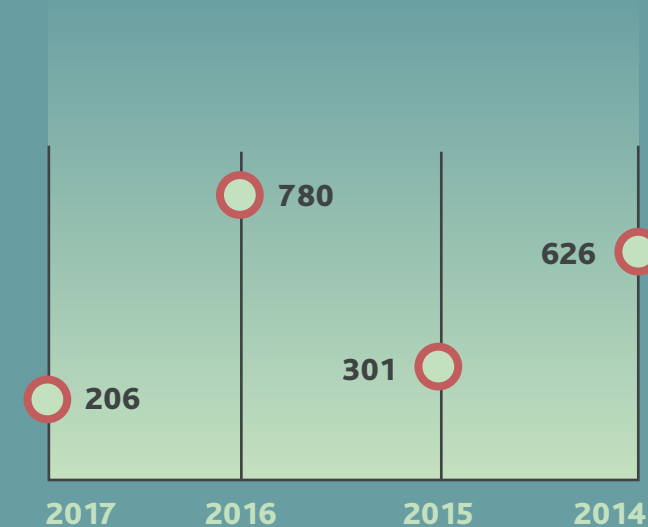


Inspection campaigns in the telecom devices market included the following:

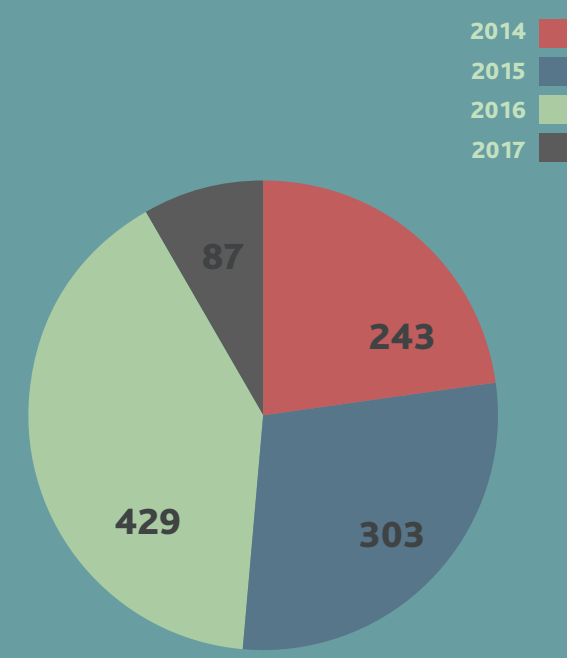
Visits



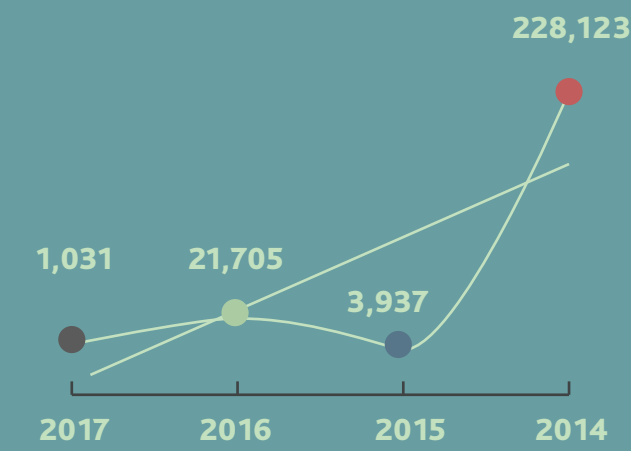
Warnings



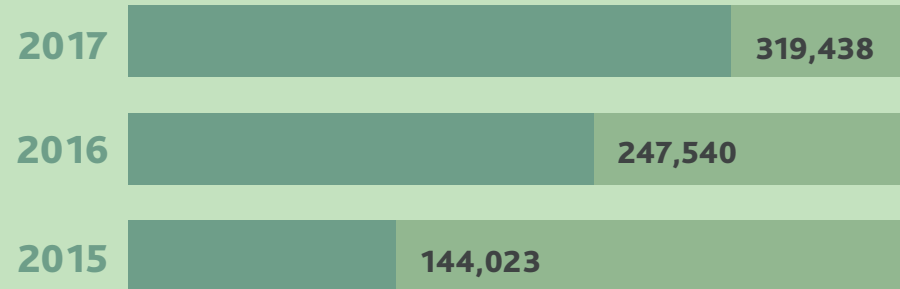
Violations



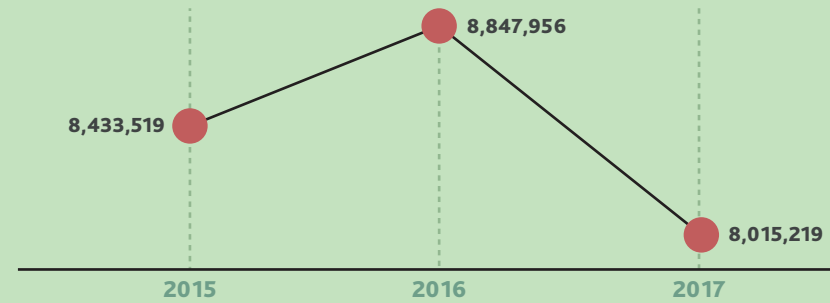
Seized devices



Regarding transfer of numbers between the operators, total transferred numbers amounted to:



Total short messages sent by the licensed operators to notify the travelling citizens of emergency numbers of the UAE embassies and consulates:



## Customer satisfaction

### Results

Registration of suppliers	75%
Registration and approval of telecom devices	66%
Customs release permit of telecom devices	69%
Assigning number resources	72%
Application for land assignment recommendation	93%
Mobile phone sim card sale points	55%

## Employee satisfaction

### Results

Satisfaction with the department manager	81%
Satisfaction with the section managers	81%
Positivity in the TRA	76%
Happiness in the TRA	81%
Harmony in the TRA * best 3 departments in results	82%
General employee loyalty in the TRA * best 3 departments in results	85%
General positivity in the TRA	81%
Gender balance in the TRA	81%

## Partner satisfaction

### Results

Innovation and creativity	53%
Knowledge exchange	63%
Mutual benefit and added value	73%
Effectiveness of communication channels	81%
Employee professionalism	70%

# Around the World

 **Innovation journey to make change**  
USA (San Francisco)  
09-12 November 2019  
Eng. Mohammed Jaddah  
Mrs. Fatima Al Shehhi

 **Advanced inspections automation conference**  
Germany (Berlin)  
11-13 October 2017  
Eng. Mohammed Al Shamsi  
Eng. Shamma Lootah  
Eng. Hanadi Al Mehrzi

 **Global broadband forum**  
Germany (Berlin)  
24-26 October 2017  
Eng. Jasim Al Ali

 **Mobile world congress**  
Spain (Barcelona)  
27 Feb – 2 March 2017  
Eng. Saif Bin Ghalaita  
Eng. Mohammed Jaddah  
En. Ahmed Al Shamsi

 **Arab standardization group meeting**  
Egypt (Cairo)  
08-10 August 2017  
Aysha Al Munifi

 **Future automobile conference**  
United Arab Emirates (Dubai)  
07-08 November 2017  
Mohamed Al Shamsi

 **Business continuity management forum**  
Oman (Masqat)  
16-17 May 2017  
Eng. Youssef Al jasmi  
Eng. Mohammed Al Ali

 **Arab standardization group meeting**  
Saudi Arabia (Riyadh)  
19-23 November 2019  
Eng. Saif Bin Ghalita  
Eng. Rashid Memari

 **World Telecommunication Development Conferences (WTDC)**  
Argentina (Buenos Aires)  
09-10 October 2017  
Eng. Saif Bin Ghalita  
Eng. Rashid Memari

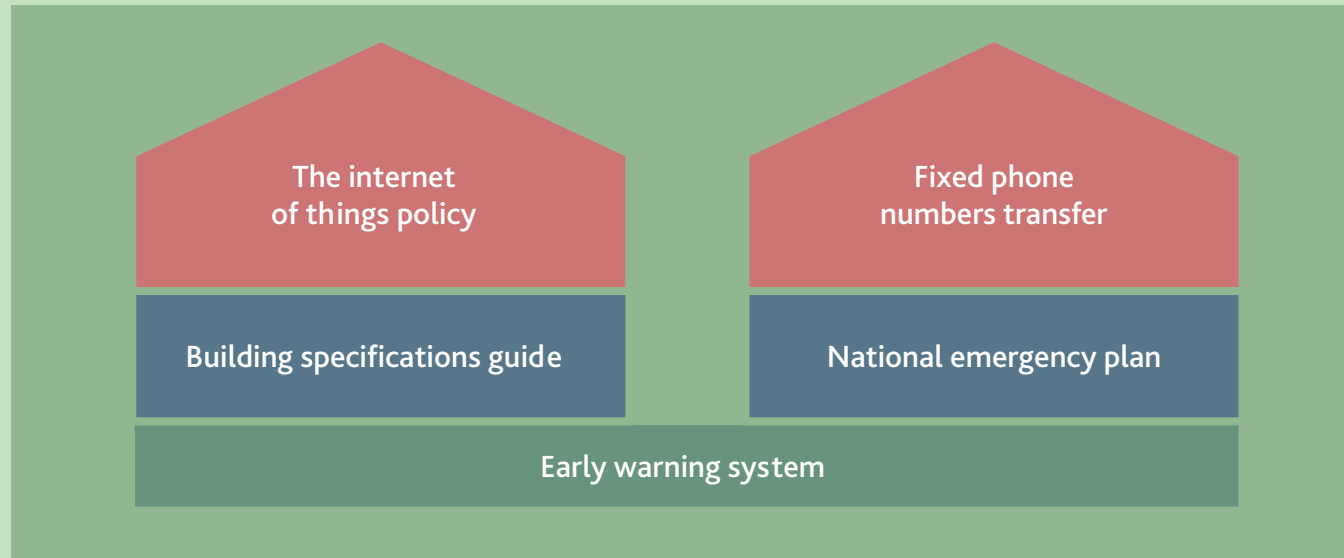
 **Study groups meeting (International Telecom Union)**  
Switzerland (Geneva)  
27 Nov – 1 Dec 2017  
Eng. Saif Bin Ghalita  
Eng. Rashid Memari

 **Forum of climate change complications relief in the Arab region**  
Republic of Tunisia (Tunis)  
16-17 May 2017  
Eng. Tahani Al Mulla

 **World Conference on Disaster Risk Reduction**  
Japan (Sendai)  
25-28 November 2017  
Eng. Abdulrahman Al Naser  
Eng. Ahmed Al Zahmi

# Success stories

## Success stories in governance



### Early warning system

**Date of achievement:**  
December 2017

The early warning system was launched in coordination with the National Emergency, Crises and Disasters Management Authority. The TRA published the technical specs of the early warning system for mobile phones, which explain all technical and operational requirements to be available in mobile phones to be able to receive national warning messages.

### Building specifications guide

**Date of achievement:**  
July 2017

The TRA published the building specifications guide to identify all conditions related to telecom sector buildings. It studied the current situation and revised the guides set by the operators in coordination with the municipalities and major companies.

### The internet of things policy

**Achievement date:**  
December 2017

Finishing the first draft of the internet of things policy internal after holding consultancy meetings with 15 government entities. The policy aims to develop the environmental system to serve the internet of things safely and securely.

### National Emergency Plan

**Date of achievement:**  
December 2017

Updating the national emergency plan for telecom sector, aiming at continuity of telecom operations in case of emergency or crisis, and to tackle urgent issues which may affect the telecom sector infrastructure.

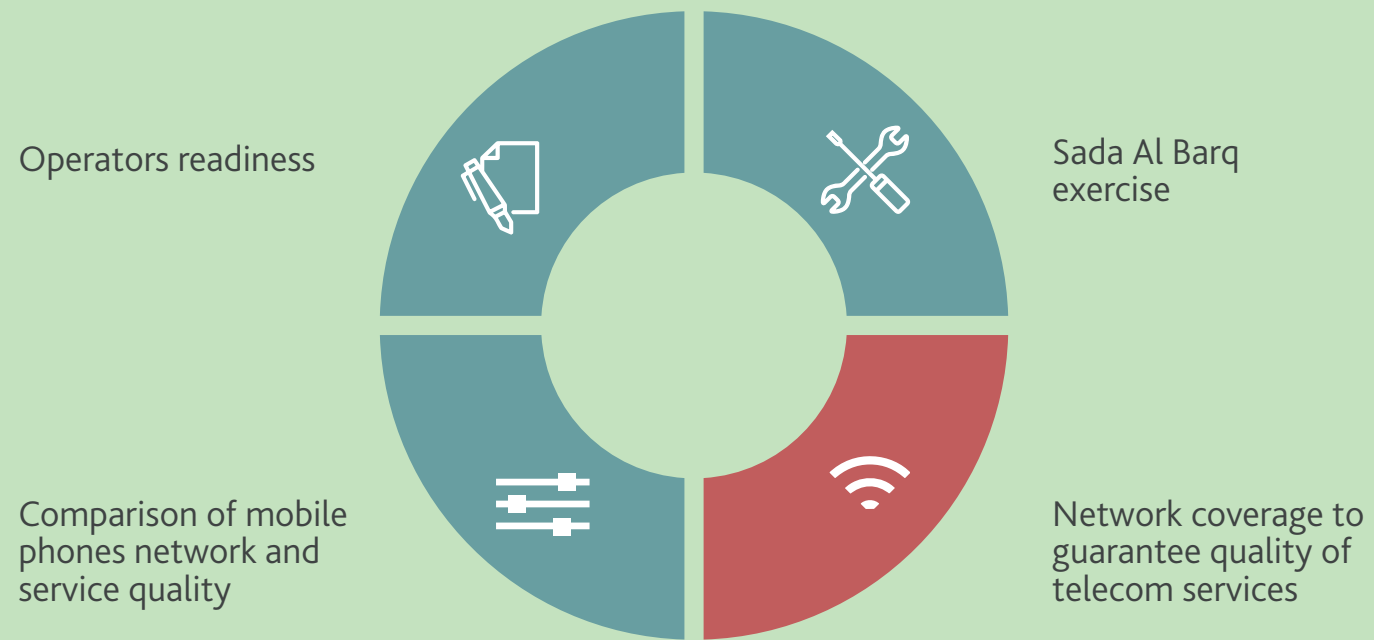
### Transfer of fixed phone numbers

**Date of achievement:**  
December 2017

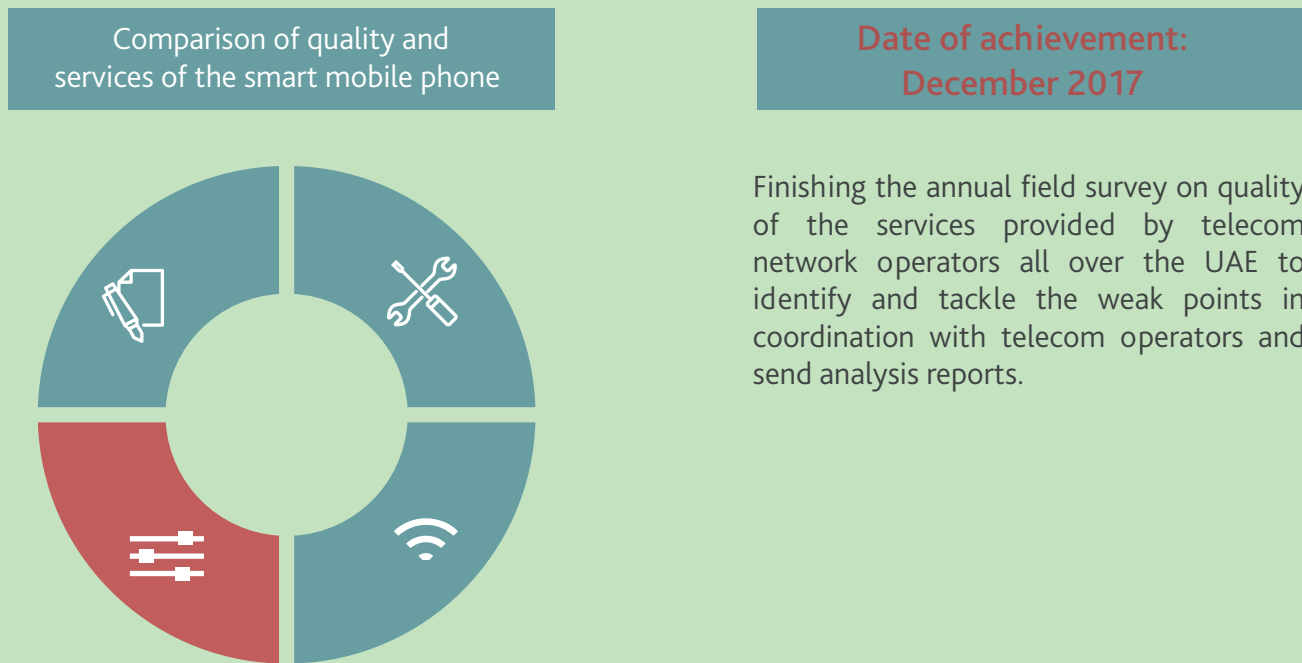
The first phase for providing the service of fixed phone number transfer was completed and operators' network technical readiness was ensured. Technical tests were completed by holding two technical and administrative forums.

# Success stories

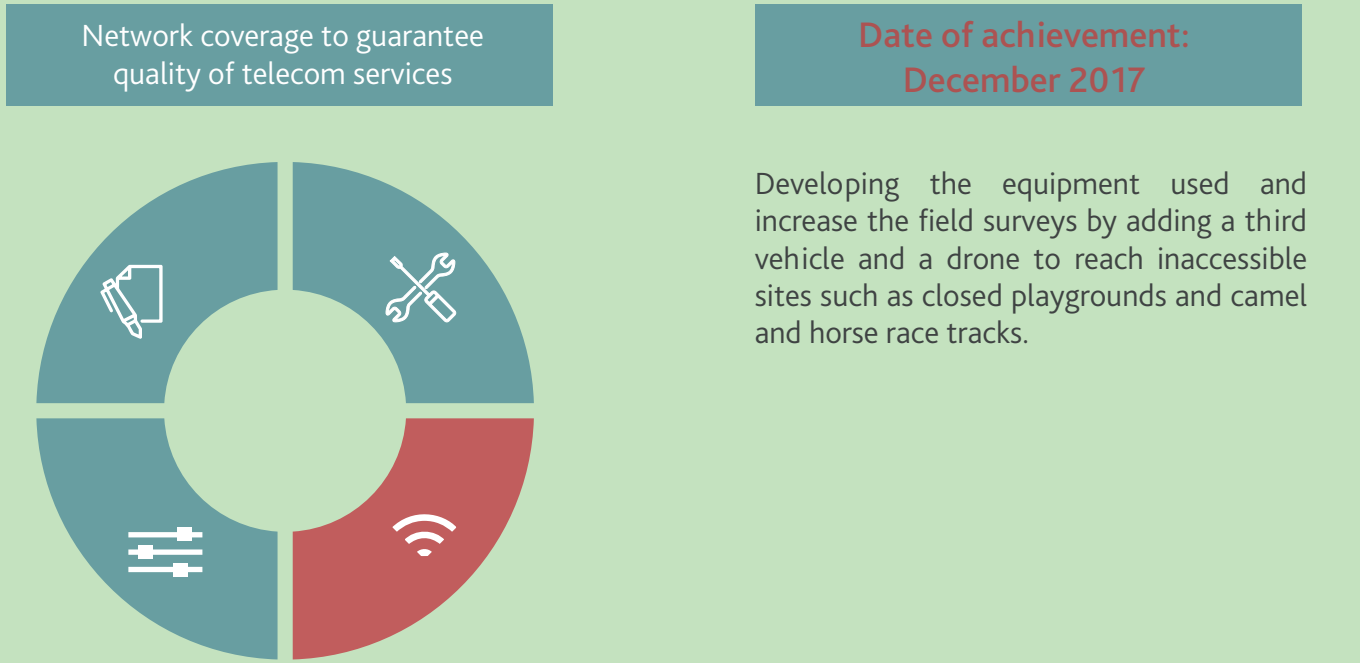
## Success stories in performance



## Success stories in performance

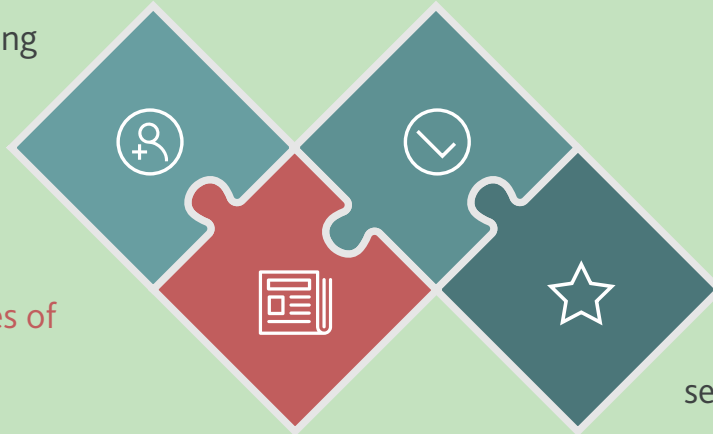


## Success stories in performance



## Success stories in development

A study for establishing a lab to enable the special needs people to use the telecom services



Classification of ICT rating (Tasneef)

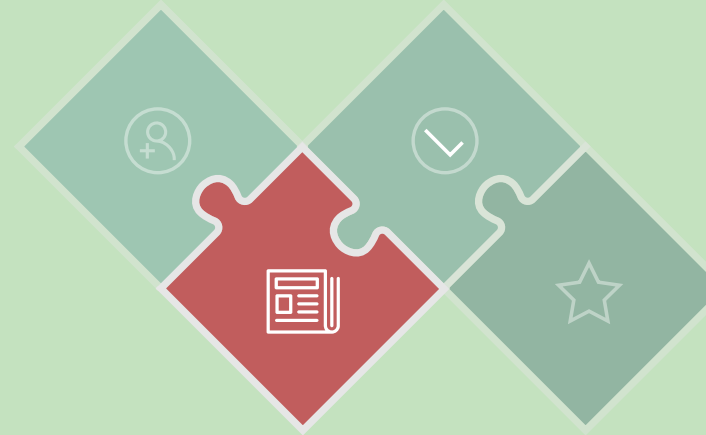
Issuance of certificates of use in numbers

Evaluation of operators' customer service centres (Erteqa)

## Success stories in development

Issuance of certificates of use in numbers

**Date of achievement:**  
December 2017

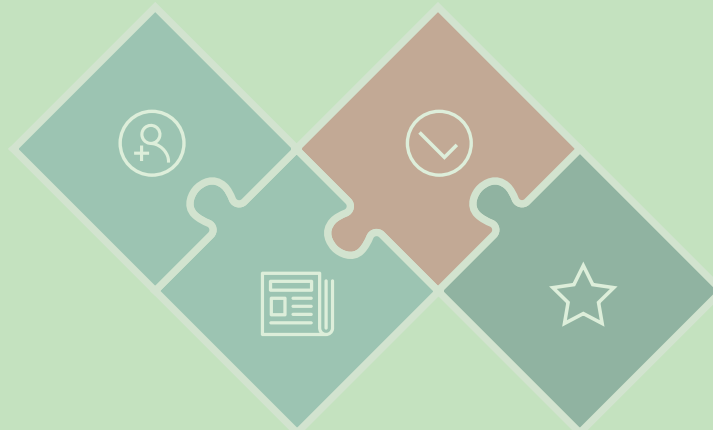


Issuance of certificate of use in numbers allowing customers to keep their numbers. The testing period of the e-system was successfully completed.

## Success stories in development

Classification of ICT rating (Tasneef)

**Date of achievement:**  
December 2017

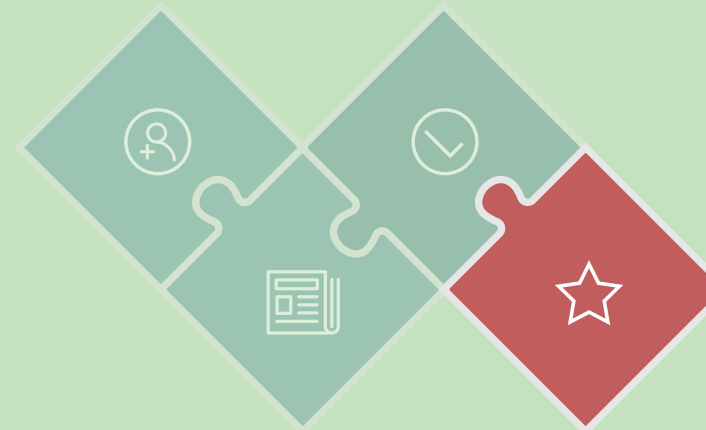


Finishing evaluation of 100 five-star hotels, 30 four-star hotels, 24 shopping centres and 4 parks all over the emirates on basis of seven standards covering substantial standards, including digital protection, support teams quick response, accessibility and service rates.

## Evaluation of operators' customer service centres (Erteqa)

Issuance of certificates of use in numbers

**Date of achievement:**  
December 2017



Finishing the first phase of evaluating the operators' customer service centres. 200 centres were assessed under six standards related to services provided to achieve customer happiness.

## Success stories in development

A study for establishing a lab to enable the determined people to use telecom services

**Date of achievement:**  
December 2017



Finishing a feasibility study to establish an assistive technology centre to help the people of determination to get such technology and enable them to merge and participate with the community.

# Regulatory Affairs Department

## Frequency Spectrum Technical Studies

The TRA's Regulatory Affairs Department (RAD) was established by Federal Law by Decree No. 3 of 2003, which provides for the regulation of the telecommunications sector. The RAD includes three sections: Customer Affairs, Interconnection & Licensing, and Economic Affairs.

The powers vested in the Department has allowed for issuing decisions and regulations that contribute to the balance between the protection of consumer/licensee rights and the competitiveness of telecommunications service providers in the UAE. In order to improve the quality of telecommunications services and promote the electronic lifestyle, the Department contributed to UAE's first place globally in ICT use and government efficiency by enforcing a regulatory framework for all practices in the sector in terms of strengthening consumer protection regulations and safeguarding competition in the sector. The UAE also ranked second in the world in mobile Internet penetration, second in reducing the burden of government regulation, third in mobile penetration and fourth in the quality of overall infrastructure.

## Department Participation:

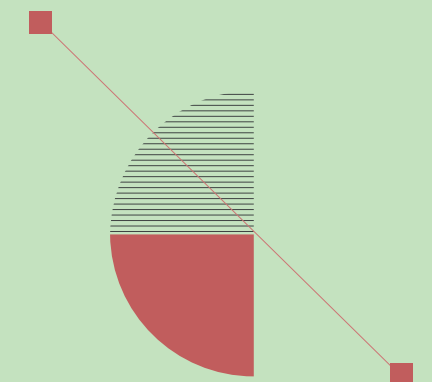
Locally	Regionally	Globally
<ul style="list-style-type: none"> <li>Communication and Regulation Law Middle East Conference 2017 - Dubai.</li> <li>5G MENA – Dubai</li> <li>Cloud MENA - Cloud Computing – Dubai</li> </ul>	<p>3rd meeting of the Arab preparatory group for the World Telecommunication Development Conference (WTDC-17) – Riyadh, Saudi Arabia.</p>	<ul style="list-style-type: none"> <li>World Telecommunication/ICT Indicators Symposium (WTIS), Tunisia from 14-16 November 2017</li> <li>8th Meeting of the Expert Group on Telecommunication/ICT Indicators (EGTI), and 5th Meeting of the Expert Group on ICT Household Indicators (EGH), Geneva - September 2017.</li> <li>Global Symposium for Regulators (GSR-17) – Bahamas - July 2017.</li> <li>Meeting of the Expert Group on ICT Indicators, Geneva, 1-3 March 2017.</li> </ul>

## Regulatory Decisions and Laws

- Determination on fees for interconnection link services extended to the customer's premises (completed in March 2018).
- Instructions to oblige telecommunication service providers in the UAE to increase oversight and control of applications and services provided by third parties.
- Determination on fees for external mobile site sharing (completed in March 2018).
- Determination on wholesale leased lines.

## Figures

- ICT indicators Survey in the Business Sector.
- Telecom annual report.
- Periodic reports of the telecommunications sector (monthly and quarterly).



## Policies and practices to achieve UAE Vision 2021:

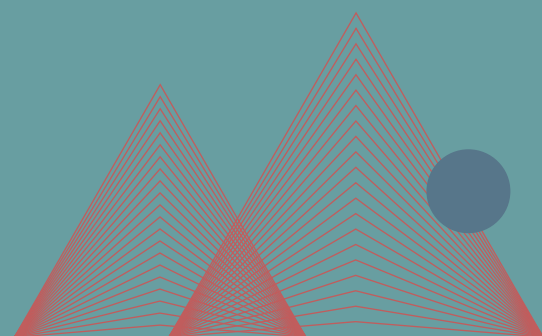
The RAD is the main contributor to NRI initiatives, through which collected data of different international organizations are inserted; enabling to analyze the priority, weights and sensitivity of sub-indices that affect network readiness, thereby making it possible to predict the expected UAE ranking in the various indicators and standards.

### Department Initiatives in the Innovation Week

Introduction of SMART Audit Program to licensees: The Department has launched an innovative initiative to ensure compliance of telecommunications service providers with the consumer protection regulations across their service centers in the UAE. Plus, upgrading the mTransformation process in line with the vision and mission of the TRA.

### Big data study

The Department also completed its big data project, in coordination with stakeholders (Etisalat, Du, Federal Competitiveness Authority and ITU) and collected the required data. The study was classified by the ITU as an innovative initiative to measure sector indicators.



### Other Achievements

1	Reviewing the regulatory accounts of Etisalat
2	Assessing the economic impact of ICT sector to the UAE economy (completed in March 2018).
3	Issuing periodic reports (e.g. Monthly sector performance summary report, quarterly sector performance report, quarterly mobile phone report, annual market review report).
4	Business ICT Survey
5	Sector price study (completed in March 2018).
6	Price control requests (372 requests in 2017)
7	Updating the Consumer Protection Regulations (CPR).
8	Updating the Consumer Protection Guide to educate consumers about their rights and responsibilities.
9	Introducing the audit process on licensees.
10	Updating the NRI simulation model.
11	Filling out ITU surveys.
12	Updating the price and quality indices of telecommunications services.



# Consumer Protection Regulations

- The Department has updated the CPR.
- Review of the billing audit reports of 2017 in respect to Directive No. (3) of 2011
- In 2017, the TRA received the 2016 audit reports of both du and Etisalat during the first quarter of 2017. Accordingly, the TRA reviewed and evaluated the reports and provided feedback on the same.
- The review and evaluation of audit reports on licensees' billing systems, and the extent to which they applied corrective actions, led to a decrease in billing complaints from 22% of total complaints in 2014 to 18% in 2016 and 15% in 2017. Furthermore, billing complaints of UAE's total number of telecom service subscribers have stabilized from 2% in 2016 to 2% in 2017.

## Number and types of complaints processed

Complaints related to the advertising activities of telecom service providers in 2017	Consumer complaints escalated to RAD
The TRA processed <b>4 complaints</b> by both licensees	<b>73 complaints</b> brought to RAD were processed in 2017

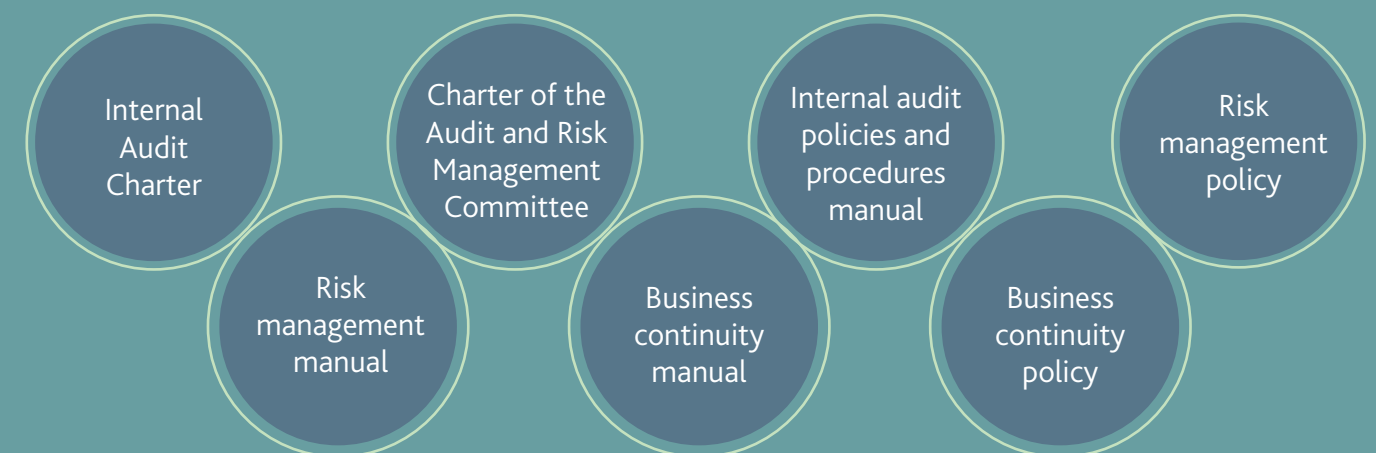
## Awareness booklets

In 2017, the TRA contributed to raising customer awareness of their rights and responsibilities by updating two consumer awareness booklets, namely the Consumer Protection Guide (containing Consumer Rights, Responsibilities & FAQs) and the Consumer Dispute Resolution Manual.

# Monitoring and implementation

Local participation	Regional participation
Membership of the Board of Directors of UAE Internal Auditors Association.	Participation in the Annual Regional Audit Conference (ARAC).
Chairing the Human Resources Committee of Internal Auditors Association.	
Participation in the 'Hassad' program to qualify national cadres in the field of internal auditing. It is linked to the 'Absher' initiative launched by HH Sheikh Khalifa bin Zayed, President of the UAE.	Participation in the annual regional audit managers' conference.
Managing Director of the UN anti-corruption Convention.	
Member and financial advisor of the Club Licensing Committee.	
Cooperation with the Department of Economic Development – Government of Sharjah and the Sheikh Zayed Housing Program to share experiences and learn best practices of TRA's internal audit.	Participation in INCOSAI.

## Regulatory Laws



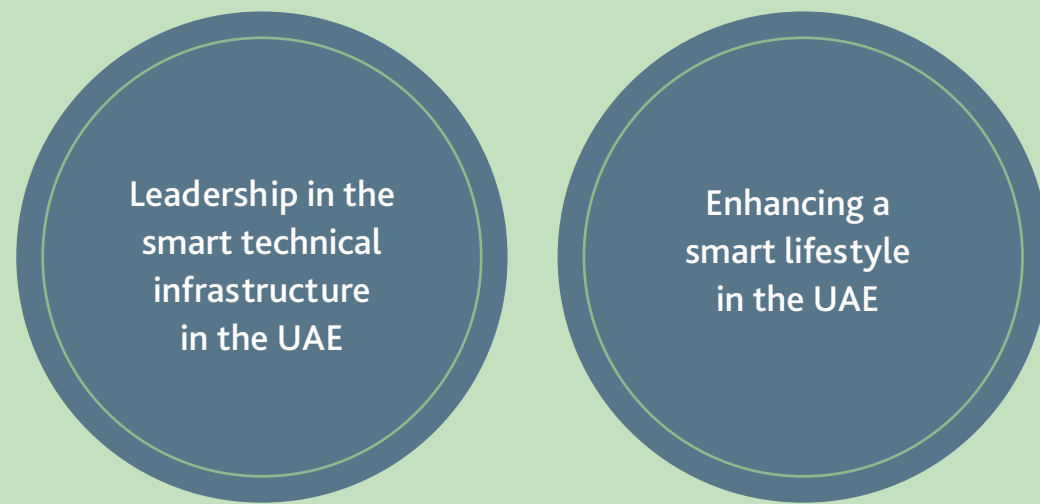
### Other achievements

ISO 22301:2014 for Business Continuity Management System, ISO 31000:2009 for Risk Management System and ISO BS 13500:2013 for Governance Management System.

# Development Department – Information and mGovernment Sector

## About the Department

The Development Department is one of the three departments comprising the Information and E-Government sector within the TRA. It plays a pivotal role in the implementation of the national agenda to achieve UAE Vision 2021 and the mGovernment strategy by carrying out a number of operational plan initiatives that serve the following two objectives:



## Among the initiatives included in the operational plan, which fall under the responsibility of development management

Building and implementing the national e-participation plan, building and implementing a plan to promote the use of smart services, running and managing the user experience lab for mGovernment services, aligning UAE's official portal with the requirements of the national e-services index of the UN, developing the national portal to pursue sustainable development goals, promoting the transformation towards the mGovernment, measuring government entities' commitment to mGovernment enablers, monitoring and measuring mTransformation.

## Local participation

The Department participated in several internal events and government workshops in the course of its efforts to coordinate the mTransformation of government services and websites. The Department held a series of workshops on content development for government websites, and provided consultation to government entities in the area of e-participation, content and open data.

On the other hand, the Department held awareness-raising workshops on mGovernment enablers indicators and the implementation of the national indicator with entities involved in achieving the OSI. The Department also held a number of consultation sessions for federal entities on the indicators of mGovernment enablers.

The Director of the Development Department is the Chairman of the OSI Executive Team, which was formed by the PMO under Letter No. (R/2016/651) dated December 27, 2016, in line with Cabinet Resolution No. (9/1W) dated October 16, 2016 on launching the executive teams and government accelerators to achieve the National Agenda 2021.

The team consists of members of:	The General Authority for Regulating the Telecommunications Sector	Ministry of Health & Prevention	Ministry of Community Development	Abu Dhabi Digital Government	Ministry of Interior
Ministry of Climate Change and Environment	Smart Dubai	Ministry of Education	Federal Competitiveness and Statistics Authority	Ministry of Finance	Ministry of Human Resources & Emiratisation

# The following is a list of the main activities and participations of the Executive Team



## Policies or practices for achieving Vision 2021

After the Development Department developed a number of manuals to help government entities move forward in the mTransformation process, the Department continued to update these manuals in accordance with global developments and local requirements. These guides/manuals can be summarized as follows:

- Guidelines for eParticipation and Social Media for Government Entities.
- Guidelines on accessibility rules of government websites.
- Moderation, Usage and Response Policy.
- e-Participation Plan via the Official UAE Government Portal.
- Guidelines on e-content specification of government entities.

# Department's initiatives during the Innovation Month

## UAE Hackathon: Data for Happiness

As part of the innovation month, the TRA launched the first hackathon series covering the seven emirates under the title: "UAE Hackathon: Data for Happiness". The aim of these hackathon is to give youth the opportunity to demonstrate their innovative skills and provide solutions to the issues that preoccupy people nowadays. The TRA has provided the tools to come up with solutions to these challenges, providing training, follow-up and data through the Open Data Portal (bayanat.ae), which was a source of data covering all topics of the Hackathon. Each hackathon is a short-term competitive event in which tools and data are available, unleashing innovation and creativity, and empowering participants to come up with innovative solutions to existing community challenges.

To organize these events, the TRA collaborated with seven local e-governments: Abu Dhabi, Dubai, Sharjah, Ajman, Fujairah, Ras Al Khaimah and Umm Al Quwain, as well as the Federal Competitiveness and Statistics Authority. The TRA has also coordinated with six universities: Khalifa University, American University of Ras Al Khaimah, University of Sharjah, Ajman University (Ajman and Fujairah campuses) and Zayed University. Private sector partners have also contributed to the organization and implementation of hackathon events, including Richard Kirby, Open Data Corporation, as well as other international and local companies.

At each hackathon, the TRA provided the necessary training to develop smart applications, e-services, websites and innovative solutions. The TRA also provided, in partnership with the private sector and universities, controllers to follow up on all participants and ensure that their ideas are developed and put into practice.

The UAE Hackathon is the first of its kind to most participants as they have not been wont to use government data or develop smart applications, websites or e-solutions. Nevertheless, a great many innovative solutions were produced by participants during the three days of each hackathon. Innovative ideas ranged from finding solutions to fog and traffic jams to providing better health care, improving the quality of education and improving the environment. During the course of the hackathon only, participants were able to develop smart applications and websites, although never before they had such skills. They were also able to use new tools to analyze data innovatively and find creative solutions. A good number of artificial intelligence concepts and tools have been applied to collect data and provide solutions to problems.

The aim of UAE Hackathon was to use and analyze data to create solutions that bring happiness to the UAE community and the world at large. The UAE Hackathon presented challenges across eight topics under the theme "Data for Happiness". These topics include:

Transportation and traffic congestion.

Health and Safety. Sustainable Development (Post-Oil Era).

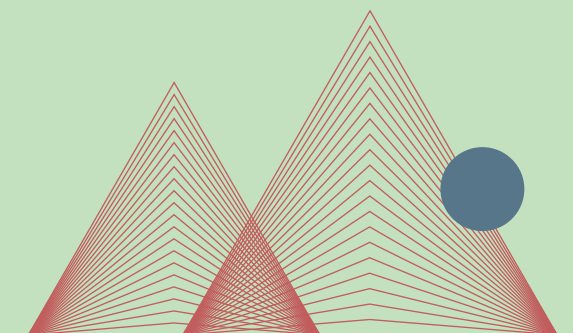
Environment and climate change.

Education.

Gender equality.

Strengthening social relations in the UAE.

Lifestyle enhancement.



## The three main expected results of the hackathon included

Develop models and samples for concrete solutions where data is used to promote happiness

Increased knowledge of data analysis among participants

Support and develop groups and teams to work with the UAE government in using data to enhance people's satisfaction and improve their quality of life

Each hackathon was organized as a three-day event. The first day focused mainly on training and team-building. The second day was dedicated to the development of solutions and follow-up by controllers. As for the final day, it focused on finalizing the solutions and presenting an overview of the innovative work before the jury. After the judging process, a list of 10 teams was announced in each emirate to enter the final stage. At the closing ceremony, the jury announced 3 winning teams in this list. The TRA prepared a list of honorary awards to recognize outstanding ideas and teams that have not won.

The TRA also invited the winning teams to celebrate their achievements at the closing ceremony hosted by Zayed University under the patronage of Her Excellency Ohood bint Khalfan Al Roumi, Minister of State for Happiness and Wellbeing. The final ceremony was held on March 4, 2018, in conjunction with the International Open Data Day. During a two-hour open meeting, the teams had the opportunity to showcase and share their projects with one another and with investors and supporters. Afterwards, the teams participated in the awards ceremony, and the top 3 winners in each emirate were honored and awarded prize money. The grand prize winning team "Life Savers" was honored at the level of the six emirates. This team developed an innovative solution to save lives of people bitten by scorpions and snakes. The winning teams received continuous support from the TRA to assist in obtaining quality open data, and received continued guidance from the hackathon organizers.

## Other achievements

### Development of "Deira" platform

Development of a national smart platform called "Deira" that supports the management and follow-up of operational plans of executive teams to accelerate the achievement of the National Agenda. This platform provides a control panel that allows decision makers to follow progress in achieving targets of national indicators over time.

### Objectives of the Platform

- Provide a smart platform to track the performance of executive teams.
- Automate the implementation of guidelines for national indicator coordinators and executive teams in accordance with the directives of the PMO.
- Document relevant past experiences to use them for better future performance.
- Enhance cooperation among members of executive teams.
- Provide realistic and comprehensive results for the performance of executive teams.
- Savings in human and financial resources by combining efforts and resources, and commitment to the team's calendar.
- Ensure uniformity, accuracy and timely submission of information.
- Support executive teams by providing relevant methodologies and information
- Publish the executive team's calendar and integrate associated preparatory plans.

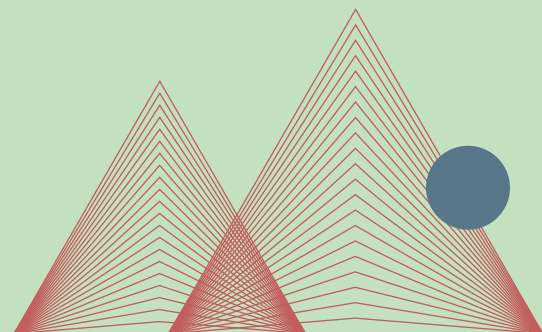
# Domain Name Administration (.aeDA)

The section of Internet Domain Name Administration was established by the TRA as the organizer and registrar of the national domain name of the UAE.

.aeDA is responsible for the control and implementation of all policies related to the operation of UAE's top-level domain ".ae" and ".emarat", in addition to overseeing the operation of the registration system.

## The role of .aeDA is:

- Policy development and implementation.
- Development and marketing of national domain names.
- Accreditation and management of national domain name registrars.
- Educating the public; presenting and promoting the national domain name.
- Streamlining the .ae dispute resolution policy.
- Representing the national domain name (.ae).



## Local participation

### TRA Launches ICANN's 60th Public Meeting (ICANN60)

Participation in the 60th International Public Meeting (ICANN60) of the Internet Corporation for Assigned Names and Numbers (ICANN) in Abu Dhabi, in the presence of highly recognized officials, specialists and stakeholders at the global level.

The meeting provides a platform for developing policies and procedures of Domain Name System (DNS), which supports the country's efforts in transitioning to the future, internet of things, knowledge economy, future foresight of internet, as well as supporting the UAE Artificial Intelligence Strategy.

## DNSSEC Worksho

The TRA, in collaboration with ICANN—the body responsible for regulating domain names, held a three-day training session from 16 to 18 May 2017 on the Domain Name System Security Extensions (DNSSEC).

The session aims to understand risks surrounding the DNS, and the role of DNSSEC in limiting these risks and learning how to implement and manage the system.

The workshop targeted the following categories: System, network and information security engineers of the ICT sector from ISPs, registrars, major corporations, banks and government entities.

## Figures

### TRA Achieves the Target Number of Registered Domain Names in the National Domain (.ae)

The TRA revealed that the number of registered names in the national domain (.ae) has reached more than 210,000 domain names until the end of 2017, achieving the target number of registered names for 2017, and thus, maintaining the leading position at the Arab level in this field. Legal Affairs.

## Customer Happiness Section

### About the section

The Customer Happiness Section seeks to ensure quality services to all TRA customers through channels of communication and customer happiness centers, providing a work environment with a high level of efficiency, transparency and excellence according to state-of-the-art technology. Indicators are developed to monitor the performance of provided services and learn about best international practices to ensure service delivery with a high degree of efficiency and quality.

### Local participation

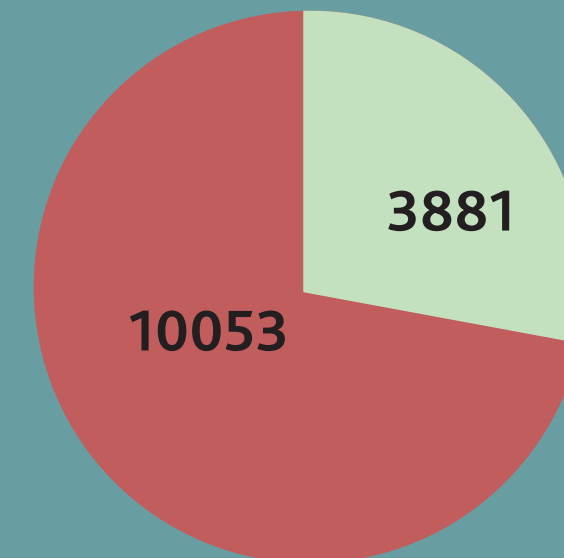
- Emirates Government Services Excellence Program workshop.
- Creativity and innovation workshop.
- Customer Service Excellence Diploma.
- Quality management system.
- Planning and strategy management.
- Customer council forum.
- TRA retreat for future shaping.
- GITEX: UAE (Dubai) – 8-12 October 2017

### Agreements

Signing of Service Level Agreements (SLA) with all service departments.

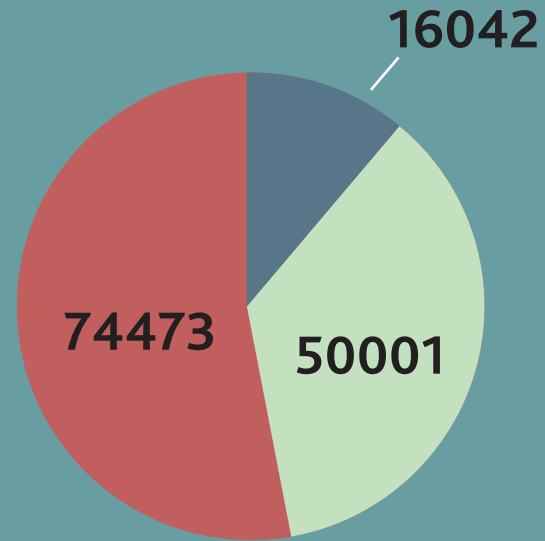
### Regulatory Laws

- Delegation of Authority Matrix.
- Service Charter and Transaction Quality Policy.
- Complaints Management and Dispute Resolution Policy.
- Employee of the Month selection mechanism.
- Quality assurance mechanism for complaint closure.
- Internal and external communication mechanism of the Section.
- ISO specification.
- Update on quality standards.
- Performance indicators:
- Customer happiness centers

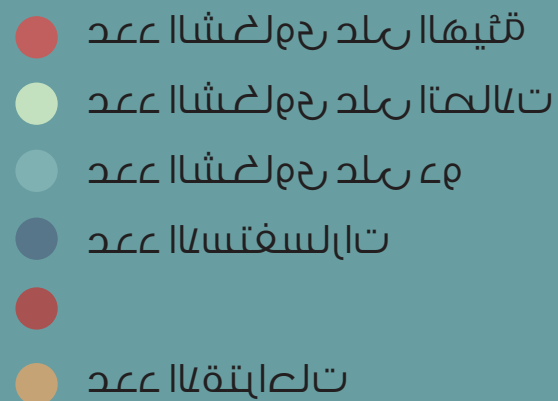
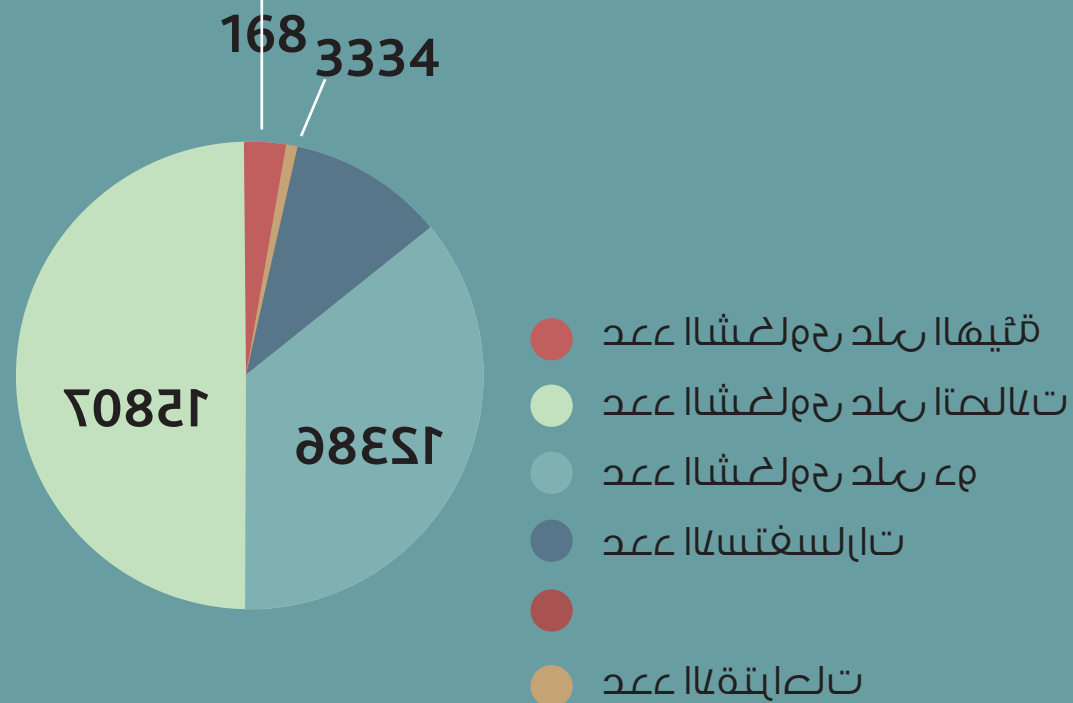


## Regulatory Laws

### Contact Center



### Customer Relationship Management



## Policies or practices for achieving Vision 2021

- Emirates Government Service Excellence Programme (service centre ratings)
- Internal Excellence Award / Award for Corporate and Career Excellence.
- ISO specification: 10001 – 10002 - 10003
- Participation in service development committees
- TRA future shaping retreat

## Other achievements

- Organizing awareness workshops on the Emirates Government Services Excellence Program 7 Stars.
- Implementation of the program's standards in the TRA.
- Replacing the queuing system.
- Implementing the happiness index across all centers.