# ITU Arab Regional Cybersecurity Center
Annual Report 2013/2017

المـركز العـربي الاقليـمي للأمن السيبراني
ITU - ARAB REGIONAL CYBERSECURITY CENTER

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## CEO, Information Technology Authority (ITA)

The ITU Arab Regional Cybersecurity Center (ITU-ARCC) extends support for cybersecurity services, including professional, technical and procedural services. It also shares experience from Oman to support other countries in the region to establish Cybersecurity Centers (CERTs). Assistance is provided to ensure that the centers gain qualifications to become members of international organizations working in the cybersecurity field, in addition to participating in international initiatives and programs. The Center will also give the opportunity to take advantage of the services provided in cooperation with International Telecommunication Union (ITU), and its international partners, which will be available to the countries in the region through ITU-ARCC.

Hosting, managing and operating ITU-ARCC in Oman by the Oman National CERT (OCERT), will enhance providing and developing such services in line with the culture, and the needs of the region, including language used or materials and tools that will be developed according to the regional needs, as well as the risks and threats that the region may be exposed to.

Enhancing cybersecurity programs and initiatives in the Arab region is a priority for the Center. This will play a role in establishing specialized institutions and companies that will grow the economy and provide employment opportunities for citizens. It will also enhance the role played by educational and academic institutions, and encourage research and development programs in this important field, to benefit the countries.

**Dr. Salim Sultan Al Ruzaiqi**
CEO, Information Technology Authority (ITA)

## ITU Forward

An ITU regional cybersecurity center is a key component of a regional and global approach to cybersecurity and is a solid building block onto which other cybersecurity related activities can be linked. The establishment of a regional center, and development of related processes on the national and regional level, can also serve as a foundation for the development of the following activities:

• Building a knowledgebase that supports the region's development and implementation of cybersecurity strategies as well as approaches for the  protection of critical information infrastructures;

• Supporting the building of a regional culture of cybersecurity and related awareness raising initiatives;

• Assisting in the planning and development of strategies on Child Online Protection (COP);

• Further enabling the host country to develop and enhance its national cybersecurity and management capabilities.

ITU's first regional cybersecurity center was officially launched on 3 March 2013 in Oman to cater for all countries in the Arab region. We are very grateful to the Government of Oman for making available its expertise, its internationally-recognized competence and its financial contributions, to create this center together with ITU.

From 2013 to 2017, Arab Regional Cybersecurity Centre (ARCC) has successfully organized 83 events and provided training in various specialty areas of cybersecurity to a variety of target groups touching a total of 6500 persons. I am pleased to note that as ARCC is gaining maturity, it is moving towards provision of consultancy services for enhancing cybersecurity in Least Developed Countries, in national CIRT assessments and implementations.

ARCC operations are gaining momentum and I have no doubt that ARCC will be brought to new heights in the coming years with innovative services in Cybersecurity. I wish to commend the ARCC management and staff for the great achievements that reflect the professionalism and dedication with which our partner has undertaken the daunting task of becoming the first ITU Regional Cybersecurity Centre. ARCC is now a reference model for future ITU Cybersecurity Regional Centers and we look forward to an even stronger collaboration in new endeavors to enhance cybersecurity in the Arab region and worldwide.

At ITU, building confidence and security in the use of ICTs remains one of our top priorities. We will continue to play our catalyst role through initiatives and programmes which we are implementing to improve cybersecurity in every country and facilitate regional and international cooperation.

ITU is committed to facilitate the establishment of more regional cybersecurity centers all around the world. This will make it easier to access and use the services and capabilities that can concretely assist Member States, and specifically developing countries, in building the confidence in the use of information and communication technologies.

**Eng. Ebrahim Alhaddad**
Regional Director, Arab Regional Office
International Telecommunication Union (ITU)

## ITU-ARCC Forward

Cybersecurity has drawn the attention of senior leadership in a various countries. Nations have developed and adopted strategies to deal with this matter, in a way that promotes and builds confidence and security in the use of information and communication technology which have become the main drivers of a knowledge economy.

This importance has been translated regionally, through the selection of the Oman National CERT (OCERT) by ITU to manage and operate ITU-ARCC. We appreciate this confidence provided by the Union and the Arab countries to undertake this vital regional and strategic role.

The working strategy of the Center is represented in adopting global cybersecurity agenda of the  ITU that  address cybersecurity from different aspects including;

• The institutional aspect which includes  the importance of having a national Center to deal with challenges of cyber security, and supervising cybersecurity initiatives and programs at the national level

• The legal aspect

• The cyber security capacity buildingThe technical procedural aspects

• International and regional cooperation

Being the main cybersecurity center in the region, ITU-ARCC activates the strategy of the center and cooperation with the Arab countries in implementing cybersecurity initiatives through various programs that are suitable for the needs of the region. In addition to activating regional cooperation in this field, the centre also focuses on raising awareness and building capabilities in cyber security. The programs and plans of the center include enhancing the readiness of response and capacity to deal with cyber threats and internet crimes in the region by implementing and executing cyber emergency readiness evaluation programs. The center also works in helping countries which have not completed yet establishing their national centers to achieve their accreditation and recruit qualified staff.

**Eng. Ebrahim Alhaddad**
Regional Director, Arab Regional Office
International Telecommunication Union (ITU)
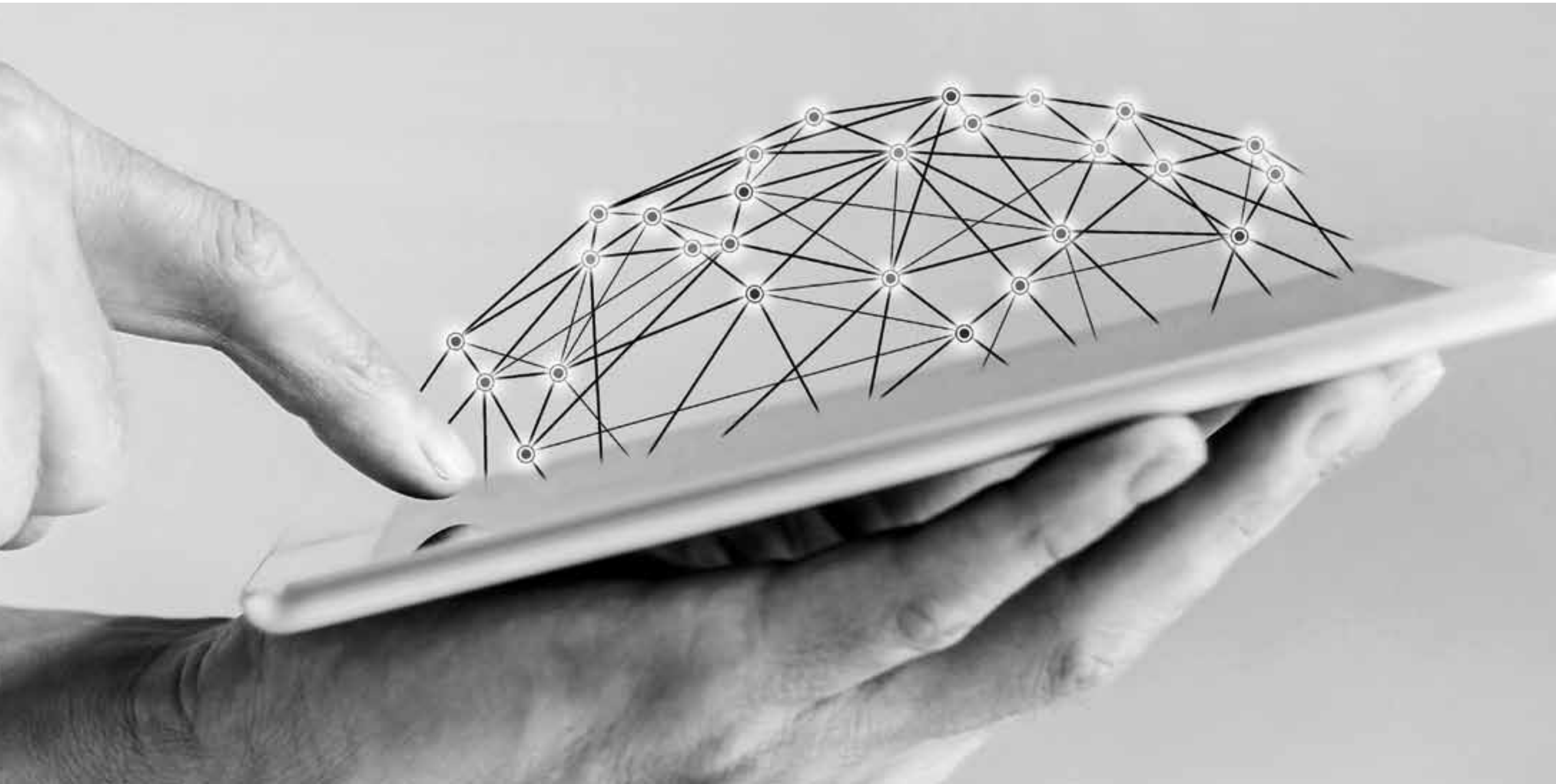
## Introduction to ITU-ARCC

The ever increasing growth of malicious cyber activities and the groups behind these activities across the globe has indicated that the digital criminal networks are getting stronger and gaining international support and consideration every moment.

This fast growing unison is a major threat to all the developed as well as developing nations. International Telecommunication Union (ITU), through its collaboration with International partners and Member States around the world has been trying to mitigate these threats and attacks at various levels using various means and methodologies. Towards achieving its goal of safe cyberspace across the globe, the ITU Arab Regional Cybersecurity Center (ITU-ARCC) is established by the International Telecommunication Union (ITU) and the Omani Government, represented by the Information Technology Authority (ITA), with a vision of creating a safer and cooperative cybersecurity environment in the Arab Region and strengthening the role of ITU in building confidence and security in the use of information and communication technologies in the region.

As a follow-up to the Connect Arab Summit in 2012, which has been organized by ITU in close partnership with the League of Arab States, all stakeholders, including governments, the private sector, civil society and regional and international organizations committed to working together to achieve the summit goals in cybersecurity and innovation. The following objectives came out of the Summit:

- Establishment of national legal frameworks harmonized at the regional level in all Arab countries, within the period of 5 years

- Establishment of Computer Incident Response Teams (CIRTs), in the Arab countries that do not have it, within the period of 3 years

- Development of a national cybersecurity strategies, aligned with international cooperation principles, including Critical Information Infrastructures Protection (CIIP), within the period of 5 years

- Establish cybersecurity related curriculum aimed at build capacity and raise awareness in the various constituencies (e.g. Governments, Academia, Private Sector, Schools).

- Establish a pan-Arab agreement on cybersecurity and cybercrime, harmonized with existing international norms and principles, and in support to global cooperation on the topics

- Emphasize the importance of Child Online Protection (COP) and safety of children and youth, through awareness programs and establishment of technical measures

The Arab Regional Cybersecurity Centre was established by the International Telecommunication Union (ITU) and the government of Oman represented by the Information Technology Authority (ITA) to follow up on these recommendations, and to continue the efforts of bridging the gap in cybersecurity. It enhances the role of ITU in building confidence and security in the use of communication technologies in the region. ITU-ARCC will act as ITU's cybersecurity hub in the region localizing and coordinating cybersecurity initiatives. The ITU-ARCC is hosted and managed by the National Center for CERT in the Sultanate.

## 2) Signing Ceremony



In December 2012, the agreement of hosting the Arab Regional Cybersecurity Center in ITA, represented by the Oman National CERT was signed on behalf of ITA, by Dr. Salim Sultan Al Ruzaiqi, CEO of ITA and, on behalf of the ITU, Mr. Brahima Sanou, and the Director of the ITU Telecommunication Development Bureau.

## 3) Official Launch of ITU-ARCC

The Centre was officially launched on the 3rd of March 2013, at the Oman National CERT in Muscat, Oman, by Mr. Houlin Zhao, the Deputy Secretary General of the ITU, who is currently holding the position of the Secretary General of ITU.



Mr. Houlin Zhao officially launching the ITU-ARCC center



Mr. Houlin Zhao and the ITA board members attending the launching ceremony

## 4) Objectives and Benefits

ITU-ARCC aims to support the member states of Arab Region in developing and improving cybersecurity through the development of sound cybersecurity policies and capabilities, building human capacity, developing related tools, applications, templates, procedures and manuals. In addition, other long term objectives will be achieved through the execution of these activities within the scope of ITU-ARCC which are:
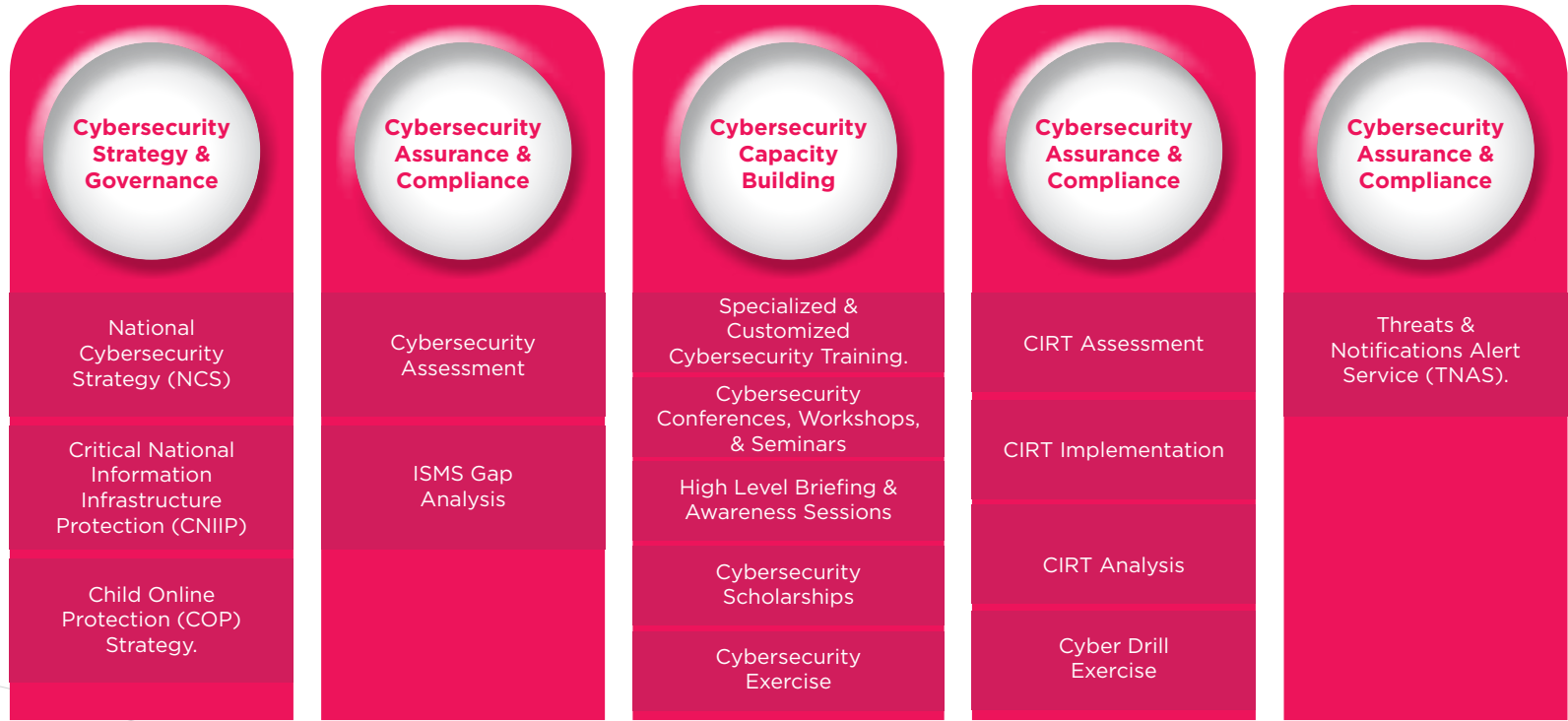
• Driving the adoption of ITU's Global Cybersecurity Agenda across the Arab region.

• Assisting/responding to the cybersecurity needs of least developed countries in the region.

• Being a management center and execution platform for regional cybersecurity objectives.

• Providing a consolidation center for Member States to manage regional cybersecurity programs and initiatives.

• Developing a regional or national information security frameworks and policies studies through regional studies and workshops.

• Increasing the awareness and expertise of cyber and information security in the region critical information infrastructure sector.

## 5) ITU-ARCC Services

ITU-ARCC services offer a variety of cybersecurity services to meet the difficult challenges of fighting cyber threats and to support the center's aim. These services align and agree with ITU Global Cybersecurity Agenda (GCA), which intends to enhance the confidence and security in the information society. The GCA was launched on 17 May 2007 for international cooperation and strategies to improve cybersecurity posture in global. ITU-ARCC provides the following services:

| Cybersecurity Strategy & Governance | Cybersecurity Assurance & Compliance | Cybersecurity Capacity Building | Cybersecurity Assurance & Compliance | Cybersecurity Assurance & Compliance |
|---|---|---|---|---|
| National Cybersecurity Strategy (NCS) | Cybersecurity Assessment | Specialized & Customized Cybersecurity Training. | CIRT Assessment | Threats & Notifications Alert Service (TNAS). |
| Critical National Information Infrastructure Protection (CNIIP) | ISMS Gap Analysis | Cybersecurity Conferences, Workshops, & Seminars | CIRT Implementation | |
| | | High Level Briefing & Awareness Sessions | | |
| Child Online Protection (COP) Strategy. | | Cybersecurity Scholarships | CIRT Analysis | |
| | | Cybersecurity Exercise | Cyber Drill Exercise | |

**(5.1) Cybersecurity Strategy and Governance**
ITU-ARCC experts work closely with governments and public sectors to develop national cybersecurity strategies with clear accountabilities and responsibilities. The cybersecurity strategy includes robust programs to enhance the cybersecurity capabilities and to fill the gaps in the cybersecurity environment.

**(5.2) Cybersecurity Assurance and Compliance**
Cybersecurity assurance and compliance services aim to offer cybersecurity analysis and auditing against some of international standards and best

practices such as ISO 27001. ITU-ARCC experts use the standards to support the compliance initiatives and determine areas for enhancement. Moreover, cybersecurity assurance benefit constituencies by identify and validate their cyber vulnerabilities.

### (5.3) Cybersecurity Capacity Building

The cybersecurity capacity building can help constituencies to build institutional cybersecurity capabilities and to develop programmatic and effective culture solutions. In addition, this service will raise awareness campaigns in the community, forums and at national level and providing cybersecurity training and development programs.
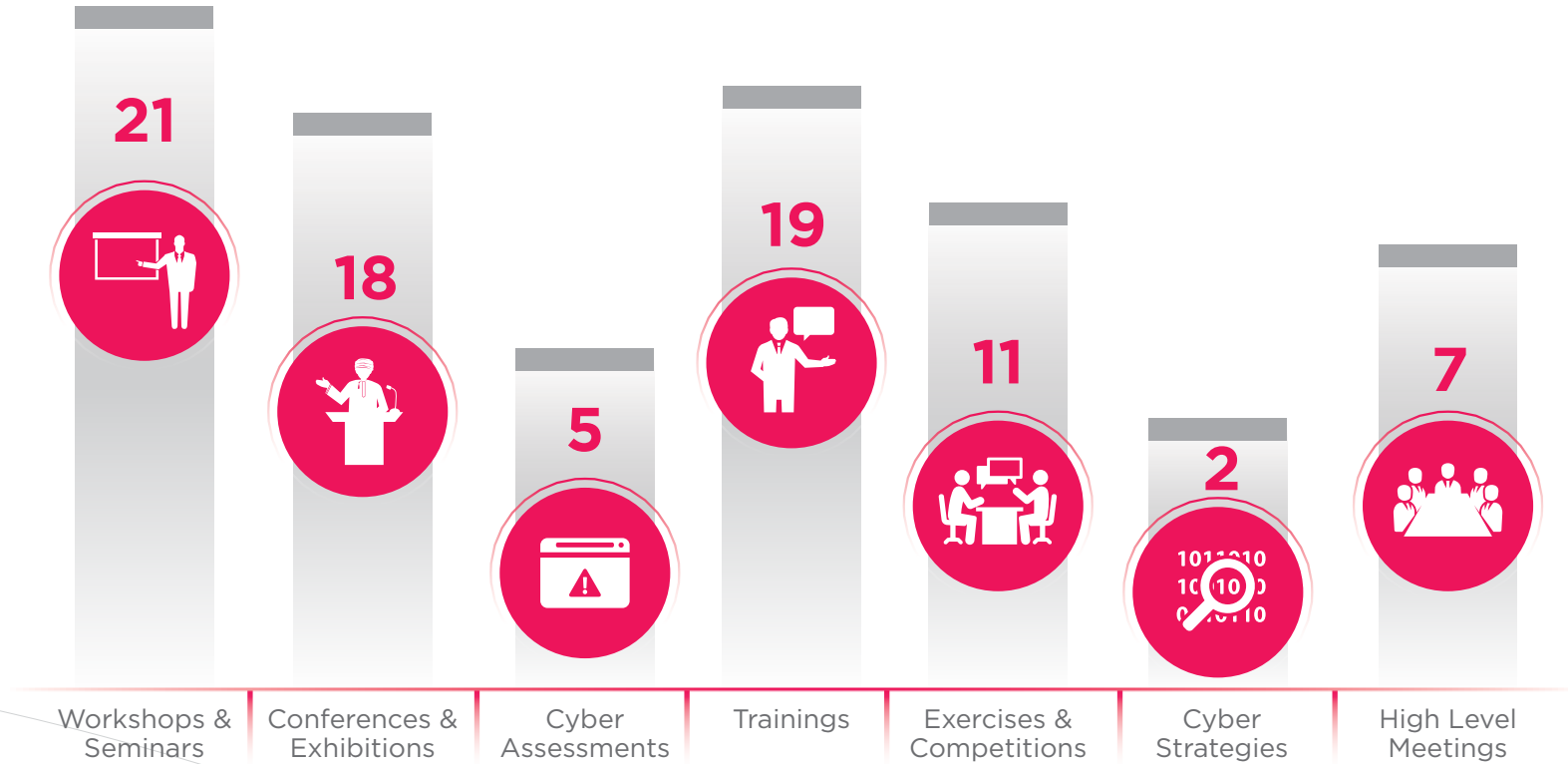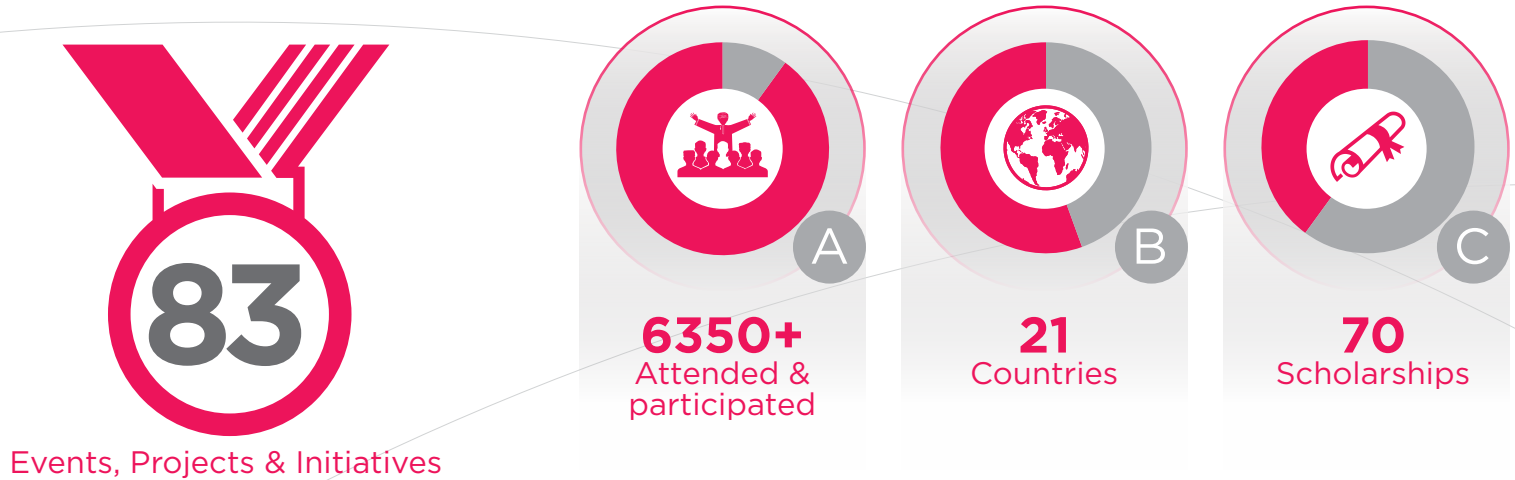
### (5.4) Computer Incident Response

ITU-ARCC work team with their partners assist and encourage ITU member states to establish its national CIRT (Computer Incident Response Team) with nationwide responsibility and to serve as a trusted, central coordination point of contact for cybersecurity. In addition, the computer incident response service is designed to assess governments and public sectors CIRTs capabilities to identify the gaps and propose roadmap to improve their CIRTs.

### (5.5) Technical Services and Information Sharing

Preemptive measures require intelligent systems to prevent attacks before damages occur by sharing of cybersecurity related information incident and threat. ITU-ARCC team provides ITU member states real statistics and platforms to assure that government implement proactive measures against cyber threats.

## 6) ITU-ARCC Activities (2013-2017)

In Years 2013 to 2017, ITU-ARCC performed and delivered a number of events under each service category such workshops, conferences, and assessment at regional level where they were:

## ITU-ARCC Achievements

**83**
Events, Projects & Initiatives

**6350+**
A
Attended & participated

**21**
B
Countries

**70**
C
Scholarships

**21** Workshops & Seminars
**18** Conferences & Exhibitions
**5** Cyber Assessments
**19** Trainings
**11** Exercises & Competitions
**2** Cyber Strategies
**7** High Level Meetings

| Period | Activities and Achievements | | | Country |
|---|---|---|---|---|
| March | Arab Regional Cybersecurity Summit | | | Oman |
| September | CIRT Train the Trainer | | | Oman |
| October | Regional Cyber Drill | Gitex Dubai | COP strategy workshop | Oman |
| | | | | UAE, Dubai |
| November | ITU Telecom World | | | Thailand |

Table 1: Summary of ITU-ARCC Achievements in 2013

| Period | Activities and Achievements | | | | Country |
|---|---|---|---|---|---|
| April | Arab Regional Cybersecurity Summit | COMEX | Malware Analysis Workshop | Incident Handling and Response Workshop | Oman |
| June | Cybersecurity Trends Conference | ISMS: Implementing ISO /IEC 27001:2013 workshop | | | Yemen |
| August | CIRT Assessment Workshop | | | | Palestine & Jordan |
| September | Information security Management Program | CIRT Assessment Workshop | | Cop Strategy Workshop | Comoros |
| | | | | | Bahrain |
| November | COP Challenge | Ethical Hacking Training | | | Bahrain |
| | | | | | Mauritania |
| December | Capacity Building Workshop with ESCWA | Cybersecurity Management Workshop | | Network Traffic & Packet Analysis | Oman |
| | | | | | Mauritania |

Table 2: Summary of ITU-ARCC Achievements in 2014

| Period | Activities and Achievements | | Country |
|---|---|---|---|
| January | Penetration Testing Training | | Oman |
| March | Regional Cybersecurity Summit 2015 | Cybersecurity Regional Innovation Program | Oman |
| April/May | COMEX Exhibition 2015 | Regional Cyber Drill 2015 | Oman |
| | | | Egypt |
| June | International Law and State Behavior in Cyberspace Series Eurasia Regional Seminar | | Oman |
| September | Middle East Cybersecurity Conference & Exhibition | | |
| | Cairo Security Camp 2015 | | Egypt |
| October | ITU Regional Strategy COP Workshop | | |
| November | Ethical Hacking Training | The 3rd Cyber Security for Energy & Utilities Oman | Djibouti |
| | | | Oman |
| | Security & Data Protection On the cloud | Cybersecurity Management Workshop for LDC | Tunis |
| | | | Djibouti |
| December | Arab days of cyber-security: Prospect of cooperation for protecting Cyberspace | | Lebanon |
| | Cyber Terrorism Seminar | | Egypt |

Table 3: Summary of ITU-ARCC Achievements in 2015

| Period | Activities and Achievements | | Country |
|---|---|---|---|
| May | Cyber Security Seminar - Fourth Edition | | Morocco |
| | Regional Cyber Drill -Forth Edition for Arab Region | CIRT Training -Technical Track | Tunisia |
| | CIRT Training -Management Track | Second Arab Cybersecurity Cooperation Team Meeting | |
| August | Implementation of ISMS | | Oman |
| October | Managing Justice Electronically | | UAE |
| October | The Third Meeting of ACCT | | Egypt |
| October-November | Regional Cybersecurity Summit | | |
| November | FIRST Arabic and African Regional Symposium | | |
| December | National Cyber Drill | CCISO  Training | Oman |

Table 4: Summary of ITU-ARCC Achievements in 2016

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| Period | Activities and Achievements | | Country |
|---|---|---|---|
| January | Cyber Green High-Level Meeting | Protecting Oil and Gas Industrial Infrastructure from the Emerging Cyber Threats workshop | Oman |
| March | Application of Modern Technology in Arab Countries: Challenges and Trends conference | | Lebanon |
| | Regional Cyber Drill 2017 | EC-Council camp Technical Track: CEH training | Qatar |
| | EC-Council Camp Management Track: CISO  Training | The Fourth Meeting of ACCT | |
| | COMEX Exhibition 2017 | | Oman |
| April 18 | CSCU Training | | |
| May | Web Security Attacks and Solutions Training | | Oman |
| | Web Security Attacks and Solutions Training | | Djibouti |
| | Vulnerability Assessment & Penetration Testing Training | | |
| | Cybersecurity War Seminar | | Oman |
| July | Penteration Testing Training | | |
| August | CIRT Assessment | | Yemen |
| September | Tenth Cyber Defence Summit | | UAE |

Table 5: Summary of ITU-ARCC Achievements in 2017

| Period | Activities and Achievements | | Country |
|---|---|---|---|
| September | Arab Security Conference | | Egypt |
| October | Information Security System Professional Training | Red Chungu Log Analysis Training | Oman |
| | Warfare and the Impact On National Security Conferenc | | Egypt |
| | Middle East Cyber Index Assessment | National Cyber Drill | Oman |
| November | National Cyber Security CTF Competition | | |
| | FIRST-ITU Africa and Arab Symposium | FIRST-ITU Africa and Arab cyberDrill | Tanzania |
| | Regional Cybersecurity Summit 2017 | ACCT Fifth High-Level Meeting | Oman |
| December | Second Edition of Fintech Security Conference 2017 | | UAE |
| | ITU-T Study Group 17 ITU-T Study Group 17 ARB Meeting | Cybersecurity Workshop for the Sustainable Energy Sector in the GCC | Oman |
| | Regional Cyber Security CTF Competition | | Egypt |
| | Security Policy and Procedures Training | | Oman |
| | Carthage Cyber Arena Conference | | Tunis |

Table 5: Summary of ITU-ARCC Achievements in 2017

## 6.1 Cybersecurity Strategy and Governance Achievements

**1. Child Online Protection (COP) Strategy Workshop**

**27th – 29th October 2013 | Muscat, Oman**


Child Online Protection (COP) Strategy Workshop, Oman


Audience interaction in the Child Online Protection (COP) Workshop, Oman

The Arab Regional Cybersecurity Centre in cooperation with the ITU organized a workshop on "Building the National Strategy for Child Online Protection" during the days 27th – 29th of October 2013, at the City Seasons Muscat. This workshop was organized to tackle cybersecurity issues faced by children, teenagers and young adults in a wholesome manner. COP National Strategy workshop aims to identify risks and vulnerabilities children face while interacting in the cyber space, develop national COP strategy plans,

create Awareness Programs on a national level and provide the attendees with the required knowledge to implement monitor and evaluate COP strategies.

**2. Child Online Protection (COP) Strategy Workshop**

**14th – 16th September 2014 | Manamah, Bahrain**

The ITU-Arab Regional Cybersecurity Centre for the Arab Region in cooperation with the International Telecommunication Union (ITU) Arab Regional Office (ARO) and the International Multilateral Partnership against Cyber Threats (IMPACT) conducted Children Online Protection (COP) national strategy workshop from 14th to 16th of September. The three days program was in collaboration with Bahrain TRA, ITU COP experts and regional partners.

Child Online Protection workshop brought together international experts and stakeholders from local authorities and all organizations who are concerned about online child protection related issues in Bahrain. The workshop aimed to examine how to ensure children and young people are able to safely and securely use new technologies. The workshop also


Child Online Protection (COP) Strategy Workshop, Bahrain

facilitated capacity building and awareness dialogue aimed at empowering experts and policy makers from around Bahrain. The Action Plan of the workshop was based on the five work areas (pillars) of the Child Online Protection initiative i.e. Legal Measures, Technical and Procedural Measures, Capacity Building, Organizational Structures and International Cooperation.

It was held under the auspices of TRA's Director for Cybersecurity, Dr. Khalid bin Duaij Al Khalifa. The workshop was attended by a number of government representative, students, researchers, NGO and group of experts in the COP field.


Some of the participants in the Child Online Protection (COP) Workshop, Bahrain

**3. ITU Regional Strategy Workshop on Child Online Protection (COP)**

**25th – 26th October 2015 | Cairo, Egypt**

ITU-ARCC participated and presented in the "ITU Regional Strategy Workshop on Child Online Protection (COP) for the Arab Region: Empowering the future digital citizens", hosted by and organized

with the Ministry of Communications and Information Technology in Egypt (MCIT) and under the auspices of the League of Arab States (LAS).

The workshop comprised of a wide participation of Arab Regional countries and agencies, different stakeholder groups – policy makers, the private sector, law enforcement agencies, International Organizations and others – to discuss issues and opportunities pertaining to the protection of children and youth online. The workshop created a platform for sharing information on existing activities within the Arab countries and defined a way forward to consolidate the activities towards a regional framework for cooperation.

## 6.2 Cybersecurity Capacity Building Achievements

**6.2-1. Specialized & Customized Cybersecurity Training**

**1- CIRT Train The Trainers (TTT) Workshop**
**22nd – 26th September 2013 | Muscat, Oman**

The objective of this training was to train the


Train the Trainers Workshop, Oman

trainers who will be able to carry out CIRT readiness assessment, implementation, and analysis activities in the Arab region. The course provided participants with the required knowledge and skills to formulate the policies, processes, management structure, infrastructure and other requirements for establishing and managing a CIRT operation. Participants learned CIRT methodology and the approach to conduct CIRT services in the Arab countries. In addition, they learned the techniques, framework, tools, policies and procedures required for establishing and implementing a CIRT.

**2- Malware Analysis Training, Oman**
**20th - 22nd April 2014 | Muscat, Oman**

This training course aimed to inculcate and raise the capability and capacity for those involved in cybersecurity amongst critical information agencies, researchers and information security professionals within the country or on a regional level.


Malware Analysis Training, Oman

Moreover, the course aimed to provide a basic understanding of malware analysis and handling, as well as to lay a path for the participants to explore opportunities in the field of reverse engineering and build an in depth understanding of modern attack methodologies like APT, ROP based attacks etc. The course provided a brief overview on current practices and methodologies used by malicious software to attain persistence and hide itself. ITU-ARO provided fellowships for the LDC countries to attend the workshop to enhance the capabilities of the cybersecurity experts in the region and encouraging the awareness of capacity building programs.

**3- ISMS: Implementing ISO /IEC 27001:2013 Training**
**24th – 26th June 2014 | Sanaa, Yemen**

The training exceeded boundaries by providing a wealth


The Implementation of ISMS Training, Yemen

of knowledge and expertise in the area of information security. The training was conducted by professional instructor equipped with a caliber of accredited experience and certificates in the field of cybersecurity audit. The Implementing of ISMS 27001:2013 workshop provided participants with the required knowledge and skills to protect their ICT infrastructure in depth and to implement and comply with the international standard such as ISO 27001. More than 52 participants attended the workshop from different departments of government and private sectors.

### 4- Ethical Hacking Training
**17th – 21st November 2014 | Nouakchott, Mauritania**

The technical training attended to bring a hands-on course focusing on hacking techniques, exploits and how to counterattack attacks from unauthorized sources. The course revolved around series of exercises based on "hacking" into a network (penetration testing the network) and how defending against the hacks.


Ethical Hacking Training on Cybersecurity in Mauritania

Other areas imparted in this training were exploit techniques, vulnerability assessment and penetrating testing techniques. Given the high accolade of this course, the objectives were to provide a clear understanding of the ethics behind ethical hacking and to equip cybersecurity specialists with the skills to defend an organization by learning the offensive and defensive techniques and the countermeasures

### 5- CIRT Network Traffic & Packet Analysis
**14th – 18th December 2014 | Muscat, Oman**


CIRT Network Traffic & Packet Analysis Workshop
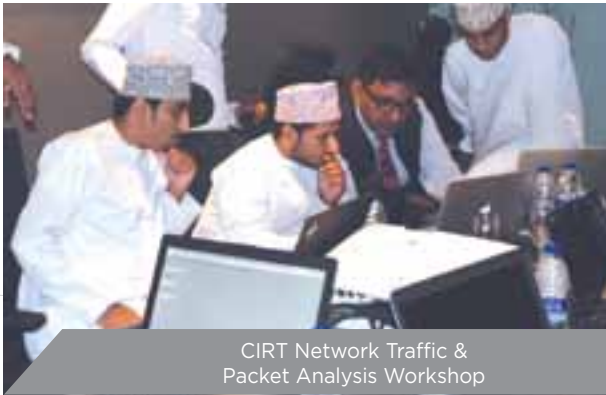
ITU-ARCC conducted a specialized cybersecurity workshop on Network Traffic & Packet Analysis from 14th – 18th December 2014. The workshop was tailored for experts in the field of Penetration Testing, Cybersecurity Specialists, and Network and Infrastructure Specialists. The topics delivered are based on the core concepts of network traffic & packet analysis such as packet capture, collection technique, network protocols, deep packet inspection, firewall and intrusion detection systems, and flow data.

### 6. Penetration Testing Training
**26th – 29th January 2015, Muscat| Oman, 2015**

ITU-ARCC conducted a 4 days training course in the field of Penetration Testing. The training course introduced the latest network penetration tools and techniques in the field of computer security. The customized course was for network administrators, and security professionals who needed to acquaint themselves with information security capabilities to prepare their infrastructure for any future attacks.

The participants benefited from hands on practical experience on network and web penetration tools whilst concurrently learning the theoretical core concepts and background of penetration testing.

### 7. Ethical Hacking Training
**1st – 5th November 2015 | Djibouti**

The ITU-ARCC and ITU-ARO provided a highly intensive program to address the cybersecurity needs and requirements of the least developed countries in the Arab region.


Ethical Hacking Training on Cybersecurity in Djibouti

The objective of the program in Djibouti, which accommodated more than 35 participants from 12 critical sector, was to deliver a training course on advanced hacking tools and techniques used by hackers and information security professionals alike to break into an organization. The training program immersed candidates into the hacker mindset in order to explore not just logical, but physical security, thus, enabling the candidates successfully defend against future attacks.

### 8. CERT Training for Managers
**26th - 27th May 2016 | Tunis**

The ITU-ARCC, in cooperation with the Forum for Incident Response and Security Teams (FIRST), conducted a CERT training programme for mangers. The training, which was hosted by the National Agency for Computer Security (NACS) of Tunis, took place in Hammamet (Tunisia) between May 26 and 27, 2016. The programme included a highly intensive


CERT Training for Managers, Tunis

training for twenty CERT managers as well as senior professionals to address the CERT needs, issues and challenges, which enabled to gain the much-needed expertise to operate CERT divisions.


CERT Training for Technical Staff, Tunis

### 9. CERT Training for Technical Staff
**26th - 27th May 2016 | Tunis**

The ITU-ARCC has also organised CERT training for technical staff in cooperation with the Forum for Incident Response and Security Teams (FIRST) following the Regional Cyber Drill to enhance the knowledge and plug the gap in dealing with cyber incidents in all Arab members. The event, which was hosted by National Agency for Computer Security (NACS) of Tunis, was held in Hammamet – Tunisia, between May 26 and 27, 2016. In fact, as many as 50 CERT analysts and information technology specialists attended the training programme.

### 10. ISMS Training
**21st - 24th August 2016 | Muscat**

The ITU-ARCC has conducted a training on ISO 27001:2013-ISMS implementation, which was organised between August 21 and 24, 2016 in Oman. The training session was attended by 33 cybersecurity and IT officers from different divisions. The training aimed to enable participants from various divisions to understand, apply and monitor the implementation of standards, and requirements of an information security management system (ISMS) based on ISO 27001. The topics discussed were mainly on the nature and benefits of ISMS, and the new structure, domains, and control-objectives of ISO 27001:2013.

### 11. CCISO Training
**25th - 28th December 2016 | Muscat**

The four day-long CCISO programme was organised by ITU-ARCC and EC-Council in Muscat, Oman,


CCISO Training, Muscat

in December, 2016. The course aimed at training individuals who are looking to make a jump from middle management to the executive ranks by focusing on high-level management skills, which are required for information security (IS) executives. As many as 13 students attended the course from different constituencies within Oman. The CCISO programme was formulated and taught by high-level information security executives from across industries, resulting in the most relevant, challenging, and applicable content on the market.


EC-Council Camp Technical Track, Qatar

**12.  EC-Council Camp Technical Track**

**8th - 9th March 2017 | Qatar**

The Vulnerability Assessment and Penetration Testing (VAPT) training was conducted by ITU-ARCC in collaboration with EC-Council, which was followed by the regional cyber drill in Qatar. The technical training has attracted wide participation from different countries with a goal to know about the most vulnerable assets and how to protect them.


EC-Council Camp Management Track, Qatar

**13.  EC-Council Camp Management Track**

**8th - 9th March 2017 | Qatar**

The ITU-ARCC has provided a highly intensive programme to address the cybersecurity roles and responsibilities for Chief Information Security Officer (CISO), which will enhance the cybersecurity controls in the organisation. The CSIO training accommodated more than 37 participants from 16 countries.

**14.  CSCU Training**

**18th April 2017 | Oman**

ITU-ARCC has organised the Certified Security Computer User (CSCU) course in cooperation with EC-Council to 30 participants from governments and critical sectors in Oman.


Training on Cyber Attacks, Oman

**15. Training on Cyber Attacks**

**1st - 3rd May 2017 | Oman**

This training course was aimed at raising the capacity in website attacks and solutions among 20 such key critical information agencies.

**16. Web Security Attacks and Solutions Training**

**14th - 18th May 2017 | Djibouti**

ITU-ARCC has conducted a specialised training in different security topics for the government security officers in Djibouti who will be responsible to deal with the incidents and vulnerabilities. The training


Web Security Attacks and Solutions, Djibouti

covered web Security attacks and solutions and accommodated 30 participants.


Vulnerability Assessment Training, Oman

**17.  Vulnerability Assessment and Penteration Testing Training**

**21st - 25th May 2017 | Djibouti**

ITU-ARCC has conducted the Vulnerability Assessment Penetration Testing (VAPT) in Djibouti from May 21 to 25, 2017 to equip the participants with required knowledge to protect their infrastructure. The participants were 30 professionals from different government entities in Djibouti.


VAPT Training, Djibouti

**18. Penteration Testining Training**

**9th - 13th July 2017 | Oman**

ITU-ARCC has conducted a five-day training course in Penetration Testing in Muscat. The training course introduced the latest vulnerability and penetration tools and attacks in computer security.

**19. Information Security System Professional Training**

**1st - 5th October 2017 | Oman**

The training was attended by over than 20 executives and cybersecurity professionals from the government sector to address cybersecurity needs, management and technical controls, challenges, and recommendations.


Red Chungu Log Analysis Training, Oman

**20. Red Chungu Log Analysis Training**

**15th - 19th October 2017 | Oman**

The programme addressed the challenges faced by modern organisations about Log Management in order to comply with business requirements, as well

as the requirements imposed by regulatory authorities and contractual obligations. More than 20 participants from different government and private firms attended the training programme.

**21. Security Policy Training**

**17th - 18th December 2017 | Oman**

The main aim of this training was to provide participants with the required knowledge and skills to protect their ICT infrastructure and to implement and comply with the best practices across the world. More than 13 participants attended the training from different departments of government and private sectors.

**6.2-2. Cybersecurity Conferences, Workshops & Seminars**

**1. Arab Regional Cybersecurity Summit 2013**

**4th – 5th March 2013 - Muscat, Oman**

In 2013, the Arab Regional Cybersecurity Summit was hosted under the theme 'The Middle East and North Africa unite to defend their critical infrastructure' and under the umbrella of ITU-ARCC. Over 300 CIOs, CISOs,


Regional Cybersecurity Summit 2013, Oman

IT Directors, IT General Managers, IT Infrastructure Directors, IT Heads and Senior Information Security Managers attended it.

In addition, Heads of Project Management Office, Data centers, and IT planning departments from various public, private and academic organizations from countries including Oman, UAE, Saudi Arabia, Bahrain, Kuwait, Qatar, Tunisia, Libya and Egypt attended.

## 2. Arab Regional Cybersecurity Summit 2014
**20th - 21st April 2014 | Muscat, Oman**

The third Annual Arab Regional Cybersecurity Summit was conducted on the 20th and the 21st of April 2014 in Muscat, Oman. This was held under the theme 'Critical National Information and Infrastructure Protection". The summit was organized by the Information Technology Authority, Oman National CERT under the umbrella of ITU-ARCC and in collaboration with Naseba.

In all, the total number of worldwide participants exceeded 300 with 35 Guests of Honors including ministers, deputy ministers, secretary generals and


Dr. Salim Al Ruzaiqi, CEO of ITA at the Regional Cybersecurity Summit 2014, Oman

director generals, 27 speakers, 220 delegates and 30 sponsors, partners and exhibitors. The delegates are representing multiple sectors and industries including banking and finance, oil and gas, telecommunications, defense, utilities and energy, education and government authorities.

Further information is available at the following URL: www.regionalcybersecuritysummit.com

## 3. Cybersecurity Trends Conference 2014
**22nd – 23rd June 2014 | Sanaa, Yemen**

The first Cybersecurity Trends Conference in Yemen aimed to create a platform for national cooperation and enhance the national awareness for the importance of having a dedicated cybersecurity center. The conference agenda discussed cybersecurity in many fronts in order to expose the audience with various mediums of how cybercrime has developed and the current challenges faced by international organizations with no boundaries jurisdiction. In association with cybercrime, the cybersecurity trends conference provided the opportunity to illustrate the best practices of cyber laws and legal measures which are vital tools in the war to combat cybercrimes.


Cybersecurity Trends Conference 2014, Yemen

The event was held under the auspices of HE Dr. Ahmed Abaid Bin Daghir, Deputy Prime Minister and Minister of Telecommunication and Information Technology. The significant event was attended by a number of their Excellencies, general director of Public Telecommunication Corporation (Yemen Telecom), advisors to the minister and ITU-ARCC representatives. Staff from telecommunication administration, sector members, and leaders in cybersecurity in academia sectors has also attended.

## 4. CIRT Incident Handling and Response Workshop
**20th - 22nd April 2014 | Muscat, Oman**

The course designed for incident handlers to equip them with insight into the work that they may perform. It provided an overview of the incident-handling arena, including CIRT services, intruder threats and the nature of incident response activities. This course provided a variety of security incidents and how to recognize and respond to incident attacks, avoid common mistakes in incident response, communicate and coordinate incident response services both internally and externally.


CIRT Incident Handling and Response


Information Security Management Workshop, Comoros

Showing their commitment and belief in enhancing the capabilities of the cybersecurity experts in the region and encouraging the awareness of capacity building programs, ITU Arab Regional Office (ITU-ARO) provided fellowships for the LDC countries to attend the workshop.

More than 18 participates attended this workshop from Arab countries included Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Lebanon, Mauritania, Oman, Palestine, Saudi Arabia, Sudan, Tunisia & Yemen.

## 5. Information Security Management Workshop for Comoros
**1st – 5th September 2014 | Moroni, Comoros**

The ITU-ARCC and in cooperation with ITU-ARO enhancing Cybersecurity for the Least Developed Countries (LDC) project aims to provide a highly intensive program to address the cybersecurity needs and requirements of the least developed ITU LDC in the Arab region. The project seeks to engage with stakeholders with significant roles in cybersecurity, focusing on critical and public sector organizations, in order to build cybersecurity capabilities as well as assess the readiness of the partner countries to develop and implement key cybersecurity measures.

The capacity-building program designed for ministers, senior management from the private sector, banks, critical sectors, IT Companies, ISPs, law enforcement agencies, the judiciary and those with national responsibilities in cybersecurity development and implementation. The workshop held under the auspices of Mr. Osman Abu baker (CEO); the important event attended by a number of their Excellencies, General Directors of the national ICT Regulatory Authority (ANRTIC) and Advisors to the minister and ITU-ARCC representatives and specialists in the field of information technology in Comoros. Staff from telecommunication administration, sector members, and leaders in cybersecurity in academia sectors has attended. The Training workshop was attended by over than 20 executives, managers and senior managers from government sector, law enforcement and Critical National Infrastructure.

## 6. Information Security Management Workshop for Mauritania
**15th – 19th November 2014 | Nouakchott, Mauritania**

The ITU-ARCC and in cooperation with ITU-ARO enhancing Cybersecurity for the Least Developed Countries (LDC) project aimed to provide a highly


Information Security Management Workshop, Mauritania

intensive program to address the cybersecurity needs and requirements of the least developed ITU LDC in the Arab region. The project intended to engage with stakeholders with significant roles in cybersecurity, focusing on critical and public sector organizations, in order to build cybersecurity capabilities as well as assess the readiness of the partner countries to develop and implement key cybersecurity measures. The main objectives of the project are to reach an overall understanding of the current cybersecurity status and the needs of the partner country and its government agencies. Furthermore, the workshop provided a high-level overview on the recommended cybersecurity posture for the country based on the current threat landscape and global best practices.


Promoting Safer Cyber Space in the Arab Region Workshop, Oman

## 7. Capacity Building Workshop on Promoting Safer Cyber Space in the Arab Region
**8th – 9th December 2014 | Muscat, Oman**

A safe and reliable cyberspace is considered as one of the pillars of building trust in information and communication technologies (ICT), whether it is the Internet, e-services, or ICT applications. Building trust in cyberspace is crucial to develop the Information Society and achieve overall socio-economic development.

The main objective of the workshop was to build the capacity of decision makers in governments and Non-Governmental Organizations (NGOs) in the Arab region on the procedural framework for implementing cybercrime law, combating cybercrime and enhancing cybersafety in the Arab region. It also addressed regional and international cooperation for the implementation of national and regional policy for promoting cybersafety in the Arab World.

The workshop jointly organized by the Technology for Development Division (TDD) at ESCWA and the Information Technology Authority represented by Oman National Cybersecurity Emergency Response Team (OCERT). The workshop was held from 8th to 9th of December 2014 at the Hormuz Grand Hotel, Muscat, Oman.

It included a number of general presentations and case studies from selected ESCWA member countries on the above topics as well as discussion sessions focusing on cybercrime and cybersecurity in the region.

### 8. The 4th Regional Cybersecurity Summit 2015
**29th – 30th March 2015 | Muscat, Oman**

ITU Arab Regional Cyber Security Center in cooperation with Bluekaizen and the Information Technology Authority through Oman National CERT (OCERT) hosted the forth Regional Cyber Security Summit by the theme of "Towards the Future of Cyberattacks" under the auspices of His Highness Sayyid Taimur bin As'ad Al Said, Assistant Secretary General for International Relations, the Research Council.


Regional Cybersecurity Summit 2015, Oman

The Regional Cybersecurity Summit with targeting over 280 international and local information security officers brought together over 35 international keynote speakers addressing cybersecurity and tomorrow's technologies, the current and future international cooperation and the challenges and measures of the cybersecurity across the world.

### 9. International Law and State Behavior in Cyberspace Series Eurasia Regional Seminar
**3rd – 4th June 2015 | Muscat, Oman**

ITU-ARCC and United Nations Institute for Disarmament Research (UNIDIR) conducted a Eurasia regional seminar on "International Law and State Behavior in Cyberspace" in Muscat. The seminar organized with the support of the Government of Germany, the Netherlands, Switzerland and the Sultanate of Oman.

UNIDIR's International Law and State Behavior in Cyberspace Series aimed to raise awareness and encourage dialogue on the various interpretations of


International Law and State Behavior in Cyberspace Series Eurasia Regional Seminar, Oman

### 10. Cairo Security Camp 2015
**19th – 22nd September 2015 | Cairo, Egypt**

ITU-ARCC participated in Cairo Security Camp annual event to explore well-known international models that present the best practice and essential elements to develop a National Cyber Security Strategy. ITU-ARCC paper demonstrated the ITU Global Cybersecurity Agenda (GCA) model to develop the NCS strategy.
The annual security camp event targeted the Information Security Community of the Middle East and North Africa (MENA Region). IT Professionals and security practitioners from the region attended, in one

the applicability of international law in cyberspace, with this instalment focusing on how this issue sits within the Eurasian context. The Eurasia seminar in Muscat brought together a wide range of stakeholders, provided a forum for States to elucidate national positions and regional perspectives on the relevance of different bodies of international law to the cyber domain, and emphasized the importance of incorporating regional conversations on cyberspace and international law into broader strategic conversations.

place, to improve and enrich the Information Security field in the MENA region in order to raise the level of awareness in information security field.


Cairo Security Camp 2015, Egypt

### 11. The 3rd Annual Cybersecurity for Energy & Utilities Oman Conference
**9th - 10th November 2015 | Muscat, Oman**

In the 3rd annual cybersecurity for Energy & Utilities conference, the participation of ITU-ARCC was very remarkable where five senior delegates attended and spoke in the event. The conference focused on incident response systems for SCADA/DCS/ICS systems and overcoming backdoor vulnerabilities in SCADA. Participants included OCERT, PDO, Kuwait National Petroleum Corporation, Ministry of Information & Communication Technology, Oman, QCERT, Saudi Aramco, ISO, GSN, and many more attended this event.

### 12. Security & Data Protection on the Cloud Workshop
**16th – 18th November 2015 | Hammamet, Tunisia**

ITU-ARCC presented at the workshop on "Security & Data Protection on the Cloud" in Hammamet, Tunisia. The workshop was hosted and organized by the Agency National of the Security Information (ANSI) as a parallel event with the 10th edition of ICT4ALL 2015 in Tunisia.

The organization of ICT4ALL event is a reaffirmation and commitment of Tunisia to the development and prosperity of Africa and Arab countries. This workshop met one of the expected results of the Arab Regional Initiative on building confidence and security in the use of telecommunications/ICTs, and gave an excellent platform to discuss the security concerns related to cloud computing and data protection.

### 13. Cybersecurity Management Workshop for Djibouti
**22th – 26th November 2015 | Djibouti**

The ITU-ARCC and ITU-ARO conducted a workshop on cybersecurity Management in Djibouti. The workshop is part of an ongoing ITU project for Least Developed Countries (LDC) aimed to provide a highly extensive program to address the cybersecurity needs and requirement of least developed countries in the Arab region.

The workshop was held under the auspices of the General Manager of Djibouti Telecom and received over 30 high-level delegates from the government, law enforcement and private sector, such as the National Police, Central Bank, general secretariat of the government, the department of the Prime Minister, Chamber of commerce and University of Djibouti.

### 14. Arab days of cybersecurity: Prospect of cooperation for protecting Cyberspace.
**1st – 2nd December 2015 | Beirut, Lebanon**

ITU-ARCC presented in the prospect of cooperation for protecting Cyberspace event, which was conducted at the Arab Center for Legal and Judicial Research in The Arab League of Arab states in cooperation with Arab Observatory for the safety of cyberspace

on 1 December 2015. Four panel discussions were conducted on the following subjects: Arab experiences on the Information Security, social and economic aspects of cyber-security, personal data protection and the utilization of modern management techniques and latest trends of cyber security. ITU-ARCC participated in the first panel discussion, sharing their knowledge and experience in the formulation of a national cybersecurity strategy.


Promoting Safer Cyber Space in the Arab Region Workshop, Oman

### 15. Cyber Terrorism Seminar
**27th December 2015 | Cairo, Egypt**

ITU-ARCC participated at the Cyber Terrorism Seminar and presented a paper at the electronic terrorism "risk, security and confrontation seminar. It was conducted at the Police Academy in cooperation and coordination with the media sector, several Egyptian ministries, universities, national bodies and research centers concerned. The seminar highlighted the dangers of cyber terrorism and the development of an effective strategy to counter cyber terrorism.

Cybersecurity Seminar- Fourth Edition, Morocco

### 16. Cybersecurity Seminar - Fourth Edition

**18th May 2016 | Morocco**

The ITU-ARCC has participated in the Fourth Edition of Cybersecurity Seminar, which took place on May 18, 2016 in Al Ribat, Morocco. The seminar was organised by the Directorate General of Information Systems Security (DGSSI), which focuses on cybersecurity in the context of mobility and cloud computing. The seminar was intended as a participatory forum, bringing together representatives of administrations,

public bodies, infrastructure of vital importance, as well as national and international experts. The participation of ARCC was through a key presentation on "Mobile Security Challenges in Oman."


Managing Justice Electronically, UAE

### 17. Managing Justice Electronically

**25th October 2016 | UAE**

A paper was presented by an ITU-ARCC expert about gaps that prevail in electronic litigation systems and the best practices and international standards to secure databases, systems and information networks within the legal system. It also reviewed models of the standards of information security and privacy such as ISO 27001 and ISO 27018. This workshop was organised by the Emirates Association of Lawyers and Jurists in partnership with the Middle East Centre for Consultancy and Social Studies in the Sultanate of Oman. The two-day event in Abu Dhabi, the UAE, was held under the slogan "Towards an Electronic Judiciary."


The Fifth Regional Cybersecurity Summit, Egypt

### 18. The Fifth Regional Cybersecurity Summit

**30th October - 1st November 2016 | Egypt**

In an attempt to create awareness on the growing cyber threats in the Middle East and North Africa (MENA) region, the ITU Arab Regional Cyber Security Centre, the National Telecom Regulatory Authority and Nispana Innovative Platforms, have organised the Regional Cyber Security Summit, which took place between October 30 and November 1 at Sharm El Sheikh in Egypt.

Gaining the momentum from the Fourth Annual Regional Cyber Security event held in Oman in April 2016, the Fifth Annual event was an extension of the cyber security initiatives conducted across the MENA region which mainly focused on the future of cyber security, cloud security, APT and the Cyber Vision 2020.

The summit has attracted more than 300 decision makers from across oil and gas, utilities, aviation, defense, telecommunication and law enforcement agencies from more than 77 countries to understand innovations in cyber security and educate the best policies and practices to combat cyber threats. The three-day summit was hosted under the patronage of His Excellency Yasser el Qady, Minister of Communications and Information Technology in Egypt, who also shared his knowledge on the role of "CyberSecurity for National and Critical Infrastructure Protection."


First - ITU Arabic and African Regional Symposium, Egypt

### 19. FIRST - ITU Arabic and African Regional Symposium

**23rd November 2016 | Egypt**

The ITU-ARCC, in collaboration with the Forum for Incident Response and Security Teams International Telecommunication Union (ITU) and National Telecom Regulatory Authority, has organised the first Arabic and African Regional Symposium, which took place

between October 30 and November 1 at Sharm El Sheikh in Egypt.

The event was an open forum for ICT professionals and decision makers in government, industry, academia and non-government organisations (NGOs) to discuss their ideas for improving cybersecurity and resiliency for security in both Arab and African regions.


Protecting Oil and Gas Industrial Infrastructure, Oman

### 20. Infrastructure Training

**29th January 2017 | Oman**

The ITU-ARCC has organised a workshop for Oman Oil Company and its subsidiaries in the SCADA domain. The main objective of this workshop was to highlight the importance of understanding industrial cyber security, automation, and plant production models in order to design the right cyber security infrastructure and solutions.

### 21. Application of Modern Technology in Arab Countries

**2nd - 3rd March 2017 | Lebanon**

The Islamic University of Lebanon organized a conference entitled "Application of Modern Technology in Arab Countries: Challenges and Trends", in cooperation with the Francophone University Agency, the Middle East Office and the Center for Research and Strategic Studies. ITU-ARCC presnted paper on the latest attacks and soluations to overcome these issues.

### 22. Cybersecurity War Seminar

**24th - 25th May 2017 | Oman**

ITU-ARCC, in collaboration with Oman National CERT, has organised a seminar to train employees for cyber drills in Oman. The main objective of the seminar, which accommodated 30 participants, was to share the knowledge and experience on how to create and conduct cyber drills.

### 23. Tenth Cyber Defense Summit

**20th September 2017 | UAE**

As part of the mission to achieve the United Arab Emirate's national agenda to transform the country into a cyber-smart society, ITU-ARCC is supporting the Tenth Cyber Defence Summit organised by business facilitator Naseba in the UAE. The summit is a private platform for up to 120 cybersecurity decision makers from the UAE to address and find practical solutions for the ever-growing cyber-threats.

### 24. Arab Security Conference

**25th - 26th September 2107 | Egypt**

ITU-ARCC has participated in the annual cybersecurity conference held in Cairo, Egypt. Hosted by Arab Security Consultants and ISEC, firms operating in the field of

information security in Egypt and the Middle East participated in the event. The conference was aimed at raising cybersecurity awareness in the Arab world.

### 25. Warfare and the Impact of Security National Security
### 18th October 2017 | Egypt

ITU-ARCC has presented a paper on "Information War and its Impact on Egyptian National Security and the Strategy to Confront it" with the participation of a group of former strategic and military experts and researchers interested in this field at a conference on impact on national security in Egypt. The main aim of the conference was to develop strategic frameworks to confront the threats and challenges of the modern information war and its impact on areas of national security.

### 26. ITU-FIRST Africa and Arab symposium
### 13th - 15th November 2017 | Tanzania

ITU-ARCC also participated as a strategic partner in the FIRST-ITU Regional Symposium in Nairobi, Kenya. ITU-ARCC personnel conducted a cloud-computing


ITU-First Africa and Arab symposium, Tanzania

security workshop for more than 32 candidates and presented a paper on the Middle East challenges in cybersecurity for more than 150 participants from Africa and Arab regions.


Sixth Regional Cybersecurity Summit, Oman

### 27. Sixth Regional Cybersecurity Summit
### 20th -21st November 2017 | Oman

ITU-ARCC has organised the Sixth Regional Cybersecurity summit hosted by Information Technology Authority of Oman and Oman National CERT in Oman. This edition has covered a range of topics, highlighting the current trend and future threats, which are affecting organisations and business effectiveness. More than 350 participants and 40 speakers from across the world have attended the event.

### 28. Fintech Security Conference
### December 7, 2017, UAE

As FinTech is gaining popularity, ITU-ARCC has endorsed the Second Edition FinTech Middle East in Abu Dhabi as a supporting partner. The conference was a platform to address international issues on cyber security and technology problems with a power packed gathering.


Cyber Security of Sustainable Energy Sector, Oman

### 29. Cyber Security of Sustainable Energy Sector
### 11th December 2017 | Oman

ITU-ARCC also hosted and co-organised the "Regional Workshop on Cyber Security of the Sustainable Energy Sector in the GCC" in cooperation with Chatham House. Renowned speakers from different countries shared their experiences and knowledge in the energy sector.


Carthage Cyber Arena Conference, Tunisia

### 30. Carthage Cyber Arena Conference
### 19th December 2017 | Tunisia

ITU-ARCC has participated in the "Carthage Cyber Arena" conference, which was held in Tunisia on December 19, 2017, as a strategic partner, and presented a paper on the ITU-ARCC roles in cybersecurity among 150 government and private sectors in Tunis.

### 6.2-3. High level briefing and awareness sessions

### 1. GITEX Exhibition
### 20th – 24th October 2013 | Dubai, United Arab Emirates

ITU-ARCC participated in GITEX exhibition which was held in Dubai, UAE to promote the regional cybersecurity center and its services in the Arab region. The main aim of this participation was to introduce the role of ITU-ARCC and its objectives, benefits, and services to ITU member states.

### 2. ITU Telecom World
### 18th – 22nd November 2013 | Bangkok, Thailand


ITU-ARCC participation at GITEX

Hosted by ITU and MICT, NBTC and TCEB on behalf of the Government of Thailand, and sponsored by China Mobile, the opening ceremony marked the official opening of ITU Telecom World 2013. ITU-ARCC participated and was a panel speaker in the conversation titled "Building Cybersecurity Capabilities in the Developing World: Needs, Challenges, and the Role of Public-Private Partnerships" and promoting ITU-ARCC services and mission to ITU member states.


ITU-ARCC participation in the ITU Telecom World

### 3. COMEX 2014
### 7th - 11th April 2014 | Muscat, Oman

COMEX, enriched with events and special projects of


ITU-ARCC participation in COMEX 2014

business and Governmental organizations, aimed to create the most comprehensive information platform for its visitors. People have interested to stopover by the ICT initiatives and learn how information technology could digitalize their life. ITU-ARCC presented and explained about center's role and provided services to ITU Region Member States.

### 4. First Arab Cybersecurity Cooperation Team Meeting
### 30th March 2015 | Oman

ITU-ARCC has organised the first meeting of the Arab Cybersecurity Cooperation Team (ACCT) in Muscat on March 30, 2015 after the regional cybersecurity summit. The communication platform among all national CERTs is to discuss the issues facing and moving forward in the cybersecurity field.

**5. Comex Exhibition 2015**

**27th -1st May 2015| Muscat, Oman**

Following the success of COMEX 2014, ITU-ARCC presented again in 2015 and shared the center's role at the exhibition. The center witnessed a greater audience from governmental organizations, private sector, and public who are interested to learn how information technology could digitalize their life.

**6. Middle East Cyber Security Conference & Exhibition**

**14th – 16th September, 2015 | Muscat, Oman**

ITU-ARCC participated in the "Middle East Cyber Security Conference & Exhibition" among other key organizations in the cyber security industry to discuss the need for cyber space to consider strategies, practices, tools, research, securing critical national infrastructure and other topics.


Middle East Cyber Security Conference & Exhibition, Oman


Second Arab Cybersecurity Cooperation Team Meeting, Tunis

**7. Second Arab Cybersecurity Cooperation Team Meeting 24th May 2016 | Tunis**

After the success of the first Arab CERT meeting, which took place in Oman's capital city of Muscat on March 30, 2015, ITU-ARCC has organised the second meeting in Hammamet, Tunisia on May 24, 2016 in cooperation with National Agency for Computer Security (NACS) of Tunis. The ITU-ARCC and some of the focal point members from different Arab countries have agreed for initiating Arab CERTs Cooperation Team (ACCT), which will be a communication platform for all CERTs in future to discuss the challenges faced by cybersecurity arena and to develop strategies to overcome these challenges.

In this meeting, members from eight Arab countries discussed the main initiatives that were mooted by ITU-ARCC and suggested appropriate solutions to the major challenges.


Third Arab Cybersecurity Cooperation Team Meeting, Egypt

**8. Third Arab Cybersecurity Cooperation Team Meeting**

**31st October 2016 | Egypt**

The ITU-ARCC has conducted the third meeting for Arab Cybersecurity Cooperation Team (ACCT) from Arab CERTs to discuss various aspects of strengthening cooperation and follow up on the implementation of decisions taken in the previous meetings. The meeting was held simultaneously with the Fifth Regional Cyber Security Summit in Egypt. Moreover, the meeting covered the current feedback and inputs from Arab CERTs' focal points about the annual cybersecurity activities implemented by ITU-ARCC.

**9. Cyber Green High level Meeting**

**18th January 2017 | Oman**

The high-level meeting was organised to highlight and demonstrate the health metrics ecosystem


Cyber Green High level Meeting, Oman

called CyberGreen for Critical National Information Infrastructure sectors.

The purpose of the event, which attracted more than 60 focal point from different critical sectors in Oman, was to enhance the communication and incident


4th Arab Cybersecurity Cooperation Team Meeting, Qatar

response capabilities of participating teams as well as to ensure a collective effort in mitigating cyber threats among the region's national Computer Incident Response Teams (CIRTs).

**10. The Fourth Arab Cybersecurity Cooperation Team Meeting**

**7th March 2017 | Qatar**

The ITU-ARCC has also conducted the fourth annual meeting of Arab Cyber-Security and Respond to the Computer Emergency (CERT) to discuss cooperation and follow up on implementation of decisions of previous meetings. The meeting was held simultaneously with the Fifth Regional Cyber Drill in Qatar.


COMEX Exhibition, Oman

**11. COMEX Exhibition**

**28th - 30th March 2017 | Oman**

ITU-ARCC participated in the COMEX exhibition in the Sultanate of Oman and the organisation has presented all its services to the visitors during the exhibition.


Fifth High-Level Meeting of ACCT, Oman

**12. The Fifth Arab Cybersecurity Cooperation Team Meeting 20th November 2017 | Oman**

ITU-ARCC has organised the Fifth Annual Arab meeting simultaneously with the Sixth Regional Cybersecurity Summit. The meeting discussed initiatives of cooperation in 2018 and study the cooperation areas among National Arab CERTs.

**13. ITU-T Study Group 17 ARB Meeting**

**10th December 2017 | Oman**

Regional teams of ITU-T Study Groups is a proven effective means to bridge the standardization gap between developing and developed countries on ICT standardization. ITU-ARCC has organised the first


ITU-T SG 17 ARB Meeting

ITU-T Study Group 17 'Security' for Arab region with the main goal to study the gap among Arab countries in cybersecurity.

### 6.2-4. Cybersecurity Scholarships

ITU Arab regional cybersecurity center provided scholarships in cybersecurity field for Arab countries. The scholarship awarded to recipients with good background or work experience in cybersecurity or information technology. The total accepted applications till December 2015 were 70 from different Arab countries.

### 6.2-5. Cybersecurity Exercises

**1. COP Challenge**

**19th - 20th November 2014 | Manamah, Bahrain**

The COP Challenge is one of the deliverables of the COP global initiative. It is a conscious and proactive effort to raise awareness and impact critical thinking skills for students, educators and parents. This programme seek to address the issue of educating children by presenting a platform where children/students, parents and educators can engage in fun activities to learn more about the risks the children face on the Internet and how these risks can be mitigated.

It designed to cater to two groups of students: middle school, secondary section (MSS) and the university section (U).

ITU- ARCC in collaboration with Bahrain TRA conducted a COP Challenge for Bahrain. The competition catered to MSS whereby one parent and his child will participate. The main objectives were to aid children/youth to understand the risks and issues regarding their usage of the Internet, interaction on online services and to promote awareness on cybersecurity and protection of children online.


COP Challenge, Bahrain

### 2. Regional Cybersecurity Innovation Program

**30 March 2015 | Muscat, Oman**

The first Arab Regional Innovation program inaugurated this year by the ITU-ARCC at the Forth Arab Regional Cybersecurity Summit with the aim of promoting innovation and entrepreneurship in the Information security industry, encourage establishment of technology start-ups with a focus on information security products such as hardware, managed services, applications and tools. The innovation competition is focusing exclusively on products or tools that can serve the security industry/customers in information security field. With a positive number of participants from the Arab regional countries, the final three winners were from Oman, Sudan and Egypt.

### 3. National Cyber Security CTF Competition

**11th November 2017 | Oman**

ITU-ARCC, in cooperation with Cyber Talents, has organised the National CTF competition in Oman, which covered more than 400 talented students from different educational institutes. The competition started with an induction programme that have covered more than 10 universities in Oman. The final round contained 16 teams and 1 team from SQU have been qualified to represent Oman in the regional competition.

### 4. Regional Cyber Security CTF Competition

**15th - 16th December 2017 | Egypt**

ITU-ARCC has also participated in the regional Capture the Flag (CTF) competition in Egypt and rewarded all the winners in this competition, who were from national CTFs. The award took place at the Cairo Security Camp in Egypt with more than 800 attendees.

### 6.3 Emergency Incident Response Achievements

**1- Regional Cyber Drill 2013**

**22nd – 24th October 2013 | Muscat, Oman**

The event held under the auspices of HE Mohammed


National Cyber Security CTF Competition, Oman


Regional Cyber Drill Workshop 2013, Oman

Yousef Al Zarafi, Under-Secretary of the Foreign Ministry for Administrative and Financial Affairs. The important event was attended by a number of their Excellencies, ambassadors of Arab countries and members of the ITA Board of Directors, alongside ITA's CEO, Dr. Salim Sultan Al Ruzaiqi, ITU representatives and specialists in the field of information technology in the Sultanate.

Staff from telecommunication administration, regulatory authorities, regional organizations, sector members, OCERT ambassadors, and delegates from the Arab Region attended. Participating Team members are from Algeria, Egypt, Tunisia, Morocco, Sudan, Qatar, Bahrain, Kuwait, United Arab Emirates, Saudi Arabia, and Oman.

The Regional Cybersecurity Forum aims to create a platform for cooperation, enhance the readiness and capabilities of the national CIRTs as they have a key role to play in supporting the Governments in addressing cybersecurity related issues at the national level as this pertains to preparing for, dictating, managing, and responding to cyber incidents when they occur.

The Regional Cyber Drill is conducted to expose the participants from the national Computer Emergency Response Teams (CERTs) to various scenarios based on case studies and real-life situations, which provides them with an opportunity to test their skills and knowledge in responding to such attacks.


CIRT Assessment Workshop, Jordan

**2- CIRT Assessment Workshop for Jordan**

**24th – 28th August 2014 | Amman, Jordan**

Fulfilling the vision of creating a safer and cooperative cybersecurity environment in the Arab Region, and in cooperation with the ITU Arab Regional Office, the ITU Arab Regional Cybersecurity Centre (ITU-ARCC), and in close cooperation with Ministry of Information and communication Technology (MOICT) Jordan carried out a workshop/readiness assessment for Jordan to establish a National CIRT. The field mission was carried out by the ITU-ARCC experts and in the presence of a representative from the ITU Arab Regional Office for the planned duration of 5 days (24th August 2014 - 28th August 2014) in Amman, Jordan. Officials from MOICT, TRC, Ministry of Interior, ISPs, Banks, Army and Ministry of Justice were some of the participants in the workshop.

The main objective of the mission was to assess the capability and readiness of Jordan to build a sustainable National CIRT, based on an analysis of stakeholder attributes with relevance to needs for security incident response of the country. The National CIRT will provide a central point capability to identify, respond and manage cyber threats and at the same time enhance cybersecurity of the sovereign country.

**3. CIRT Assessment Workshop for Palestine.**

**24th – 28th August 2014 | Amman, Jordan**

In cooperation with the ITU-ARO, ITU-ARCC, and in close cooperation with Ministry of Information Technology (MTIT) carried out a workshop readiness assessment for Palestine to establish a National CIRT. The field mission was carried out by the ITU-ARCC experts for the planned duration of five days (24th August 2014 - 28th August 2014) in Amman, Jordan. Officials from government and private sectors were some of the participants in the workshop.

The main objective of the mission was to assess the capability and readiness of Palestine to build a sustainable National CIRT, based on an analysis of stakeholder attributes with relevance to security incident response needs of the country. The National CIRT will provide a central point capability to identify, respond and manage cyber threats and at the same time enhance cybersecurity of the sovereign country.


Palestine participation in the CIRT Assessment Workshop

#### 4. CIRT Assessment Workshop for Comoros

#### 8th – 12th September 2014 | Moroni, Comoros

ITU-ARCC's goal is to bridge the digital divide between the rest of the World and the Least Developed Countries (LDC) in the Arab Region by conducting an enhancing cybersecurity program. CIRT assessment workshop was one of the delivered programs in Comoros which aimed to suggest the necessary recommendations that will improve cybersecurity readiness of Comoros and build a sustainable National CIRT. More than 28 participants from different government and private entities attended the CIRT assessment workshop.


CIRT Assessment Workshop for Comoros

#### 5. Regional cyber drill Egypt- Third edition.

#### 17th – 21st May | Hurghada, Egypt

ITU Arab Regional Cybersecurity Center (ITU-ARCC) in Oman and the International Telecommunication Union (ITU) organized the third edition of the regional cyber drill in Egypt.

The cyber drill exposed participants from the national Computer Emergency Response Teams (CERTs) to various scenarios based on case studies and real-life situations, which provides them with an opportunity to test their skills and knowledge in responding to such attacks.

A number of experts and specialists from the CERTs took part in the event, in addition to a number of strategic partners from the private sector, as well as global companies specializing in cybersecurity and members and workers in the field of cybersecurity in the Arab region.

#### 6. Regional Cyber Drill -Fourth Edition

#### 23rd - 25th May 2016 | Tunis

The ITU-ARCC has also organised the Fourth Edition of the Regional Cyber Drill-Applied Learning for Emergency Response Teams (ALERT) for the Arab Region, which was dedicated for National Arab CIRTs. This event was held in Hammamet, Tunisia, between 23 and 25 May, 2016, and was hosted by the National Agency for Computer Security (NACS) of Tunis.

More than 100 cybersecurity specialists from National CERTs within the region participated in the event,

which is in addition to several strategic partners specialised in cybersecurity, and global corporate members in the Arab region. The shared aim among the participants was to enhance communication and incident response capabilities of the participating teams as well as to ensure a collective effort in mitigating cyber threats among the region's national Computer Incident Response Teams (CIRTs).


National Cyber Drill, Muscat

#### 7. National Cyber Drill

#### 19th - 21th December 2016 | Muscat

The national cyber drill was organised by ITU-ARCC and hosted by Information Technology Authority in Oman between December 19 and 21, 2016 to enhance collaboration between Governments and critical national infrastructure sector for better respond to cyber threats, as well as building local capabilities to effectively mitigate adverse effects of cyber incidents.

More than 100 participants participated in the event from more than 33 government agencies, private companies, and other critical sectors in Oman. The national drill is structured around various scenarios involving the most common types of cyber-attacks, while the workshop provided a platform for cooperation, information sharing, and discussions on cybersecurity and related issues.


Regional Cyber Drill, Qatar

#### 8.  Regional Cyber Drill

#### 5th - 7th March 2017 | Qatar

ARCC has organised the fifth edition of regional cyber drill for Arab countries with the participation of 160 participants from 16 Arab countries. The purpose of the event was to enhance communication and incident response capabilities of the participating teams as well as to ensure a collective effort in mitigating cyber threats among the region's national Computer Incident Response Teams (CIRTs).

#### 9. CIRT Assessment

#### 13th - 17th August 2017 | Yemen

ITU-ARCC has remotely conduct the CIRT assessment in cooperation with Yemen Telecom, which aimed to improve cybersecurity readiness of Yemen and build a sustainable Telecom CIRT.


National Cyber Drill, Oman

#### 10. National Cyber Drill

#### 24th - 25th October 2017 | Oman

ITU Arab Regional Cybersecurity Center (ITU-ARCC) and Oman National CERT exposed participants from the national government entities and critical sectors in Oman to various real attacks scenarios to test their skills and knowledge in responding to such attacks.

#### 11. Middle East Cyber Threat Index Assessment

#### 22nd October 2017 | Oman

The Middle East Cyber Threat Index (MECTI) is a

multi-stakeholder project bringing together both the private and public sectors at national level, with the aim of raising awareness of current and on-going cyber threats as well as to drive the development of effective national cybersecurity strategies. ITU-ARCC and Silensec-run MECTI assessment provides both a country-level index and a ranking within the Middle East countries on the cyber threat level faced by various countries within the region.


FIRST- ITU Africa and Arabic Cyber Drill

#### 12. FIRST-ITU Africa and Arab Cyber Drill

#### 16th – 17th November 2017 | Tanzania

With the main aim to enhance attendee's capabilities by implementing capacity-building programme and evaluate their performance on how to respond the cyber-attacks, ITU-ARCC developed and delivered a "Ransomware" scenario to over than 60 cybersecurity participants from Africa and Arab.

## 7) Testimonials

### Sudan

"Since its establishment by ITU and ITA, the ITU-ARCC has provided many important services for the Arab region, especially, the Cybersecurity Incident Response Centers. Personally, I benefited from their services and I noticed the quality and experience in delivering these services. The center provides important services in training, educating and building capacities to help countries to protect their cyberspace, fighting cybercrimes and spreading the culture of the safe use of the internet".

**Eng. Mohammed Mohammed Khair Al haj**
**Director of International Relations Department National Telecommunication Corporation Khartoum - Sudan**

### Yemen

"We would like to express our thanks to the Regional Cybersecurity Center for their continuous support of our organization (Yemen Telecom) by providing consultations in information security and your valued contribution on the success of the first information security conference in Yemen. We appreciate your help in training our staff to upgrade their capacity in information security, wishing you all the success and prosperity".

**Eng. Tariq Mohammed Rasi'**
**Head of network security department**
**Yemen Telecom**

### Palestine

"ITU-ARCC in cooperation with the ITU is helping Palestine to build the cybersecurity incident response team Pal CIRT as part of its active role in protecting information, networks and other vital IT infrastructure". "The center organized a number of workshops in the Arab region. The center succeeded in organizing the readiness workshop to build cybersecurity incidents response teams in Jordan and Palestine, which resulted in the current preparation of these teams. The workshop was organized by the end of August 2014".

**Fadi Mohammed Marjanah**
**Director of the Government Computer Center**
**Ministry of Telecommunications and Information Technology, Palestine**

### Comoros

"ITU-ARCC conducted two successful events in Comoros and the outcome of these events resulted into better understanding of cybersecurity issues in Comoros, as well as an effective raise of awareness about the threats people are facing while online. Now that awareness is raised here, we are looking forward to more work to do together again with ITU-ARCC in the upcoming year 2015."

**Mr. Taoufiki Mbaé,**
**Directeur Technique, Autorité Nationale de Régulation des TIC**