1st ITU Regional IPv6 and IoT Challenge for Arab States

May-August 2022

1. Background:

The World Telecommunication Development Conference 2017 stipulated five priority areas of work for ITU in the Arab States Region under the ARB Regional Initiatives (ARB RIs). ARB RI 4 titled "Internet of Things, Smart Cities and Big Data" aims to raise and spread awareness of the importance of future challenges in the era of the Internet of Things (IoT) and Big Data, and how to address such challenges; establish regulatory frameworks and take measures to help cope with the rapid changes in the field of telecommunications and information technology, and work to ensure the transition to smart cities and communities (SCCs). This **1st ITU Regional IPv6 and IoT Challenge** are organized by the ITU in collaboration and support of the Telecommunications and Post Regulatory Authority of Sudan (TPRA) and is part of the implementation of the activities of the ITU's regional IPv6 and IoT Expertise center for Arab region kindly hosted by TPRA-Sudan.

The ITU's regional IPv6 and IoT Expertise center for the Arab region project aims at assisting the ITU Member States in the Arab region is transitioning from IPv4 (Internet Protocol version 4) to IPv6 (Internet Protocol version 6) for the Internet of Things (IoT).

2. Information about the Challenge:

In the context of the ITU Arab regional outreach with its membership and bringing new partners for the seek for regional development using IPv6, IoT and IPv6-IoT based networks and applications, a themed Challenge/challenge will be organized to attract both the domain users as well as solutions developers to identify topical problems, accelerate solution availability and strengthen the ecosystem, overall. Broadly, the themes are classified as below:

1. IPv6 applications
2. IoT applications
3. Smart Grids, Smart metering, Smart Farming, and Smart Transport based IoT solutions
4. IPv6 and IoT Security
5. Emerging IPv6 and IoT R & D

This IPv6 and IoT Challenge will help to accelerate solution building in areas of the Challenge with existing expertise and generate additional expertise in themes where local expertise is low/building up. In addition,

the Challenge is looking for participants that are passionate about IPv6 and IoT and want to work on real-life, practical projects.

Who Should Participate?

The Challenge is targeting at university students, graduates, startups, SMEs and IPv6 and IoT developers from the industry, academia, ICTs specialists, IoT and IPv6 enthusiasts, hardware hackers and security researchers, software developers and network operators as well as open source IPv6 and IoT projects specialists.

Why Should You Participate?

This Challenge provides a great opportunity to develop new software or tools, meet others in your field, and exchange knowledge and experience with topic experts who are more specialized the Challenge topics.

Below are the main stages of the IPv6 and IoT Challenge organization, IPv6 and IoT apps developers' eligibilities and requirements to register in the challenge, winners' selection criteria and prizes distribution.

2.1 Challenge format:

This 1st ITU Regional IPv6 and IoT Challenge for Arab States consists of different activities and events .

1. The First activity aims to introduce the themes to the target groups moderated by domains experts, the activity aims to promote the IPV6 and IoT technologies, introduce the challenge and address the market gaps and potentials.

2. Following this activity, another two virtual sessions (one technical session and the other one will introduce ideation tools and techniques).

3. 3 days virtual hackathon will be organized, where the participants will develop their business models and MVP plans

4. These participated teams will work on their prototypes and market studies with the support of business and technical coaches.

5. The teams will present their work in front of the challenge jury to select three winners.

6. The Challenge panel judges the commercial pitches and awards prizes. Prizes are expected to be cash or a certificate of appreciation or both and subject to completion of a prototype solution and demonstration.

2.1.1 Pre-Challenge:

The challenge will be open to innovators based in the Arab region and Sudan and no need to be part of a registered team/organization according to the rules and the teams must be represented (by a minimum of three to four registered participants) in the final day to be eligible for the prize if they become to be winners.

The Challenge will be governed by a Challenge panel consisting of ITU and representatives of the TPRA trainers' members, respective partners, and sponsors. The panel shall nominate, by election from among the members, the Chairman of the panel during the first meeting. Application for the Challenge will close on **25**

June 2022. The Challenge organizer will organize many information sessions (physical and online) to attract potential applicants and answer any questions.

5 to 10 teams will be shortlisted by **26 June 2022** after sending their applications and attending the Challenge events and based on their proposals (i.e. proposals that do not meet the challenge requirements will not be retained). The teams shortlisted will then be notified to work towards developing their prototypes. Teams would comprise **2-5** individuals (at least one female participant per team is a requirement). Roughly **85** participants are expected.

After the teams are registered, they can immediately start to design and develop their prototypes up until the first day of the hackathon as mentioned below. Coaching and technical support will be provided during the Challenge event dates and mentorship will be provided during this period by the Challenge Challenge organizer.

2.1.3 During the Challenge

The Challenge organizer and partners will organize many information sessions (physical and online) to attract potential applicants and answer any questions. In addition, 249Stratups as Challenge organizer will provide support to the shortlisted teams and coach the teams to help them prepare their pitch and demo for the Jury.

2.1.4 After the Challenge:

The selected teams will present their projects on the first day of the planned regional training on "Certified Network Engineer for IPv6 (CNE6) & Certified IoT Fundamental (CIoTF) to be conducted in Khartoum (**21 August 2022**), teams will make their presentations to a jury responsible for deciding the Challenge's winners. Winners will be announced after all teams have presented. Only the first three teams will be awarded a prize on **25 of August (dates to eb confirmed later)**.

Winning teams will be judged according to the originality of their application of IPv6 and IoT, its feasibility, level of development and deployment.

Prizes

Prizes for the 3 top winners will be announced and identified later.

2.2 Partnerships and Sponsorships

To achieve the Challenge goals, three tiers of partnerships are sought:

- Outreach Partners
- Technology Partner

- Strategic Partners (Potential Users of Innovation – For the sustainability of the graduates)
- Sponsors (Financial support towards the program / Significant in-kind contribution)

List of Potential Partners and their Status

Partner	Contact information	Partnership Mode	Status
TRPA	**Eng Ahmed Atyya** ahmed.atyya@tpra.gov.sd	Strategic Partner and Sponsor	Onboard
Sudani	**Mrs Hiba Ali** hiba.ali@sudatel.sd	Technology Partner	Onboard
249Startups-Sudan	**Mr Ahmed El Murtda,** ahmed@249startups.com	Outreach Partner and Challenge organizer	Onboard
IEEE- Sudan Chapter	**Ms Fay Majid** faymagid4@gmail.com	Research Partner	Onboard
Google Developer Student Clubs - University of Khartoum	**Mr Abdulmajid Ali** tiotech1998@gmail.com	Research Partner	Onboard
Internet Society Sudan Chapter	**Mutwakel Yassen Abd Alrahman Yousif** mu@isoc.sd mutitex@gmail.com	Outreach Partner	Onboard
Sudanese Network Operators Group (sdnog)	**Sara Alamin Mohamed Hassan** sara.alamin@protonmail.com	Outreach Partner	Onboard
Dal Group		Sponsor	
Sudan University for Science and Technology (SUST)		Academic Partner	On progress
Garden City University		Academic Partner	On progress

Future University		Academic Partner	On progress

2.3 Post- Challenge:

End of activity report about the Challenge experiences will be developed and shared with the Challenge/ Challenge stakeholders and partners. The idea, apps and prototypes created/developed and problem solved will be documented and posted on the main homepage of the ITU's regional IPv6 and IoT Expertise Centre for Arab region. The apps developed and problem solved could be used by the project sponsors.

A problem/s that comes from the event will also be recorded as a possible challenge for the next run of the Challenge.

As Challenge is a wonderful opportunity to build a community around new ideas, the ITU-Industry panel will work on the preparation of the next Challenge considering challenges encountered.

3. Challenge Events: Important Dates and Deadlines

- ✓ 29-30 May 2022: 1st Event: Regional IPv6 and IoT Challenge (Hybrid)
- ✓ 11 June 2022: Technical Session
- ✓ 16 June 2022: Ideation Session
- ✓ 25 June 2022: Deadline for application for the Challenge
- ✓ 26 June 2022: Selection of applicants (shortlisted applicants)
- ✓ 30 June-02 July 2022: 2nd Event: Virtual Regional IPv6 and IoT Challenge
- ✓ 21 August 2022: Pitching ideas and prototypes session
- ✓ 23 August 2022: Announcement of winners
- ✓ 25 August 2022: Winners received their prizes during opening ceremony of the ITU Expertise centre on IPv6 and IoT for Arab Region (Date to be confirmed)

4. Challenge Activities and Milestones

IPv6 and IoT Challenge was launch in 7th of April 2022 and expected to end by 25 of August, and it will go through 4 milestones as shown in the table below (see the workplan with timelines below).

Stage	Description	Due Date

Stage One [Pre-Challenge]: Outreach and awareness campaign	- Communities campaign
	   o IEEE (region)
	   o Students' communities
	   o Google Developer Student Clubs -University of Khartoum
	   o Internet Society Sudan Chapter
	   o Sudanese Network Operators Group (SDNOG)
		10th of April – 25th of June

	o Arab Innovation and Entrepreneurship Network (AIEN) o Start-ups and companies o MEIs o SMEs - Digital campaign o Posts and videos content about each theme online o Host experts online to discuss the topics o Partner with other hubs in the region to promote the application - Workshops o Technical workshops to cover the targeted themes o Product-market fit/ business model generation o Business applications of IPV6 and IoT	
Stage Two: **First Challenge Event (Hybrid)**	The Challenge are designed to cover business and technical aspects by providing: - Mentorship - Short sessions about user feedback/ UX / UI	29 & 30 May
Technical Session	Technical session to cover the main themes of the Challenge: - IPv6 - IoT	11th of June
Ideation Session	Business session to take the participants from ideation stage to prototype of the products using business Canvas tool	18th of June
Selection of Applicants	Select the applicants (shortlisted)	26th of June
Virtual Hackathon	The virtual hackathon will cover business and technical aspects by providing: - Business Model Generation - Market research - Mentorship - Short sessions about user feedback/ UX / UI	30 June-02 July

Stage Three: Post Challenge	The participants will have access to the following: • Co-working space • Training workshops (market research, business planning, product design and product development, pitching skills) • Coaching	June- August
Stage Four: Pitching and Closing Ceremony	- Pitching ideas and prototypes - Announce winners - Keynote speeches	▪ 21 August 2022: Pitching ▪ 23 August 2022: Announce winners ▪ **25 August 2022**: Closing Ceremony (to be confirmed)

5. **Challenge Coordination:**

ITU Coordinator: **Eng. Mustafa Al Mahdi** Programme Officer| ITU Arab Regional Office Email: mustafa.almahdi@itu.int	Host Coordinator: **Eng Ahmed Atyya** Director | Numbering and Licensing TPRA-Sudan Email: ahmed.atyya@tpra.gov.sd	Challenge Organizer Coordinator: **Mrs. Khansa Sayed Alhag** Director | SMEs Unit E-mail: Khansa@249startups.com