The Universal Acceptance (UA) of Domain Names and Email Address Internationalization (EAI)

Africa GAC Members Webinar

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ICANN

Universal Acceptance of Domain Names and Email Addresses

Mohamed Elbashir
Universal Acceptance Program Manager

What is the Universal Acceptance?

The Domain Name System (DNS) has changed dramatically over the last decade. There are now more than 1,200 active generic top-level domains (gTLDs) and some of these include domains that use non-Latin scripts and that are longer than three characters (e.g. .ไทย, .LONDON, .SPORT).

Universal Acceptance (UA) is cornerstone to a digitally inclusive Internet by ensuring all domain names and email addresses – in any language, script, or character length (e.g., .рф, .PHOTOGRAPHY) – are accepted equally by all Internet-enabled applications, devices, and systems.

Universal Acceptance
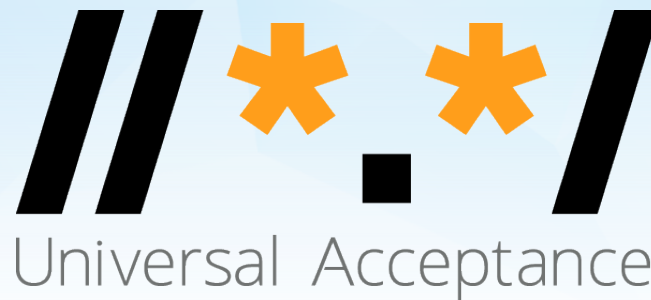
Universal Acceptance

Vision
All domain names and email addresses work in all software applications.

Impact
Promote consumer choice, improve competition, and provide broader access to end users.

Why Universal Acceptance is Important?

- 70% of Indians are non-English speakers, India has more than 718 million internet user and 54% of its 1.3 billion population are online

- Africa Internet penetration is 39.3%, 525 million of its 1.3 billion population

- Arab Internet penetration is 53.0 %, 9,348% users grown between 2000-2020

- Africa is most linguistically diverse continent, estimated 2,100 spoken languages Widely spoken native languages include Arabic, Swahili, Amharic and Hausa

- Ethiopic script is integrated in RZ-LGR

- The next billion(s) Internet users will be non-English speakers

Why Universal Acceptance Matter?

Achieving UA ensures every person has the ability to navigate and communicate on the Internet using their chosen domain name and email address that best aligns with their interests, business, culture, language, and script.

UA can also help:

- ◉ Support a diverse and multilingual Internet.

- ◉ Create business opportunities.

- ◉ Offer career advantages for developers and system administrators.

- ◉ Assist governments and policymakers.

Expansion of the DNS

The introduction of new generic top-level domains (gTLDs), including long TLDs, and Internationalized Domain Names (IDNs) into the Internet ecosystem through the New gTLD Program, has enabled the largest expansion of the DNS.

Pre-2009

Generic TLDs (gTLDs)

(**22** total)

.com	.edu
.org	.net
.aero	.asia
.mobi	.travel
.info	

Country Code TLDs (ccTLDs)

(two-character ASCII ccTLDs)

.uk	.jp
.de	.fr

2009-onward

IDN ccTLDs

(in non-Latin scripts)

.рф	.台灣
.한국	.ଭାରତ

2013-onward

New gTLD Program

New and Long gTLDs

(Over 1,200 total)

.bank	.bar	.club
.car	.global	.london
.rio	.vote	.sky

IDN gTLDs

(in non-Latin scripts)

.संगठन	.在线
.닷넷	.ストア
.ابوظبي	.дети

Categories Affected and UA Readiness

- **Domain Names:**
  - **Newer** top-level domain names: example.**sky**
  - **Longer** top-level domain names: example.**Africa**

  - **Internationalized** domain names   **موقع.عرب - คน.ไทย**

- **Internationalized email addresses (EAI):**
  - ASCII@ASCII (new and long TLD)   ekrem@university.capetown
  - ASCII@**IDN**   marc@société.org
  - **Unicode**@ASCII   测试@example.com
  - **Unicode**@**IDN**   ईमेल@उदाहरण.भारत
  - **Unicode**@**IDN**; right to left scripts   بريد@موقع.عرب

What have Changed

- Africa Arabic Script ccTLDs

  .الجزائر   سودان.   موريتانيا.   مصر.   المغرب.   تونس.

- African gTLDs

  .mtn   .durban   .joburg   .capetown

What have Changed

Script	gTLD	ccTLD	Number of Delegated TLDs
Chinese	54	7	61
Arabic	12	21	33
Cyrillic	8	9	17
Katakana	8	0	8
Devanagari	3	3	6
Hangul	3	1	4

The Governments Use of IDNs

Arabic Domain - صحة.مصر

- Egypt's Ministry of Health, COVID19 website
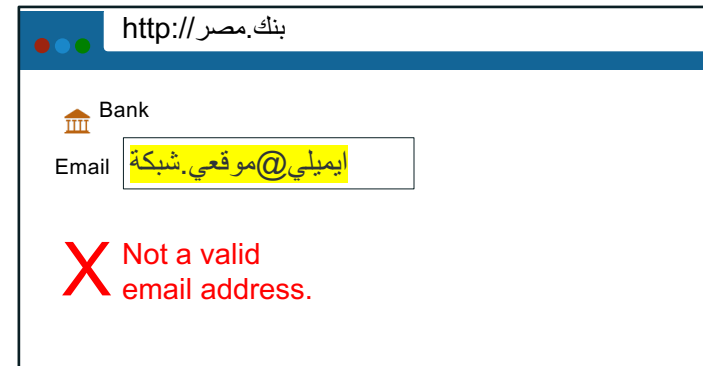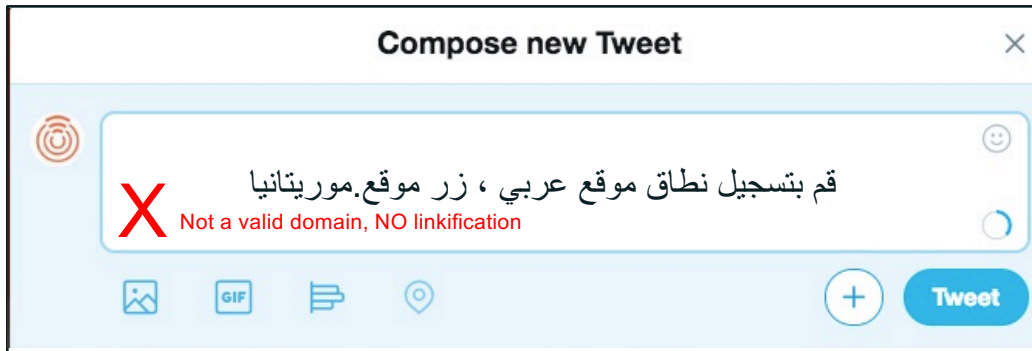
The Governments Use of IDNs

saarthi.bharat – Devangari Domain
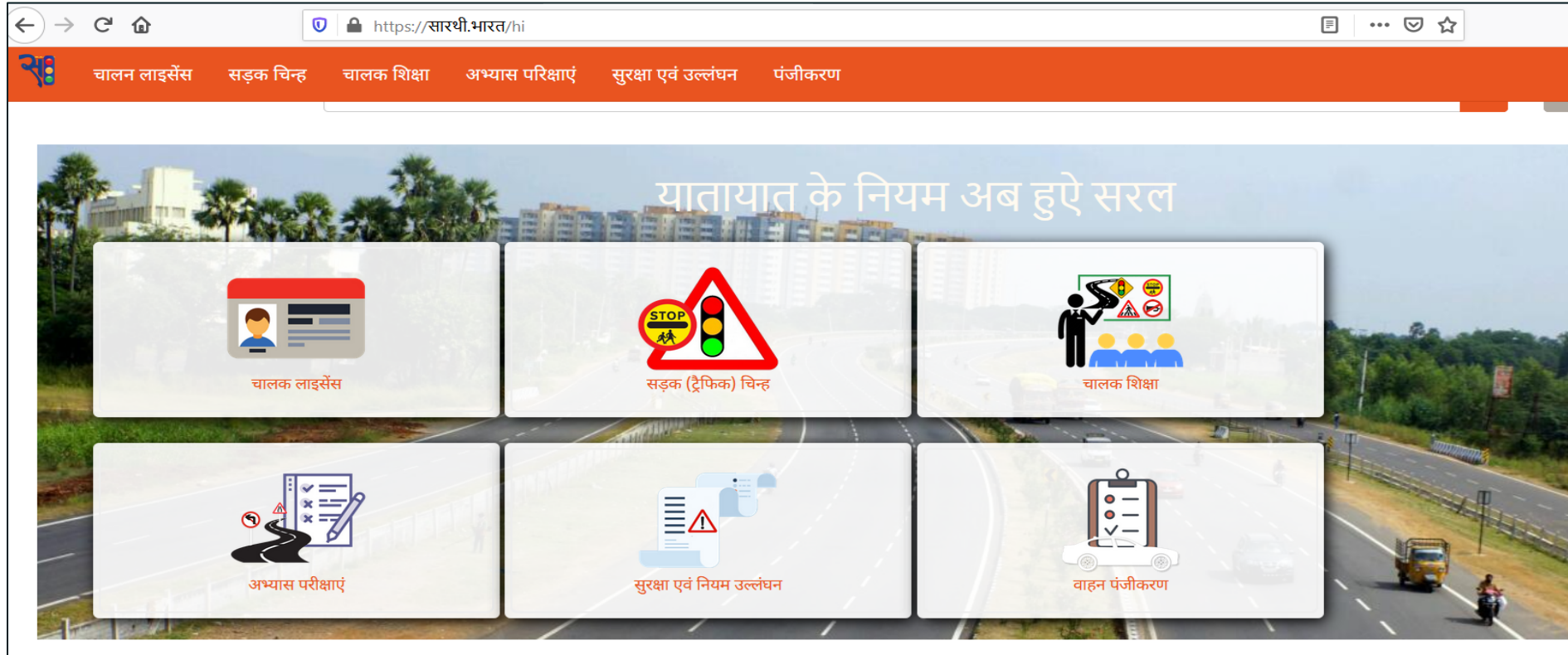
- India's Sarathi (Drivers and vehicles licensing), part of the Ministry of Roads and Transportation

User Experience is Important

Universal Acceptance addresses an issue that prevents some Internet users from successfully completing transactions online. The problem can arise when applications reject or don't treat all parts of the domain name correctly.

Compose new Tweet ×

قم بتسجيل نطاق موقع عربي ، زر موقع.موريتانيا

X Not a valid domain, NO linkification

http://بنك.مصر

🏛 Bank

Email ايميلي@موقعي.شبكة

X Not a valid email address.

- ▪ UA Readiness Framework

| Accept | Validate | Process | Store | Display |

The Status of UA

UA Readiness in 2020
- At a Glance -

9.7% of email servers are potentially configured to support email addresses in local languages and scripts.

11% of the top 1000 websites globally support email addresses in Arabic and Chinese.

98.3% of the top 1000 websites globally support email addressses with short top-level domains.
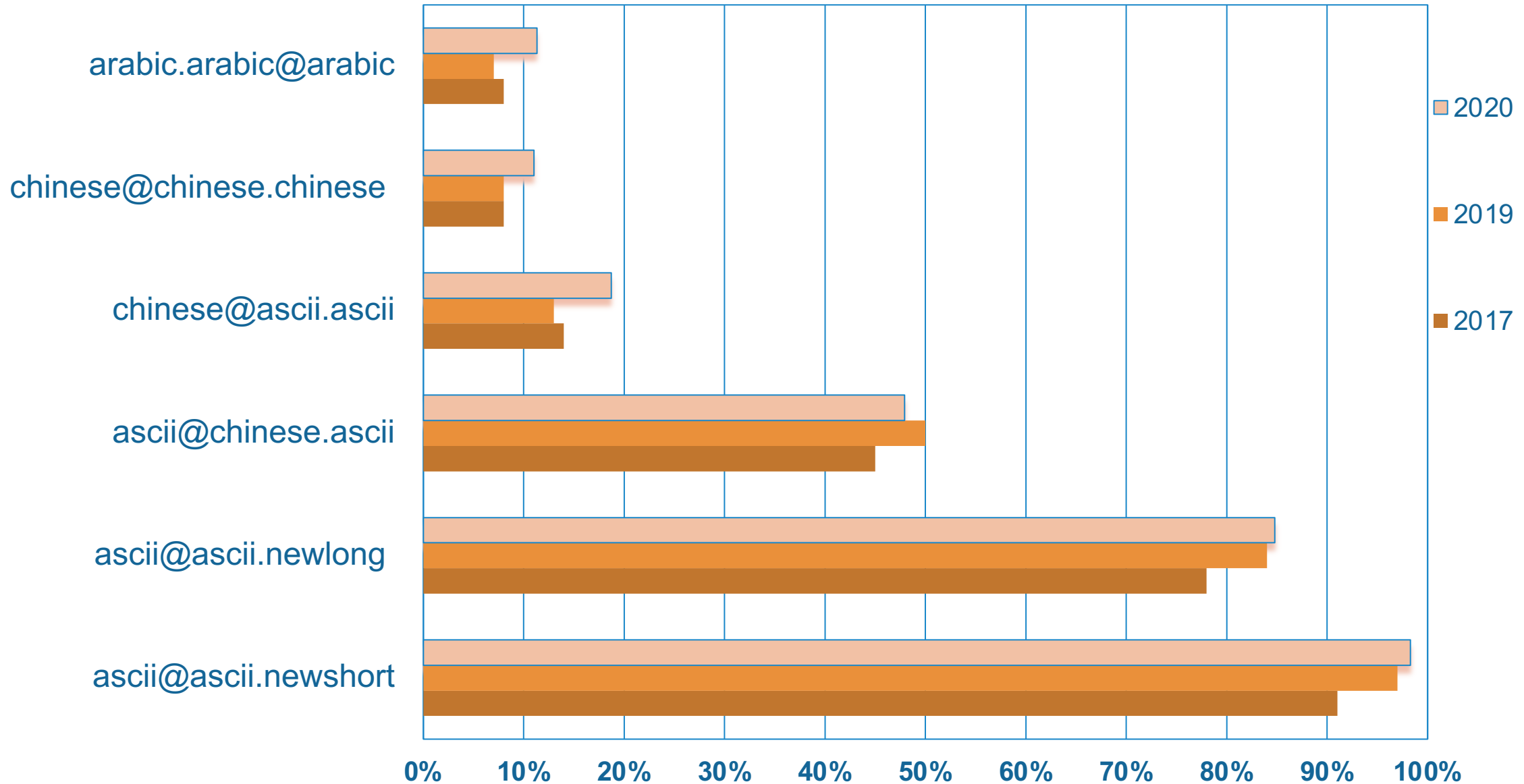
测试@普遍接受-测试.世界
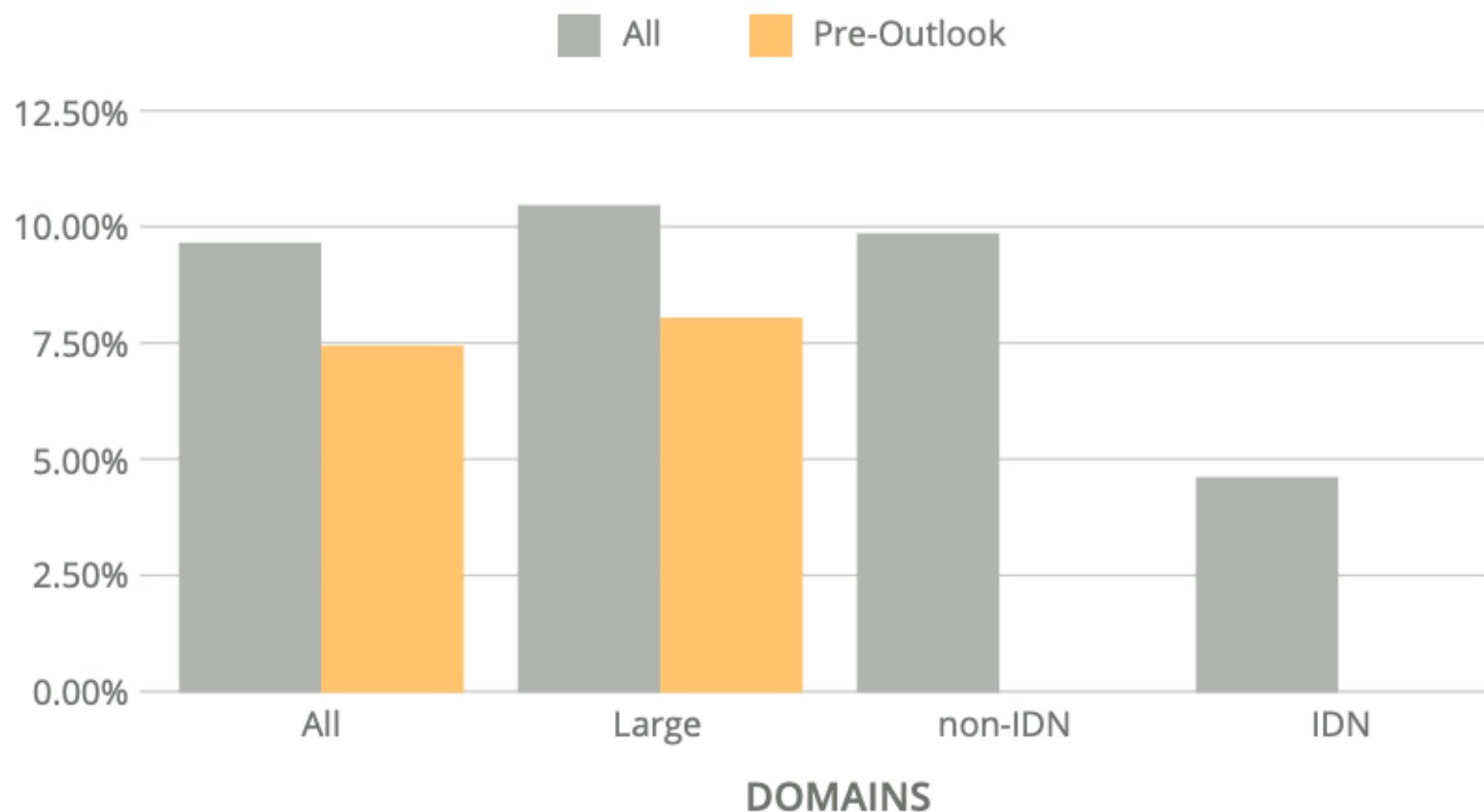
مشرف@اختبار-سجل.مصر

όνομα@παράδειγμα.ευ

Acceptance of Email Addresses in 1k Websites Globally

Email Servers to Configured to Support EAI in 2019

EAI Readiness in TLDs Report: https://uasg.tech/wp-content/uploads/2019/02/UASG021D-EN-EAI-Readiness-in-TLDs.pdf

Test your email server for EAI support: https://uasg.tech/eai-check/

Mail Systems EAI Acceptance

Server % EAI Ready
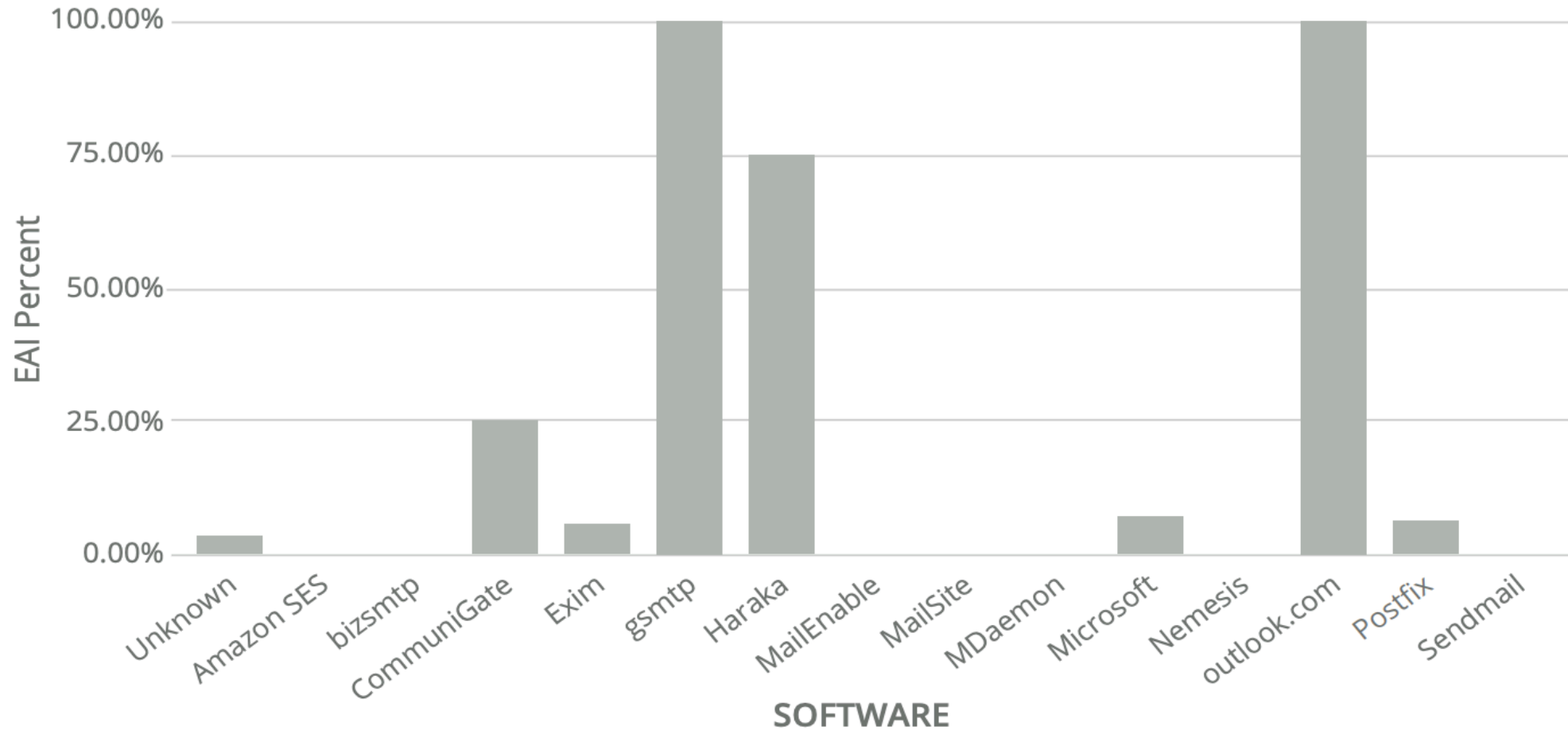
Email Stack for UA Consideration

Components of Email System: Mail User, Submission, Transfer, Delivery Agents, and Mail Service Provider
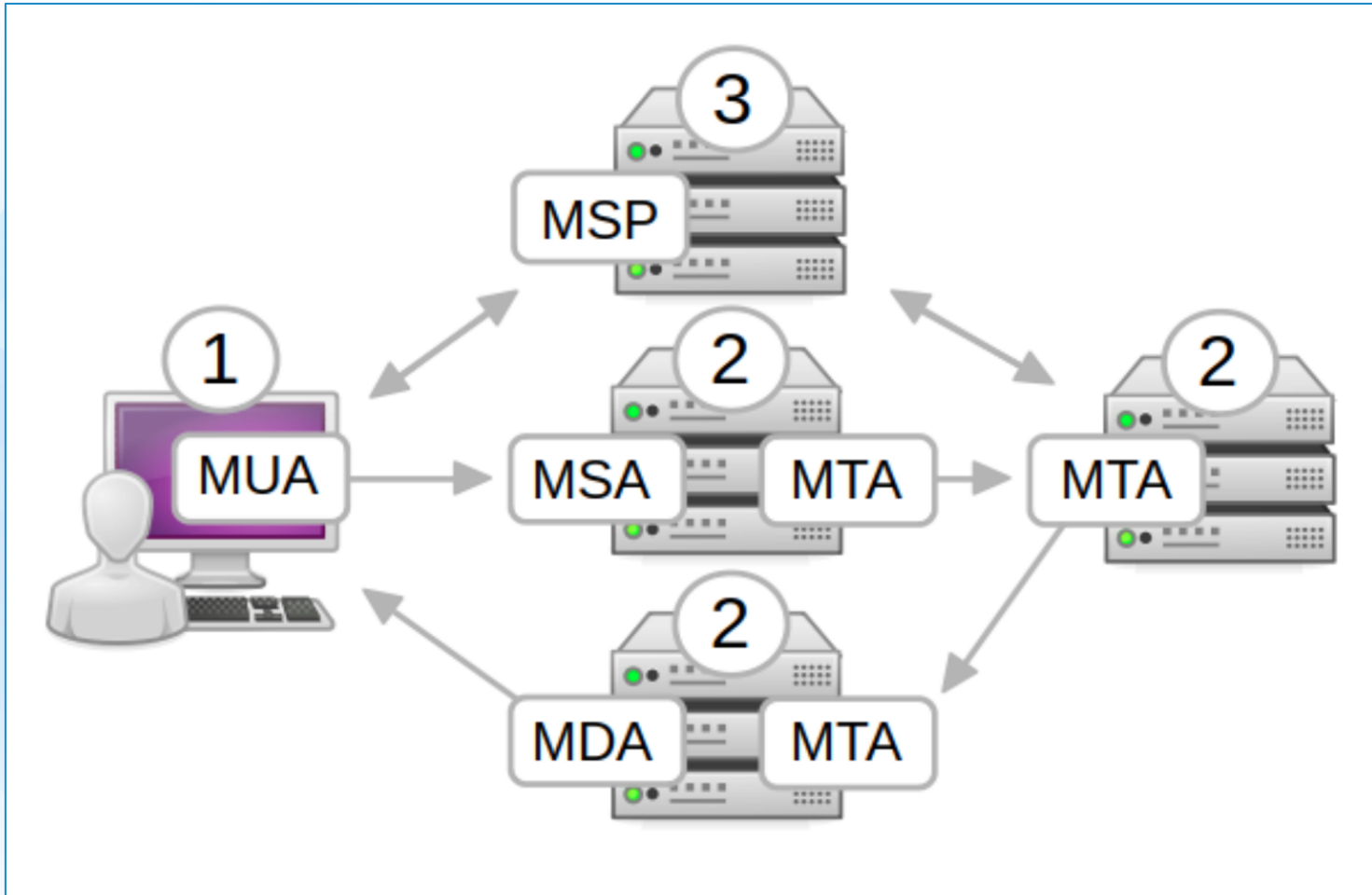
Webmail:
- Gmail
- Coremail
- Yandex

MXAs
- Axigen
- Courier
- Dovecot
- Postfix
- Zimbra

Internationalized Email Address Case Studies

The Government of the State of Rajasthan, through India's RajMail project, has provided all its citizens with a **free email address** in either Hindi or English, using its own secure email platform provided by local company XgenPlus. This is an important step in the state's eGovernance project.

* RajMail: https://uasg.tech/wp-content/uploads/2019/02/UASG013E-en-case-study-rajmail-government-of-rajasthan.pdf

The Thai Network Information Center Foundation (THNIC) and the Thai government support the .Thai Internationalized Domain Name (.ไทย) and Email Address Internationalization (EAI) initiatives, which facilitate the use of email addresses using the .ไทย IDN. This is an important step in increasing Thailand's Internet penetration.

* THNIC: https://uasg.tech/wp-content/uploads/2016/11/UASG013A-161031-en-case-study-thnic-digital.pdf

See all case studies: https://uasg.tech/case-studies/

Technology Stack for UA Consideration

Applications and Websites

- Wikipedia.org, ICANN.org, Amazon.com, custom websites globally
- PowerPoint, Google-Docs, Safari, Acrobat, custom apps

Social Media and Search Engines

- Chrome, Bing, Safari, Firefox, local (e.g. Chinese) browsers
- Facebook, Instagram, Twitter, Skype, WeChat, WhatsApp, Viber

Programming Languages and Frameworks

- JavaScript, Java, Swift, C#, PHP, Python
- Angular, Spring, .NET core, J2EE

Platforms, Operating Systems and System Tools

- iOS, Windows, Linux, Android, App Stores
- Active Directory, OpenLDAP, OpenSSL, Ping, Telnet

Standards and Best Practices

- IETF RFCs, WHATWG

UA Remediation Cycle

Identify a technology to evaluate

Define SOW and scope for evaluation

Start a project, Evaluate UA Readiness

Prioritize technology with gaps

Develop remediation guidance

Engage with stakeholders to provide guidance or training

Support Remediation
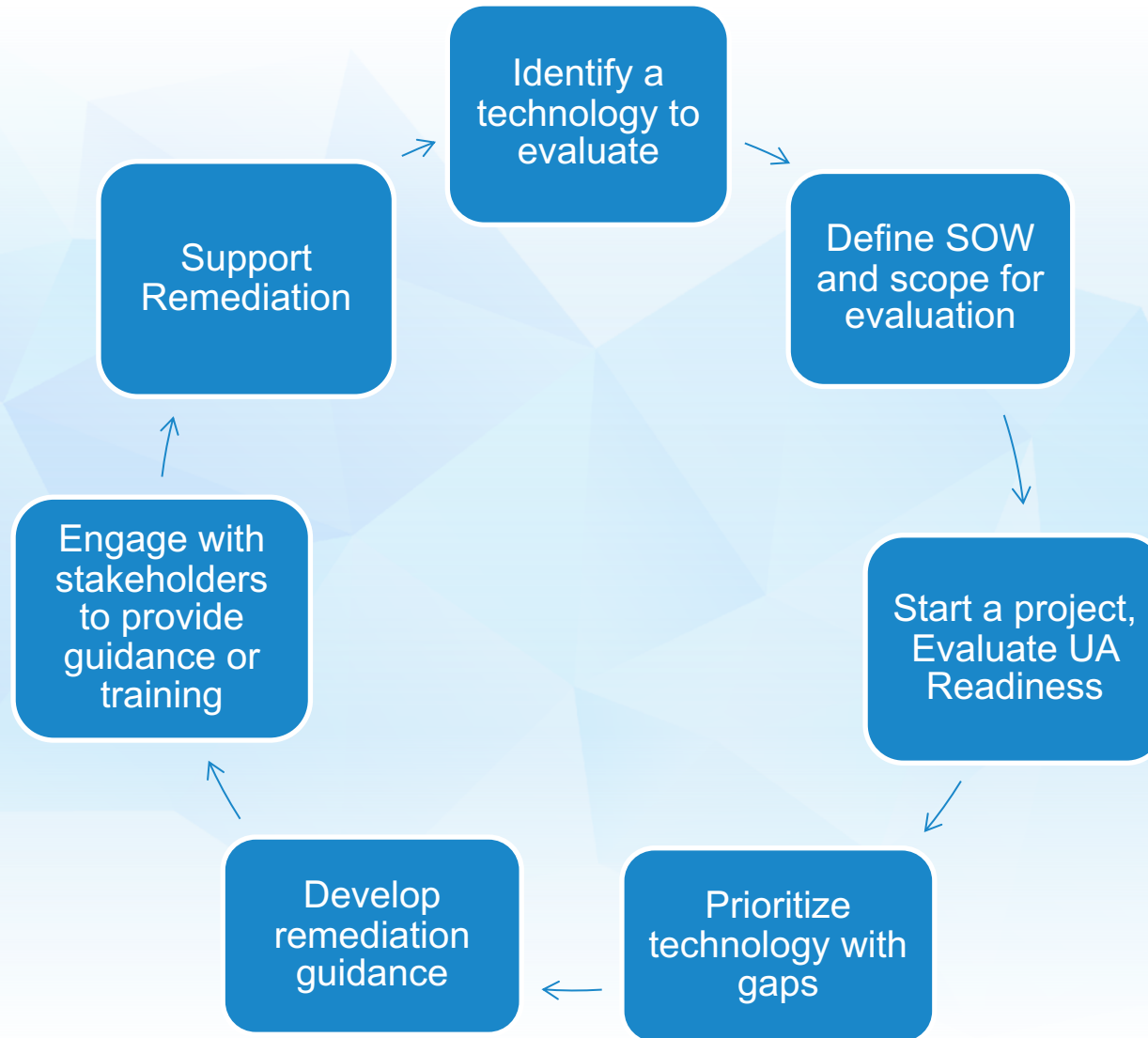
Organization of UA Work

- ALAC IDN-UA Working Group

- GAC IDN-UA Working Group

- Universal Acceptance Steering Group (UASG)
  - UA Working Groups
  - UA Ambassadors' Program
  - UA Local Initiatives

UA Working Groups and ICANN Org UA Readiness

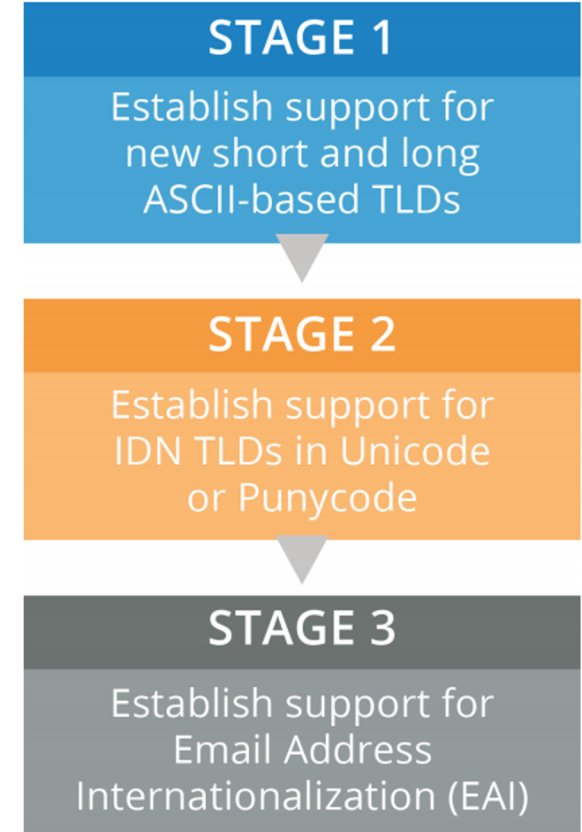| Stakeholders / Organization	Tech. Enablers	Tech. Developers	EAI Providers	Policy Makers
Technology WG	X	X		
EAI WG			X	
Measurements WG				
Communications WG	X	X	X	X
Local Initiatives WG		X	X	X
UA Ambassadors WG	X	X	X	X

STAGE 1
Establish support for new short and long ASCII-based TLDs

STAGE 2
Establish support for IDN TLDs in Unicode or Punycode

STAGE 3
Establish support for Email Address Internationalization (EAI)

Details in ICANN's Case Study

UA Local Initiatives

The aim is to interact with local stakeholders to promote UA readiness.

- Messaging and outreach
- Technical training

Local Initiatives formed

- Eastern Europe (CIS-EE)

  Armenia, Belarus, Georgia, Latvia, Russia, Serbia, Ukraine

- India
- China
- Thailand
- Arab Region
- Africa

Help us establish new UA Local Initiatives:
Use the Local Initiative Charter and proposal template available in UASG.tech

UA Ambassadors   Local Initiatives

UA Ambassadors Program

2020 new Ambassadors
- Abdulkarim Ayopo Oloyede – Nigeria
- Aman Masjide - India
- Cengiz Acarturk – Turkey
- Malick Alassane - Benin
- Mark Elkins – South Africa
- Sushanta Sinha – India

UA current Ambassadors
- Abdalmonem Galila – Egypt
- Harish Chowdhary – India
- John Levine – USA
- Mark W. Datysgeld – Brazil
- Xiucheng Wu (Marvin Woo) – China
- Yangyi Wu (Walter Wu) – China
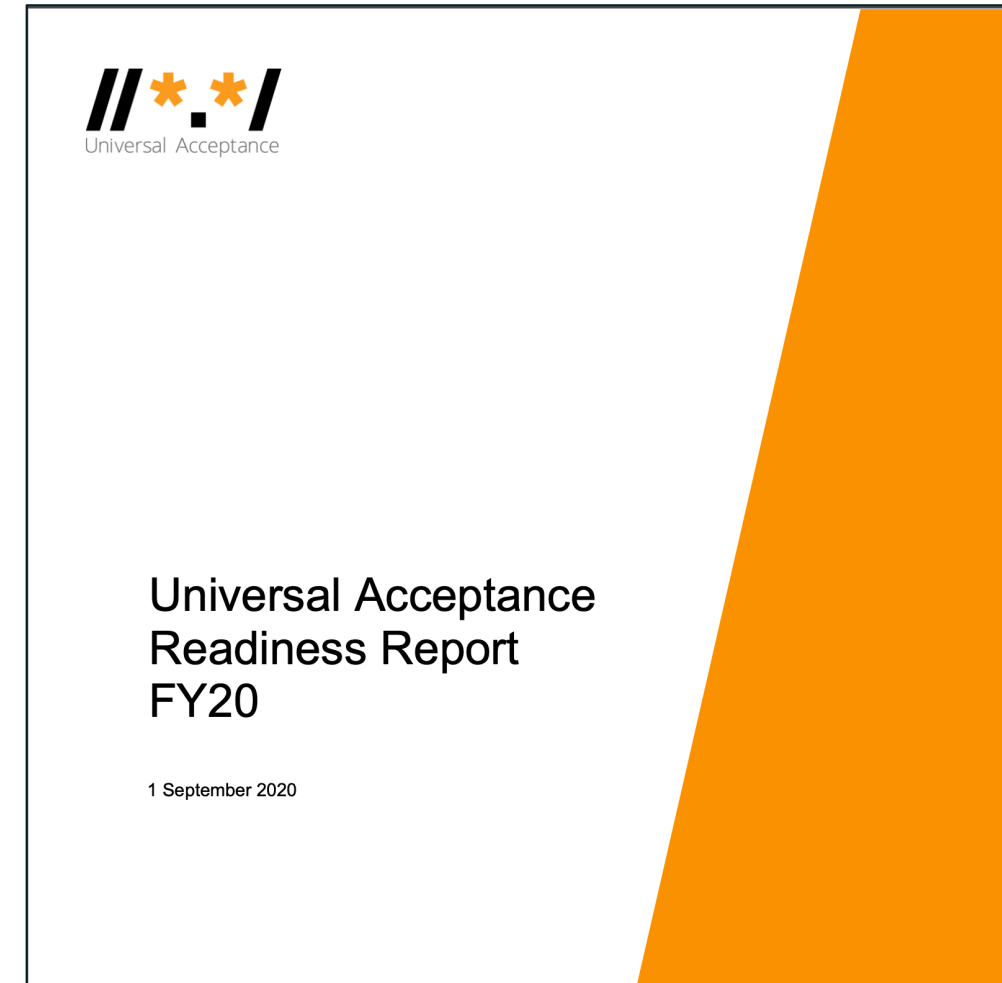- Zhijiang Liu – China

UA Readiness Report 2020

UASG Published the first annual UA readiness report

The report highlights:

- UA/EAI annual activities
    - National and regional initiatives
    - Reports and publications
    - Events, out-reach and trainings

- Technology UA status and gap analysis

- Progress on technology readiness

The report is available online at http://UASG.tech website

Universal Acceptance

Universal Acceptance
Readiness Report
FY20

1 September 2020

Government Systems and UA Readiness/EAI Support

✓ Government's systems and eServices are widely used

✓ UA and EAI readiness can generate demand

✓ Government IT/Systems Procurement and UA Compliance

"Universal Acceptance Sample Clause UNIVERSAL ACCEPTANCE OF TLDs COMPLIANCE (Universal Acceptance (UA) is the state where all valid domain names and email addresses are accepted, validated, stored, processed and displayed correctly and consistently by all Internet-enabled applications, devices and systems.): To the extent the Services and/or Deliverables include development or provision of software and/or devices that support network or Internet connectivity of any kind, Contractor warrants and represents that all such Services and Deliverables will be fully compliant with the following provision: In whatever manner a Service/Deliverable handles a domain name, the Service/Deliverable shall do so consistently for all standards compliant names in all top-level domains listed in IANA's Root Zone Database (accessible via https://www.iana.org/domains/root/db) at the time of delivery and guarantees consistency for three years.

Source: https://uasg.tech/wp-content/uploads/documents/UASG009-en-digital.pdf

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Universal Acceptance Steering Group
Quick Guide to Tender and Contractual Documents

UA009
28 April 2016

Background

Universal Acceptance (UA) is the state where all valid domain names and email addresses are accepted, validated, stored, processed and displayed correctly and consistently by all Internet- enabled applications, devices and systems.

Due to the rapidly changing domain name landscape, many systems do not recognize or appropriately process new domain names, primarily because they may be more than three characters in length or in a non-ASCII format. The same is true for email addresses that incorporate these new extensions.

The Universal Acceptance Steering Group (UASG), supported by Internet Corporation for Assigned Names and Numbers (ICANN), is a community-led, Internet industry-wide initiative working on creating awareness and identifying and resolving problems associated with the universal acceptance of domain names. The purpose of these efforts is to help ensure a consistent and positive experience for Internet users globally.

For more information on the UASG and recent development, visit www.uasg.tech.

Tender and Contractual Documents

One way of working toward Universal Acceptance of all domain names is to ensure that such a requirement is included in Tender and Contract documents.

'Broccoli Issues'

The term 'Broccoli Issues' is used here to identify issues that are good and useful but not particularly exciting to the rest of the world. With respect to Internet issues, this will include provision of IPv6 and DNSSEC compliant services.

This document includes Good Practice clauses for Universal Acceptance as well as IPv6 and

UA Collaboration

Review and Share the UA Reports and Guidelines

Research: UA and EAI Readiness of Systems

UA Sessions and Technical Training (E.G Java/Python)

Testing EAI and UA Readiness

Pan African Multi-stakeholder UA Initiative

Thank You and Questions

One World, One Internet

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