PKI Frameworks & Use Cases in the Arab and African regions

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PKI Frameworks & Use Cases in the Arab and African regions

01 About AAECA-Net

02 Study: State of the Art and prospects

03 The way forward
The Arab ICT Organization «AICTO» is a specialized Arab governmental organization working under the aegis of the league of Arab States, located in Tunis, and has been operational since the 1\textsuperscript{st} of January 2008.
Towards a Unified Arab digital society based on the creativity and innovation, boosting the Arab-Interregional complementarity and contributing efficiently to the development of the global sustainable digital economy.
An Interregional Multistakeholder Network for Digital trust in the Arab & African Regions having the specificity to be open internationally to all interested stakeholders.
Better interregional collaboration on e-Trust for better trustworthy digital economies based on Laws Harmonization & Digital Trust services Interoperability
Objectives

1. Common Interregional Multi-Stakeholder Platform
2. Laws convergence
3. Standardization development
4. Interoperability and Mutual Recognition
5. Interregional & International cooperation
AAECA-Net OBJECTIVES

- **Common Interregional Multistakeholder Network**
  - Gathering the Arab and African PKI/e-certification authorities within a common network with all relevant parties (Public and Private sector, Academia,...) to exchange the related experiences and expertise.

- **Laws convergence**
  - Unifying and Harmonizing the interregional laws related to e-transactions and e-trust services based on international experiences.

- **Standardization development**
  - Harmonizing positions in the field of standardization and propose norms/standards in PKI field and Digital Trust.

- **Interoperability and Mutual Recognition**
  - Working on the interoperability and the mutual recognition between the Arab and African e-certification authorities, as a first step, and between the countries of the two regions with the rest of the world in a further step.

- **Interregional & International cooperation**
  - Establishing Interregional (Multilateral) conventions ensuring the Interoperability & the mutual recognition of the e-trust services between the countries of the two regions and with other foreign countries.
**The AAECA-Net shall have a Chairperson from its members for a period of at least one year (renewable)**

**Steering Committee is composed of representatives of AAECA-Net members and chaired by the SG of AICTO**
Membership

- Principal Members
  - Government institutions
  - Associate Members
  - Regional & International specialized bodies

- Observers
  - Private Sector
  - Academia & Individuals
AAECA-NET Members

2017
5 Arab countries (Oman, Sudan, Iraq, Tunisia, Palestine)

2019 (first semester)
4 new countries have jointed the network:
Djibouti, Niger, Mauritania, Burkina Faso

Ongoing process:
The following counties are expected to officially join the AAECA-Net by the end of this year:
Nigeria, Algeria, Cameroun, Jordan + (GCC countries)
AAECA-NET Working Groups

AAECA-Net WG1: Strategic Planning
AAECA-Net WG2: E-trust-T&S
[Technical Aspects & Standardization]
AAECA-Net WG3: E-trust -L
[Legal frameworks Harmonization]
AAECA-Net WG1: Strategic Planning

- **Working methods**: Membership charter (Member’s categories, Conditions, advantages, rights and obligations…).

- **Interregional strategy**: Developing “Arab-African strategy” to encourage Arab and African countries to create and enhance their local e-certification authorities and to set up the mutual recognition mechanisms, thus developing a secure platform for cross-border e-transactions and e-commerce between them and with the rest of the world.
AAECA-Net WG2: E-trust-T&S
[Technical Aspects & Standardization]

- Study the economic benefits and impacts of introducing PKI and E-Trust services in the two regions
- Investigate the ecosystem in the two regions
- Perform a gap analysis between the existing services and what is required
- Undertake an assessment of the benefits and lessons learned of the implementations of existing PKI and trust services both on regional and international levels
- Harmonize positions in the field of standardization and work on proposing standards in PKI field and Digital Trust services
- Lead Capacity building program & Technical assistance

Bridging the gap and prepare for the mutual recognition
AAECA-Net WG3 : E-trust -L
[Legal frameworks Harmonization]

This group will deal with regulatory issues related to public keys and e-trust services management

- The Main objective of this group is to develop a regulatory framework of reference

- Assessment of the existing legal frameworks in both regions (weakness)

- Taking into account real needs and specific characteristics of both regions a first tentative of a harmonized legal framework should be developed by this working group. (General guidelines)
ACTIVITIES

• Awareness activities: Forum & Technical conferences
• Capacity Building: Practical workshops and training sessions
• International exhibitions
• Studies and reports
• Technical assistance
• International cooperation
ACHIEVEMENTS

- **White book**: PKI implementation in the Arab and African regions
- Capacity building/training sessions
- Technical assistance mission
- “Interregional Standardization Forum for PKI & e-trust” Forum (2 editions)
- Region Reports (As IS) – first edition of the study of the State of Art and Prospects of e-trust services in the two regions
1st edition
“Interregional Standardization Forum for PKI & e-trust”
“Towards Bridging the Standardization Gap (BSG) in the Hyper-connected world

Venue: Muscat – Sultanate of Oman – Date 11 & 12 December 2017
2nd edition
“Interregional Standardization Forum for PKI & e-trust”
“Boosting interregional collaboration for better trustworthy digital economies”

Venue: Republic of Tunisia – Date 04 & 05 April 2019
Study: “State of Art and Prospects of e-trust services in the two regions – Technical & Legal levels”

AICTO has launched a survey among Arab & African countries about e-certifications Authorities and digital trust:

• Collect data about e-certification and PKI authorities in Arab and African countries, e-signature, and the available legal and regulatory frameworks governing the e-transactions.

• Give a clear vision about the state of the art and future needs of these countries in the field of digital trust.
Study: “State of Art and Prospects of e-trust services in the two regions – Technical & Legal levels”

**01 TECHNICAL**
- E-certification authorities/ Root certification authorities
- Available e-trust services
  - 2.1: E-signature
  - 2.2: Time stamping
  - 2.3: Electronic seal
  - 2.4: Electronic delivery
  - 2.5: Website authentication
- National “Trusted list”
- Are e-IDs available in your country?
- Is e-passport available in your country?

**02 LEGAL**
- Legal framework for E-transactions (General)
- Legal framework defining and organizing the work/tasks for e-Certification providers
- Legal framework for personal data protection
- Legal framework for e-trust services
Root certification authorities in the Arab Region

- Algeria
- Tunisia
- Oman
- Iraq
- Jordan
- Palestine

6 Arab countries
E-certificate Authorities Timeline

2000
- National Agency Of Digital Certification
  www.certification.tn

2013
- National Digital Certification Center (NDCC)
  http://oman.om/tam

2015
- National E-certificate Authority

2016
- Jordan National Root CA
  http://www.pki.jo
Available e-trust services

- E-signature
- Time stamping
- Electronic seal
- Electronic delivery
- Website authentication

Study: “State of Art and Prospects of e-trust services in the two regions – Technical & Legal levels”
E-signature

- 2000: E-banking, E-Gov, E-Commerce
- 2012: Government
- 2013: Private sector
- 2016: 2013: Commercial Registration (CR) Services
- 2014: Man Power Services
- 2017: eHealth Services
- 2018: SMEs Services
Time stamping

- **2008**: E-banking, E-Gov, E-Commerce
- **2013**: Signature Validation Proof Report (2013)
- **2016**: SMEs Services (2014)
- **2017**: Commercial Registration (CR) Services (2014)
- **2019**: Man Power Register (2017)
- **Not yet**: Iraq
Electronic seal

- 2014: SMEs Services
- 2014: Commercial Registration (CR) Services
- 2019: E-GOV
- Not yet: Omani
- Not yet: Algeria
- Not yet: Tunisia
- Not yet: Jordan
- Not yet: Iraq
Electronic delivery

- 2016: Algeria
- 2019: Oman, Palestine
- 2019: Jordan
- 2020: Planned for 01/06/2020
- Not yet: Iraq, Kuwait

Flags of the countries mentioned.
Website authentication

2000: E-banking, E-Gov, E-Commerce
2013: Government
2014: Private sector
2017: www.jordan.gov.jo
2019: Flag of Jordan
## Available E-trust services

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<th>Time stamping</th>
<th>Electronic seal</th>
<th>Electronic delivery</th>
<th>Website authentication</th>
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National "Trusted list"

- ALGERIA: Available
- TUNISIA: Available
- OMAN: Planned
- PALESTINE: Planned
- JORDAN: Planned
- IRAQ: Not available
Are e-IDs available in your country?

- **Algeria**: Not available
- **Tunisia**: Planned for 2020
- **Oman**: 2013
- **Iraq**: 2014
- **Palestine**: 2017

Oman eID is owned and operated by Royal Oman Police via the National Civil Status System which had been accredited as eID RA in 2013.

Two digital certificates; authentication and e-signing, are generated in the National/Resident ID by default.

The validity period of the certificates is 5-years for the Citizens and 2-years for residents.
Is e-passport available in your country?

- **Oman**: ePassport is issued and operated by a different authority; Oman Royal Police

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**Countries with e-passports**

- **Algeria**: Planned for 2020
- **Tunisia**: 2020
- **Palestine**: 2020
- **Jordan**: 2020
- **Iraq**: 2014
- **Oman**: Planned for 2020
Study: “State of Art and Prospects of e-trust services in the two regions – Technical & Legal levels”

Part Two: Legal frameworks

1. Legal framework for E-transactions (General)
2. Legal framework defining and organizing the work/tasks for e-Certification providers
3. Legal framework for personal data protection
4. Legal framework for e-trust services
Legal framework for E-transactions (General)

- **2000**
  - 09/08/2000
  - Law n° 2000-83, for e-transactions and e-commerce

- **2008**
  - 17/05/2008
  - Oman Electronic Law 69/2008

- **2015**
  - 02/01/2015
  - Law 15-04 : General rules for e-signature and e-certification

- **2015**
  - 01/01/2015
  - E-transactions Law
2001
Decree n° 2001-1667 dated 17 July 2001, approving the specifications relating to the exercise of the activity of the electronic authentication services provider.

2008
17/05/2008
Oman Electronic Law 69/2008

2015
02/01/2015
Law 15-04: General rules for e-signature and e-certiﬁcation

2015
01/01/2015
E-transactions Law
Legal framework for personal data protection

2001

27/07/2001
Law n° 63-2004
Law No. 2004-63 of July 27, 2004, on the protection of personal data

2008

17/05/2008
Oman Electronic Law 69/2008
Chapter Seven of Oman Electronic Law 69/2008
Protection of Private Data Page 14
Legal framework for e-trust services: E-signature

**ALGERIA**

- **02/01/2015**: Law 15-04 : General rules for e-signature and e-certification

**TUNISIA**

- **19/07/2001**: Order of the Minister of Communication Technologies, dated 19 July 2001, on the establishment of the technical specifications of the electronic signature creation system

**OMAN**

- **17/05/2008**: Oman Electronic Law 69/2008
  - Chapter Four of Oman Electronic Law 69/2008
  - Methods of Protecting Electronic Transactions

**IRAQ**

- **01/01/2015**: E-transactions Law

**BALESTINE**

- **10/18/2012**: LAW 28 of 2012

**JORDAN**

- **Planned for 2020**:
Legal framework for e-trust services: Electronic Seal

2008

17/05/2008
Oman Electronic Law 69/2008
- Chapter Three of Oman Electronic Law 69/2008
  Electronic Transactions and Contract Formation (Article 17 page 7)
- Chapter Four of Oman Electronic Law 69/2008
  Methods of Protecting Electronic Transactions Page 8

2018

21/02/2018
Legal framework for e-trust services: Electronic delivery

Legal frameworks for Website authentication

TUNISIA
09/08/2000
Law n° 83-2000

OMAN
17/05/2008
Chapter 06 of Oman Electronic Law 69/2008
Provisions Related to Certificates and Authentication Services
Article (33) Page 11 and Article (340) Page 12
Agreement on interoperability & mutual recognition

Tunisia

Agreements:
- SOUDAN
- BURKINA FASO

Oman

Interoperability has been successfully done between Oman, Qatar, UAE and Kuwait in IDP of eIDs in Staging Environments
Expectations from AAECA-Net

1. **SHARING**
   - Exchange of successful experiences/best practices & the transfer of expertise between Arab and African countries in the field of e-certification and e-trust services

2. **LAW HARMONIZATION**
   - Regional & Interregional Law Harmonization of e-transactions’ regulations between Arab and African countries

3. **Regional/global trusted lists**
   - Regional/global trusted lists of Certification Service Providers

4. **Inter-regional mutual recognition**
   - Inter-regional mutual recognition and Interoperability of e-trust services
Recommendations

• Joint agreements between all Arab countries instead of signing bilateral agreements
• Technical and legal committees from the member countries to study and develop the common legal and technical framework
• Activation of Electronic Commerce among Member States
• Recommendations, instructions and technical rules for global applications in the areas of electronic signature, encryption and secure electronic transactions
• Establish an Arab entity to approve applications operating in the fields of electronic signature, encryption and secure electronic transactions
• Strengthening electronic trust services in business within as well as between countries of the two regions
Four main categories:
In the progress in setting up a secured infrastructure to develop digital services:

1. **Technical & Legal**
   Countries that have already established their legal frameworks and already use the e-services in different fields such as Tunisia, Egypt, ....

2. **Technical**
   Countries that use only technical solutions without finishing the related legal framework such as Morocco, ...

3. **Legal**
   Countries that have only legal frameworks with technical solutions not yet established such as Iraq, ...

4. **Countries that have neither elaborated their legal frameworks nor set up the technical solutions such as Mauritania, Yemen,...**
AAECA-Net MISSION

Sharing

Sharing global experiences, activities, initiatives, best practices in matter of e-transactions and e-trust services both for technical and legal frameworks.

AICTO provides an open and flexible platform for an effective communication and fruitful cooperation between members.

Coordination

Coordinating efforts and actions between all AAECA-Net members towards reducing the technical and legal gaps and to come up with global solutions.

This coordination will make actions easier and more effective.

Convergence

Building an upward convergence Framework to bring closer all stakeholders having the same vision and ambitions in matter of enhancing digital trust and encouraging cross-border e-transactions; within a common and holistic framework.
The way forward
Multilateral Sustainable Solutions

Digital Trust is a major priority and it requires strong Cooperation relationships at the regional and international levels in order to create collaborative approach with inputs from all key stakeholders in order to promote an open, free, and secure cyberspace for everyone everywhere.

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