

Joint AFRALO-AfrICANN Meeting ICANN 79 Community Forum

Wednesday, 6th March 2024 from 15:00-16:00 local Puerto Rico

Time(19:00-20:00 UTC)

San Juan, Puerto Rico

-=- Statement -=-

TOPIC:” Artificial Intelligence (AI) & AI-powered tools in the service of DNS Management in Africa: Opportunities, Challenges, and Impacts”

We, the members of the African ICANN Community, who actively participated in ICANN79 and attended the joint AFRALO/AfrICANN meeting on Wednesday, 6 March 2024 in San Juan, Puerto Rico, engaged in a comprehensive discussion regarding *Artificial Intelligence (AI) & AI-powered tools in the service of DNS Management in Africa: Opportunities, Challenges, and Impacts*.

Artificial Intelligence (AI) has significantly shaped today's landscape across various sectors, influencing how we live, work, and interact with technology. It has become an integral part of our modern landscape, driving innovation, improving efficiency, and influencing various aspects of our daily lives and industries. Through its impact on the Domain Names Industry, it brings opportunities as well as many challenges, as follows:

Opportunities in AI-powered DNS Management

- a) **Improved Security:** AI-powered DNS management will improve security by detecting anomalies and mitigating threats early on. Machine learning algorithms will enable quick detection and response to emerging cyber threats, increasing the overall resilience of the region's DNS infrastructure.
- b) **Predictive Traffic Analysis:** AI integration will enable predictive traffic analysis and optimisation of DNS resources. Organisations that anticipate traffic patterns will better allocate resources, reduce latency, and ensure efficient performance even during peak usage periods.
- c) **Automation for Operational Efficiency:** AI-driven automation will significantly improve DNS management efficiency. Automated tasks, such as DNS record management and updates, will significantly reduce manual intervention, minimise errors, and streamline operations.

- d) **Intelligent Traffic Steering:** Dynamic routing based on AI-driven insights will optimize resource usage and enhance network performance, particularly in regions with varying connectivity challenges.
- e) **Collaboration and Partnerships:** AI-powered DNS management in Africa will enable stakeholders to pool expertise and resources. By leveraging AI technologies collectively, they will address DNS challenges, share best practices, and build a robust ecosystem.

Challenges in Implementing AI in DNS Management in Africa are as follows:

- a) **Infrastructure and Connectivity:** Limited Internet access and scarcity of data centers in Africa hinder real-time data processing for AI-powered DNS management, posing challenges in deployment.
- b) **Data Availability and Quality:** Limited availability of high-quality data in Africa poses challenges in training AI models for DNS management, while biases in training data can lead to discriminatory outcomes, raising ethical concerns.
- c) **Skills and Expertise:** Africa faces challenges due to a shortage of AI professionals, compounded by brain drain, and limited understanding among stakeholders, hindering widespread adoption and implementation of AI in DNS management.
- d) **Regulatory Complexity:** Complex regulatory frameworks and policies may create significant barriers to the implementation of AI-powered DNS management solutions in Africa, impacting governance and compliance measures.
- e) **Funding Limitations:** Limited financial resources may impede investment in AI infrastructure, training, and technology adoption for DNS management across the continent.

Recommended Actions:

- a) **Prioritize Capacity Building:** We call upon ICANN and stakeholders to prioritize the development and implementation of initiatives aimed at enhancing AI expertise within the African DNS community.
- b) **Support for Collaborative Partnerships:** We urge ICANN to support collaborative partnerships among regional stakeholders, governments, industry experts, and technical communities
- c) **Advocate for Regulatory Simplification:** We urge ICANN and stakeholders to advocate for regulatory simplification and harmonization to eliminate barriers and foster an enabling environment for the implementation of AI-powered DNS management solutions in Africa.

- d) **Provide Financial Support and Resources:** We call upon ICANN and stakeholders to allocate additional financial support and resources to facilitate investment in AI infrastructure, training, and technology adoption for DNS management across the continent.

In conclusion, the successful integration of Artificial Intelligence into DNS management in Africa relies on concerted efforts to address the challenges outlined. By prioritizing capacity-building initiatives, fostering collaborative partnerships, advocating for regulatory simplification, and providing adequate financial support, ICANN can lead the way in facilitating the effective adoption of AI-powered solutions. These actions are crucial for overcoming hurdles related to infrastructure, connectivity, data availability and quality, skills and expertise, and ethical considerations. Through collective action and commitment from other stakeholders, Africa can harness the transformative potential of AI to enhance DNS management practices and drive digital innovation across the continent. As a key stakeholder, AFRALO remains committed to collaborating with ICANN and other partners to responsibly advance progress in this domain for the benefit of the region.

