AFRINIC
The Internet Numbers Registry for Africa

Annual Report
2020

Contents

Chairman's Message

I am pleased to present AFRINIC's Annual Report and Financial Statements for the year 2020.

It is no secret that 2020 came with its fair share of unprecedented challenges and new norms forced upon us all due to the effects of the global pandemic. Organisations that managed to innovate and adapt quickly were the ones that managed to navigate the challenges and continue to deliver on their promise and mandate.

I am glad to report that AFRINIC was indeed among those that were able to meet the challenge and fully deliver on its commitments. COVID-19 tested AFRINIC's resilience as an organisation and as such we managed to overcome the obstacles and successfully organised our first Africa Internet Summit and Annual General Members Meeting Online. During the pandemic, AFRINIC also provided relief to its members with regards to late penalty fees invoices by extending the deadline by at least six months.

AFRINIC engaged with our regional and global communities as we endeavoured to continue to support community driven initiatives that help Africa achieve its Internet development goals. Moreover, our engagement efforts were by no means deterred. AFRINIC joined hands with several international partners by supporting Internet Governance Forums and community driven events in Africa. AFRINIC also sealed partnerships through the signature of MoUs for several projects on IPv6 Deployment, Internet Measurement, and Internet Governance.

The audited financial statements for 2020 indicate that the company is in a healthy financial position. We had a slight drop in our membership fees revenue, dropping by 2.6% from USD 5,677,352 in 2019 to USD 5,532,620 in 2020. Our operation costs dropped significantly from USD 4,630,929 in 2019 to USD 3,430,068 in 2020.

The Board of Directors held 14 meetings and 45 board resolutions were taken in 2020. The minutes and resolutions of all Board meetings are published on our website. The Governance committee completed a review of the bylaws which was approved during the 2020 Annual General Members meeting.

One of the challenges we faced was the Misappropriation of IPv4 number resources. AFRINIC conducted a comprehensive audit on our database accuracy. Law enforcement agencies provided their full support to AFRINIC with whom we were closely collaborating. AFRINIC has triggered recovery procedures for misappropriated resources.

AFRINIC has completed its Strategic Plan for 2021-2023 which goes to define how we will work to fulfill our vision towards a secure and accessible Internet for sustainable digital growth in Africa. This strategic alignment is key to ensure all stakeholders in our diverse environment are aligned and efforts are aiming towards the same objectives during the next three years. The four pillars and drivers of the AFRINIC strategic plan are engagement, service delivery, operational excellence, and organisational performance.During the next two years, the Board will be involved in the broad reflection towards a new business model that will sustain the next strategic plan. The process will involve community consultations and we welcome you to reflect with us as we continue to serve the growth of the continent's digital ecosystem.

Finally I wish to again thank our Members and the Community-at-Large for their great support and trust they have on us.

I look forward to 2021 hoping that the ongoing pandemic will soon be behind us.

Subramanian Moonesamy

Chairman

Message from the CEO

I am pleased to present this report of AFRINIC's activities in 2020. It has not been an easy year but nevertheless it was a good year for us at AFRINIC.

With **948,376** IPv4 address space, **89** /32s IPv6 address space and **194** AS Numbers distributed in 2020, compared to 4,574,464 of IPv4 address space, 364/32s IPv6 address space and 188 AS number distributed in 2019, we continue to play our part in contributing to Africa's Internet growth.

On the operations side, AFRINIC welcomed 191 new members during the year: we finished the year with a total of 1,836 members.

Additionally, two policy proposals were implemented in 2020.

We continue to call for v6 adoption throughout the African region. Around 46.14% of AFRINIC member organisations have been allocated IPv6 space so far.

Our technical training team is now focusing its effort on online IPv6 deployment support strategies and e-learning. Two IPv6 e-deployathons recorded 30 participants, 1918 professionals participated in 20 webinars, while the number of registrants for our e-learning courses amounted to 886 this year and the IPv6 deployment helpdesk attended to 227 DO help desk requests from 40 countries.

On the technical operations side, we have been able to operate normally despite the pandemic and lockdown. Our technical team and infrastructure effectively supported our operations throughout the year.
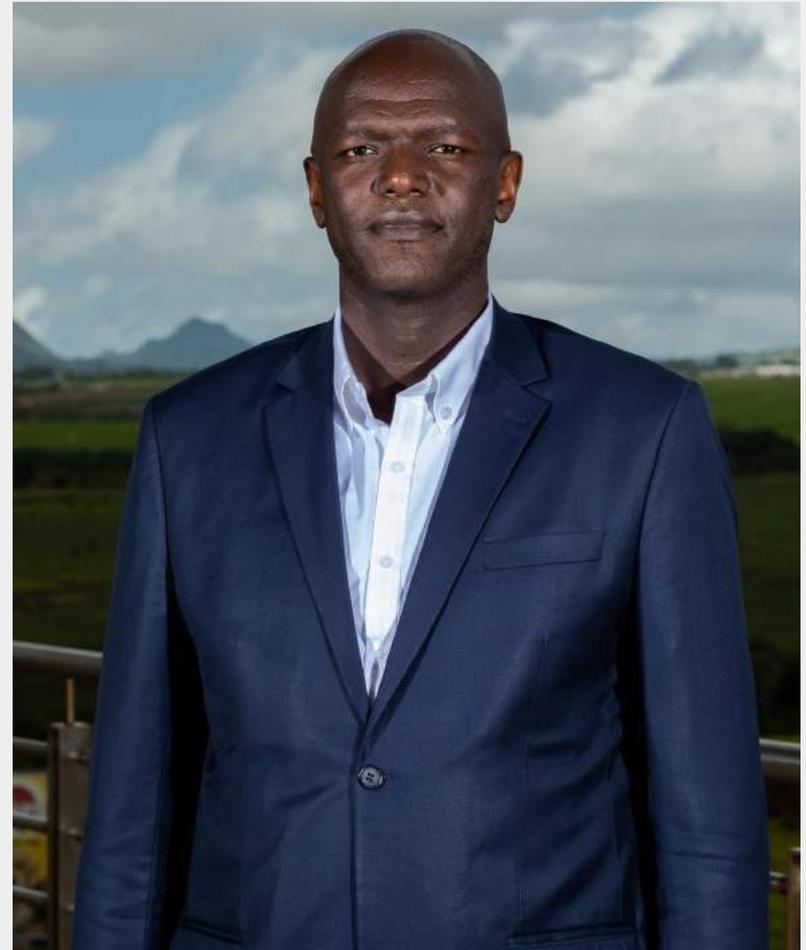
We have achieved a surplus of $ 2,139K representing a 37.3% growth in our total reserves which is now at $ 8,041K.

With COVID-19, we had to adapt quickly to the changes that came by, such as planning and organising our first AIS online. We organised a successful AIS'20 with over 500 online participants. I would also like to appreciate the sponsors without whose support some of the meetings would have not been as successful.

We also embarked internally on an agile transformation journey to improve on our efficiency, and work more collaboratively. I firmly believe that co-creation delivers faster products and services that are aligned with our customers' needs. Finally, a word of thanks to our dedicated volunteers on various committees and working groups. A special vote of appreciation for their unwavering support to the organisation. I cannot conclude without appreciating our staff who spare no efforts to go the extra-mile in delivering on our promises.

Our people are the most important asset. We would not have achieved this much without them. We celebrate their commitment and continued dedication to the advancement of both the vision and mission of AFRINIC.

I invite you to go through the pages of this report to read more about our achievements.

I wish you all a pleasant read.

 Eddy Kayihura

Chief Executive Officer

2020 in Numbers

948,376	89 /32s	194
/32s of IPv4 address space distributed in 2020.	**/32s** of IPv6 address space distributed in 2020.	ASNs assigned in 2020

118,047,128	9,675 /32s	2,234	**New Members in 2020:** 191
/32s of IPv4 address space distributed since 2004.	**/32s** of IPv6 address space distributed since 2004.	ASNs assigned since 2004	**Total Members:** 1836

Capacity Building

We received

227

DO Helpdesk Requests from

40

countries

We conducted

59

Helpdesk Calls for

26

organisations from

15

countries

We conducted

2

e-Deployathons, attended by

30

engineers from

19

organisations

We helped organisations accomplish

64

deployment KPIs

We conducted

20

capacity building webinars recording

1918

participants

Blog and Social Media

87
blog posts
published.

7,929
Facebook Page
Likes,
over 457 more
than at the
start of 2020.

9457
Twitter
Followers, over
723 more than
at the start of
2020.

510
Youtube
Subscribers
over 135 more
than at the
start of 2020.

552
Instagram
Followers over
177 more than
at the start of
2020.

2803
Linkedin
Followers over
128 more than
at the start of
2020.

Popular campaigns included: AIS 19, AFRINIC 31, AFRINIC Fellowship, IPv6 Webinars and Elearning

Highlights

January

- AFRINIC enters IPv4 Exhaustion Phase 2
- Call for comments - Board Seat 6 East Africa
- AFRINIC Board approves new election process and guidelines
- Call for volunteers: AFRINIC Nomination Committee (NomCom) 2020

February

- New Policies Implemented
- Call for Comments on AFRINIC Bylaws
- Announcement of Nomination Committee
- Updates on Police Investigations into IP number Resources Theft
- Call for Nominations for open Board of Directors Seats

March

- ASN Allocation to AFRINIC
- New Partnership to deliver AFRINIC IPv6 certification exams
- New Statistics Portal AIRRS Launched
- RPKI Repository Delta Protocol Deployed

Highlights

June

- [AFRINIC Participates in the Africa Cyber Defense Forum 2020](#)

July

- [AFRINIC launches new statistics portal](#)

- [Internet Society and AFRINIC sign an MoU to cement their Collaboration on Africa Internet Measurement](#)

August

- [AFRINIC Annual Report 2019](#)

- [Announcement for Final Candidate Slate for AFRINIC Board Elections](#)

- [Announcement for Final Candidate Slate for Open Seat for the NRO NC and PDWG elections](#)

- [AFRINIC Calls for Comments on Selected Candidates for AFRINIC Elections](#)

- [Misappropriation of IP addresses in the AFRINIC region](#)

- [Registration for the Elections of PDP Co-Chair and NRO NC Opens](#)

Highlights

September

- [The code of conduct: safeguarding the processes that built the Internet](#)

- [Countdown to AIS'20 Online: Are you looking forward to AIS'20 Online as we are?](#)

- [The AFRINIC Policy Development Process](#)

- [AFRINIC Election 2020 Results](#)

- [Community Engagement: Strategic Plan 2021-2023](#)

- [Election of new AFRINIC Chair and Vice-Chair](#)

October

- [DNS Flag Day 2020](#)

- [The Africa Internet Summit (AIS'20) Online Conference: Behind the Scenes](#)

November

- [AFRINIC Collaborations](#)

- [Call for Volunteers on the Governance Committee 2021](#)

- [Call for Volunteers on the Nomination Committee (NomCom) 2021](#)

About AFRINIC

The African Network Information Centre (AFRINIC) is the Regional Internet Registry (RIR) for Africa. It is responsible for the distribution and management of Internet number resources (IPv4 and IPv6 addresses and Autonomous System Numbers – ASNs) for the African and Indian Ocean region. It was founded in 2004 and is a non-governmental, not-for-profit, membership-based organisation headquartered in Mauritius. The policies governing the distribution of Internet number resources by AFRINIC are defined by the AFRINIC community using a bottom-up, community-driven policy development process (PDP). The Board of Directors then ratifies these policies. AFRINIC also plays a leading role in education and capacity building as well as in IP infrastructure development and reinforcement throughout the region.

Core Functions

AFRINIC's core function is to assign and allocate Internet number resources (IPv4, IPv6 and ASNs) to its members and to provide related services, including RPKI and the management of the Reverse DNS (rDNS) zones for the Internet number resources it allocates and assigns.

In addition to its core function, AFRINIC

- Supports the community-based process for developing number resource policies.

- Provides training and education services to its members, governments and the wider community to support capacity building and infrastructure development throughout the region.

- Collaborates with regional and international organisations on Internet-related matters to ensure the needs of the region are taken into account.

- Promotes and supports an open, stable, secure and resilient Internet through technologies and projects including RPKI, DNSSEC, local Internet Exchange Point (IXP) set up and deployment of root server copies throughout Africa.

- Manages the small Grants and Awards programme, FIRE Africa, to fund and mentor entrepreneurial Internet-related projects in Africa.

Members

AFRINIC is a membership organisation and provides services to its members, mostly Internet Service Providers (ISPs), governments, educational institutions and end-users, within its geographical service region. At year-end 2020, AFRINIC had **1836** active members. More details about membership can be found in the Membership section.

Service Region

5th RIR

55
Economies
In Africa and Indian Ocean

54
Dedicated staff

Vision:
A secure and accessible Internet for sustainable digital growth in Africa

Mission:
To serve the African Internet community by delivering efficient services in a global multi-stakeholder environment

Core Values

- Community Driven

- Excellence

- Integrity

- Passion

Corporate Governance

AFRINIC's activities are overseen by a Board of Directors (BoD) and managed by an appointed Chief Executive Officer, who oversees the staff and daily operations. The BoD is supported by the Council of Elders, which performs an advisory function. AFRINIC is governed by a set of Bylaws developed and approved by the community.

Compliance Statement

In accordance with its mission statement, AFRINIC is committed to applying the principles of good corporate governance in its day-to-day operations
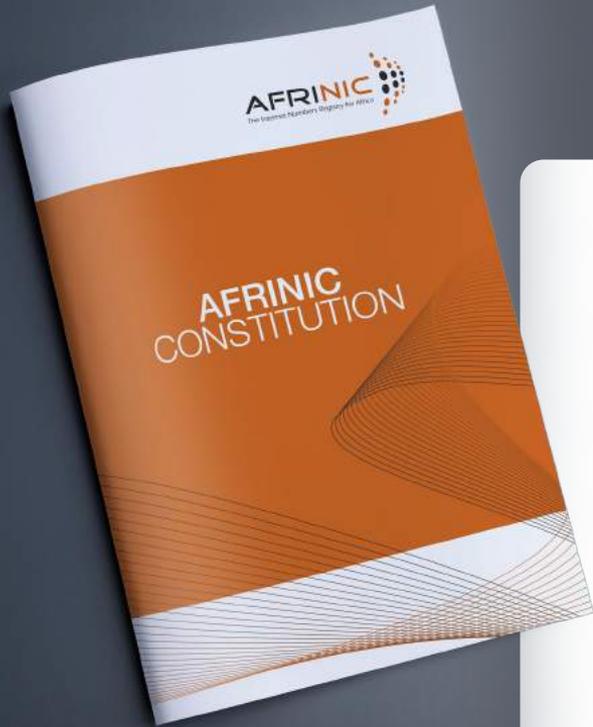
Board of Directors

The Board of Directors (BoD) is elected by AFRINIC members on a regional and non-regional representation basis as defined by Article 13 of the Bylaws. Once appointed to the BoD, each director represents and works for the entire region and not just for the sub-region seat they were elected into.

Bylaws

AFRINIC is governed by a set of Bylaws that are developed and adopted by the AFRINIC membership.

The BoD responsibilities as outlined in Article 15 of the Bylaws are to:

- Determine the guidelines for the allocation of address space for Members.

- Consider broad Internet policy issues in order to ensure that the policies and strategies of the company fully respond to the changing Internet environment.

- Determine a financial budget for the activities of the Company for a given period.

- Establish a ceiling for expenditures for a given period and from time to time to vary such ceiling as they deem fit.

- Fill any casual vacancy in the office of the auditor of the Company.

- Provide any general directives to the Chief Executive Officer regarding the staffing of the Company.

- Determine the conditions of employment of the employees of the Company who are employed at an Executive level

- Reduce or waive fees payable by any person to the Company, or to amend in any manner whatsoever the conditions relating to the payment thereof

- Appoint or remove the secretary of the Company and to determine the remuneration payable to such secretary; and

- Appoint such committees for such reasons and with such terms of reference as they shall consider necessary or desirable.

Conflicts of Interest

All members of the Board of Directors are expected to be enlightened individuals from the region served by AFRINIC, who, by their wisdom and knowledge of Internet Technology and business, endeavour to advance the interests of the community and the Internet Infrastructure in the region. A Board Director should bring to the knowledge of the Board any degree of conflict that may arise in the course of his or her functions and must resolve such conflict according to their own judgment, always acting in the best interest of the organisation. Each individual Director is encouraged to declare any possible conflict at the beginning of their term on the Board of Directors. The Director is encouraged to give details of the nature and extent of the conflict of interest, and how its nature relates to the decision making capacity of the Board of Directors, in writing to the Chief Executive Officer (CEO). The CEO shall inform the Chairman of the Board, and an appropriate decision will be taken as per majority decision of the Board.

Board Meetings and Composition

The AFRINIC Board meets regularly. A Calendar of Board meeting for the upcoming year is approved at the end of each preceding year. The Board met **14** times during the period under review.

2020 Board Resolutions

During 2020, **45** resolutions were discussed and resolved. A detailed overview of these resolutions can be found [here](#).

Board Composition

Board Composition: January 2020 to December 2020

Seat Number	Name	Country	Region	From	To
Seat 1	Prof Habib Youssef	Tunisia	Northern Africa	20 July 2019	30 June 2022
Seat 2	Emmanuel Adewale Adedokun	Nigeria	Western Africa	20 June 2019	30 June 2022
Seat 3	Subramanian Moonesamy *Re-elected on 18 Sep 20	Mauritius	Indian Ocean	1 July 2017 18 September 2020	18 September 2020 30 June 2023
Seat 4	Dr Christian D. Bope	DRC Congo	Central Africa	1st July 2017	18 September 2020
Seat 4	Serge Ilunga	DRC Congo	Central Africa	18 September 2020	30 June 2023
Seat 5	Vika William Mpisane	South Africa	Southern Africa	20 June 2019	June 2021
Seat 6	Abdalla Omari	Kenya	Eastern Africa*	18 September 2020	30 June 2022
Seat 7	Seun Ojedeji	Nigeria	Non-Regional Africa	20 June 2019	June 2022
Seat 8	Serge Ilunga	DRC Congo	Non-Regional Africa	1 July 2017	18 September 2020
Seat 8	Benjamin Eshun	Ghana	Non-Regional Africa	18 September 2020	June 2023
Seat 9	Eddy Mabano Kayihura - Appointed CEO of AFRINIC				

*Note 1 : Seat 6 was vacant for the period January 2020 – 18 September 2020.

**Note 2:

The Board Seat 6– Eastern Africa, Seat 4- Central Africa and Board Seat 8 – Non Geographical were subject for election under the Annual General Members Meeting [AGMM2020] on 18 September 2020. The Board election during the online AGMM2020 lead to the following results:

- Mr Abdalla Omari was elected to the Seat 6 – Eastern Africa for a two-year term ending June 2022.

- Mr Benjamin Eshun was elected to Board Seat 8 – Non Geographical for a three-year term ending June 2023.

- Mr Serge Ilunga was elected to Board Seat 4 – Central Africa for a three-year term ending June 2023.

- Mr Subramanian Moonesamy was elected to Board Seat 3 – Indian Ocean for three-year term ending June 2023

Board Attendance

REGION	BOARD MEMBERS	February 12	19	March 20	June 10	17	24	30	July 29	September 1	11	21	November 11	December 11	18
Date		12	19	20	10	17	24	30	29	1	11	21	11	11	18
EAST	Vacant														
	Abdalla Omari	■	■	■	■	■	■	■	■	■		√	×	√	√
SOUTH	Vika Mpisane	√	√	√	√	√	√	√	×	√	√	√	√	√	×
WEST	Dr Adewale Adedokun	√	√	√	√	√	√	√	√	×	√	√	√	√	√
CENTRAL	Dr Christian Bope	√	√	√	√	√	√	√	√	√	√	■	■	■	■
	Serge Ilunga											√	√	√	×
NORTH	Prof Habib Youssef	√	√	√	√	√	√	√	√	√	√	√	√	√	√
INDIAN OCEAN	Subramanian Moonesamy	√	√	√	√	√	√	√	√	√	√	√	√	√	√
NON-GEO	Oluwaseun Ojedeji	√	√	√	√	√	√	√	√	√	√	√	√	√	√
	Serge Ilunga	√	√	√	√	√	√	√	√	√	√	■	■	■	■
	Benjamin Eshun	■	■	■	■	■	■	■	■	■		√	√	√	√
CEO	Eddy Kayihura	√	√	√	√	√	√	√	√	√	√	√	√	√	√

Key

Black represents Not a Board Director during the particular period and/or Board Seat

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Board Committees

Committees are set up by the Chair of the Board and assist the Board of Directors in the course of its work as per Article 15.3 of the Bylaws. The Board Committees facilitate the discharge of the Board's responsibilities and provide in-depth focus on specific areas. The Committees report to the Board through their respective chairman and each committee has Terms of Reference (ToR) which the Board reviews at least once a year. The committees are re-formed as and when a new Board is elected and are also constituted with a defined lifetime. Ad-hoc committees are created as and when necessary to support short-term projects or activities.

The following Committees were active in 2020:

The Audit Committee

The Audit committee assists the BoD in discharging its oversight responsibilities, and oversees the financial reporting process to ensure the balance, transparency and integrity of published financial information. The Audit Committee also reviews the effectiveness of AFRINIC's internal financial control and risk management system, internal auditing and control, informational systems and IT governance.

The Audit Committee Charter can be seen at: https://www.afrinic.net/board/committees#audit

Committee members:

- Oluwaseun Ojedeji [September December]
- Benjamin Eshun [September – December]
- Serge Ilunga (January - December)
- Adewale Adedokun (January - December)
- Prof. Habib Youssef (January - December)

Finance Committee

The Finance Committee monitors AFRINIC's financial planning, management and reporting matters. It also ensures the fiscal stability and long-term economic health of the company, as well as making recommendations and delivering reports to the Board of Directors.
See https://www.afrinic.net/board/committ ees#finance for more details.

Committee members:

- Subramanien Moonesamy (January - September)
- Abdalla Omari [September-December]
- Vika Mpisane [September – December]
- Christian Bope (January - September)
- Adewale Adedokun (January - September]
- Oluwaseun Ojedeji (Janaury - September)
- Eddy Kayihura (CEO, January - December)

Remuneration Committee

The Remuneration Committee is responsible for recommendations with regard to determining, agreeing and developing the company's general policy on executive and senior management remuneration, performance related elements, including short term bonuses and long term incentives.

Committee members:

- Serge Ilunga (September- December)
- Oluwaseun Ojedeji (January - December)
- Vika Mpisane (January- December)
- Habib Youssef (January - December)
- Eddy Kayihura (CEO, January - September)
- Dr Adewale Adedokun [September – December]

Technical Committee

The Board constituted a Technical Committee in September 2019. It is responsible for defining and recommending matters related to technical aspects of the organisation for approval by the Board.

The ToRs are published at
https://www.afrinic.net/board/committees#technical

Committee members:

- Vika Mpisane (January - December)
- Subramanien Moonesamy (January - December)
- Dr Christian Bope (January - September)
- Serge Ilunga (January - December)
- Oluwaseun Ojedeji (September - December)
- Benjamin Eshun (September - December)
- Eddy Kayihura (CEO, January - December)

Reform Committee

The Reform Committee was set up in September 2019 to help address some of the issues the organisation is facing on matters of governance, accountability and transparency. The Committee is composed of the following members:

Committee members:

- Adiel Akplogan
- Alan Barrett
- Habib Youssef
- Viv Padayatchy
- Dr Alioune Traore
- Paul Wilson

Recall Committee

On 16 November 2020 the Board of Directors received a request to recall the PDWG Co-Chairs. In this context, the Board constituted an Recall Committee pursuant to section 3.5(3) of its Consolidated Policy Manual, to investigate the circumstances of the justification for the recall request and determine the outcome thereof.

Committee members:

- Adiel Akplogan
- Alan Barrett
- Dr Christian Bope
- Craig Ng (Observer)

Nomination Committee

According to Section 9 of AFRINIC Bylaws, a Nomination Committee is appointed by the Board and works to ensure that appropriate candidates are nominated for open Board seats and that all elections are conducted according to current procedures. The four members of this committee are appointed by the Board. One member is from the Board while three others are selected from the community.

Committee members:

- Mark Elkins
- Caleb O Ogundele
- Dr Ousmane Ly
- Dr Adewale Adedokun [Board Representative]

The Council of Elders

Article 16 of the bylaws enables the BoD to appoint up to six former AFRINIC BoD chairpersons to the AFRINIC Council of Elders. Those who are eligible for membership to the Council of Elders should have served for at least one full term as the Chair of the AFRINIC BoD. The Council of Elders performs an advisory role.
Dr Christian Domilongo Bope who has served as Chairperson of the Board of Directors of AFRINIC and whose mandate as a Board Director ended on the 18 September 2020, was appointed to the Council with effective date from 25 November 2020

The Council of Elders is now composed as follows:

- Dr. Viv Padayatchy
- Mr Pierre Dandjinou
- Mrs Maimouna Diop
- Dr Nii Quaynor
- Dr Christian D. Bope

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PDWG Appeal Committee

AFRINIC has a Policy Development Appeal Committee as per Section 3.5 of the AFRINIC Policy Development Policy.

The AFRINIC Policy Development Appeal Committee, or the Appeal Committee, is appointed by the AFRINIC Board, intended to adjudicate on appeals in terms of the Conflict Resolution section of the AFRINIC Policy Development Process (PDP). Any such appeal will involve a disagreement regarding the actions taken by the Chair(s) of the Policy Development Working Group (PDWG).

Further information on the Appeal Committee and its charter is available at
https://www.afrinic.net/policy/appeal-committee#tor

Committee members:

- Adam Nelson
- Paulos Nyirenda
- Luc Missimbazi
- Jean-Robert Hountomey
- Wafa Dahmani Zaafouri

Misappropriation of IP number resources

The misappropriation of IP number resources in AFRINIC's WHOIS Database was brought into light around mid-2019.

AFRINIC undertook an audit of all IPv4 number resources, which consisted of verifying the rightful custodianship of those resources. The audit verified the processes adopted for the allocation of IPv4 number resources which covered both legacy and non-legacy resources that fall under AFRINIC's service region.

Following the findings of the audit, AFRINIC took several remedial actions such as reinforcing internal and external processes and adding multiple layers of verification to our IP allocation and database update processes.

Read the report here.

Annual General Members Meeting (AGMM)

The AGMM is held once a year, usually during an AFRINIC Open Policy Meeting. The AGMMs enable the membership to meet with the BoD, Council of Elders and CEO to discuss operational, financial and corporate governance issues. Elections for BoD seats and voting on proposed special resolutions may also take place during the AGMMs. In 2020, the AGMM was held virtually on 18 September 2020 due to the COVID-19 pandemic.

The minutes, video recording and presentation materials from this meeting are available on the AFRINIC website.
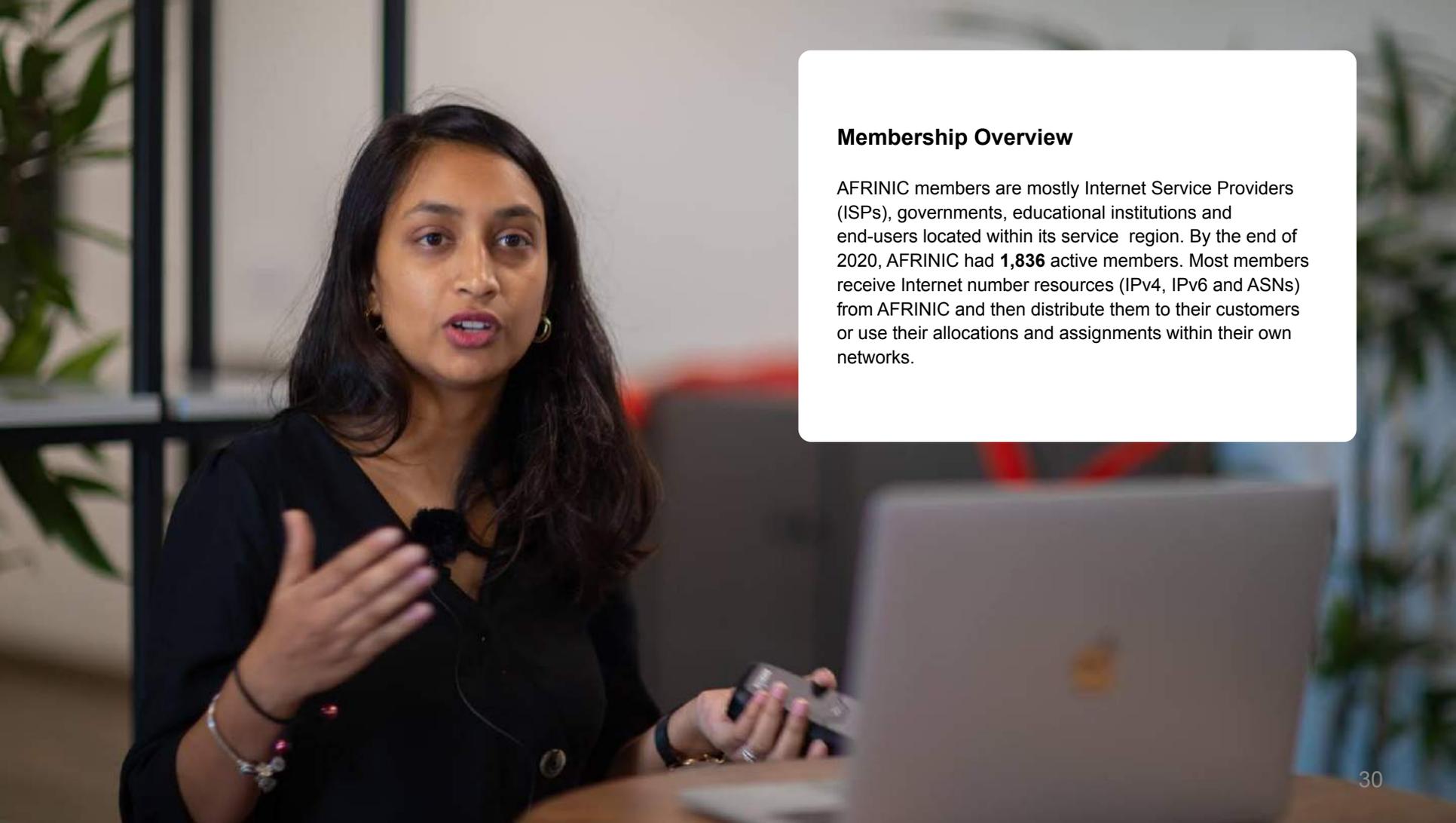
Membership Overview

AFRINIC members are mostly Internet Service Providers (ISPs), governments, educational institutions and end-users located within its service region. By the end of 2020, AFRINIC had **1,836** active members. Most members receive Internet number resources (IPv4, IPv6 and ASNs) from AFRINIC and then distribute them to their customers or use their allocations and assignments within their own networks.

Members

There are two types of membership:

- Resource Members: Local Internet Registries (LIRs) or End Users (EUs). These are organisations that allocate the Internet number resources they receive to their own customers or those who use the resources in their own infrastructure.

- Associate Members. These are organisations or individuals who do not use Internet Number Resources but have a substantial interest in the management of Internet Number resources in Africa.

Fees

Annual membership fees are calculated based on the amount of Internet number resources an organisation holds.

Benefits of Membership

- Obtaining IPv4 and IPv6 address space and Autonomous System Numbers (ASNs).

- Getting reverse DNS and RPKI for their resources.

- Taking advantage of priority places on AFRINIC's FREE hands-on IPv6 and Internet Number Resource Management (INRM) Training Courses.

- Using an IPv6 test-bed to test their IPv6 deployments.

- Attending the Annual General Members' Meetings (AGMM) either in person or remotely and participating in elections for Board and Governance Committee positions.

- Getting preferential access to various AFRINIC initiatives and activities.
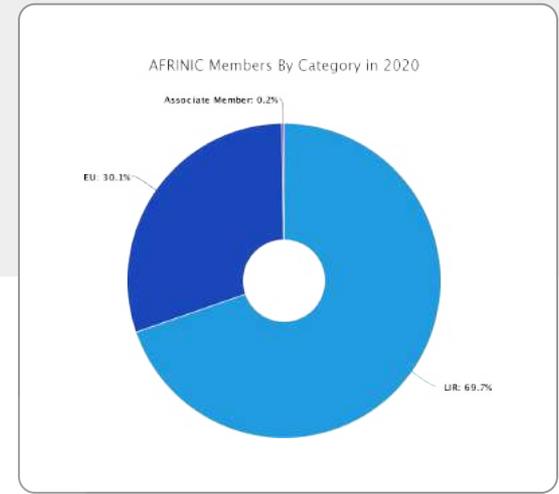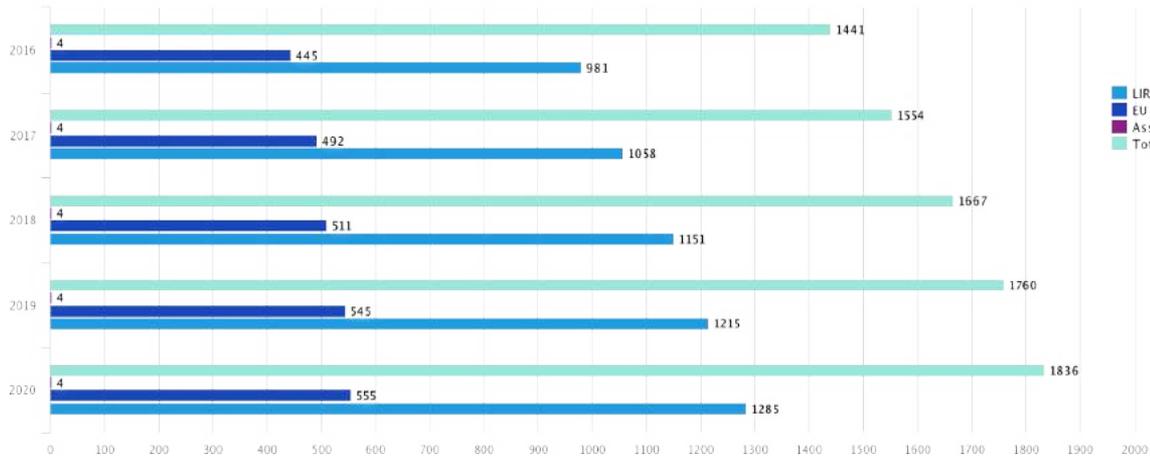
Find out more about how you can become a member at: https://www.afrinic.net/membership

Membership Statistics

AFRINIC welcomed 191 new members in 2020.

New Members per Year (2006 – 2020)

AFRINIC Membership Growth since 2006

New Members 2020 by Membership Category

AFRINIC Members By Category in 2020

Associate Member: 0.2%

EU: 30.1%

LIR: 69.7%

AFRINIC Members by Membership Category from 2016 to 2020

2016
1441
445
981

2017
1554
492
1058

2018
1667
511
1151

2019
1760
545
1215

2020
1836
555
1285

LIR
EU
Associate Member
Total Members

33

Member Services (MS)

The Member Services team manages the day to day of AFRINIC 's core registry functions as well as different service-oriented activities and projects. Member Services core functions and main activities include:

- Managing the resource inventory

- Maintain the accuracy of the resource registrations on the AFRINIC whois database.

- Evaluation of resource requests as per existing policies, approve and issue resources

- Enforce resource policies compliance

- Delivery of and support for registry related services

- Project leadership

The team is also involved in:

- Conducting workshops on INRM training, IRR and RPKI,

- Playing a key role in Resource Policy Implementation
  - Policy impact assessment
  - Specification drafting
  - Product testing
  - Implementation experience reviews

- Member support documentation on the website

- Conducting MS outreaches

- Reporting

Requests, Queries and Tickets

The department responded to an average of 76% of tickets logged within SLC within 48 working hours throughout the year.

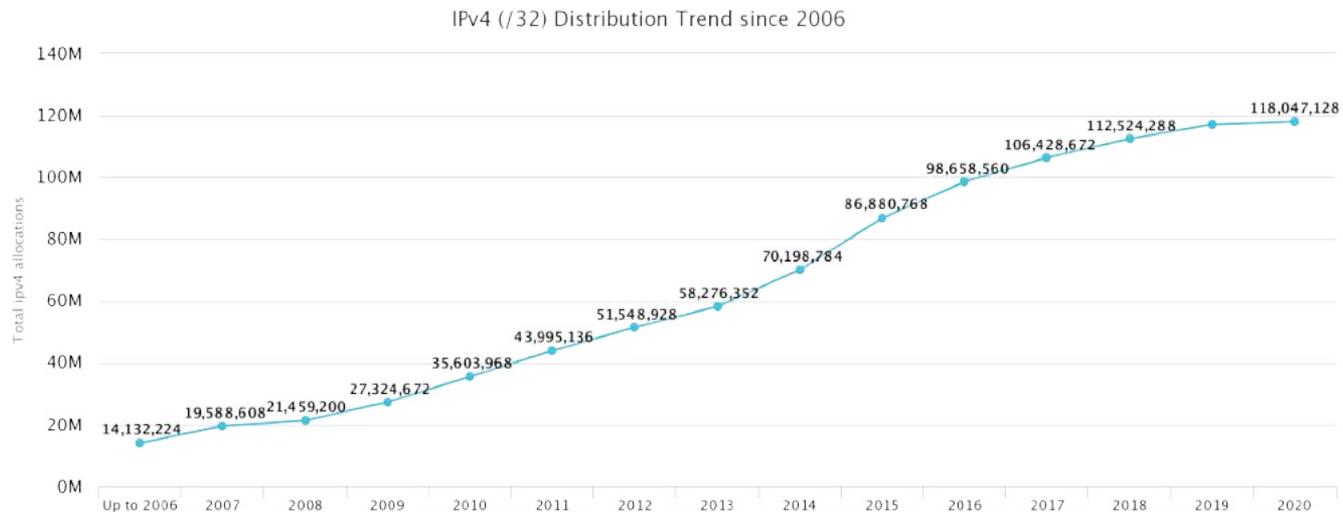Real-time ticket statistics can be found at: https://www.afrinic.net/stats/requests

IPv4 distribution

A total of **948,376** IPv4 addresses were issued in AFRINIC's service region in

2020. Since its inception, AFRINIC has distributed **118,047,128** IPv4 addresses.

**Total Cumulative IPv4 Addresses Allocated in the AFRINIC service region:
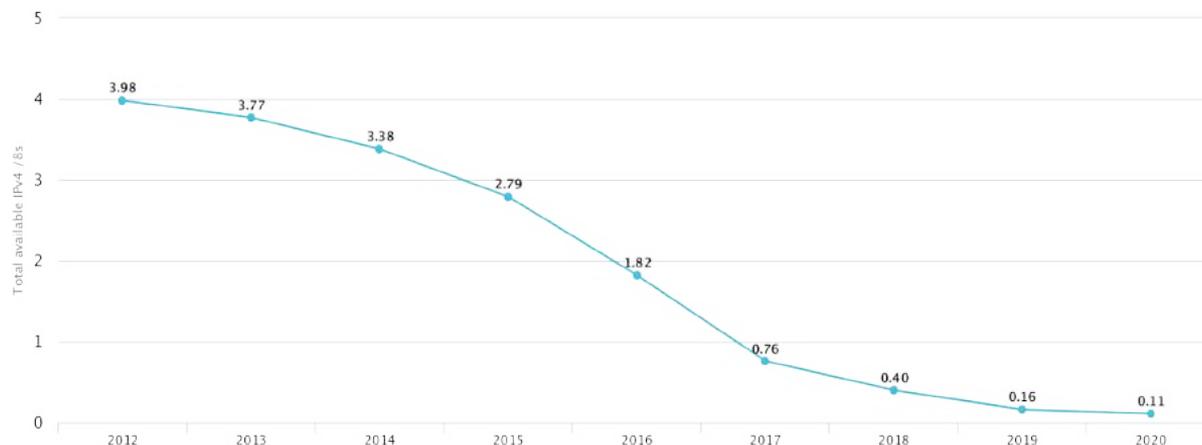2006-2020**

IPv4 Pool Availability as of December 2020

The available inventory in /8s is depicted in the table below. As can be observed, the IPv4 pool is gradually decreasing.

IPv4 Exhaustion Trend since 2012

Year	Total available IPv4 /8s
2012	3.98
2013	3.77
2014	3.38
2015	2.79
2016	1.82
2017	0.76
2018	0.40
2019	0.16
2020	0.11

|	Prefix Size	Total Free
1	/12	1
2	/13	1
3	/14	1
4	/16	1
5	/20	23
6	/21	2
7	/22	15
8	/23	1
9	/24	4

Available resources in the AFRINIC inventory at end of 2020:

IPV4
SOFT
LANDING

IPv6 distribution

A total of 105 IPv6 prefixes were distributed in AFRINIC's service region representing a total of 89 /32s.

Since 2004, AFRINIC has distributed 9,675 /32s to its membership.

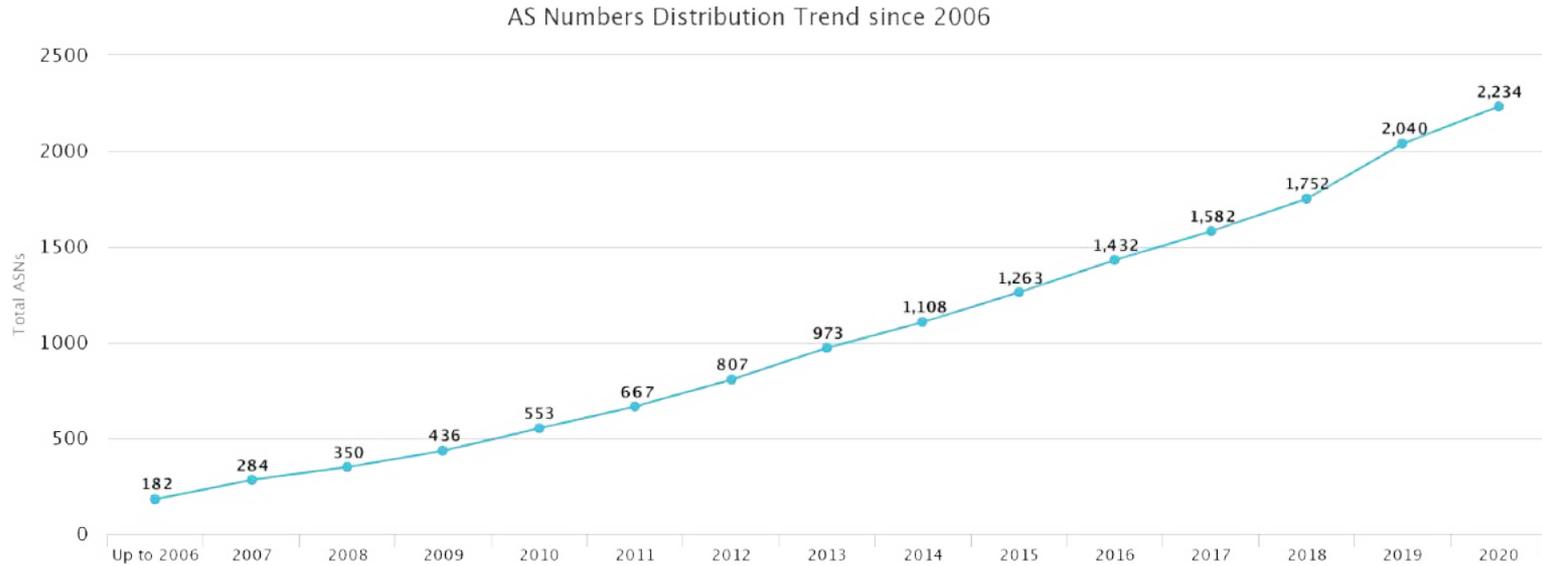**Total Cumulative IPv6 Addresses Allocated in the AFRINIC service region**

IPv6 (/32s) Distribution Trend since 2006
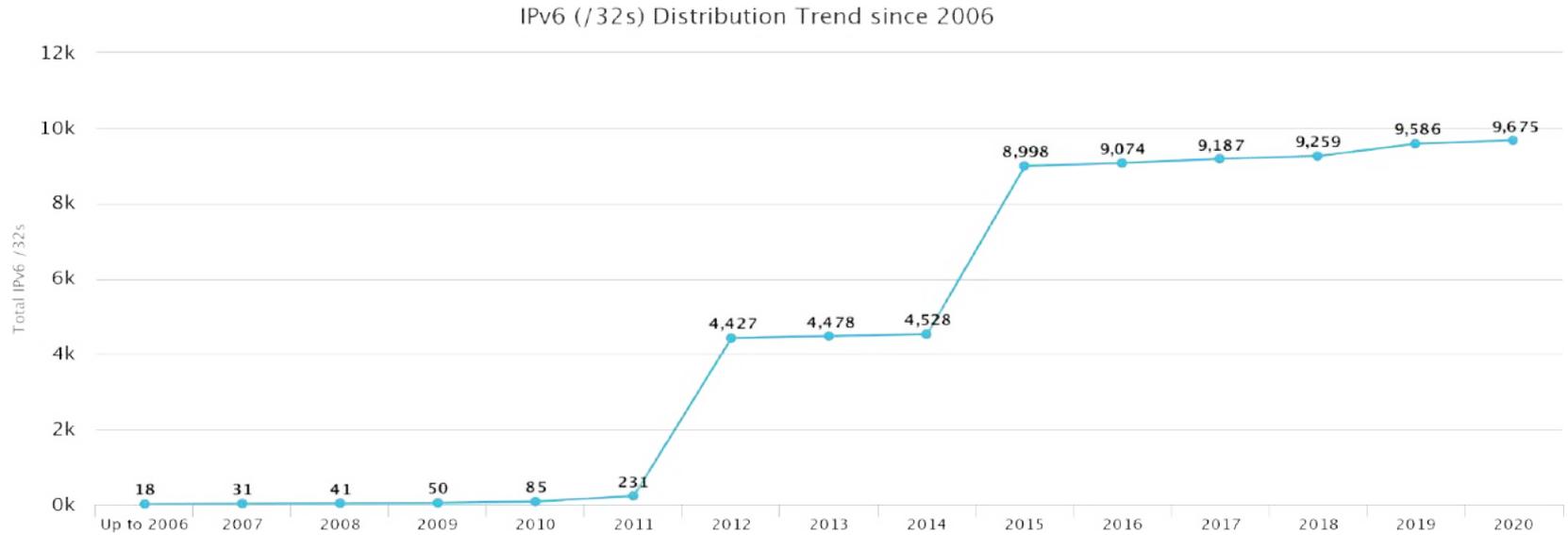
ASN Distributed

A total of 194 ASNs were issued during the year.

Since inception, AFRINIC has issued a total of **2,234** ASNs.

Total Cumulative ASN Distribution in the AFRINIC service region

AS Numbers Distribution Trend since 2006

Internet Routing Registry

There was a steady increase in the number of route objects on the AFRINIC IRR during 2020. The Member Services department encourages members to use the AFRINIC IRR. In 2020, 65% of AFRINIC Resources Members were using the AFRINIC IRR.
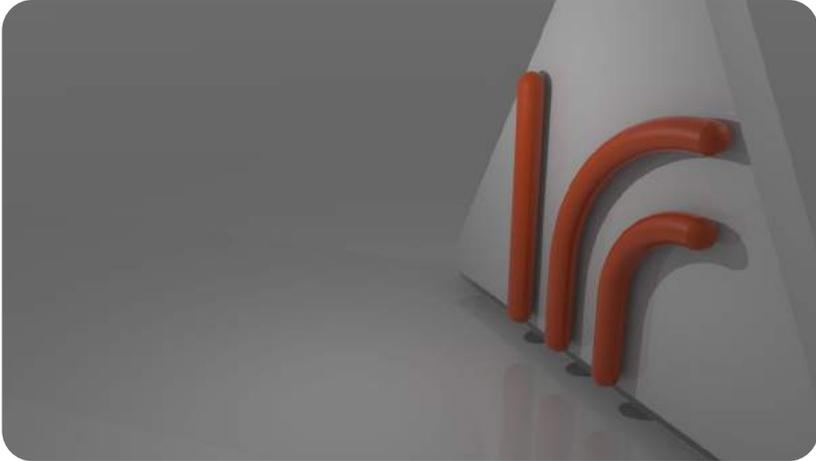
IP Resource Transfer

19 transfers were completed during 2020, including mergers and acquisitions.

Legacy resources

IPv4 resources that have legacy status: 7,320,576 /32s.

Community and Policy Development

AFRINIC provides several platforms for the discussions of Internet number resource management policies and relevant Internet-related topics. Such activities are conducted through workshops, conferences and business events that include the AFRINIC public policy meetings. As part of its secretariat role, AFRINIC facilitates the Policy Development Process for the AFRINIC community to ensure that the unique needs of the region are catered for.

The AFRINIC Community

AFRINIC Meetings

AFRINIC holds two open public policy meetings every year in various locations throughout its service region. The meetings provide an opportunity for local, regional and global Internet-related individuals and organisations to gather to discuss and develop the policies governing Internet number resource distribution in the African region and beyond, to share technical knowledge and best practices, and to attend relevant courses, workshops and tutorials. Due to the pandemic situation worldwide AFRINIC had to rethink its strategy for conducting such meetings.
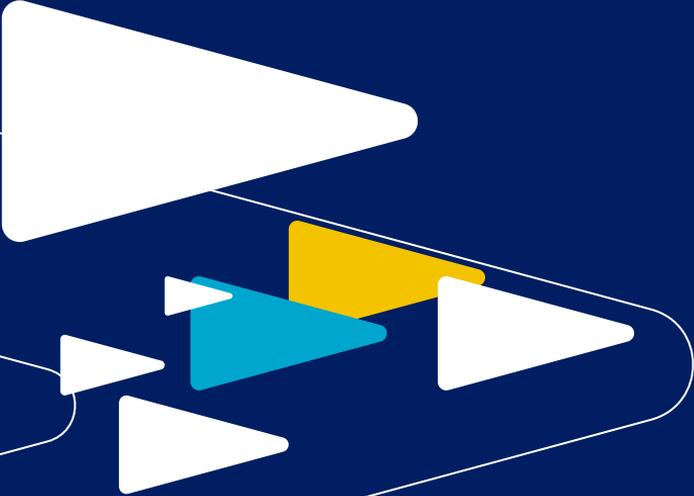
Africa Internet Summit 2020 (AIS'20)

The Africa Internet Summit (AIS) is an annual, regional, multi-stakeholder ICT conference co-organised by AFRINIC and the African Network Operators' Group. It is the pinnacle educational and business ICT event in Africa enabling key players in the Internet industry to come together to interact with the global Internet community.

The AIS'20 and the AFRINIC-32 Meeting took place for the first time online. It was attended by **501** people from 62 countries. The Meeting Statistics can be found here.

Read more on AIS'20 Online on our blog here.

Keeping the Community Informed

AFRINIC Blog and News

The AFRINIC Blog publishes relevant and interesting articles, news, research and statistics. This provides not only information but also facilitates community discussions and engagements on Internet-related topics in Africa and beyond. 87 blog and news posts were published on the AFRINIC website.

Mailing Lists

AFRINIC has several mailing lists through which it informs the community on AFRINIC related issues on relevant topics. Find out more about AFRINIC's mailing lists, most of which are open to all, at https://www.afrinic.net/email

Outages and Incidents

No incident outages were reported in 2020. AFRINIC ensures that the community is kept up to date on any incidents and outages through its dedicated webpage. The community can also make sure they are informed by following the @AFRINIC_IT twitter feed, which updates the community in real-time of any planned or unscheduled maintenance.

Policy Development

Policies that govern how AFRINIC manages the distribution of IPv4, IPv6, ASNs and related resources are developed by the community through the Policy Development Working Group - PDWG.This is a transparent, open and bottom-up policy development process. Most policy development activity happens through the rpd@afrinic.net mailing list and at the bi-annual AFRINIC public policy meetings where open policy proposals go through consensus-building process. Policy proposals under discussion are listed on the policy web page https://www.afrinic.net/policy/proposals.
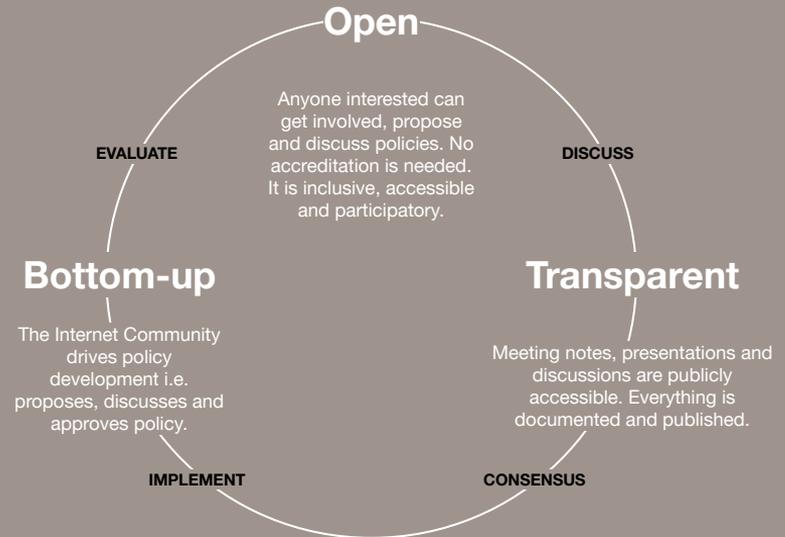
Abdulkarim Oloyede from Nigeria and Moses Serugo from Uganda served and steered the PDWG community as co-chairs in 2020.

A lot of policy development activity took place in 2020 with strong participation of community members from within and outside the AFRINIC region.

One Public Policy Meeting was held in 2020 and was in online format. During the meeting, the following policy proposals were discussed, with the current status of each respective proposal as indicated below:

PRINCIPLES OF PDP

AFRINIC's Policy Development Process is consensus-based and is:

Open

Anyone interested can get involved, propose and discuss policies. No accreditation is needed. It is inclusive, accessible and participatory.

EVALUATE

DISCUSS

Bottom-up

The Internet Community drives policy development i.e. proposes, discusses and approves policy.

Transparent

Meeting notes, presentations and discussions are publicly accessible. Everything is documented and published.

IMPLEMENT

CONSENSUS

Policy Proposals

Board Prerogatives on the PDP - AFPUB-2020-GEN-004-DRAFT01
Proposed: 13 August 2020

The proposal proposes to add a section in the CPM to clarify what are the limits of the Board and resolve existing breaches of the PDP and related procedures, in consonance with the bylaws and the community sovereignty, on top of the Board decisions itself.

Presented at: AFRINIC-32 (September 2020)
Status at end of 2020: Version 2
(AFPUB-2020-GEN-004-DRAFT02) of the proposal reached Consensus (Not sent to the AFRINIC Board for ratification)

PDP Working Group (WG) Guidelines and Procedures - AFPUB-2020-GEN-002-DRAFT02
Proposed: 30 July 2020

The proposal addresses the problems by defining clear and explicit Working Group guidelines and procedures.

Presented at: AFRINIC-32 (September 2020)

Status at end of 2020: Under discussion

Simple PDP Update for the New 'Normal' - AFPUB-2020-GEN-003-DRAFT01
Proposed: 7 August 2020

This simple proposal seeks to eliminate the requirement that states that consensus must only be reached at the PPM, adapt the relevant timings, and at the same time, clarifies the definition of "consensus" and "last call".

Presented at: AFRINIC-32 (September 2020)
Status at end of 2020: Under discussion

Policy Compliance Dashboard - AFPUB-2020-GEN-001-DRAFT01
Proposed: 17 February 2020

This proposal provides the framework for a "Policy Compliance Dashboard", to be developed by AFRINIC, and incorporated in MyAFRINIC (and future members communications platforms).

Presented at: AFRINIC-32 (September 2020)
Status at end of 2020: Under discussion

Chairs Election Process - AFPUB-2019-GEN-007-DRAFT02
Proposed: 19 August 2020

The proposal provides a complete process for the PDWG chairs candidate requirements, in order to be integrated in the AFRINIC Policy Development Process(PDP)

Presented at: AFRINIC-31 (AFPUB-2019-GEN-007-DRAFT01 in December 2019), AFRINIC-32 (September 2020)
Status at end of 2020: Under discussion

RPKI ROAs for Unallocated and Unassigned AFRINIC Address space - AFPUB-2019-GEN-006-DRAFT02
Proposed: 30 July 2020

The proposal instructs AFRINIC to create ROAs for all unallocated and unassigned address space under its control. This will enable networks performing RPKI-based BGP Origin Validation to easily reject all the bogon announcements covering resources managed by AFRINIC.

Presented at: AFRINIC-31 (AFPUB-2019-GEN-006-DRAFT01 in December 2019), AFRINIC-32 (September 2020)
Status at end of 2020: Under discussion

Resource Transfer Policy - AFPUB-2019-V4-003-DRAFT02
Proposed: 13 August 2020

The proposal provides for Inter-RIR (and Intra-RIR) transfer of IPv4 and ASN resources.

Presented at: AFRINIC-31 (AFPUB-2019-V4-003-DRAFT01 in December 2019), AFRINIC-32 (September 2020)
Status at end of 2020 : Consensus (as per email from Co-chairs on RPD List) & Under Appeal

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AFRINIC Number Resources Transfer Policy - AFPUB-2019-GEN-002-DRAFT02
Proposed: 22 September 2019

The policy defines a set of rules to allow inter-RIR and intra-RIR transfer of IPv4 addresses and ASNs, by specifying what categories of resources are eligible for transfer, the location of parties (sources and recipients) and the conditions to be met. The policy segregates resources in different categories and defines which transfer rules apply to each category. Only Legacy resources and resources transferred in from other regions will be transferable out of the AFRINIC service region.

Presented at: AFRINIC-31 (December 2019), AFRINIC-32 (September

2020) Status at end of 2020: Expired

IPv4 Inter-RIR Resource Transfers (Comprehensive Scope) - AFPUB-2019-v4-002-DRAFT04
Proposed: 12 August 2020

The proposal allows establishing the mechanism to allow inter-RIR and intra-RIR transfers of legacy and non-legacy IPv4 resources and ASN to/from other regions.

Presented at: AFRINIC-30 (June 2019), AFRINIC-31 (AFPUB-2019-v4-002-DRAFT03 in December 2019), AFRINIC-32 (September 2020)
Status at end of 2020: Under Discussion

Abuse Contact Policy Update - AFPUB-2018-GEN-001-DRAFT06
Proposed: 12 August 2018

The proposal introduces a mandatory "abuse-c" attribute for specifying abuse email address(es) for a given directly issued resource. it further introduces a mechanism for AFRINIC to validate the given abuse email address, and punitive measures (such as blocking of my.afrinic.net access, including access to voting) if contacts remain invalid.

Presented at: AFRINIC-29 (November 2018), AFRINIC-30 (June 2019), AFRINIC-31 (December 2019)
Status: Under Discussion (Version 6)

Adjusting IPv6 PA Policy - AFPUB-2019-IPv6-002-DRAFT01
Proposed: 3 November 2019

The proposal addresses a discrepancy related to the need to announce (or justify otherwise) the aggregated addressing space within 12 months.

Presented at: AFRINIC-31 (December 2019)
Status at end of 2019: Last Call

Provisions for Resource Hijacking - AFPUB-2019-GEN-001-DRAFT01
Proposed: 17 May 2019

The proposal aims to clarify that deliberate resource hijacking is not acceptable as normal practice within the AFRINIC service region, primarily because it negates the core purpose of running a (Regional Internet) Registry.

Presented at: AFRINIC-30 (June 2019), AFRINIC-31 (December 2019)
Status at end of 2019: Under Discussion

IPv6 PI Clarification -AFPUB-2019-v6-001-DRAFT02
Proposed: 14 May 2019

The proposal amends Section 6.8 of the CPM to allow IPv6 prefixes issued to IXP peering networks and private networks to not be announced. Other IPv4 PI assignments will have to be deployed within 12 months and the announcements be aggregated

Presented at: AFRINIC-30 (June 2019)
Status at end of 2020: Implemented

Multihoming not required for ASN - AFPUB-2019-ASN-001-DRAFT04
Proposed: 27 February 2019

This proposal amends the eligibility requirement for an Autonomous System Number(ASN). In addition to multihoming, planning to be multihomed and having a unique routing policy, an organisation that demonstrates a technical need for a globally ASN is eligible to receive one.

Presented at: AFRINIC-30 (June 2019), AFRINIC-31 (December 2019)
Status at end of 2020: Implemented

Internet Number Resources Review by AFRINIC -
AFPUB-2016-GEN-001-DRAFT-08
Proposed: 18 May 2016

The proposal puts in place a policy provision for AFRINIC to conduct routine (or whistle-blower triggered) number resource audits on members. It also provides for revocation of resources (and closure of members) that fail such audits (reviews).

Presented at: AFRINIC-25 (November 2016) , AFRINIC-26 (May 2017), AFRINIC-27 (November 2017), AFRINIC-28 (May 2018), AFRINIC-29 (November 2018), AFRINIC-30 (June 2019), AFRINIC-31 (December 2019)
Status at end of 2020: Expired

AFRINIC Policy Development Process – bis -
AFPUB-2017-GEN-002-DRAFT-05
Proposed: 28 April 2017

The proposal is a major revision of the current Policy Development Process. Major highlights include:

- A clearer mechanism for appeals and disputes.
- Introduction of distinct phases in the policy proposal life cycle.
- More transparency around consensus-gauging.

Presented at: AFRINIC-26 (May 2017), AFRINIC-27 (November 2017), AFRINIC-28 (May 2018) and AFRINIC-29 (November 2018), AFRINIC-30 (June 2019), AFRINIC-31 (December 2019)
Status at end of 2020: Expired

Impact Analysis is Mandatory - AFPUB-2019-GEN-005-DRAFT01
Proposed: 4 November 2019

The proposal provides a strict deadline for the impact analysis of policy proposals.

Presented at: AFRINIC-31 (December 2019)
Status at end of 2020: Expired

M&A Resource Transfers - AFPUB-2019-GEN-004-DRAFT01
Proposed: 2 November 2019

The proposal establishes such mechanism to allow intra-RIR transfers of any kind of resources exclusively for those M&A cases.

Presented at: AFRINIC-31 (December 2019)
Status at end of 2020: Expired

Implemented Policies

All implemented policies appear in the Consolidated Policy Manual: https://www.afrinic.net/policy/manual

A list of all policies implemented within 2020 is as follows:

Policy Proposal	Policy Manual Section(s)
Policy Adjusting IPv6 PA Policy (AFPUB-2019-IPv6-002-DRAFT01)	Section 6.5.1.1 was updated and Section 6.5.4.2 was removed
Multihoming not required for ASN (AFPUB-2019-ASN-001-DRAFT04)	Section 7.0
IPv6 PI clarification (partial implementation)	Section 6.8

AFRINIC 32 ONLINE

Public Policy Meeting Report from the meeting held during 2020 can be found at the following URL:

AFRINIC-32 - https://www.afrinic.net/policy/development-working-group/ppm-afrinic-32

Global Policy Development / NRO-NC Update

The 2020 representatives from the AFRINIC region to the NRO-NC are:

- Mike Silber (South Africa)– January 2020 to December 2022
- Noah Maina (Tanzania) – January 2018 to December 2020
- Wafah Dahmani (Tunisia) - January 2020 to December 2020.

No global policy proposals were received or approved during 2020. However, the following notable activity was conducted by the ASO-AC within the year 2020:

- Early in the year the ASO-ASO members elected Aftab Siddiqui as Chair. The Chair appointed Jorge Villa from LACNIC and Kevin Blumberg from ARIN as vice chairs.
- The ASO-AC had reviewed the Work plan 2019 and published on the website https://aso.icann.org/wp-content/uploads/2020/02/ASO-AC-Work-Plan-Review-2019.pdf
- The annual Transparency Review 2019 was approved and published on the website https://aso.icann.org/wp-content/uploads/2020/04/ASO-AC-Transparency-Review-2019.pdf
- The AC work plan 2020 and the AC meeting schedule were also adopted and published on the website https://aso.icann.org/aso-ac/meetings/aso-ac-meeting-schedule/

https://aso.icann.org/aso-ac/workplan/

During the discussions it was mentioned that the main priority as a group was to improve the ICANN Board selection process which started in April. The group had planned to do it at ICANN 67, however, the meeting went virtual and there were no ASO-AC sessions.

It was decided to work on the selection process on the mailing list and during the next meetings. The main work was to review Section 9 of the operating procedures.
On September 15 , the ASO-AC issued a call for nominations to seat 9 of the ICANN Board of Directors.

https://aso.icann.org/icann-board/icann-board-elections/2021-icann-board-of-directors-seat-9-elections/

The Group had also set the timeline to appoint a Nomcom 2021 representative. Pankaj Chaturvedi was appointed and it was the only nomination received.

https://aso.icann.org/icann-board/icann-nomcom-appointments/

- The group had also discussed the NRO inspection request to ICANN regarding the Internet Society's proposed transfer of ownership for the .org registry.

Elections held in 2020 in the AFRINIC service region saw Saul Stein from South Africa elected for three years from January 2021 to December 2023 replacing Noah Maina. Wafa Dahmani reappointed by the board for one year.

- Wafa Dahmani will continue to represent Policy Proposal Facilitator Team (PPFT)

- Noah Maina and Mike Silber are on IANA RC

Stakeholders Engagement

The department's activities are geared towards government and community engagement, cooperation development and sponsorship funding.

Cooperation Development

Our strategy toward government was built on mapping the African government's needs and challenges pertaining to their digital transformation to the AFRINIC initiatives and services. We engaged in fruitful cooperation with Internet development institutions to accelerate the implementation and usage of Internet technologies on the continent.

Eddy Kayihura, and Dr. Lacina Kone,
Director General of Smart Africa,

In 2020, we signed four (4) new MoUs for a total amount of 9 projects for IPv6 Deployment, Internet Measurement, and Internet Governance. We signed MoUs with partners: the Nigerian Communications Commission (NCC), SmartAfrica Secretariat (SAS), Autorité de Régulation de la Poste et de Télécommunication du Congo (ARPTC-DRC) and ISOC-Africa. We teamed up with ISOC-Africa to promote research, capacity building around Internet Measurement, Routing security, IETF-Africa, and Internet exchange point. The signature of an MoU sealed this collaboration. AFRINIC also entered into a partnership and collaboration with the Southern Africa Telecommunications Association (SATA) for Internet development in the southern Africa region. SATA and AFRINIC signed an MoU to guide the implementation of Internet development activities. We also collaborated with INX ZA by signing an MoU for the hosting services being provided by INX-ZA to AFRINIC.

Moreover, AFRINIC was given an observer member status in ARISPA, Both organisations look forward to joining forces to promote Internet development in the Arab region including North Africa.

To cover AFRINIC's interaction with Law Enforcement Authorities (LEAs) regarding IP resources and members information queries, we published the AFRINIC WHOIS Usage Terms & Conditions. This resulted in conducting the first LEA Workshop online with the Tunisian National Information Security Agency (ANSI) on AFRINIC WHOIS Usage.

AFRINIC and African governments and governmental Institutions entered into agreements to collaborate on the development and the promotion of Internet governance and Internet technology usage on the African continent. In 2020, we reached out to new stakeholders such as ATU, EACO, and UNECA to scale up the Digital Transformation on the continent and give opportunities to African citizens and economies fully to take advantage of the benefits offered by the internet.

Additionally we released the AFRINIC Initiatives for Government and Regulators 2020 catalogue.

Community Engagements

In 2020, we conducted various activities to engage with the AFRINIC community and leverage relationships between AFRINIC and its community constituencies. Despite not having been able to conduct on-site and physical meetings, we kept interacting with our community virtually.

AFRINIC and its partners successfully conducted AIS 20 online from 11-18 September 2020. The first meeting held exclusively online went according to plan, and the Board Community Engagement, Annual General Members Meeting (AGMM), and elections marked the final act of the event.

In our continuous effort to improve our interactions with the AFRINIC community and ensure engagement from the outset, we initiated an impactful series of 8 French and English webinars on AFRINIC's Ecosystem and Governance structure.

We also were actively involved in the organisation of 12 Internet Governance Forums in each region in Africa. Our participation took different forms such as presentation, Keynote, Panelist, Sponsor, and Brand promotion.

Sponsorships

By the end of 2020, we provided in total 16 Sponsorship grants for a total of USD 21,800 to the following organisations: ZANOG, Internet Society, Kondoa Community Network - Tanzania, South Sudan IGF, Kuza STEAM Generation - Tanzania, @JURISTIC - Cameroon, Initiative TIC et Citoyenneté - Burkina Faso, Global Youth Network - Benin, E-Governance and Internet Governance Ghana, FGI Côte D'Ivoire, ISOC Namibia Chapter, Arab States Research and Education Network (ASREN), Central Africa Internet Governance Forum, AFRICOMM and the Mauritius and Indian Ocean IGF - 2020.

More on our 2020 collaborations with our community in this blog at https://www.afrinic.net/20201112-afrinic-collaboration
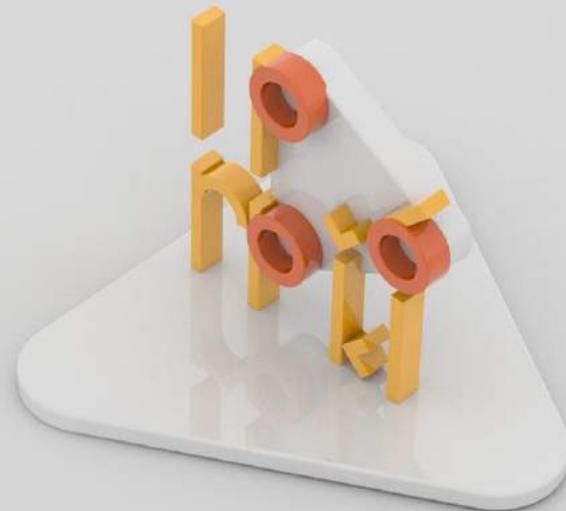
Capacity Building

AFRINIC plays a leading role in education and capacity building. The Capacity Building department has embarked on a strategy focusing on IPv6 deployment support and e-learning capability.

AFRINIC offers comprehensive online support through webinars, e-learning courses and online IPv6 deployment helpdesk. This is in addition to IPv6 certification programmes and IPv6 deployathons conducted throughout Africa and the Indian Ocean in French and English languages.

The e-learning courses enrolled 2700 registrants out of which 866 were unique students.

The department ran 20 webinars in English and French which were attended by 1918 professionals for 3921 registrants in total.
28.3 % of the webinar participants were network engineers, 11.2% were systems engineers and 10.9% were IT Managers. The webinar attendees were mainly from ISPs 26% or Enterprise networks 15.5% while the majority of the attendees were from Nigeria (185) and South Africa (178).

The webinars covered:

1. Understand & Implement RPKI to secure BGP

2. Set up an IPv6 deployment project

3. Create the ideal IPv6 address plan

4. Plan & deliver critical internet infrastructure preparedness for black swan events

5. Perform an IPv6 infrastructure audit

6. Internet infrastructure support in time of crisis

7. Properly set up a resilient DNS infrastructure

8. Plan & deliver DNS security and privacy

9. The root server system

10. IPv6 Strategy & Planning

11. DNS Abuse : Threats & Mitigation

The overall net promoter score for the webinars was 62.

We all start from somewhere, why not start with us?

Study Configure Basic IPv6 e-course at your convenience
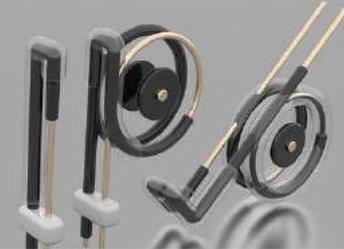
bit.ly/Elearning-Configure-Basic-IPv6

Earn your v6 Stripes

IPv6 Strategy and Planning Virtual Workshop for Decision & Policy-makers

Date: 9th and 10th September 2020

bit.ly/Register-IPv6-virtual-course

Advance your IPv6 Deployment today

Get IPv6 Deployment Support for your projects in our IPv6 Helpdesk

bit.ly/6Deploy-EN

AFRINIC 15th ANNIVERSARY

Following the encouraging experience and feedback from our face-to-face deployathons in 2019, our plans to do more in 2020 were disrupted by the COVID pandemic. We thus had to adapt by developing the Deployment (DO) Helpdesk and adapting the Deployathon format to online, i.e. e-Deployathon.

In 2020, 30 organisations from 14 countries were able to accomplish 24 deployment KPIs:

- 7 validated route6 object

- 4 address plans in IPAMS

- 4 advertised IPv6 prefixes

- 2 validated RPKI ROA objects

- 2 IPv6 traffic from test VLAN

- 1 IPv6-enabled DNS

- 1 DNSSEC IPv6 signed IPv6 reverse zone

- 1 IPv6-enabled website

- 1 IPv6-enabled email

We received **227** DO Helpdesk requests from **40** countries
We conducted **59** Helpdesk Calls for **26** organisations from **15** countries

We conducted **2** e-Deployathons, attended by **30** engineers from **19** organisations

You can find more information on the certi6 website at https://certi6.io/en/

AFRINIC also runs certi::6, a multi-tiered programme of written exams under the IPv6 Forum certification program. The programme validates the knowledge and skills required to plan, design, configure, manage and troubleshoot multi-vendor IPv6 networks. Twenty-four candidates took part in these examinations.

AFRINIC has partnered with the National Telecommunications Institute (NTI) from Egypt to conduct examinations under the AFRINIC and IPv6 Forum certification program.

<https://www.ipv6forum.com/ipv6_education/Certified/site/faq.php>.

Network engineers from the Northern African region who are willing to receive this valuable IPv6 certification will now be able to take exams at the underlined facility in Egypt.

Find out more about AFRINIC's e-learning courses, webinars, helpdesk, and certification programme on learn.afrinic.net.

Follow the Training Team's travels and news on Twitter: @afrinictraining

Technical Services

2020 was a year of challenges especially in the era of the pandemic.

Working from home

Due to the pandemic, as for many companies that went through lockdown, it was a test for the strength of our infrastructure to support our services.. Staff were able to operate normally and systems that were usually used to cater for the dozen people out of office supported the heavy load of all the staff.

Technical Services

RPKI - RRDP deployment

In addition to the resiliency of the RPKI repository, AFRINIC implemented the RPKI Repository Delta Protocol (RRDP). We are happy to announce that both RSYNC and RRDP run in parallel. Our community can now connect to the RPKI repository over HTTPS.

More information about the deployment at **https://afrinic.net/20200401-rpki-repository-delta-protocol-deployed**

Resiliency of critical services

Following the deployment in 2019 of a new set of equipment, AFRINIC enhanced the resiliency of critical services. We did so through an increased number of services nodes spread across multiple datacenter locations. As a result a significant decrease of downtown was noticed.

MyAFRINIC

We provided our membership with a "Routing Registry GUI" via MyAFRINIC. The graphical user interface allows members to manage their
*route*, *route6*, *aut-num* and *as-set* objects more intuitively.

Automated reminders are sent to members having an outstanding balance with the statement of accounts.

Two features for IPv6 policy implementation were deployed on production and now prospective members are allowed to request only nibble IPv6 blocks. They may also choose whether to announce IPv6 prefix while daily checks for the announcement of IPv6 prefixes will run and the results recorded.

Technical Services

MyAFRINIC v2

In 2020, AFRNIC has embarked on a project for updating the current version of MyAFRINIC. MyAFRINIC v2 will allow our members to better engage with AFRINIC services and products. We launched a consultative online survey and received feedback from 283 respondents.

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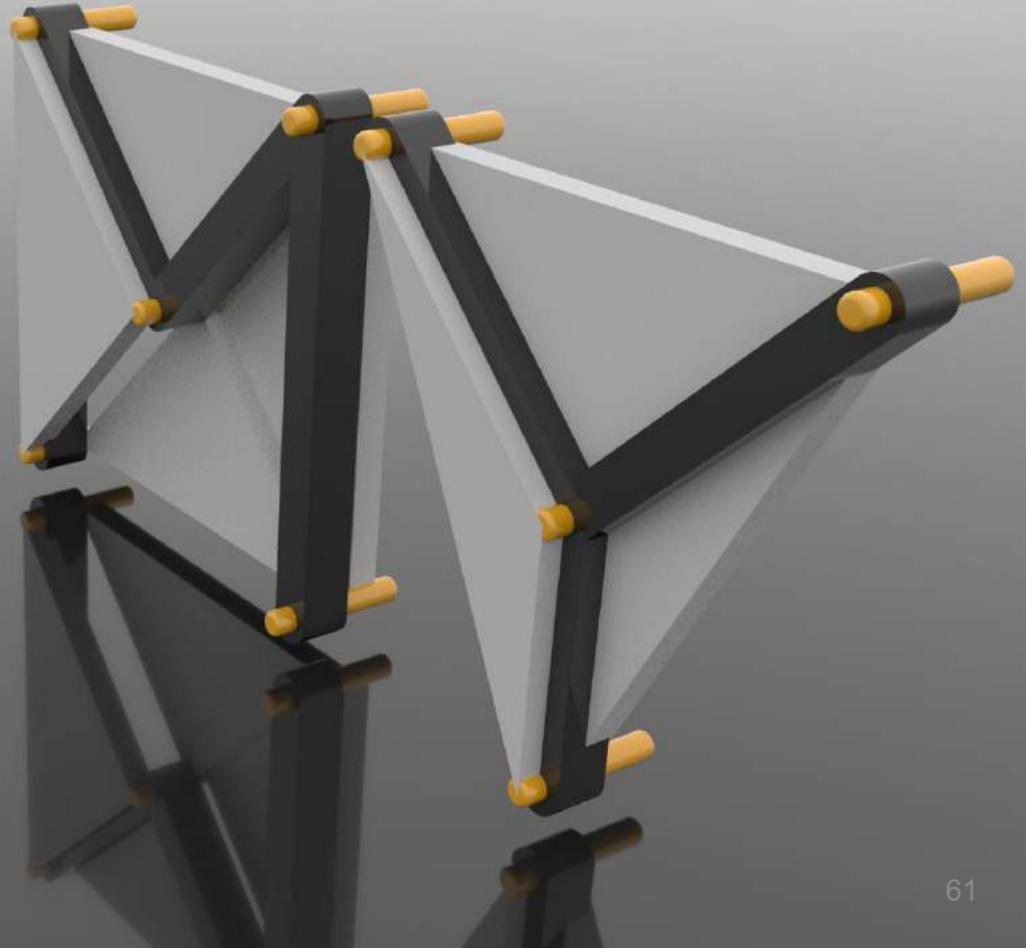
WHOIS

A few security enhancements on WHOIS were deployed.

- For the following object types, unreferenced objects older than 90 days are automatically deleted:
  - *mntner*
  - *key-cert*
  - *irt*
- CRYPT and MD5 cannot be used to authenticate any objects, except when updating *mntner* objects.
- The *key-cert* objects are immutable.
- The *mnt-by* attribute is optional for *key-cert* objects.

The WHOIS daily dump file has been provided for a long time now, but it does not contain some information which is present in the normal WHOIS output. We have started providing an "un-redacted WHOIS daily dump file" to those who enter an agreement with AFRINIC.

Statistics Portal

The Statistics Portal was launched. This has replaced the statistics pages which were on the main website. The Statistics Portal is interactive and allows users to filter as well as drill down to obtain different granularity levels in the graphical representations.

Projects and Research

As part of the work of the Research and Innovation Department, AFRINIC offers or contributes to several initiatives for the benefit of the African and global Internet community.

Africa Internet Measurement (AIM) Programme:

AFRINIC signed an MoU with MIRA (Measuring Internet Resilience in Africa). The project will use Internet measurements gathered by specially provisioned measurement devices (called MIRA pods) located in different African countries.

aim

Projects and Research

AFRINIC Research Collaborations (ARC) Programme

In 2020 we collaborated with the following research and academic institutions for the development of the MIRA project proposal:

* University of Cape Town, ZA

* CMU-Africa

* Simula Research Lab

Additionally we published three papers based on research work from the 2020 Research Internships:

* https://afrinic.net/research/dnssec-service-a-prototype-implementation

* https://afrinic.net/research/african-dns-authoritative-nameservers

* https://afrinic.net/research/african-cctlds-technical-environment

AFRINIC was actively involved in the organisation of the virtual conference AFRICOMM 2020 together with Middlesex University, Mauritius.

https://africommconference.eai-conferences.org/2020

AFRICOMM
e-Infrastructures and e-Services for Developing Countries
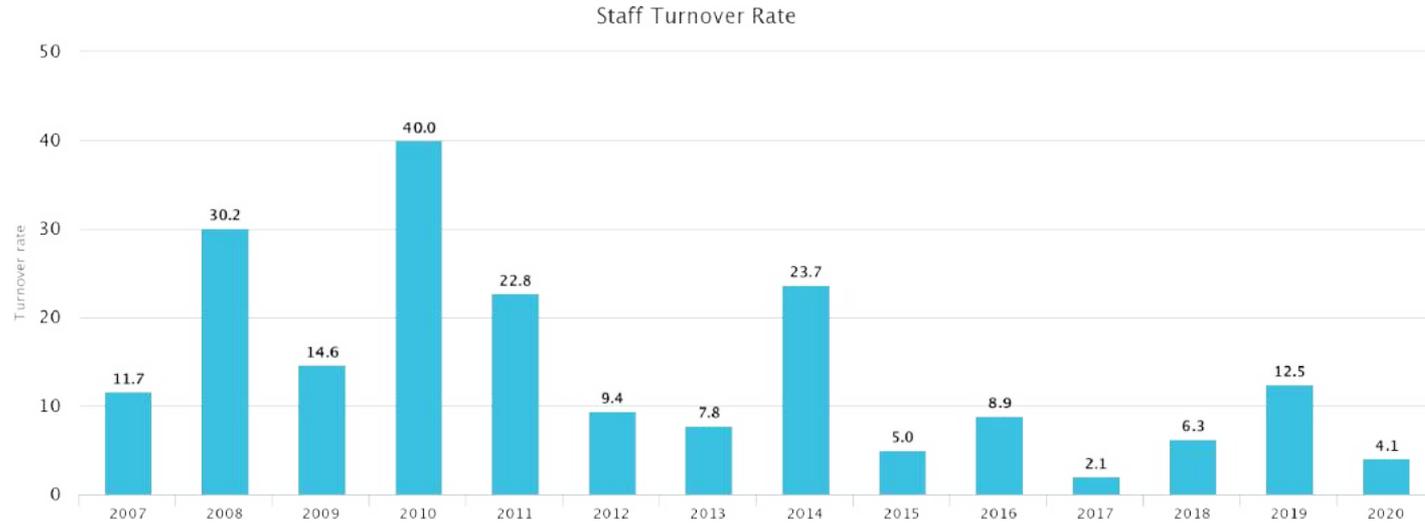
Human Resources and Administration

AFRINIC is a culturally diverse organisation employing talents from different countries, mainly across Africa. AFRINIC celebrates diversity of culture, background, experience and thought and recognises these as key to deliver effective services to our members and the community.

AFRINIC Staff serves its Members and the African Internet community and has 49 staff of 12 nationalities.

Evolution of Staff

Four new employees joined AFRINIC during the course of 2020.

The employee turnover rate for 2020 is at 4.08% with 2 leavers throughout 2020.

Human Resources and Administration

Staff Turnover Rate

Year	Turnover rate
2007	11.7
2008	30.2
2009	14.6
2010	40.0
2011	22.8
2012	9.4
2013	7.8
2014	23.7
2015	5.0
2016	8.9
2017	2.1
2018	6.3
2019	12.5
2020	4.1

AFRINIC's Agile Transformation

AFRINIC has embarked on an Agile Transformation journey which endeavours to position AFRINIC as an agile organisation producing incremental and frequent value for its stakeholders.

The transformation journey comprises an internal change in mindset of staff through specific participatory training sessions and also the learning of new skills through the Agile Shift Training.

AFRINIC Performance Management

- Various internal training sessions organised to accompany teams on setting up their quarterly OKRs on JIRA Upraise

- JIRA Upraise now being used for 360 Degree Feedback and for staff appraisals

- Training organised on how to give and receive feedback.

Learning & Development

- All staff trained in Lean Six Sigma Yellow belt

- All staff trained on SLII by Ken Blanchard

- All staff participated in a forum to enhance collaboration – Moving from ME to WE

- Additional team members have been trained in ISO 9001 standard and auditing so as to prepare them for joining the ISO Internal Audit Team

ISO 9001 : 2015 Surveillance Audit

ISO Auditors from the SGS were at AFRINIC for their surveillance audit in March 2020. Three minor-non conformities were noted during the audit.

A process improvement team has been put in place to help and accompany process owners in their objectives to enhance the maturity levels of their processes.

Furthermore 3 staff members have been sent on ISO 9001 internal auditor course as part of their preparation to integrate the team of process internal auditors.
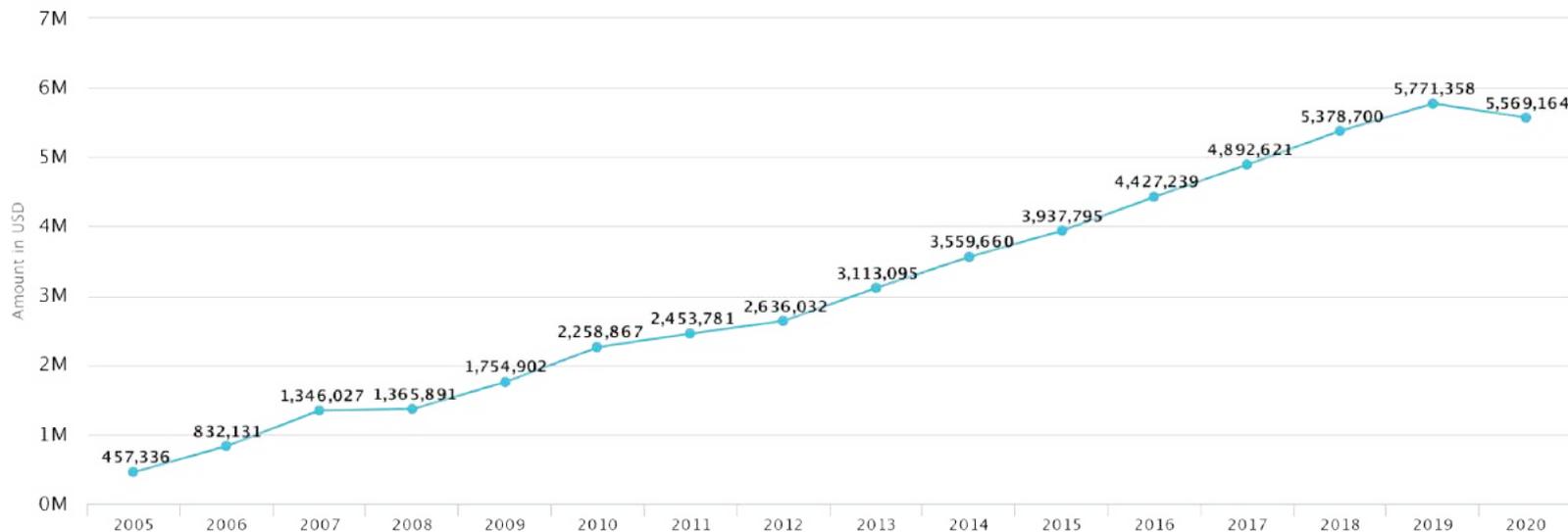
Financial Report

2020 FINANCIAL RESULTS OVERVIEW

2020 financial results in a nutshell; net surplus; record cash holdings; increased total reserves and improved liquidity ratio. A very healthy Balance Sheet.

2020 recorded yet another good operational financial performance closing on a net surplus of $ 2,139K (*2019: $1,225K*). Total Revenue decreased slightly by 3.6% mainly due to less sponsorship received during the year and also less late payment penalties in 2020. Closing total cash position reflected an improvement, with an increase of 35.98% higher than the total holding as at the last audited balance sheet.

AFRINIC Historical Fee Revenue Levels

Year	Amount in USD
2005	457,336
2006	832,131
2007	1,346,027
2008	1,365,891
2009	1,754,902
2010	2,258,867
2011	2,453,781
2012	2,636,032
2013	3,113,095
2014	3,559,660
2015	3,937,795
2016	4,427,239
2017	4,892,621
2018	5,378,700
2019	5,771,358
2020	5,569,164

REVENUE - Membership fee income

Membership Fees and services related fees from members remain the primary source of revenue. The financial period under review saw the transition into Soft landing Phase II which had an impact on revenue.

Total Membership fee income dropped by 2.6% from $ 5,677,352 in 2019 to $ 5,532,620 in 2020. Revenue from Allocation and Assignment fees also dropped by 19.12% from $ 673,000 to $544,258 in 2020. Late Payment Penalties amounted to $ 87K (*2019:$221K*) whilst AFRINIC support to Research & Educational Institutions and Critical Infrastructures in the region, via discounted fees, amounted to $161K (*2019:$206K*). Sponsorships from regional and international partners for AFRINIC events, recorded a decrease from $82K in 2019 to $19K in 2020.

The above chart shows the Fee Revenue steady growth over the years; the Fee Revenue has doubled since 2012.

COSTS – Operating Costs

Total operating costs for the financial year to December 2020 amounted to $ 3,430K as compared to $ 4,631k for 2019. HR costs continue to dominate total operating costs, accounting for 67% (*2019: 51%*) of Total Operating Costs. Bank charges saw a higher than anticipated increase due to an increasing number of fee settlements via Credit Card; and increased overall Fee Revenue. A provision for bad debts was made on 2020 debtors based on an assessment made as per International Financial Reporting Standards (IFRS 9). The USDollar/Mauritian Rupee exchange rate has been stable for most of the year.

AFRINIC Operating Cost Levels

Adoption of International Financial Reporting Standards (IFRS) and International Accounting Standards (IAS)

Several new International Reporting Standards became effective from 2019 and were adopted where applicable in the financials. IFRS 16 relates to Accounting for Lease and the Statement of Financial Position reflected the adjustments under Non-Current Assets and also included under Non-Current Liabilities. IAS 19 (Employee Benefits) relates to Pension benefits. The effect is reflected in the financials and amounted to a provision of $103K. Details of all applicable and adopted Standards are provided in the AFS.

AFRINIC Historical Cash Holdings
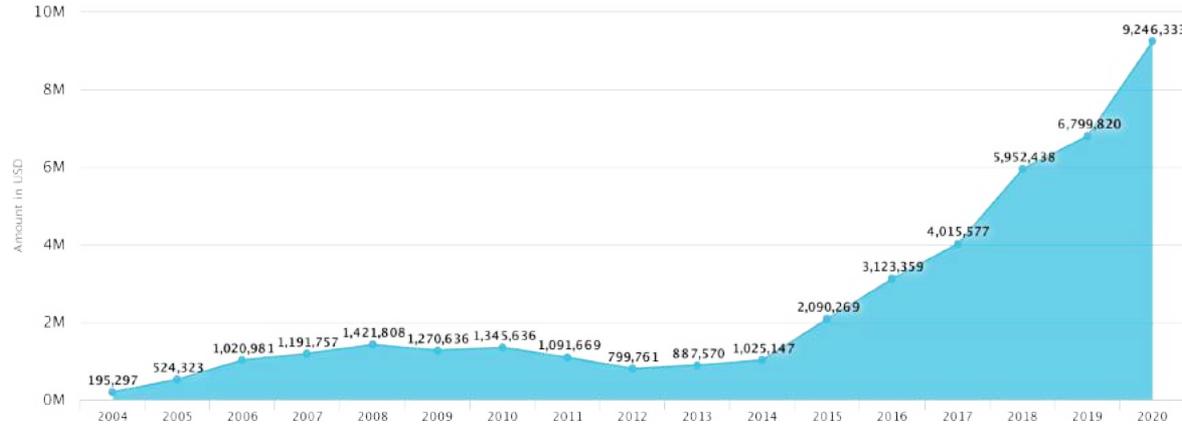
AFRINIC Historical Liquity Ratio

The Bottom line

A net Surplus of $ 2,139K (*2019: US$ 1,225K*) was recorded for the financial year to 31 December 2020. Consequently, total Reserves reflected a growth of 37.3% (*2019: 25.8%*), increasing to $ 8,041K from $ 5,857K in 2019. An additional amount of US$ 1,000K was placed on Fixed Deposit; hence increasing the Strategic Cash Reserves to $ 4,338K. The Liquidity Ratio continues to improve in the light of the increased closing total cash holdings of $ 9,246K from $ 6,779K in 2019. The Liquidity Ratio stood at 4.3:1 (*2019: 4.1:1*).

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