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POLICY BRIEF

THE AFRICAN OUTER SPACE PROGRAMME: FIVE AGENDA ITEMS FOR THE 35TH AFRICAN UNION (AU) SUMMIT

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EXECUTIVE SUMMARY

The 35th African Union (AU) Summit is scheduled for 5-6 February 2022. During the Summit, African Heads of States and Governments will deliberate and decide on several policies and programmes of the AU. As with past Summits, it is expected that the Assembly discuss the flagship programmes of the AU, including the African Outer Space Programme. This policy brief discusses five areas that need the attention of the Assembly namely, the African Space Policy and Strategy; African Space Agency (AfSA); Pan-African University Institute for Space Science (PAUSS); Space application programmes; and Space governance in the African Union Commission (AUC). It also discusses specific actions needed to move forward in each of these areas. These actions include the development of a framework for monitoring, measuring and reporting the extent to which all AU space activities, including programmes funded by partners, align with the African Space Policy and Strategy; review of the governance structure of the AfSA and verification of preparation for operation of AfSA; selection of a new host country for PAUSS; expansion of areas of cooperation between the European Union (EU) and AU; and a clear mandate for the new division for space in the AUC and the Commissioner responsible for it. These recommendations, if adopted and implemented, will accelerate space development in the continent and position Africa to benefit from the global space enterprise.

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1. INTRODUCTION

The interest of the African Union (AU) Assembly [1]in outer space has been increasing over the past decade. Three separate initiatives ignited this interest, namely Algeria's successful hosting of the third African Leadership Conference on Space Science and Technology Applications for Sustainable Development (ALC); South Africa's bid for hosting of the Square Kilometre Array (SKA); and a recommendation by an expert panel for the establishment of the Pan-African University - Institute for Space Science (PAUSS). Reports on these initiatives were submitted to the 14th AU Summit in 2010 and all the recommendations were adopted. Since then, outer space is a recurring item on the agenda of AU Summits.

The decisions and support of the Assembly have led to significant progress in space development in Africa, particularly through:

- drafting and adoption of the African Space Policy and Strategy
- establishment of an African Space Agency (AfSA)
- establishment of the Pan-African University - Institute for Space Science (PAUSS)
- implementation of space application projects
- establishment of a division on space in the African Union Commission (AUC)

As the AU Assembly prepares for its 35th Summit, which is scheduled to be held from 5-6 February 2022, this policy brief provides the status on the initiatives listed above, and recommendations for moving them forward. Some of the issues discussed could also be talking points for the AU as it prepares for talks on space partnership during the 6th EU-AU Summit that is scheduled for 17-18 February 2022.

2. THE AFRICAN SPACE POLICY AND STRATEGY

2.1. Background

In 2012, the AU established an African Union Space Working Group (AUSWG) to develop four foundational documents for the African Outer Space Programme namely policy document, strategy document, implementation plan and governance framework. Members of the AUSWG included two countries from each of the geopolitical regions of the continent. Cameroon and Congo Brazzaville represented Central Africa; Kenya and Tanzania represented East Africa; Algeria and Egypt represented North Africa; Namibia and South Africa represented Southern Africa; Ghana and Nigeria represented West Africa. There were also representatives from the New Partnership for Africa's Development (NEPAD),[2] United Nations Economic Commission for Africa (UNECA) and relevant departments of the AUC. The AUSWG met between 2012 and 2017, organised validation workshops, and consulted different thematic and political interest-groups.

2.2. Status

The AUSWG completed work on the policy and strategy documents, and they were adopted by the Assembly in 2016.[3] Both documents are expected to serve as the anchor, basis and cornerstone of all AU space activities. The AUC continues to use different channels to popularise the documents, as well as encourage domestication of the policy and strategy. However, the effectiveness of the policy and strategy documents is yet to be ascertained.

2.3. Recommendation

The Assembly needs to develop a framework for monitoring, measuring and reporting on the extent to which all AU space activities, including programmes funded by partners, align with the African Space Policy and Strategy.

1 The Assembly is the highest decision-making organ of the AU. It consists of the Heads of States and Governments.
2 The New Partnership for Africa's Development (NEPAD) has been subsumed into the AU structure and is now called the African Union Development Agency (AUDA).
3 Assembly/AU/Dec.589(XXVI), 26th Ordinary Session of the AU Assembly, 30-31 January 2016, Addis Ababa, Ethiopia

Such a framework will determine where and when a review is needed, as well as a guide for negotiations with partners.

3. AFRICAN SPACE AGENCY (AFSA)

3.1. Background

The African Space Agency (AfSA) was established in 2018 as an organ of the AU. [4]Some African space experts voiced concern that a continental space agency was not an immediate necessity, others opined that it was necessary, while a number of other experts proposed a graduated approach. Curiously, there is no mention of an African Space Agency in the policy and strategy documents submitted by the AUSWG. Another idea that was floated was a Committee of African Space Institutions (CASI), but it was dropped after initial acceptance by heads of some African national space agencies. The Assembly went ahead with establishing the African Space Agency and adopting its statutes. Egypt, Ethiopia and Nigeria successful submitted bids to host the agency, and Egypt was eventually chosen as the host country.[5] The agency is expected to begin operation in 2023.

3.2. Status

Four years after its establishment, there is little report on the preparation for the take-off of the agency. Nevertheless, in 2021, the Executive Council adopted AUC's recommended operating structure of 156 staff positions with an annual estimated cost of $13,101,302.48.[6] It is not clear how this bill will be footed, not to talk of other recurrent and capital expenditures.

The operating structure of AfSA provides for four directorates namely, policy and external relations; space applications; space operations and technology; as well as innovation, research and development. The space applications directorate has four divisions which are earth observation; satellite communications; navigation and positioning; astronomy, space exploration and outer space science. This aligns with the priority areas of the African Space Policy and Strategy. The space operations and technology directorate has three divisions: safety, mission planning and assurance division; systems, robotics and space infrastructure management division; assembly, integration and testing division. This structure suggests that AfSA would engage in satellite missions and operations, whereas its statutory mandate is coordination of space activities in the continent. Furthermore, it is not clear how the adopted operating structure would be funded.

Another issue of concern is the decision to make AfSA an organ of the AU. There are three main types of institutional structures in the AU namely, organ,[7] specialised technical office[8] and specialised agency.[9] The decision on the institutional structure of AfSA affects its structure, operations, funding and sustainability. As an organ, the budget of AfSA would be subsumed in the budget of the AU, which is often at a shortfall and sourced from external donors. A space programme on the other hand requires long-term planning, regular funding, entrepreneurial thinking and strategic leadership. Hence, the African Space Agency is better suited as a specialised agency. Furthermore, other AU institutions whose mandate border on international spaces such as the African Civil Aviation Commission (AFCAC) and the African Telecommunications Union (ATU), were established as specialised agencies of the AU.

3.3. Recommendations

1. Send a fact-finding mission to the host country to ascertain the level of preparedness for the commencement of operation of AfSA.

4 Assembly/AU/Dec.676(XXX), 30th Ordinary Session of the AU Assembly, 28-29 January 2018, Addis Ababa, Ethiopia.
5 Assembly/AU/Dec.748(XXXII), 32nd Ordinary Session of the AU Assembly, 10-11 February 2019, Addis Ababa, Ethiopia.
6 EX.CL/Dec.1126(XXXIX), 39th Ordinary Session of the AU Executive Council, 14-15 October 2021, Addis Ababa, Ethiopia.
7 An Organ of the AU is subject to the administrative, budgetary and financial rules and regulations of the AU. It reports to the Executive Committee through the AUC. It requires separate a statute and all AU Member States are automatic signatories to the statute.
8 A specialised technical office is under a department of the AUC. Its budget is submitted by that department and is subject to the administrative and financial rules and regulations of the AU. It does not require separate statutes; instead, its mandate and functions are determined by the Executive Committee.
9 A specialised agency is not subject to the administrative, budgetary and financial rules and regulations of the AU. It has its own governing structures (outside the policy structures of the AU) which approve its structure, administration, operations and financial regulations. However, it is affiliated to the AU and is accorded special status.

2. Review the governance structure of the AfSA and consider making it a specialised agency.

4. PAN-AFRICAN UNIVERSITY INSTITUTE FOR SPACE SCIENCE (PAUSS)

4.1 Background

The Pan-African University (PAU) was established in 2010 to serve as a Centre of Excellence and reference standard for other tertiary institutions in the continent.[10] It operates as a network of five institutes with each institute located in an existing university in each of the geopolitical regions of the continent. Cameroon hosts the Institute for Governance, Humanities, and Social Sciences; Kenya hosts the Institute for Basic Sciences, Technology and Innovation; Algeria hosts the Institute for Water and Energy Science including Climate Change; Nigeria hosts the Institute for Life and Earth Sciences; while South Africa was assigned the Institute for Space Sciences. The Institute for Space Sciences is expected to develop workforce for Africa's space sector.

4.2 Status

The statute of PAU was adopted in 2016. Except for the Institute of Space Sciences, the other institutes have started operation and have graduated at least three cohorts of master's and doctoral students. Unlike the other PAU institutes that are hosted in one university in their host countries, PAUSS was designed to operate through a network of eight universities in South Africa. However, South Africa has declined to sign the host country agreement, citing that some of the articles in the statute and provisions in the host country agreement, contravene its national laws. Some of the issues were highlighted during the United Nations/ South Africa Symposium on Basic Space Technology, which was held in Stellenbosch, South Africa, from 11-15 December 2017. The issues include:

1. ceding of relevant equipment and facilities of the eight participating universities to PAUSS
2. representation of participating universities in PAUSS board, as opposed to the composition in Article 20.2 of the statute
3. tax exemptions, privileges and immunities for staff of PAUSS as contained in Article 5.1 of the statute
4. curricula and selection of students should be guided by the host universities and the South African Qualifications Authority (SAQA), not the centralised PAU Senate as contained in Article 15 of the statute

Several engagements between the AUC and South Africa have proved abortive.

4.3. Recommendation

Given the deadlock in negotiation between the AUC and South Africa, the AU should consider re-opening the bidding process so that other countries in Southern Africa could be given opportunity to host the institute.

5. SPACE APPLICATION PROGRAMMES

5.1. GMES[11] and Africa

During the Second EU-Africa Summit, which was held from 6-7 December 2007, in Lisbon, Portugal, the African delegation made a formal request to the EU to extend its continental Earth Observation programme to Africa. The EU programme was at the time called Global Monitoring of the Environment and Security (GMES) but is now called Copernicus. EU agreed to this request, and the 'GMES and Africa' initiative was launched. A Project Management Office (PMO) was set up in the AUC and the office has successfully delivered on the first phase of the programme from 2017-2021. During this phase, 13 consortia were given grants to implement projects based on data and imagery from EU's satellites. The projects entail the management of land, inland water, ocean and natural resources. AU is expected to reciprocate by giving the EU access to all its in-situ data. The second phase of the programme is scheduled for 2022-2025.

10 Assembly/AU/Dec.290(XV), 15th Ordinary Session of the AU Assembly, 25-27 July, 2010, Kampala, Uganda.
11 Global Monitoring of the Environment and Security (GMES), now called Copernicus, is the EU's global earth observation system.

5.2. EGNOS[12] in Africa

EGNOS in Africa, now rebranded SatNav Africa, is an initiative which aims to extend EU's Space-Based Augmentation System (SBAS) across Africa, to improve safety and security in Africa. It is one of outcomes of the Joint Africa-EU Strategy (JAES) on Satellite Navigation, hence its steering committee is co-chaired by the AUC and the European Commission. A Joint Programme Office (JPO) was tasked with the introduction and coordination of EGNOS-based services and applications, as well as leading the development of satellite navigation in Africa, with aviation as the entry sector. JPO is currently hosted by the Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA), Dakar, Senegal. The programme has successfully gone through two phases; the third phase is scheduled for 2021-2024. Unlike GMES and Africa, EGNOS in Africa is implemented outside the structure of the AUC. As the current phase of EGNOS in Africa will soon end, it is expedient to secure a sustainable solution for the activities of JPO to continue. This would ensure the growth of Africa's indigenous capacity in satellite navigation and positioning.

5.3. Recommendations

1. The Assembly should mandate the AUC to conduct a comprehensive assessment on the societal impact of GMES and Africa programme.

2. It is urgent that the AU set up a mechanism for integrating JPO into its space governance structure, to avoid loss of talent, services and technologies.

3. In January 2012, the AU Assembly identified radio astronomy as a priority area for Africa's science and technology, and proposed its inclusion in international partnerships.[13] In the same vein, in November 2021, a high-level panel identified four other potential areas of cooperation, namely: satellite communication, space weather, space governance and Sustainable Development Goals (SDGs). The 35th AU Assembly should therefore consider discussing these four potential areas of cooperation in the forthcoming EU-AU Summit.

6. SPACE GOVERNANCE IN THE AUC

6.1. Background

Following the adoption of Agenda 2063 – Africa's framework for socioeconomic development, the Assembly decided to reform the Union and the AUC, so that it could be in a better position to achieve the aspirations of Agenda 2063.[14] The process began in 2016 and is expected to be completed in 2022. The restructuring led to the reduction of the AUC departments from eight to six and the refining of their mandates and focus areas.

6.2. Status

The ongoing reform of the AUC has resulted in the restructuring of the former Department of Human Resources, Science and Technology (HRST). It is now called Department of Education, Science, Technology and Innovation (ESTI). It has two divisions, namely: Division of Education, and Division of Science, Technology and Space (STS). The new structure is a welcome development as it has raised the profile of space in the AUC. However, the staff positions that were created are yet to be filled and this is slowing down the activities of the department. Also, It is not clear how the space activities within and outside the AUC would be managed and coordinated.

6.3. Recommendations

1. The Commissioner of the Department of Education, Science, Technology and Innovation (ESTI) should be designated as the principal policy officer on space for the AU. Among other things, his roles should include making space-related policy recommendations to the Assembly and conducting oversight of all AU space

12 European Geostationary Navigation Overlay Service (EGNOS) is the EU's satellite-based augmentation system which is used to improve the accuracy and reliability of global positioning systems.
13 Assembly/AU/Dec.407(XVIII), 18th Ordinary Session of the AU Assembly, 29-30 January 2012, Addis Ababa, Ethiopia.
14 Assembly/AU/Dec.606(XXVII), 27th Ordinary Session of the AU Assembly, 17-18 July 2016, Kigali, Rwanda.

activities in the continent.

2. The AUC should explore ways to utilise space for Africa's socio-economic development including incentivized competitions and workshops. The Commissioner should be charged with formally informing the Assembly on how it could leverage on space to implement its theme for each year and decade.

7. CONCLUSION

This policy brief has aimed to set an agenda for the 35th AU Assembly in five major areas encompassing African Space Policy and Strategy; African Space Agency (AfSA); Pan-African University Institute for Space Science (PAU-ISS); space application programmes; and space governance in the AUC. It highlighted the status of the initiatives and ways of moving them forward. These recommendations, if adopted and implemented will accelerate space development in the continent and position Africa to benefit from the global space enterprise.

AGENDA ITEM	RECOMMENDATION
1. The African Space Policy and Strategy	Develop a framework for monitoring, measuring and reporting on the extent to which all AU space-related activities align with the continental policy and strategy.
2. The African Space Agency (AfSA)	(i) Ascertain the level of preparedness for the commencement of operation of the agency. (ii) Convert AfSA from an AU organ into a specialised agency.
3. Pan-African University – Institute for Space Science (PAUSS)	Re-open bid for selection of a new host country for the institute.
4. Space application programmes	(i) Conduct assessment of societal impact of the GMES[1] and Africa programme. (ii) Integrate EGNOS[2] in Africa Joint Programme Office (JPO) into AUC structure. (iii) Explore new thematic areas for space partnership with the European Union (EU).
5. Space governance in the AUC	Commissioner of the Department of Education, Science, Technology and Innovation (ESTI) should be designated as the principal policy officer on space for the AU.

1 Global Monitoring of the Environment and Security
2 European Geostationary Navigation Overlay Service

The School of Transnational Governance (STG) delivers teaching and high-level training in the methods, knowledge, skills and practice of governance beyond the State. Based within the European University Institute (EUI) in Florence, the School brings the worlds of academia and policy-making together in an effort to navigate a context, both inside and outside Europe, where policy-making increasingly transcends national borders.

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