NATIONAL EVENT ON AFRICA-BB-MAPS NATIONAL BROADBAND MAPPING SYSTEMS IN MALAWI

7 – 9 October 2025
Lilongwe, Malawi

EXECUTIVE SUMMARY

Malawi is among the first eleven African countries chosen to take part in the Africa Broadband Mapping Systems (Africa-BB-Maps) project, a four-year initiative running from 2025 to 2028. The initiative is being led by the International Telecommunication Union (ITU) with €15 million in funding from the European Commission. The program seeks to transform digital connectivity across the continent. The program was launched with an African BB Mapping Systems regional event in Abidjan in March 2025. The project will develop standardized, publicly accessible broadband maps by integrating data from multiple sectors—including energy, transport, health, education, and urban planning—to support informed policymaking, foster digital inclusion, and encourage investment in digital infrastructure.

The Africa-BB-Maps National Event on National Broadband Mapping Systems in Malawi took place from 07-09 October 2025 in Lilongwe, Malawi. It marked the launch of the roll-out phase of the project at the National level.

The objective of the workshop was to convene relevant national stakeholders from government, regulatory authority, the private sector, and civil society to build shared understanding, technical alignment, and institutional commitment around the development of a robust national broadband mapping system. The workshop successfully brought together the targeted technical experts, who deliberated on the main subject matter, that is, the establishment of broadband mapping systems as foundational tools for achieving universal and meaningful connectivity.

Key outcomes of the workshop include a national consensus on the need for data standardization, integrating Geographic Information Systems (GIS) into policy frameworks, and a commitment from participating experts to establish a national broadband mapping task force. The task force is expected to spearhead the operationalization of robust and sustainable national broadband mapping systems, enabling the collection and dissemination of validated, publicly accessible data that supports evidence-based policymaking, facilitates targeted infrastructure investment, promotes universal and meaningful connectivity, and accelerates digital transformation, while also ensuring regional harmonization and alignment with international standards.

Hosted by:

Organized by:

The Broadband Mapping Systems roadmap for Malawi is set to lay the foundation and readiness assessment in 2025. In the year, a conference for Africa BB Mapping regional conference for national focal points was held in Cote d'Ivoire in March. The conference was followed by virtual system specification meetings to specify the national technical requirements. Later in the year, the national broadband mapping workshop was held. In 2026, the project will focus on system development and capacity building. Later operationalization and policy alignment in 2027, and finally on the sustainability and regional leadership in 2028.

Table of Contents

1. INTRODUCTION

The growth of the digital economy is exposing the dire disparity between connected and unconnected populations in Africa. The lack of precise, real-time data on broadband availability, quality, and affordability hinders effective policy intervention and investment. The Africa Broadband Mapping Systems Workshop was convened in Lilongwe to explore solutions to the development of national broadband mapping systems to address this challenge. The primary objective was to promote knowledge and tools necessary to develop and maintain dynamic, interactive broadband maps to drive evidence-based decision-making for digital inclusion.

As one of the 11 selected African countries benefiting from this project, Malawi held its National Broadband Mapping systems workshop from **7th to 9th October 2025**, at the **Bing International Conference Centre (BICC), in Lilongwe, Malaw**i. This national event launched and set in motion the country-level implementation of the Africa-BB-Maps project as a follow-up to the regional event held in Abidjan, Cote d'Ivoire, in March 2025.

The main objective was to convene relevant national stakeholders from government, regulatory bodies, private sector, and civil society to build shared understanding, technical alignment, and institutional commitment around the development of a robust national broadband mapping system. Through this event, the country assessed its current institutional and technical readiness to implement the Africa-BB-Maps initiative, including the review of any existing systems, datasets, or working structures already in place. It provided a platform to identify the key policy and regulatory gaps that need to be addressed to enable efficient data governance and support national planning in line with broadband development priorities.

Informed by the insights of the Regional Event, the national event supported the contextualisation of European case studies and mapping practices and assessed their relevance for adaptation and local application. Attention was made to broadband mapping integration into the country's broader digital development strategies, including the national broadband plan, universal access initiatives, and ICT resilience policies.

Hosted by:

Organized by:

The event fostered dialogue between regulators, ministries, operators, technical service providers, statistical agencies, mapping experts, and other actors in the Malawi context. The agenda was structured around two core components: (i) the policy and regulatory framework needed to sustain a mapping system, and (ii) the technical and data infrastructure required for its operationalisation. The event also functioned as a co-creation workshop—helping to shape the national roadmap and inform ITU technical specifications to showcase progress and strategic outcomes.

2. WORKSHOP PROCEEDINGS:

2.1. Day 1: Opening of the Workshop

The Director of Telecommunications at the Malawi Communications Regulatory Authority (MACRA), Mr. Edward Kauka, who was standing in for the Guest of Honour and representing the Director General of MACRA, delivered the keynote address, emphasizing that "you cannot manage what you cannot measure". He further highlighted Malawi's ongoing digital transformation agenda and the necessity of a national broadband map to bridge the urban-rural connectivity divide.

In his speech, the Director recognized the representatives from the European Union delegation representative, Ms. Angelica Sartori Conte, Programme Manager in charge of Digital and Energy, International Telecommunications Union (ITU) officials, Mr. Dana Jon Kamason, Project Manager, Africa-BB-Maps and Mr. Elind Sulmina, Project Officer, Africa-BB-Maps, Internet Society (ISOC) representative, Mr. Steve Song, Senior Director for Infrastructure Mapping and Development, other dignitaries present, heads of private institutions, and the public sector actors. He also recognized their critical roles in shaping the digital landscape in Malawi. He also expressed his gratitude to ITU and EC for the support extended toward the realization of the broadband mapping in Malawi.

The ITU reaffirmed its dedication to supporting Africa in closing the digital divide, highlighting broadband mapping as a critical tool for the efficient deployment of broadband infrastructure. Ms. Halima Letamo, ITU Area Representative for Southern Africa, highlighted that the BB mapping system aims to improve lives by addressing gaps in digital infrastructure. She encouraged Malawi to harness partnerships and foster collaboration among all ecosystem stakeholders, ensuring that the Broadband Mapping Project drives meaningful national socio-economic development.

EU highlighted the EU-funded projects which are currently advancing Malawi's development, with a strong emphasis on digital and financial inclusion. The Inclusive Digital Transformation for Malawi (IDT4M) project, is working to establish a robust and inclusive digital ID system, enhance e-governance for smoother service delivery, and promote digital skills while specifically working to bridge the digital gender gap . Complementing these efforts, the United Nations Capital Development Fund (UNCDF), with EU support, is driving financial inclusion through the Digital Financial Services for Resilience (DFS4Resilience) programme. This initiative promotes enabling regulations and expands access to digital financial services, for instance by digitizing Village Savings and Loan Associations (VSLAs) to improve financial access and literacy in rural areas.

2.2. *Day 1 Proceedings - Policy Dialogue & Strategic Orientation*

The inaugural day focused on aligning stakeholders around the national importance of broadband mapping.

Following the official opening by the Director of Telecommunications for MACRA and other dignitaries, the programme established the current landscape through a series of interventions. The Malawi Communications Regulatory Authority (MACRA) presented the national context, followed by perspectives from governmental and public sector entities like the Ministry of Information and ESCOM. The afternoon sessions broadened the dialogue to include the private sector's operational views and the support frameworks offered by international

Hosted by:

Organized by:

partners such as the EU, UNDP, and the Internet Society. The day concluded with a detailed presentation by the ITU on the Africa-BB-Maps project's specific objectives, technical framework, and timeline for implementation in Malawi.

2.3. Day 2: Technical Systems & Data Readiness

The second day transitioned from policy to practical application, delving into the technical requirements for a robust broadband map. After recapping Day 1, participants engaged with case studies from ITU experts in Romania, Lithuania, and the Netherlands to extract relevant lessons.

A technical deep-dive session explored system architecture, data standards, and the ecosystem of tools required, followed by a parallel policy deep-dive examining the necessary legal and regulatory frameworks. The day was structured around collaborative "co-creation" dialogues, where stakeholders split into groups to discuss specific challenges related to system architecture, open data, data standardization, and quality control, fostering a shared understanding of the technical path forward.

Summaries from the discussions are:

1. Systems Architecture & Deployment Models

The team deliberated on possible architecture for the Malawi deployment and settled for an on-premises system architecture with the primary site at the National Data Centre in the south and the secondary infrastructure in egovernment data center in the central region. An enterprise system for having an easier learning curve was proposed.

2. Data Governance

The team proposed the establishment/alignment of a data governance structure to set effective and foundational rules and structures for the entire mapping system. Clear roles and responsibilities for all stakeholders, from data providers to system administrators, must be defined to ensure accountability in all data-related decisions.

This framework must prioritize the management of data quality, integrity, and security through robust legal and institutional protocols.

A crucial discussion on the legal frameworks required to mandate data submission from operators, ensure data privacy, and secure long-term funding for the maintenance of the mapping portal.

By embedding transparency into these processes, a strong governance model builds trust and ensures that data handling practices are compliant, ethical, and aligned with national objectives.

3. Data Standardization

Data standardization is the critical first step toward creating a harmonized and interoperable broadband mapping system.

The team on this subject recommended developing a standardized schema that specifies the exact data elements to be collected, such as the precise location and description of physical infrastructure like fiber networks, backbone routes, and last-mile connections. For coverage data, this process involves defining uniform formats where operator data, often supplied in Excel, is consistently converted into visual formats like KML files. This ensures that detailed information on technologies like 2G, 3G, 4G, and 5G, along with their associated metadata, is presented uniformly for accurate analysis and comparison.

4. Data Quality

Maintaining high data quality is essential for the mapping system to be a reliable tool for decision-making. This is achieved by implementing rigorous assurance practices that utilize specialized tools, such as Optical Time-Domain Reflectometers (OTDR) for fiber networks and RF testing equipment for mobile coverage. These tools enable the collection and verification of data to confirm signal strength, accuracy, and overall network integrity.

It was proposed to establish continuous monitoring mechanisms, the system can sustain high data reliability over time, ensuring that the insights derived from the maps remain valid and actionable.

5. Data Classification

A clear data classification framework is necessary to manage the sensitivity and accessibility of the diverse information within the mapping system. This involves defining categories based on who can access specific datasets. For instance, public data would be freely available to promote transparency and attract investment, while private data, such as sensitive broadband capacity information, would be shared exclusively between the regulator

and individual operators. A club data category could also be established to allow for data sharing within the operator community for specific purposes, balancing the need for transparency with the protection of commercially sensitive information.

6. Data Validation

Data validation ensures the credibility of the mapping system by creating a multi-layered verification process. To be most effective, validation mechanisms are integrated directly into the established data standards from the outset. This process typically involves two key levels: an initial internal validation by the operator to ensure accuracy before submission, followed by a secondary, independent validation by the regulator (such as MACRA). The regulator uses lawful data references and its own oversight to verify the submitted information, ensuring consistency, compliance with standards, and the overall integrity of the final broadband maps

2.4. Day 3: Stakeholder Coordination & Roadmap Development

The final day was dedicated to consolidating partnerships and defining the future course of action.

Building on the previous days' discussions, the agenda focused on establishing effective cross-sector coordination mechanisms to ensure data sharing and protection. This was followed by a session to finalize the stakeholder mapping, clearly defining the roles and responsibilities of all parties involved.

The core outcome of the day was the development and presentation of a national roadmap, which outlined the final timeline, planned training programs, and concrete next steps for the initiative.

3. CHALLENGES IDENTIFIED

Despite the collaborative spirit, delegates identified several persistent challenges:

- Data Sharing Reluctance: Private operators expressed concerns about the commercial sensitivity of network deployment data and the potential for regulatory overreach.

- Financial Sustainability: The high cost of maintaining dynamic mapping systems (software licenses, personnel, and data collection) remains a barrier for smaller regulatory authorities.

- Technical Capacity: A significant skills gap exists in the areas of GIS analysis and data science within national regulatory agencies.

- Legal instruments fragmentation: Various laws provide guidance and mandate different MDAs with roles in the management of infrastructure. Harmonisation of these laws is imperative.

- There is no established governance structure with an established mandate to mandate the development of broadband mapping systems

4. CONCLUSION AND RECOMMENDATIONS

The Africa Broadband Mapping Systems Workshop in Lilongwe marked a significant step toward data-driven digital development in the region. The event successfully shifted the conversation from *whether* to map to *how* to map effectively and sustainably.

For Malawi, it is recommended that:

1. MACRA (Malawi Communications Regulatory Authority) initiates the initial broadband mapping systems, early engagements, and actions. The procurement process for a dynamic broadband mapping platform, leveraging the technical specifications discussed during the workshop.

2. The MoICT should facilitate alignment of laws and policies to ensure the country has adequate legislation and policies to see the smooth implementation of the broadband mapping systems.

3. Partnerships with local institutions, both public and private, are encouraged to develop capacity and support for the national mapping initiative.

4. Intensify capacity building, funds mobilisation, and collaboration with international partners to leverage on their experiences.

5. CLOSING OF THE WORKSHOP

The workshop concluded on Thursday, 9th October 2025, with a closing session led by the Director of Telecommunications, Mr. Edward Kauka. On behalf of the Director General and the interests of Malawi, Mr. Kauka extended heartfelt gratitude to the ITU and the

Hosted by:
MACRA

Global Gateway

Organized by:
ITU

European Union for selecting Malawi among the first eleven African countries to benefit from the Broadband Mapping project. He thanked all stakeholders for their dedicated participation throughout the workshop and urged them to sustain the demonstrated commitment to ensure the successful implementation and operationalization of the Broadband Mapping Systems project in Malawi. The workshop formally closed with remarks from the ITU and the Director of Telecommunications of MACRA.

Hosted by:

MACRA

Global Gateway

Organized by:

ITU