UGANDA COMMUNICATIONS COMMISSION

ADOPTION OF TERRESTRIAL DIGITAL SOUND BROADCASTING

OCTOBER 2025

Preface

This consultation document seeks stakeholder input into Uganda's adoption of terrestrial Digital Sound Broadcasting (DSB). The objective is to shape a practical and inclusive framework addressing its technical, licensing, and policy aspects.

Structure of this Consultation Document

The document is structured into three chapters:

- Chapter A - Technical Aspects,
- Chapter B – Licensing Aspects,
- Chapter C - Policy and Implementation Aspects.

Each section concludes with a set of consultative questions to guide stakeholder feedback.

Who Should Respond?

The consultation is open to:

i. Licensed broadcasters and prospective broadcasters.
ii. Infrastructure providers and multiplex operators.
iii. Equipment manufacturers, importers, and distributors.
iv. Industry associations and professional bodies.
v. Government ministries, agencies, and local authorities.
vi. Academia, civil society, and development partners.
vii. Members of the public with an interest in broadcasting and digital media.

How to Submit Responses

Responses should address specific sections or question numbers and be submitted by email to bi@ucc.co.ug by November 30, 2025.

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1. Background

1.1. Radio remains one of the most accessible and influential media in Uganda, reaching millions of citizens daily with information, education, and entertainment. For decades, these services have been delivered using analogue FM broadcasting, which has served the nation well but now faces increasing technical and capacity limitations.

1.2. The FM band (87.5–108 MHz) is approaching saturation, particularly in urban and peri-urban centres. The Uganda Communications Commission (UCC) continues to receive numerous applications for new FM services that cannot be accommodated due to a lack of available spectrum. In addition, analogue systems are not spectrum-efficient and do not readily support emerging data-driven applications that are increasingly becoming part of modern broadcasting.

1.3. Technological advancements have since introduced Digital Sound Broadcasting (DSB), a system that transmits sound and associated data using digital technology. DSB enables several radio services to be carried on a single frequency block through multiplexing, thus improving spectrum efficiency and service diversity.

1.4. Globally, many countries are adopting DSB technologies to complement or replace FM broadcasting. Within Africa, trials and early deployments have been recorded in South Africa, Kenya, Nigeria, and Algeria, among others.

1.5. Against this background, and in line with its statutory mandate to promote efficient use of the radio spectrum and the orderly development of broadcasting, the UCC is exploring the introduction of Digital Sound Broadcasting in Uganda.

1.6. It is worth noting that the current broadcasting content regulations and standards shall continue to apply for analogue FM and the digital platforms.

CHAPTER A: TECHNICAL ASPECTS

2.0 Overview of Digital Sound Broadcasting (DSB)

2.1 Definition and Concept

Digital Sound Broadcasting (DSB) refers to the transmission of radio signals using digital technology. Unlike analogue FM broadcasting, which carries only one audio programme per frequency, DSB enables the transmission of multiple programmes and associated data within a single frequency block through multiplexing.

The digital signal is more robust and less prone to interference. It can also carry additional information such as station names, programme data, traffic updates, and text messages. Listeners receive these services through DSB-compatible receivers.

2.2. Advantages of DSB

DSB offers numerous benefits to consumers, broadcasters, and regulators. The table below summarises these advantages:

Actor	**Benefits**
Consumers	– Superior and consistent audio quality. – Wider range of stations and program diversity. – Easier tuning and service discovery by station name. – Potential access to data-driven services such as real-time information.
Broadcasters	– Reduced transmission costs per channel due to shared infrastructure. – Ability to launch additional stations without new frequency allocations. – Improved coverage and business opportunities through multiplexed platforms.
Government and Regulators	– More efficient spectrum use and reduced congestion on the FM band – Increased media plurality and regional representation. – Potential new revenue streams from digital broadcasting services.

2.3 DSB Transmission Standards

2.3.1 Several DSB technologies are used globally, each optimised for particular frequency bands, coverage requirements, and market conditions. The main systems include:

1. DAB / DAB+ (Digital Audio Broadcasting): Widely adopted across Europe and parts of Africa. It operates in VHF Band III (174–230 MHz) and allows multiple radio programmes to share one frequency block through multiplexing. DAB+ is an enhanced version that uses a more efficient audio codec (HE-AAC v2) for improved sound quality and capacity.
2. DRM (Digital Radio Mondiale): Designed to digitize the AM and VHF/FM bands. DRM supports both long-range and low-power local broadcasting, making it suitable for national, regional, or community-scale coverage where full multiplex networks may not be economically feasible.
3. ISDB-TSB (Integrated Services Digital Broadcasting – Terrestrial Sound Broadcasting): Developed and used mainly in Japan, this system was designed for coexistence with television broadcasting and supports flexible service configurations combining audio and data.
4. IBOC (In-Band On-Channel): Predominantly used in the Americas, it enables simultaneous analogue and digital transmissions within the same FM channel, allowing a gradual migration from analogue to digital.

2.3.2 Each technology presents distinct advantages depending on spectrum availability, market maturity, and receiver ecosystems.

2.3.3 Uganda's pilot implementation employed the DAB+ standard, consistent with trends in ITU Region 1, where more than thirty (30) countries, including the UK, Germany, Norway, Kenya, South Africa, and Algeria, have adopted or are piloting DAB+ networks. The pilot demonstrated that DAB+ offers technical and economic suitability for national rollout within Uganda's allocated Band III spectrum.

2.4. Uganda's Pilot Implementation

2.4.1.In 2023, UCC conducted a Digital Sound Broadcasting pilot project using the DAB+ transmission in Kampala. The transmitter was a 1.25 kW transmitter at Kololo Summit View, with an effective radiated power (ERP) of 6.26 kW. Drive tests indicated a coverage radius of approximately 33 km, varying with terrain and propagation conditions.

2.4.2The pilot confirmed the technical viability of DAB+ for Uganda and demonstrated:

- Reliable signal coverage within the metropolitan area.
- The feasibility of efficient multiplexing would allow several FM stations to share one frequency block.
- Stability in reception under typical urban conditions.

2.4.3 However, challenges were observed, including limited receiver availability and uneven signal distribution in certain directions.

2.5 Market Demand

2.5.1 In the last three calendar years, UCC has received over 400 applications for FM broadcasting licenses, yet in many areas, no additional frequencies remain

available. This indicates an apparent market demand for additional broadcasting capacity that DSB can accommodate without further expanding the FM band.

3.0 SPECTRUM MANAGEMENT

3.1 Background

3.1.1 Uganda, as a Member State of the International Telecommunication Union (ITU), is bound by the provisions of the Geneva 2006 (GE06) Agreement for Region 1, which governs terrestrial broadcasting in the VHF and UHF frequency bands. Under this agreement, the VHF Band III (174–230 MHz) is allocated for both digital sound and television broadcasting services.

3.1.2 Uganda's existing broadcasting ecosystem primarily operates within Band IV (470–582 MHz) and Band V (582–862 MHz), both covered under the GE06 Agreement. Following the completion of the Digital Terrestrial Television (DTT) migration in 2015, digital television services currently utilise Band IV and part of Band V (582–694 MHz). Meanwhile, the widely used FM broadcasting (analogue) occupies Band II (87.5–108 MHz) in accordance with the Geneva 1984 (GE84) agreement and assignment plan.

3.1.3 Given the increasing saturation of the FM band, Band III presents a technically viable opportunity for introducing Digital Sound Broadcasting (DSB). However, integrating DSB into Uganda's broadcasting landscape requires careful spectrum planning, coordination, and phased implementation to ensure efficient use, avoid interference, and maintain coexistence with existing services.

3.2 Spectrum Planning Considerations

3.2.1 The introduction of DSB using the DAB+ standard will necessitate a review and adjustment of the national broadcasting frequency plan to accommodate digital sound transmissions within the 174–230 MHz frequency range. Key considerations to achieve this include:

i. *Compatibility with the GE06 Plan:* All DSB assignments must comply with Uganda's international frequency coordination commitments under the GE06 agreement to ensure cross-border compatibility and coexistence, to minimize interference with services in the band and those adjacent in neighboring countries.

ii. *Coexistence with existing services: According to the National Table of Frequency Allocation, the 174–230 MHz band designated for DSB deployment in Uganda is allocated to broadcasting services and shared with fixed and mobile services on a secondary basis. The UCC notes that fixed and mobile services within this frequency range are not entitled to protection from interference caused by DSB operations but emphasizes the need to protect services operating in adjacent bands, specifically 161–174 MHz and 230–322 MHz.*

iii. *Infrastructure Reuse Potential*: Introducing DSB offers opportunities to reuse existing broadcasting infrastructure such as towers, power systems, and transmission sites, hence reducing capital costs. Stakeholders' technical and economic input will be vital in shaping infrastructure and reuse policies and considerations.

iv. *Spectrum Efficiency and Coordination:* DSB enables multiple radio programs to share one frequency block, improving spectrum efficiency. Nevertheless, careful spectrum coordination is required to mitigate interference within Band III .

Under the GE06 frequency plan, the band 174 -230 MHz is divided into several frequency blocks designated as 6A, 6B, 10D etc. A single block is 1.53MHz wide and can accommodate between 6 – 36 FM radio station in a DAB+ environment. Under this Plan, Uganda is allocated twenty-three (23) blocks that must be used sustainably.

v. *Transmission Power and Coverage Patterns:* Because of its robust digital signal, DSB can achieve comparable or improved coverage using lower transmitter power. However, coverage uniformity depends on terrain and network design. Stakeholders' input on practical power configurations and expected coverage will inform the national network model.

3.3 Spectrum Assignment Mechanism

3.3.1 Spectrum is a finite national resource. Its allotment and assignment for DSB must balance technical efficiency, equitable access, and market sustainability. UCC aims to adopt a framework that promotes competitiveness, encourages investment, and ensures the long-term viability of DSB networks. The following principles will guide the approach to DSB spectrum assignment:

i. *Efficient Utilization:* Maximise the number of services and minimize unused capacity.

ii. *Fair and Transparent Access:* Ensure that both existing and new entrants can participate in the DSB ecosystem through equitable access to the designated spectrum resources.

iii. *Coexistence and Interference Management:* Coordinate transmission power, polarisation, and site planning to prevent harmful interference with established in and adjacent services.

iv. *Spectrum Harmonisation:* Maintain alignment with the GE06 Plan and regional coordination frameworks, including those within the East African Community (EAC).

v. P*ublic Interest:* Assign spectrum in a manner that serves the widest number of Ugandans, promotes diverse programming and content, and encourages local participation in digital broadcasting.

3.4 Proposed Spectrum Allotment Structure

3.4.1 Spectrum will ONLY be assigned to entities holding valid Public Infrastructure Provider Licenses.

i. To support a tiered rollout *(see section 4.5 herein)* of DSB in Uganda, UCC proposes the following initial frequency block allocation/assignment: in the 174–230 MHz band, Two (2) Frequency Blocks shall be assigned to National Multiplex Operators (Tier 1)
   a. Each block will support a nationwide multiplex service capable of carrying multiple radio stations, subject to the adopted system based on the DAB+ standard.
   b. It is anticipated that the two national multiplexes will enhance competition, innovation, and redundancy.

ii. Two (2) Frequency Blocks for Regional or Local Multiplexes (Tier 2)
   a. Additional blocks will be allocated to regional multiplex operators in alignment with the fourteen (14) broadcasting regions defined under GE06.
   b. The assignment will consider market demand, population distribution, and infrastructure readiness.

iii. Two (2) Frequency Blocks for Community Multiplexes (Tier 3)
   a. To serve local or community-based audiences, limited-coverage blocks may be allocated where technically feasible.

   b. These assignments will operate under restricted power and coverage limitations to safeguard against interference with national and/or DSB networks established.

The above proposal is summarized in Table 1 below.

Table 1: Proposed frequency block allocation plan.

Role	**Proposed Frequency Blocks**	**Remark**
National multiplex 1 (wide coverage)- Tier 1	6A (181.936 MHz)	Lower part of Band III; good propagation.
National multiplex 2 (wide coverage)- Tier 1	11B (218.64MHz)	Mid-band, sufficiently separated from 5A to mitigate co-channel/adjacent interference.
Local/regional multiplexer – Tier 2	9D (208.064), 7D/7B, (194.064/190.64)	To be used in high population regions, blocks

		are selected so that adjacent localities do not use the same to mitigate interference.
Community multiplexer – Tier 3	12B(225.648), 12D (229.072)	To be operated on restricted power and coverage

3.5 Coexistence with Digital Television

i. 3.5.1 Given the adequate spectral separation between Band III (174–230 MHz), designated for DSB in Uganda, and the DTT band (470–694 MHz), no interference is expected between the two services. However, the UCC will review deployments adjacent to both bands to ensure that DSB operations do not cause any undesirable effects. In doing so, the following considerations shall be made:. Adjusting both DTT and DSB transmitter power and antenna configurations to ensure and control any potential adjacent signal leakages

ii. Reassignment of channels as may be applicable to minimize interference risk.

iii. Coordinating antenna polarization to mitigate any adjacent interference with services in the adjacent bands.

3.5.2 Where both DSB and DTT operators may use feasible, shared infrastructure (such as sites), provided technical safeguards shall be implemented to maintain both systems quality and performance standards.

3.6 Spectrum Monitoring and Reassessment

3.6.1 Spectrum assignment for DSB will be a dynamic and iterative process. UCC will continuously monitor usage efficiency, coverage, and service quality.

3.6.2 Based on performance and market evolution, frequency blocks may be replanned or reallocated to optimize coverage, encourage competition, and accommodate new technologies and use cases.

3.6.3 To promote accountability and effective utilization, the UCC will apply the "use-it-or-lose-it" principle upon verification of underutilization of assigned resources. This is aimed at ensuring that resources remain available for active and deserving or potential operators.

3.7 Expected Industry Insights and Stakeholder Input

3.7.1 UCC seeks practical, substantiated feedback from stakeholders to inform the final DSB Spectrum Plan. Input is especially encouraged on:

i) Potential interference or coexistence issues between DSB/DAB, FM, and both Fixed and mobile services operating in bands adjacent to the DSB/DAB designated band.

ii) Infrastructure reuse/sharing opportunities (tower co-locations).

iii) Network design considerations such as antenna polarisation, power and system gain configuration, etc, that could affect DSB rollout.

iv) Challenges anticipated in the coordination of the national and regional deployment of the 174–230 MHz band.

v) The adequacy of the proposed initial frequency block allocation and assignment, and the tiered allocation highlighted in 3.4.1 above.

Economic and market implications, including how DSB could reduce per-program transmission costs over time, given the shared transmission mode.

3.7.2 Stakeholder feedback will guide UCC in finalising the DSB Spectrum management plan (allotment and assignment) to facilitate the achievement of national policy objectives and industry sustainability.

3.8 Stakeholder Consultation Questions – Chapter 1 (Technical Aspects)

The following questions are intended to guide stakeholder input on the technical and operational dimensions of Uganda's proposed adoption of Digital Sound Broadcasting They focus on critical decision points that will influence the adoption of suitable transmission standards, investment models for infrastructure, spectrum planning, and industry readiness.

Stakeholders are encouraged to provide data-driven feedback and practical insights based on their technical, operational, or market experience.

No.	**Thematic Area**	**Consultation Question**	**Purpose of Feedback / Decision Insight**
1	**Adoption of DSB**	Do you support the introduction of Digital Sound Broadcasting (DSB) in Uganda to address FM band congestion and promote innovation? What opportunities or risks do you foresee for different actors?	To confirm overall stakeholder acceptance and identify perceived risks or benefits.
2	**Transmission Standard**	Based on the pilot, do you have any objection to adopting DAB+ as the most suitable standard for Uganda? If not, which alternative (DRM, ISDB-TSB, IBOC) should be considered and why?	To validate the preferred technical standard and assess openness to multi-standard adoption.
3	**Transmission Standard**	What technical, economic, or operational considerations should inform Uganda's final choice of DSB transmission standard?	To gather criteria for a nationally appropriate technology decision.
4	**Market Readiness**	Does the current demand for FM broadcast channels guarantee market uptake for DSB, or are other factors, such as the receivers, also accounted for?	To shape receiver-ecosystem policy and affordability interventions.

		Given the limited availability of DSB receivers, what measures can be explored to promote **receiver penetration** and consumer adoption (e.g., incentives, awareness, import facilitation)?	
5	**Infrastructure Reuse**	How can existing broadcasting infrastructure (towers, transmitters, power systems) be reused or shared to support cost-effective DSB rollout?	To inform infrastructure-sharing policy and cost-reduction strategy.
6	**Infrastructure Investment**	What level of infrastructure investment should be expected from broadcasters versus infrastructure providers?	To guide capital-responsibility and licensing obligations.
7	**Spectrum Policy Principles**	Are the proposed planning principles (efficiency, transparency, coexistence, harmonization and public interest) adequate to ensure effective adoption and deployment of DSB in Uganda? If yes/no, please explain.	To refine guiding principles for the Initial National DSB Spectrum Plan.
8	**Spectrum Access Model**	Do you support restricting initial DSB frequency assignments to Public Infrastructure Provider (PIP) licenses? Would this encourage or constrain participation?	To test market perceptions of the initial licensing model.
9	**Allotment Structure**	What are your views on the proposed structure of two national multiplexes, regional multiplexes, and community multiplexes?	To validate the practicality and competitiveness of the allotment model.
10	**Interference Management**	What are the likely interference or coexistence challenges between DSB, FM, and DTT systems? What technical solutions could mitigate them?	To gather engineering insights for the coexistence policy.
11	**Spectrum Governance**	What are your views on applying a "use-it-or-lose-it" rule for under-utilized DSB frequencies? How can fairness be maintained?	To refine the enforcement policy and investor-protection balance.
12	**Research & Data**	What type of data sharing or research collaboration should UCC and industry pursue to inform future DSB adoption planning (coverage, audience, receivers)?	To shape evidence-based regulatory decisions.
13	**Capacity Building**	What capacity-building programmes are needed for broadcasters, engineers, and installers to adopt digital sound broadcasting?	To identify training and skills-development needs.

CHAPTER B – PROPOSALS ON LICENSING

4.1 Background

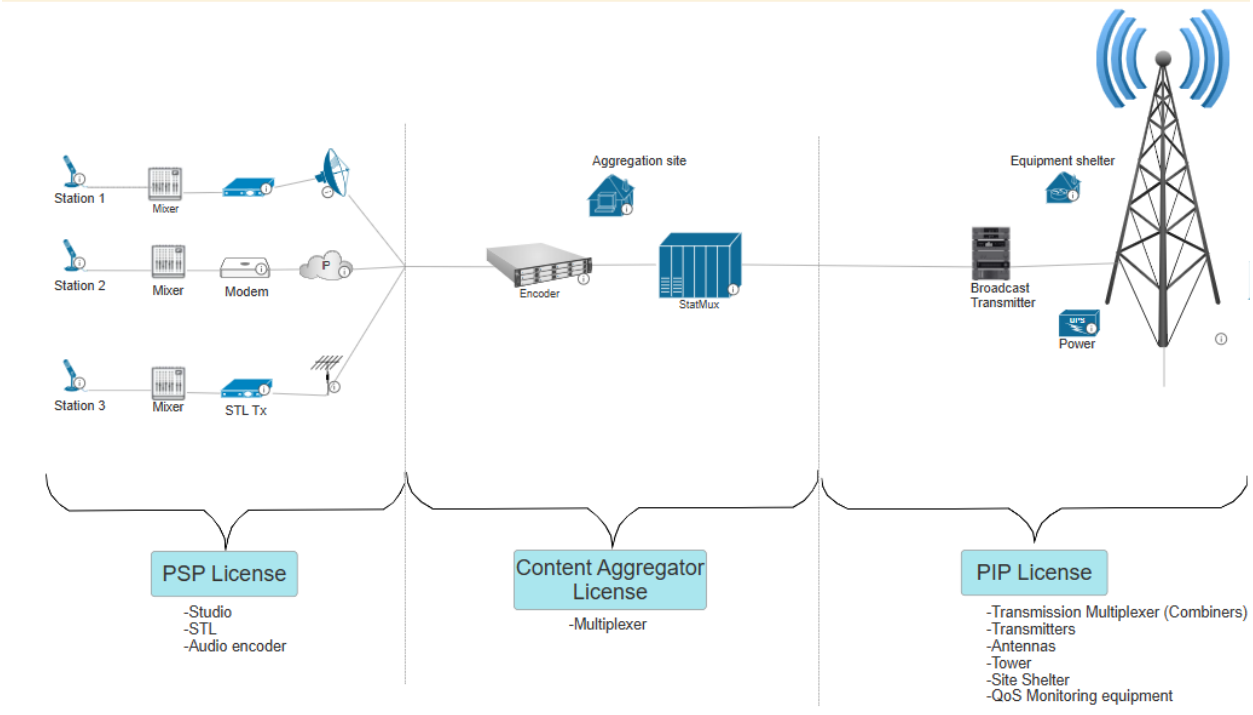
4.1.1 Licensing is a central element in introducing terrestrial Digital Sound Broadcasting in Uganda. A clear, adaptive licensing framework ensures that all players, from infrastructure providers to broadcasters, understand their roles, obligations, and opportunities within the emerging digital broadcasting ecosystem.

4.1.2 Under Part III of the Uganda Communications (Licensing) Regulations, 2019, the Commission issues four main categories of broadcasting licenses:

i. Public Infrastructure Provider License
ii. Public Service Provider License
iii. Aggregator License
iv. Any other license that the Commission may designate

These categories remain valid and relevant but require adaptation to reflect the technical and operational dynamics of DSB. Under DSB, the current FM license holders who wish to put their content on the digital network will require a Public Service Provider license

4.1.3 The DSB framework builds on Uganda's existing broadcasting experience, lessons from the Digital Terrestrial Television (DTT) migration, and international practices under the GE06 Plan. It is designed to foster an enabling environment that balances investment, innovation, and universal access.



4.2 Proposed DSB Licensing Structure

To support a diverse and competitive DSB ecosystem, the UCC proposes three primary licensing categories:

a) Public Infrastructure Provider (PIP) License

This license applies to entities that own and operate transmission infrastructure used to deliver DSB services, such as towers, transmitters, antennas, multiplexing equipment, and supporting power systems.

i. The PIP licensee shall provide the physical transmission layer, ensuring network coverage, signal strength, and technical reliability.
ii. A PIP licensee may host multiple multiplex operators or content providers thereunder under.
iii. Separation of infrastructure ownership from service provision encourages competition, reduces duplication, and promotes infrastructure sharing.

b) Content Aggregator

This license applies to entities that aggregate multiple broadcasters' content into a single digital transmission (multiplex) and distribute the combined signal to the public.

i. The aggregator manages the logical network layer, organises the digital transport stream, and ensures service quality across participating broadcasters.

ii. Multiplex operators may either lease infrastructure from a PIP licensee or deploy their own facilities.
iii. Operators must comply with UCC's technical standards and ensure transparent capacity allocation to content providers.

c) Public Service Provider (PSP) License

This license applies to content creators or broadcasters who produce and supply digital radio programmes for transmission via a DSB multiplex.

i. Existing FM broadcasters will qualify to transition under this category, ensuring service continuity.

ii. New entrants may apply directly for the PSP to provide digital services, subject to compliance with regulatory and technical requirements.

4.3 Relationship between License Categories

4.3.1 The proposed structure envisions a layered licensing model:

Layer	Function	License Type	Key Responsibility
Physical	Transmission infrastructure	Public Infrastructure Provider	Network rollout, signal reliability

Logical	Multiplex management	Content Aggregator	Aggregation, capacity management
Content	Programme creation	Public Service Provider	Content provision and diversity

4.3.2 The model encourages specialisation and collaboration. A single entity may hold more than one license category. For example, a broadcaster could operate its own multiplex or infrastructure, provided it meets the regulatory obligations of each role.

4.4 Adoption of Existing FM Broadcasters to DSB

4.4.1 The Commission recognises the significant investment made by existing FM broadcasters. To ensure inclusiveness and continuity, a transitional adoption arrangement will be established:

i. All licensed FM broadcasters expressing interest will be eligible for authorisation under the PSP license, subject to technical and operational compliance.
ii. Early adopters may benefit from incentive measures during the initial adoption phase, as shall be advised.

The goal is to make the adoption of DSB cost-efficient, minimally disruptive, and supportive of media pluralism.

4.5 Coverage and Rollout Strategy

4.5.1 The rollout of DSB will be progressive and demand-driven, targeting maximum population reach and resource efficiency. The approach builds on lessons from Uganda's DTT migration, where phased implementation proved most effective.

4.5.2 Rollout Priorities: The DSB network rollout will prioritise population coverage to ensure that the adoption is financially sustainable for the early adopters. The Key rationale:

i. Demand concentration: Urban and peri-urban areas host the majority of radio audiences and advertising markets.

ii. Infrastructure readiness: Major transmission sites already exist in these areas, lowering deployment costs.

iii. Receiver introduction: Urban markets can accelerate DSB receiver uptake.

iv. Operational efficiency: Controlled early rollout allows testing of network models and consumer response.

4.5.3 Infrastructure Rollout Phases - The infrastructure rollout will be prioritised in three tiers, guided by population density, economic activity, and infrastructure readiness:

Tier 1	Major business and population areas	Kampala Metropolitan, Wakiso, Mukono, Jinja, initial deployment for national multiplexes
Tier 2	Cities	Gulu, Mbarara, Arua, Mbale, Fort Portal, leveraging existing DTT infrastructure
Tier 3	Other areas – consolidated coverage	Progressive expansion to underserved areas using complementary technologies or shared models.

4.5.4 Community and Small-Scale Multiplexes - To foster inclusion, UCC proposes to also consider small-scale multiplexes serving localised audiences, such as community broadcasters.
These multiplexes will operate at limited power and coverage, with simplified licensing and tailored compliance obligations to reflect their non-commercial nature.

4.5.5 Regulatory Coverage Obligations and Reporting - Each PIP licensee and or Content Aggregator will be required to:

i. Submit coverage and rollout plan (population reach, transmitter sites, timelines).
ii. Report periodically on implementation progress.
iii. Demonstrate coverage performance through measurable Quality of Service (quality of service) indicators.
iv. Meet minimum technical and service standards set by UCC for each phase.

4.5.6 Guiding Principles **-** The rollout strategy is anchored on:

i. Cost-effectiveness through infrastructure sharing and co-location.
ii. Equitable access and progressive national coverage.
iii. Consumer inclusion linked to receiver availability and awareness.
iv. Progressive implementation.

4.6 Licensing Process and Evaluation Criteria

4.6.1 Overview - The UCC will adopt a structured and transparent licensing process that encourages fair competition while ensuring that licensees demonstrate technical competence and financial sustainability.

4.6.2 Application Procedure - Each licensing round will be treated as an independent process with specific conditions and timelines:

i. Calls for applications will be publicly advertised with eligibility criteria, submission formats, and deadlines.

ii. Applications will remain open for at least three months from publication or as shall be specified.

iii. Subject to the complete submission of all required documents in a single package, evaluation and award will be completed within sixty (60) days after the closing date.

iv. Clarifications or additional information may be requested to ensure completeness. In this case, the sixty (60) day period shall start from the time a further and/or a complete submission is received.

This flexible process allows each round to respond to prevailing market, technical, and policy realities.

4.6.3 Evaluation Criteria - Applications will be assessed on transparent, measurable criteria that balance technical, financial, and public interest factors:

Criterion	**Description**
Completeness of submissions	The application shall be complete, attaching thereto all the necessary documents to facilitate a timely assessment.
Coverage Area	Emphasis on population coverage rather than pure geographic size. Applicants must provide predicted coverage maps and transmitter layouts.
Implementation Plan	Clear rollout timelines, milestones, and testing schedules.
Financial and Technical Capacity	Evidence of capital investment, sustainable funding, and qualified personnel.
Business Plan	Demonstrated market viability and operational model.
Content and Service Diversity	Support for pluralistic, local, and educational programming.
Promotion of Digital Adoption	Plans to stimulate receiver uptake and public awareness.
Fair Competition and Access	Transparent, non-discriminatory terms for broadcasters accessing multiplex capacity.
Local Demand and Support	For regional/community multiplexes, evidence of interest, support and partnerships with the local community.

The weighting of criteria will differ by licence category; however, all applications will be assessed on merit and their contribution to Uganda's broadcasting objectives.

4.7 Fees Framework

4.7.1 Uganda Communications (Fees and Fines) Regulations, 2019 shall apply. Where gaps have been identified, an appropriate fee structure shall be established.

4.7.2 Fees will be structured to reflect:

i. The level of infrastructure investment required per category.
ii. Population coverage obligations and operating costs.
iii. Market scale (national, regional, community).
iv. Considerations for early adoption and innovation.
v. Long-term financial sustainability.

4.7.3 Stakeholders are encouraged to share their insights on cost drivers, investment barriers, and incentive mechanisms to aid in designing a fee framework that promotes fair access and market expansion.

4.8 Compliance and Enforcement

4.8.1 Licensees will be bound by specific terms and conditions issued under each license category.

4.8.2 UCC will monitor compliance through routine audits, performance reporting, and on-site inspections.

4.8.3 Non-compliance will attract regulatory measures and sanctions as provided under the Uganda Communications Act, Cap 103 and related instruments.

4.9 Objectives of the Licensing Framework

4.9.1 The DSB licensing regime aims to:

i. Encourage infrastructure sharing and reduce environmental impact.
ii. Promote competition and innovation among service providers.
iii. Ensure broad participation by both existing and new broadcasters.
iv. Provide flexibility to accommodate evolving technologies.
v. Facilitate accountability through clear distinction of physical, network, and content responsibilities.
vi. Support progressive migration from analogue FM to digital broadcasting.

4.10 Stakeholder Input Sought

4.10.1 UCC invites stakeholder comments on:

i. The adequacy of the proposed licensing categories and structure.
ii. The practicality of the rollout phasing and coverage obligations.
iii. Proposed evaluation and fee criteria.
iv. DSB adoption measures and incentives for existing FM broadcasters.
v. Opportunities to promote inclusivity through community and small-scale multiplex licensing.

Feedback will inform the finalization of the DSB Licensing and Implementation Framework for Uganda.

4.11 Stakeholder Consultation Questions – Chapter B (Licensing and Regulatory Aspects)

The following questions are designed to guide stakeholder input on the proposed licensing framework for Digital Sound Broadcasting (DSB) in Uganda. They focus on structural, procedural, and economic aspects of licensing to ensure that the final framework is practical, inclusive, and supportive of a sustainable broadcasting ecosystem.

Stakeholders are encouraged to provide evidence-based feedback and real-world insights from their operational or market experience.

No.	Thematic Area	Consultation Question	Purpose of Feedback / Decision Insight
1	**Licensing Framework**	Do you agree that Uganda requires a distinct licensing framework to guide the introduction of terrestrial Digital Sound Broadcasting (DSB)? If Yes/No, please explain.	To validate consensus on the need for a separate regulatory framework under existing licensing regulations.
2	**Licensing Categories**	Are the proposed licensing categories, Public Infrastructure Provider (PIP), Content Aggregator, and Public Service Provider (PSP), adequate for Uganda's DSB ecosystem?	To test whether the structure sufficiently accommodates all market participants and promotes competition.
3	**Role Separation**	What are your views on separating infrastructure ownership (PIP) from content and service provision (Aggregator/PSP)? Should hybrid licensing (entities holding multiple roles) be permitted or limited?	To assess whether specialization or vertical integration best supports market efficiency.
4	**Transition of FM Broadcasters**	Are the proposed transitional measures for existing FM broadcasters, including automatic eligibility for PSP licensing and early adopter incentives, sufficient to encourage migration?	To determine the fairness and adequacy of support for current licensees.
5	**Early Adoption Incentives**	What types of incentives would most effectively stimulate early adoption of DSB?	To design a balanced incentive and cost recovery model.
6	**Community & Small-Scale Multiplexes**	Do you support the introduction of community and small-scale multiplexes with simplified licensing and compliance obligations? What safeguards are necessary to ensure quality and sustainability?	To validate inclusivity and assess the regulatory implications of localised services.

7	**Rollout Strategy**	Do you agree with the proposed three-tier rollout strategy (major cities → secondary cities → other areas) based on population density and infrastructure readiness?	To confirm rollout priorities and test feasibility for coverage expansion.
9	**Evaluation Process**	Are the proposed evaluation criteria technical capacity, financial strength, content diversity, implementation plan, and business viability appropriate and sufficient?	To verify the fairness and transparency of the evaluation framework.
10	**Application Timelines**	Is the proposed licensing process — which includes a three-month window for application calls and submissions, followed by a 60-day evaluation period — practical and fair for both applicants and the UCC?	To ensure the process balances speed and procedural thoroughness.
11	**Fees and Charges**	What key cost elements should guide the determination of license and spectrum fees for DSB operators?	To gather practical data on cost drivers for different market players.
12	**Collaboration Models**	What partnership or collaborative models could enhance market entry and cost efficiency?	To identify cooperative mechanisms that lower barriers to participation.
13	**Policy Alignment**	How can the proposed DSB licensing framework best align with Uganda's existing DTT framework and broader digital transformation agenda?	To ensure coherence and integration within national ICT policy.

CHAPTER C: POLICY, LEGAL AND REGULATORY FRAMEWORK FOR DIGITAL SOUND BROADCASTING (DSB)

5.0 CONTEXT

5.1 Background

5.1.1 The adoption of terrestrial digital sound broadcasting is a strategic national objective aimed at improving spectrum efficiency, promoting content diversity, and enhancing service quality. It builds on Uganda's Digital Terrestrial Television (DTT) migration and responds to global trends in digital radio development.

5.1.2 Digital Sound Broadcasting is not a single technology or one-time event. It represents a gradual transformation involving multiple stakeholders, regulatory adaptations, market incentives, and consumer readiness. UCC, as the regulator, is tasked with steering this adoption in a manner that is inclusive, technically sound, and market-sustainable.

5.2 Legal and Regulatory Mandate

5.2.1 UCC was established under the Uganda Communications Act, Cap 103, with functions that include monitoring, licensing, regulating, and promoting communications services across the country. Specifically:

i. Section 5(1)(b) mandates UCC to monitor, inspect, license, supervise, control, and regulate communication services.
ii. Section 5(1)(c) empowers UCC to allocate, license, standardize, and manage the use of the radio frequency spectrum to ensure optimal utilisation and diversity in programming.
iii. Section 5(1)(m) requires UCC to improve communications services and promote equitable access to such services throughout Uganda.

5.2.2 In line with Regulation 12 of the Uganda Communications (Licensing) Regulations, 2019, UCC issues different broadcasting license categories, including Public Service Provider, Infrastructure Provider, and Distributor (Aggregator), which together form the foundation for integrating DSB into Uganda's broadcasting ecosystem.

5.2.3 The proposed DSB framework therefore aims to extend existing regulatory instruments to accommodate digital technologies, ensuring consistency across licensing, spectrum management, and compliance enforcement.

5.3 International and Regional harmonisation

5.3.1 Uganda is a signatory to the International Telecommunication Union (ITU) Geneva 2006 (GE06) Agreement, which allocates parts of the VHF (174–230 MHz) and UHF (470–862 MHz) bands for digital broadcasting.

5.3.2 The GE06 Plan guided Uganda's DTT migration, which successfully utilised part of this allocation, leaving sections of VHF Band III available for Digital Sound Broadcasting.

5.3.3 Regionally, Uganda's participation in the East African Communications Organisation (EACO) and African Telecommunications Union (ATU) initiatives encourages spectrum harmonisation and interoperability across East Africa and Africa in general, creating opportunities for cross-border coordination, equipment and receiver standardisation to maximise economies of scale for technology adoption.

5.4 Policy Objectives for DSB Introduction

5.4.1 The introduction of DSB in Uganda aligns with both national and international policy objectives to:

i. Promote efficient and equitable spectrum utilisation through shared digital platforms.
ii. Encourage technological innovation and development of local content ecosystems.
iii. Enhance media pluralism and diversity of voices.
iv. Improve service quality and listening experience for consumers.
v. Enhance universal access to broadcasting services, particularly in underserved regions.
vi. Ensure the long-term sustainability of the broadcasting sector through a balanced regulatory and financial framework.

5.5 Technology Adoption Framework

5.5.1 Global Context - Globally, DSB has evolved into several technological families, each suited to specific market and geographic conditions:

i. DAB / DAB+ (Digital Audio Broadcasting): The most widely adopted digital sound broadcasting technology worldwide.

ii. DRM (Digital Radio Mondiale): This technology is designed to digitise AM and VHF/FM bands, making it ideal for long-range and low-power transmissions.

iii. ISDB-TSB (Integrated Services Digital Broadcasting – Terrestrial Sound Broadcasting): Predominantly used in Japan.

iv. IBOC (In-Band On-Channel): This is common in the Americas and allows simultaneous analogue and digital broadcasts on the same frequency.

Each system has strengths and trade-offs depending on spectrum availability, market scale, geography, and receiver ecosystem.

5.5.2 Regional influence - Within ITU Region 1 (covering Africa, Europe, and parts of the Middle East), **DAB+** has emerged as the dominant standard. Over 30 countries, including the United Kingdom, Germany, Norway, Kenya, South Africa, and Algeria, have either launched or are piloting DAB+ networks. This regional concentration has produced clear economies of scale in receiver affordability, transmitter equipment, and engineering expertise, supported by GE06-based coordination models.

5.5.3 By contrast, DRM adoption remains limited, serving mainly as a complementary option for low-density or rural broadcasting scenarios.

5.6 Uganda's Technology Considerations

5.6.1 Pilot Outcomes - Uganda's DAB+ pilot project in Kampala demonstrated the technology's suitability for national deployment. Key findings included:

i. Reliable signal coverage up to approximately 33 km under test parameters.
ii. Efficient multiplexing allowing multiple FM stations to share one frequency block.
iii. Stable reception performance even under urban interference conditions.

These results affirm that DAB+ aligns with Uganda's VHF Band III allocation, regional harmonisation goals, and long-term efficiency requirements.

5.6.2 Complementary Technologies - While DAB+ is recommended as the primary standard, UCC acknowledges that in some low-density or community contexts, full multiplex operations may not be immediately viable. Therefore, DRM or other low-power digital technologies could be approved for pilot or experimental use, ensuring flexibility without fragmenting the receiver market.

5.6.3 Guiding Principles for Technology Adoption - UCC's approach to technology adoption will be guided by:

i. Regional harmonisation under ITU and EAC frameworks.
ii. Technical feasibility proven through pilot performance.
iii. Market sustainability, including equipment cost and availability.
iv. Inclusivity, enabling both commercial and community broadcasters to participate in the digital adoption.

5.7 Policy Measures for the adoption of DSB

5.7.1 Linking FM License Renewal to Digital Participation - To promote gradual adoption, UCC encourages analogue FM licensees to consider adopting the DSB ecosystem.

5.7.2 Key objectives include:

i. Encouraging voluntary adoption of DSB.

ii. Ensuring equitable access to emerging digital platforms.
iii. Avoiding dual or indefinite licensing regimes.
iv. Promoting efficient use of the crowded FM spectrum by transitioning mature stations to shared digital multiplexes.

5.7.3 Must-Carry Requirement for Public Broadcaster - The law stipulates a must-carry obligation for the Uganda Broadcasting Corporation (UBC) on all licensed multiplexes (national or regional). This ensures that public and national-interest programming remains accessible to all Ugandans. Policy justifications for this requirement include:

i. Safeguarding national identity and cultural content.
ii. Ensuring universal access to educational, emergency, and civic programming.
iii. Maintaining continuity of service during the adoption.
iv. Promoting government communication and public awareness.

5.7.4 Migration to Digital-Only Broadcasting - UCC's long-term vision is to achieve a full adoption of digital radio. However, migration will be market-led and evidence-based, depending on:

i. Availability and affordability of DSB receivers.
ii. Consumer adoption rates and listening behaviour.
iii. Network readiness and signal stability.
iv. Broadcaster preparedness and financial capacity.
v. Alignment with national digital transformation goals.

5.7.5 A complete analogue switch-off will only be considered, if at all, once sufficient digital penetration has been achieved to ensure no loss of access for any segment of the population. To this end, UCC will develop a Digital Radio Migration Roadmap with clear milestones, timelines, and support mechanisms.

5.8 Guiding Principles for Policy Implementation

5.8.1 UCC's policy approach to digital sound broadcasting is anchored on the following principles:

i. Inclusivity – ensuring that both broadcasters and listeners adopt smoothly.
ii. Market readiness – avoiding premature regulatory enforcement.
iii. Public value – preserving access to essential national and educational content.
iii. Spectrum efficiency – freeing congested FM bands for other communication services.
iv. Collaboration – promoting coordinated engagement with industry, government, and regional partners.
v. Financial sustainability – ensuring that adoption policies do not undermine broadcaster viability or consumer affordability.

5.9 Receiver Strategies and Implementation

5.9.1 The success of DSB depends not only on the availability of transmission infrastructure but also on the accessibility of compatible receivers among consumers. Receiver strategies are therefore a critical policy consideration for ensuring that the benefits of DSB reach all audiences. The following strategies shall be explored to drive receiver availability.

(i) Development of Minimum Receiver Specifications

Upon adoption of the DAB+ standard as Uganda's preferred DSB technology, the Commission will develop Minimum Receiver Specifications to guide the business community, importers, and retailers on the technical qualifications of compliant receivers.
These specifications will define the essential performance parameters for DAB+ receivers to ensure consistent quality of service and interoperability across brands.

The process will be complemented by the Commission's Type Approval Framework, under which all DSB receivers marketed or distributed in Uganda will undergo type approval to confirm conformity with approved standards. This will ensure that only compliant devices are available on the market, protecting consumers and maintaining the integrity of the broadcasting ecosystem.

(ii) Collaboration with the Automotive Sector

Recognising that a significant portion of radio listening in Uganda occurs during commuting, UCC will work closely with car importers and dealers to integrate DAB+ receiver specifications into the importation and pre-inspection requirements for vehicles. This partnership will encourage the inclusion of DAB-compatible radio systems in both new and used cars imported into Uganda, thereby accelerating the penetration of receivers among urban audiences and frequent commuters.

(iii) Receiver Market and Affordability

Market research conducted by UCC and global DSB industry sources indicates that DAB+ receivers are available at a wide range of price points, ranging from approximately USD 10 for entry-level portable sets to over USD 200 for advanced, multi-functional units with added features such as Bluetooth, Wi-Fi, and colour displays. These prices are broadly comparable to the cost range of mid- to high-tier analogue FM receivers currently on the market, suggesting that affordability may not be a prohibitive barrier to adoption.

To further stimulate uptake, the Commission will explore collaboration with importers, retailers, and broadcasters to implement consumer awareness and market introduction campaigns, as well as possible incentive mechanisms such as bulk procurement, promotional discounts, or phased duty exemptions on compliant devices during the early rollout phase.

5.9.2 Guiding Principles

The following principles will guide UCC's approach to receiver policy:

- Affordability and accessibility: Ensuring that receivers are available at prices comparable to analogue devices.
- Quality assurance: Enforcing minimum technical specifications through type approval.
- Market stimulation: Promoting early adoption through partnerships with the private sector.
- Inclusivity: Encouraging the availability of both standalone receivers and integrated in-car solutions.

6.0 Stakeholder Consultation Questions – Chapter C (Policy, Legal and Regulatory Framework)

The following questions invite stakeholder feedback on the policy, legal, and regulatory measures proposed to guide the introduction and nationwide adoption of Digital Sound Broadcasting in Uganda.

They aim to ensure that the DSB policy framework is inclusive, harmonised with regional and international practice, and sensitive to Uganda's market realities. Stakeholders are encouraged to provide evidence-based and practical feedback that reflects their institutional, operational, or consumer perspectives.

No.	Thematic Area	Consultation Question	Purpose of Feedback / Decision Insight
1	National Policy Direction	Do you agree that introducing Digital Sound Broadcasting (DSB) should be a national priority for improving spectrum efficiency, content diversity, and service quality? If Yes/No, please explain.	To confirm policy alignment and stakeholder support for DSB as a national objective.
2	Regulatory Readiness	Are existing provisions under the Uganda Communications Act Cap 103 and Licensing Regulations, 2019, sufficient to support DSB, or are additional instruments (guidelines or amendments) needed?	To assess legal adequacy and identify regulatory gaps.
3	Institutional Roles	What role should different stakeholders (UCC, MOICT, broadcasters,	To clarify institutional

		manufacturers, civil society) play in steering DSB adoption?	responsibilities and coordination mechanisms.
4	International & Regional Harmonisation	How can Uganda strengthen regional cooperation under EACO and ATU for frequency harmonisation, receiver standardisation, and cross-border coordination?	To identify opportunities for regional policy alignment and shared economies of scale.
5	Technology Standardisation	Do you have any objection to the adoption of DAB+ as Uganda's primary standard for DSB, with DRM and other systems permitted only for low-power or experimental use? If Yes/No, please explain.	To validate the preferred technology approach and flexibility for complementary standards.
6	Technology Choice Flexibility	Should UCC maintain flexibility to accommodate new or hybrid digital technologies as the market evolves, or focus on strict standardisation around DAB+?	To gauge industry appetite for innovation versus standard consistency.
7	FM License Renewal Linkage	Do you support the proposal to link analogue FM license renewal to participation in the digital ecosystem?	To test the acceptance of progressive migration through regulatory linkage.
8	Must-Carry Obligation	What safeguards should ensure this requirement does not distort competition?	To balance public-interest obligations with fair market practice.
9	Market-Led Migration	Should Uganda's eventual transition to digital-only broadcasting remain market-led, or should Uganda consider setting indicative national timelines for analogue phase-out?	To establish consensus on the pace and approach of digital migration.
10	Digital Radio Migration Roadmap	What milestones and indicators should guide Uganda's Digital Radio Migration Roadmap (e.g., receiver penetration, coverage, adoption rates)?	To collect inputs for the roadmap structure and the monitoring framework.
11	Financing and Sustainability	What financing models (public-private partnerships, incentives, shared infrastructure) could ensure the financial sustainability of DSB rollout?	To inform investment policy and sustainable cost-sharing mechanisms.
	DSB receiver strategies	Propose additional strategies to increase the availability of DSB receivers.	To explore additional ways of driving receiver penetration

13	Guiding Principles	Are the proposed guiding principles, inclusivity, market readiness, public value, spectrum efficiency, collaboration, and financial sustainability, sufficient? What would you add or refine?	To validate policy principles and invite refinement.