



REVIEW OF THE ALARM RESPONSE SYSTEMS LICENSING FRAMEWORK

CONSULTATION PAPER

Invitation to Comment

The Communications Authority of Kenya invites stakeholders to submit comments on the proposed licensing and charging mechanism for GSM-based alarm transmitters.

The consultation seeks views on the proposed regulatory approach, licensing options, registration and verification requirements, equipment compliance, consumer protection, transitional arrangements, and, in particular, the proposed cost-based annual regulatory oversight fee for GSM-based alarm endpoints.

Respondents are encouraged to address the consultation questions presented at the end of each section and to provide data, calculations, examples and other evidence supporting their views.

Consultation response format

For each proposal, respondents should indicate whether they agree, provide an alternative where they disagree, identify any gaps, explain and justify their position, and provide any other relevant comments.

Table 1: Abbreviations and Acronyms

Abbreviation	Meaning
AOL	Annual Operating Licence
AO	Administrative Overheads
ASP	Application Service Provider
CA	Communications Authority of Kenya
CLC	Communications Licensing Committee
GSM	Global System for Mobile Communications
IC	Inspection and Compliance Costs
ICT	Information and Communications Technology
IoT	Internet of Things
IP	Internet Protocol
ITU	International Telecommunication Union
KES	Kenyan Shilling
KICA	Kenya Information and Communications Act, Cap. 411A
M2M	Machine-to-Machine
MHz	Megahertz
MNO	Mobile Network Operator
NFP	Network Facilities Provider
PC	Personnel Costs
RF	Radio Frequency
SC	Systems and ICT Costs
SIM	Subscriber Identity Module
SRM	Standards and Resource Management
TRC	Total Annual Regulatory Cost
ULF	Unified Licensing Framework
VHF	Very High Frequency

Definitions

Clear and technology-neutral definitions are necessary to determine which alarm systems, operators and endpoints fall within the proposed framework. The definitions below distinguish dedicated VHF alarm networks from alarm systems that use public mobile, IP, IoT, M2M or other communications infrastructure.

Unless the context otherwise indicates, words and expressions assigned meanings under KICA and applicable regulations retain those meanings.

Table 2: Definitions

Term	Proposed definition
Active alarm endpoint	An installed alarm transmitter or control unit that is connected to an alarm response or monitoring service and is capable of transmitting an alarm signal during the relevant reporting period.
Alarm endpoint	A transmitter, control panel, module or other device installed at customer premises and used to originate or relay an alarm signal to a monitoring or response centre.
Alarm response service	A service through which alarm signals are received, monitored and acted upon by a security firm, monitoring centre, emergency responder or other authorised entity.
GSM-based alarm system	An alarm system that uses a SIM-enabled device and a licensed public mobile network to transmit alarm signals, notifications or control information.
Hybrid alarm system	An alarm system that uses more than one communications path, including any combination of VHF, GSM, IP, IoT, M2M or other technologies.
Non-spectrum-based alarm system	For purposes of this framework, an alarm system whose provider does not receive a dedicated frequency assignment from the Authority for each endpoint and that relies on communications infrastructure provided by another licensed operator.
Regulatory oversight fee	A cost-based charge imposed to recover reasonable costs associated with registration, record maintenance, inspection, compliance verification, systems administration, consumer protection and enforcement, excluding a direct spectrum usage charge.
Security firm	An entity providing alarm monitoring, alarm response or related security services to customers and using one or more electronic communications technologies to receive or transmit alarm signals.
VHF-based alarm system	An alarm system that uses dedicated radio frequencies assigned by the Authority, typically within the VHF band, to transmit alarm signals from customer premises to a security firm or monitoring centre.

1 Introduction

The Communications Authority of Kenya is responsible for regulating the information and communications sector, managing radio frequency spectrum and protecting consumers of regulated services. Historically, security firms providing alarm response services have used VHF alarm networks licensed by the Authority. These networks use dedicated frequencies and alarm transmitters installed at customer premises.

The alarm response market is increasingly adopting GSM-based alarm systems. A GSM alarm transmitter incorporates a SIM card and uses a licensed mobile network to transmit alerts from customer premises to a security firm, monitoring centre, customer device or emergency service. This transition offers broader coverage, simpler installation, easier scaling and integration with modern security technologies.

The current licensing framework does not specifically accommodate GSM-based alarm transmitters. As a result, VHF-based providers remain subject to frequency licensing and annual fees, while providers offering a substantively similar alarm response service through GSM-based systems operate outside the alarm licensing and charging framework. The Authority therefore proposes a technology-neutral framework that provides regulatory visibility over both existing and emerging alarm technologies.

1.1 Introduction - Consultation Questions

1. Do you agree that the transition from VHF-based to GSM-based alarm systems creates a regulatory gap that should be addressed?
2. If not, what alternative interpretation of the current market and regulatory position do you propose?
3. Please provide evidence supporting your assessment of the regulatory gap and its significance.
4. Provide any other comments relevant to this section.

2. Objectives of the Framework

The proposed framework is intended to establish a proportionate, transparent and future-ready approach to the regulation of alarm response systems. It seeks to remove regulatory asymmetry between technologies while ensuring that regulatory charges reflect the costs imposed on the Authority rather than serving as a substitute spectrum charge.

The proposed objectives are to:

- I. Define the regulatory scope for VHF, GSM and other alarm technologies;
- II. Prescribe applicable licensing or registration requirements;
- III. Establish a cost-based charging methodology;
- IV. Promote equipment compliance and service reliability;
- V. Protect consumers; and
- VI. Provide transitional arrangements for existing operators.

2.1 Objectives of the Framework - Consultation Questions

1. Do you agree with the proposed objectives of the framework?
2. If not, which objectives should be revised or removed, and what alternative objectives do you propose?
3. What additional objectives should be included, particularly regarding public safety, innovation, competition, consumer protection or data security?
4. Please explain how your proposed objectives would improve the effectiveness of the framework.
5. Provide any other comments relevant to this section.

3. Overview of VHF-Based and GSM-Based Alarm Response Systems

3.1 VHF-Based Alarm Response Systems

VHF-based alarm systems use dedicated radio frequencies, commonly within the 138-174 MHz range, to send alarm signals from customer premises to a decoder or receiver at a security firm's control room. Security firms normally operate a separate voice network to dispatch response personnel after an alarm is received.

These systems provide direct control over the communications path and remain useful where independence from public mobile or internet infrastructure is required. Their deployment, however, requires frequency planning, radio equipment, antennas, base stations, decoders, maintenance and annual frequency fees.

3.2 GSM-Based Alarm Response Systems

GSM-based alarm systems use SIM-enabled alarm panels or communication modules to transmit alarm signals over a licensed mobile network. Signals may be delivered to a security firm's control room, a monitoring platform, a customer's mobile device or an emergency response service.

Because the provider relies on the infrastructure and spectrum of a licensed MNO, the security firm does not require a dedicated frequency assignment for each alarm endpoint. GSM systems can support two-way communication, remote arming and disarming, real-time notifications and integration with cameras, sensors, access control and other IoT services.

3.3 Comparative Characteristics

Table 3: Comparative Characteristics

Issue	VHF-based alarm system	GSM-based alarm system
Communications path	Dedicated radio network controlled by the security firm	Licensed public mobile network operated by an MNO
Frequency assignment	Dedicated frequencies assigned by the Authority	No individual endpoint frequency assignment to the security firm
Installation	Requires radio planning, antenna placement and signal testing	SIM-enabled device can generally be installed using available mobile coverage
Scalability	Additional infrastructure may be required as coverage expands	Can scale using existing national mobile network coverage
Functionality	Typically focused on alarm signaling	Supports alarm signaling two-way communication, applications and IoT integration
Current regulatory charge	Frequency fee per alarm unit, billed in groupings of five	No specific alarm oversight fee under the current framework

3.4 Overview of Alarm Response Systems - Consultation Questions

1. Do you agree that the descriptions of VHF-based and GSM-based alarm systems accurately reflect how the technologies are deployed in Kenya?
2. If not, what alternative or additional technical description do you propose?

3. What other alarm communication technologies, service models or market participants should be covered?
4. Please explain how any other technology or service model affects the proposed regulatory framework.
5. Provide any other comments relevant to this section.

4. Factors Driving the Uptake of GSM-Based Alarm Systems

Inspections conducted by the Authority between 2023 and 2026 indicate that licensees are increasingly replacing or supplementing VHF alarm transmitters with GSM-based alarm systems. This transition is driven by expanded mobile network coverage, simpler installation and maintenance, greater scalability, consolidation of control rooms, and lower infrastructure and regulatory costs than maintaining dedicated radio networks.

GSM-based systems also support integration with modern security technologies, including mobile applications, cameras, motion sensors, smoke detectors, access-control systems and Internet of Things platforms. They facilitate two-way communication and enable customers to access connected, real-time and remotely managed security services.

In urban and peri-urban areas with sufficient mobile network coverage, GSM systems provide a practical alternative to dedicated VHF infrastructure. Their increasing availability in rural areas may further support wider adoption. The Authority recognizes that these benefits can promote innovation, improve service delivery and reduce operating costs.

5. Rationale for Regulation of GSM-Based and Other Non-Spectrum-Based Alarm Systems

The Authority proposes to introduce licensing of alarm systems based on new and emerging technologies, including GSM-based alarm systems, to manage their use, ensure device safety, protect public safety infrastructure and protect consumers. As these systems utilize cellular networks to transmit alerts, they are subject to telecommunications regulations. Key justifications for licensing include:

- i. Licensing provides the Authority with a mechanism to identify and manage the usage of these devices, ensuring compliance with KICA, especially for devices with advanced features like remote surveillance.
- ii. GSM-based alarms operate on specific frequency bands (e.g., 900/1800 MHz or 850/1900 MHz). Substandard devices can cause harmful interference with mobile network operators, disrupting critical communication services.
- iii. Licensing ensures that equipment complies with technical standards for signal reliability and safety. This prevents the proliferation of substandard or counterfeit devices that pose risks to human health and the environment.
- iv. These systems often send alerts to police or private security firms. Licensing ensures that these systems are interoperable and that they do not overwhelm emergency networks with false alarms.
- v. Licensing of GSM alarms which transmit sensitive security data ensure that the equipment meet standards for encryption to prevent signal jamming or unauthorized interception.

The Authority proposes to use the general category "non-spectrum-based alarm systems" to accommodate GSM and future technologies that do not require a dedicated endpoint frequency

assignment. Dedicated VHF networks would remain subject to applicable spectrum licensing requirements. Hybrid endpoints should be registered once and charged in a manner that avoids double charging for the same customer endpoint.

5.1 Rationale for Regulation - Consultation Questions

1. What is your view on the proposed regulatory oversight by the Authority on GSM-based and other non-spectrum-based alarm systems?
2. What other alternative regulatory, self-regulatory mechanism or legal framework should apply?
3. Please explain how the proposed oversight can be implemented without duplicating MNO or private security regulation.
4. Provide any other comments relevant to this section.

6. Market research.

The Authority conducted a market survey to establish the charges imposed on customers for alarm response services. The findings are presented in the table below.

Table 4: Cost of Alarm Response Systems by Company (KES)

Company (pseudonym)	Manual Intruder System (KES)	Automatic Intruder system (KES)	Additional charges (KES)
A	8,000.00	8,000.00	1,450.00
B	8,000.00	Company installs both manual and automatic intruder systems for clients who opt for the automatic intruder system and charges KES 8,000	1,450.00
C	No longer installing VHF based alarm response systems in Nairobi	8,000.00	N/A
D	8,499.00	13,599.00	N/A
E	7,450.00 + VAT	8,050.00 + VAT	1,450.00
F	6,850.00	6,850.00	1,450.00
G	7,000.00	7,000.00 though this may vary depending on the installation size	N/A
H	7,000.00	Declined to give cost but said that the monthly charge would depend on the installation size	N/A

Based on the data collected, the average monthly cost for alarm response services was approximately KES 8,000.00 with most firms charging similar amounts for both VHF-based and GSM-based technological deployments.

The information collected from the security firms has been used to provide three cost modelling options to determine the appropriate fees to charge when introducing GSM-based alarm systems into the licensing framework. These options are outlined in the sections below.

6.1 Market research - Consultation Questions

1. Do you agree that the market data presented reasonably reflects the prevailing charges for alarm response services and that KES 8,000 per customer per month is an appropriate average for revenue modelling?
2. If not, what alternative average charge, range, or methodology should the Authority use, including whether separate assumptions should apply to manual, automatic, VHF-based, GSM-based, and hybrid alarm systems?
3. What additional factors should be considered when estimating alarm service charges and revenues, including installation size, equipment, maintenance, armed response, connectivity, additional charges, VAT, customer category, and geographical location?
4. Please provide supporting evidence for your proposals such as anonymized invoices or relevant market data.
5. Provide any other comments on the market charges, additional fees, customer numbers, or revenue assumptions used in developing the proposed GSM alarm charging methodology.

7. Licensing and Charging Proposal

7.1 Onboarding GSM-based Alarm systems in the current licensing framework

In the current Spectrum Licensing framework, the Authority charges a frequency fee for the VHF-based alarm systems, that is based on the number of alarm transmitters a firm has installed on the customer premises. Each alarm unit is KES 1,250.00 and applicable fees for the firm are determined by using the maximum value in each grouping of 5; 5 for 1-5, 10 for 6-10, 15 for 11-15 etc.

GSM based alarm systems, which are currently not included in the current licensing framework, impose regulatory oversight and compliance monitoring on the Authority. These costs increase with the number of deployed alarms.

This proposal therefore seeks to determine the regulatory fees for a GSM-based alarm system. The oversight fee for GSM-based alarm systems shall applied solely to recover costs associated with regulatory supervision and compliance.

1.1.1 Costing Modelling for GSM-based Alarm Systems

Per-Alarm Fee

To establish the per-alarm fee, the cost model determined the total annual regulatory cost for alarm systems against the total number of registered alarm units, and was computed using the illustrated formula;

$$\text{Per-Alarm Fee} = \frac{\text{Total Annual Regulatory Cost for Alarm Systems}}{\text{Total Number of Registered Alarms Units}}$$

To determine the total annual regulatory costs for alarm systems, the following costs were taken into consideration.

Personnel Costs (PC)

Personnel costs represent the direct human resources required to carry out the Authority's statutory functions relating to alarm systems. This includes time spent on registration processing, review by relevant committees, compliance verification, and record maintenance.

Inspection & Compliance Costs (IC)

Inspection and compliance costs reflect the operational expenses incurred by the Authority in verifying that alarm systems comply with applicable regulatory requirements. These include field inspections, remote audits, and verification exercises

$$IC = \text{Average Cost Per Inspection} \times \text{Number of Inspection per Year}$$

Systems and ICT costs (SC)

Systems and ICT costs cover the technical infrastructure used by the Authority to administer and monitor electronic alarms systems. They include; Alarm registry database (Spectrum Management System), Licensing/registration systems, Data Storage Cost, and Reporting tools.

Administrative Overheads (AO)

Administrative overheads represent indirect but essential support costs that enable regulatory activities to function effectively but cannot be directly attributed to individual alarm systems.

They include, legal support, financial processing, customer support and management oversight. These costs use a standard overhead allocation rate (10 – 20%).

$$AO = (PC + IC + SC) \times \text{Overhead Rate}$$

Total Annual Regulatory Cost (TRC)

$$TRC = PC + IC + SC + AO$$

Alarm Endpoint Count (Denominator)

The total number of registered alarm endpoints is used as the allocation basis for determining the per-alarm oversight fee.

$$\text{Total Alarm Endpoints} = \sum \text{Declared Installed Alarms (All Licensees)}$$

Final Per-Alarm Fee Formula

The Authority calculated the approximate costs associated with alarm systems to determine the fee that would be charged for a GSM-based alarm transmitter.

$$\text{Per-Alarm Oversight Fee} = \frac{PC + IC + SC + AO}{\text{Total Registered Non-Spectrum Alarms Units}}$$

The proposed per-alarm annual fee for the GSM-based alarm units is rounded off to **KES 680.00**.

This proposed charging mechanism is preferable because it does not favor any class of firms, as the total cost would depend on the number of alarms installed by each security firm. The proposed per-alarm fee of KES 680.00 represents 0.71% of the security firm's estimated per-alarm revenue, as shown in Table 4. In this proposal, we recommend retaining the current grouping of 5; (5 for 1-5, 10 for 6-10, 15 for 11-15 etc.) as contained in the VHF-based alarm fee charging methodology.

The proposed GSM-based per-alarm charges are cost-based, technology-neutral, and include only recovery costs associated with regulatory supervision and compliance.

To maintain a future-ready and technologically neutral licensing regime, the Authority may consider applying the same GSM-based per-alarm fees to all new and emerging categories of alarm systems, such as Internet of Things (IoT) or Machine to Machine (M2M) alarms. In this case, the Authority could adopt a general category term, “**non-spectrum-based alarm systems**” in the licensing of any new alarm systems. This would accommodate diverse and emerging communication technologies, ensuring the licensing framework remains adaptable as innovations extend beyond traditional cellular systems (GSM).

7.1 Onboarding GSM-based Alarm systems in the current licensing framework - Consultation Questions

1. What is your view on the proposal to introduce GSM-based alarm systems within the existing alarm-system licensing framework and charge an annual regulatory oversight fee for each installed GSM alarm unit?
2. What is your view on the methodology used to calculate the proposed annual fee of KES 680 per GSM-based alarm unit?
3. Do you agree that the proposed framework is technology-neutral and does not unfairly favour or disadvantage firms based on their size or the alarm technology they deploy? If not, identify the areas of potential unequal treatment and propose suitable safeguards.

4. Do you agree with the proposal to retain the current charging bands of five alarm units, namely 1–5, 6–10, 11–15 and subsequent groups of five, when determining the applicable GSM alarm fees? If not, propose an alternative grouping or billing method and explain its advantages.
5. Do you agree with the proposal to apply the same charging and licensing principles to other non-spectrum-based alarm technologies, including Internet of Things and Machine-to-Machine alarm systems? If not, explain how or if such emerging alarm technologies should be regulated.
6. What measures should be introduced to ensure that the proposed fees do not create unreasonable barriers to entry or impose a disproportionate burden on micro, small, and medium-sized security firms?
7. Provide any other comments, evidence, or proposals relevant to the licensing, charging, implementation, and oversight of GSM-based and other non-spectrum-based alarm systems.

8. Implementation Roadmap

The proposed roadmap of key implementation and actions items is as detailed in table 14 below.

Table 14. Implementation roadmap

No	Activity	Status/Proposed Target
1.	Review of alarm response systems licensing public consultation process	Quarter 1 FY 2026/2027 - Ongoing
2.	Review and Incorporation of consultation comments, and Stakeholder Validation	Quarter 2 FY 2026/2027
3.	Development of final alarm licensing framework	Quarter 3 FY 2026/2027
4.	Implementation of adopted alarm licensing framework	FY 2027/2026

8.1 Implementation Roadmap - Consultation Question

1. What transitional arrangements should apply to firms currently operating GSM-based alarm systems before the proposed framework comes into effect? Please comment on the appropriate transition period, registration process, treatment of existing installations, and possible phased implementation.