

SERVICE OVERVIEW

AdaptiveMobile Messaging Revenue Protection

PROTECTING THE BORDERLESS NETWORK

Mobile operators across the globe are facing intense pressure on their SMS messaging business as the market pricing for consumer messaging services mature and over-the-top mobile messaging apps gain market share. A saviour is the rising volume of A2P messaging, bringing scope for supplementary revenues, but also the risk of Grey Route Abuse.

Grey Routes occur when commercial messages are sent over connections where the sending or receiving operator is not appropriately paid.

For many operators the connection agreements between their networks and those of peering partner, which enable billing and settlement for message termination, are structured for P2P traffic. This can mean significant revenue leakage for operators who receive large volumes of A2P messages, often originating from major brands, but funnelled through unauthorised grey route P2P channels.

Likewise, for their own subscribers, many operators do not permit consumer plans to be re-sold or used for commercial purposes. Handling these commercial messages as consumer traffic, that is in violation of their terms and conditions, would give them little financial benefit.

AdaptiveMobile also observe a range of cases where sending operators may have grey routes present, originating from undetected SIM Banks in their networks, resulting in unnecessarily high outbound international charges.

AdaptiveMobile Messaging Revenue Protection can help operators tackle a broad range of challenges to their messaging business. Using in-network controls, subscriber reputation and advanced discovery and detection algorithms, the AdaptiveMobile Network Protection platform can identify and control this traffic – protecting an operator's current and future messaging business.

Why is the Grey Route challenge hitting now?

Falling Person to Person (P2P) generated SMS volumes

- Despite increasingly generous consumer packages giving unlimited International messages

Yet increasing Application to Person (A2P) traffic

- SMS is the only global method for identification of & contact to individuals
- Rise in 2-Factor Authentication, One-Time Passwords due to security concerns
- Notification of Service/Application/Credit Card Transactions
- Only consistent method for target market engagement (Advertising / Promotion)
- Rise in application usage of SMS as primary communication channel

Enterprises are communicating more with their customers via SMS

- To further build their own customer relationships
- To reduce the impact of potential fraud on their own business (by using 2FA SMS passcodes)

AdaptiveMobile Service Benefits

AdaptiveMobile deliver per-message content based control

- This means no matter where the grey route moves to, you are always protected
- You do not have to block revenue generating legitimate routes
- Our service works faster than the Grey Route providers can move giving you complete control
- Our service enables you to select appropriate business models meaning no loss of business relationship with key brands or revenue surrender

AdaptiveMobile has automatic content discovery

- Automatically discovered content is made available for inspection to identify new brands, new campaigns, new content & new route sources

Only AdaptiveMobile offer a service of Grey Route discovery and control, and SIM Bank detection, based upon content and behaviours

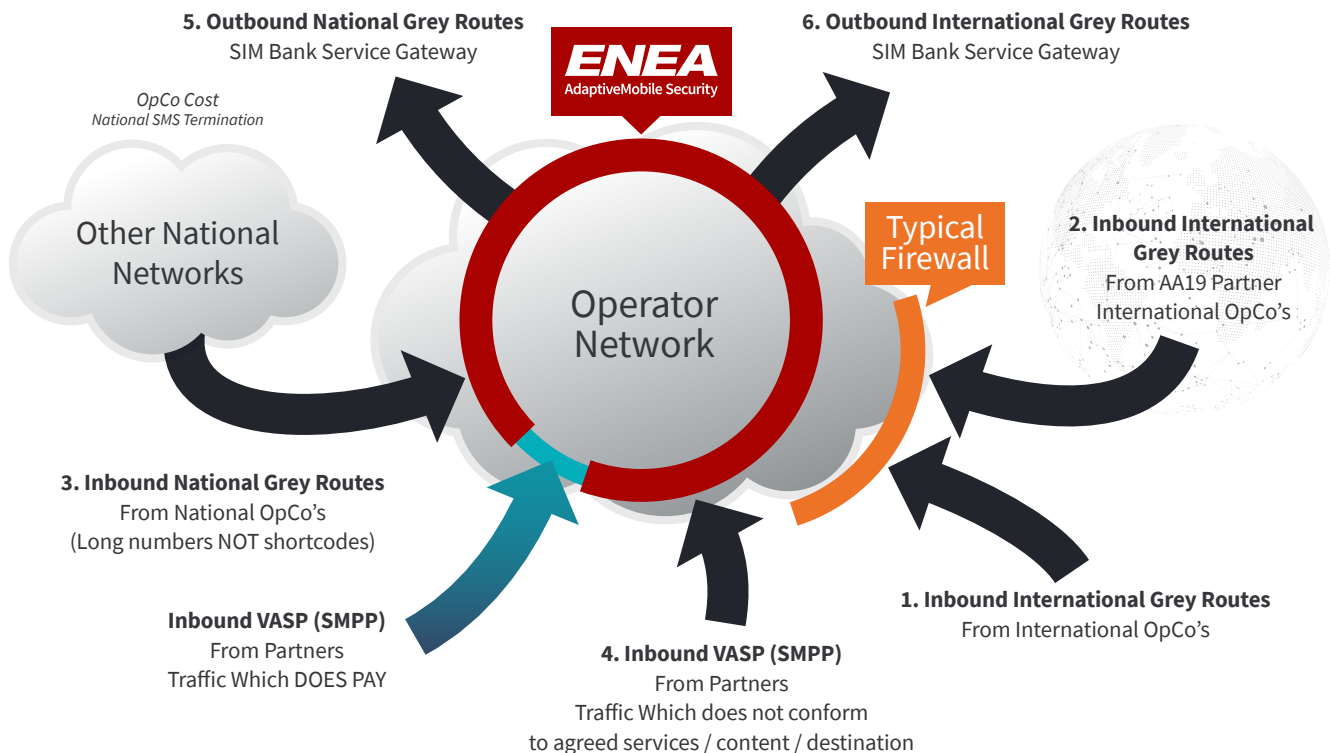


Figure 1 – Example Grey Route Traffic Flows

Functional Components

Grey Route Control by Security Engine

- Uniquely providing control over known Grey Route campaigns in real-time using proprietary, constantly-updated Fingerprints
- Evaluates all other traffic with a proprietary Analysis Engine to detect “suspicious” traffic that may be new Grey Route campaigns
- Identification of in-network Grey Route traffic including SIM Banks and Service Gateways
- Near-zero latency for legitimate users

Threat Intelligence by Security Centre

- The AdaptiveMobile Threat Intelligence Service evaluates and confirms new campaigns detected
- Sharing of known Grey Route sources and techniques detected across our global network of customers
- Detection and reputation stats are fed back from all deployments
- Cartridge updates with fingerprints for new campaigns
- Ongoing Grey Route technique research

Grey Route Reporting by Security Reporting

- Collates and processes suspect traffic to identify new grey route campaigns and to determine the reputation of devices connecting to your network
- Behaviour patterns of senders of known campaigns are used to build reputational profiles of all sources
- Reputation-based controls for on-net subscribers and external sources
- Grey Route correlation of origins across common campaigns – enables profiling and control of high risk sources

Grey Route Policy by Security Policy

- AdaptiveMobile Revenue Protection services deliver control without the need for operator administration
- Provides the flexibility for operators to respond to local requirements
- Brand & Category-based selection of fingerprints
- Override / reset / whitelist of individual source reputation
- Rich policy hierarchy and filter set

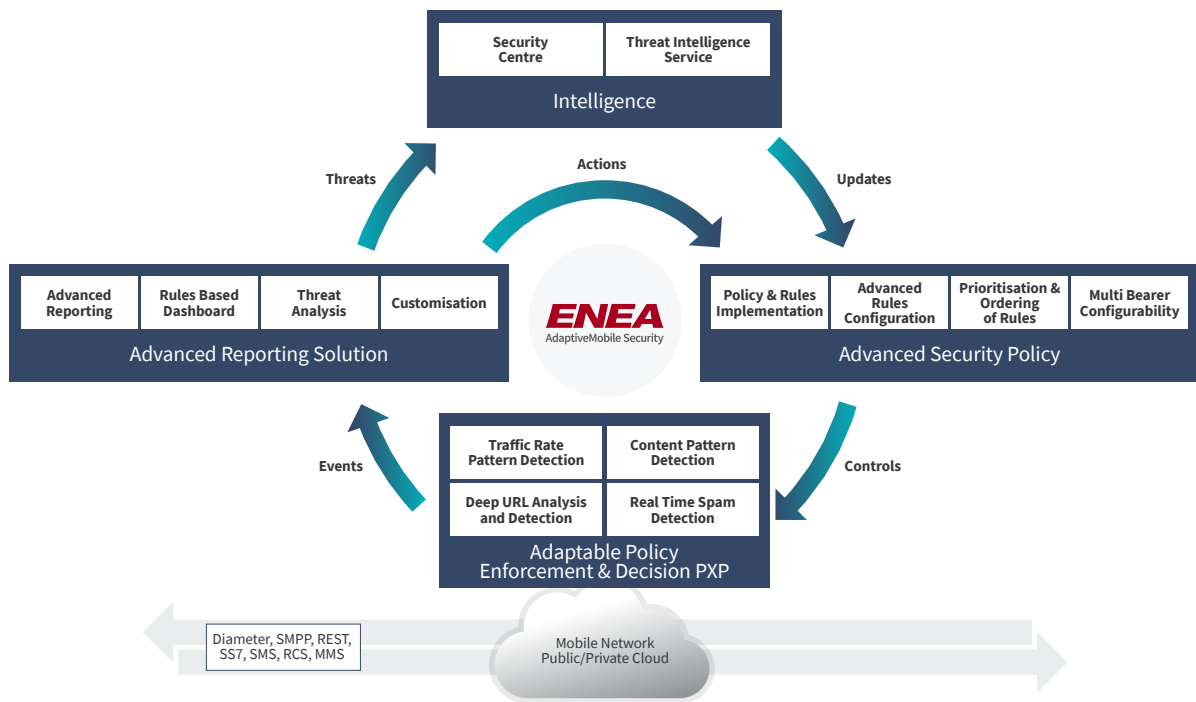


Figure 2 – AdaptiveMobile Network Protection Platform

Advantages of the AdaptiveMobile Network Protection Platform

- **The market leading platform for mobile operators around the world**
- **Proven through deployment in over 40 networks including some of the largest messaging environments**
- **Proven reduction in messaging abuse and subscriber complaints**
- **The most comprehensive messaging security platform for mobile operators**
 - Sophisticated policy structure
 - Real-time system-wide reputation and traffic analysis engines
 - Industry-leading spam fingerprint and discovery algorithms
 - Backed up with the only global Threat Intelligence Unit dedicated to mobile messaging threats
 - Multi-function and multi-bearer platform so you can deliver additional services and gain further benefits from investment
 - Industry leading False Positive accuracy for messaging security
 - Customers have membership to our intelligence and security community, benefitting from our continually expanding knowledge from our 2.2 Billion subscriber base
 - AdaptiveMobile leads the market in messaging security Innovation

About Enea AdaptiveMobile Security

Enea AdaptiveMobile Security is a world leader in mobile network security, everyday protecting over 80 Mobile Operators and billions of mobile subscribers and devices globally from fraudsters, criminals and nation states. We have the strongest 5G core network security team, who are designing, planning and building the very best in 5G core network security solutions focussing on threat-intelligence, security heritage and protocol correlation.

Enea AdaptiveMobile Security brings a unique security perspective on real-time mobile network traffic. The global insight provided by our 5G, Signalling and Messaging thought leaders, security specialist teams and Threat Intelligence Unit, combined with our signalling and network protection software that sits at the heart of the network, ensures Enea AdaptiveMobile Security remains at the forefront of the latest advancements in mobile networks and their security, and continues to be the trusted partner of many of the world's largest Mobile Operators.

For more information on how Enea AdaptiveMobile Security can help you protect your communications infrastructure, subscribers and revenues, please contact sales@adaptivemobile.com.

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