ENEA
AdaptiveMobile Security

CASE STUDY

Real Time Voice Protection in the Middle East

A market leading Mobile Network Operator (MNO) in the Middle East faced pressure from the national regulator to combat serious fraud threats. These threats came from criminals using mobile voice services to carry out extremely convincing scams in an attempt to trick subscribers into providing financial and personally identifiable information (PII). These scams were carried out by manipulating calling numbers to spoof the numbers of real people.

Overview

Situation:	An MNO in the Middle East was experiencing call spoofing and other voice fraud threats.
Solution:	ENEA AdaptiveMobile Security Voice Protection
Success:	Identification and mitigation of a significant amount of call spoofing plus other voice frauds.
Impact:	The MNO met the requirements of the national regulator, protecting its subscribers, addressing customer complaints, as well as reducing lost call revenues.

Situation

In the world of telecoms, hiding someone's true origination or identity (either CLI or IP address) is called spoofing, a fraud which accounted for $2.63B of lost global revenues in 2021*. When this type of impersonation is combined with social engineering, it creates a powerful technique, used by criminals to carry out highly effective scams. In the case of this MNO, criminals were dialling its subscribers through the international interconnect, using carefully selected spoofed numbers, including those from the Ministry of Finance, other government departments, banks, and VIPs. The intent was to trick unsuspecting victims into believing calls were legitimate, enabling the criminals to successfully execute financial scams. Another related concern for the MNO was that its customers were complaining about overcharging for spoofed calls they had not made.

There was clearly a need for an effective security solution to provide voice call protection to combat illegal calls that were spoofing the country's number ranges.

*CFCA Fraud Loss Survey Report 2021

Solution

Why the Customer Chose AdaptiveMobile's Voice Firewall

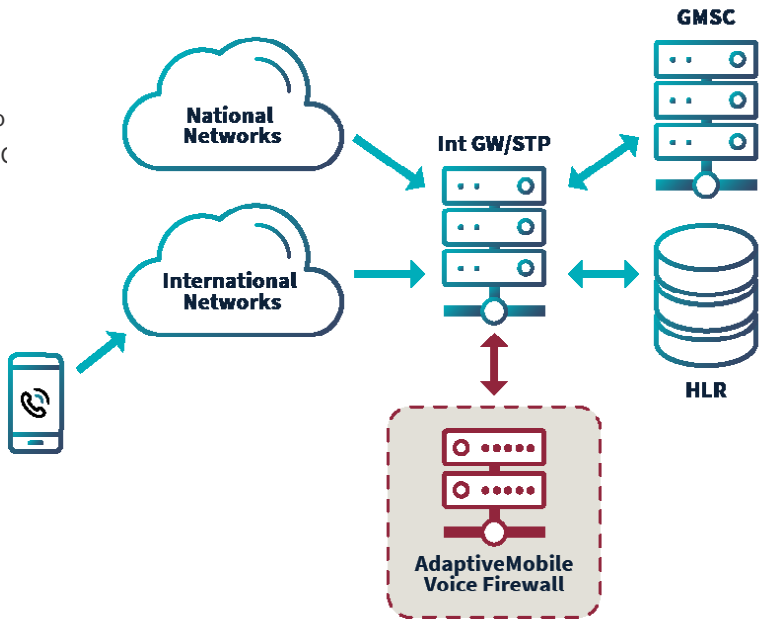
The MNO knew of AdaptiveMobile Security's reputation as a leading provider of signalling security solutions for mobile networks. By implementing AdaptiveMobile's Voice Firewall they would be able to reduce call spoofing fraud, and importantly, do this in real time, before the scams could be properly initiated. The operator also recognized that the AdaptiveMobile solution possessed a highly flexible rules engine, capable of rapidly adjusting to address new potential voice call threats and fraud risks. In addition, the AdaptiveMobile solution provided them with the agility and speed required to meet the stringent deadline placed on them by the authorities.

Ease of Deployment

Deployment is straightforward as there is no direct integratio required between the AdaptiveMobile Voice Firewall and the (or HLR. Integration and routing are achieved via the STP.

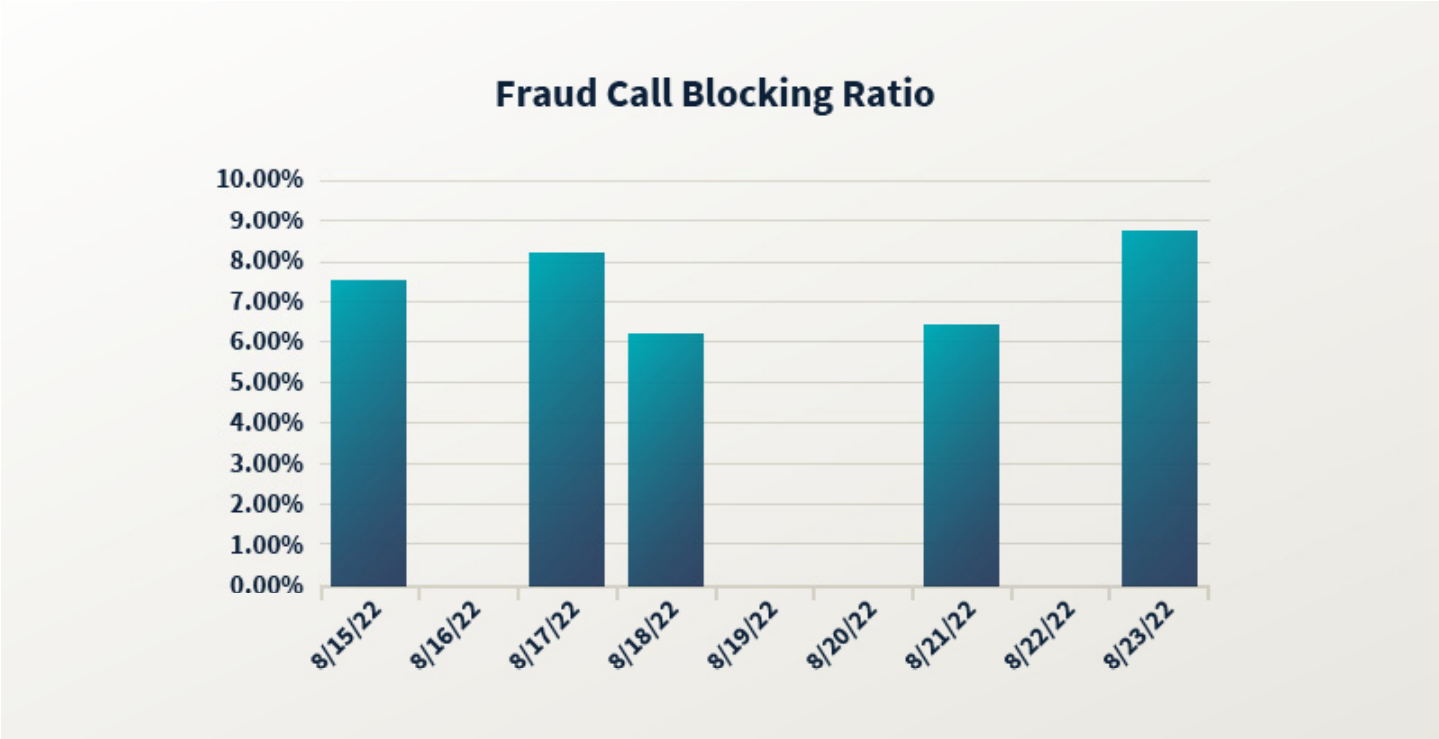
The AdaptiveMobile Voice Firewall Implementation

The AdaptiveMobile Voice Firewall can be applied to voice threats through acquiring messages in signalling protocol traffic, in real time, and then using network interactive logic to block specific voice fraud cases. The operator's GMSC detects incoming call requests from the international interconnects and then triggers the Voice Firewall service. The Voice Firewall checks the compliance of the incoming call as defined in the filtering criteria and then responds with an appropriate message to allow the call, or to reject the call, effectively acting as a policy decision point.



Success

Real World Results



Early data shows a significant blocking rate for voice fraud threats. It is too early to identify any trend, but it would be expected, as seen with many other security deployments from AdaptiveMobile, that the fraudulent call blocking ratio would decrease as criminals see their return on investment declining and perhaps move to other less secure networks.

Note: in addition to blocking spoofed calling numbers, the AdaptiveMobile voice protection solution was also set up to block some other voice threats, with their quantities included in the graph. These include Filter A - initial checks, Filter B - advanced check, etc.

However, data collected for a typical day shows that more than 84% of blocked calls were for the primary problem of spoofed numbers.

Impact

The Customer's Continued Security Advancements

Following the early success of the voice protection solution, activity is ongoing to implement an additional layer of security to prevent other voice fraud types.

In the meantime, the MNO has met the requirements of the national regulator, protecting its subscribers, addressing customer complaints, as well as reducing lost call revenues.

Why Choose AdaptiveMobile for Voice Protection

AdaptiveMobile Security can help mobile network operators (MNOs) take the right steps to tackle a broad range of challenges to voice services, enabling fraud identification and mitigation to help reduce subscriber complaints, loss of revenue and brand damage.

Security Expertise and Focus

- Industry leading delivery of active security for networks, blocking threats in real-time, with minimal false positives.
- Continued market leading operational security solutions and technology innovation.
- Contribution and heavy collaboration with the carrier community through active participation in the GSMA working groups and specialist teams and chairing of the N32 specification (5GC-5GC).

Signalling rules and functionality

- Enhanced beyond GSMA Cat 1, 2 and 3 and Low-Layer attack detection based on continual real world data analysis and research.
- Rules are validated with real world data from across 5 continents.
- Flexible powerful rule definitions across an exhaustive list of fields: MAP/CAP/TCAP/SCCP/Sigtran/Diameter/GTP-C/ISUP/SIP/HTTP/2.
- Cross-Protocol Location Correlation across SS7/Diameter/GTP-C/voice and 5G.
- Advanced threat reporting with drilldown to full details of the original source packet and business intelligence-based analysis.

Architecture

- Flexibility to perform passive analysis, active blocking, or combinations of these.
- Support for geographically distributed Voice Firewalls, centralized combined management and reporting.
- Trusted architecture at scale in Tier 1 operators.
- Support for intelligence sharing with open APIs for external analytics platforms.

Threat Intelligence Services

- AdaptiveMobile World Leading Threat Intelligence services available with global coverage.
- MNOs benefit from ongoing threat intelligence analysis.
- Market Leading Security Services for tuning, analysis, and ongoing monitoring of threat intelligence.
- Security Analysis and Research work together on world-class protection.

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 critical national communications infrastructure from malicious mobile network attacks by state-level threat actors please contact sales@adaptivemobile.com

Legal Notices

HEAD OFFICE

Ferry House, 48-52 Lower Mount St, Dublin 2.

Contact: sales@adaptivemobile.com

www.adaptivemobile.com

REGIONAL SALES CONTACT NUMBERS

US, Canada, Latin America Sales: +1 972 377 0014

UK Sales: +44 207 049 0421

Middle East Sales: +97144 33 75 83

Africa Sales: +27 87 5502315

Asia Sales: +65 31 58 12 83

European Sales: +353 1 524 9000

REGIONAL OPERATIONAL SUPPORT CONTACT NUMBERS

UK: +44 208 584 0041

Ireland: +353 1 514 3945

India: 000-800-100-7129

US, Canada: +1 877 267 0444

LATAM: +525584211344

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