



International Revenue Share Fraud The Value of International Premium Rate Test Numbers as a Fraud Indicator

International revenue share fraud – A threat you cannot afford to ignore.

CFCA GLOBAL FRAUD LOSS SURVEY 2017

Total Estimated Fraud Losses = **\$US29.2 Billion**

1.27% of Global Telecom Revenues

IRSF Estimated Fraud losses 2013 Survey

\$US1.8 Billion

IRSF Estimated Fraud losses 2015 Survey

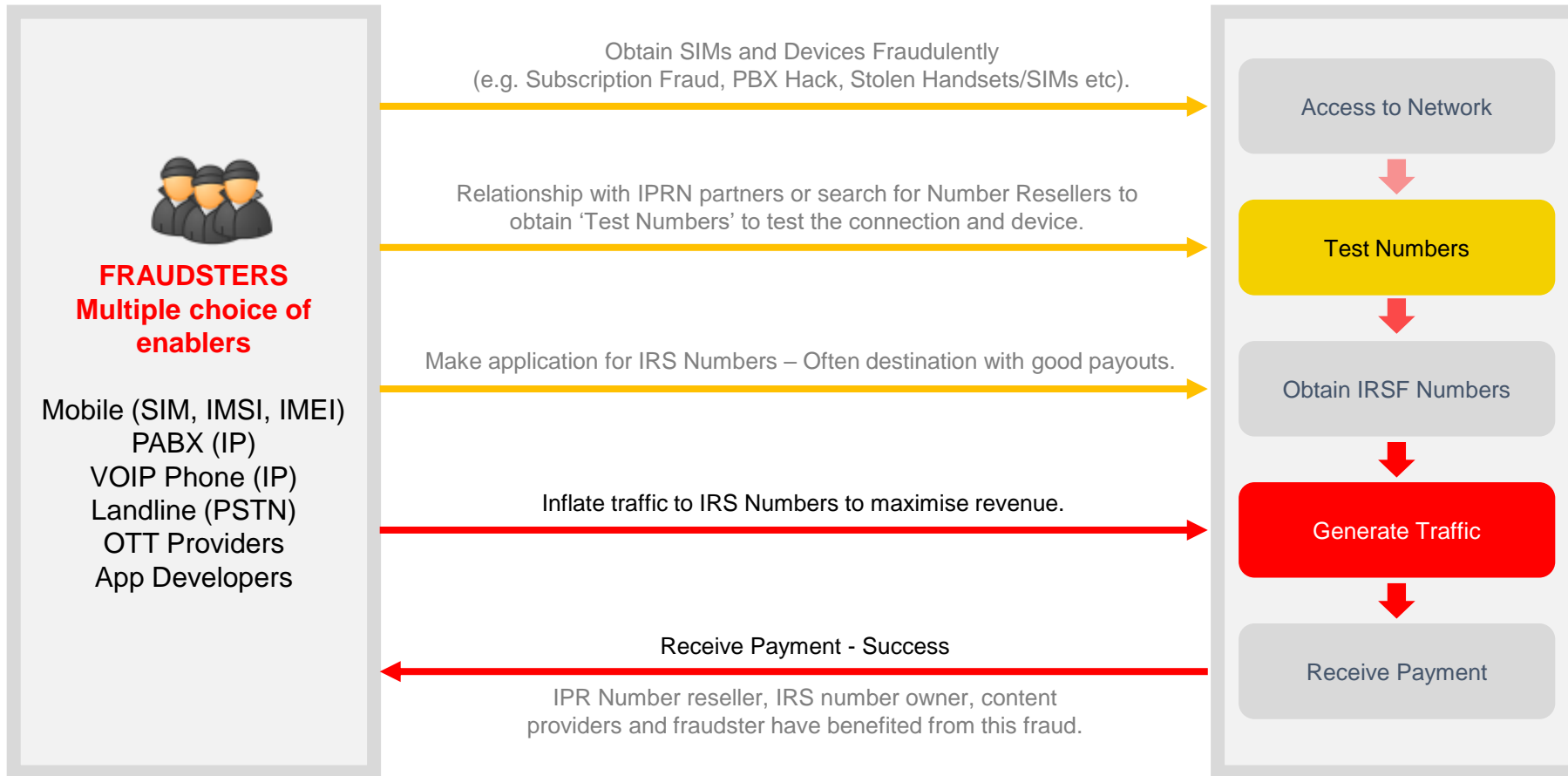
\$US10.7 Billion

IRSF Estimated Fraud losses 2017 Survey

\$US6.10 Billion

Up by 238% between 2013 and 2017

Typical modus operandi of fraudsters before an IRSF attack.



One common factor in the majority of IRSF attacks is the use of IPR Test Numbers. Fraudster must confirm that the device/enabler they are using to make their IRSF calls is able to complete a call to the number range and country they wish to call, from the country they are calling from.

Imagine the value to a victim operator if these test numbers were known, and a fraud alert could be generated if one of these numbers was called.

PRISM – a cloud based pioneering database to tackle IRSF fraud.

No technology overheads. **A simple and secure cloud database.**

Subscriber set up in few seconds.



Over 1.27 million Test Numbers representing 221 countries in PRISM (as at 20/07/2018). 160+ number resellers assessed. **Numbers**



updated every 2 weeks. PRISM numbers not advertised for 2 years now purged each month.



Simple to use. **No training required.** Subscription comes with **complete support and expert advice.**



The lowest cost IRSF Detection/Prevention tool available. ROI of several folds by stopping just one IRSF attacks.

How can PRISM help fight against IRSF attacks?

1

Use the *'PRISM Test Numbers'* or *'PRISM Wildcard Test Numbers'* as B-NO hotlist in your FMS.

2

Monitor all calls (A-NO) to this B-NO hotlist and destinations. Identify devices used (SIMs, IMEIs, PSTN, VoIP, PBX etc.) by the callers.

3

Alert all calls originating from the same number (A-NO) or devices used for making calls to the B-NO hotlist (e.g. SIMs, IMEIs, PBX etc.)

4

If a call alerts against a PRISM number, then it is because that number has been advertised by an IPRN Reseller. This short call becomes important

5

Search for other SIMs and devices that may also be under the control of these fraudsters and implement your approved procedures for IRSF incidents.

How can PRISM help fight against IRSF attacks?

6

In most IRSF incidents, fraudsters will first call an IPR Test Number to confirm that the destination country and number range can be reached from their calling location and from the device they are using to originate the calls

7

In many cases, these test calls occur 10 to 45 minutes before IRSF call pumping commences (or longer), to allow fraudster to establish their final arrangements

8

Look at recent IRSF call records, and in most cases you will see <1 to 2 minute calls to the IRSF destinations before the IRSF calls escalate to each destination. (This may not occur if Fraudster has an existing relationship with IPRN reseller)

9

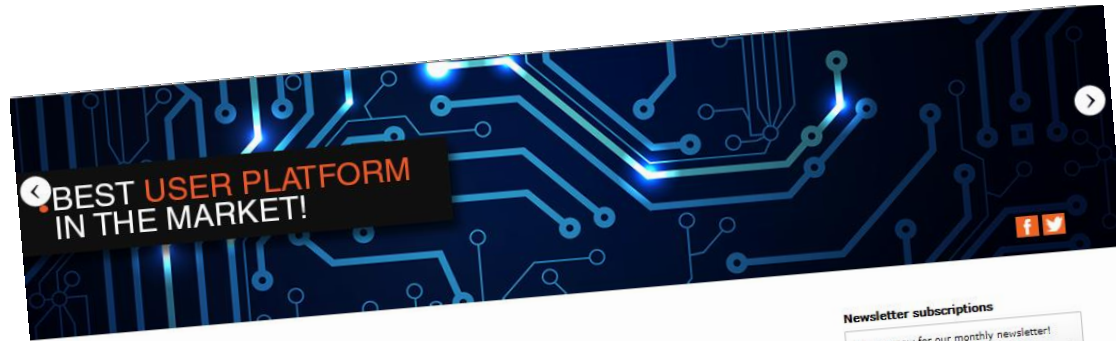
A hotlist alert from a PRISM number called will initiate an investigation and identify a pending IRSF attack, or provide confirmation that one has started

10

PRISM does not contain all IPR Test Numbers, but existing users advise that it consistently provides early warning in between 75 and 80% of IRSF attacks

Introduction to PRISM Database

Every 2 weeks we search 160 of these websites to create the PRISM database.



New International VAS Offer

* Domestic calls for each destination are not allowed. No payments will be made according to this restriction

Destination	Test Number
Afghanistan B1	93704860403
Albania A1	35551181228
Albania A2	355669160030
Albania B1	35545750812
Albania B2	35552450433
Albania C1	35542490448
Albania C2	35542490448
Albania C3	35542490448
Albania C4	35542490448
Albania C5	35542490448

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Send



Group Name	Number	Default payment terms
Afghanistan 11	0093777463904	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 12	0093780872998	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 13	0093752289134	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 14	0093795903362	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 16	0093770029876	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 17	0093797993904	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 18	0093780009987	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 20	0093780009985	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 24	0093546681160	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 26	0093763029036	EVERY 30 DAYS 45 DAYS DELAY
Afghanistan 31	0093729039110	EVERY 30 DAYS 30 DAYS DELAY
Afghanistan 9	0093779721503	EVERY 30 DAYS 30 DAYS DELAY
Albania 10	00355669170601	EVERY 30 DAYS 45 DAYS DELAY
Albania 11	0035552450295	EVERY 30 DAYS 45 DAYS DELAY
Albania 12	00355669141693	EVERY 30 DAYS 45 DAYS DELAY
Albania 4	0035542500450	EVERY 30 DAYS 45 DAYS DELAY
Albania 5	00355689326606	EVERY 30 DAYS 45 DAYS DELAY
Albania 7	00355681903655	EVERY 30 DAYS 30 DAYS DELAY
Albania 8	00355663946108	EVERY 30 DAYS 45 DAYS DELAY
Albania 9	0035545750871	EVERY 30 DAYS 45 DAYS DELAY
Algeria 3	0021372795033	EVERY 30 DAYS 30 DAYS DELAY
Algeria 5	00213695000163	EVERY 30 DAYS 45 DAYS DELAY
Algeria 6	00213559000011	EVERY 15 DAYS 30 DAYS DELAY

Navigation: Payouts, On-Line report, Numbers, Order, My account, Price lists, My news, Download, Customization, Invoice, News

Report view: Sum per number

Filter: Prefix (ANY, 1 246 256, 1 246 859a, 1 246 859b), Number from, Date from (2014-11-12), Date to (2014-11-12), Billing (Weekly, Monthly, Two monthly)

Buttons: Confirm, Today, Yesterday, Current Month, Last Month, Export

TEST NUMBERS and PRICE LIST
Download here

This week **HOT** terminations:
960 915 | 960 900 8 | 53 319 97
231 902 | 48 185 21 | 232 212 06

Be informed and check the section **NEWS!**

SILVER PAYOUTS for ONLY 250,000 minutes SPECIAL OFFER for NOVEMBER 2014

November 2014 NEW Terminations

+224 78 09	Guinea	+22478096980
+257 161 8	Burundi	+25716189130
+48 221 13	Poland	+48221138240
+232 212 06	Sierra Leone	+23221062200
+53 431 30	Cuba	+5343130080

User name	Prefix	PRN	Calls	Minutes	Currency	Revenue/min	Revenue	Date
test	1 246 859a	12468599140	6	0.78 min	USD	0.075	0.06	2014-11-12
test	1 473 507	14735077640	1	0.07 min	EUR	0.19	0.01	2014-11-12
test	1 473 901	14739018040	12	1.92 min	USD	0.087	0.17	2014-11-12
test	220 891	2208913040	3	0.15 min	USD	0.12	0.02	2014-11-12
test	220 99	2209974270	3	0.46 min	USD	0.115	0.06	2014-11-12
test	224 55 30	22455300860	1	0.17 min	USD	0.155	0.03	2014-11-12

Feedback

Navigation: HOME, ABOUT US, SERVICES, PAYMENTS, PREMIUM NUMBERS, PRIVACY POLICY, CONTACT US

Premium Numbers !

SR	Country	Currency	Rate/Daily	Rate Card XLS	Test Numbers
1	AfghanistanB1	USD	0.0725		93704860403
2	AlbaniaA2	EUR	0.075		355669160030
3	AlbaniaB1	EUR	0.075		35545750812

Login Screen



PRISM PRICING

A YATES FRAUD CONSULTING SOLUTION. DESIGNED AND DEVELOPED BY FRSLABS.

- Database is hosted on a Rackspace cloud server.
- Secure https access by subscribers to server via SSL Certificate.
- Database has an XLS upload and download feature.
- Browser access supports Chrome (Version 28+), Safari (Version 5+), Firefox 3.6 and IE 8+
- No technology overheads. A simple and secure cloud database. Subscriber set up in a few minutes.
- Simple to use. No training required. Subscription comes with complete support.
- There is an API to allow the automated downloading of PRISM numbers to customers FMS

PRISM Database Fields

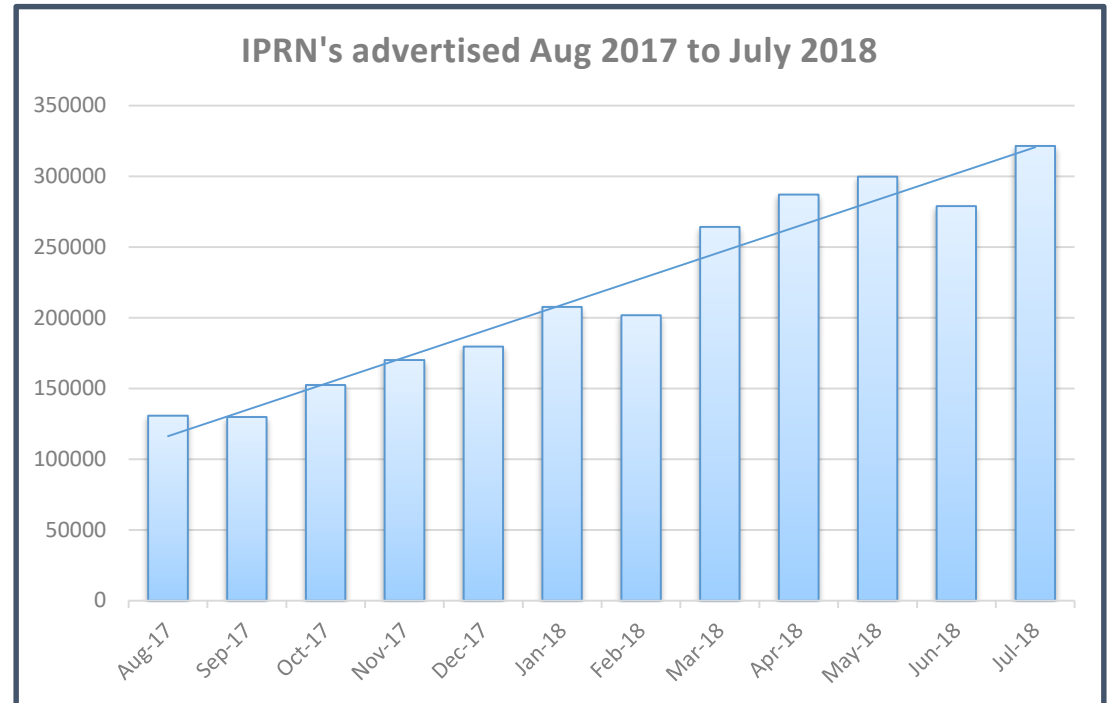
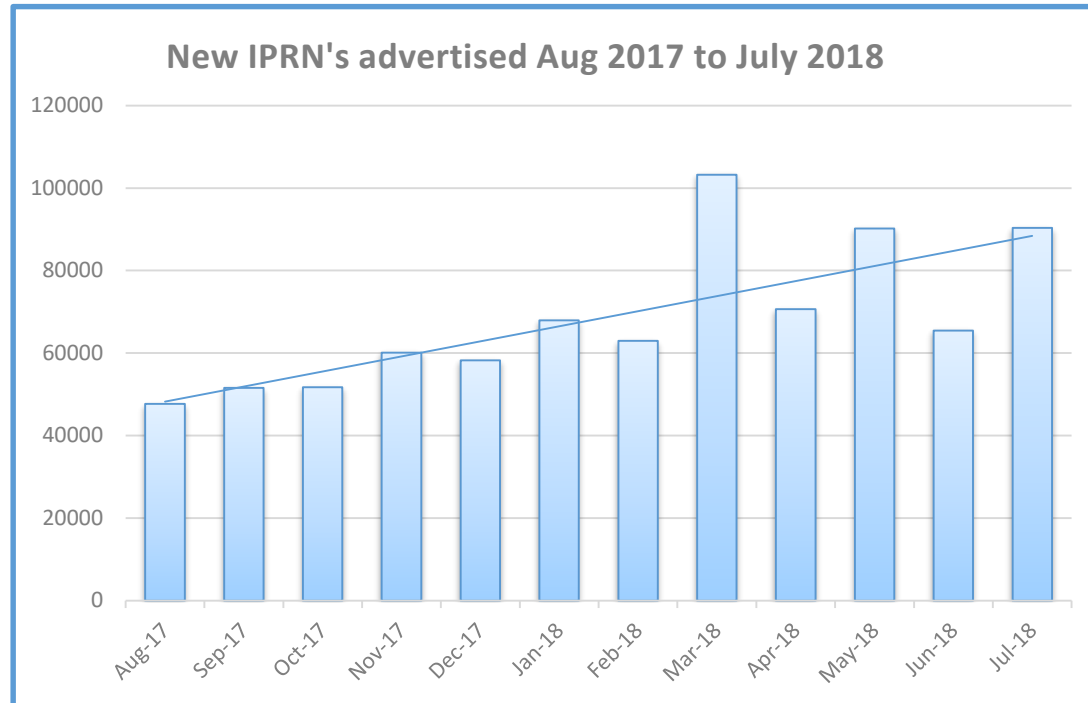
IRSF Test Numbers

The screenshot shows the PRISM database interface. At the top, there is a navigation bar with icons for Home, Admin, Dashboard, Feedback, Help, and Logout, along with the PRISM logo. Below the navigation bar, the total number of records is displayed as 1,271,920, with a report last updated on 20/07/2018 at 00:00:00. There are also buttons for Upload and Download. The main part of the interface is a table with the following columns: Terminating Country, Test Number, First Advertised Date, and Latest Update Date. The table contains 19 rows of data, all from Afghanistan. The footer shows the page number as Page 1 of 12,720.

	Terminating Country	Test Number	First Advertised Date	Latest Update Date
1	Afghanistan	93004884316	06/02/2018	06/02/2018
2	Afghanistan	93004884334	06/01/2018	06/01/2018
3	Afghanistan	93004884367	19/01/2018	19/01/2018
4	Afghanistan	93004884699	20/02/2018	20/02/2018
5	Afghanistan	93006427011	19/01/2018	19/01/2018
6	Afghanistan	93006427042	21/11/2017	21/11/2017
7	Afghanistan	93006427168	06/02/2018	06/02/2018
8	Afghanistan	93006427240	06/11/2017	06/11/2017
9	Afghanistan	93006427351	05/06/2017	05/06/2017
10	Afghanistan	93006427424	21/08/2017	21/08/2017
11	Afghanistan	93006427568	06/01/2018	06/01/2018
12	Afghanistan	93006427576	21/05/2017	21/05/2017
13	Afghanistan	93006427628	06/09/2017	06/09/2017
14	Afghanistan	93006427640	07/12/2017	07/12/2017
15	Afghanistan	93006427661	04/08/2017	04/08/2017
16	Afghanistan	93006427725	05/10/2017	05/10/2017
17	Afghanistan	93006427788	20/12/2017	20/07/2018
18	Afghanistan	93006427844	20/06/2017	20/06/2017
19	Afghanistan	93006427903	20/12/2017	20/12/2017

- Over 160 IPRN Websites monitored.
- Numbers updated every 2 weeks.
- Numbers have increased from 17,000 4 years ago to over 1.27 mil now (as at July 2018)
- Numbers originate from 221 Countries.
- The 1.27 mil unique numbers have been advertised over 1.6 Mil times over multiple websites.
- Also provide the PRISM 'Wildcard' database.
- Last 2 digits removed and replaced with Wildcards with over 7 million numbers in DB.
- Significant resource used to source, download and cleanse numbers before uploading to DB

Growth in New and currently advertised IPRN Numbers



- Many IPRN Providers are now removing detected numbers each month and replacing them with new numbers
- The frequency of these number changes required monthly PRISM updates to be moved to 2-weekly
- Over 500,000 new numbers added in past year to July 2018 (252,000 in same period 2017-18)

- There has been a significant increase in the numbers advertised each month by IPRN Providers
- Currently advertised numbers have increased from 130k to 321k in 12 month period (146% increase)
- These are the numbers most likely to be used as Test or IRSF numbers and should be considered the highest risk

Changes in IPRN Provider behaviour

PREVIOUS UPDATE 20 January 2017

Terminating Country	Total Numbers	% of Total
Cuba	47,066	11.41%
Latvia	25,701	6.23%
Lithuania	17,783	4.31%
Somalia	16,363	3.97%
Guinea	15,139	3.67%
Gambia	13,676	3.32%
Maldives	11,958	2.90%
Estonia	9,973	2.42%
Sierra Leone	8,248	2%
Zimbabwe	7,724	1.87%

CURRENT UPDATE 20 July 2018

Terminating Country	Total Numbers	% of Total
Cuba	64,362	5.06%
Latvia	37,845	2.98%
Somalia	31,888	2.51%
Lithuania	30,811	2.42%
Guinea	23,199	1.82%
Tunisia	21,425	1.68%
Algeria	21,088	1.66%
Morocco	20,502	1.61%
Maldives	19,830	1.56%
Estonia	17,418	1.37%

- Leading up to January 2017, the top 10 IPRN destinations remained fairly consistent with around 40-45% of all numbers relating to these 10 countries
- The top table to left is the result from January 2017, where 42.1% of all numbers in PRISM related to these 120 destinations
- Since Jan 2017, this percentage has decreased, with the top 10 responsible for 28.45% of numbers in Jan 2018, and down to 23.6% in July 2018
- IPRN Providers are moving way from the traditional 'high risk' destinations and now advertising more numbers in lower risk destinations
- These include destinations that have not appeared previously such as many European countries and others which are regarded as low risk
- This makes it more difficult to detect IRSF using traditional methods such as monitoring traffic to high risk destinations
- The Fraudsters strategy is likely to be to settle for a lower per call rate but a longer detection time which equals higher profits
- All 220 plus destinations in PRISM should now be considered as high risk
- Fortunately, irrespective of the risk profile of any destination, if a test number is called, and it is in PRISM, then a fraud alert will be generated
- Monitoring of historical high risk destinations, or numbers that have been detected from an earlier IRSF incident, is unlikely to provide the same result

MSRN/PRISM Database

- From fraud reports submitted, it has become apparent that many IPRN Providers are now including MSRN numbers in their offerings
- An MSRN (Mobile Station Roaming Number) is a temporary number assigned to a mobile customer which roams into another country and allows calls in to that customer number to be forwarded from the home network
- If an MSRN is hijacked and short-stopped, inward calls to a roaming customer from their home network may be terminated to an IPRN Provider controlled IVR
- We have now created a database from the PRISM numbers analysing all published MSRN ranges from operators IR21's to identify MSRN's being offered as IPRN's
- As at 20 July 2018, we have identified over 14,500 MSRN's in PRISM with over 4,000 advertised currently (as at 20 July 2018)
- If a visited roamer has his home country MSRN range blocked, no inbound calls from their home country will be received, which could also have a revenue impact
- The PRISM MSRN Database is also available for download along with the other databases available for PRISM customers

Test Numbers - Value as an IRSF identifier

CASE STUDY – EUROPEAN MOBILE OPERATOR (1)

- Fraudsters obtained 24 SIM cards and took these to a neighbouring country.
- 8th Jan, Fraudsters made 14 test calls. 4 were to PRISM IPR Test Numbers.
- 9th Jan, Fraudsters made 37 test calls. 25 were to PRISM Numbers. Last test call 9 Jan at 2027hrs
- 9th Jan, 2028 hrs through to 11 Jan 1638hrs. Made 8422 long duration IRSF calls
- 11 Jan, made 36 test calls between 1653 and 1753 hrs. All numbers in PRISM Database
- From then through to 1638 hrs on 12 Jan, made another 3080 long duration IRSF calls
- Total IRSF call volumes 386,000 minutes with retail value of €520,000
- 65 calls were to PRISM Test numbers – all would have generated alerts if hot-listed
- The first PRISM alarm would have occurred 26 hours before artificial inflation of traffic started, with 31 alarms possible before AIT commenced
- Had PRISM been used at the victim Operators, losses could have been less than €200.00
- Operator who was victim of this fraud is now a PRISM customer.

Test Numbers - Value as an IRSF identifier

CASE STUDY – EUROPEAN MOBILE OPERATOR (2)

- Ongoing issue in another European Country where Fraudsters were using Social Media to make friends in operators home country and convince them to send local SIM cards to them
- Fraudsters then using these SIM cards to make IRSF calls.
- Roaming records (NRTRDE) arriving 3-4 hours after traffic inflation starts, so losses high.
- Victim operator checked call records from previous few incidents and found obvious test numbers being called, most 30-40 minutes before AIT started.
- Checks with PRISM found all test calls appearing in IRSF call records were in PRISM Database.
- Checking further they found that because these test calls were 30-40 minutes earlier than the AIT traffic, Operator could have been notified in an earlier NRTRDE record if PRISM available
- This would have considerably reduced their fraud losses.
- Operator victim is now using PRISM.

Test Numbers - Value as an IRSF identifier

CASE STUDY – Asia Pacific MVNO (3)

- MVNO purchased capacity from Network Aggregators and on-sold services to his customers
- Received request from a European Travel agent wanting 70 Simcards for a tour group traveling to MVNO's home country. Simcards to be given to tourists and activated on arrival in MVNO's home country
- All details relating to requestor of Simcards checked out and Simcards sent to Europe in inactive state
- 1 month before tourists due to arrive in MVNO's home country, MVNO advised by his Network Aggregator that all 70 Simcards were being used for multiple calls in to known IRSF destinations
- MVNO found that all Simcards had been activated without his knowledge (suspected internal collusion) with roaming permitted and all calls made while Simcards still physically located in Europe
- Fraud continued for 77 hours during which time 605 unique numbers in 41 different countries were called
- Total losses amounted to US\$2.13million with these losses accumulating at \$US27,662 per hour
- When call records were analysed, it was found that the PRISM IPRN database could have generated 289 fraud alerts, 36 during the first 30 minutes of the fraud, with losses restricted to under \$US50,000
- Eventually the network aggregators who provided network access required full payment from the MVNO, which could not be paid, resulting in the MVNO going in to liquidation.

Business Case Considerations

- PRISM is quite different to the GSMA Hot Number Range list.
- GSMA numbers are those previously used for fraud and are typically blocked.
- PRISM numbers are Test Numbers, many of which are currently advertised by IPRN Resellers, to test that a number and destination can be called from a fraudsters location and device.
- Used as a Called Number Hotlist, these can provide an early warning prior to traffic inflation starting in an IRSF attack. It should only take 1 PRISM alert to initiate an investigation.
- An alert generated from a PRISM Test Number will allow an IRSF attack to be closed down before AIT starts, resulting in an immediate return of the investment made to access PRISM
- The Wildcard database has proven to be an effective tool to identify Wangiri Fraud attacks.
- Alerting against inward and outward calls to Wildcard numbers allows for identified Wangiri Fraud numbers to be blocked. This provides significant protection to customers.
- Low risk. Access to PRISM is by annual subscription. If it provides little value (which we know is unlikely) simply do not renew the subscription next year without penalty.

Important issues you should be aware of

- The 3rd and 4th columns in PRISM (slide 10) are headed 'First Advertised Date' and Latest Update Date'. If the Latest Update Date is the current month, this signifies that the number is currently being advertised by an IPRN Reseller.
- There are normally between 260,000 and 300,000 of these, so as they are current, they are considered the highest risk of being used during the month.
- The date difference between column First Advertised Date and Latest Update Date indicates how long that test number has been advertised.
- We have now provided another download option, which allows users to download only the new advertised numbers – numbers that have never previously been added to PRISM.
- If a number is in PRISM, then it is there because it has been advertised by an IPRN Reseller, either on their website or their rate card, as an International Revenue Share test number.
- PRISM does not contain numbers that have been used for IRSF (unless a test number has previously been used by an IPRN Reseller in their general numbering pool).
- Users have the option of downloading these numbers directly, or utilising the API we have developed to push the number updates automatically as they are ready.

Final Words

- Those who are using PRISM now rely on this as a key tool in their IRSF defence strategy.
- Unfortunately many of the existing PRISM customers started using the product after one or more significant IRSF hits. All would agree that they should have done this earlier.
- We are now adding between 75,000 and 100,000 new numbers to PRISM every month and the number of IPRN Resellers continues to increase.
- The CFCFA survey results speak for themselves – Overall fraud is dropping by 17.8% but IRSF is up by 238% since the 2013 survey. The number of IPRN's advertised each month has increased by over 146% between August 2017 and July 2018
- The industry has failed to find a way to manage this fraud over many years, and there is nothing happening currently that is likely to change that in the near future. This requires individual CSP's, and their FMS Vendors to develop their own strategy to manage their IRSF risk
- The majority of fraud enablers are being used for IRSF or related frauds.
- A standard Rules based FMS will provide some protection, but PRISM can improve that detection rate by 75-80% through early warnings.

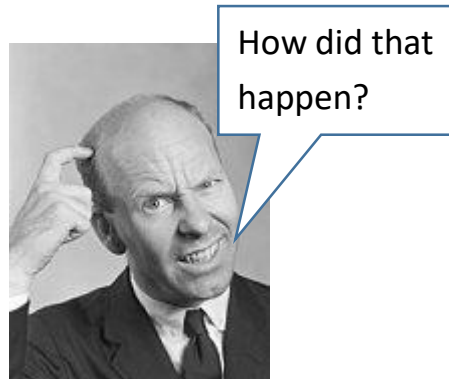
One low subscription fee – quick set up – real savings.

“IRSF is one of the top Emerging Threats”

Source: CFCFA Global Fraud Loss Survey 2011 .

~~“IRSF is one of the now the top Emerging Industry Threats”~~

Source: CSP’s who have suffered significant IRSF attacks in 2015.



Thank You

colin@yatesfraudconsulting.com

pshankar@frslabs.com

