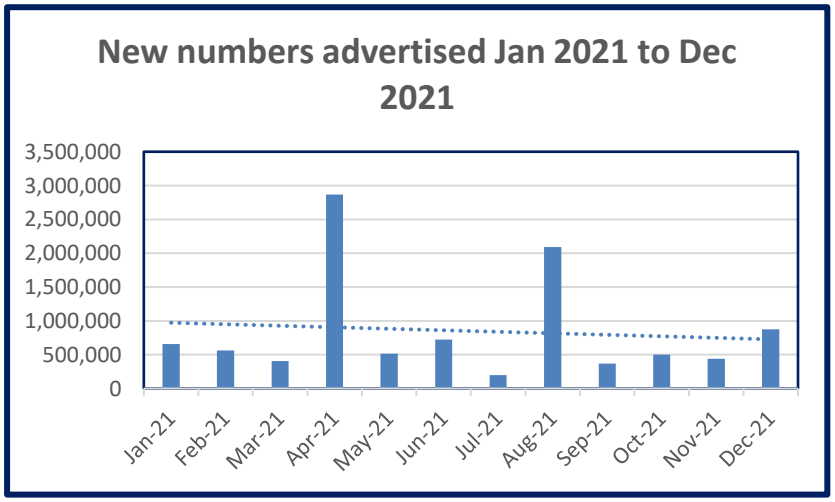
PRISM – FAQ

Q. What is PRISM and what can it do?

A. PRISM is a database of over 7 million International Revenue Share test numbers (as at 20th January 2022), which are provided by IPRN resellers to test that a revenue share destination and number range can be called from a given location. These test numbers, used correctly in a hotlist, are a valuable tool to alert CSP's of a pending or live IRSF attack.

Q. How are these IRS Test Numbers kept up to date?

A. New IPRN Resellers are being identified regularly, and existing number Resellers are updating and changing their numbers frequently, certainly on a 2-4 weekly basis. To ensure that PRISM numbers are current, the database was updated every 4 weeks however, due to the increase in new numbers being added to the IPRN's rate cards at odd times during each month, these monthly database updates have now been increased to twice per month. PRISM users are notified each time a new update is available so that this new version of PRISM can be downloaded. This notification also includes information on current high risk destinations for the month or any other information that is considered of interest to our PRISM users. New updates are now made available around the 6th and 20th day of each month. We can add anywhere between 300,000 and 900,000 new numbers to the database each month. The numbers advertised each month continues to increase. In January 2016, there were 60,000 IPRN's advertised that month. In Jan 2022, we identified over 3 million numbers advertised, an increase of 4,900% over this 5-year period (average 980% per year). The new numbers added each month (numbers not seen previously on an IPRN Rate Card) between Jan and Dec 2021 are indicated on the graph below. Total new numbers during this period exceeded 10 million.



Q. How do I use PRISM?

A. The PRISM database should be used as a hotlist on all called numbers from a Fraud Management System or through other network monitoring systems that are available, and also on all roaming traffic, (inbound and outbound). Once an alert is generated the originating device and subscriber should be investigated to determine if they are fraudulent and this may also lead to the identification of other fraudulent connections.

Q. Why would I utilise PRISM on inbound roaming traffic?

A. This is an opportunity to provide some added value to your roaming partners. IRSF losses through the use of a Simcard roaming in a visited network can increase at a rate of over €1,000 per hour (significantly more if International Call Forwarding or multiple Simcards are used). A visited network is required to provide a home network with details of roaming calls within 4 hours. Alerting your roaming partner of likely IRSF activity an hour or two before they receive NRTRDE files could help them avoid significant losses. This could be seen as a differentiator of service from other networks and could result in your organisation being considered a preferred roaming partner, consequently increasing your roaming revenues.

Q. I don't have an FMS. Can I still use PRISM?

A. Yes you can still use PRISM by integrating it into your manual or semi-automatic hotlist checking processes. Alternatively there are some low cost FMS offerings available which can automate this function for you. Obviously the key to maximising the value from using PRISM is the reaction time between the time any alert is generated and the time a fraudulent device is identified and taken down. We can assist you with recommendations for some FMS providers who have integrated PRISM in to their systems.

Q. How does PRISM differ from other commercial number databases on the market?

A. PRISM contains IRS test numbers that we know are currently being offered for use by IPRN Providers. If a number is in PRISM, it is being advertised by an IPRN Provider. This includes the many ITU numbers that are allocated to operators and are then leased on to IPRN resellers, so may be used in IRSF attacks. It also includes unallocated, invalid and in some cases customer numbers which are hijacked (short-stopped) by organised fraud groups.

Q. How does PRISM differ from the GSMA hotlist number range database?

A. The GSMA hotlist number database is compiled using operator fraud reports of actual IRSF incidents and therefore relies on the goodwill of operators to share such information with the GSMA. It also relies on the GSMA publishing updates to these numbers and actively managing the database. PRISM is an actively managed database with updates, providing new IPR Test Numbers gained from analysing the content of new and known IPRN Reseller websites, every 2 weeks. Typical updates will contain any new numbers identified, plus

retain previous numbers not published by the IPRN Resellers during this period, as it has been found that often these numbers will re-appear, or have been traded with another Reseller. In this way the latest version of the PRISM database is always up to date with all known test numbers that may be used. Also, the GSMA Hotlist Number Database contains numbers that have been used for fraud calls. PRISM contains test numbers, which will alert you to a likely IRSF attack, before fraud losses escalate. A recent review by an FMS provider whose customers were suffering regular IRSF attacks and were relying on the GSMA Hot number range list to identify suspected IRSF calls, found that over 60% of the IRSF attacks they had suffered during this period could have been prevented had they been using PRISM.

Q. Can we just block the numbers in the PRISM database?

A. PRISM contains numbers that are being advertised as International Revenue Share test numbers. We do not recommend that these numbers are blocked, but rather used in a hotlist so you can be alerted to any activity on the network that could warn you of a potential IRSF attack. If you block these numbers, which are not typically used in the actual IRSF attack itself, then you will lose the intelligence that these numbers can provide as an early warning tool. Fraudsters often have access to multiple devices and an early warning of a likely IRSF attack provides the opportunity to investigate and identify any other devices that should also be blocked. Some IPRN Resellers do provide numbers for legitimate purposes, such as content services, Psychic lines etc. Blocking these numbers could prevent customers accessing a legitimate service, preventing revenue. We are also finding that there are more MSRN's being advertised as IPRN's and these numbers should not be blocked.

Q. What is an MSRN and how can these be used to generate fraudulent income?

A. An MSRN is a Mobile Station Roaming Number, a temporary number that is assigned to a mobile customer who roams in to another country and facilitates the routing of a call to that customers mobile originating from their home network. If that MSRN is blocked, the roaming customer will be unable to receive inbound calls which is likely to result in customer complaints and lost revenue. As at 20th January 2022, there were over 16,700 MSRN's currently advertised by IPRN Providers, and over 48,000 MSRN's in PRISM (which includes those previously advertised). A separate database containing these MSRN's is also available to our PRISM customers to download. Fraudsters will arrange for calls using these MSRN's to be hijacked and short-stopped (terminated on an IVR controlled by the IPRN Provider).

Q. I have heard that some PRISM users have occasionally located an assigned customer number within the database. How can that happen?

A. If a number is entered in the PRISM database, then it has been advertised by an IPRN Reseller on their rate card or test number schedule. Some IPRN Resellers are heavily involved in number misappropriation (number hijacking), and will often hijack a small operators complete number range during a period when they intend carrying out an IRSF attack. In this case, they will often publish assigned customer numbers which will only

generate revenue for them during the period of the number hijack. This is another very good reason why PRISM numbers should not be blocked. In this case, a very quick investigation could reveal that the call is placed by a legitimate customer to the genuine user of the PRISM advertised number.

Q. Can PRISM numbers be uploaded directly to an Operators FMS without any rejections?

A. Yes. Through initial testing, we found there were white characters and other formulas imbedded within some Resellers numbers that caused these numbers to be rejected from an FMS. Now all new numbers are subjected to a 'cleansing process' by engineers at FRSLABS (responsible for maintaining the PRISM database) to ensure there are now no rejections. All PRISM customers are provided with a secure and confidential access to our PRISM platform to download the PRISM databases, and also have the option to utilise our REST API to automate this function.

Q. What does a typical IRS test call look like?

A. A typical test call will consist of very short calls (sometimes as short as 2 or 3 seconds) to these test numbers. If you have suffered an IRSF attack at any time, look through the fraud calling schedule, and the test calls will be obvious. These will generally be between 1 and 5 short calls to the same numbers followed by multiple calls to different numbers within the same ranges. If the called country is changed midway through the IRSF attack, you will generally see more short duration calls to that Country Code, again checking to ensure that this new Country can still be connected from the device being used. Occasionally, if the fraudster has an existing relationship with an IPRN Reseller, there may be no test calls.

Q. Other than IRSF what else can PRISM be used for?

A. Since PRISM contains a list of active IRS test numbers it can be used for a number of purposes other than detecting IRSF attacks. One example is using the PRISM database for Wangiri fraud detection. By replacing the last 2 digits of the IRS test numbers with wildcards we have a wildcard database consisting of over 15 million numbers. Monitoring calls from these numbers onto your network, especially where these numbers are dialling more than a certain number of unique domestic numbers, has been shown to be effective in detecting Wangiri fraud attacks. Similarly this also works as an outgoing hot list if a rule is set at say >5 calls to a specific PRISM range from different subscribers in xx minutes.

Q. Does it really work?

A. Yes. Our user experience has shown that PRISM does work. It is actively managed and updated on a fortnightly basis and while we don't claim that it contains every single IRS test number it does provide very effective protection. Existing PRISM users now regard this database as the key defensive tool in their IRSF detection strategy. Only one alert from a test number dialled is necessary to identify a possible IRSF attack. A recent analysis of calls made

during an IRSF attack on a network which was not a PRISM customer found that from 18,000 calls to 745 unique numbers, 260 of these numbers were recorded in PRISM. Had this operator been using PRISM, 260 IRS Fraud Alerts could have been raised, although the fraud would have been detected, and shut down following the first alert. We have many similar examples to this one.

Q. Does PRISM only detect fraud on mobile networks?

A. No. If an IRSF test number that is in the PRISM database is called, it does not matter whether the device used to generate the call is a mobile, a PBX, VoIP or any other technology. If that called number is checked against the PRISM hotlist, then a fraud alert will be generated. PRISM has been successful at identifying IRSF incidents on mobile, fixed and Voice over IP networks.

Q. Would it not be easier just to monitor for multiple calls in to high risk destinations

Y. Perhaps in previous years yes, but it is difficult to identify a high-risk destination today. There are over 230 destination countries represented within the PRISM database. In January 2016, 42.1% of these PRISM numbers related to what were then regarded as our highest risk destinations (Cuba, Latvia, Somalia etc). In July 2018, the top 10 PRISM destinations only accounted for 23.6% of the numbers in PRISM, and this dropped to under 20% in 2021. Fraudsters know that most networks will monitor the traditional high-risk destinations, or block access to them. Many IPRN Providers are now publishing fewer of these numbers and increasing their number stock with European, South American and some African countries which have historically been regarded as lower risk. PRISM is the simple but effective detection tool that can provide you with some protection over all 230 destinations world-wide.

Q. As a customer, how do I know when the number updates are ready to download.

A. Every PRISM user receives an email once the fortnightly number update is complete and ready to download. We also provide an API (at no additional cost to the user) so that these numbers can be pushed to you as soon as they are available.

Q. What is the cost of a PRISM licence?

A. A single user (operator) PRISM licence is available at a cost of €7,500.00 per year. Multi operator (Group) licences are also available by negotiation.

Q. How do I get access to PRISM?

A. Email Colin Yates at colin@yatesfraudconsulting.com or Shankar Palaniandy at shankar.palaniandy@frslabs.com for more information (including an application form), or visit http://www.yatesfraudconsulting.com or http://www.frslabs.com.