

Forensic Focus – Articles

DIGITAL FORENSICS ARTICLES AND RESEARCH PAPERS

DATA RECOVERY

Cellular Provider Record Retention Periods

POSTED BY SCAR · APRIL 18, 2017 · 8 COMMENTS

by Patrick Siewert, Principal Consultant, Pro Digital Forensic Consulting

I just returned from a fantastic few days at the Virginia Trial Lawyers Association 2017 annual conference. I spent 3 days meeting with litigators from all over Virginia about the various ways data can help in their cases. Part of the nuance of operating a digital forensic consultancy is to actively listen and try to drill down exactly how digital forensics and related services can add value in different types of litigation. For example, there is data that is contained on many mobile devices that could serve to be the digital “smoking gun” with regard to distracted driving cases. However, the problem is that when litigation over distracted driving takes place, the data (and likely the device) are long gone because the justice system grinds slowly. This makes the value that digital forensics can add in these cases somewhat minimized, unless the case involved law enforcement and they happened to have the foresight to get a device extraction at or close to the time of the incident.

One of the valuable areas I’ve been spreading the word about to all of my partners in litigation is the power of cellular call detail records. Everyone carries around a mini tracking device in their pocket in the form of a smart phone and it is virtually always connected to a cellular network. That means data can be retrieved, analyzed and even mapped-out to show location information. Other valuable data can be known associates, cell tower “ping” data, cell tower sector data and so on. However, all of the cellular companies retain these records for different periods of time. When I talk about this with litigators and their staff, they almost always ask how long the data is retained. The answer is... (wait for it)... It depends! Being that I get this question quite often, I decided to contact each of the five major U.S. cellular carriers and ask them myself. I’ve been through training previously that detail this information, but nothing beats getting the information directly from the source. So here we go!

Definitions

Before we discuss the retention periods themselves, some explanation is required. First, there are only five cellular companies who provide service in the United States. They are:

- Verizon Wireless
- AT&T

- Sprint
- T-Mobile
- U.S. Cellular

All of the others that you see commercials for on TV – Cricket, Boost, Virgin Wireless, Jitterbug, Straight Talk, Tracfone, Family Mobile – and so on, lease their service from one (or more) of the five carriers listed above. From an investigative standpoint, it makes it simpler that we only have five potential sources where that data could be kept.

Other terminology is also important. Some additional definitions for terms that will be used later are:

- **SMS content:** Text message detailed content. This includes standard text message only and is a different service from Apple proprietary iMessages and third-party text message apps.
- **Cell Tower:** The sole-source connection that a device makes on the given cellular network. Call detail records generally provide this information via GPS latitude & longitude. Many will also have the sector or side of the tower detailed as well.
- **Tower Dump:** A listing of all devices connected to a given cellular tower at a certain point in time. These are mostly passive connections, but all cell phones need to be connected to a cellular tower in order to receive cellular phone calls.
- **PCMD:** Per call measurement data. This data helps determine the distance a cell phone (or handset) is from a particular cell tower during a call. It is allegedly accurate within 10 meters or so.
- **NELOS:** The same as PCMD, only NELOS is the term used by AT&T
- **RTT:** Range to Tower. The same as PCMD & NELOS, but RTT is used by Verizon Wireless

These definitions will become important as we list the particular data areas and their retention periods.

Cellular Provider Retention Periods

All cellular service providers retain different types of data for different time periods. When investigating a case, it's important to know how long you may have access to this data for, otherwise it could be an investigative red herring. It's also important to note that these retention policies are not written in stone and can be modified by the provider at any time. The retention periods below were provided by each of the 5 major U.S. Cellular carriers themselves on the date of this publication:

Verizon Wireless

Subscriber Information: 7-10 years

Call History: 7 years

Tower Locations as they related to Call History: 1 rolling calendar year

SMS Content: 3-5 days (although I've been told unofficially it may be as much as 7-10 days)

Tower Dumps: 1 year

Range to Tower (RTT) Data: 8 days

AT&T

Subscriber Information: 7 Years

Call History: 7 years

Tower Locations as they related to Call History: 7 years

SMS Content: Not Available
Tower Dumps: 7 years
Range to Tower (RTT) Data: 180 days

Sprint

Subscriber Information: 10 years
Call History: 18 months. Bill reprint form 7-10 years, pre-pay accounts only 18 months regardless.
Tower Locations as they related to Call History: 18 months
SMS Content: Not Available
Tower Dumps: 18 months
Range to Tower (RTT) Data: 14-90 days. The technician advised that after 14 days, certain detail in these records is purged, but the remainder is kept for up to 90 days.

T-Mobile

Subscriber Information: 3-5 years. Canceled accounts are purged after account closes.
Call History: 23 months
Tower Locations as they related to Call History: 23 months
SMS Content: Not Available
Tower Dumps: 3 months
Range to Tower (RTT) Data: 23 months. This seems rather long to me, but the technician repeated it on the phone.

U.S. Cellular

Subscriber Information: up to 7 years
Call History: 1 rolling calendar year. Bill reprint: 7 years.
Tower Locations as they related to Call History: 1 rolling calendar year
SMS Content: 3-5 days
Tower Dumps: 1 rolling calendar year
Range to Tower (RTT) Data: Not Available (technician stated would be coming soon).

As you can see, the retention periods and even the types of available records are not uniform, making this type of information crucial in both criminal and civil investigations alike. For records such as bill reprint, the detail in this data will be far less than we normally see in traditional investigative cellular call detail records, so I wouldn't rely on this information for anything other than basic communication documentation. As a rule, I recommend checking with the provider first to see if the data you're looking for is still available.

Wrapping it Up

In the right hands and in the spirit of the holistic mobile investigation, cellular call detail records can be a powerful piece of evidence to help confirm or refute a person's location during a given time frame or incident. However, the ability to know what types of data are available, how long the data is accessible for and how to analyze and explain that data is a crucial intangible in any case. Without that, it's all just one big spreadsheet!

About Patrick Siewart

Patrick Siewert is the Principal Consultant of Pro Digital Forensic Consulting (www.ProDigital4n6.com), based in Richmond, Virginia. In 15 years of law enforcement, he investigated hundreds of high-tech crimes, incorporating digital forensics into the investigations, and was responsible for investigating some of the highest jury and plea bargain child exploitation investigations in Virginia court history.

Patrick is a graduate of SCERS, BCERT, the Reid School of Interview & Interrogation and multiple online investigation schools (among others). He continues to hone his digital forensic expertise in the private sector while growing his consulting & investigation business marketed toward litigators, professional investigators and corporations, while keeping in touch with the public safety community as a Law Enforcement Instructor.

About scar

Scar de Courcier is an assistant editor at Forensic Focus.

[View all posts by scar »](#)

Discussion

8 thoughts on “Cellular Provider Record Retention Periods”

1. So none of these companies keep the actual content of an SMS message save for verizon, which does so for 3-5 (possibly as long as) 10 days?

POSTED BY DAK | OCTOBER 18, 2017, 11:16 AM

REPLY TO THIS COMMENT

2. The problem with your ending statement is that mobiles will passively ping many towers within about a 20 mile radius, therefore making the “location” of a phone at a given time inconclusive. What would be necessary is not only tower information, but also GPS and possible Wi-Fi history of the device’s MAC address. This would make it entirely accurate enough to pinpoint exactly where a mobile phone was at any given time. If someone disables their device’s GPS, has Wi-Fi off (including passive scanning for networks, which is by default on), and simply has the phone on (passively connected to a tower), this data is unreliable as to where they were located at any given time. If one wants to stay invisible, first rule is to not have a smartphone. Secondly, if they insist on keeping a smartphone, turn on Airplane Mode and disable Wi-Fi scanning and GPS.

Interesting article. Cheers!

POSTED BY J | OCTOBER 26, 2017, 12:14 AM

REPLY TO THIS COMMENT

3. Great reporting! This information is slightly different from what has been reported previously. For example TMobile cell tower information is now 23 months. It has been reported as 7 years before – back in 2015. It sounds like you confirmed this new information. How confident are you in this new information?

Thank you!

POSTED BY D | NOVEMBER 26, 2017, 2:31 PM

REPLY TO THIS COMMENT

4. Dak- That is correct. None of them retain text message content, save Verizon wireless for the amount of time listed.

J- I completely agree and generally speaking, I always prefer a more “holistic” approach to the analysis, meaning getting the records AND the device to help prove the best location, but many times this is not available. Thanks for the feedback, though!

D- I’m as confident as I can be speaking with a line-level compliance analyst. Sometimes you speak to different people and get different answers. I’ve received feedback from others that it’s not 100% accurate, but close.

POSTED BY **PRODIGITAL4N6** | JANUARY 10, 2018, 11:58 PM

REPLY TO THIS COMMENT

5. There are dozens of wireless phone companies in the United States who DO NOT lease their services from the 5 companies that you listed above. In fact, almost all of the 5 companies that you listed actually lease services in certain areas of rural America from the smaller wireless providers because the large companies have not built their networks out yet.

POSTED BY **IWORKFORTHELITTLEGUYS** | JANUARY 23, 2018, 10:13 PM

REPLY TO THIS COMMENT

6. Any idea if these time periods relate to former subscriber records as well? In other words if a person switched carriers 4 years ago, do these stated time periods include these former customers?

POSTED BY **OLDCSM** | JULY 14, 2018, 5:05 PM

REPLY TO THIS COMMENT

- It depends on the provider. The provider compliance contact numbers are all available on search.org ISP directory listing.

POSTED BY **PRODIGITAL4N6** | JULY 16, 2018, 1:50 PM

REPLY TO THIS COMMENT

7. So if I wanted to retrieve text messages records from 10 years ago... would that be possible?

POSTED BY **DERRICK LEE** | JANUARY 9, 2019, 8:32 PM

REPLY TO THIS COMMENT

This site uses Akismet to reduce spam. [Learn how your comment data is processed.](#)

Forensic Focus – Articles

[Blog at WordPress.com.](#)