



Survey Sampling International

info@surveysampling.com • surveysampling.com



## Wireless Sample Methodology

SSI offers wireless/mobile sample for researchers who want to help balance their telephone surveys or reach hard-to-find segments of the population. This offering reduces the potential of coverage bias by providing researchers with a non-overlapping sampling frame to complement SSI's Random Digit Dial (RDD) telephone sample.

### Frame Construction

SSI starts with the most recent monthly Telcordia TPM (Terminating Point Master) Data file. This is Telcordia's master file of NPA-NXX and Block-ID records for the North American Number Plan. It contains at least one record per NPA-NXX. For prefixes (NPA-NXXs) where 1000-block number pooling is in effect, this file also provides information for individual 1000-blocks. This allows users to identify those 1000-blocks that have either not been assigned for service or that have been allocated to different service providers.

### Selection of wireless prefixes and blocks

From this file, SSI selects all records (NPA-NXXs and/or 1000-blocks) where the NXXTYPE is:

- 04 Dedicated to Cellular
- 55, 60 Special/Selective Billing Option – Cellular
- 65 Miscellaneous Service (non-500 PCS)
- 67, 68 Special/Selective Billing Options – PCS
- 58, 63 Special/Selective Billing Options - Cell, paging, mobile
- 50 Shared 3 or more POTS, Cellular, Paging
- 54 Shared POTS and Cellular
- 66 Shared POTS and PCS (non-500)

and

Dialable Indicator is 1 (yes, dialable by subscriber)

Point ID is 48 non-protected, Alaska and Hawaii

Change Code is not Z (deleted but preserved for billing) or D (Deleted)

- New exchanges/1000-blocks are included in the frame. They have an activation date on or before the release date associated with the release date of the wireless frame.
- Dedicated US Mobile (IMTS) and Paging services will not be included. However, numbers belonging to paging or IMTS services may be encountered in 'mixed' or 'shared' blocks selected above.

### File Expansion

Exchange records for which there were no 1000-block records are expanded to ten (10) 1000-block records. This file is then further expanded to a file of 100-blocks, 10 100-block records per 1000-block containing the same information as the 1000-block record.

"Mixed" or "shared" 100-blocks (NXXTYPES 50, 54, 66) are then compared to SSI's list-assisted RDD database.

*Continued on next page*



Survey Sampling International

info@surveysampling.com • surveysampling.com



100-blocks with no listed numbers are retained in the wireless frame and 100-blocks containing listed numbers on the RDD frame are removed. The result is a frame of 100-blocks that is mutually exclusive of SSI's list-assisted RDD frame while allowing coverage in prefixes and 1000-blocks that potentially provide both landline and wireless service.

### **Telcordia Information on the Database**

An OCN (Operating Company Number) for the 1000-block is retained on each record.

The Carrier Name has been attached to each record based on a Telcordia table of OCN codes and names. Carrier Names and codes (OCN) frequently do not reflect mergers and acquisitions. These acquisitions may be national in scope or state specific. For example, Southwestern Bell Wireless and parts of Pacific Bell Wireless were bought by Cingular but still reflect the original carrier name and OCN. Carrier Names and codes are frequently different by state, particularly for large wireless companies offering national or almost national service. These companies also frequently distinguish (different corporate entities) between their landline, cellular and paging divisions. Therefore a unique OCN will not always represent a unique carrier and visa versa. The carrier identification is for the 1000-block and will be inaccurate for subscribers who have ported their cell phone number to a different cellular provider.

- Exchange Type (NXXTYPE).
- Billing Center (Exchange Place Name) associated with the prefix.
- Billing State for Billing Center of the prefix or exchange.
- Change Code (see appendix A). As described above most New "N" prefixes are likely to be populated at the time a sample is selected. However, clients may optionally exclude 100-blocks with a Change Code of "N" in the interest of improved efficiency or receive the Change Code in the keyline of the sample for informational/analytical purposes.

### **Information Added by SSI to the Database**

- FIPS state and county codes are appended to each 100-block based on the billing coordinates of the prefix. Since wireless exchange boundaries are significantly larger than most landline exchanges, many counties will not be represented in this file or may under-represented.
- Alpha Time Zone associated with the prefix.
- State Abbreviation (based on FIPS Code and may be different from Billing State).
- Additional FIPS based geography codes (Census Region, MSA, etc.) have been added to the database based on the SSI FIPS code.
- Shared Flag easily identifies 100-blocks that have NXXTYPE = 50, 54, or 66. Clients may optionally include or exclude 100-blocks with a Shared Flag of "Y" or receive the Shared Flag in the keyline of their sample for informational or analytical purposes.
  - "Y" = 100-block is in a 'shared' prefix/1000-block
  - "N" = 100-block is not in a 'shared' prefix/1000-block

### **Sample Selection**

The file of 100-blocks is sorted by FIPS Code, Carrier name and 100-block. The intent is to provide a stratification that will yield a sample that is representative both geographically and by large and small carrier. A sampling interval is determined by dividing the universe of eligible 100-blocks by the desired sample size. From a random

*Continued on next page*



Survey Sampling International

info@surveysampling.com • surveysampling.com



start within the first sampling interval, a systematic nth selection of 100-blocks is performed and a 2-digit random number between 00 and 99 is appended to each selected 100-block stem.

Replication is available as number of replicates or size of replicate.

Deduplication against prior samples is available. Duplicates can be detected and substituted during the random number generation process (non-probability method) or may be removed after the sample has been selected (EPSEM method). In the latter instance, the sample delivered may be less than the originally specified size.

Screening for disconnects is not available for wireless sample since it would violate TCPA rules prohibiting dialing wireless numbers using “automated” telephone equipment. The sample is delivered in standard sort: Replicate, Time Zone, and Phone Number.

A variety of count reports for the sample are available. Universe information is available upon request.

Landline numbers that have been ported to wireless service will not be included since they are on the RDD frame. However, they can be flagged and included in a landline sample for clients who have a NeuStar license.

Wireless numbers that have been ported to landline service will be included and can't be identified.

See Appendix B for file layout/keyline options.

*\* There are no sources for directory-listed or assigned cell phone numbers. Therefore SSI's Wireless Frame is not a list-assisted frame. Without directory-listed information, there is no way to truncate the frame to 'active' prefixes and 100-blocks to improve efficiency.*

#### **About Survey Sampling International**

Survey Sampling International is the premier global provider of sampling solutions for survey research. SSI offers access to more than 6 million consumer and business-to-business research respondents in 54 countries via internet, telephone, and mobile. Additional client services include customer profiling, survey programming and hosting, data processing, sampling consulting, and survey optimization. SSI serves more than 1,800 clients, including nearly three-quarters of the top researchers, worldwide. Founded in 1977, SSI has an international staff of 400 people representing 50 countries and 36 languages. The company has 16 offices around the world for local client support. For more information, contact SSI at +1.203.567.7200 or info@surveysampling.com.

© Copyright Survey Sampling International 2009

*Continued on next page*



Survey Sampling International

info@surveysampling.com • surveysampling.com



## Appendix A

Change Code: Used to indicate some aspect of the record has changed from the previous product.

- (Blank) = No Change
- 2 = Dialable Indicator
- 3 = Place Name and/or Locality Name and/or  
Rate Center Name and/or associated state
- 4 = Major Vertical and/or Horizontal Coordinate (note: a change to only minor V&H's will  
have a "4" appear in the Minor V&H file only)
- 5 = Time Zone and/or Daylight Savings Indicator
- 6 = RAO Code (Note: In the SAC file this indicates an NPA Code change)
- 7 = Operating Company Number (OCN)
- 8 = Other Line Rate Step
- 9 = Multiple Changes
- A = Awaiting Effective Date (but no data change)  
(NXX will be activated in the future)  
(will not appear in the "activity" file of a product)
- B = Any data change to a record in an "A" state
- C = Literal Company Name
- D = Deletion
- E = Effective Date of Change (note: an E may indicate that a data element associated with  
the NXX, but not a part of the given file data, has changed)
- F = Thousands Block Pooling file only (change in TBP Effective Date of Assignment)
- G = AOCN
- H = Point ID
- J = Company Type
- K = Company Code
- L = LATA and/or LATA Subzone
- M = Business Office Code (OTCNPG only)
- N = New record (was not in primary file of previous product)**
- P = IDDD Indicator
- Q = Rate Center Name Abbreviation and/or Rate Center Type
- R = NXXTYPE
- T = Portability Indicator
- U = Cancellation of a Z code appearing in previous product
- V = Thousands Block Pooling Indicator
- W = Send to RAO
- Z = Deleted. Data retained for bill reconciliation needs

*Continued on next page*



Survey Sampling International

info@surveysampling.com • surveysampling.com



## Appendix B

### File Layout

Data Item	Start	Length	
<b>Default File Layout</b>			
Replicate	1	3	
Alpha TZ	4	1	
Area code	5	3	
Exchange	8	3	
Phone number	11	4	
State abbreviation	15	2	Based on FIPS Code
FIPS state/county code	17	5	Based on Billing coordinates
Exchange/1000-block type	22	2	See Methodology for types included
Operating Company Number	24	4	
Billing Place Name	28	10	Some wireless place names are not geographical
Billing State	38	2	
Carrier (OCN) Name	40	20	
DMA <sup>®</sup>	60	3	
MSA	63	5	
CBSA	68	5	
CSA	73	3	
Census Region	76	1	
Census Division	77	1	
Nielsen County Size	78	1	
Change Code	79	1	N identifies "New" prefixes
Shared Flag	80	1	Block provides "shared" services (Y,N)

**TCPA regulations require that cell phone numbers be hand dialed.**