Methodology for measuring the target audience reach data

Advertising inventory of Livesystems

January 2025

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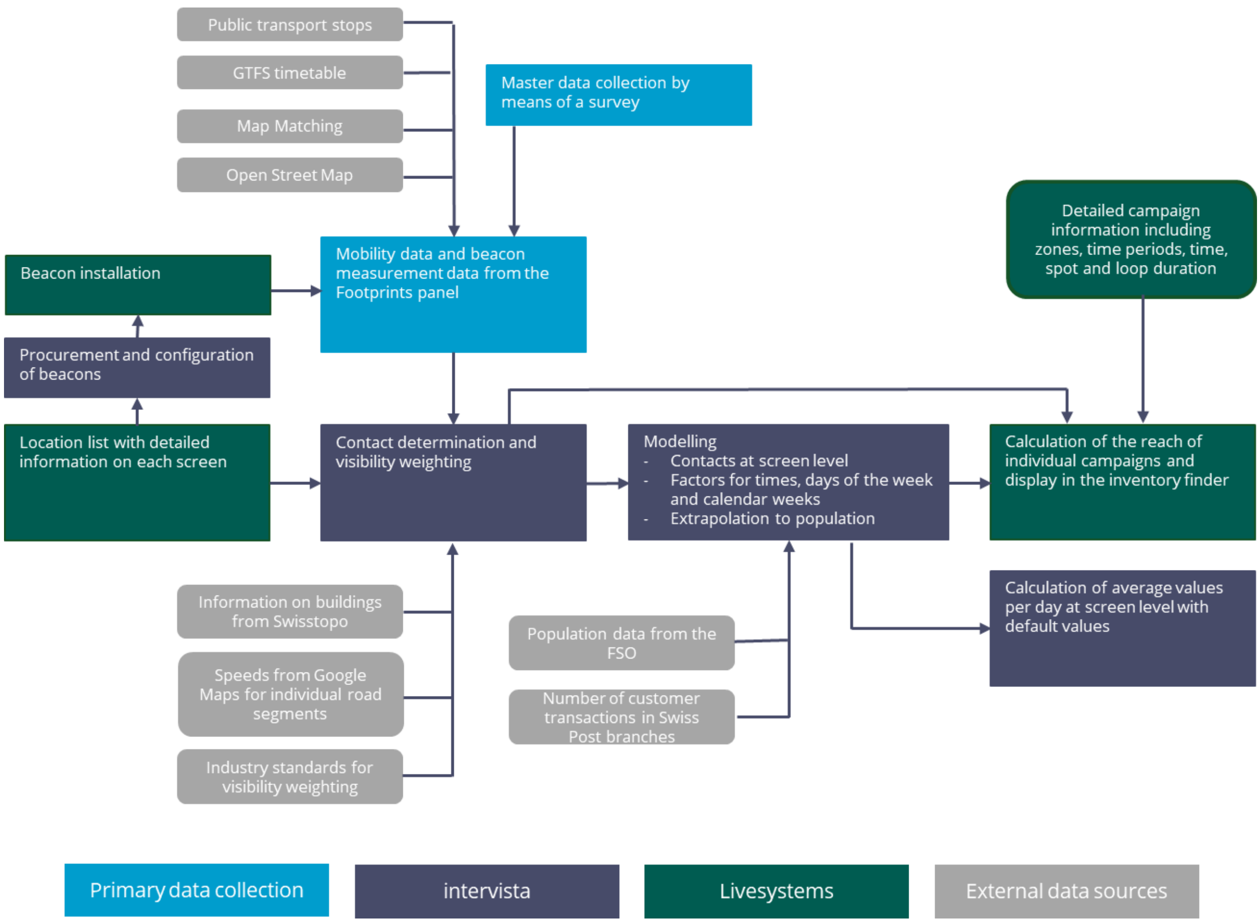
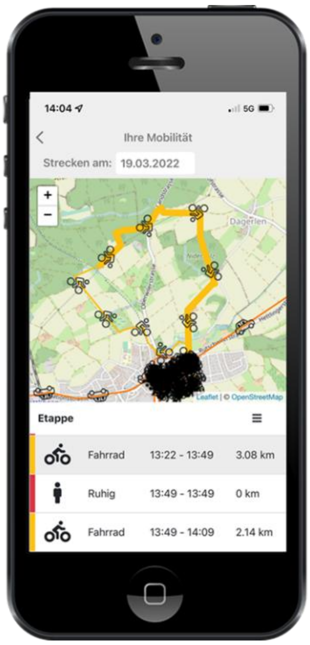
The target audience reach data for the inventory of Livesystems is gathered by the Swiss research institute intervista since September 2022. The “Footprints Research” app developed by intervista is the basis for the data collection. It continually records the mobility patterns, as well as contacts with beacons that are installed in advertising screens of Livesystems. Around 4,000 people from all over Switzerland have the app installed on their smartphones and are thus part of the “Footprints Research Panel”. Extensive profile features exist for these individuals who are linked to the measurement data collected, thus enabling in-depth analyses. The measured periods of time spent in proximity to the Livesystems screens are subjected to visibility weighting. This ensures that criteria that have a considerable influence upon the contact quality are considered when calculating the contact values. These criteria include, for instance, the time spent near the screens, the perspective, or the speed when passing through.

The data from intervista in the Inventory Finder is based on measurement data from the last 52 weeks. The data is updated every 4 weeks. In addition to inputs from Livesystems and the primary data collection, data from external sources is also used for modelling. This diagram provides an overview of the various components of the methodology.



The individual components of the measurement methodology, the data preparation procedure and the visibility weighting of the collected data are explained in more detail below.

“Footprints Research” app



The “Footprints Research” app was developed in 2018 by intervista. It continually records the locations, the data of the motion sensors of the smartphones, and also any contact with beacons. Beacons are small Bluetooth transmitters, which are, for example, installed in screens of Livesystems, and continually send out a Bluetooth signal. The signal from the “Footprints Research” app is detected and processed. Thus, all stays in the direct vicinity of a beacon are registered and endorsed with a time stamp (stand and end points). This data is then periodically submitted to the intervista server.

The app has been conceived in such a way that it supplies data virtually seamlessly (the app does not need to be open for that purpose), and simultaneously offers users a positive user experience (such as low battery consumption and ease of installation). The app is available for Android and iOS.

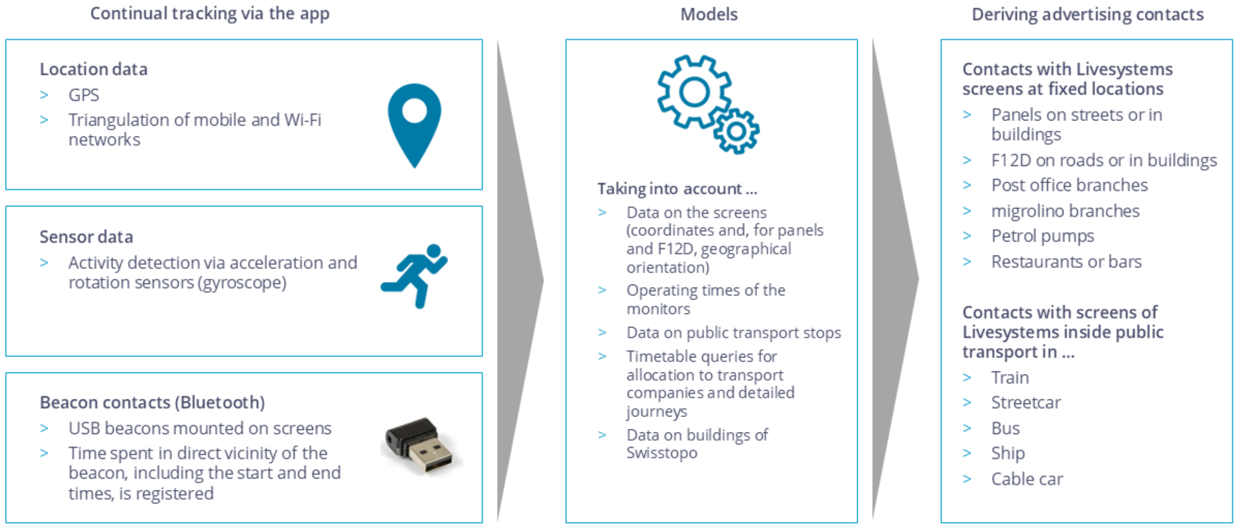
“Footprints Research Panel”

The “Footprints Research Panel” has been operated by intervista since October 1, 2018. It currently includes 4,000 active participants. The statistical population comprises people between the ages of 15 and 79 years who use a smartphone and are residents of Switzerland. The panel has been recruited in line with Federal Statistical Office requirements that are representative of the Swiss population, and thus constitutes a microcosm of the Swiss population. Due to the extensive quota (4 age groups x gender x economic regions of Switzerland x who use public transportation), the representative nature of the results is guaranteed.

Extensive information regarding the panellists on socio-demographics, consumption patterns and interests, which may, in the context of the data processing, be linked to the measurement data, is available. This data is updated annually with an update survey.

Technology and Data Processing

The measurement of stays and the amount of time spent near screens of Livesystems are comprised of the following:



ith the aid of models, specific advertising contacts are derived from the location data, sensor data and beacon contacts of the panelists measured using the “Footprints Research” app. In order to get as exact a measurement as possible, Livesystems has mounted beacons on all screens that are not oriented towards public transportation or on streets.

Specific patterns can then be derived from the latter: One, stays near Livesystems screens at fixed Panels in public spaces, post office branches, migrolino Convenience stores, restaurants or bars and petrol pumps; and two, rides on public transportation with screens of Livesystems (train, streetcar, bus, ship, cable car). The duration of transit or stay near the respective screens is also measured.

Details on the measurement per product and environment

Livestystems offers four product types that can be placed in different environments. The combinations differ in terms of various factors that are relevant for contact determination, such as loop duration or screen operating times.

The following table lists the contact-related differences for measuring product and environment combinations:

Product and environment combinations	Data collections	Distance to be observed	Monitor operating times
Screen **Public Transportation**	Measured mobility data and modelling of trips from station to station	Time spent in the mode of transportation	0:00 to 24:00 hrs
Screen **Gas Station**	Measurement with beacon on the screen	Up to 10 meters	5:45 to 23:00 hrs
F12D **(F12D on streets)**	Measured mobility data and contact modelling	Up to 40 meters	6:00 to 22:00 hrs
F12D **(F12D in a building)**	Measurement with beacon on the screen	Up to 40 meters	6:00 to 22:00 hrs
Panel **(Panel on streets)**	Measured mobility data and contact modelling	Up to 40 meters	5:45 to 23:00 hrs
Panel **(Panel in a building)**	Measurement with beacon on the screen	Up to 40 meters	5:45 to 23:00 hrs
Board **Post Office**	Measurement with beacon on the screen	Time spent at branches	7:00 to 21:30 hrs On Sundays, only 6 branches, from 7:00 to 18:00 hrs
Board **migrolino**	Measurement with beacon on the screen	Time spent in the checkout area	5:45 to 22:00 hrs
Board **Restaurant/Bar**	Measurement with beacon on the screen	Time spent in the checkout area	5:45 to 22:00 hrs

Visibility weighting

All contacts measured have been subjected to a visibility weighting. This ensures that any factors that influence the visibility of a screen, and thus the value of (potentially) coming into contact with the advertising medium, are appropriately taken into consideration.

Visibility weighting is strongly based on SPR+ industry standards. The following section explains in more detail which factors are included in visibility weighting and how they are weighted.

The following factors enter into the visibility weighting of **panels and F12D**:

<table>
<tr><th></th><th>Contact value weighting</th></tr>
<tr><td>Maximum viewing distance, measured speed, and angle of transit</td><td>Maximum viewing distance: 40 meters
The orientation of the particular screen is taken into account, as well as buildings that impair the view of that screen.
Factor for frontal transits: 1
Factor for parallel transits ≤ 10km/h: 1
Factor for parallel transits > 10km/h: 0.3

</td></tr>
<tr><td>Operating period of screens</td><td>5:00 to 23:00 hrs
Contacts within the operating period receive factor 1, contacts outside the operating period receive factor 2.</td></tr>
<tr><td>Temporal visibility of advertising material</td><td>$\min(\frac{passage\ lengths + spot\ length - 2}{loop\ length}, 100\%)$</td></tr>
<tr><td>Frequency of screens</td><td>1 screen: 1.00
2 screens: 0.80
3 screens: 0.65
4 screens: 0.50</td></tr>
<tr><td>Digital Attraction DOOH
SD: Steady Display
AD: Animated Display
FM: Full Motion</td><td>
<table>
<tr><td></td><td colspan="2">Mode of transportation</td><td colspan="2">On foot</td><td colspan="2">Objects</td></tr>
<tr><td></td><td>Frontal</td><td>Parallel</td><td>Frontal</td><td>Parallel</td><td>Frontal</td><td>Parallel</td></tr>
<tr><td>SD/AD</td><td>1.1</td><td>1.81</td><td>1.04</td><td>0.98</td><td>0.89</td><td>0.82</td></tr>
<tr><td>FM</td><td>1.25</td><td>1.94</td><td>1.16</td><td>1.04</td><td>1.01</td><td>0.9</td></tr>
</table>
</td></tr>
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For the visibility weighting of **boards and screens**, the following factors are taken into account:

	Contact value weighting
Maximum viewing distance	Maximum viewing distance: Depending upon the size of the screens, 10 or 20 meters
Operating period of screens	The operating periods of the screens are correlated with the business hours of particular branches. Contacts within the operating period receive factor 1. Contacts outside the operating period receive factor 2.
Temporal visibility of advertising material	$\frac{stay\ length + spot\ length - 2}{loop\ length}$
Frequency of screens	1 screen: 1.00 2 screens: 0.80 3 screens: 0.65 4 screens: 0.50 5 screens: 0.40 6 screens: 0.33 7 screens: 0.29 8 screens: 0.25

Calculating the net and gross reach of a campaign

Using the measured data, the gross and net reach of the campaign are calculated and shown in the Inventory Finder. OTS and GRP values, as well as the range expansion, are also shown. Weekdays, calendar weeks and times are taken into account in the calculation. Should a campaign reach a net range of at least 5%, the distribution according to gender, age, region of residence and income is also shown.

Calculating the gross contacts for individual screens

To identify the average number of contacts per week, modelling is implemented, which takes into account the measured net contacts per site per week, the contacts of the screen network, the number of screens at the site, and standard values for spot and loop duration. For screens in post branches, the number of customer transactions per branch is also included in the modelling.

The following standard values (strong advertising pressure) have been used:

Environments	Spot duration in seconds	Loop duration in seconds
Screen Public Transportation	10	480
Screen Gas Station	10	180
Panel	10	60
Board Post Office	10	180
Board migrolino	10	60
Board Restaurant/Bar	10	60

The daily contacts are subject to certain fluctuations and are, for example, dependent on the day of the week. As a result, contact categories are identified for each individual screen.

Public Transport

TPF RER: Fribourg Nord

5000 - 12142 Contacts/Day (gross)
18 Displays

Example of a contact category description

Your contact at intervista

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