INFORMATION NOTE

AUDITEL'S TELEVISION AUDIENCE DATA MEASUREMENT

(In compliance with the obligations imposed by the Communications Regulatory Authority within the implementation measures for the acquisition, processing and management of information requested by the framework act on the measurement of audience indexes and communication media distribution indexes: resolution 130/06/CSP, art. 6, published on the Italian Official Gazette 174 of 26/06/2006).

General data of the company conducting the survey

In accordance with resolutions 85/06/CSP and 130/06/CSP, the subject conducting the survey on the audience indexes of the Italian television is Auditel S.r.l.

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Whereas

The Auditel system for measuring editorial and advertising video content consumption provides users with minute-by-minute audience data on the programmes offered by national and local broadcasters.

The Auditel survey on television audience is composed of two main elements:

a) Auditel Basic Survey

It aims at (i) creating the sample defining TV consumption, namely generating a reservoir of names and setting the universes (see below) for the creation of the Auditel SuperPanel™; (ii) measuring the distribution of the different devices for viewing TV content; (iii) measuring the availability and the actual personal use of devices for accessing the internet. This activity is performed by the company Ipsos S.r.l. upon assignment by Auditel.

b) Collection, processing and distribution of television audience data

It aims at collecting, processing and distributing the data on television audience following the recruitment, management and maintenance of the Auditel SuperPanel™. This activity is performed by the company The Nielsen Company (Italy) S.r.l. upon assignment by Auditel.

Auditel provides the above mentioned companies with all the technical specifications required to best conduct the survey and for its necessary development.

Summary of the main features of the television audience survey

Below is a brief extract of the main features of the television audience survey, reporting its most relevant structural and functional elements which will be described in detail later in this document.

- Details of the companies conducting the television audience survey for Auditel

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- Methodology. A survey conducted on the Auditel SuperPanel™, composed of 16,000 households provided with a meter for measuring TV audience.

- Auditel SuperPanel™. It represents all the households residing in Italy (including foreigners). Its universes (population total, age groups, household members, etc.) are obtained from ISTAT - Italian National Institute of Statistics data – (when available) and estimated from the Auditel Basic Survey.

- Data collection. It is performed using meters installed on every TV set in the household. There are two types of meters: 1) meters that detect household TV consumption; 2) meters that detect individual TV consumption. They recognise the channel being viewed by means of audio matching technology (a digital matching of the audio signatures of the broadcast) and, for Sky Set-Top-Boxes only, by means of the so-called service information which uses an STB port connectable to the meter via cable.

- Statistical error. As all samples, the Auditel SuperPanel™ can be subject to estimation error. Indicatively, statistical errors may be more significant on low viewership channels. More details are provided in the next section of this document.

- Measurement period. Measurement is taken every day of the year from 2:00 a.m. to 2:00 a.m. of the following day. The Auditel week starts on Sunday and ends on Saturday.

- Access fees to the Auditel audience data. Auditel distinguishes two main types of clients, regulated by ad-hoc price plans: 1) national and local broadcasters that request to be measured: the fee is calculated on the channel TV share and made commensurate with a fixed amount representing the total cost of the survey defined yearly by the Auditel Board of Directors; it is also possible to request measurement for a limited time period, called "trial"; 2) users (such as media centres, software houses, production companies): fees vary according to the type of activity the client intends to use the data for, as well as the business size, based on objective third elements.

Auditel

This information note by Auditel is available on the website www.auditel.it

The Auditel Basic Survey

a) aim of the Auditel Basic Survey

The Auditel Basic Survey aims at providing data on the socio-demographic structure of the households residing in Italy, as well as the technological devices available in their main dwellings and of interest to Auditel.

The Auditel Basic survey also aims at estimating the devices available to the population, as stated in self-declarations on the ownership, availability (that is the possibility to use regardless of personal ownership) and actual personal use of such devices (purely individual, such as smartphones; or individual/collective such as tablets and PCs).

Information is collected by means of quantitative interviews with a structured questionnaire on a probabilistic sample of the Italian population aged 2 and older, that is the Auditel Basic Survey.

The information collected with the Auditel Basic Survey contributes to the definition of the stratification grid used for modelling the panels, in accordance with socio-demographic and behavioural parameters.

In addition, the Basic Survey forms the so-called "reservoir" of addresses used for replacing the sample households that leave the survey.

b) Object of the Auditel Basic Survey

The object of the Auditel Basic Survey consists of:

- Estimating and updating the universes of reference of the Auditel SuperPanel™(1).

- Creating a reservoir of household names to be used for integrating only the Auditel SuperPanel™ providing the households with a people-meter.

- Measuring how widespread devices/technologies are and how channels can be received through different modes/sources inside the main dwellings of the population residing in Italy.

- Measuring, by means of self-declarations, the ownership, availability (that is the possibility to use regardless of personal ownership) and actual personal use of purely individual devices (such as smartphones) or individual/collective devices (such as tablets and PCs), in order to identify and quantify which part of the population residing in Italy has access to the internet, by which specific modes, from where, with which devices, and how often.

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[1] *For the sake of completeness, please note that the Auditel Basic Survey has been used also for estimating the Audiweb Universes since 2018.*

c) Methodology

The methodology used for the Basic Survey is a 4-stage Sampling process, with the first stage being stratified and the surveyed households being extracted from a recognised address list.

The information relevant to the address (house number and housing unit) is extracted from the cadastre data bank of the Real Estate and Land Registry Agency (Agenzia del Territorio). The municipalities not included in the data bank of the Agenzia del Territorio are sampled using city-roads maps.

d) Universe of reference

The Auditel Basic Survey provides two types of statistics: statistics on households (number of TV sets owned, devices and technical equipment) and statistics on individuals (socio-demographic information on each household member, as well as the ownership, availability, and personal use of purely individual or individual/collective devices and information on when the last internet access occurred, by means of a self-declaration by a randomly selected household member). Consequently, the examined universes of reference (object of the survey) are differentiated as follows:

A) Household universe of reference

Households residing in Italy, including households of foreigners only. A household is a group of individuals who live in the same housing unit for at least six months and one day a year, regardless of kinship, emotional relationships or mutual economic assistance.

Household universe source:

- <u>for sampling</u> → Italian National Institute of Statistics (ISTAT) – 2017 demographic balance (www.demo.istat.it) (25.981.996). Nevertheless, this account bases on a definition of household that excludes simple cohabitation.

Since the definition of household adopted by our survey differs from the definition adopted by ISTAT, the Auditel Basic Survey adopts what has been done by Auditel since the end of 2014, making –during the analysis - an independent estimate of the households based on sample data.

Household universe source:

- <u>for weighting</u> → Data obtained by "translating" universes, namely comparing the households' composition according to the civil registry and the households' composition according to households' declarations within the 2015 Auditel Basic Survey. In particular, the comparison concerned the interviews conducted with the addresses method in 2015 (integrated with interviews "per quota" for the sample of foreigners conducted in the same year, in order to have a more solid base of cases at our disposal), for which further registry data have been acquired.

The data on a household situation resulted from the comparison between self-declarations and the civil registry were used to transpose the data published by ISTAT (which exclude cohabitations not

based on kinship, emotional relationship and mutual assistance) to the data that are aligned with the definition of household adopted by Auditel and used within the Auditel Basic Survey.

The case base analysed is composed of 19,098 interviews in total.

B) Individual universe of reference

Individuals of households who live in Italy.

Individual universe source:

ISTAT – 2017 demographic balance and resident population at 31st December 2017 (www.demo.istat.it) (60.483.973)

e) Survey sample consistency

The Auditel Basic Survey is composed of a continuous series of surveys on the Universe of households and individuals residing in Italy (divided into 7 monthly cycles). Overall, the Auditel Basic Survey includes 20,000 annual interviews conducted through probability sampling, aiming at deducing the descriptive parameters of the Household universe, and individual interviews, conducted on a randomly selected household member, aiming at producing the estimates on the population accessing the internet. The individual interviews are divided into 10,000 interviews to the household's spokesperson (namely the component who answers the questions on the household) and, proportionate to the output of the 2017 Auditel Basic Survey, approximately 4,000-5,000 interviews to a second member of the household. These interviews can be integrated with samples that are variable in size, exclusively aiming at feeding the Auditel Panel and intended for specific household segments (in this case, the interviews are conducted through the random walking technique) or for foreign citizens residing in Italy (in this case, the interviews are conducted through a mix of techniques, such as detecting foreign households residing in Italy at community centres or the "snowball" sampling technique). Territorial extension: the final sample is composed of 1,315 municipalities, including province capital cities.

f) Sampling method

The sampling design used within the Auditel Basic Survey, which corresponds to the design used within the Auditel Basic Survey since 2015, is based on a 4-stage sampling scheme, with the first stage being stratified.

- the first sampling unit is the Municipality (PPS selection);

- the second-stage unit is the voting district (for municipalities with more than 10,000 inhabitants) or the aggregation of census districts (for municipalities with up to 10,000 inhabitants), which only serve as territorial agglutinants (SRS selection);

- the third-stage unit is the house number (PPS selection);

- the final unit is the household that resides at the housing unit, randomly selected from the list of housing units within the selected voting district / aggregate of census districts (SRS selection).

The stratification of the first-stage sampling units is conducted as follows:

- sampling of all the province capital cities and municipalities with more than 80,000 inhabitants (self-representative units), constituting a whole stratum and absorbing a number of interviews proportional to their size (size being the number of households residing in that municipality or stratum);

- stratification of the remaining municipalities per province and per size according to the number of inhabitants (however, the allocation of interviews is based on the number of households). Within each stratum, municipalities are selected through PPS method (Probability Proportional to Size), in proportion to the number of households residing in the single municipality.

The information relevant to the address (house number and housing unit) is extracted from the cadastre data bank of the Agenzia del Territorio.

The municipalities not included in the data bank of the Agenzia del Territorio are sampled using city-roads maps.

Territorial extension: the final sample is composed of 1,315 municipalities, including province capital cities.

g) Weighting and expansion of the results

By adopting universes of reference that guarantee exact correspondence between households and individuals, the Auditel Basic Survey results have been weighted by means of calibration, the weighting process that permits to manage individual and household parameters simultaneously, thanks to which the average of the individual weights of the components of a specific households is equal to the weight of that same household (in this case, the sample size made it possible to add the rule stating that the weight of each component must be equal to the weight of the household of origin).

Calibration guarantees that the estimates obtained are absolutely coherent between households and individuals at any desired level of detail.

h) Assignment of household parameters

The following universe parameters are assigned after being obtained by "translating" the universes, namely comparing the composition of households according to the civil registry and the composition of households according to the self-declarations of the 2015 Auditel Basic Survey:

-   household distribution per region cross-checked with city size;

-   household distribution per number of components, cross-checked with region and cross-checked with city size;

-   household distribution between households of only Italian nationals, mixed households and households of only foreign nationals;

-   distribution per number of components, separating households of only Italian nationals, mixed households and households of only foreign nationals.

In case weighting is performed quarterly, the household file is directly assigned – through weighting - also some exact and certified data provided by publishers, in particular:

-   total number of Sky pay-TV subscribers;

-   total number of HD Sky pay-TV subscribers;

-   distribution per geographic area of Sky pay-TV subscribers.

i) Assignment of individual parameters

The following parameters are assigned after being obtained from the ISTAT demographic balance at 31st December 2017, except for the distribution of individuals per household type (obtained by "translating" the universes similarly to the household parameters):

-   distribution of individuals per territorial parameters (region per city size, province);

-   distribution of individuals per gender and age groups;

-   distribution of individuals per age and city size;

-   only for foreign nationals, marginal distribution per gender, age, aggregations of nationality, geographic area and city size;

-   distribution of individuals per household type (only Italians, only foreign nationals, Italians in mixed households, foreign nationals in mixed households).

In case weighting is performed quarterly, individual records are also assigned the number of 4+ individuals in Sky subscribing households, obtained by applying the average number of Sky

household members (resulted from the Auditel Basic Survey by accumulating the last 5 processable waves each time) to the Sky datum (assigned at household level by weighting).

j) Measurement period

The survey is composed of 7 monthly measurements that follow the calendar below:

- 1° wave 16-1-2020 / 22-2-2020

- 2° wave 29-2-2020 / 6-4-2020

- 3° wave 15-4-2020 / 22-5-2020

- 4° wave 30-5-2020/ 6-7-2020

- 5° wave 28-8-2020 / 2-10-2020

- 6° wave 3-10-2020 / 9-11-2020

- 7° wave 10-11-2020 / 16-12-2020

The universes are updated once a year as regards the main socio-demographic characteristics of the population, and quarterly as regards the reception conditions of the different transmission platforms and the access to the internet. Meanwhile, the interviews of the Auditel Basic Survey have immediate effect only on TV audience measurement, as the names of the interviewed households are added to the database of households to be contacted for the recruitment of the metered Auditel panel.

The new update of the universes of the main socio-demographic characteristics, scheduled for next August, is going to make use of the new information from the Auditel Basic Survey together with the ISTAT data (if no new updates are published, the current ones will remain the universe of reference).

k) Measurement method and possible margin of error

The interviewers conduct the interviews at the main dwelling of the household with the support of the personal computer (CAPI – Computer Aided Personal Interviewing), except for individual interviews to a second selected member when the person to be interviewed is not at home or is not available for the interview at the moment: in this case, the interviews are conducted afterwards by telephone (CATI – Computer Aided Telephone Interviewing).

The margin of error relevant to the survey results (significance level = 95%) ranges between +/- 0.14 % and +/- 0.69 for the percentage values relevant to the total interviewees (20,000 cases).

Collection, processing and distribution of the TV audience datum

a) Aim of the survey

The survey aims at producing, every day and continuously, an estimate of the number of households/individuals who consume video content from a TV set and/or devices connected to the TV set, by means of a panel which represents the population of individuals residing in Italy aged 4 and older.

b) Methodology

Television audience indexes are produced through sampling on a sample of households residing in Italy, the Auditel SuperPanel™. The Auditel SuperPanel™ is a representative sample of the population aged 4 and older residing in Italy. Households are the sample recruitment units; thus, recruitment is performed on the basis of household characteristics. This type of methodology does not impede data production at individual target level (as actually occurs), but it impedes sample checking based on individual characteristics during the recruitment phase. In any case, a correct balancing of the individual sample can be indirectly approximated thanks to the numerousness of the household sample and the right balancing of its household characteristics. The disproportions that anyway occur on the individual sample, and that can potentially cause distortions in the audience estimates, are corrected through the weighting system described later.

It is worth remembering that the Auditel household sample also includes:

- A percentage of households "WITHOUT TV SETS", estimated at 2.9% of the total Italian households in August 2018. Households "WITHOUT TV SETS" are all those households that do not physically own a TV set connected to an aerial in their main dwelling.

- A percentage of households with at least one foreign member, estimated at 9.2% of the total households residing in Italy in August 2018.

Selection and recruiting criteria for the Auditel SuperPanel™.

The households who are offered to participate to the Auditel SuperPanel™ can only come from the name data bank of the households interviewed within the Auditel Basic Survey (conducted since January 2006 with a total of 20,000 interviews every year) or a data bank from the so-called "per quota" surveys. Unlike the interviews conducted within the Basic Survey, the interviews carried out within surveys "per quota" focus on specific targets with low or insufficient cases and apply different methodological approaches.

The variables defining the random selection from the data bank are:

Independent variable	Province	(103)
Intercorrelated variables	Geographic area	(4 classes)
	Household dimension	(4 classes)
	Age of head of household	(3 classes)
Intercorrelated variables	Age of head of household	(3 classes)
	City size	(2 classes)

The intercorrelation of variables (the first three and the last two – separated into two matrixes since February 2010) generates two matrixes of recruiting cells (sample target) whose size is proportional to the population of the universe of reference.

The cell matrixes represent the primary recruitment criterion, together with the representativeness of the 103 provinces proportionally to their population (except for the oversampling of the regions of Aosta and Molise and the micro-representativeness criterion which sets the minimum number of households at 20 for all those provinces that would be proportionally represented by a lower number of households; both valid for the People Meter panel only).

A "secondary" stratification variable was added on 4th February 2007, namely the satellite pay-TV sub-universe, for which the marginal distribution in relation to the four variables composing the stratification matrix (geographical area, city size, number of household members, age of head of household) is kept under control. The chosen tolerance rule is based on the comparison between the target and the installed sample in relation to the total number; if the difference exceeds 10%, intervention will be required to lower it.

The reservoir of names generated through the Auditel Basic Survey is organised into recruitment cells. Hence, after assigning a household to a specific sample cell and province, an automatic procedure randomly selects the names required to recruit that household among all the names with the same characteristics in the reservoir.

The number of the names to be extracted is calculated according to the collaboration rate of each household type and the province.

The selected households are contacted and offered to participate to the Auditel SuperPanel™. In case none of the households accepts to collaborate, the whole process will be repeated until positive outcome is achieved.

The so-called Auditel SuperPanel™ was first implemented on 30th July 2017, integrating the existing People Meter panel (5,520 metered households + proportional percentage of households

"WITHOUT TV SETS") with a new Set Meter panel composed of 10,000 metered households (plus the corresponding percentage of households "WITHOUT TV SETS").

The two samples have the same structure, except for the complete proportionality of the Set Meter panel and the above-mentioned oversampling applied to the People Meter panel.

The sample covers more than 3,500 out of the 8,000 Italian municipalities thanks to its territorial dispersion.

From the technical point of view, the Set Meter panel households are provided with a meter installed in each TV set, exactly as the People Meter panel households, but not with a remote control. As a matter of fact, in order to evaluate the individual component of the audience, a statistical model uses the People Meter data to estimate the number of individual viewers within the Set Meter.

Data processing

The data collected every day from the Auditel SuperPanel™ households (see section D below on the measurement technique) are the inputs to a processing stage that includes the following steps:

- validation;

- expansion.

Validation

Once the audience data of the sample households have been collected second by second, the validation stage aims at making the necessary corrections and creating a base of correct data for the following expansion stage.

According to the level of non-response of the datum, the validation stage consists of different types of intervention:

- removal of the household

- removal of some household data

- assignment, when possible, of "uncovered" audience data to an individual of the sample household (when a TV set is on, but no one declares to be watching).

Expansion

The expansion procedure transforms sample data into estimates related to the represented population. The expansion process needs to be also a weighting process, as both the household sample and the individual sample cannot be allocated in exact proportion to the distribution of the population related to the numerous variables that can be correlated with the audience (age, education, social class, etc.). Hence, the households whose incidence in the sample is lower than their incidence in the population need to have expansion factors above the average and *vice versa* in the opposite case.

The two samples of the Auditel SuperPanel™ go separately through two types of expansion processes: household data expansion and individual data expansion. In both cases, the weighing process involves two stages: cellular pre-expansions and rim weighing.

In particular, data expansion makes it possible to:

- project the sample data in relation to the total represented universe (1/3 for the People Meter panel and 2/3 for the Set Meter panel);

- re-balance the "real" sample, taking into consideration:

    - intended disproportions of the "ideal" sample to the universes (for example, oversampling of provinces for the People Meter panel);

    - misalignment between the "real" sample actually produced on the single day and the "ideal" sample due to unmanageable outcomes of the household recruitment stage.

A) Pre-expansion

The household and individual universes, to which the sample data are projected, are segmented according to some variables (see chart below) that, when cross-checked, generate the so-called pre-expansion matrixes.

Households (Universe: Total households)	Individuals (Universe: Total individuals aged 4 and older)
Area (4 classes) Household size (5 classes) City size (2 classes)	Gender (2 classes) Age (13 classes) Region (20 classes) City size (2 classes)

Each household or individual cell has its own primary expansion factor, calculated as the ratio between the cell universe and its sample size.

Each household/individual of the same cell has the same primary expansion factor, that is the starting point to calculate the final expansion factor to be applied to each individual, obtained through "iterative rim weighting" (described later).

The final expansion factor permits to project the individual audience data to the universe of reference, correctly representing the totality of the population categories.

B) Rim weighting

After the pre-expansion stage, the sample is perfectly balanced in relation to the variables used to generate the cell matrix.

In fact, many other variables are used within the system for analysing audience data (such as socio-economic class, education, presence of children, etc.).

A higher number of variables (see chart) can be simultaneously balanced through the rim weighting procedure, leaving behind the idea of same weight for all the components of the same cell.

RIM – WEIGHTING	
Households (Universe: Total households)	Individuals (Universe: Total individuals aged 4 and older)
Total Households Region (20 classes) Province (103 classes) Total households SAT PAY-TV (since 4/2/2007) Total households DTT (from 29/4/2007 - to 28/1/2012) Total households TIVUSAT (since 30/7/2017) Total households OTHER FREE SAT (since 30/7/2017) (since 29/4/2007) Total households FREE SAT – removed on 30/7/2017 Total households SAT PAY-TV per Region (from 31/5/2009 to 28/9/2013) Total households SAT PAY-TV per Area (since 29/9/2013) Total households SKY HD (since 2/8/2009) Total households MY SKY (since 30/5/2010) Total households SKY CINEMA (since 30/5/2010) Total households SKY CALCIO (since 30/5/2010) Total households SKY SPORT	Total individuals Total Individuals per geographic area (3 classes) Total Adults, Men, Women, Children Total 15-34 y.o. Total 35 y.o. and older Gender x Age (2*13 classes) Socio-economic class (5 classes) Province (103 classes) Education (4 classes) City size (4 classes) Children, Men, Women per region (3*20) Region per City size (2*20) Adults with children (2 classes) Household size (5 classes) Total MHS1 MHS per region (20 classes) – removed on 2/5/2010 MHS per gender (2 classes) MHS per age groups (5 classes) MHS with children (3 classes) MHS per job status (2 classes) MHS per city size (2 classes) – removed on 31/1/2010 (since 4/2/2007) Individuals SAT PAY-TV split per: Total individuals Men, Women Age (9 classes) Socio-economic class (2 classes) Education (4 classes) – removed on 31/1/2010 City Size (2 classes) – removed on 31/1/2010 Adults with children (2 classes) Household size (5 classes)

(since 30/5/2010) Total households WITH/WITHOUT TV SETS (since 4/3/2012)	Region (from 31/5/2009 to 28/9/2013) Area (since 29/9/2013) SKY HD (since 2/8/2009) MY SKY (since 30/5/2010) SKY CINEMA (since 30/5/2010) SKY CALCIO (since 30/5/2010) SKY SPORT (since 30/5/2010)
Total households foreign nationals only (since 4/8/2013) Total households Italian nationals only (since 4/8/2013) Total households Mixed (since 4/8/2013) Socio-economic class (5 classes) (since 29/7/2018)	
	(since 29/4/2007) Total individuals FREE SAT – removed 30/7/2017 (since 30/7/2017) Total individuals OTHER FREE SAT (since 30/7/2017) Total individuals TIVUSAT
	(since 29/4/2007) Individuals DTT split per: Total individuals – removed on 29/1/2012 Men, Women – removed on 30/5/2010 Age (9 classes) – removed on 30/5/2010 Socio-economic class (6 classes) – removed on 31/10/2010 Education (4 classes) – removed on 30/5/2010 City Size (2 classes) – removed on 30/5/2010 Adults with children (2classes) – removed on 30/5/2010 Household size (5classes) – removed on 30/5/2010
	Total individuals WITH/WITHOUT TV SETS (since 4/3/2012) Total individuals Foreigners (since 4/8/2013) Total individuals Italians (since 4/8/2013) Total individuals foreigners in mixed households (since 4/8/2013)

MHS = Main Household Shopper

Survey sample consistency

The People Meter panel (PM) is composed of 5,662 households (updated in relation to the universes on line since November 2019), including the oversampling of those provinces that – following proportionality criteria - would have been assigned less than 20 households (the minimum threshold per province), performed in order to reach the minimum threshold of sample cases in those provinces as well.

The Set Meter panel (SM) is composed of 10,255 households, that (as in the PM) are also completely proportional to and representative of the households without TV sets and including at least one foreign national.

As for sample consistency, the number of households that have agreed to collaborate continuously to the survey differs from the daily average number of households that contribute to the production of the audience indexes with their data. The households that have agreed to collaborate and that are provided with the measurement devices connected to their TV sets – if they own any – are called "installed households".

The number of households that contribute every day to measure audience indexes ("households in production" or "validated households") is lower than the total number of installed households and varies daily. This difference from the number of "installed" households is caused and explained by the households "under repair" due to technical problems with their meters or with the data transmission line.

These households are temporary excluded from the production cycle while waiting for the maintenance technician to visit them to fix the problem.

There are also households that cannot be produced on a specific day – even if they are not experiencing any technical problems – as the polling system has failed to collect their data for a number of reasons often connected with the phone operator's responsibility. Finally, there are households whose data are regularly collected but are rejected by the validation system.

On average, more than 14,000 households are validated and produced every day.

Measurement methods and potential margin of error

Measurement methods

The households "WITHOUT TV SETS" in the Auditel SuperPanel™ represent the correspondent share of the households present in the universe and are produced every day with audience equal to zero. Their complement, namely the households possessing TV sets, are measured by means of a measurement system called "meter".

The technologies of these devices have undergone a significant evolution over time.

The survey has constantly updated its equipment and always employed the most advanced solutions, also scouting for them at an international level.

With the advent of digital TV, Auditel has put in place a wide operation, which has completely innovated the idea of traditional audiometers.

From this point of view, it is worth specifying that the Auditel SuperPanel™ is in constant evolution; households enter the sample with or without a certain type of audiovisual device, but obviously the situation doesn't remain still over time. Each household, like any household of the Italian population, is free to equip itself with the devices they consider appropriate, so the company in charge of the measurement must consequently update the number and the type of measurement instrumentation. If, for example, a household buys an additional TV set (or buys its first one, in case of households without TV sets), it must be immediately equipped with an additional meter to those already installed on the other TV sets.

All the households in the Auditel SuperPanel™ are equipped with the GTAM meter. The GTAM meter represents the latest generation of TV audience measurement solutions and allows to measure audience independently from the broadcasters (or from the transmitted identifying codes), since it operates by means of the audio matching technique.

Special collecting stations (reference rooms) on the territory record the broadcastings of the entire day of the different broadcasters and produce a database containing the digitalized audio of the TV events (reference streams). At a later time, this will be compared to the audio tracks produced by the sample households' viewings (sample streams) collected by their GTAM meters. The channel recognition occurs when the sample stream and the reference stream match.

In this way, the channel/broadcaster tuned in to by the monitored TV sets is identified with certainty and independently.

Each functioning TV set in the household is connected to the meter base unit, which automatically detects the tuned-in channel on the TV set it is connected to.

The fundamental difference between the two samples that constitute the Auditel SuperPanel™ lies in the measurement of the individual audience. In fact, the meters of the PM households are

equipped with a remote control (one per each base unit and thus one per each TV set), which is the tool allowing each individual in the sample to "interact" and declare their presence in the audience. In these households, individual viewing is measured through the collaboration of the single persons pushing the meter's push button (each member of the household has their "own" button). The system also allows the measurement of guests (till a maximum of 8). If a guest is viewing a specific channel in the household, they shall push a dedicated button, declaring age and gender.

On the contrary, the meters of the SM households are not equipped with a remote control, therefore the individual viewing is measured by means of a statistical model of individualization which also allows to estimate guests and the Uncovered Viewing.

It is considered as a viewer for the entire minute, on the tuned-in channel, the individual who is present for at least 30 seconds in that minute.

The minimum slot of time on a specific broadcaster which generates a statement of viewing is 15 seconds (the statement of viewing is the information in the database about the individual code, the broadcaster code, or the on/off of the TV set or any other connected audio/video device, the time when the operation of channel change/ TV switching on/off has occurred).

Problems in assigning the minute (that is the minimum unit to represent the audience datum) may occur if more than one channel is tuned in to in the same minute. The rule assigns the minute to the broadcaster that was tuned in to at the 29° second (whose permanence was anyway not less than 15 seconds).

The sample household must give communication when it is absent for long periods of time (holidays). The households in the PM sample have also the possibility to give communication by pushing the dedicated button on the remote control. This operation is not key to data accuracy, nonetheless it is useful to the quality control staff to understand that the absence of audience data is not due to a possible error, which will at least cause a verification action, but it is simply due to the fact that the household is temporarily out of its principal dwelling.

In this situation, the meter stays always connected (if the power is shut down, its functioning is guaranteed by an internal battery) and the household will continue to be called and produced, obviously with nil audience since the meter will not transfer any statement of viewing. It is essential that the households away from their principal dwelling, and thus with nil audience, remain within the "produced" households. If these households were excluded, an overestimation distortion of the audience data would occur.

The audience data collected for each TV set in a household are transferred from the base unit to the transmission unit placed close to the telephone line, where all the audience data of the household are stored until the calling phase (polling) begins (starting from 2:00).

Individualization model of the Set Meter panel

As already mentioned, the Set Meter panel has been established with the objective to extend the sample base and thus allow a better measurement of small audience indexes at a sustainable cost for the measurement system.

This sustainability has been guaranteed by some operative choices such as a lighter technology and an innovative methodology, which reduces the effort required to the households because it does not require active collaboration through the remote control, but it estimates the individual data starting from the measurement carried out by the meters at the level of each single TV set.

The estimate of the individual audience component is obtained by means of a complex statistical model, which, day by day, statement by statement, estimates a series of parameters on the known data about the PM panel and applies them to the SM panel.

The estimate involves three steps:

- the estimate of the nil-viewer individuals, namely those persons who haven't watched TV even for 1 minute during the day;

- for each statement detected by the meter, how many individuals are currently viewing (including the uncovered viewing share);

- who among the individuals in the household potentially viewing (since not excluded from the estimate in step 1) are actually viewing the statement being measured.

This model includes also a separated part which estimates only the guest component.

Audience per platform

Since 30th January 2011, each broadcaster has the discretion to publish its daily data divided per broadcasting platform.

The current platforms are:

- digital terrestrial

- digital satellite

- IPTV

- non defined

Time-shifted viewing

Since 1st May 2011, the Time-Shifted Viewing has added two new dimensions to the live datum treated till that moment:

- VOSDAL (Viewing On Same Day As Live): the live broadcasting day of the event corresponds to the day of its time-shifted viewing;

- TIME-SHIFTED: the live broadcasting day of the event occurs up to n° days earlier than its time-shifted viewing.

Two limits are associated with time-shifted viewing in Italy:

- Time Shifted +4

- Time Shifted +7

The datum considered to calculate GRPs is the one including time-shifted viewing till 4 days.

Users can also rely on a consolidated datum at 7 days, for editorial analysis.

As for live audience, time-shifted audience is measured by means of two different techniques:

- Service information. Exploiting the information transmitted on the digital signal that identifies univocally the broadcaster being viewed (live or shifted), the day of broadcasting (live or shifted) and the precise broadcasting time (live or shifted), the meter system detects whatever is necessary by "chatting" with the Sky STB (the only PVR device structured to transfer these pieces of information to the meter);

- Audio matching. The system analyses everything is coming from the devices that can produce time-shifted viewing (TV with USB port, PVR, etc.), which has not been recognized in the live audience measurement phase. The system will then compare the audio tracks and will search a correspondence (within the defined consolidation range) between the reference (broadcaster) and what comes from the meter. Once the correspondence is obtained, the corresponding playback session will be obtained conversely.

The license covering the use of elemental data contains to maximum detail all the information useful to treat the audience datum:

- audience dimension (live, Vosdal, Time-Shifted);

- playback time collocation (date/time);

- Vosdal/Time-Shifted session time collocation.

Thanks to these pieces of information, in addition to the ones within the elemental datum, users can employ the datum available in a particularly flexible way.

Nonetheless, Auditel has established some standards, in particular:

- daily datum: live + Vosdal has become the reference;

- consolidated datum: it contains all three dimensions, live + Vosdal + Time-Shifted.

Margin of error per category

The relative margin of error on the estimates of audience data varies according to the type of data under analysis. The confidence interval of the estimates is a function of the following variables:

- Sample size of the population target under survey: the error increases when the target sample size decreases.

- Percentage of households, taking as a base the Italian population, which can receive the broadcaster's signal whose margin of error on the estimate of audience is to be measured: the error increases when the percentage of the households receiving the broadcaster's signal decreases.

- Broadcaster's audience level: the error increases when the audience level decreases.

- Intraclass correlation coefficient: the error increases when the audience level among more than one individual in the same household increases. In other words, the broadcasters and the programmes which tend to be viewed by more than one member of the same household have a higher margin of error than the programmes which do not "gather" the household together in front of the TV.

- Time aggregation: the error increases when the duration of the event decreases. The margin of error on the datum referred to the single minute is generally higher than the margin of error on the aggregated hourly or daily datum.

- Individualization model: the error decreases in a less-than-proportional way when the sample size increases, due to the existence of a statistical model which estimates the individual audience; this estimate is also biased by definition.

In view of the above, it is not possible to define the margin of error of the audience estimates obtained with the Auditel SuperPanel™ in general terms, but it is necessary to refer to specific cases.

Since the variety of combinations of channels, time slots and targets of analysis that can be produced through the Auditel data is extremely wide, and the range of variation of the margin of error of the estimates that can be produced is consequently high, it makes no sense providing an average datum.

The users interested in estimating the margin of error on a specific event on a specific target shall make the calculations themselves or make a request to Auditel.

We do not recommend using tables with pre-calculated margins of error according to different options, unless for the sole purpose of producing rough estimates based on probable but not rigorously authentic assumptions.

Survey period

The data are produced every day, 365 days per year. The data on the previous day are released to users at 10:00 a.m.. Per day, Auditel means the slot of time going from 2:00:00 a.m. to 1:59:59 a.m..

In the spirit of maximum flexibility for the users, the data can be subject to several time aggregations. The minimum detail is the minute.

Auditel's survey methodology can be viewed, prior the signature of a non-disclosure agreement, at Auditel's premises, but it cannot be duplicated. Auditel is available for any requests for clarification about it.

Access fees to the single audience measurement services

The complete data set is available upon payment to anybody who requires it. Fees change according to the type of user, their business size and the variety of information delivered. In order to define distribution criteria and their relative costs, Auditel makes a distinction between two types of applicants:

- TV broadcasters (interested in the measurement and publication of the audience data achieved by their programmes in order to evaluate their "performance" and offer them to the market).

- Users, namely a wide variety of subjects interested in analysing audience data for advertising reasons (agencies, media centres, production companies, investors, etc.).

TV broadcasters

The costs to obtain information, subject to prior contract with Auditel, vary according to the TV "weight" of the applicant broadcaster.

Two categories of broadcasters are considered: national and local

- National broadcasters, both terrestrial and satellite

Once the annual total cost of the survey to be charged to the national broadcasters is defined, this amount is divided among the broadcasters that authorize the publication on the basis of the annual audience share achieved. This amount is recommensurated to the total audience of the participant broadcasters and includes a minimum guaranteed level of 34,800.00 euro per subject.

Auditel permits any requiring national broadcaster to open a window on its own audience results, which means the possibility to obtain a reserved production of information with no publication to the market.

The monthly cost for this trial period is:

  o 3,900.00 euro for the average daily and average monthly datum

- Local broadcasters

The yearly cost is defined on the basis of the net contacts of the yearly average day (or monthly in case of new application) with three minimum cost levels and a maximum level:

  o up to 100,000 contacts: 5,000.00 euro

  o per each contact over 100,000: 12.00 euro per each thousand contacts

The local broadcasters that request the publication of their daily data shall pay an extra yearly amount of 5,100.00 euro.

Auditel permits any local requiring broadcaster to open a window on its own audience results, which means the possibility to obtain a reserved production of information with no publication to the market. The monthly cost for this trial period is:

- 2,000.00 euro for the average monthly datum (average monthly Monday, average monthly Tuesday, etc.)

- 2,200.00 euro for the daily datum and the monthly average, as above.

Users

The final users can access Auditel's data through the software houses and/or their applications. The software houses are companies specialized in the analysis of audience data.

The software houses are licensed by Auditel to receive the audience data (which remain sole property of Auditel) with the objective of creating value-added services, that is processing activities and/or analysis commissioned by a final user (i.e. agencies, media centres, advertising users, advertising sales agencies, production companies, as well as any other professional users).

Each software house signs a contract of license to use Auditel's data, to whom it recognizes a fee even in case of no clients.

The price list below shows the fee for the year 2020 established by Auditel (this amount does not include the right to use the lifestyle classification, whose intellectual property pertains to Eurisko, which requires an additional fee).

Likewise, the end user shall sign a right of use contract with Auditel and pay a fee, according to the Auditel price list. Also in this case, this amount does not include the right to use the lifestyle classification, which requires an additional fee.

Once the contract is signed, Auditel will release an authorization number, which entitles the users to contact the different authorized software houses, without any cost duplication.

Therefore, the software house is required to ask the client for this authorization number, without which it is not authorized to deliver any service treating Auditel's data, and it is also required by contract to inform Auditel of the requests for services containing Auditel's data coming from new users that are not clients of Auditel yet.

The new Auditel Price list

Auditel has redefined its charging system for their clients which access and use TV audience data.

Here are the principal guidelines of this change:

- adjustment of the segmentation of users to better represent the deeply changed market structure. (see chart 1);

- fine-tuning of the quantitative parameters, aiming at improving and streamlining the pricing process within every user category, as well as further balancing the correlation among the different types of users on the basis of the nature of the use of Auditel's data (commercial, editorial, research, etc.);

- lowering of the minimum threshold fee, to further facilitate access by small-size users.

By means of the present price list, any subject interested in using Auditel's data can estimate the relative fee, by identifying the type of professional activity within which they want to use Auditel's data and the corresponding quantitative parameter (billing, turnover, etc.) which shows their business size.

Moreover, the following access modalities allow occasional Users and/or Users operating in seasonal businesses to make use of the information:

- continuous access for up to 6 months;

- access through one or more elaborations operated by a software house (hence without accessing the entire data bank).

The following fees are valid from 1st January 2020 until 31st December 2020.

the new Auditel price list
classification of Auditel's clients

subject	description
software house	✓a company which specializes in media analyses based on Auditel's data by means of proprietory softwares and applications.
information services company	✓a company which creates and manages computerised data banks, processes and provides data from the data banks and offers information services on these data to the end client.
media centre	✓a business which operates on behalf of its clients by booking advertising spaces and negotiating their prices with publishers and advertising sales agencies.
advertising agency	✓a business which operates on behalf of its clients by conceiving, designing and creating advertising campaigns for communication media.
auditing firm	✓a company which provides auditing services.
production company	✓a company which conceives, creates and markets audiovisual products (films, TV series, entertainment programmes, etc.).
advertising sales agency	✓a business which sells advertising spaces on behalf of its clients (radio and TV broadcasters, cinemas, publishers, websites, etc.).
advertising users	✓industrial, trading and services companies which invest in advertising and communication in order to promote their products and services to consumers.
sports rights owner	✓a company which owns the audio-visual and radio rights for sport events and markets them to the media and other interested subjects.
other users	✓users which make use of Auditel's data and do not belong to any of the categories above.

the new Auditel price list
new Auditel price list (valid since 1st January 2020)

software houses (Italy turnover base – source: chamber of commerce)		
a) micro	euro	8,000
b) small	euro	15,000
c) medium-big	euro	23,000

information services companies (Italy turnover base – source: chamber of commerce)		
a) micro	euro	5,000
b) small	euro	10,000
c) medium-big	euro	15,000

advertising agencies and media centres (tv billing base – source: Nielsen, Adex, Le Fac)		
minimum fee	euro	3,000
a) up to 10 million	euro/1m	341
b) 10.1-50 million	euro/1m	324
c) 50.1-250 million	euro/1m	306
d) 250.1-500 million	euro/1m	288
e) 500.1-1,000 million	euro/1m	271
f) over 1,000 million	euro/1m	253

auditing firms (Italy turnover base – source: chamber of commerce)		
a) small	euro	5,000
b) medium	euro	13,000
c) big	euro	22,000

production companies (Italy turnover base – source: chamber of commerce)		
a) small	euro	5,000
b) medium	euro	13,000
c) big	euro	22,000

advertising users (Italy turnover base – source: chamber of commerce)		
a) up to 10 million	euro	5,000
b) 10.1-50 million	euro	12,000
c) over 50 million	euro	20,000

advertising sales agencies (advertising investment base - source: Nielsen, Adex / Italy turnover base – source: chamber of commerce)		
a) up to 10 million	euro	5,000
b) 10.1-50 million	euro	15,000
c) 50.1-250 million	euro	30,000
d) 250.1-500 million	euro	50,000
e) 500.1-1,000 million	euro	75,000
f) over 1,000 million	euro	110,000

sports rights owners (Italy turnover base – source: chamber of commerce)		
a) small	euro	5,000
b) medium	euro	15,000
c) big	euro	35,000

other users (Italy turnover base – source: chamber of commerce)		
a) micro	euro	3,500
b) small	euro	6,000
c) medium	euro	10,000
d) big	euro	15,000

seasonal users		
a) up to 6 months	% fee	75%
b) 6-12 months	% fee	100%

Specific fees not in the above price list may be applied for the use of the data related to some types of services.