MMS Golden Rules TAM

2022-09-01

MMS

Contents

0. Updates

Paragraph	Title	Date
	Document created	2021-12-15
5.5	Updated standard criteria for reach calculations	2022-09-01

1 Components

1.1 Official raw data on individual basis

This data is the source for calculations of viewing metrics. ORPI, as it is abbreviated, consists of two different parts:

- ORPI-RP: Containing information about the panel of possible viewers. This file consists of one row per each individual panel-member and holds information about the panel-members current weight, sociodemographic variables, and other relevant information. A specification of the RP file can be found here.

- ORPI-RV: Containing the measured viewing statements for each viewing panel-member. This file consists of one row per each panel-member and viewing sequence. A viewing sequence is a continuous viewing on a certain channel. A specification of the RV-file can be found here.

The ORPI files are produced daily per each day of consumption. The ORPI-RV-file for a specific date will cover live viewing of content broadcasted during that specific date, and time shifted viewing of content that was originally broadcasted previously during that same day or within the 7 previous days.

1.2 Objects of measurement

The object of measurement could be a specific tv-program, a commercial spot or a timeslot like a quarter, hour, or complete day. It could also be a whole schedule of different programs or spots, or timeslots over a period.

2 Panel composition

2.3 Control variables

The Swedish TAM panel is controlled by the variables:

- Level of education
- Claimed amount of viewing
- Household size (1p or 2p+)
- Presence of children and adult age (20-22 or 45+)

This result in a panel matrix of 36 cells that controls the number of panel households belonging to each cell according to the current universe sizes. The object of the panel matrix is to control the panel representativity with respect to the variables that are identified to influence viewing behavior.

2.4 Universe

Twice a year the Establishment Survey (ES) is conducted to map the structure of the Swedish population. The results from the ES are used to update the *universe sizes* which are used for the following purposes:

- Composing the panel matrix
- Weighting the panel
- As a factor in calculation of TV-metrics

The universe sizes are updated biannually in beginning of January and July.

2.5 Sum of weights of possible panel-viewers

The sum of weights of possible panel-viewers is used as a parameter in all the different metrics.

This is calculated by summing the panel weights in ORPI-RP-file for each selected target-group (*M*) and TV-day (*D*). Guests should be excluded.

$$Sum\ of\ weights_{M,D} = \begin{cases} \sum_{p=1}^{P} w_p, & Guest = 0 \\ 0, & Guest = 1 \end{cases}$$

Where:
P= Total number of panel-members (guests excluded) in target-modules *m*.
w= Weight for panel-member *p* according to ORPI-RP-file.

2.6 Classes of variables

The calculation of TV metrics can be performed an analyzed over a rich variety of target groups and panelist variables. However, the representativity and reliability varies between three different classes of variables. The metrics will also be calculated slightly different depending on the class of the target group variable, which will be described in chapter 2.

Class 1: Standard target groups

There are two variables that are classified as class 1 variables:

- age-group*gender (ALDKON)
- family-situation (FAMLIV)

The universe sizes for the standard target groups are stored in a structure where the universe sizes are aggregated into several target-modules corresponding to the different values of each class 1 variable.

Calculation of metrics performed on class 1-variables should always be performed on target-module level. The absolute, rounded, values for each involved target-module are the combined into the total results for the target group.

Example: For class 1 target-group Males 3-14, the calculations are first performed on target-modules M3-6, M7-11, and M12-14 separately. The absolute figures for each module are summarized into the total result for M3-14.

Class 2: Free target groups

All other variables in ORPI-RP beside the 2 mentioned class 1-variables are considered as class 2-variables. A target group is classified as "free" if at least one of the variables included in the target group is a class 2 variable.

Instead of the standard universe sizes as for the standard target groups, a "base figure" for the target group is to be calculated from the RB3-file, consisting of results from the establishment survey on respondent level.

Since class 2 variables doesn't need to be involved in either panel controls or weighting, it means there could potentially be bigger discrepancies between the panel sample and the population base figure from the RB3-file. Hence the panel representativity for these free target-groups cannot be guaranteed.

Class 3: Lifestyle variables

A target group is classified as class 3 if at least one of the variables included is a so called "lifestyle variable". These variables are information coming from the "Lifestyle survey" which is a survey where panel members have responded to a questionnaire about their interests, lifestyles etc.

These variables do not exist in the ORPI-RP-file. The source is instead the PS-file which is updated and delivered once a week containing answers for every panelist who have answered the survey.

Neither does the class 3 variables exist in the establishment survey, which means there will be no universe or base figures to calibrate the calculations against.

When calculating class 3-variables, it is always the last available PS-file that should be used. A new PS-file will always completely replace an earlier version.

In case there are multiple data lines for a panel member in the PS-file, the one with the latest response date should be used.

Since the PS-file is updated weekly with the addition of new panel-members survey responses, it is important to keep in mind that historic viewing results for class 3 variables might change when using the newer PS-file.

A specification of the PS file can be found here.

2.7 Guest viewers

When guests are visiting panel homes, they are supposed to log in as viewers just like the regular panel members. The difference is that panel members have their own log-in button on the remote control, while guests log in with a special "guest button" and enters their gender and age. The guest viewing is meant to function as an approximation of panel members viewing out of home.

The "guest ID" within a panel home is only unique within a single viewing day. This means that over time, the viewing from a particular "guest ID" can originate from several different individuals/guest. Because of this, guest viewers are never to be included in Reach and Frequency analysis (section 3.5).

Neither should guest viewers be included in the sum of weights (section 1.5) as that would lead to a higher sum of panel weights than the size of the universe.

The weights for a guest viewer are always derived from the actual viewing day, even in case of time shifted viewing (section 4).

3 Calculation of metrics

3.1 Rating

Rating is defined as the average number of viewers per minute across a specific time slot. Rating is non-unique measure of the program's average audience size, where the intensity of viewing time has been considered.

The first step is to calculate the accumulator A of weighted viewing minutes in panel, where each viewing statement (v) in ORPI-RV-file is compared to the slot being measured. For class 1 and 2 variables, the accumulator will be adjusted by using the ratio between the universe target and the sum of weights of panelists. This is not applicable for class 3 variables since there are no available universe targets.

The (universe-adjusted) accumulator is then divided with the length of the slot in minutes, to calculate the absolute rating. For class 1 variables, this calculation needs to be done at target-module level (m) before being summarized into the complete target group (M):

	Class 1	Class 2	Class 3
Accumulator (A)	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$
Absolute rating (target module)	$round\left(\dfrac{A_m * \dfrac{U_m}{W_m}}{L}\right)$	Not applicable	Not applicable
Absolute rating (target group)	$\sum_{m=1}^{M} Absolute\ rating_m$	$round\left(\dfrac{A_M * \dfrac{U_M}{W_M}}{L}\right)$	$round\left(\dfrac{A_M}{L}\right)$
Relative rating (target group)	$\dfrac{Absolute\ rating_M}{U_M}$	$\dfrac{Absolute\ rating_M}{U_M}$	$\dfrac{Absolute\ rating_M}{W_M}$

Where:

V= Total number of viewing statements v in ORPI-RV-file.
t= Number of minutes for viewing statement v that matches the slot being measured.
w= Weight for panelist p according to ORPI-RP-file.
U= The universe size of target-module or -group. For class 2 variables, this is derived from the RB3-file.
W= The sum of weights of possible panel-viewers in target-module m or target group M as described in 2.5.
L= Length of the measured slot in minutes.

3.2 Average viewing time

Average viewing time is the number of minutes viewed in average per individual in the target population.

As for rating, the base is accumulator of weighted viewing minutes (*A*) which is then divided with the universe target (class 1 and 2) or the sum of weights in panel (class 3).

The difference between class 1 and 2 is that the former needs calculation of the rounded and universe-adjusted accumulator by each target-module (*m*) before summarizing it and dividing it with the universe size of complete target group (*M*):

	Class 1	Class 2	Class 3
Accumulator (A)	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$
Average viewing time (target group)	$\dfrac{\sum_{m=1}^{M} round\left(A_m * \frac{U_m}{W_m}\right)}{U_M}$	$\dfrac{round\left(A_M * \frac{U_M}{W_M}\right)}{U_M}$	$\dfrac{round(A_M)}{W_M}$

Where:

V= Total number of viewing statements *v* in ORPI-RV-file.
t= Number of minutes for viewing statement *v* that matches the slot being measured.
w= Weight for panelist *p* according to ORPI-RP-file.
U= The universe size of target-module or target-group.
W= The sum of weights of possible panel-viewers in target-module *m* or target-group *M* as described in 2.5.

3.3 Share

Share is the calculation of a specific channels share of the total viewing time for all channels during a specific slot.

$$Share_{MC} = \frac{Total\ viewing\ time_{MC}}{Total\ viewing\ time_{MT}}$$

Like the other time-based metrics rating and average viewing time, it uses the (universe-corrected) accumulator (A) of weighted viewing minutes. For class 1 variables this is calculated per each target-module (m) first before summarizing it into the complete target-group.

	Class 1	Class 2	Class 3
Accumulator (A)	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$	$\sum_{v=1}^{V}(t_v * w_p)$
Share (target group)	$\dfrac{\sum_{m=1}^{M} round\left(A_{mC} * \frac{U_m}{W_m}\right)}{\sum_{m=1}^{M} round\left(A_{mT} * \frac{U_m}{W_m}\right)}$	$\dfrac{round\left(A_{MC} * \frac{U_M}{W_M}\right)}{round\left(A_{MT} * \frac{U_M}{W_M}\right)}$	$\dfrac{round(A_{MC})}{round(A_{MT})}$

Where:

C= Denotes the specific channel being measured.
T= Denotes the total TV-viewing across all channels. Please find which channel codes that should not be included in chapter 5.7.
V= Total number of viewing statements v in ORPI-RV-file.
t= Number of minutes for viewing statement v that matches the slot being measured.
w= Weight for panelist p according to ORPI-RP-file.
U= The universe size of target-module or target-group.
W= The sum of weights of possible panel-viewers in target-module m or target-group M as described in 2.5.

3.4 Reach single slot

This metric calculates the number of unique individuals that has been reached during a specific slot. Each viewer shall only be counted once, regardless the number of times the panelist has watched during the slot being measured.

The reach calculation can be combined with a reach criterion stating that the panelist needs to have been viewing for at least X continuous minutes to be included.

The weights of all unique panelists are summarized, and for class 1 and 2 variables the sum is multiplied with the ratio between universe size and sum of weights. For class 1 this is done within each target module (m) before summarizing it into the complete reach of the target group (M).

The relative reach is calculated by dividing the absolute reach with the universe size (class 1), base figure from RB3 (class 2) or sum of weights of panelists (class 3).

	Class 1	Class 2	Class 3
Absolute reach (target module)	$round\left(\left(\sum_{p=1}^{P} w_p * D_{p,v}\right) * \dfrac{U_m}{W_m}\right)$ $D_{p,v} = \begin{cases} 1, & if\ v_i = v_1\ and\ t > c \\ 0, & else \end{cases}$	Not applicable	Not applicable
Absolute reach (target group)	$\sum_{m=1}^{M} Absolute\ reach_m$	$round\left(\left(\sum_{p=1}^{P} w_p * D_{p,v}\right) * \dfrac{U_M}{W_M}\right)$ $D_{p,v} = \begin{cases} 1, & if\ v_i = v_1\ and\ t > c \\ 0, & else \end{cases}$	$round\left(\sum_{p=1}^{P} w_p * D_{p,v}\right)$ $D_{p,v} = \begin{cases} 1, & if\ v_i = v_1\ and\ t > c \\ 0, & else \end{cases}$
Relative reach (target group)	$\dfrac{Absolute\ reach_M}{U_M}$	$\dfrac{Absolute\ reach_M}{U_M}$	$\dfrac{Absolute\ reach_M}{W_M}$

Where:
P= Total number of panel-members in selected target-module m or target-group M.
w= Weight for panelist p according to ORPI-RP file.
v= Viewing statement for panelist p that matches the selection criteria.
t= Length in minutes for viewing statement v.
c= Reach criterion in minutes
U= The universe size of target-module or target-group.
W= The sum of weights of possible panel-viewers in target-module m as described in 2.5.
D= A 'dummy'-variable that indicates if the panel-members viewing statement v should be considered in the reach calculation or not. Each individual panelist should only be counted once.

3.5 Reach and frequency across multiple slots

This section refers to calculation of unique viewers and frequency distribution over a schedule of multiple slots over time.

Panel-day

In this kind of calculation, a certain *panel-day* should be used. The official recommendation is to use the middle day of the selected period as the panel-day. In case of an even number in the period, the latest of the two middle days should be used. The panel-day used for a specific analysis should always be shown in the final report of the results.

Example: The selected period for the analysis is 20210101-20210107. In this case 20210104 will be used as the panel-day.

The base for the calculation is the set of all possible panelists, guests to be excluded, and their weights, from the ORPI RP-file belonging to the panel-day. Only this set of panelists and their viewing during the selected period are to be considered in the reach calculation. Any viewing made by a panelist not belonging to the panel-day should not be part of the calculation.

To correct for differences between the reporting samples for each specific day and the used sample belonging to the panel-day, MMS will use the negative binomial distribution (NBD) to model the final frequency distribution.

Reach criterion

The calculation of reach across multiple days can be combined with a reach criterion in a similar way as for reach single slot (3.4).
The calculation of the frequency distribution F_i should then be limited to the set of viewing statements where the viewing length is equal to or longer than the specified reach criterion.

Calculation of input parameters

The first step is to calculate the input parameters needed for the NBD modelling:

- "True" rating

- "Raw" rating

- "Raw" frequency vector of the number of individuals who have viewed exactly 1 slot, exactly 2 slots…exactly n slots during the selected period.

1. The true rating is basically the total sum of absolute rating for the selection of S slots. The rating for each specific slot s should be calculated according to section 2.1:

$$True_S = \sum_{s=1}^{S} Absolute\ rating_s$$

2. The *raw* number of contacts are calculated in a similar way, but with one important difference. Only the viewing statements belonging to panelists included in the reporting sample of the chosen panel-day are to be considered, and guest viewers are excluded. This means that the panelists weights from the panel-day should be used when calculating the viewing time accumulator A.

$$Raw = \sum_{s=1}^{S} Absolute\ raw\ rating_s$$

3. For each panelist belonging to the panel-day, all viewing statements (fulfilling the reach criterion) for all viewing-days in the selected period should be used to count the number of viewed slots within the period.

   By then summarizing the weights for the panelists who have viewed exactly 1 slot, exactly 2 slots…exactly n slots:

   $$F_i = \sum_{p=1}^{P} pw_p$$

   for $i = 1,2,3,\ldots,n$

   Where:
   P= Total number of possible panelists (guests excluded) belonging to the panel-day, according to the ORPI RP-file.
   pw= Weight for panelist p at the panel-day
   i= Number of viewed slots within the period

   The "raw" frequency distribution will be adjusted by fitting the negative binomial distribution to it as described in the following section.

1. Calculate the relative frequency distribution by dividing each element of the input frequency vector with the universe size of the selected target-group:

$$Fr_i = \frac{F_i}{U_M}$$

$$for\ i = 1,2,3,\dots,n$$

Note: For class2 variables this refers to the base target derived from RB3-file. For class 3 variables the sum of weights of panelists in target group should be used. This applies for all cases where the universe size parameter is mentioned in this section.

2. Calculate the share of individuals watching exactly 0 days of the period by summarizing all elements of the frequency vector calculated in the previous step, and subtract this from 1:

$$Fr_0 = 1 - \sum_{i=1}^{n} Fr_i$$

Special case: In case $\sum_{i=1}^{n} Fr_i > 1$, let element $Fr_0 = 0$.

3. Add element Fr_0 to the frequency vector Fr to make it cover $i = 0,1,2,\dots,n$ number of active viewing days.

Special case: In case Fr begins with one or more elements where $Fr_i = 0$, these elements should be removed from the frequency vector before applying the probability model in the following steps.

Example: Assume the following relative frequency distribution:
Exactly 0 slots: 0
Exactly 1 slot: 0
Exactly 2 slots: 0.5
Exactly 3 slots: 0.4
Exactly 4 slots: 0
Exactly 5 slots: 0.1

Since the distribution begins with two elements with value 0, these two elements should be removed from the frequency vector. The remaining Fr_i will then cover the counts $i = 2,3,4,5$.

4. Before being able to apply the model, it is necessary to estimate the needed NBD parameters. The first step is to estimate the parameter k:

$$k = abs \left[- \frac{RawR * ln(Fr_0)}{ln(Fr_0) - RawR * W_{-1} \left[\frac{Fr_0^{\left(\frac{1}{RawR}\right)} * ln(Fr_0)}{RawR} \right]} \right]$$

Where:

RawR= The relative version of the input parameter *Raw*, where it is divided by the universe size of the relevant target-group:

$$RawR = \frac{Raw}{U_M}$$

Fr₀ = The value of the 0-element in the frequency vector, as calculated in step 2.
W₋₁[ ]= The Lambert W function (using the secondary branch).

Special case: In case $k > 120$, let $k = 120$.

5. After estimating the value of k, the parameters a and b can be calculated as:

$$a = \frac{\frac{Raw}{k}}{U_M}$$

Where:

Raw: The input parameter of raw number of contacts
U: The universe size of target-group *M*.

$$b = a * \frac{True}{Raw}$$

Where:

True: The input parameter of "true" number of contacts.
Raw: The input parameter of "raw" number of contacts.

6. With the values of *a* and *b,* the NBD probabilities of *p_raw* and *p_true* can be calculated as:

$$p\_raw = \frac{a}{(a+1)}$$

$$p\_true = \frac{b}{(b+1)}$$

7. With all needed parameters, each element of the frequency distribution *Fr* will be adjusted by using the function of the negative binomial distribution:

$$\widehat{Fr}_i = \frac{\Gamma(k+i)}{i!\,\Gamma(k)}[(p\_true)^i(1-p\_true)^k - (p\_raw)^i(1-p\_raw)^k] + Fr_i$$

Where:

Γ( )= Gamma function.
i= The number of $i = 0,1,2,\dots,n$ active slots as remaining after step (3.).

Final adjustments and reach calculation

1. The next step is to adjust the sum of the frequency shares to make it equal to 1 (=100% of the population).

   In case the sum of $\widehat{Fr} \neq 1$, the difference should be added by adjusting the last, n^{th}, element of the frequency distribution as:

$$\widehat{Fr}_n = \widehat{Fr}_n + \left(1 - \sum_{i=0}^{n} \widehat{Fr}_i\right)$$

   Special case: In case any elements of the frequency distribution were removed due to the special case rule in step (3.), these should now be included again (with their values of 0) to make the full adjusted frequency distribution $\widehat{Fr}_i$ cover the complete number of $i = 0,1,2,\dots,n$ number of slots.

2. The relative reach across the selected period can now be calculated as the sum of elements $i = 1,2,\dots,n$, i.e the share of individuals who have watched during at least one of the slots within the period:

$$Relative\ reach\ (across\ multiple\ slots) = \sum_{i=1}^{n} \widehat{Fr}_i$$

Calculate the absolute frequency counts by factor all elements of the relative frequency distribution $\widehat{Fr}$ with the universe size of the relevant target groups:

$$\hat{F}_i = \widehat{Fr}_i * U_M$$

The sum of the absolute frequency distribution $\hat{F}$ gives the absolute number of reached individuals during the selected period:

$$Absolute\ reach\ (multiple\ slots) = \sum_{i=1}^{n} \hat{F}_i$$

Cumulative reach over time

The reach calculation can be used to display the growth of additional reached viewers day by day for the selection of slots.

All above steps including calculation of input parameters, fitting the probability model and final reach calculation needs to be done in an iterative way adding each slot within the period one at a time for s1, s1+s2, s1+s2+s3 etc. up until the complete S slots of the selection.

The panel-day is chosen based on the complete selected period and should be used for each specific iteration within the period.

To avoid the risk of decreasing reach levels within a period of analysis, MMS applies and additional correction step upon the results. This will be described by the following example:

Example: Assume a reach and frequency-analysis for the period 20190101-20190105 (slot: full day) with the below results for the frequency distribution $\hat{F}_i$ after performing the negative binomial modelling as described in previous steps.

The absolute reach after 20210103 is lower, 107 000, compared to the results after the previous day 20210102.

	$\hat{F}_1$	$\hat{F}_2$	$\hat{F}_3$	$\hat{F}_4$	$\hat{F}_5$	Absolute Reach+1
d1=20210101	100 000					100 000
d2=20210102	80 000	30 000				110 000
d3=20210103	75 000	27 000	5 000			107 000
d4=20210104	70 000	32 000	4 000	2 000		108 000
d5=20210105	65 000	35 000	10 000	2 000	1 000	113 000

The absolute reach level after each day in the period needs to be compared with the previous one:

$$difference_d = Absolute\ reach_d - Absolute\ reach_{d-1}$$

In case $difference_d < 0$, the absolute value of the difference should be added to the last, n^{th}, element of the frequency distribution $\hat{F}_i$ as:

$$\hat{F}_n = \hat{F}_n + abs(difference_d)$$

In the example we can see that the difference between d3 and d2 is 107 000-110 000= -3000

which means that that:

$$\hat{F}_{3,d3} = 5000 + abs(-3000) = 8000$$

And the absolute reach after d3 now equals to 110 000.

Continuing with the procedure we can see that also the reach level after 20210104 needs to be adjusted since it now will be lower compared to the corrected reach level of 20210103.

The final frequency distribution and reach+1 levels of the example are seen in the table below:

	$\hat{F}_1$	$\hat{F}_2$	$\hat{F}_3$	$\hat{F}_4$	$\hat{F}_5$	Absolute Reach+1
d1=20190101	100 000					100 000
d2=20190102	80 000	30 000				110 000
d3=20190103	75 000	27 000	*8 000*			*110 000*
d4=20190104	70 000	32 000	4 000	*4 000*		*110 000*
d5=20190105	65 000	35 000	10 000	2 000	1 000	113 000

4 Time shifted viewing

4.1 Time shift components

MMS TV audience measurement covers viewing up to 7 days after the live broadcast day. This means that the measurement includes, and can be analyzed across, 9 different viewing components:

Code	Viewing component
L	Live
T0	Vosdal (time shifted viewing on the same day as live)
T1	Time shifted viewing 1 day after the live day
T2	Time shifted viewing 2 days after the live day
…	…
T7	Time shifted viewing 7 days after the live day.

Time shifted viewing statements will appear in the ORPI-RV-file belonging to the *consumption day,* meaning the day the viewing took place. The viewing shall however always be allocated and reported to the *live broadcast day* and the original live broadcast slot.

4.2 Time shift in the currency

An early, **preliminary version,** of viewing figures is called overnight (OV) and can be available the day after the television day. This includes results for L+T0. The **final version** of the currency viewing figures is called consolidated (KO) and includes live viewing plus attributed time shift viewing from all 7 days after the live day.

Currency version	Viewing component included
Live	L
OV	L+T0
KO	L+T0+T1+T2+…+T7

It is also possible to analyze the viewing on live or time shift separately, but the report should always show what viewing components are included in the calculation.

4.3 Weights and demographic

If a time shifting panel member is included in the reporting sample of possible viewers (ORPI-RP-file) on the *live broadcast day,* the weight and demographic from this day should be used.

If a time shifting panel member is *not* included in the panel sample on the live day, the weight and demographics from the *time shift day* (i.e the viewing day) should be used instead. In case such a panel member has time shifted the same live slot multiple times on different time shift days, the weight and demographic from the time shift day *closest to* the live day should be used.

For guest viewers, the weight and demographic information should *always* be used from the time shift-day (viewing day) regardless of the "guest ID" is found in the ORPI-RP-file on the live day or not. The reason for this is that the "guest ID" within a panel home can refer to different individuals/guests over time.

The above-described rules for how to pick the correct weight and demographic are also being summarized in the following table:

			Panel-member	Guest viewer
Included in panel sample on live-day	**Yes**	**One time shift-day**	Live-day	Time shift-day
		Multiple time shift-days	Live-day	Time shift-day
	No	**One time shift-day**	Time shift-day	Time shift-day
		Multiple time shift-days	The time shift-day closest to the live day	Time shift-day

4.4 Reach

Reach on a single slot is still a unique measure also with time shifted viewing included. A panel member should always be counted only once even if the viewing might include both live and time shift.

Guest viewers are only to be seen as unique within the viewing day, since the "guest ID" might refer to different individuals/guest over time. This means that if the same "guest ID" have viewed the same program on different viewing days (for example both Live and T3), they should be counted as two different individuals in the calculation of consolidated Reach.

5 Definitions and standards

5.1 Reporting minutes

The lowest reporting level in the TV audience measurement is "minute".

A viewing session (equivalent to a viewing data statement on ORPI-RV-file) refers to an unbroken viewing, by the same panel member, on the same channel.

A viewing session can only be attributed to one single channel. This means that if there are viewing taking place on more than one channel within the same minute, the channel with the longest sequence within the minute till "win" the complete minute. In case there viewing is split 50/50, the most recent sequence's channel will win the minute and be allocated the viewing session in ORPI-RV-file.

The ORPI-RV-file are using "Mam" (minute after midnight) as format of the minute variable.

5.2 Programs

The channels define the broadcasted programs in as-run-program-log files following common guidelines.

In MMS people meter system, the program start times are round down to the nearest minute if the seconds are between 00-29 and rounded up to the next minute if the seconds are 30-59. The ending times are rounded in the same way.

The duration of a program will always be in complete minutes, calculated as the difference between the start- and end times of the program, using the same rule for minute rounding as above.

Commercial breaks inside a program are included in the program length, and hence also in the viewing figures.

5.3 Spots

The viewing figures of a spot is always calculated based on the viewing during the start minute of the spot. **Example:** The start time of a spot is 20:00:20 and it is 60 seconds long, ending in 20:01:20. According to the round rule in section 4.1, the start minute of the spot will be 20:00. The rating of the spot will the be equal to the rating of the slot minute 20:00, regardless the overlapping viewing in minute 20:01.

The definition of a commercial block is an unbroken sequence of adjacent spots.

5.4 Day, week and month

All viewing should be reported to its television day. A television day starts at 02:00 (mam=120) and ends including the minute 25:59 (mam=1559). This means that viewing between 00:00 and 01:59 will be allocated to the television day before the calendar day. The ORPI-RV-file of a specific day is always in line with the television day.

A television week starts with a Monday and is always 7 days long.

A television month (also called "MMS month") can consist of either 4 or 5 television weeks. In case a television week are overlapping two calendar months, the week will be allocated to the television month with the highest number of days within the week.

A television year always consists of 12 complete television months (January to December), which can cover either 52 or 53 television weeks.

5.5 Reach criteria

MMS current standard for reach criteria is since 2022-09-05:

Type of analysis	Criterion
Program	1 minute
Day/day part	1 minute
Week	1 minute
Niche channels	1 minute

The previously used standard (before 2022-09-04) was:

Type of analysis	Criterion
Program	3 minutes
Day/day part	5 minutes
Week	15 minutes
Niche channels	1 minute

A reach criterion is fulfilled if the length of the viewing statement in ORPI-RV-file is longer than or equal to the set criterion.

5.6 Panel day

"Panel day" is a concept used in calculations of reach and frequency across multiple slots, which may cover a period of multiple television days. Since there are variation in the panel sample and their weights from day to day, it is necessary to use the sample from only one day as the base for the analysis. This day is referred to as the "panel day", and the official recommendation is to use the middle day of the period to be analyzed. In case of an even number of days, the latest of the two middle days should be chosen as the panel day.

See section 3.5 for more details about calculating reach and frequency over time.

5.7 Total television definition

Total television viewing is defined as the sum of viewing on all channels being measured and reported in the ORPI-RV-file with the following exclusions:

Source code according to MMS list of reference recorded channels	Period for excluding the sources
75, 82	Viewing up to and including 2005-08-21
75, 82, 86, 146, 240, 241, 135	Viewing from 2005-08-22 to 2009-09-27
75 ,82, 86, 146, 240, 241, 135	Viewing from 2009-09-28 to 2010-03-21
75, 82, 86, 146, 241, 135, 701* 700-720	Viewing from 2010-03-22

*701 refers to time shifted viewing, not yet attributed to the correct channel. Time shifted viewing allocated to the broadcast day should be included.