



# CIM Television

Calculation and Reporting Rules

June 2021



*These exploitation rules were created with the much appreciated assistance of:*

- *SKO from the Netherlands who gave their permission to use elements and formulas from the document 'Calculation and Reporting Rules',*
- *Philippe Delhaise (Mediatrix) who compiled the basic copy regarding formulas and who corrected various revisions with the patience of angels.*



## Introduction

The multiplication of tv and online video platforms inspired CIM to combine different measurements:

- The CIM has entrusted the CIM TAM study for the period 2021-2025 to GfK Belgium for the audience study.
- The Time Logging contract has been entrusted to Nielsen for the period of 2019-2022.
- The measurement of online video content of TV channels is entrusted to Gemius for the period of 2020-2021.

The integration of all of these data is the objective of the OVC project.

The aim of this document is to indicate how data should be calculated and how it can be used.

As part of the introduction of time shifted viewing, certified all TV software applications of the so-called TV software houses. A list of certified companies is provided at the website of CIM ([Softwareleveranciers | CIM](#) or [Fournisseurs de logiciel | CIM](#)).



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## 1. Usage of the data

The CIM TV data are available to all subscribers of the CIM TV study. A list of entitled subscribers is posted on the CIM website ([Zenderlijsten | CIM](#) or [Listes des chaînes | CIM](#)).

The subscribers must respect the rules regarding the communication of data. These rules are available at the CIM website ([Reglement - Televisie | CIM](#) or [Règlement télévision | CIM](#)) and in paragraph 3.

Only CIM-certified software houses may warrant use of CIM TV data. They are held to strict confidentiality and may under no circumstances use the CIM TV data in any other form. Every situation that is cause for the slightest doubt should be submitted to the CIM.

The issue of these calculation and reporting rules is prompted by the availability of data regarding time shifted viewing in the Belgian market and what is by consequence considered as currency. From 2016 on the currency is Live+7+Guests.

Analysis and reporting on the basis of other viewing definitions remain possible but should be clearly specified.

### 1.1 Rules concerning the use of CIM TV data

#### 1.1.1 Data for Subscribers

Two files are generated on a daily basis for **subscribers of the CIM TV study**:

- ATA file: data per second, complete list of all TV channels. These files are made available to TV channels and their national advertising producers who have subscribed for this.
- ATB file: data per second for national subscribed TV channels in addition to aggregated data per quarter for all other TV channels who earn at least 1% market share in the complete universe (4 years and older) (only ratings and share). This file thus contains 2 different levels of detail depending on the channel, and the number of reported channels is limited. These files are made available to intermediaries.

The following regroupings of other TV channels are included:

- Other channels – Dutch-speaking
- Other channels – French-speaking
- Other channels – neither Dutch nor French

Two files are generated daily for **subscribers of the CIM OVC Project**:

- A band file: daily traffic for three types of online video (episodes, fragments, live) of all OVC channels. These files are made available to the channels and their national advertising producers that subscribed to the big Audimétrie and for the OVC project.
- B band file: daily traffic for two types of online video (episodes, fragments, live) of all OVC channels. These files are made available to intermediaries.



### **1.1.2 Data for other CIM members**

CIM members who are not subscribed to the CIM TV study can request monthly channel reports (*MZR*). A report can be provided by a choice of target group and hour slot with the average day reach, week reach, month reach and market share of a TV channel.

### **1.1.3 Which data can be included in external communication?**

The data a subscriber of the CIM TV study can use in his external communications are:

- the data for channels that are found in the ATB file,
- the pre-calculated channels or channels with a monthly broadcasting report (*MZR*).

In other words, communicating the data found in the ATA file externally that are not found in the mentioned files above is prohibited.

All external communications are subject to the following limitations:

- It is forbidden that a TV channel reported on the basis of figures per second is compared with a TV channel reported on the basis of quarterly figures. If one of the TV channels is reported per quarter in the AUB file, in a comparison with other TV channels, the latter must also be indicated on the basis of data per quarter, even if data per second is available.
- When publishing figures, a clear distinction should be made between CIM TV figures on the one hand and estimates based on CIM TV figures on the other hand. In the latter case, it should be clearly stated 'estimate of ... based on CIM TV figures'.
- A minimum of 300 individuals must be represented in the random sample size of a selected target group. If the number of 300 individuals is not achieved, the CIM requests that this be mentioned in the reporting.

Please be advised that the rating figures in the top 20 programs published by CIM represent 'all viewers all screens', including CIM OVC data. Information on calculation, rules and publication is detailed further in this document.

The terminology and calculation rules for the different parameters as described below, must be respected by the users of the CIM TV data.

For more information, please contact CIM:  
02 661 31 50 ([tv@cim.be](mailto:tv@cim.be))



## 2. Calculation rules

### 2.1 Calculation rules “live”

#### 2.1.1 Reference universes

The following definitions of reference universes have already been in use since 1997 (Methodological report CIM TV – version of March 2007) and do not change. They are included here for the sake of completeness.

The reference universe is the population for which the study wants to establish a representative measure of television viewing behaviour. The definition of the reference universe remains constant but numbers vary according to the calendar year, depending on how the population evolves.

The **Total Reference Universe** is the Dutch-speaking and French-speaking population aged 4 and over, residing on Belgian territory (including foreign nationals), and who belong to a household that has at least 1 television set at its disposal.

Because of the regional division of Belgium, in practice two sub-universes have been delineated:

- **North Universe:** all people who meet the above definition and that live in the region of Flanders or Brussels (defined as the Nielsen 3 region) and who are Dutch-speaking.
- **South Universe:** all people who meet the above definition and that live in the region of Wallonia or Brussels (defined as the Nielsen 3 region) and who are French-speaking.

The composition of the television panel may vary slightly per day: sometimes new people are added, other people leave the panel, sometimes the information for a family is missing for technical reasons... To obtain representative viewing figures every day, all members of the panel are thus weighted every day to obtain a perfect match with the reference universe. This ‘daily weight’ is a basic parameter for the correct calculation of viewing figures.



## 2.1.2 Broadcast parameters

When identifying television broadcasts, different parameters are used by the CIM for time logging:

- Level : level 1, 2, 3 or 4  
The TV-log is in fact like a tree. Some programs of level 1 can contain elements of level 2 (program, break or auto-promotion). Programs of level 2 can also contain elements at level 3 and programs of level 3 can contain elements at level 4.
- Section : if an element can be considered as a section of a 'father' program, the value is S; in all other cases it is N.  
A classical example are parts of a film or series separated by breaks and/or auto-promotions and/or infomercial, etc. Another example would be the different parts of a football program.
- Type : A = program, B = break, C = autopromo
- Format : e.g. 32 = magazine
- Content : e.g. 418 = consumer advice
- Title : description of the time-logged element.

Please take into consideration that some programs like infomercials can appear at level 2 and still be considered as a main program. A typical example would be a movie with 2 levels wherein we find infomercial identified as level 2 N.A. instead of level 1 N.A. (due to the fact that the movie has not ended yet). Such program does not belong to the main event (in this example, the movie) and its rating and duration will not be taken into account while doing your calculation for rating, duration, etc. of the main event.

The list of Genre codes is available on the CIM website ([Methodologie | CIM](#) or [Méthodologie | CIM: Typology](#)).

These parameters are included in the results of the CIM TV study, as illustrated below:

Start time	Duration	Level	Section	Type	Format	Content	Title
02:00:00	1354	1	N	A	32	418	ON N'EST PAS DES PIGEONS!
02:00:00	1033	2	S	A	32	418	ON N'EST PAS DES PIGEONS!
02:17:13	29	1	N	C	70	999	AUTOPROMO
02:17:42	23	1	N	B	61	999	NUI
02:18:05		1	N	A	36	216	METEO

A 'BRUTO' (gross) programme is defined by a start and an end of a programme, without extracting parts as commercial spots, auto-promotion, breaks,...

A 'NETTO' (net) programme is defined by a start and an end of a programme, excluding the commercial spots, auto-promotion, infomercial... = netto programme.





### 2.1.3 The CIM audience Threshold

#### a. Viewing duration

The sample data is available per second. For some metrics, the CIM has set a minimum of viewing time.

For example viewing for at least 1 min / 10 min =

- Anyone who watched a programme, a time band or a channel at least 60/600 seconds.
- This needs regrouping of different STATS-lines per viewing type (live, TSV):  
HOME-ID  
MEMB-ID or GUESTID  
TV-NUMBER  
CHANNEL or VIRTUAL CHANNEL  
ACTIVITY CODE = TV and Overlay

This regrouping is sufficient for non-consecutive viewing.

If the viewing needs to be consecutive the regrouping is more stringent. The conditions are enlarged to identify consecutive viewing of a person in case of different statements (e.g. different statements due to arrival of other panel members or guests):

- The regrouping of different STATS-lines per viewing type:  
HOME-ID  
MEMB-ID or GUESTID  
TV-NUMBER  
CHANNEL or VIRTUAL CHANNEL  
ACTIVITY CODE = TV and Overlay  
END TIME STATS<sub>x-1</sub> = STARTING TIME STATS<sub>x</sub>

As the lower threshold of a programme reach, the CIM has set a minimum of 60 consecutive seconds viewing a programme.

In addition, the user is free to determine or set a higher minimum viewing duration and whether this must be consecutive or not, and to choose whether someone must have watched one or more programmes to count as part of the programme reach.

How long someone must have watched one or more programmes can either be stated in minutes or as a percentage.

Frequently occurring values include: a minimum of 1 consecutive minute, a minimum of 10 minutes and a minimum of 10 consecutive minutes.

#### b. % of viewing

The CIM defines viewing a spot as having contact with a spot during at least half of its duration in its time slice. See 2.1.4 e.



## 2.1.4 Rating calculation rules

### a. Programmes

The rating of a programme is defined as the average percentage of viewers per second within the reference universe that watched this programme. The respondents in the random sample are weighted with a weight determined by the extent to which they occur in the total population of viewers in the reference universe.

$$rating_i = \frac{\sum_{r=1}^R w_r p_{r,i}}{\sum_{r=1}^R w_r} \times 100\%$$

*rating<sub>i</sub>* : rating for programme *i*

*R*: number of respondents in the sample

*w<sub>r</sub>*: weight of respondent *r*

*p<sub>r,i</sub>*: proportion of the programme *i* viewed by respondent *r*

Where the proportion is equivalent to:

$$p_{r,i} = \frac{V_{r,i}}{\text{duration}_i}$$

*V<sub>r,i</sub>*: Viewing duration of respondent *r* for programme *i*

*Duration<sub>i</sub>*: duration of programme *i*

### b. Time bands

The rating of a time band is defined as the average percentage of viewers per second within the reference universe that watched this/these channel(s) during this time band.

$$rating_t = \frac{\sum_{r=1}^R w_r p_{r,t}}{\sum_{r=1}^R w_r} \times 100\%$$

*rating<sub>t</sub>* : rating for time band *t*

*R*: number of respondents in the sample

*w<sub>r</sub>*: weight of respondent *r*

*p<sub>r,t</sub>*: proportion of time band *t* viewed by respondent *r*

Averages per time band, over multiple days, should be calculated as follows: a data file is calculated on a daily basis for the relevant target group including the rating per channel, per second, rounded up to a minimum precision of six decimals. These data are then used to calculate averages over multiple days, rounded off to the desired number of decimals.



### c. Total TV

The Total TV rating is defined as the average percentage of viewers within the reference universe who watched one channel or another during a programme or time band.

$$rating_{z,t} = \sum_{z=1}^Z rating_{z,t}$$

with

- $rating_{z,t}$ : Total TV rating for time band  $t$
- $rating_{z,t}$ : rating for channel  $z$  in time band  $t$
- $Z$ : total number of channels

As from March 1<sup>st</sup>, 2021, Total TV comprises the following elements:

- All individual channels (registered via EAM and/or Picture Matching and/or CNI code) (live and TSV statements)
- 'Other TV' channels (live statements)

Before March 1<sup>st</sup>, 2021, Satellite Receiver was considered as part of Total TV.

### d. Other Screen Usage

As from March 1<sup>st</sup>, 2021, Other Screen Usage comprises the following elements:

- Video recorder
- Other hardware device (camera, PC, etc.)
- Game console (Sony PlayStation, Microsoft X-Box, etc.)
- Set-top box (Telenet Digibox, Belgacom TV, etc.)
- Pay-TV decoder (Prime, Canal+, BE TV, etc.)
- DVD (reader, writer, reader + VCR, etc.)
- Satellite Receiver

### e. Total Screen Usage

Total Screen Usage is the sum of Total TV and Other Screen Usage

BEWARE: both Total TV and Total Screen Usage should be based on the Station code (never the Source code).<sup>1</sup>

### f. Spots

Viewing a spot is a Boolean variable: it is true (1) or false (0). The CIM defines viewing a spot as having contact with a spot during at least half of its duration in its time slice.

Timings and durations are expressed in integer numbers and can be even or odd  
Let us define:

---

<sup>1</sup> The Station code (field 2) indicates which channel or station has been watched. This value is different from the Source code (field 9) that identifies the device generating the signal: 0=TV, 1=VCR, 2=SATELLITE, 3=PAY, 4=DVD, 5=DVB, 6=PLAY, 7=OTHER DEVICE, 8=Connected TV.



- $l(s)$  = the length of a spot  $s$  in seconds
- $nS(r,s)$  = the number of seconds of spots viewed by respondent  $r$ , consecutive or not.

The contact value of spot  $s$  for respondent  $r$  is then a variable with two states:

- $c(r,s)=1$  (true), if  $nS(r,s) \geq \text{ceiling}(l(s)/2)$
- $c(r,s)=0$  (false), if  $nS(r,s) < \text{ceiling}(l(s)/2)$

Since time is an odd or even integer, the ceiling function is used to transform the result of the division in the nearest integer.

Example for a spot of 21 seconds:

- $c(r,s) = 1$  if  $nS(r,s) \geq 11$
- $c(r,s) = 0$  if  $nS(r,s) < 11$

The rating of a spot is defined as the percentage of viewers within the reference universe who have seen at least half of the spot.

$$\text{rating}_s = \frac{\sum_{r=1}^R w_r c(r,s)}{\sum_{r=1}^R w_r} \times 100\%$$

with

- $\text{rating}_s$ : rating for spot  $s$
- $R$ : number of respondents in the sample
- $w_r$ : weight of respondent  $r$
- $c(r,s)$ : =1 if respondent  $r$  saw  $nS(r,s)$  or more seconds of this spot with  $NsecondsMin = \text{ceiling}(lengths/2)$ , else = 0.

#### g. Blocks of advertising

A block of advertising usually starts and ends with a jingle. The rating of the block is not calculated on the basis of the individual ratings of the spots, but on the basis of the starting and ending time of the block. The jingles are included in the calculation of the rating of the blocks of advertising.

The calculation is identical to that of programmes and time bands (see a. and b. above).

### 2.1.5 Market share calculation rules

Until the introduction of Time Shifted Viewing, the market share was defined as the percentage of viewers of a broadcast or time band, based on the total viewing audience. Market share is calculated by dividing the rating of a programme or time band by the rating of total channels in the relevant programme or time band.



$$marketshare_{z,t} = \frac{rating_{z,t}}{rating_{z,t}}$$

Both Total TV and Total Screen Usage can be used as a reference within the software application.

### 2.1.6 Reach calculation rules

#### a. Programme

The programme reach is defined as the percentage of viewers who watch one programme at least once for a certain time.

$$reach_I = \frac{\sum_{r=1}^R w_r d_{r,I}}{\sum_{r=1}^R w_r} \times 100\%$$

$$d_{r,I} = \begin{cases} 1 & j_{r,I} \geq J \\ 0 & j_{r,I} < J \end{cases}$$

*I* :series of programmes

*d<sub>r,I</sub>* :‘dummy’ that indicates whether respondent falls within the programme rating according to specific definition

*J* :criterion for the specific programme rating (e.g. 60 consecutive seconds)

*R* :number of respondents in the sample

*w<sub>r</sub>* :weight of respondent *r*

*j<sub>r,I</sub>* :calculated according to the specific conditions, personal criterion of respondent for the programme series *I*

#### b. Reach of a channel

The reach of a channel is defined as the percentage of viewers who have watched a certain channel at least once for a certain time (duration).

### 2.1.7 Viewing Time calculation rules

The viewing time is defined as the average time that viewers watched a programme or a channel during a time band, expressed in seconds.



$$viewing\ time_t = \frac{\sum_{r=1}^R w_r V_{r,t}}{\sum_{r=1}^R w_r}$$

*viewing time t*: viewing time in time band t  
*R*: number of respondents in the random sample  
*w<sub>r</sub>*: weight of respondent r  
*V<sub>r,t</sub>*: viewing time of respondent r in time band t

### 2.1.8 Special calculation rules

#### a. Genre average

As indicated above (see 2.1.2) there is a tree structure in the genre codes of TV broadcasts. When determining the average reach of genre codes, the fact that the same genre can occur at different levels must be taken into consideration. This creates the risk of a broadcast being counted twice.

The simplest way to avoid this is to only calculate the average for identical levels: 1, 2 or 3. Combining different codes is only permitted if it is unquestionably clear that no minutes are counted double.

An example is the next scheme of a magazine (On n'est pas des pigeons!):

Start time	Duration	Level	Section	Type	Format	Content	Title
02:00:00	1354	1	N	A	32	418	ON N'EST PAS DES PIGEONS!
02:00:00	1033	2	S	A	32	418	ON N'EST PAS DES PIGEONS!
02:17:13	29	1	N	C	70	999	AUTOPROMO
02:17:42	23	1	N	B	61	999	NUI
02:18:05		1	N	A	36	216	METEO

If one wants to calculate the average for code faa for **different** football matches, this must be done at the same level: the average of every part of the game (level 3) or the average of level 2 or 1. Attention: fal stands for interviews before and after the game.



b. Multiple broadcasts

**Cumulative rating**

The cumulative rating is defined as the added ratings for multiple broadcasts.

$$\text{cumulative rating} = \sum_{i=1}^n \text{rating}(i)$$

*Cumulative rating: cumulative rating for n programmes*

*n: number of programmes*

*rating<sub>i</sub>: rating for programme i*

**Weighted average rating**

The weighted average rating is defined as:

$$\text{weighted average rating} = \frac{\sum_{i=1}^N \text{rating}(i). \text{duration}(i)}{\sum_{i=1}^N \text{duration}(i)}$$

**Weighted market share**

The weighted market share as being

$$\text{weighted market share}\% = 100. \frac{\sum_{i=1}^N \text{rating}(i). \text{duration}(i)}{\sum_{i=1}^N \text{totalTV}(i). \text{duration}(i)}$$

c. On the basis of daily sampling

Daily sampling is used for all results that pertain to one day and to averages over multiple days.

A daily sample includes all panel members of families who were successfully polled for that day. This involves all individuals for which the data is contained in the demographic files of gross files. No a posteriori adaptations or corrections are to be made.

d. On the basis of a periodic sampling (more than 1 day)

The weighted factor for each respondent from the periodic sampling is calculated by taking the mean of the daily weights of the respondent. The denominator is the total number of days of the periodic sampling on which a broadcast occurred.

When dealing with target groups over a longer period of time, some Panellists may join or leave this target group. A panellist could for example have his 30st birthday within the analysed period, and no longer be part of the target group 'Females 18-29 yr'. If socio-demographical characteristics change within the analysed period, only the days on which the panellist has the characteristics of the target group should be taken into account. All other days he should receive a weight of 0.



#### e. Guests

The age and gender of each registered guest is known (see 4.1). Until 1/1/2013 guests were not included in the calculations.

Guests were only taken into consideration for the weekly top 20 and annual top 100 of the CIM TV figures.

From 1/1/2013 guests are profiled in the CIM TV study and guest viewing is part of the official currency of the CIM TV study. The viewing behaviour of the guest is linked to a panel member that isn't watching at that time. The link based on 4 parameters: region (North – South), gender, age category (4-11, 12-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65+) and type of set top box.

The documentation on guest viewing is available in the methodology section on the CIM site [Methodologie | CIM](#) or [Méthodologie | CIM: Guest viewing](#)

#### f. Rounding

All calculations take place without rounding.

If the result types are determined in the meantime, they are rounded to a minimum of 6 decimal places. The number of possible deviations in respect of the reference is thus negligible.





## 2.2 Calculation rules “live+7”

### 2.2.1 Basic Principle

Time Shifted Viewing (TSV) is the term used for watching recorded programmes via VCR, DVD or DVB:

- Time shifted viewing on the actual day of broadcast (Day 0) is also called Vosdal ('Viewing on the same day as live').
- In the CIM TV study, time shifted viewing is identified as TSV up until 7 days after broadcast (Day 0 to Day 7 inclusive). The total of this TSV is called “+7”
- If a programme is viewed longer than seven days after broadcast, the viewing process remains identified as VCR, DVD or DVB.

In order to determine whether the viewer is watching live or time-shifted, the content of the broadcast on the viewed channel is compared with the broadcasts of the channel as it was registered live on the so-called 'Reference site'. This occurs in steps:

- The viewing process is first compared to the so-called 'Reference process': the live broadcast and all broadcasting to a maximum of 1.5 hours before that;
- If no match is found, then a search is performed in the period up to seven days before that for the first broadcast that does match;

If no match is found, the viewing process remains VCR, DVD or DVB.

Viewing processes cannot be ascribed to reference processes that are in the future.

Time shifted viewing behaviour is only calculated for persons in the random sample of the day of broadcast. Time shifted viewing behaviour of persons who do not belong to the panel on the day of broadcast is reported as 'Video', 'DVD' or 'HD'.

TSV will be available for the channels from the B-files, the channels reported per quarter (of an hour) and the channels with Monthly Broadcasting Reports:

You can download the list of participating channels in the CIM TV study on the CIM website ([Zenderlijsten | CIM](#) or [Listes des chaînes | CIM](#)).

The TV currency changed over time:

- (1997-2009) Live
- (2010-2012) Live+6: Live and time shifted viewing until 6 days after broadcast
- (2013-2015) Live+6 &Guests: Live and time shifted viewing till 6 days after broadcast, including guests
- (2016-now) Live+7 &Guests: Live and time shifted viewing till 7 days after broadcast, including guests



## 2.2.2 Rating “live+7” calculation rules

### a. Programmes

The rating of a programme is defined as the average percentage of viewers per second within the reference universe of the broadcasting day that watched this programme live or time shifted. The respondents in the random sample are weighted with a weight determined by the extent to which they occur in the total population of viewers in the reference universe of the broadcasting day. Time shifted viewers that were not present in the universe on the broadcasting day are not taken into account.

$$rating_i = \frac{\sum_{r=1}^R (w_r p_{r,i, live} + w_r p_{r,i, tsv})}{\sum_{r=1}^R w_r} \times 100\%$$

*rating<sub>i</sub>*: rating for programme *i*

*R*: number of respondents in the sample (broadcasting day)

*w<sub>r</sub>*: weight of respondent *r* (broadcasting day)

*p<sub>r,i, live</sub>*: proportion of the programme *i* viewed live by respondent *r*  
where the proportion is equivalent to:

$$p_{r,i, live} = \frac{V_{r,i}}{\text{duration}_i}$$

*V<sub>r,i</sub>*: Viewing duration of respondent *r* for programme *i*

*Duration<sub>i</sub>*: duration of programme *i*

*p<sub>r,i, tsv</sub>*: proportion of the programme *i* viewed time shifted by respondent *r*  
where the proportion is equivalent to:

$$p_{r,i, tsv} = \sum_{TSV0}^{TSV6} \frac{V_{r,i}}{\text{duration}_i}$$

*V<sub>r,i</sub>*: Viewing duration of respondent *r* for programme *i*

*Duration<sub>i</sub>*: duration of programme *i*

TSV 0: time shift in the broadcasting day

TSV 1: time shift one day after the broadcasting day

...

TSV 7: time shift seven days after the broadcasting day



b. Timebands

$$rating_t = \frac{\sum_{r=1}^R (w_r p_{r,t, live} + w_r p_{r,t, tsv})}{\sum_{r=1}^R w_r} \times 100\%$$

*rating<sub>t</sub>* : rating for time band *t*

*R*: number of respondents in the sample

*w<sub>r</sub>*: weight of respondent *r*

*p<sub>r,t, live</sub>*: proportion of the time band *t* viewed live by respondent *r*

*p<sub>r,t, tsv</sub>* : proportion of the time band *t* viewed time shifted by respondent *r*

Averages per time band, over multiple days, should be calculated as follows: a data file is calculated on a daily basis for the relevant target group including the rating per channel, per second, rounded up to a minimum precision of six decimals. These data are then used to calculate averages over multiple days, rounded off to the desired number of decimals.

### 2.2.3 "live+7" reach for a programme

The programme reach is defined as the percentage of viewers who watch one programme at least once for a certain time, live or time shifted.

$$reach_t = \frac{\sum_{r=1}^R w_r d_{r,I}}{\sum_{r=1}^R w_r} \times 100\%$$

$$d_{r,I} = \begin{cases} 1 & j_{r,I} \geq J \\ 0 & j_{r,I} < J \end{cases}$$

*I* : series of programmes

*d<sub>r,i</sub>*: 'dummy' that indicates whether respondent falls within the programme rating according to specific definition

*J*: criterion for the specific programme rating (e.g. 60 consecutive seconds)

*R*: number of respondents in the sample

*w<sub>r</sub>*: weight of respondent *r* (broadcasting day)

*j<sub>r,i</sub>*: the sum of live and time shifted viewing, calculated according to the specific conditions, personal criterion of respondent for the programme series



### 2.2.4 "live+7" share

"Live+7" marketshare is calculated by dividing the "live+7" rating of a programme or time band by the "live+7" rating of all channels in the relevant programme or time band.

Both Total TV and Total Screen Usage can be used as a reference within the software application.

$$\text{"live + 7" marketshare}_{ch,t} = \frac{\text{"live+7" rating}_{ch,t}}{\text{"live+7" rating}_{CH,t}}$$

with ch=channel, CH=all channels, t=time band

### 2.2.5 Specific Variables

#### a. Time Shift Delay

The Time Shift Delay (TSD) is the average number of minutes between the recording of programmes and the playing of the programmes.

This is defined as the average number of minutes between the starting time of the Live Broadcast Time (LBT) until six days before that and the start of viewing (Time Shifted Viewing Moment = TSVM).

$$TSD = (\sum(TSVM_i - LBT_0)) / n$$

With

- 1 >= TSD =< 10080 minutes
- TSVM<sub>i</sub> = Average Time Shifted Viewing Moment in day I (DD:HH:MM:SS in seconds)
- i = 0, ..., 6
- LBT<sub>0</sub> = Live Broadcast Time on day 0 (DD:HH:MM:SS in seconds).
- n = number of TSV viewings

#### b. Market share in total TSV

This concerns the achieved TSV of a programme or time band with respect to the total TSV (until six days after the broadcast).

This is a different result type than the Market Share TSV, because in the denominator the sum of all the TSV occurring during a week is used.

$$MS\ TSV = \frac{\text{Time shifted rating}_t}{\text{Time shifted rating (T)}} \quad (\%)$$

t = 1, ..., t series of Time Bands

T = 1+...+t total Time Band in days 1 to 7, where Time Bands do not overlap

0 =< MS TSV =< 100%



c. Share of TSV in rating

This is the share of TSV in the total rating of the programme or time band (Live plus TSV).

$$TSV\ Share = \frac{\text{Rating TSV Programme/Time Band}}{\text{Total rating of Programme/Time Band}} \quad (\%)$$

With  $0 \leq TSV\ Share \leq 100\%$

d. 'day share' in TSV

This concerns the relative share of TSV according to programme or time band per day, as compared to the total TSV for a programme or time band.

$$Day\ share\ in\ TSV = \frac{\text{Time shifted rating programme or time band on day x}}{\text{Total Time shifted rating programme or time band}} \quad (\%)$$

$0 \leq Day\ share\ in\ TSV \leq 100\%$

### 2.2.6 Special calculation rules

a. Guests and Live+7

Until 31/12/2016 only guests present on the actual day of broadcast (Day0) could be included in Live+6/7 analyses. Guest could therefore not be included in TSV other than Vosdal ('Viewing on the same day as live'). On 01/01/2017 Guest viewing was included for all TSV, and should thus be included in all Live+7+Guests analyses.

b. Total Screen Usage and Live+7

Since the introduction of TSV, two different interpretations of TSU are possible:

- one based on the TSU for a particular [broadcasting day](#) =  $TSU_{Live+7}$ ,
- and one based on the TSU for a particular [viewing day](#) =  $TSU_{Overnight}$ .



**TSU<sub>overnight</sub>** = TSU on day X, taking into account Vosdal + TSV from the last 7 days.  
 This is the total amount of seconds viewed on day X as in the ATA/ATB file.

It is calculated as **the sum of Live + Vosdal + TSV from past 7 days + OSU** with:

- Live: all stats with station-code<sup>2</sup> ≠ VCR - Other - Play - DVB - Pay - DVD (ATA) AND VCR | DVD | PAY | DVB | Play | Other (ATB) and TSV-code<sup>3</sup> = 0 (no TSV);
- Vosdal: Viewing On the Same Day As Live;
- TSV-1|-7: Playback TSV-1 + TSV-2... TSV-7 = TSV from the past;
- OSU: all stats with station-code = VCR - Other - Play - DVB - Pay - DVD (ATA) AND VCR | DVD | PAY | DVB | Play | Other (ATB) and TSV-code = 0 (no TSV).

**TSU<sub>Live+7</sub>** = TSU on day X, increased with viewing time from Vosdal + TSV from the next 7 days

It is calculated as **the sum of Live + Vosdal + TSV+1->+7 + OSU** with:

- Live: *identical* to Live as defined for TSU<sub>overnight</sub>;
- Vosdal: *identical* to Vosdal as defined for TSU<sub>overnight</sub>;
- TSV+1|+7: TSV as delivered in the TSA/TSB files in the days after the broadcast day;
- OSU: *identical* to OSU as defined for TSU<sub>overnight</sub>.

The scheme below summarizes the difference between TSU<sub>overnight</sub> and TSU<sub>Live+7</sub>.

Broadcasting day x	Viewing day x	Viewing day x+0	Viewing day x+1	...	Viewing day x+6	Viewing day x+7
Live day x	Live day x	Live day x	Live day x	...	Live day x	Live day x
Vosdal day x		Vosdal day x	Vosdal day x	...	Vosdal day x	Vosdal day x
OSU day x	OSU day x	OSU day x	OSU day x	...	OSU day x	OSU day x
TSV x-1 till x-7			TSV x+1	...	TSV x+1	TSV x+1 till x+7
				...	...	
					TSV x+6	
<b>TSU<sub>overnight</sub></b>	TSU <sub>live</sub>	TSU <sub>live+0</sub>	TSU <sub>live+1</sub>	...	TSU <sub>live+1</sub>	<b>TSU<sub>Live+7</sub></b>

TSU<sub>live+1</sub> may not be used in analyses of programme variables because this value is intermediate and not complete.

<sup>2</sup> Not to be confused with the Source code, a new field compared to the former AUA-AUB file that indicates which device generates the signal (see 5.3 Description ATA-ATB and TSV files).

<sup>3</sup> A new field added to the ATA-ATB file which indicates if a statement is time shifted yes or no (0=no, 1=yes).



c. Sources

The introduction of the Source code makes it possible to analyse the strength of different sorts of peripheral equipment<sup>4</sup>.

The scheme below illustrates the repartition of the different sources, how this evolves over time and how this results in TTV and TSU (example based on ratings). In the columns you'll find the different sources and the results for TTV and TSU. In the rows you'll find the results for Live, Live+Vosdal, Live+1,..., and the OSU (based on the Station code). When moving from Live to Live+Vosdal, Live+1,... the amount of seconds per source will increase. The only exception is "Other TV broadcasters" because this does not allow recording a program and hence it is impossible to have TSV on these sources.

Source	TV	VCR	Sat	DVD	DVB	PLAY	Other	CTV	Total TV 2006+	Total Screen Usage
Live+Playback	52.912	4.071	12.380	50.224	1.044.121	5.501	291	129.669	1.299.168	1.747.202
Live	52.905	3.922	10.164	39.412	823.445	3.766	290	88.183	1.022.087	1.747.202
Live+0 (Live+Vosdal)	52.905	3.995	11.908	46.785	943.127	4.594	290	112.890	1.176.496	1.624.530
Live+1	52.905	3.995	12.017	48.085	989.092	5.011	291	120.817	1.232.214	1.680.249
Live+2	52.905	4.008	12.065	48.565	1.006.822	5.160	291	123.650	1.253.466	1.701.501
Live+3	52.905	4.008	12.126	49.114	1.017.725	5.230	291	125.423	1.266.822	1.714.857
Live+4	52.905	4.035	12.163	49.437	1.025.819	5.301	291	126.745	1.276.696	1.724.730
Live+5	52.905	4.035	12.260	49.741	1.032.723	5.310	291	127.989	1.285.255	1.733.289
Live+6	52.905	4.035	12.393	50.113	1.039.718	5.322	291	129.178	1.293.955	1.741.990
Live+7	52.910	4.035	12.479	50.384	1.046.332	5.373	291	130.484	1.302.289	1.750.323
OSU	0	103	6.525	38.664	236.556	12.016	7	154.164	448.034	
TSU/Source	52.910	4.138	19.004	89.048	1.282.888	17.389	298	284.648	1.750.323	1.750.323

CIM TV: Belgium; 4+; week 11, 2021

<sup>4</sup> The calculation of Total TV (TTV) and Total Screen Usage (TSU) (as described in 2.1.4 Rating calculation rules) remains unchanged and is still based on the Station code.



## 2.3 Algorithm for the evaluation of advertising campaigns (“Live+7”)

### 2.3.1 General calculation rules for campaign evaluations

The general calculation rules for the CIM TV study have been used since 1997.

#### a. Main variables

The main variables in the post-evaluation of an advertising campaign are:

- Total coverage in %: percentage of target universe having seen a minimum of one spot
- OTS: Opportunity To See. This is the average number of contacts each person has with the spot.
- Contact distribution: cov%(k): percentage persons in the target universe who had k contacts with the spot.
- Daily GRP of each spot
- Total GRP of the campaign

Like all TV variables, all computations described in this chapter can be computed for a particular target. The only difference between computation for one target and for the Universe is that the sample is restricted to the persons belonging to the specified target group. We will therefore explain the algorithm for the Universe only.

#### b. Definition of a campaign

A campaign is a list of spots (events) broadcasted during a limited period of time.

- In CIM TV a campaign may not cross year boundaries.
- It is never a good solution to evaluate campaigns over too long periods because this will reduce the quality of the panel: not only some audimeters may not answer on specific days but also more members may enter and exit from the panel during the period.

A campaign is defined in the following way:

Day id	Spot id	Date	Channel	Start time	Duration
d1	s1	dd-mm-yyyy	CH3	19:00:00	31
d1	s2	dd-mm-yyyy	CH4	20:00:00	27
d2	s3	dd-mm-yyyy	CH2	19:30:00	45
d2	s4	dd-mm-yyyy	CH1	17:05:13	71
d3	s5	dd-mm-yyyy	CH1	25:12:17	11
d4	s6	dd-mm-yyyy	CH6	23:47:58	5
d5	s7	dd-mm-yyyy	CH5	19:45:34	15

D: number of days where one spot of the campaign is broadcast, in this example D=5.

S : number of spots, in example, S=7





c. Panel constitution for a specific campaign

To compute the post-evaluation, the algorithm will first define a campaign panel. In the CIM TV study the panel used is a Union panel: all participants of the Audimetric panel on one or more of the campaign days are a member of the panel. In the example above, all members of the Audimetric panel present on the 18<sup>th</sup> or 19<sup>th</sup> or 22<sup>nd</sup> of August or the 15<sup>th</sup> or 17<sup>th</sup> of September will be included in the campaign panel.

Earlier (see 2.1.1) the use of the daily weights for each individual panel member was described. However, at the campaign level, independent of the daily weights, a person present all days of a campaign will have a higher importance than a person present only a small number of days. In order to reflect this difference, each person in the campaign panel receives his own "campaign weight".

Let's define:

- $dW(d,m)$ : "daily weight" of member m for day d (d is the day of broadcast)
- $cW(m)$ : "campaign weight" of the member (a constant for the campaign)

with

m: one member

M: the number of members

The example below helps to understand how the campaign weights are computed.

	daily weights of m1	daily weights of m2	daily weights of m3
<b>d1</b>	100	80	70
<b>d2</b>	0(Absent)	70	72
<b>d3</b>	90	0(Absent)	68
<b>d4</b>	95	95	74
<b>d5</b>	105	105	76

The constant weight is computed as the sum of daily weights (0 if absent) divided by D, the total number of days of the campaign

- $cW(m1) = (100+90+95+105)/5 = 78$
- $cW(m2) = (80+70+95+105)/5 = 70$
- $cW(m3) = (70+72+68+74+76)/5 = 72$

d. GRP's for an individual spot

The GRP's published at the spot level are computed with the member daily weights. So we can define the GRP's for spots as:

$$GRP\%_s = \frac{\sum_{m=1}^M C(m,s) * dW(m,d)}{\sum_{m=1}^M dW(m,d)} * 100,0$$



with

- $c(m,s)=1$  (true), if  $nS(m,s) \geq \text{ceiling}(l(s)/2)$
- $c(m,s)=0$  (false), if  $nS(m,s) < \text{ceiling}(l(s)/2)$

and

- $l(s)$  = the length of a spot  $s$  in seconds
- $nS(m,s)$  = the number of seconds of spot  $s$  viewed by member  $m$ , consecutive or not.

e. GRP's, coverage and OTS for a campaign

The total GRP for a campaign = GRPT%.

The total GRP of the campaign can be defined as the sum of GRP's for the individual spots in a campaign:

$$GRPT\% = \sum_{s=1}^S GRP\%_s$$

Similar to the notion of contact of a member with one spot, we can define the contact of a member with the whole campaign as the sum of contacts with individual spots:

$$cT(m) = \sum_{s=1}^S c(m,s)$$

The total coverage can then be expressed as:

$$COVT\% = \frac{\sum_{m=1}^M v * cW(m)}{\sum_{m=1}^M cW(m)} * 100,0$$

With

- $v=1$  if  $cT(m) > 0$  (contact with at least one spot in the campaign),
- $v=0$  if  $cT(m) = 0$  (not a single contact with one of the spots in the campaign).

Logically, the average OTS can then be expressed as:

$$Average\ OTS = \frac{GRPT\%}{COVT\%}$$

f. Computing the contact distribution for a campaign

Computing the contact distribution for a whole campaign, cannot be based simply on data for individual spots. These data involve daily weights that can differ from day to day per member and don't take into account the difference between members in campaign weight.



It is possible to compute the total GRP based on campaign weights per campaign panel member:

$$cGRPT\% = \frac{\sum_{m=1}^M \sum_{s=1}^S c(m,s) * cW(m)}{\sum_{m=1}^M cW(m)} * 100,0$$

We can now define the % contacts for any given k (k being a number of contacts):

$$COVTk\%(k) = \frac{\sum_{m=1}^M v * cW(m)}{\sum_{m=1}^M cW(m)} * 100,0$$

With

v=1 if cT(m)=k,  
v=0 if cT(m) ≠ k.

However, neither the cGRPT% nor the COVTk%(k) may ever be published:

- Given the fact that GRPT% is based on daily weights but cGRPT% is based on campaign weights, often GRPT% will not be equal to cGRPT%.
- Since COVTk%(k) is also based on campaign weights, it cannot be published.

One of the priorities of the CIM TV algorithm is to allow the publication of GRP's for individual spots during the campaign without risk for modification of these values afterwards. Therefore, only the GRPT% can be published.

To calculate a publishable contact distribution, a correction algorithm is used that transforms the contact distribution computed with campaign weights in such a manner that it respects following mandatory conditions:

- GRPT% must be unchanged, it is the sum of the GRP% of each spot;
- COVT% defined above must also remain unchanged;
- OTS must evidently remain GRPT%/COVT%.

Since the objective is to establish following formula,

$$GRPT\% = \sum_{k=1}^K COVTk\%(k) * k ,$$

the values of COVTk%(k) will have to be changed to keep the previous equation true while maintaining also the following relation:

$$COVT\% = \sum_{k=1}^K COVTk\%(k) .$$



The correction algorithm seeks to establish in five steps for each number of contacts a transformation value  $\alpha$  so that:

$$\begin{aligned}
 1. \quad GRPT\% &= \sum_{k=1}^K (d_k + \alpha_k) \cdot k & \text{or} & \quad \sum_{k=1}^K \alpha_k \cdot k = GRPT\% - cGRPT\% , \text{ and} \\
 2. \quad COV\% &= \sum_{k=1}^K (d_k + \alpha_k) & \text{or} & \quad \sum_{k=1}^K \alpha_k = 0
 \end{aligned}$$

Step 1.

Knowing that the average  $OTS = \frac{GRPT\%}{COV\%}$ , we define  $F = \text{int}(\text{averageOTS})$ .

This value is used as a pivot value. It allows to compute the % of members (coverage) in the campaign panel present on each side of the pivot value in the contact distribution:

On the lower end: 
$$D_m = \sum_{k=1}^F COVTk\%(k)$$

On the higher end: 
$$D_M = \sum_{k=F+1}^K COVTk\%(k)$$

Step 2.

$\beta$  is defined as the coverage for any given OTS level divided by the total coverage on its side of the pivot value, with a negative sign if it falls in the lower end of the contact distribution:

$$\beta_k = -\frac{COVTk\%(k)}{D_m} \quad \text{for} \quad k \leq F$$

$$\beta_k = \frac{COVTk\%(k)}{D_M} \quad \text{for} \quad k > F$$

with 
$$\sum_{k=1}^K \beta_k = 0$$

Step 3.

Multiply for each OTS level the  $\beta$ -value with the number of OTS.

A is defined as the sum of these multiplications: 
$$A = \sum_{k=1}^K \beta_k \cdot k$$

Step 4.

This allows calculating  $\alpha_1, \alpha_2, \dots, \alpha_n$  from the equation 
$$\alpha_k = \frac{GRPT\% - cGRPT\%}{A} \cdot \beta_k$$
 taking 1) and 2) into account.



Step 5.

Finally, the values of  $COVTk\%(k)$  can be adapted for all  $k$  as follows:

$$COVTk\%(k) = COVTk\%(k) + \alpha_k$$

Final check: Check once more that coverage and OTS are unchanged and that following formula is true

$$GRPT\% = \sum_{k=1}^K COVTk\%(k) * k$$

Hereunder, you can find an example of a correction by the algorithm.

### Campaign evaluation

Total of daily GRP (sum of GRP's/event)	250
Coverage % whole "campaign"	68
Average OTS	3,68

Input data			Intermediary values				Result	
Step 0			Step 1	Step 2	Step 3	Step 4	Step 5	
Number of contacts $k$	cov%(k)	Campaign GRPs $k * cov\%(k)$ (not published)	Pivot value + Split coverage%	Beta(k)	Beta(k)*k	Alpha(k)	Corrected cov%(k)	Corrected GRPS(k)
1	10,00	10,00	campaign GRP = 319,00 F = 3,00 Dm = 38,00 DM = 30,00	-0,26	-0,26	3,30	13,30	13,30
2	8,00	16,00		-0,21	-0,42	2,64	10,64	21,28
3	20,00	60,00		-0,53	-1,58	6,60	26,60	79,80
5	8,00	40,00		0,27	1,33	-3,34	4,66	23,28
6	5,00	30,00		0,17	1,00	-2,09	2,91	17,46
7	1,00	7,00		0,03	0,23	-0,42	0,58	4,07
8	7,00	56,00		0,23	1,87	-2,93	4,07	32,60
9	0,00	0,00		0,00	0,00	0,00	0,00	0,00
10	5,00	50,00		0,17	1,67	-2,09	2,91	29,10
11	0,00	0,00		0,00	0,00	0,00	0,00	0,00
12	3,00	36,00		0,10	1,20	-1,25	1,75	20,96
13	0,00	0,00		0,00	0,00	0,00	0,00	0,00
14	1,00	14,00		0,03	0,47	-0,42	0,58	8,15
<b>Total</b>	<b>68,00</b>	<b>319,00</b>			<b>0,00</b>	<b>5,50</b>		<b>68,00</b>
<b>campaign GRP</b>							<b>COVTO</b>	<b>GRPTO</b>

### Double

Recomputed COVTOT	68
Difference with COVTOT should be 0	True
Recomputed GRP TOT	250
Difference with daily GRPTOT should be 0	True

See also excel file "Campaign Evaluation Algorithm"



### 2.3.2 Adaptations to handle time shift viewing in the post-evaluation algorithm

Time Shifted Viewing can create a slightly different situation:

- $c(m,s)$  was always 0 or 1.  
It now becomes the total number of Live and Time Shifted contacts of member  $m$  with spot  $s$ .  
Its value can be 0, 1 or higher.
- If we define
  - LENGTH: the number of seconds of spot  $s$
  - LIMIT : ceiling  $(l(s)/2,0)$
  - NS: total number of seconds of this spot seen by member, eventually partly live, partly in TSV

the value of  $c(m,s)$  is defined in the following way

- 0 if  $NS < LIMIT$
  - 1 if  $NS$  between  $LIMIT$  and  $(LENGTH + LIMIT - 1)$
  - 2 if  $NS$  between  $(LENGTH + LIMIT)$  and  $(2 * LENGTH + LIMIT - 1)$
  - $N$  if  $NS$  between  $((N-1) * LENGTH + LIMIT)$  and  $(N * LENGTH + LIMIT - 1)$
- Another modification is the number of values in the distribution contacts. With TSV, the distribution contacts can contain more values than the actual number of spots.



## 2.4 Calculation rules for “Live+Playback”

### 2.4.1 Basic Principle

Live+Playback is a new “viewer centric” measure. Whereas Live and Live+7 are “broadcast centric” measures. The starting point for Live+Playback is the viewer who watched a certain channel on a specific day independently of the broadcasting day of the programme(s) or time band(s) involved. In other words: both live and time shifted viewing on the specific day are taken into account.

The time of viewing is 1 specific day only. The content of the viewed broadcasts covers a maximum of 7 days (day of viewing and the broadcasts of six days before).

Live+Playback may only be reported for Total TV and up to channel level.

Live+Playback cannot be calculated for programmes because programmes may be broadcasted in the past and the ‘live’ audience is not taken into account.

Live+Playback on one specific day is the total of:

- a/ Live viewing on a that specific day (Live)
- b/ The Time shifted viewing on the actual day of viewing (TSV 0)
- c/ The Time shifted viewing of programmes broadcasted until 7 days before that specific day (TSV -1 until TSV -7).

The total of b/ and c/ is called “Playback”

Broadcasting day								Viewing Day	
Day -7	Day -6	Day -5	Day -4	Day -3	Day -2	Day -1	Day 0	Station A	
Station A Broadcast 1								TSV -7	Playback
	Station A broadcast 2							TSV -6	
		Station A broadcast 3						TSV -5	
			Station A broadcast 4					TSV -4	
				Station A broadcast 5				TSV -3	
					Station A broadcast 6			TSV -2	
						Station A broadcast 7		TSV -1	
							Station A broadcast 8	TSV -0	Live
							Station A broadcast 9		
							Station A broadcast 10		
							Station A broadcast 11		



## 2.4.2 Rating “Live+Playback” calculation rules

### a. One a specific day

The rating on a specific day is defined as the average percentage of viewers per second within the reference universe of this viewing day that watched live or in playback. The respondents in the random sample are weighted with a weight determined by the extent to which they occur in the total population of viewers in the reference universe of the viewing day. All viewers that are present in the universe on the viewing day are taken into account.

$$rating_d = \frac{\sum_{r=1}^R (w_r p_{r,d, live} + w_r p_{r,d, playback})}{\sum_{r=1}^R w_r} \times 100\%$$

*Rating<sub>d</sub>* : rating for one specific day, the viewing day

*R*: number of respondents in the sample on the viewing day

*w<sub>r</sub>*: weight of respondent *r* on the viewing day

*p<sub>r,d, live</sub>*: proportion of the day (*d*) viewed live by respondent *r*

*p<sub>r,d, playback</sub>*: proportion of the day (*d*) viewed in playback by respondent *r*

where the proportion is equivalent to:

$$p_{r,d, live} = \frac{V_{r,d}}{\text{duration}_d}$$

*V<sub>r,d</sub>*: Viewing duration of respondent *r* for the specific day (*d*)

*Duration<sub>d</sub>*: duration of the day (24h)

$$p_{r,d, playback} = \sum_{TSV0}^{TSV-6} \frac{V_{r,d}}{\text{duration}_d}$$

TSV 0: time shifted viewing on the viewing day

TSV-1: time shifted viewing from content broadcasted 1 day before the viewing day

TSV-2: time shifted viewing from content broadcasted 2 days before the viewing day

...

TSV -7: time shifted viewing from content broadcasted 7 days before the viewing day

Rating can only be calculated for a (number of) Channel(s), namely a channel with TSV data, see station list provided by the CIM.





### 2.4.3 Reach "Live+Playback" calculation rules

The channel reach for one specific day is defined as the percentage of viewers who watch that channel at least once for a certain time during a specific day, live or in playback.

$$reach_{ch} = \frac{\sum_{r=1}^R w_r d_{r, ch}}{\sum_{r=1}^R w_r} \times 100\%$$

$$d_{r, ch} = \begin{cases} 1 & j_{r, ch} \geq J \\ 0 & j_{r, ch} < J \end{cases}$$

*ch* : channel

*d<sub>r,ch</sub>*: 'dummy' that indicates whether respondent falls within the channel rating according to specific definition (viewing threshold)

*J*: criterion for the specific channel rating (e.g. 60 consecutive seconds)

*R*: number of respondents in the sample

*w<sub>r</sub>*: weight of respondent *r* (viewing day)

*j<sub>r,ch</sub>*: the sum of live and playback viewing, calculated according to the specific conditions, personal criterion of respondent for the channel.

### 2.4.4 "Live+Playback" share

"Live+Playback" share is calculated by dividing the rating<sub>d</sub> of a specific channel by the rating<sub>d</sub> of all channels on the specific day.

Both Total TV and Total Screen Usage can be used as a reference within the software application.

$$\text{"live + playback" marketshare}_{ch, d} = \frac{rating_{ch, d}}{rating_{CH, d}}$$

with *ch*=channel, *CH*=all channels, *d*=day



## 2.5 Calculation rules for OVC

### 2.5.1 The TV currency logic

The TV currency logic is applied to different types of OVC:

- Live OVC, including rewind, represents what is Live and VOSDAL in TV.
- On demand OVC is considered Time Shifted Viewing (TSV).

This results in following logic:

- Online viewing on BD =  $OVOSDAL^5/OVC\ 0 \sim VOSDAL/TSV\ 0$ .
- Online viewing on BD+1 = OVC 1 ~ TSV 1
- ...
- Online viewing on BD+7 = OVC 7 ~ TSV 7

Unlike TV, there will be OVC data until 28 days after broadcast. For these data, additional variables can be created, e.g. OVC 8, ... , OVC 28.

### 2.5.2 Calculation of Online metrics

At this stage the number of metrics the CIM provides is limited to the list of which you can find the definition below. Additional metrics requested by software houses and their clients will be possible in following phases of the OVC project.

#### a. Apps vs Browser

Currently the traffic from browsers and apps are reported separately. A total for each video can be made by the sum of the two, based on the TV-Link.

#### b. Belgian vs Foreign Traffic

Currently Belgian and Foreign traffic are reported in different columns. A total for each video may be made by the sum of the two, based on the TV-Link.

#### c. Time viewed

Time viewed of an episode can be aggregated from the Gemius traffic files from the broadcast day until 28 days after the broadcast, based on the TV-Link.

Time viewed can also be aggregated on the following levels: multiple individual episodes, program, season, channel, etc.

#### d. Stream views

Stream views of an episode can be aggregated from the Gemius traffic files from the broadcast day until 28 days after the broadcast, based on the TV-Link.

Stream views can also be aggregated on the following levels: multiple individual episodes, program, season, channel.

#### e. Web rating

In order to simplify the calculation of the program length, Nielsen has adapted the attribution of the Episode ID (aka TV-link) in the .hor files:

- Programs with only 1 level : Episode ID will be indicated on level 1
- Programs with 2 levels : Episode ID will only be indicated on levels 2

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<sup>5</sup> OVOSDAL = Online Viewing on Same Day As Live



- Programs with more than 2 levels : Episode ID will be indicated on the main event (e.g.: for a football match, the episode ID will be on the level 3 S.A.)

The rule to calculate the program duration for OVC is very straight forward: you can addition all program durations with the same Episode ID, regardless the level where an Episode ID has been added.

The definition of the web rating is:

$$Web\ Rat_p = \frac{\sum_d TimeViewed_d}{Duration_p}$$

Where

- d= number of days
- TimeViewed<sub>d</sub>= time viewed on day d as stated in Gemius File
- Duration(p) = the length of the program, based on (the sum of) the duration(s) per Episode ID in the Time Logging file

Remark

Web rating and views should always be attributed to the oldest entry possible.

- Repeat broadcast on the same day

When there is more than one occurrence of the same episode on the same day, the web rating and views have to be attributed to the first of the two broadcasts, whilst the other gets zero.

- Repeat broadcast on a later date:

when there is a second/third/... occurrence of the same episode in the period of 28 days after the first broadcast of an episode, web rating and views for this episode are only attributed to the first of the two broadcasts. The second broadcast is only attributed the web rating and views that falls outside of the 28-day period after the first broadcast. (See Annexe 1 for an example).

This rule only has to be applied for episodes and fragments. For live, the web rating and views have to be attributed to the episode that is live broadcasted on tv at that moment. If the same episode is broadcasted twice the same day or more, the live web rating and views have to be attributed to the first broadcast of the day.

#### **f. Total OVC rating**

A Total OVC-rating, comparable to the TOTAL TV 2006+ rating can be made. To do this the following formula should be applied:

$$Total\ Web\ Rat_d = \frac{\sum_d TimeViewed_{All\ Programs,d}}{Time_d * d}$$

Where

- d= number of days
- TimeViewed<sub>All Programs,d</sub>= All time viewed on day d as stated in Gemius File
- Time<sub>d</sub> = length of a day (24h, 1440 min., 86.400 sec.)



### **2.5.3 Web rating > views**

If a broadcaster applies a tv-link to the wrong piece of online content, the web rating of a program may be higher than the number of views. If you encounter such a case, please filter it out of the results published in your software.

#### **Remark**

If such an anomaly appears for figures from browser but not for app, you will have to filter out only the figures from browser (for this day only), and vice versa if this appears for app and not for browser.



### 3. Reporting rules

#### 3.1 Live, Live+7 and Live+Playback rating/reach

Given the introduction of Time Shifted Viewing, it has become possible to make different calculations for rating and reach:

- Live rating/reach : viewing during the live broadcast,
- Live+7 rating/reach : viewed during the live broadcast or until 7 days later;
- Live+Playback rating/reach : viewed live and playback (broadcasted until 7 days before the viewing day).

Live and Live+7 rating and reach emit from 1 broadcast and when it is viewed, live or later:

Live + Playback rating and reach proceed from the viewers who, on 1 day, view one channel live or broadcasts from the near past of one channel in playback.

Schematically, the distinction between Live, Live+7 and Live+Playback looks like this.

Broadcasting day								One Specific Day	Viewing day								
Playback									Station A	6							
Day -7	Day -6	Day -5	Day -4	Day -3	Day -2	Day -1	Day 0			Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Station A Broadcast 1								TSV -7									
	Station A broadcast 2							TSV -6									
		Station A broadcast 3						TSV -5									
			Station A broadcast 4					TSV -4									
				Station A broadcast 5				TSV -3									
					Station A broadcast 6			TSV -2									
						Station A broadcast 7		TSV -1									
							Station A broadcast 8	TSV -0									
								Live	Station A broadcast 9	Station A broadcast 12	Station A TSV of 12	Station A TSV of 9					
								Live	Station A broadcast 10	Station A broadcast 13		Station A TSV of 3		Station A TSV of 8			
								Live	Station A broadcast 11	Station A broadcast 14		Station A TSV of 7			Station A TSV of 10	Station A TSV of 5	
								Live	Live	TSV 0	TSV 1	TSV 2	TSV 3	TSV 4	TSV 5	TSV 6	TSV 7



## 3.2 Live, Live+7 and Live+Playback

The calculation of the share of a broadcast or time band in total viewing becomes more difficult, due to the introduction of Time Shifted Viewing. Depending on the jumping-off point, both the viewing volume of a broadcast and the total viewing volume can be defined differently.

The software applications must enable two different bases for analysis of the data:

- The broadcast: the content as it is broadcast live on day X.
- The viewer: the period when a viewer watches content, live on day 0 or time shifted.

The term 'content' broadly encompasses all types of broadcasts here: programmes, programme components, spots, etc.

The CIM has decided that for 'content' only 3 results may be published:

- Live share (based on a broadcast)
- Live+6 share (based on a broadcast between 01/01/2010 and 31/12/2015)
- Live+7 share (based on a broadcast since 01/01/2016).

And for only time combined with channel:

- Live+Playback share (based on the viewer).

Any other analysis may only be used for internal purposes.

### 3.2.1 Live share

Until the introduction of data regarding Time Shifted Viewing, the market share was calculated as the percentage of viewers who watched a broadcast (live by definition) or time band, divided by the total viewing audience (see 2.1.4 above).

This notion remains in existence by the name 'Live share'.

### 3.2.2 Live+6 share

By measuring Time Shifted Viewing, it became obviously interesting to add up the sum of live and time shifted viewing (on the day itself until six days later) for a broadcast and to compare it with the broadcasts on other channels with the same start and end time.

This variable is called 'Live+6 share' and may only be reported for the period 01/01/2010 - 31/12/2015



### 3.2.3 Live+7 share

The variable, 'Live+7 share' has the same characteristics as Live+6 share but include one additional day of time shifted viewing. All reporting of programmes, broadcast schedules, as well as spots, blocks of advertising and time bands that were broadcasted since 1<sup>st</sup> of January 2016, should be done using this variable.

#### Example:

The programme 'Thuis' was broadcast on 01/02/2016 and was viewed on that day as well as later. This programme was then (re)watched later and distributed up to 7 days after broadcast. Until 08/02/2016, time shifted viewing of 'Thuis' was allocated to 01/02/2016.

The 'Live share' of Thuis corresponds with the market share as was used until the introduction of TSV: the percentage of viewers of 'Thuis' in relation to the total 'live' viewing audience.

The 'Live+7 share' is the percentage of viewers of 'Thuis' in relation to the total viewing audience. The total viewing audience are the viewers of Thuis and all time slots of broadcasts that were programmed parallel on 1/9/2008 (from 9:15 pm – 10:05 pm) and that were viewed both live (on 01/02/2016) and time-shifted (01/02/2016 (VOSDAL)- 08/02/2016).

This type of reporting can also be applied to a channel's broadcast schedule.

For example: RTL-TVI between 8 pm and 10:30 pm on 01/02/2016.

All viewers (both live and time shifted until and including 08/02/2016) of the programmes within this time span on Canvas and the programmes on the channels that are programmed parallel belong to the total Live+7 viewing audience.

This idea applies to programmes, broadcast schedules, as well as spots, blocks of advertising and time bands.

### 3.2.4 Live+Playback share

The starting point here is the viewer who watched a certain channel on a specific day, separate from the fact of whether the broadcast was followed live or dated from an earlier time (until six days ago).

The time of viewing is thus one specific day only. The content of the viewed broadcasts covers a maximum of 8 days (day of viewing until and including seven days before).

The share of a channel is defined here as the 'Live+Playback share'.

To keep the user from becoming lost in all possible combinations of viewing times and programmes, time bands, spots and so on, reach, rating and share may only be reported for Total TV and up to channel level.

### 3.2.5 "+7" and "Playback"

In the CIM TV study, time shifted viewing is identified as TSV up until 7 days after broadcast (Day 0 to Day 7 inclusive). The total of this TSV is called "+7"



The total of the time shifted viewing on the actual day of viewing (TSV 0) and the time shifted viewing of programmes broadcasted until 7 days before that specific day (TSV -1 until TSV - 7) is called "Playback".

### **3.2.6 Monthly figures including Time Shifted Viewing**

Calculations of reach and rating for a month may only be reported on the basis of a channel.

In a month of 30 days, the figures must be calculated based on what was watched from day 1 to 30, inclusive.

So this is not about the programming of those days that can also be viewed seven days after the month has ended.

### **3.2.7 Campaign evaluation**

Since the currency is 'Live+7+guests', the balance of advertising campaigns may only be published on the basis of Live+7+guests.

In practical terms, this means:

- Day 1 is the day of the broadcast of spot 1,
- The last campaign day is the day of broadcast of the last spot + 7 days.





### **3.3 Source citation**

Every report without exception must state the conditions or parameters that resulted in the specific reported channel reach.

As indicated above, CIM TV considers 'Live+7+guests' as the currency.

Every document and presentation must state the source of the data: 'Source: CIM TV' as well as the target group, hour slot and all additional parameters that determined the universe of the analysis. Also the company who generated the data needs to be mentioned.

The fact that a channel has a detailed listing in AUB, has a monthly broadcasting report or just per quarter must be considered.

If it does not involve complete data, this must be clearly indicated:

- If Live only: 'Source: CIM TV – Incomplete figures, only live viewing'
- If Time Shifted only: 'Source: CIM TV – Incomplete figures, only time shifted viewing'

### **3.4 Rounding**

The CIM recommends rounding to one (1) digit after the decimal point for final reporting.

An exception is the export of data, in databases or in other software, where new calculations can be made. In this case, greater precision remains necessary (at least 4 digits after the decimal point).



## 4. Available files

An Excel file with a detailed description of ATA-ATB and TSV files is available upon request at CIM: 02/661 31 50 or [tv@cim.be](mailto:tv@cim.be).

**Field 10** TSV is added to the TSV part in the ATA and ATB file.

Field	Description	Start.pos	End.pos	Length
9	Source code	44	45	2
10	Time Shifted Viewing	46	46	1

### 4.1 TSV file

The TSV file includes the recording time and the re-viewing time.

The following variables are included in the file:

- Recording date
- Family number
- Channel code
- Time of broadcast
- Viewing duration
- Date of re-viewing
- Time of re-viewing
- Source code

### 4.2 Top 20 and Top 100

A daily and weekly Top 20 of the most watched TV programmes in the North and the South is available in the public section on the CIM website:

- The day top 20 contains the rating of the best viewed programs for a week. As from 2021, data are published on Live+VOSDAL+Guest+Online. They are available the day after, at 2.30 PM.
- The week top 20 contains the rating and market share of the best viewed programs for a week. As from 2021, data are published on Live+7+Guest+Online. They are available 8 days after the week has ended.

The annual Top 100 with the 100 most viewed programs is available by mid January of the next year. Rating As from 2021, data are published on Live+7+Guest+Online.

Note that the variables 'market share' and 'Average % of viewers' in the Top 100 is based on TV viewers only. Online viewing is not included.