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Report of the Independent Inspector

to the VA on CSTBs - 2011 - 2012

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Summary

General

This is the second report of the Independent Inspector to the Voluntary Agreement on Complex Set Top Boxes (VA on CSTBs). The aim of the VA on CSTBs is to contribute to the objectives of the Ecodesign Directive (2009/125/EC) by reducing the potential environmental impact of CSTBs, in particular their energy consumption. The VA, endorsed by the European Commission in November 2012, is considered to be a valid alternative to an Ecodesign Regulation.

By December 2012 there were 26 Signatories to the VA, among them 11 equipment manufacturers and 8 service providers. 4 Signatories have joined since the first reporting period, 2 Signatories have left and one Signatory has merged with another since the first period. Manufacturers and service providers need to report information on the energy consumption of the CSTBs that have been placed on the EU market or put into service in the monitoring period, including the number of devices per type placed on the market.

Results and conclusions from the 2nd monitoring period

Out of 26 Signatories to the VA, 19 Signatories are manufacturers or service providers and as such had to comply with the reporting obligations. 7 Signatories are either component manufacturers or software providers and do not have yet specific reporting obligations.

In total 18 Signatories provided reports to the Independent Inspector while 1 Signatory made use of the procedure foreseen in Chapter 5.1 of the VA not to provide a report this year as they had formally signed up to the VA after the start of the monitoring period.

All 18 Signatories provided reports that complied with the commitments stipulated in Chapter 4.3.1. of the VA, stating that each Signatory shall ensure that 90% of its CSTBs comply with the applicable energy consumption targets specified in Annex D to the VA. On average 98.1% of their boxes put on the market were compliant.

Two Signatories reported on the compliance with Tier 2 requirements. All box types they had placed on the market in the monitoring period were compliant to Tier 2 TEC (Total Energy Consumption) requirements.

An on-site audit was done at the premises of Liberty Global. Compliance measurements were done on two settop box types. The Total Energy Consumption values determined from the power measurements agreed with reported values within 2%. Reported default Auto Power Down times were also confirmed.

Compliance to Chapter 4.8 ("… Signatories shall provide consumers with detailed information about energy consumption levels. …") was checked for all service providers. One service provider did eventually not provide the required information and is therefore non-compliant to Chapter 4.8. The other 7 service providers all publish information on energy or power consumption online and are thus compliant. It was observed that there is little standardisation in location and nature of the information. In order to make the information more useful and fit for purpose for consumers it should be considered to standardise this information.

It was observed that some Signatories who reported box types with Auto Power Down functionality did not observe the time limits specified in A.4. Some others did not report them. Even though APD functionality is not compulsory yet, according to A.4 the period of time after which a CSTB switches itself into the APD mode should be no more than 4 hours.

Comments on the monitoring process

The monitoring process went as planned for the majority of Signatories. Reports were sent before the deadline and questions from the Independent Inspector were answered within the timeframe set (usually one week). However, there still are exceptions. Two signatories sent in their report after the deadline of Nov. 30th, 2012. The last report came in on Jan. 31st, 2013 and when it came it was incomplete and had to be followed up with several rounds of questions.

Recommendations

The Independent Inspector recommends that the Steering Committee

1. Resolves the situation with the Signatory that is non-compliant to Chapter 4.8 and reports back to the Independent Inspector on steps taken.
2. Further improves reporting discipline by establishing that a Signatory who fails to submit their report on the required deadline is considered to be non-compliant.
3. Further improves reporting discipline by requiring Signatories to notify the Independent Inspector by the reporting deadline in case they want to make use of Chapter 5.1 not to report.
4. Further improves reporting discipline by requiring Signatories to use the latest reporting template, as their might be changes from one year to the next year.
5. Considers the standardisation of performance information to consumers.
6. Requires Signatories who report the presence of Auto Power Down functionality for specific models to adhere to the maximum APD times specified in A.4.

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1 Introduction and background

This is the second Report of the Independent Inspector to the Voluntary Agreement on Complex Set Top Boxes (VA on CSTBs). It covers the period 1 July 2011 – 1 July 2012.
This report is commissioned by the Steering Committee of the VA and will be made available to the European Commission and Ecodesign stakeholders (members of the Consultation Forum established under Article 18 of the Ecodesign Directive 2009/125/EC).

The findings of the Independent Inspector are based on
1. Confidential data received by the Signatories in the Reporting Template
2. Queries by the Independent Inspector to selected Signatories
3. An on-site inspection (audit) of one Signatory.

The contents of this report are as follows:

- In Chapter 2 an update on the background on the Voluntary Agreement and the process of monitoring and inspection is given.
- In Chapter 3 an update of the method of data collection and processing is explained.
- In Chapter 4 the findings are presented.
- In Chapter 5 conclusions are drawn and recommendations for the monitoring and verification process are made.

1.1 Background

A background to the project was given in the report that covered the first monitoring period.
For this second monitoring period (1 July 2011 – 1 July 2012) the Independent Inspector has again reviewed compliance to 'V3.0' of Voluntary Industry Agreement to improve the energy consumption of Complex Set Top Boxes within the EU, dated 2 September 2011.

After the work for the second monitoring period was started the European Commission released the draft of the new 'guidelines on the self-regulation measures concluded by industry under the Ecodesign Directive 2009/125/EC.' As the guidelines are still in draft and because the reporting and inspection had already started these guidelines could not be taken into account in detail. Nonetheless, care was taken to at least include the information required under 4.7 (conformity reports).

2 Method of data collection and processing

2.1 Standardised reporting template

Ecofys proposed a few changes to the reporting template used in the first reporting period.
These changes concerned:

1. On the cover sheet, service providers were already asked to provide an URL under which ”environmental characteristics and performance of CSTB-types” are reported. In addition, if not available online, they are now asked to state where the information for consumers can be found.
2. On the cover sheet, service providers are asked, regarding devices with recording functionality, how users can disable speculative recording with these devices, in case they are enabled by default.
3. In the data sheet, a column is added where Signatories should report the default time period after which the CSTB switches itself into standby, in case Auto Power Down is supported.

The final data to be reported are given in Annex A to this report.

2.2 Data collection process

The deadline for reporting was set at 30 November 2012. Some effort had to be made to obtain the data as complete as possible.
For this monitoring period the emphasis has been on collecting evidence from manufacturers and service providers. Other types of Signatories have not received questions.

2.3 Additional queries and audit

Following the data collection, queries were made to selected Signatories. The reasons for request for submitting (additional) information were:

- information was found to be missing in the standardised reporting template,
- information submitted required clarification,
- random checks asking for more detailed information (e.g. in-house test reports).

Usually a turnaround time for answering questions of one week was taken.

2.3.1 Audit

By means of a random check an audit was done at the Liberty Global premises in the Netherlands.
The audit comprised of

- A visit to the laboratory facilities of Liberty Global
- A Q&A session for additional questions and background information
- Compliance measurements

For the compliance measurements test laboratory Testronics was commissioned to perform the tests. 3 boxes of 2 CSTB models, 6 boxes in total, were randomly selected in the Liberty Global warehouse by the independent inspector. The boxes were taken to the LGI headquarters and laboratories.
In order for CSTBs to work properly and to be tested properly they need to have conditional access (CA) to the network to which they are intended to be connected and they need to have a proper TV signal. In addition, preferably the same software had to be used as the software used during the Total Energy Consumption measurements from Liberty Globals own measurements.
These three conditions could all be more easily fulfilled at the Liberty Global laboratory than at the Testronics laboratory. For this reason the measurements were performed on LGI premises. Testronics brought their own test equipment for the tests.

The complete test procedure in Annex of the VA was followed. Originally a standby power measurement of one day (24 hours) was proposed by Testronics, in order to take into account E3.6 of the test procedure and the possibility of a variable power usage in standby. This is to take into account any housekeeping activities that occur regularly and could make a difference for the Total Energy Consumption. For practical reasons this was not done in all measurements. However, boxes have been measured overnight to check that the stability of the standby mode power consumption.

2.4 Report of the Independent Inspector

In the process of preparing the first report it was discussed with the Steering Committee what kind of data the Independent Inspector would be allowed to report without breaching the Non-Disclosure Agreement. The agreement made then was largely respected in this report, with one important change: to improve transparency and on request of stakeholders the Steering Committee has allowed publication of a new Annex that contains anonymised performance data of individual CSTB types. This is done in Annex D to this report.

3 Results

3.1 General statistics

Table I provides a general overview of the number and nature of the signatories for this reporting period. It should be noted that Telenet has become a part of Liberty Global. Because Liberty Global included Telenet in its reporting it was decided to take Telenet out of all statistics, even though they still reported separately as well. In this way double counting is avoided. The total number of service providers and Signatories therefore excludes Telenet.

Table I overview of final response per type of Signatory.

Type and number of Signatories	Final response per type of Signatory	Reports incl. sales data
11 manufacturers	10 reports	9 reports
	1 made use of procedure Ch. 5.1	-
8 service providers	8 reports	8 reports
7 other signatories	-	-
Total of 26 Signatories	**18 reports**	**17 reports with sales data**

Table I shows that 18 out of 19 Signatories required to submit a report did so. One Signatory made use of the procedure in Chapter 5.1 not to submit a report as it had formally signed up to the VA after the start of the monitoring period.

By the official deadline of data submission, 30 November 2012, 16 out of 19 service providers and manufacturers had responded. One Signatory turned out to make use of the procedure in Ch 5.1, as they did in the first reporting period. One Signatory submitted a report on 10 December2012. The last Signatory submitted its report on 31 January 2013, after repeated requests from the Independent Inspector as well as the Steering Committee. This has slowed down the entire reporting process.

Annex B to this report lists all Signatories, when they joined the VA, whether they reported or not, their compliance status and reason for not reporting.

The 17 signatories that submitted reports with sales data, accounted for placing on the market 25.1 million CSTBs between July 2011 and July 2012, comprised of 310 different models. It should be noted that this number contains overlap between manufacturers and service providers.
At least 88% of those CSTBs placed on the market by service providers who are Signatories to the VA are from manufacturers who are Signatories to the VA.

3.2 Compliance with Chapter 4.3.1

Chapter 4.3.1. requires that "Each Signatory shall ensure that 90% of its CSTBs comply with the applicable energy consumption targets of the Voluntary Agreement as set out in Annex D (Maximum Energy Consumption Targets and Time Schedule)."

One signatory submitted energy consumption data but did not report sales data. For this reason, a last column 'Reports incl. sales data' was added to table I. All models reported by that signatory were compliant.

The compliance rate averaged over the 17 signatories who submitted energy consumption data as well as sales data was found to be 98.1%.
Table II shows the distribution of the individual compliance rates of the 18 Signatories who submitted reports.
All compliant CSTB-types are listed[1] in Annex C to this report.
The complete set of data related to energy performances is published in Annex D, in an anonymised form, in accordance to the decision of the Steering Committee at its meeting on 12 February 2013.

Table II Individual compliance rates of 18 Signatories who submitted a report.

compliance range	number of Signatories in range
90-92%	1
92-94%	1
94-96%	0
96-98%	1
98 - 100%	2
100%	13

3.3 Functionality and energy consumption

Basic information on energy consumption of the CSTB population in this monitoring period is given in table III.

Table III Energy consumption per box, averaged over all models, all Signatories.

Energy consumption	kWh/yr
Average over all models	82
Average allowance per model	150
Minimum consumption	~ 20
Maximum consumption	~ 280

The average over all models is slightly higher than in the previous period (78 kWh/yr). For the Signatories that reported in the first year as well the second year the average per model this year is 79 kWh/yr. Although important to report and compare for reasons of transparency, care should be taken to conclude anything on trends in average energy consumption as the differences are small. In addition, an average per model may not be the most representative for the whole population of boxes, as boxes with low sales volume have equal weight to boxes with high sales volume. On the other hand, it is still considered to be important to report as Signatories who do not report sales volumes are not included in sales weighed averages.

[1] This list provides e.g. Member States the opportunity to perform their own compliance testing.

In the same way as in the first reporting period the sales averaged energy consumption per box reported by manufacturers and by service providers is reported, in table IV.

Table IV Average yearly energy consumption for various selections of CSTBs, averaged according to sales.

Selection of CSTBs	manufacturers kWh/yr (% of allowance)	service providers, kWh/yr (% of allowance)
all boxes	85 (54%)	118 (66%)
boxes with same specifications	114 (62%)	118 (64%)
same specs and standby > 1 W	126 (68%)	132 (71%)
same specs, standby > 1 W and no APD	125 (68%)	145 (78%)

In the first row the consumption averaged over sales of all boxes is given. If only Signatories who reported in the first period as well are selected, the average of all boxes for manufacturers and service providers is 74 and 118 kWh/yr, respectively. This compares to 70 and 117 kWh/yr for the first monitoring period, respectively. Again, care should be taken not to overinterpret these results, but they are reported for reasons of transparency. When collected for several years it should become possible to discern trends in average energy consumption. For now, it is concluded that the average consumption has increased for manufacturers and has stayed the same for service providers.

In the second row the consumption averaged over sales of a group of boxes with the same specification and with a significant market share is given. This group of boxes has an allowance of 180 – 185 kWh/yr, depending on whether it was a terrestrial / IP box or satellite/ cable box. In the first and second row the percentage of the allowance is also given, in brackets. The specifications of these boxes according to Annex B to this report are as follows:

- No additional functionality present that was turned off during the measurement
- Access to 1 additional RF channel
- Advanced Video Processing present
- DVR (Digital Video Recording) present
- No DOCSIS 3.0 or VDSL functionality
- Capable of HD
- Return path functionality present
- No multi-decode and multi-display functionality

In the 3rd and 4th row the average energy consumption is given for the same groups of boxes, but filtered for standby power > 1 W and standby power > 1 W + absence of APD (Auto Power Down), respectively.

The table shows in that for all boxes together (first row) a considerable difference exists in the average consumption of all boxes between manufacturers and service providers, similar to the first reporting period. For boxes with the same specifications (second row) the average consumption of boxes from manufacturers and service providers shows a much smaller difference, much smaller than in the first reporting period. This difference does not decrease with filtering on standby power and APD (Auto Power Down), in contrast to the first reporting period. In interpreting these results it should be realised that the number of models of boxes over which the averaging takes place de-

creases with increased filtering. In the bottom row (same specs, standby > 1 W and no APD) averaging takes place over less than 10 box models.

In figure 1 the distribution of sales[2] as a function of the energy consumption of the boxes is given, expressed in % of allowed energy consumption.

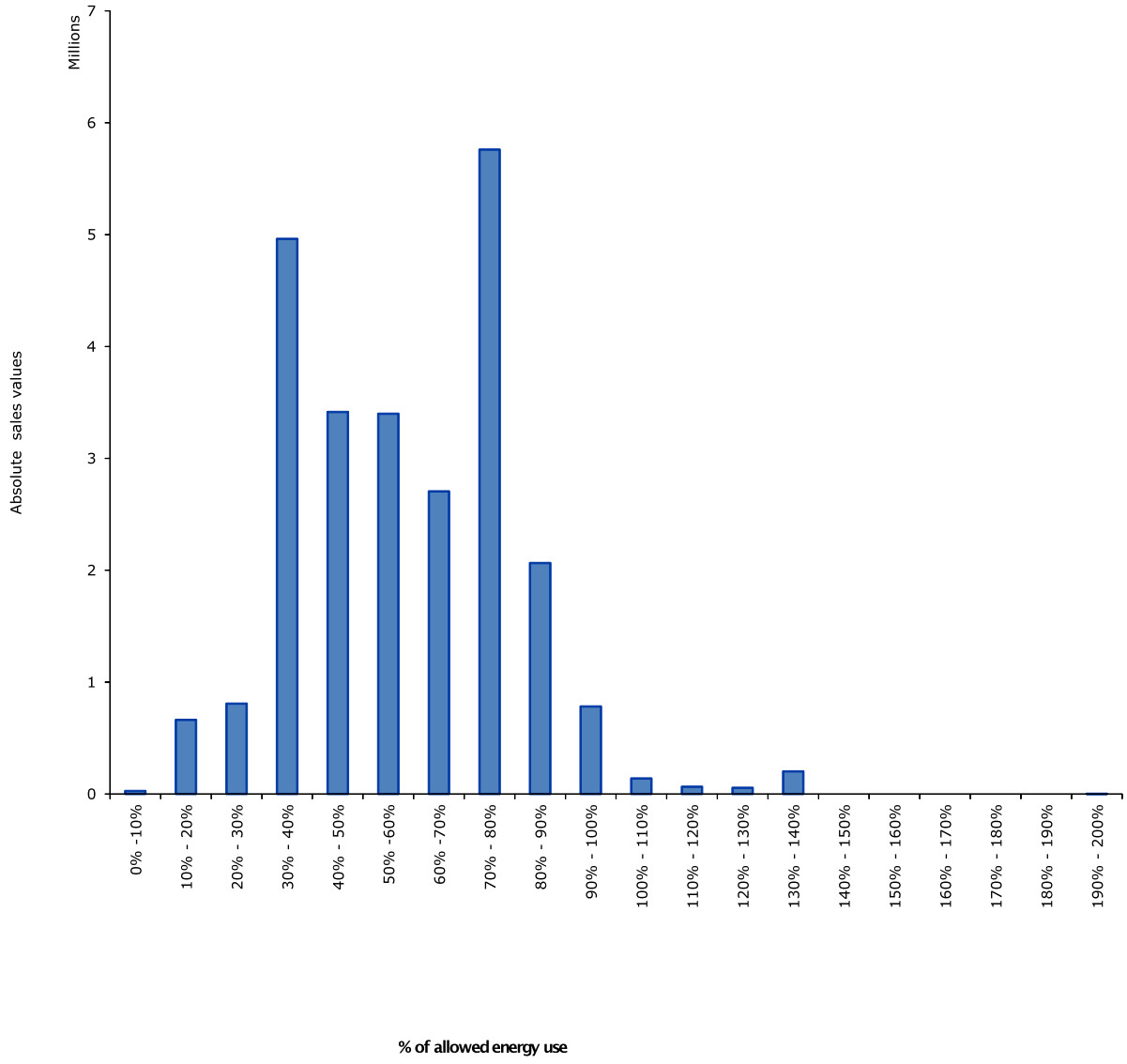

Figure 1 CSTBs put on the market distributed according to percentage of allowed energy consumption.

[2] For simplicity reasons, both 'placing on the market' (true sales) and 'putting into service' (by service providers) is called 'sales' here.

The data reported above come from 94% of all Signatories with reporting duties. Also, it is possible that consumption levels of CSTB manufacturers and service providers who are currently not in but are considering to join the VA have consumption levels that are closer to the limit.

3.4 Findings on specific Chapters other than 4.3.1

3.4.1 Chapter 4.3.3 Compliance with subsequent energy targets from Annex D

2 Signatories reported Tier 2 data. From a viewpoint of Total Energy Consumption, 20 out of 21 of all box types complied with Tier 2 requirements.
However, more than half of all types of boxes did not have APD and therefore do not fully comply with Tier 2 requirements.

Questions have been raised before by stakeholders as to how much the ambition level increases in going from Tier 1 to Tier 2 requirements. In order to get a better understanding of this issue, the report presents some data on this below. It should, however, be noted that this should be considered as an indication rather than a full and complete analysis of this subject, especially since it only concerns a limited number of boxes.

First, the ratio of Tier 2 to Tier 1 allowance for all box types were determined. Then categories of this ratio were made and it was counted which percentage of box types fall into which category. This is shown in the first two columns in Table V. For example, for 5% of the box types the Tier 2 allowance (in kWh/year) is 90-100% of that of the Tier 1 allowance (i.e. for these box types Tier 2 is 0-10% more stringent than Tier 1), for 57% of the box types the Tier 2 allowance is 80-90% of that of the Tier 1 allowance etc..
The last column in the table indicates whether functionality specific to Tier 2 is present[3].

Table V. Percentage of box types per category of Tier 2 / Tier 1 allowance

Tier2 / Tier1 allowance	% of box types	Tier 2 functionality present?
40-50%	19%	N
50-60%	14%	N
60 - 70%	5%	N
70 - 80%		
80 - 90%	57%	Y
90-100%	5%	Y

This limited data set shows that

- Tier 2 requirements are always more stringent than Tier 1 requirements, even though the difference can be small (Tier 2 allowances are 80 – 100% of Tier 1 allowances)
- For boxes without functionality specific to Tier 2, Tier 2 requirements are significantly more stringent (Tier 2 allowances are 40-70% of Tier 1 allowances).

[3] An overview of Tier 1 and Tier 2 reporting requirements and functionality is given in Annex A to this report.

3.4.2 Chapter 4.8 Information to consumers

All 8 service providers were asked to provide an "URL where environmental characteristics and performance of CSTB-types are reported". If not available online, they are asked to state where the information for consumers can be found. 7 service providers reported an URL that shows energy and / or power information on directly or from which this information could be easily reached through following links. One of the 8 service providers did not report where such information can be found, even after repeated requests on supplying the information, and is therefore non-compliant to Chapter 4.8 of the VA.

Of the 7 service providers that provided a URL:

- all 7 show on-mode power consumption,
- 6 show stand-by power consumption,
- some Signatories show multiple values for standby power consumption,
- one Signatory shows yearly energy consumption values,
- one Signatory shows a 'smart energy' mode consumption.

It is not always easy to check the reported values against the values published on websites, as the CSTBs regularly have different names for customers than reported in the report for the Independent Inspector. In such cases model numbers can sometimes be found tucked away in the specifications, in the last part of the manual, but sometimes not even that.

In some cases power consumption values were easily found and displayed very clearly. In other cases, they can be found in the technical specifications in the back of a manual.

It should also be noted that power consumption values (on-mode as well as standby) reported to consumers are not necessarily the same as power consumption values in the reports submitted to the Independent Inspector. In some cases they are, but in several cases a maximum power consumption is reported instead of an on-mode power consumption. This consumption includes for example the power consumed by external loads, such as the power to the satellite dish in case of satellite boxes[4].

On one hand, apart from the service provider that is non-compliant to this Chapter, the results show improvement in transparency compared to the first reporting period. 7 out of 8 service providers have now shown to publish information online, compared to 3 out of 10 in the first reporting period.

On the other hand, a lack of standardisation on the location and nature of the information is observed. Depending on the exact purpose of Chapter 4.8 (e.g. to enable consumers to compare performances of boxes from one service provider to another, enabling consumers to obtain an estimate of the yearly energy consumption of a particular box) consideration should be given to standardise the performance information.

[4] These external loads are excluded in the test procedure.

3.4.3 Chapter 4.9 Procurement specifications

No checks against this Chapter were done at this time. Priorities need to be set for the independent inspector work and this was not a priority for this reporting period.

3.4.4 Annex A.4

This reporting period a question was asked to all Signatories concerning Annex A.4: 'if APD is supported, what is the default time period after which the CSTB switches itself into standby (hrs)?'
An overview of 'Auto Power Down time statistics' is given in Table VI.

Table VI Auto Power Down time statistics

Selection of CSTBs	all Signatories	service providers
% equipped per with APD - sales weighed average	33%	48%
% with APD time reported - sales weighed	24%	42%
APD time - sales weighed average (hr)	2.7	2.5
APD time - min – max (hr)	2-14	2-4

For Tier 1 presence of an Auto Power Down mode is not compulsory yet[5].
According to Art. A.4, if APD is present, the default time after which the device switches itself into the APD mode should not exceed 4 hours. This was not always the case. One manufacturer reported slightly higher APD times for boxes shipped to service providers that are not Signatories to the VA. Some manufacturers did not specify the APD times. One service provider reported higher default APD times but indicated that they were in the process of updating the default APD times to 4 hours for all models deployed at customers.
On one hand one could say that as APD is not compulsory yet it could be allowed to have longer APD times or not report APD times. However, as the presence of APD is rewarded in the Total Energy Consumption calculation, claiming APD should imply having the values implemented as prescribed in A.4 (a default APD time of no more than 4 hours and a user adjustable APD time of no more than 8 hours).

3.4.5 Annex A.5

No checks against this Chapter were done at this time. Priorities need to be set for the independent inspector work and this was not a priority for this reporting period.

3.4.6 Annex A.8

Annex A.8 states that CSTBs "that provide for speculative recording[6] must have a user-accessible menu option allowing the user to disable this feature at will". This was translated into an additional questions for service providers in the reporting template.
Out of the 8 service providers that reported

- 2 indicated with their answers that speculative recording functionality is not present.
- 2 used an old template. This was not pursued further this time. In the next monitoring period all Signatories should use the latest template.

[5] If APD is present this can be taken into account in the TEC (Total Energy Consumption, kWh/yr). Instead of 9 hours on mode, 4.5 hours on mode and 4.5 hours APD mode is taken for the determination of the TEC.
[6] Typically push video-on-demand content.

- 4 have speculative recording functionality enabled.

Of the 4 service providers that have recording functionality enabled, 2 report to have a user accessible menu option to disable the feature. 2 report that a disable function can be applied upon user request.

3.5 Results compliance measurements

2 CSTBs of 2 different model types were tested, 4 in total. On-mode, standby and autopower down power consumption was measured, from which the Total Energy Consumption (TEC) was calculated. Some issues were encountered during the measurements, such as a problem with the conditional access for one box, a lower than expected standby consumption measured due to a software setting deviating from its default value. These issues took some time but were solved in the end.
The final results of the TEC determination agreed well with reported values. Deviations found were less than 2% in all cases.
During the tests reported default auto power down times were also confirmed.

4 Conclusions

4.1 Conclusions on compliance to the commitments

Similar to the first report, the focus of this second report was on the 19 out of 26 Signatories that had to send in data according to the specified reporting template. Some slight changes were made to the reporting template compared to the first period.
Of the 11 manufacturers and 8 service providers that were asked to send in a report, 18 sent in the report. One signatory who signed up after the start of the monitoring period made use of Chapter 5.1 and did not send in a report.

Of the 18 Signatories who sent in reports, determination of compliance with Chapter 4.3.1 ("each Signatory shall ensure that 90% of its CSTBs comply the applicable energy consumption targets of the VA…") was a key task.
All other 18 Signatories complied with Chapter 4.3.1. Of the 17 Signatories that reported sales data the average compliance rate was found to be 98.1%.

An on-site audit was done with Liberty Global. One complete measurement procedure was carried out for 2 CSTB-types, 2 of each. The Total Energy Consumption values determined from the power measurements agreed with reported values within 2%. Reported default Auto Power Down times were also confirmed.

Compliance to Chapter 4.8 was checked for all service providers ("… Signatories shall provide consumers with detailed information about energy consumption levels. …"). 7 out of 8 service providers that had sent in reports reported URL's on which information on energy consumption and/ or power consumption could be found. This is an improvement from last year. One service provider neither provided a URL nor where the information for consumers can be found and is therefore non-compliant with the requirements of Chapter 4.8.
A lack of standardisation on the location and nature of the information to consumers is observed. Depending on the exact purpose of Chapter 4.8 consideration should be given to standardise the performance information.

It was observed that some Signatories who reported box types with Auto Power Down functionality did not observe the time limits specified in A.4. Some others did not report them. Even though APD functionality is not compulsory yet, according to A.4 the period of time after which a CSTB switches itself into the APD mode should be no more than 4 hours.

4.2 Conclusions on the monitoring process

The monitoring process went as planned for the majority of Signatories. Reports were sent before the deadline and questions from the Independent Inspector were answered within the timeframe that was set (usually one week). It can therefore be concluded that the current way of working works with

most Signatories. However, there still are exceptions. Two signatories sent in their report after the deadline of 30 November 2012. The last report came in on 31 January 2013 and when it came it was incomplete and had to be followed up with several rounds of questions. This has slowed down the reporting process. In order to avoid this, our proposal for the next monitoring period is to consider all Signatories who do not submit a report by the deadline as non-compliant.

4.3 Recommendations on the monitoring and verification process

The Independent Inspector recommends that the Steering Committee

1. Resolves the situation with the Signatory that is non-compliant to Chapter 4.8 and reports back to the Independent Inspector on steps taken.
2. Further improves reporting discipline by establishing that a Signatory who fails to submit their report on the required deadline is considered to be non-compliant.
3. Further improves reporting discipline by requiring Signatories to notify the Independent Inspector by the reporting deadline in case they want to make use of Chapter 5.1 not to report.
4. Further improves reporting discipline by requiring Signatories to use the latest reporting template, as their might be changes from one year to the next year.
5. Considers the standardisation of performance information to consumers.
6. Requires Signatories who report the presence of Auto Power Down functionality for specific models to adhere to the maximum APD times specified in A.4.

Annex A Reporting Template for Signatories

Columns standard reporting template, Tier 1	Columns standard reporting template, Tier 2
Manufacturer / brand	Manufacturer / Brand
Model Type	Model Type
Base Functionality	Base Functionality
NEW innovative functionality disabled?	NEW innovative functionality disabled?
Access to additional RF channels	Access to additional RF channels
Advanced Video Processing	Advanced Video Processing
	High efficiency Processing
DVR	DVR
(Euro) DOCSIS 3.0 or VDSL	DOCSIS 3.0 or VDSL
HD	HD
Return path	Return path functionality
	Full HD
	Ultra HD
	3D-TV
	Advanced graphics processing
	DOCSIS 2.0 or ADSL
Multi decode & multi display	Multi decode
	Multi-display
	In home network
Total Annual Energy Allowance (kWh/year)	Total Annual Energy Allowance (kWh/year)
On Power (W)	On Power (W)
Standby Power (W)	Standby Power (W)
Does product support APD?	Does product support APD?
APD Power (W)	APD Power (W)
A.4: if APD supported, what is default time period after which the CSTB switches itself into standby (hrs)?	
Product Annual Energy Consumption (kWh/year)	Product Annual Energy Consumption (kWh/year)
Compliance margin (%)	Compliance margin (%)
% of allowed energy use	% of allowed energy use
Complies with VIA 3.0 Tier1?	Complies with VIA 3.0 Tier 2
Annual Sales Quantity placed on the internal market during the reporting period?	Annual Sales Quantity placed on the internal market during the reporting period?

In addition, service providers are requested to provide answers to questions related to Art. 4.8 and A.8.
Concerning 4.8 they are asked to provide

- A URL where environmental characteristics and performance of CSTB-types are reported:
- If this is not available online they are asked to state where information can be found

Concerning A.8 they are asked the following:
For devices with recording functionality:

- Is there a user-accessible menu option allowing the user to disable this featuer at will?
- Is there a disable function that can be applied upon user request (for example via the Service Provider call centre)?
- Are instructions provided for disabling speculative recording?

Annex B List of Signatories

As of Oct. 25th, 2012

	Company	signed up on	Re-ported (Y/N)	Compliance status	reason for not report-ing / other comments
1	Advanced Digital Broadcast S.A.	nov. 2011	N	N/A*	Ch. 5.1 not signed up at start of reporting period
2	Amino Communications Ltd	Nov-11	Y	Compliant	
3	BskyB	Nov-11	Y	Compliant	
4	Cisco		Y	Compliant	
5	Deutsche Telekom AG	Dec. '12	Y	Compliant	
6	Echostar	Oct. 2011	Y	Compliant	
7	Entropic Communications		N	N/A	
8	Humax Digital	Nov-11	Y	Compliant	
9	Intel	Nov-11	N	N/A	
10	Irdeto	Oct-11	N	N/A	
11	Liberty Global	Sep-11	Y	Compliant	
12	Maxlinear		N	N/A	
13	Microsoft	Jul-11	N	N/A	
14	Motorola		Y	Compliant	
15	NDS Group	Jul-11	N	N/A	
16	Pace	Oct. -11	Y	Compliant	
17	Sagemcom Broadband SAS	aug. 2011	Y	Compliant	
18	Samsung	Jul-11	Y	Compliant	
19	Sky Deutschland Fernsehen GmbH & Co.	Aug-11	Y	Compliant	
20	Sky Italia Srl	May-11	Y	Compliant	
21	Tatung Technology Inc	Oct-11	Y	Compliant	
22	Technicolor	Sep-11	Y	Compliant	
23	Telenet	Jul-11		Compliant	Part of Liberty Global
24	Telenor / Canal Digital	Nov-11	Y	Compliant to 4.3.1 Not compliant to 4.8	
25	Texas Instruments	Oct-11	N	N/A	
26	Viasat Satellite Services AB	Aug. '11	Y	Compliant	
27	Virgin Media	Oct. '11	Y	Compliant	

Left since previous period:
Kaon
Prisa

*: N/A is put for signatories who are not required to send in regular reports and who have not received additional questions from the Independent Inspector

new signatory

new signatory with regular reporting duty

signatory who submitted first report

Annex C List of compliant CSTBs

Compliant CSTSB models manufacturers

Manufacturer	Model
Amino Communications	A125
Amino Communications	A129
Amino Communications	A130
Amino Communications	A130H
Amino Communications	A130M
Amino Communications	A132
Amino Communications	A140
Amino Communications	A532
Amino Communications	A540
Amino Communications	H140
Amino Communications	Cubovision
Amino Communications	A110
Cisco	8485DVB (4027645)
Cisco	8485DVB (4028092)
Cisco	8398DVB (4031620)
Cisco	4398DVB (4031621)
Cisco	8485DVB (4033377)
Cisco	4585DVB (4034403)
Cisco	8685DVB (4035928)
Cisco	8620DVB (4036462)
Cisco	8685DVB (4037335)
Cisco	8685DVB (4037336)
Cisco	8685DVB (4038000)
Cisco	8685DVB (4039032)
Cisco	4398DVB (4040027)
Cisco	8675DVB (4041021)
Cisco	4682DVB (4042454)
Cisco	8685DVB (4042607)
Cisco	8685DVB (4042608)
Cisco	ISB6030 (4029833)
Cisco	ISB6530 (4037000)
Cisco	IST6122 (4037173)
Cisco	ISB2001 (4035825)
Cisco	KMM3010 (4027772)
Cisco	ISB2201 (4036311)
Cisco	ISB2231 (4042381)
Cisco	ISB6030 (4039815)
Cisco	CIS5030 (4034683)
Cisco	ISB2231 (4041374)
Cisco	ISB2001 (4039480)
Cisco	IST6002 (4037177)
Cisco	ISB6030 (4039476)
Cisco	ISB6030 (4035823)
Cisco	IST6102 (4038354)
Cisco	ISB2201 (4042743)
Cisco	IST6002 (4034724)
EchoStar	HDC-601DER
Humax	BXR-HD
Humax	BXR-HD+
Humax	CXHD-5000C

Humax	CXHD-5100C
Humax	DIGI+C
Humax	DIGI+C HD
Humax	DTT-3600
Humax	DTV 4700
Humax	EUROFOX HD+
Humax	F4-FOX HD/HD+
Humax	HD NANO
Humax	HD-1000NC
Humax	HD-5400S
Humax	HD-5500T
Humax	HD-5600S
Humax	HD-5700T
Humax	HDCI-5000
Humax	HD-FOX IR
Humax	HD-FOX/HD+
Humax	HD-FOX+
Humax	HDPVR-5000T
Humax	iCord Cable
Humax	iCord HD+
Humax	iCord Mini
Humax	iHD-FOX C
Humax	iHD-PVR C
Humax	iHDR-5050C
Humax	iHDR-5200C
Humax	IR-FOX Z
Humax	IRHD-5100S
Humax	IRHD-5300C
Humax	NA-FOX HD
Humax	PDR iCord HD
Humax	PR-HD2000C
Humax	S HD3
Humax	S HD4
Humax	TN5000HD
Humax	TN5050HDR
Humax	UD-FOX
Humax	VAHD-5300
Humax	VAHD-5300F
Motorola Mobility	VIP1903T, IP/DVBT-STB
Motorola Mobility	VIP1003, IP-STB
Motorola Mobility	VIP1003, MOT std w/o RCU
Motorola Mobility	VIP1003, IP-STB, TeliaSonera
Motorola Mobility	VIP1963, IP STB Mot STD
Motorola Mobility	VIP1903 SC, IP-STB Mot Std
Motorola Mobility	VIP1003 Altibox, IP-STB
Motorola Mobility	VIP1963 MRCU 180 WV, IP-STB
Motorola Mobility	VIP1963 DB KPN
Motorola Mobility	VIP1003 TEO IP-STB
Motorola Mobility	VIP1903 SC Canal Digital
Motorola Mobility	VIP1003 WV HDMI w/o RCU
Motorola Mobility	VIP1963 DB Altibox, IP-STB
Motorola Mobility	VIP1003 MRCU 180
Motorola Mobility	VIP1963 IP-STB PVR36 TeliaSonera
Motorola Mobility	VIP1903C SC COM HEM, IP-STB
Motorola Mobility	VIP1963C SC COM HEM, IP-STB
Motorola Mobility	VIP1903C SC MOT STD
Motorola Mobility	VIP1853,IP-STB,MOT STD,F/G
Motorola Mobility	VIP1903 SC COM HEM,IP-STB,F/G

Motorola Mobility	VIP1003 LATTELECOM II,IP-STB,F/G
Motorola Mobility	VIP1903C SC DB STOFA,IP-STB,F/G
Motorola Mobility	VIP1963C SC DB STOFA,IP-STB,F/G
Motorola Mobility	VIP1853D,IP-STB,KPN,F/G
Motorola Mobility	VIP1963,IP-STB,DB SONAECOM PT,F/G
Motorola Mobility	VIP1200E, IP-STB
Motorola Mobility	VIP1232E, IP-STB
Motorola Mobility	VIP1003E, IP-STB
Motorola Mobility	VIP2262E, IP-STB
Pace	DS250NV
Pace	TDS865NS
Pace	TDS865NV
Pace	DS830NV
Pace	DCR7111/03
Pace	DCR7111/05
Pace	DCR7111/06
Pace	DCR7151/24
Pace	DS831IMH
Pace	DSR7151/24
Pace	DSR8151/24
Pace	DCR8151/24
Pace	TDS866NSD
Pace	DSR8211
Pace	DS831NS
Pace	TDS866NSDX
Pace	TDC866NSDX
Pace	DiT7100/14
Pace	DZC3000NGT
Pace	HDS7241
Pace	DC840CH
Pace	DSR8141
Sagemcom	RCI92-160_BYT
Sagemcom	ICD84 HD CND
Sagemcom	ICADD84 HD DTY
Sagemcom	DCI85 HD KDG
Sagemcom	RCI88-320 KDG
Sagemcom	DEC ICADD84 HD MG
Sagemcom	ICADD84 HD NC
Sagemcom	EGCI421-00 NC
Sagemcom	ESCI91-HD VF DE
Sagemcom	RTI90-160 BYT
Sagemcom	RTI422-320 BYT
Sagemcom	IAD84 HD HA
Sagemcom	IAD83-160 HD HA
Sagemcom	ITAD81 HD ICT
Sagemcom	EI90 HD ICT
Sagemcom	IAD84 HD OS
Sagemcom	ETI91-250 HD SFR
Sagemcom	ETI916-250 HD SFR
Sagemcom	DI916-8 MA
Sagemcom	DI91-8 MA
Sagemcom	DS87 HD BTC
Sagemcom	ISD86 HD CND
Sagemcom	ITSD81-250 HD CND LF
Sagemcom	DST78 CND
Sagemcom	DSI87 HD CYFRA+
Sagemcom	DSI83 CPL

Sagemcom	ITSAD88 HD MOB
Sagemcom	ITSAD88 HD FT
Sagemcom	ITSAD88 HD FT NEWTV
Sagemcom	ITSAD88 HD FT NEWTV-2
Sagemcom	ESI88 HD POL SAT
Sagemcom	DSI86 HD FREESAT
Sagemcom	DS77 TNTSAT FR
Sagemcom	DS87 HD TNTSAT
Sagemcom	DSI87-8 HD SFR
Sagemcom	DTSI78TPSA
Sagemcom	ETSI88 HD TPSA
Sagemcom	DT90 T2 Boxer
Sagemcom	RT90-160 T2 Boxer
Sagemcom	RT90-500 HD Boxer
Sagemcom	RT90-320 HD Boxer
Tatung Technology Inc	STB3210
Tatung Technology Inc	STB3310
Tatung Technology Inc	STB3011
Tatung Technology Inc	STB3110
Tatung Technology Inc	STB-2530
Tatung Technology Inc	STB2313
Tatung Technology Inc	STB3112CDA
Tatung Technology Inc	STB-3012CDA
Tatung Technology Inc	STB-3112CEE
Tatung Technology Inc	STB-3212
Tatung Technology Inc	STB-3112
Tatung Technology Inc	STB-3012
Tatung Technology Inc	STB-3212
Samsung	SMT-S5210
Samsung	SMT-C7160
Samsung	MR303B
Samsung	SMT-C5270A
Samsung	SMT-C7200A
Samsung	SMT-S5240
Samsung	SMT-S7800
Samsung	DSB-P990V
Samsung	SMT-C5120A
Samsung	SMT-G7400
Samsung	SMT-S5140
Samsung	SMT-S7140
Samsung	SMT-C7100A
Samsung	SMT-C7140B
Samsung	SMT-G7440
Samsung	SMT-G7441
Samsung	SMT-C7160B
Samsung	SMT-E7100N
Samsung	SMT-E7100W
Samsung	SMT-H6106A
Samsung	SMT-S5240P/PT
Samsung	SMT-T1040
Samsung	SMT-T1041
Samsung	SMT-C7101A
Samsung	SMT-H3110B/VML
Samsung	SMT-H3126B
Samsung	SMT-C7140A
Technicolor	DBI805
Technicolor	DBI8500E-T
Technicolor	DST805

Technicolor	DBI2210E
Technicolor	DSI702
Technicolor	DCI713
Technicolor	DSI706
Technicolor	DSI2110TNS

Compliant CSTB models service providers

Model
DRX595
DRX890
DRX895
MR 303 A
MR 303 B
MR 102
MR 500 Sat
MR 300 A
MR 301 A
MR 300 B
MR 301 B
MR 100
DVB8685
DVB8485
K-B4003HCO
K-ES1280CO
DCR7111
SMT-G7400
DC-AD2100
DB-AD210
TDS866NSD (S HD PVR 101)
PR-HD3000 (S HD4)
TDS865NSDX (S HD2)
TDS866NSDX (S HD201)
PR-HD3000C (S HD3)
TDS865NSD (S PVR HD1)
TDC866NSDX (S HD501C)
DH313 (DH310 hotel version)
DS831NS
TDS865NS
DSB-P990N
DSB-P990V
DRX890i
4585DVB
SMT-H3110
CT8685
CT8620
S7100
S7101
SD86
ITSD81-250HD
5720SX
CDC9000
CDC7000
CDC5050
CDC5000
BTC-1540
DSI 175D/13R

DST78
2850ST
SMT-S7140
SMT-S5140
DSB-H670
DS830NV
TDS865NV
DS250NV