**WHOLESALE REFERENCE OFFER
OF SMP OPERATOR**

**TV SERVICES OVER CABLE**

**ANNEX 4  – SERVICE LEVEL AGREEMENTS**

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# 1 GLOSSARY

| | |
|---|---|
| ADI | Asset Distribution Interface, an Interface Format commonly used for distributing VoD assets between content archives |
| BAL | Beneficiary Access Line, one or more physical network links between SMP operator and Beneficiary over which all network traffic required to operate the wholesale services will be organised |
| Bouquet | A group of digital TV services that are together sold as a Product |
| BSS | Business Support Systems are the components that a telecommunications network provider uses to run its business operations towards customers. BSS and OSS platforms are linked in the need to support various end to end services |
| CA | Conditional Access, the protection of content by requiring certain criteria to be met before granting access to this content. The term is commonly used in relation to digital television systems |
| CAL | CAS Access Line, a network link between SMP operator and the externally hosted CAS for Beneficiaries |
| CAS | Conditional Access System, the System that enforces the CA |
| CASV | Beneficiary's (externally hosted) CAS Vendor |
| CATV | Cable Analog TV |
| CDR | Customer Detailed Records |
| CM | Cable Modem |
| CMTS | Cable Modem Termination System, the general term for the central headend controller in a cable modem network based on the EuroDOCSIS family of standards |
| CPE | Customer Premises Equipment |
| DHCP | Dynamic Host Configuration Protocol, the standard Internet protocol to allow a networked device to obtain an IP address for one of its network interfaces from a DHCP server in the network. |
| DTV | Digital TV |
| DVB | Digital Video Broadcast standard |
| DVB-C | Digital Video Broadcast standards specific to cable networks |
| EAE | Early Authentication and Encryption, term in the EuroDOCSIS standard whereby a cable modem is authenticated and establishes secured communication even before the exchange of data on the IP network level starts |
| EIT | Event Information Table, part of DVB SI metadata that is typically used to carry the EPG data |
| EPG | Electronic Program Guide, an application showing on screen which content is being broadcast now and in the immediate or further future on each channel |
| EU_ID | End User Identified, the unique ID used to identify a service account between SMP operator and Beneficiary. The EU_ID is created upon initial activation of CATV service after which all communication (orders, billing, status) between SMP operator and Beneficiary is based on this EU_ID. |
| EuroDOCSIS | Family of industry standards used for IP data services over cable networks in Europe |
| HFC | Hybrid Fiber/Coax, a telecommunications industry term for abroadband network which combines optical fibre andcoaxial cable. It has been commonly employed globally by cable operators since the early 1990s |
| IHN | In Home Network |
| KPI | Key Performance Indicator |

| | |
|---|---|
| MPEG | A family of video compression standards |
| MPTS | Multi Program Transport Stream, a digital audio/video transport stream that groups multiple channels and typically is broadcast to fill up one frequency on the cable network. |
| NIU | Network Interface Unit, a device installed in consumer's homes to provide proper termination of the cable network and connectivity for the various services offered by cable operator |
| NTP | Network Termination Point (as defined in section 4.1 of the Main Body) |
| PSI | Program Specific Information the metadata for transport streams as defined by the MPEG standards |
| OSS | Operational Support Systems, computer systems used by telecommunications service providers dealing with the "network functions" including the telecom network itself and the supporting processes such as maintaining network inventory, provisioning services, configuring network components and managing faults. BSS and OSS platforms are linked in the need to support various end to end services |
| PVR | Personal Video Recorder |
| QAM | Quadrature/Amplitude Modulation, the modulation technique used on DVB-C networks |
| RTSP | Real-Time Streaming Protocol, commonly used to control the streaming behavior of video servers (start/stop/pause/slow/fast/forward/reverse) |
| SI | Service Information, additional metadata for transport streams as defined by the DVB standards, complements the PSI from MPEG |
| SMS | Subscriber Management System, the business IT system of SMP operator, Beneficiary or CASV responsible for management of subscribers |
| SLA | Service Level Agreement |
| SOAP | Simple Object Access Protocol, an industry standard for allowing systems to communicate by exchanging XML messages |
| SOR | Statement of Requirements |
| SPOC | Single Point of Contact |
| STB | Settop Box (the digital TV Decoder) |
| VHE | Video Head-End, the main facility in the SMP operator network where the DTV signals are prepared for broadcast over the HFC network |
| VoD | Video on Demand |
| WRO | Wholesale Reference Offer |
| WSDL | Web Service Description Language, an XML based language for describing the interface of a web service |
| XML | Extensible Markup Language, an Internet standard for representing structured data under form of simple text files |

## 2 SCOPE OF THIS DOCUMENT

1. This annex describes the Terms and Conditions upon which Coditel will deliver installation and maintenance of the Wholesale TV Services over Cable.

2. The scope of this document is to set a framework for operational collaboration between both parties that ensures the respect of the fixed deadlines and an acceptable quality of the provided Services.

3. The Service Level Agreements are aimed at the timers for validation of orders, installation of orders and repair of interruptions.

4. The intention of this annex is to motivate the SMP operator to respect the agreed Service Levels.

5. The working of this Service Level Agreement is subject to a learning curve, i.e. the current values included are values that are to be evaluated on a regular basis. This learning curve will extend for 6 months after the deployment of the first wholesale orders. This annex may be updated or amended as agreed with the competent regulator or as decided by the competent courts. Every update or amendment will be communicated to the Beneficiary in an appropriate manner.

# 3  PREREQUISITES

6.    Both parties agree to respect the content of this document.

7.    When specific follow up or support needs to be performed, both parties are obliged to provide a SPOC with its respective name, telephone number or e-mail.

## 3.1  FORECASTS

8.    In order to ensure reasonable operational workload, the Beneficiary should ensure a reasonable spread of his orders during the month. For the execution of the present Contract, the maximum daily volume intake is defined as 10% of the monthly forecasted volumes. The orders exceeding on a daily basis the maximum daily volume intake are exempted from the SLA conditions.

9.    In case of massive orders, provisioning will be done on project-basis. In that case, planning can be negotiated between the Beneficiary and Coditel. The Beneficiary must upfront inform Coditel when forecasted volume is exceeded. In that case, although SLA will not apply, Coditel will execute these orders on a best effort basis.

## 3.2  NON APPLICABILITY

10.   Timers that are delayed due to the Beneficiary are not valid within this Service Level Agreement.

11.   In case of force majeure, the SMP operator might decide to temporarily postpone the Service Levels until the consequences following the force majeure have been resolved. Examples of force majeure are amongst other natural disasters, exceptional weather, strikes, refusals of licence, full system break down. In such cases, the SMP operators will resort to a best effort system for validation, installation and repair.

12.   All acts or reports from the Beneficiary outside of working hours will be answered the next working day after the initial report.

## 3.3  TRANSITION PERIOD

13.   The SLA will take effect 6 months after the succesfull closure of the implementation and testing phase.

# 4 SERVICE LEVEL AGREEMENTS

14. This paragraph includes the most relevant SLAs in the operational processes framework. The purpose is that these SLAs will be reviewed periodically based on experience.

15. Timers, used in the definition of the hereunder SLAs, are always expressed in working days unless specified otherwise. For a timer of the action must be completed before end of working dayfter reception of the order or other Beneficiary message, unless specified otherwise. Timers expressed in months consist of 21 working days. Under the present document, a working day for order purposes is considered as being from 9h00 to 16h30xcluding Saturday, Sunday and Belgian holidays.

16. Any order for which the timer has been exceeded due to force majeure, as specified above, is considered not being applicable to the SLA and thus will not be included in the calculation of the KPI, related to this SLA.

17. The SLAs included below are binding and a revision of the latter is possible after BIPT approval or after a court's decision .

18. The KPIs, related to the SLAs, will be measured bi-monthly.

19. The Beneficiary shall inform Coditel of any change to its network or equipment which are likely to affect the performance of the services which are to be supplied by Coditel and subsequently Coditel's ability to comply with this SLA.

## 4.1 PROVISIONING

### 4.1.1 Provisioning Validation SLA

20. The provisioning validation timer starts the day following the day Coditel has sent an acknowledgment message for the Beneficiary order. When an order is validated, any request for modification to the order details may only be effected by cancelling the original order and submitting a revised order. Timers relating to an order whose modification is sought by the Beneficiary are not valid within the SLA.

21. Changes regarding the date of installation, cancellation of extra services, change of the product are possible within one week of installation.

21.22. The timer ends on the sending day of the validation message by Coditel.

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**Provisioning Validation SLA**
Percentage of orders validated within the corresponding validation timer

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| | |
|---|---|
| 50% | 30 minutes |
| 95% | 2 working days |
| 99% | 5 working days |

22.23. The provisioning validation SLA is not valid if the order sent by the Beneficiary has been rejected and a Reject message has been sent by Coditel.

### 4.1.2 Provisioning Execution SLA

23.24. The provisioning execution timer starts the day following the day the validate message has been sent to the Beneficiary by Coditel.

24.25. The timer ends on the sending day of the installation done confirmation by Coditel.

On site (with visit)

| Provisioning Execution SLA Percentage of orders done within the corresponding execution timer | |
|---|---|
| 80% | 15 working days |
| 95% | 22 working days |
| 99% | 35 working days |

Without visit

| Provisioning Execution SLA Percentage of orders done within the corresponding execution timer | |
|---|---|
| 80% | 10 working days |
| 9095% | 16 working days |
| 10099% | 2225 working days |

25.26. No timer will apply in the following circumstances:

25.1.26.1. The installation requires work on Coditel's network outside the End-User premises;

25.2.26.2.   The installation requires a connection on the End-User premises to Coditel's network;

25.3.26.3.   Failure of the Beneficiary to follow the procedures set out in the SLA.

26.27. This timer is frozen by a stop clock in the following cases:

26.1.27.1.   an appointment (if needed) is not accepted at the proposed date,

26.2.27.2.   in case of absence of the End-User at appointment date,

26.3.27.3.                                            in any case of incomplete or incorrect information to be provided by the Beneficiary with relevance for the provisioning process.

26.4.27.4.   Coditel is not able to reach the Beneficiary or the Beneficiary is not able to reach the End-User;

26.5.27.5.   in case Coditel cannot have a sufficient access to the part of the network at the End-User premises or in case Coditel cannot complete the installation for reasons beyond Coditel's reasonable control.


## 4.2   REPAIR

### 4.2.1   Repair SLA on the End User line

27.28. The repair time on the End User line timer starts when Coditel receives a Trouble mention by the Beneficiary and ends at the closure of this Trouble Ticket after the feedback has been given by Coditel to the Beneficiary.

28.29. If an appointment is needed at the End-User address and the problem resides at the high bandwidth part, it is the Beneficiary that arranges an appointment at the End-User premises.

Problems arising from or otherwise caused by the following circumstances are excluded from the SLA:

a.   Where the Trouble is caused by third party activities;
b.   Where a Trouble is due to changes in the End-User apparatus;
c.   Where a Trouble is reported and no problem is detected when the service is tested;
d.   Where the Beneficiary fails to operate its services in accordance with Coditel's terms and conditions ;
e.   Failure of the Beneficiary to follow the procedures set out in the SLA.

29.30. This timer is frozen by a stop clock in the following cases:

29.1.30.1. an appointment (if needed) is not accepted at the proposed date,

29.2.30.2. in case of absence of the End-User at appointment date,

29.3.30.3. in any case of incomplete or incorrect information to be provided by the Beneficiary with relevance for the repair process.

29.4.30.4. Coditel is not able to reach the Beneficiary or the Beneficiary is not able to reach the End-User;

29.5.30.5. in case Coditel cannot have a sufficient access to the part of the network at the End-User premises or in case Coditel cannot complete the repair for reasons beyond Coditel's reasonable control;

29.6.30.6. the problem is sporadic and can hardbly be identified ;

29.7.30.7. the problem requires civil engineering work or requires an intervention on the network outside the End-User premises ;

29.8.30.8. the problem is a network problem affecting several End-Users.

| Repair SLA Percentage of orders done within the corresponding execution timerResolution time for service interruption for one customer | |
|---|---|
| 80% | Day of trouble ticket opening + 1 (before end of the following second half working day)8 Working Hours/Working days to be defined in line with opening hours of retail services helpdesk. |
| 90% | 5 working days16 WH |
| 95% | 2 WD |
| 100% | 15 working days4 WD |

| Repair SLA Resolution time of service degradation for one customer |
|---|

| | |
|---|---|
| 80% | 2 WD |
| 90% | 3 WD |
| 95% | 4 WD |
| 100% | 8 WD |

30.31. If an appointment is needed at the end-user address, the repair timers will only apply if the Beneficiary specifies in the Trouble Ticket its end-user availability.

## 5   WRONGFUL REPAIR REQUESTS

~~31.~~32. Coditel will charge the Beneficiary with the fee related to Wrongful Repair Requests (see Annex 5 – Pricing and Billing) if the fault is not attributable to Coditel or if the fault results from the abnormal use of the line or any other Beneficiary - or end user of the Beneficiary - fault.  In such case, the Beneficiary may not request Coditel to charge the End-user directly for with all or part of the fee related to a Wrongful Repair Request.

## 6   DOCUMENTED REPORTS

32.33. Coditel will provide every two months the BIPT and each Beneficiary with documented reports on the Services ordered by this Beneficiary during these two months, containing all information needed to calculate the provisioning KPI's described in this document.

# 7 TERMS AND CONDITIONS FOR COMPENSATIONS

~~33.~~34. Compensations are applicable in the cases that Coditel has not respected its commitment as defined by the present SLA or other exclusion as described in this document

~~34.~~35. Compensations are calculated annually for installation and repair SLAs. In order to determine the population of orders/tickets subject to compensation, the following method will be applied:

~~34.1.~~35.1. Orders/tickets will be sorted in an ascending order according to their level of compliance with the SLA;

~~34.2.~~35.2. The (100%-SLA) of worst cases will be removed from the calculation of the compensations;

~~34.3.~~35.3. The other cases (%SLA-%KPI) will be subject to compensation (in case the KPI is lower than the SLA).

~~35.~~36. For example: if the SLA is 95% and the KPI indicates that the obtained results were at 80%, than the compensations are applicable on the differential 15% (=95%-80%), since the SMP operator is allowed to default on 5% of the orders given the definition of the SLA.

~~36.~~37. The Beneficiary needs to provide Coditel with the necessary information in case of a delayed provisioning or repair or any shortage of Coditel that gives cause for the compensations described in this Service Level Agreement. Coditel will upon receipt verify this information. When this verification appears that the information of the Beneficiary shows a shortcoming of Coditel that gives cause for paying compensation, this payment will be done immediately and automatically through a Beneficiary's invoice without VAT.

~~37.~~38. Coditel will motivate its decision in case of rejection of the request for compensation.

## 7.1 COMPENSATION FOR PROVISIONING OF AN END USER LINE

| Compensation for Provisioning Execution Timer | |
|---|---|
| 90% | 5% of the monthly rental fee for the Beneficiary per working day of delay |

## 7.2 COMPENSATION FOR REPAIR

| Compensation for Repair Timer |
|---|

| 100% | 100% of the daily fee for the Beneficiary per calendar day |
| --- | --- |

## 7.3    COMPENSATION MAXIMALE

La valeur de la compensation est calculée sur la base de la formule suivante :

**_Compensation pour le SLA exécution de commande_**
_5% du loyer mensuel par jour ouvrable_
**_Compensation pour le SLA réparation_**
_7,5 % du loyer mensuel par jour ouvrable_

# 8   ESCALATION PROCEDURE

38.39. By default Internal Escalations are performed automatically. The target of departments is to limit the number of external escalations by launching pro-actively internal escalations as soon as timers are exceeded.

39.40. Escalation is possible when a trouble ticket has been created.

40.41. External Escalation can be initiated by the Beneficiary to level 1 at Coditel after the defined timer has been passed. Further escalation can be requested to level 2 at day of first external escalation submitted +1 day. Escalation to level 3 can be requested at day of first external escalation submitted + 2 days.

41.42. Immediately External Escalation to Level 2 and Level 3 is accepted from persons at the same level in the Beneficiaries Organization in case the Level 1 escalation is done before and the level 1 escalation shows structural problems or unavailability. Level 2 and 3 will first check whether lower escalation steps have been taken, before proceeding.

42.43. The escalation matrix is available on the Coditel Wholesale website.

# 9 FORECASTING PROCEDURE

## 9.1 GENERAL PRINCIPLES

43.44. The forecasts are mandatory to guarantee to respond to orders placed during the provisioning period and this is needed to help Coditel to plan a reasonable capacity to fulfill Beneficiary's demand.

44.45. Beneficiaries are guaranteed that Coditel will set up the necessary resources for the period concerned to meet its market needs, independent of the needs of other Beneficiaries. In addition, the forecast entitles the Beneficiary to the conditions for delays determined in the Service Level Agreement.

45.46. For the orders exceeding the forecasts no guarantee will be offered and they will be carried out, as soon as possible, according to the remaining capacity available. If the forecasted volumes cannot be installed, the Beneficiary will be informed within 30 working days and parties will cooperate to find the most acceptable solution.

## 9.2 LEVEL OF DETAIL IN FORECASTS

46.47. The following services, part of the wholesale services, must be subject to forecasts.

| Product | Frequency | Forecast period |
|---------|-----------|-----------------|
| **Analog TV** | Monthly | 6 months |
| **Digital TV** | Monthly | 6 months |
| **Interactivity** | Monthly | 6 months |
| **Broadband** | Monthly | 6 months |

47.48. The forecasted volumes (new clients and migrations) are ventilated per installation type, all products  analog TV, digital TV, interactivity and broadband combined. It can be expected that most Beneficiaries who request interactivity or broadband products will need an intervention. However the validation will show whether an intervention is necessary for each product. This validation will be done according to the rules set out in this document.

## 9.3 VLAAMS-BRABANTBRUSSELS PROCESSING OF FORECASTS

48.49. The Beneficiary is responsible for the accuracy of the forecast. Therefore, the Beneficiary is requested to provide this forecast by e-mail to his SPOC, at the latest one month prior to the first forecasted period in time.

49.50. For the three first series of forecasts of a new Beneficiary, both Parties will enter into good faith discussions about the submitted forecasts and the feasibility to implement the forecasts concerned.

50.51. Forecast shall be done through the use of the templates provided by Coditel. These templates will only be considered as valid when they are properly completed. In case data is missing or is not correct, the forecast will be rejected (within 5 working days following its reception). In the latter case, the reasons of rejection will be indicated on the template by Coditel.

51.52. Once confirmed, the forecasted volumes are globalized by Coditel into one basket. Capacity reservation, and calendar dimensioning, is done accordingly to fit the needs of the entire market.

53. Forecasting is mandatory as from 50 orders.

### 9.4 DEVIATIONS BETWEEN SUCCESSIVE FORECASTS

52.54. The globalized volumes forecasted by the entire market at month M will be compared with the volumes forecasted at month M-1. For each forecasted month common to the 2 successive forecasts, the maximum deviation between the successive forecasts of this month at month M and at month M-1 will be – 30 % to + 30 %.

### 9.5 DEVIATIONS BETWEEN FORECASTED VOLUMES AND ACTUAL VOLUMES

#### 9.5.1 Underrun

53.55. Underrun occurs when actual ordered volumes are below forecasted volumes. Any underrun mechanism applies to the entire globalized volume of orders of the entire market.

54.56. A reasonable underrun of the forecasted volumes can be absorbed by Coditel and has no direct consequences for the Beneficiary. A reasonable underrun is considered to be no more than a 2030% deviation of the forecasted volume. In case of severe underrun (i.e. more than 2030%) and in case this underrun was caused by a single Beneficiary who excessively increased the volume proposed by Coditel, Coditel reserves the right to limit the allowed modification for the forecast of the following 3 months for that Beneficiary to a level deemed necessary by Coditel.

#### 9.5.2 Overrun

55.57. Overrun occurs when actual ordered volumes are above forecasted volumes. Any overrun mechanism applies to the entire globalized volume of orders of the entire market.

56.58. As from the first order exceeding the globalized forecasted volume, independently of which Beneficiary might be the cause of this overrun, all orders of all Beneficiaries for the remainder of the month will be carried out by Coditel as soon as possible, according to the remaining capacity available.

## 10  REFERENCED DOCUMENTS

~~57.~~59. The following documents may be referenced in this document and together with it form the complete WRO:


Coditel Wholesale Reference Offer - TV Services over Cable – Main Body
Annex 1: General Terms and Conditions
Annex 2: Technical Specifications
Annex 3: Planning and Operations
Annex 4: SLA
Annex 2.3.1: Network Connections and Configuration
Annex 2.3.2: Network Connections – Configuration Form
Annex 2.4.1: CATV Content Offer
Annex 2.5.1: DTV Content Offer
Annex 2.5.2: DTV Network Description – AV Formats, Services, SI/PSI Scheme
Annex 2.5.3: DTV Specification for CA Host Integration in Coditel VHE
Annex 2.6.1: VoD Asset Ingest – Content Formats, Metadata and Ingest Protocol
Annex 2.6.2: VoD Session Setup
Annex 2.6.3: VoD Control Protocol for Video Streaming
Annex 2.7.1: Broadband Internet: Service Profiles and Modem Configuration Files
Annex 2.7.2: EuroDOCSIS Cable Modem Specifications
Annex 2.7.3: Specifications for Cable Modem Provisioning
Annex 3.1: Specifications for Installation of Wholesale Services
Annex 3.2: Certification Procedures on Staff, Procedures and Equipment
Annex 3.3: Web Application – Description of XML Content Formats
Annex 3.4: Beneficiary ID Card - Template

~~58.~~60. All these documents and templates will be available on the Coditel Wholesale Secured website.


Refer to comments on Main Body

# 11 APPENDIX: FORECAST TEMPLATE

59.61. Remarks:

59.1.61.1. Mi refers to the month in which the forecasting templates are submitted

59.2.61.2. All quantities (M1 tot M12) are in incremental values

## "Customer Operations" Forecast

**Forecasting Template**

| Customer reference: |
| Edition: |
| Split: With or Without customer visit |
| Reception date: |

| | $M_1$ | $M_2$ | $M_3$ | $M_4$ | $M_5$ | $M_6$ | $M_7$ | $M_8$ | ... | $M_{12}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| Sub-area 1.1 | | | | | | | | | | |
| Sub-area 1.2 | | | | | | | | | | |
| Sub-area 2.1 | | | | | | | | | | |
| Sub-area 2.2 | | | | | | | | | | |
| Area 3 | | | | | | | | | | |
| Area 4 | | | | | | | | | | |
| Area 5 | | | | | | | | | | |