TELEKOM AUSTRIA GROUP

Service Description: direct2home

1. Introduction

direct2home (DTH) is a satellite-based radio and TV service which enables fast and substantial footprint extension to CUSTOMERS having no or only limited fixed infrastructure.

direct2home covers two product variants: It offers technical distribution for CUSTOMERS who are broadcasters aiming to extend their reach into new markets. It also enables CUSTOMERS who are cable, IPTV and telecommunication providers to dive into the satellite pay TV business with their brand and channels of their choice.

2. Service parts

The Service consists of several parts:

- Content injection: A1 fetches the data streams (e.g. TV channels, …) and transfers them to the TV headend in the Aflenz uplink station
- If requested A1 scrambles some or all data streams in the TV headend
- A1 muxes all the CUSTOMER's separate data streams to one transport stream
- A1 sends the transport stream to the satellite
- As part of the Service A1 provides the space segment needed to broadcast the transport stream.

3. Conditional access system (CAS)

A1 will apply Conax Contego card based digital rights management to data streams as defined by CUSTOMER. This will be done immediately prior to the uplinking.

Sometimes a CUSTOMER wishes to create packages of different data streams (e.g. one package for music, one for action movies, children etc) which can then be assigned to CAS cards (so that a CAS card may be entitled to the packages "music" and "children" but not to "action movies"). If agreed in the contract A1 will grant the CUSTOMER an interface to the CAS system: This will allow the CUSTOMER to assign customized packages to each of the CAS cards (which the CUSTOMER distributes to his subscribers).

4. Content injection

4.1. Fetching the data streams

A1 will pick up the agreed data streams at a POP location to be defined in the order form and in the letter of authorization. CUSTOMER ensures that each data stream is handed over as separate clear channel (i.e. unscrambled).

Each data stream may include any of the below streams, all of which may be defined in more detail in the order form (where the Parties which will also define the channel line-up):

- TV channel
- Additional audio signals for TV streams
- Radio channel
- Electronic program guide ("EPG")
- Teletext

- Subtitles

4.2. Transferring the data streams

A1 transfers the received data streams to its TV headend in the Aflenz uplink station via geographically redundant routes.

4.3. Preparation for uplinking

In the uplink station in Aflenz A1 will join all data streams in the TV headend where they are encoded and/or transcoded and muxed into one transport stream.

Unless provided otherwise in the order form A1 will encode/transcode the data streams into mpeg4 format.

In the order form the PARTIES may set out in more detail which of the data streams will have which bandwidth. In any case the bandwidth defined for each data stream will be an average bandwidth: When muxing the data streams to the transport stream A1 will change the bandwidth of all the CUSTOMER's data streams so that they will all make best possible use of the ordered bandwidth range available to the transport stream.

On a case by case basis (e.g. when the CUSTOMER orders a lot of uplink bandwidth) the PARTIES may agree to generate more than one transport stream.

5. CAS cards and A1's testing requirements

The conditional access system (see clause 3) will only work with CAS cards which use Conax Contego's DRM protection (including pairing) and will work in set top boxes that are compatible with the Conax Contego system, i.e. that have passed the conformity test and security evaluations of the Conax STB kit.

CUSTOMER needs to acquire any needed CAS cards from A1 and A1 will sell needed them to the CUSTOMER. CUSTOMER may order these CAS cards from A1 in multiples of 10.000, 25.000 and 50.000 pieces per order. CUSTOMER may order the CAS cards as white label or customized to his brand.

A1 will not assign the CAS cards to any customized package. Assigning a package to a CAS card is part of the rights of the CUSTOMER (see clause 3).

CUSTOMER may request the CAS cards to be paired with the CUSTOMER's STBs and/or CAMs. This will only work if the CUSTOMER's STBs and CAMs are compatible with Conax Contego.

Upon the CUSTOMER's request A1 will inform the CUSTOMER if any envisaged STB and/or CAM provider is licensed by Conax.

A1 may scramble the data streams to up to 5 of A1's own CAS cards and use them for testing and monitoring purposes.

6. Uplink and space segment

A1 will modulate the transport stream(s) on a DVBS2 carrier and uplink it to the agreed direct to home ("DTH") satellite which covers the region requested by the CUSTOMER.

A1 may for operational reasons switch to a different DTH satellite which must be in the same orbital position so that no repointing of the receiving antennas is necessary and which characteristics (e.g. agreed region covered by the satellite) do not deviate materially from the initially used satellite.

Each set top box ("STB") on the subscriber side needs to be capable of receiving DVB-S2 signals.

A1 will provide the bandwidth on the satellite to cover the average bandwidth of the transport stream (see 4.3). Upon the CUSTOMER's request A1 will provide information on the coverage details of the agreed satellite (or a link to this information).

7. Customized branding of the EPG

A1 will pick up the EPG from the place indicated by the CUSTOMER. The CUSTOMER may decide on the branding used for the EPG and will need to provide the necessary details.

8. Classification of failures

8.1. No failure

Some cases, where the Service is not available to its full extent cannot be attributed to A1 and will therefore not be understood as limitation (see clause 8.2) or outage (see clause 8.3). The causes for these cases are:

(a) a planned interruption/maintenance (carried out after prior consultation of CUSTOMER) or

(b) CUSTOMER breaching CUSTOMER 's duties

(c) force majeure including weather conditions, atmospheric or extra-atmospheric conditions (including solar storms or flares, meteorites and/or solar conjunctions causing earth station outages lasting a few minutes per day during a maximum period of 3 to 5 days, generally occurring at the beginning of March and October)

(d) problems on the side of the CUSTOMER’s subscribers

(e) failure, breakdown, loss or destruction of the then-current satellite for reasons not attributable to A1, as duly justified by A1

(f) failure, breakdown, malfunctioning, loss or destruction of the equipment and/or the software used for monitoring, maintaining or controlling the then-current satellite, if said failure, breakdown, malfunctioning, loss or destruction is not attributable to A1, as duly justified by A1

(g) jamming, modification or modulation of the transmit frequencies of the then-current satellite, if said interruption or deterioration is not attributable to A1, as duly justified by A1;

8.2. Limitation of the Service

Notwithstanding 8.1 limitation of the Service shall be understood as a failure to perform with respect to some (but not all) essential parts of the of the ordered data streams. Typical example of limitations are the complete failure of audio streams or the failure of the video stream on a large area of the screen. Pixel errors, deterioration of sound or comparable events are normal consequences of compression. They will not be treated as limitation because they can only be cured by sufficiently increasing the ordered bandwidth.

8.3. Outage of the Service

Notwithstanding 8.1 outage of the Service shall be understood as a failure to perform with respect to all of the ordered data streams.

9. Availability (class of service)

9.1. Availability regarding limitation of Service (see clause 8.2)

The availability of A1's Service with regard to individual (but not all) of the ordered data streams (see clause 8.2) shall be calculated as follows:

$$\text{Availability} = \frac{TT - TUT}{TT} \times 100$$

TT (total time) shall be the total of minutes within one calendar year during which the Service to the respective individual (but not all) of the ordered data streams was agreed to be in operation.

TUT (total unavailable time) shall be the total of all minutes within such calendar year that the Service is limited (see clause 8.2) but does not suffer from an outage (see clause 8.3).

Any such period of unavailability shall start being added to TUT when there is a limitation of Service and CUSTOMER initiates a trouble ticket at A1's SMC and shall end when A1's SMC informs CUSTOMER about fault clearance.

Availability of each individual (but not all) of the ordered data streams is: 99.7% per calendar year.

9.2. Availability regarding outages (see clause 8.3)

The availability of A1's Service with regard to all ordered data streams (see clause 8.3) shall be calculated as follows:

$$\text{Availability} = \frac{TT - TUT}{TT} \times 100$$

TT (total time) shall be the total of minutes within one calendar year during which the Service for all ordered data streams was agreed to be in operation.

TUT (total unavailable time) shall be the total of all minutes within such calendar year that the Service suffers an outage (see clause 8.3).

Any such period of unavailability shall start being added to TUT when there is an outage and CUSTOMER initiates a trouble ticket at A1's SMC and shall end when A1's SMC informs CUSTOMER about fault clearance.

Availability of Service regarding outages is: 99.9% per calendar year.

9.3. Penalties

A1 shall pay to CUSTOMER a contractual penalty if the availability set out in clauses 9.1 and 9.2 is not met.

The contractual penalty for lower availability than set out in clause 9.1 (limitation of Service) depends on how much the CUSTOMER paid for the limited part of the Service (hereinafter "BASIS", see the definition below) and on how much the actual availability was too low: For each 0.01% that the availability set out in clause 9.1 is missed, A1 will pay a penalty of double that percentage of the BASIS to CUSTOMER (i.e. if the agreed availability is missed by 1% the penalty will be 2% of the BASIS). Hence this penalty will be calculated and paid per data stream affected.

The BASIS for calculating penalty for a limitation of Service (clause 9.1) shall be the pro rata part of fees (excluding one time installation fees) that CUSTOMER paid for the Service with regard to the affected individual (but not all) of the ordered data streams in the calendar year during which the limitation happened.

For each 0.01% that the availability set out in clause 9.2 (outage of Service) is missed, A1 will pay a penalty of double that percentage of the BASIS to CUSTOMER (i.e. if the agreed availability is missed by 1% the penalty will be 2% of the BASIS).

The BASIS for calculating penalty for an outage of Service (clause 9.2) shall be the fees that CUSTOMER paid for the Service in the calendar year during which the outage happened.

However, the total of penalties under clause 9.3 shall in each calendar year be limited to a maximum of 30% of the fees that CUSTOMER paid for the Service in the calendar year during which the limitation or outage happened.

10. Time limits for removal of Service limitation and outage

10.1. Service management center

A1 operates its service management center (SMC) 24 hours/day and 7 days per week.

The CUSTOMER may contact A1's SMC in all technical maintenance matters (e.g. complaints, questions, faults) related to the ordered Service either by phone or by e-mail.

10.2. Proactive monitoring and trouble-ticket procedure

A1 employs proactive monitoring and informs CUSTOMER by fax or e-mail of any limitation of outage. A1 sets all actions needed for removing any outage or limitation of the Service.

The Parties will use the trouble-ticket procedure to transparently monitor the progress in removing a Service limitation or outage: A1 creates a trouble-ticket and assigns it an identification number ("TT-ID") as soon as A1 detects (or the CUSTOMER reports to A1) a limitation or outage. A1 will provide the TT-ID to CUSTOMER within the time limit stipulated in clause 10.3.

This TT-ID number serves as a unique identifier of the Service limitation or outage, and shall be used by both Parties for communication while handling such Service limitation or outage. Upon removal of all causes of the Service limitation or outage and the subsequent restoration of the Service, A1 shall propose that this trouble-ticket be closed while stating the time of such closing. If no time of closing is stated then suggested time of closing shall be the time the proposal to close is sent. If CUSTOMER subsequently confirms the restoration of the provision of the Service to the extent and in the quality agreed in this SLA, such trouble-ticket shall be considered closed and the removal of the Service limitation or outage completed. Should the work on removing a Service limitation or outage be delayed against the guaranteed time limits, CUSTOMER shall be entitled to escalate such removal in accordance with the escalation procedure mentioned in clause 11.

The process of removing a Service limitation or outage starts when the TT-ID is created and ends at the time of restoration of the Service.

10.3. Time limits

Action	**Document**	**Time limits**
Failure found by A1 or reported by the CUSTOMER		**T**
First response from A1 after CUSTOMER reports a failure	Trouble-ticket created	T+10 minutes, provided, that this time shall only apply when despite expiry of the "T+10 minute" deadline and despite of direct telephone contact between the Parties after having reported the failure no first response by A1 is given within a time frame of T+15 minutes. (Background: Failure reports and first response replies may face technical difficulties when sent by email. Direct telephone contact shall help minimize any delay which may be caused this way.)
Restoration of the Service by A1	Trouble-ticket solved	**T+2** hours

10.4. Service Credit for Late Delivery

If the guaranteed RFS date (as defined on the order from) is not met, upon CUSTOMER's request which shall be issued by written notice no later than 15 days after the effective RFS date A1 shall pay to the CUSTOMER a service credit as follows:

If the Service is even not ready 7 calendar days after the committed RFS date A1 shall pay 3% of the monthly fee for each calendar day delay, however, not more than 100% of one monthly recurring charge of this Service.

11. Escalation Procedure

For purposes of improving the quality of the Service and making communication and problem solving more effective, the Parties will use the following escalation procedure.

Each Party may unilaterally change its contacts and will inform the other Party of such change without undue delay.

Escalation level (EL)	**Contact**	**Phone**	**Fax / Email**	**Tile of escalation level reached**
Operational level	Head of SOC Broadcast Gerhard Janik	+43 50664 41996	soc.broadcast@a1telekom.at	7/24/365, see comment below
El 1	SOC Teamleader On Call Duty	+43 664 6623171		100% of the agreed fault clearance time plus 1 hours
EL 2	Head of Service Operation Center (SOC) Andreas Lohner	+43 664 6624229		100% of the agreed fault clearance time plus 3 hours
Top Escalation Level (=EL3)	Head of Platform and Network Operation (PNO) Leo-pold Kraus	+43 664 6621397		100% of the agreed fault clearance time plus 5 hours

Comment for escalation level of Operational Level: "Outside of business hours (i.e. Monday to Friday 7 a.m. to 5 p.m.) the Operation Level will accept escalations and forwarded them to Andreas Lohner und Leopold Kraus according to the list of presence."

Escalation is understood as a request for the support of a higher technical or management level in order to urge and resolve a problem situation. Before any escalation, any faults or problems will always be first reported to the operational level. The escalation can take place when a trouble-ticket was not solved or will not be solved within a time period equal to twice the update period (= information on progress, see clause 10.3). Escalation to level n+1 will only take place if escalation to level n did not produce the expected result.