Request for proposals for the development and delivery of V&V test content transport streams

The DVB Project invites proposals (the "**Proposals**") from potential suppliers ("**Suppliers**") for the development and delivery of V&V test content transport streams as specified in the attached Request for Proposals (the "**RfP**").

The content and structure of the Proposal shall follow the guidance given in the RfP. Details of how to submit your Proposal and the deadline for submission are given in the RfP.

Suppliers should note the requirement to submit Proposals in the format set out in Annex 1 of the RfP.

The DVB Project reserves the right to appoint any number of Suppliers or may decide to appoint no Suppliers at all in respect of this RfP. Where necessary, DVB may enter into several agreements with the same Supplier in respect of different features or options or phases.

Dated this 23 November 2023

Signed by

Peter MacAvock
(no signature – electronic delivery)
For and on behalf of the DVB Project
Attachment: RfP for V&V transport stream content for AVMSD Prominence Descriptor

Request for proposals for V&V transport stream content for AVMSD Service Prominence Descriptor

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1. Scope of the RfP

Proposals are invited for the supply of V&V transport stream content for the AVMSD Service Prominence Descriptor as specified in Annex 2 to this RfP.

Proposals shall include:

- the creation of the V&V transport streams,
- the reporting of issues where the DVB-SI specification is felt to be incomplete or insufficiently detailed or contradictory and participating in the resolution of those issues within the DVB process,
- the support of the delivered test material during acceptance and warranty period.

This RfP replaces any previous RfP referring to the same subject.

1.1 Deliverables

The package of deliverables shall comprise the following:

- Reference streams as defined in Annex 2

2. Guidance for submission

2.1 Period of validity

The Proposal shall be valid for a period of six months from the date of the Proposal.

2.2 Delivery of Proposal

The deadline for submitting a Proposal shall be 9am CET **15 January 2024**.

A signed copy of the Proposal should be submitted by the deadline by email to the <dvb@dvb.org> email address. The Proposal should be addressed to:

DVB Project
L'Ancienne-Route 17A
CH-1218 Grand-Saconnex
Suisse

2.3 Further information

Contract, administrative and technical queries should be sent to the <dvb@dvb.org> email address.

Queries should be clearly marked as confidential if the Supplier wishes them to be treated as such. Suppliers are allowed to send in questions related to RfP subjects

until 9am CET on **14 December 2023**. Anonymized responses to these questions will be provided by DVB to all Suppliers by **22 December 2023**.

3. Requirements

The Suppliers and the Proposals must fulfil the following requirements:

3.1 Proposal structure and contents

Proposals shall follow the proposal structure and provide the contents specified in Annex 1.

3.2 Pricing

The preferred model for the creation of the test material is a fixed payment although DVB Project is open to other payment models as well.

Prices quoted shall include coverage for warranty as well.

All pricing must be in Euros including all applicable fees and taxes.

3.3 Schedule

The following major milestones are defined;

Milestones	**Commentary**	**Initial acceptance period**	**Payment after initial acceptance**
1. Delivery of test stream content – by **28 February 2024**	A delivery suitable for interested DVB members to review including running in their own facilities.	4 weeks	60%
2. Final delivery including documentation – by **20 June 2024**	The end of the development phase of the project.	12 weeks	40%

For each of the milestones identified above, DVB Project will carry out initial acceptance testing within the initial acceptance period (as indicated in the table above) starting from the actual date of each delivery. If DVB Project rejects the delivery, it shall notify Supplier of such rejection and Supplier must fix any errors notified to it and re-submit what was rejected. Upon re-submission DVB Project will recommence initial acceptance testing which it will carry out within the initial acceptance period (as indicated in the table above) starting from the actual date of re-submission. Initial

acceptance of any delivery shall be notified to Supplier by DVB Project once DVB Project has completed initial acceptance testing. In the event that no notice of rejection is made to Supplier within the initial acceptance period (as indicated in the table above) following the delivery or re-submission of the delivery, then initial acceptance of the delivery shall be deemed to have taken place.

The DVB Project will carry out full acceptance testing of the milestone 2 delivery within 12 weeks of the actual date of delivery. If DVB Project rejects the delivery, it shall notify Supplier of such rejection and Supplier must fix any errors notified to it and re-submit what was rejected. Upon re-submission DVB Project will recommence full acceptance testing which it will carry out within 12 weeks of the actual date of re-submission. Final acceptance of any delivery shall be notified to Supplier by DVB Project once DVB Project has completed final acceptance testing. In the event that no notice of rejection is made to Supplier within a period expiring 12 weeks following the delivery or re-submission of the delivery, then final acceptance of the delivery shall be deemed to have taken place and Supplier may invoice the remainder.

3.4 Warranty

DVB Project requires a 12 months warranty period starting from the submission date of the invoice relating to the final delivery. Suppliers shall provide without delay any updates to the streams and/or content and/or documentation if errors are found.

Suppliers shall indicate in their Proposal what is covered by the warranty.

3.5 Way of working

The test material shall be developed and shared in a public repository maintained by DVB Project.

3.6 Change control

Any issues found with EN 300 468, or clarifications required, should be reported to DVB TM-MPEG2TS group, and any required fix should be taken into account.

4. Appointment Process

The process of making any appointments of a Supplier or Suppliers is the following:

4.1 Evaluation and Appointment

Proposals will be opened and reviewed internally at the convenience of DVB Project. Within 6 weeks of the submission deadline, DVB Project will have completed a comparative assessment of received Proposals in order to decide as to which Proposals, if any, should be selected for further analysis and negotiation.

At the end of the analysis and negotiation phase, DVB Project will make a provisional appointment (the "**Appointment**"), at its entire discretion, of the Supplier or Suppliers who demonstrate the best ability to meet the requirements set out in this RfP to deliver and validate the reference streams.

If other factors are equal, DVB has a slight preference for Suppliers who are members of the DVB Project.

4.2 Clarification of Proposals / Changes to process

Notwithstanding any other provision of this RfP, DVB Project reserves, at its entire discretion, the right to:

a) Conduct discussions with any or all potential Suppliers for the purpose of clarification of Proposals;
b) Waive, or decline to waive, any defect in any Proposal;
c) Accept, reject, or negotiate any or all Proposals or the terms of any Proposal for the purpose of obtaining the best and final offer;
d) Cancel or amend this RfP or issue other requests for proposals (and in doing so will endeavor to communicate transparently and in a timely manner with all Suppliers);
e) Request Suppliers submitting Proposals to resubmit Proposals with a modified scope;
f) Provisionally appoint any number of Suppliers and complete more than one agreement with any one Supplier relating to different phases and to complete agreements at different times; and
g) Select no Proposals at all.

4.3 Negotiation and execution of agreements

In the event that there is negotiation and the appointed Supplier and DVB Project are not able to reach agreement and execute such agreements within 30 days of the Appointment, DVB Project may declare the Appointment void and may provisionally appoint another Supplier or Suppliers or issue a new RfP.

4.4 Rejected Proposals

DVB Project has no duty to provide Suppliers with any explanation or justification of its decisions not to accept a Proposal or to accept a Proposal only in part.

5. Intellectual Property

The reference streams and documentation must be licensed under an open-source license such as the MIT license - https://opensource.org/licenses/MIT.

If any part of the reference streams or content is making use of any third-party intellectual property, it must be clearly identified and must follow that third party's intellectual property licensing requirements.

If the reference streams or related tools contain open-source components, this must be disclosed in the Proposal.

6. Exclusion of liability / costs

The DVB Project has prepared this RfP in good faith with a particular interest for swift and cooperative progress in the development of the reference streams. To the extent permitted by law, the DVB Project excludes any liability (whether in contract, tort, negligence or otherwise) for any incorrect or misleading information contained in this RfP.

Any costs or expenses incurred by any Supplier or other person under the present submission process will not be reimbursed by the DVB Project and neither the DVB Project nor any of its representatives will be liable in any way to any Supplier or other person for any costs, expenses or losses incurred by any Supplier or other person in connection with this RfP.

7. Confidentiality

Sections 1 to 8 of the Proposals may be shared with any member of the DVB Project. Sections 9 to 12 will only be shared with members who have been specifically tasked with considering the Proposals and will not be shared more widely.

8. Applicable Law and Dispute Settlement

This present RfP, as well as subsequent negotiations shall in all respects be governed by and construed in accordance with Swiss law.

The present RfP must be regarded as a modality of a negotiation subject to the general rules of the Swiss Code of Obligations. Swiss law does not subject requests for proposals in the present context to any specific rules, such as e.g. public procurement rules, and DVB Project is entirely free to enter into contract with whatever Supplier it considers best suited for the awarded work. As a consequence, no claims can be brought against the DVB Project out of the present procedure. For all practical purposes, the following dispute settlement rules shall nevertheless apply:

All disputes arising out of or in connection with the present RfP shall be submitted, in the first instance, to the Dispute Adjudication Board ("**DAB**") in accordance with the Dispute Adjudication Board Rules of the International Chamber of Commerce (the "**DAB Rules**"), which are incorporated herein by reference.

The DAB shall consist of three (3) members to be appointed as follows: when a dispute arises that could not be amicably settled, each of the potential Supplier and DVB Project (each a "**Party**", collectively the "**Parties**") may send a written notice to the other Party requesting the establishment of the DAB. Each Party shall then within 10 business days appoint one independent DAB member who must have the following credentials: (i) be demonstrably experienced in the subject matter of the dispute, and (ii) be an employee or representative of a company that is a member of the DVB Project. The two appointed DAB members shall appoint, within 10 business days, the third independent DAB member, who shall act as chairman of the DAB.

The DAB procedure shall be purely private, and the parties shall not revert to the ICC Dispute Board Center. Problems arising from not having the support of the ICC Dispute Board Center shall be resolved ad hoc by the DAB.

For any given dispute, the DAB shall issue a decision in accordance with the DAB Rules and within a time period of 2 months. The deadlines for the various steps of the procedure shall be set (and if longer deadlines are mentioned in the DAB Rules be systematically reduced) to allow for a swift rendering of the decision of the DAB within the time limit of 2 months.

If (i) any Party fails to comply with a decision when required to do so pursuant to the DAB Rules, (ii) any Party sends a written notice to the other Party and to the DAB expressing its dissatisfaction with a decision, as provided in the DAB Rules, (iii) the DAB does not issue the decision within the time limit of 2 months, or (iv) if the DAB is disbanded pursuant to the DAB Rules, the dispute shall be finally resolved by arbitration in accordance with the Swiss Rules of International Arbitration of the Swiss Chambers of Commerce (the "**Swiss Rules**") in force on the date when the notice of arbitration is submitted in accordance with these Swiss Rules. The number of arbitrators shall be one (1). The applicable procedure shall be the expedite procedure under Article 42 para 1 of the Swiss Rules (in particular: award to be made within six months). The seat of the arbitration shall be Geneva and the arbitral proceedings shall be conducted in English.

Each Party hereby: (i) irrevocably consents to the exclusive jurisdiction of such arbitral tribunal for the resolution of such disputes; (ii) irrevocably waives any objection that it may now or hereafter have to the venue of any such action or proceeding in such arbitral tribunal or to the convenience of conducting or pursuing any action or proceeding in such arbitral tribunal; and (iii) irrevocably waives any right to a trial by jury regarding the resolution of any dispute between the Parties hereto.

Annex 1: Proposal Structure

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    8.2. Any other costs

9. Supporting confidential information

Each section should start on a new page.

Section 9 should only be used for material that is clearly confidential. Use of section 9 for material that needs to be assessed by the DVB membership outside the small group of volunteers evaluating the responses may damage the chances of the Proposal being accepted.

Annex 2: Test material description

The implementation of the AVMSD has been realised by the introduction of the Service_Prominence_Descriptor (SPD) - see clause 6.4.18 of DVB-SI specification EN300468 (DVB BlueBook A038r16).

The program content of the streams shall contain at least a video component and an audio component listed in each service PMT. The video should be encoded with a commonly used codec (e.g., H264) and the audio should be encoded with a commonly used codec (e.g., AAC). The bitrates used for elementary streams should be representative of current broadcast practice. The elementary streams should ideally use rights-free content or should have a clearly defined usage license.

The streams to be delivered are described below.

Stream 1: Minimal Implementation – Equal SOGIs across whole network
In this example three services are defined as SOGIs that apply across the whole network but that is all, see Table 1. There are no regional requirements and no relative differentiation between the SOGIs. As there are no regional requirements all the signalling can be done within the NIT or BAT.

Table 1: Example SOGIs

Service Name	Service_Id	SOGI Priority	Regions where Prioritised
TV-A	25001	0	All
TV-B	25002	0	All
TV-C	25003	0	All

The relevant parameters of the SPD are shown in Table 2:

Table 2: SPD Equal SOGIs across whole network Example

Control Logic	Element	Value	Notes
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for the 3 SOGI services
Loop for TV-A			
	SOGI_flag	1	service is a SOGI
	target_region_flag	0	applies to whole network
	service_flag	1	NIT or BAT
	SOGI_priority	0	All SOGIs have same priority
	service_id	25001	TV-A (0x61A9) see Table1
Loop for TV-B			
	SOGI_flag	1	service is a SOGI
	target_region_flag	0	applies to whole network
	service_flag	1	NIT or BAT
	SOGI_priority	0	All SOGIs have same priority
	service_id	25002	TV-B (0x61AA) see Table1
Loop for TV-C			
	SOGI_flag	1	service is a SOGI
	target_region_flag	0	applies to whole network
	service_flag	1	NIT or BAT
	SOGI_priority	0	All SOGIs have same priority
	service_id	25003	TV-C (0x61AB) see Table1

This example will probably meet the needs of the simplest implementation of AVMSD.

Stream 2: Implementation with Country Identification and Prioritisation

The AVMSD essentially defines SOGIs to apply to national entities. In this example a SOGI in country YYY is not a SOGI in country ZZZ. If a network broadcasts to more than one country, as is usually the case in a satellite network, it may be necessary to identify to which country the prominence requirement applies to each SOGI. In this example TV-A and TV-B are only SOGIs within country YYY, and TV-B has a higher priority than TV-A. TV-C is only a SOGI within country ZZZ, see Table 3. As there are no sub-regional requirements all the signalling can be done within the NIT or BAT.

Table 3: Example SOGI Services

Service Name	Service_Id	SOGI Priority	Countries where Prioritised
TV-A	25001	2	YYY
TV-B	25002	1	YYY
TV-C	25003	0	ZZZ

The relevant parameters of the SPD are shown in Table 4:

Table 4: SPD Implemetation with Country Identification and Prioritisation Example

Control Logic	Element	Value	Notes
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for the 3 SOGI services
Loop for TV-A			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	2	second level priority
	service_id	25001	TV-A (0x61A9) see Table3
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-B			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	1	highest level priority
	service_id	25002	TV-A (0x61AA) see Table3
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-C			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	0	no need to define
	service_id	25003	TV-C (0x61AB) see Table3
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	ZZZ	code for ZZZ

Stream 3: SOGIs with multiple priorities across single country

In this example eight services, see Table 5, are defined as SOGIs that apply across the whole country YYY and some SOGIs have higher priority than others and all SOGIs have equal priority with at least one other service. There are no regional requirements for any SOGIs. As there are no regional requirements all the signalling can be done within the NIT or BAT. Thus the relevant parameters of the SPD are:

Table 5: Example SOGIs

Service Name	Service_Id	SOGI Priority	Regions where Prioritised
TV-A	25001	1	YYY
TV-B	25002	1	YYY
TV-C	25003	2	YYY
TV-D	25004	2	YYY
TV-E	25005	3	YYY
TV-F	25006	3	YYY
TV-G	25007	3	YYY
TV-H	25008	3	YYY

The relevant parameters of the SPD are shown in Table 6:

Table 6: SPD SOGIs with multiple priorities across single country Example

Control Logic	Element	Value	Notes
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for the 8 SOGI services
Loop for TV-A			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	1	highest level priority
	service_id	25001	TV-A (0x61A9) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-B			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	1	highest level priority
	service_id	25002	TV-A (0x61AA) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-C			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	2	highest level priority
	service_id	25003	TV-A (0x61AB) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-D			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows

Control Logic	Element	Value	Notes
	service_flag	1	NIT or BAT
	SOGI_priority	2	highest level priority
	service_id	25004	TV-A (0x61AC) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-E			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	highest level priority
	service_id	25005	TV-A (0x61AD) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-F			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	highest level priority
	service_id	25006	TV-A (0x61AE) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-G			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	highest level priority
	service_id	25007	TV-A (0x61AF) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY
Loop for TV-H			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	highest level priority
	service_id	25008	TV-A (0x61B0) see Table 5
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to entire country
	country_code	YYY	code for YYY

All the following examples in Table 7 would be compliant implementations of the above signalling, prioritising the services in the order shown.

Table 7: Example Four Prioritised Implementations

Priority	User Interface 1	User Interface 2	User Interface 3	User Interface 4
1	TV-A	TV-A	TV-B	TV-B
1	TV-B	TV-B	TV-A	TV-A
2	TV-C	TV-C	TV-D	TV-C
2	TV-D	TV-D	TV-C	TV-D
3	TV-E	TV-H	TV-F	TV-G
3	TV-F	TV-G	TV-E	TV-H
3	TV-G	TV-F	TV-H	TV-E
3	TV-H	TV-E	TV-G	TV-F
	nonSOGI service 1	nonSOGI service 1	nonSOGI service 3	nonSOGI service 3
	nonSOGI service 2	nonSOGI service 2	nonSOGI service 4	nonSOGI service 4

Stream 4: SOGIs with simple regionalisation in single country

In this example within the YYY territory, there are 4 regions; NW, NE, SW and SE. Table 8 defines the region codes for these (primary) regions. Each region has a service that is available within its region that requires prominence below that of the two national SOGI services (TV-1 and TV-2). Two additional regional services (TV-N and TV-S) require prominence across two regions. The regional services are available (receivable) in the other regions but have no priority in those regions. The service names and service_ids are as indicated in Table5:

Table 8: Region Code Examples

Region Name	Region Code
NW	101
NE	102
SW	103
SE	104

Table 9: Example SOGIs

Service Name	Service_Id	SOGI Priority	Countries & Regions where Prioritised
TV-1	25001	1	YYY
TV-2	25002	2	YYY
TV-NW	25011	3	YYY-NW
TV-NE	25012	3	YYY-NE
TV-SW	25013	3	YYY-SW
TV-SE	25014	3	YYY-SE
TV-N	25018	3	YYY-NW & -NE
TV-S	25019	3	YYY-SW & -SE
TV-J	25051	none	none
TV-K	25052	none	none

The relevant parameters of the SPD are shown in Table 10:

Table 10: SPD SOGIs with simple regionalisation Example

Control Logic	Element	Value	Notes
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for the 8 SOGI services
Loop for TV-1			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows

Control Logic	Element	Value	Notes
	service_flag	1	NIT or BAT
	SOGI_priority	1	highest level priority
	service_id	25001	TV-1 see table 9
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-2			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	2	second level priority
	service_id	25002	TV-2 see table 9
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-NW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25011	TV-NW see table 9
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	101	NW see table 8
Loop for TV-NE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25012	TV-NE see table 9
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	102	NE see table 8
Loop for TV-SW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25013	TV-SW see table 9
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	103	SW see table 8
Loop for TV-SE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25014	TV-SE see table 9
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	104	SE see table 8

Control Logic	Element	Value	Notes
Loop for TV-N			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25018	TV-N see table 9
TR loop	target_region_loop_length	calculated	for two loop instance
TR loop1	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	101	NW see table 8
TR loop2	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	102	NE see table 8
Loop for TV-S			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	3	third level priority
	service_id	25019	TV-N see table 9
TR loop	target_region_loop_length	calculated	for two loop instance
TR loop 1	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	103	SW see table 8
TR loop 2	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	104	SE see table 8

A compliant implementation might thus display these services in the order indicated in Table 11 for each respective region. Other implementations could also be valid.

Table 11: Example Prioritised Implementation

Priority	NW Region	NE Region	SW Region	SE Region
1	TV-1	TV-1	TV-1	TV-1
2	TV-2	TV-2	TV-2	TV-2
3	TV-N	TV-N	TV-SW	TV-SE
3	TV-NW	TV-NE	TV-S	TV-S
none	TV-J	TV-J	TV-J	TV-J
none	TV-K	TV-K	TV-K	TV-K
none	TV-NE	TV-NW	TV-NW	TV-NW
none	TV-SW	TV-SW	TV-NE	TV-NE
none	TV-SE	TV-SE	TV-SE	TV-SW
none	TV-S	TV-S	TV-N	TV-N

Stream 5: SOGIs with more complex regionalisation

In this example within the YYY territory, there are 4 regions; NW, NE, SW and SE. Table 12 defines the region codes for these (primary) regions. Each region has a service that is available within its region that requires prominence below that of the two national SOGI services (TV-1 and TV-2). These regional services are available (receivable) in the other regions and still have a priority, but a lower priority level 4 in those regions. The service names and service_ids are as indicated in Table 13:

Table 12: Region Code Examples

Region Name	Region Code
NW	101
NE	102
SW	103
SE	104

Table 13: Example SOGIs

Service Name	Service_Id	SOGI Priority	Regions where Prioritised
TV-1	25001	1	All
TV-2	25002	2	All
TV-NW	25011	3 in region, 4 out of region	NW
TV-NE	25012	3 in region, 4 out of region	NE
TV-SW	25013	3 in region, 4 out of region	SW
TV-SE	25014	3 in region, 4 out of region	SE
TV-J	25051	none	none
TV-K	25052	none	none

The way this AVMSD signalling is achieved is by defining the regional services as priority 4 in the NIT/BAT for the whole country and the using a further definintion in the SDT to override the priorities defined in the NIT/BAT.
The relevant parameters of the SPD are shown in Tables 14 and 15 for NIT/BAT and SDT respectively:

Table 14: SPD SOGIs with more complex regionalisation : NIT/BAT : Example

Control Logic	Element	Value	Notes
For NIT/BAT			
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for the 6 SOGI services
Loop for TV-1			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	1	highest level priority
	service_id	25001	TV-1
TR loop	target_region_loop_length	calculated	for single loop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-2			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	2	second level priority
	service_id	25002	TV-2
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows

Control Logic	Element	Value	Notes
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-NW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	4	fourth level priority
	service_id	25011	TV-NW see table 13
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-NE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	4	fourth level priority
	service_id	25012	TV-NE see table 13
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-SW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	4	fourth level priority
	service_id	25013	TV-SW see table 13
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY
Loop for TV-SE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	4	fourth level priority
	service_id	25014	TV-SE see table 13
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	0	applies to whole country
	country_code	YYY	code for YYY

Table 15: SPD SOGIs with more complex regionalisation : SDT : Example

Control Logic	Element	Value	Notes
TV-NW SDT			
Service_id 25011			Implicit from within SDT
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for TV-NW
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	0	SDT
	SOGI_priority	3	third level priority
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	101	NW see table 12
TV-NE SDT			
Service_id 25012			Implicit from within SDT

Control Logic	Element	Value	Notes
TV-NW SDT			
Service_id 25011			Implicit from within SDT
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for TV-NE
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	0	SDT
	SOGI_priority	3	third level priority
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	102	NW see table 12
TV-SW SDT			
Service_id 25013			Implicit from within SDT
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for TV-SW
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	0	SDT
	SOGI_priority	3	third level priority
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	103	NW see table 12
TV-SE SDT			
Service_id 25014			Implicit from within SDT
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for TV-SW
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	0	SDT
	SOGI_priority	3	third level priority
TR loop	target_region_loop_length	calculated	for singleloop instance
	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	104	NW see table 12

A compliant implementation might thus display these services in the order indicated in Table 16 for each respective region. Other implementations could also be valid.

Table 16: Example Prioritised Implementation

Priority	NW Region	NE Region	SW Region	SE Region
1	TV-1	TV-1	TV-1	TV-1
2	TV-2	TV-2	TV-2	TV-2
3	TV-NW	TV-NE	TV-SW	TV-SE
4	TV-NE	TV-NW	TV-NW	TV-NW
4	TV-SW	TV-SW	TV-NE	TV-NE
4	TV-SE	TV-SE	TV-SE	TV-SW
none	TV-J	TV-J	TV-J	TV-J
none	TV-K	TV-K	TV-K	TV-K

Stream 6: SOGIs with multiple priorities in multiple regions (partial example)
In this example within the YYY territory, there are 8 regions; N, S, E, W, NW, NE, SW and SE. Table 17 defines the region codes for these (primary) regions. One of the SOGIs within this country has multiple different priorities in each region. Undoubtedly many ('n') other SOGIs would be defined for this network but this partial example just shows the signalling relevant for this single SOGI in the NIT/BAT. This partial example does not replicate any known use case but simply demonstrates the flexibility of the Solution. Table 18 defines the required priority for each different region.

Table 17: Region Code Examples

Region Name	Region Code
NW	101
NE	102
SW	103
SE	104
N	105
S	106
E	107
W	108

Table 18: Example SOGIs

Service Name	Service_Id	SOGI Priority	Regions where Prioritised
TV-M	25001	11	NW
TV-M	25001	12	NE
TV-M	25001	13	SW
TV-M	25001	14	SE
TV-M	25001	15	N
TV-M	25001	15	S
TV-M	25001	16	E
TV-M	25001	16	W

The relevant parameters of the SPD are shown in Table 19:

Table 19: SPD multiple priorities in multiple regions partial example

Control Logic	Element	Value	Notes
	descriptor_tag	0x7F	see [1] Table 12
	descriptor_length	calculated	
	descriptor_tag_extension	0x22	see [1] Table 109
	SOGI_list_length	calculated	for all n+1 SOGI services
partial NIT/BAT			
Loop for TV-M in NW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT

Control Logic	Element	Value	Notes
	SOGI_priority	11	11th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	101	NW see table 16
Loop for TV-M in NE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	12	12th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	102	NE see table 16
Loop for TV-M in SW			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	13	13th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	103	SW see table 16
Loop for TV-M in SE			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	14	14th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	104	SE see table 16
Loop for TV-M in N			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	15	15th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	105	N see table 16
Loop for TV-M in S			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	15	15th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY

Control Logic	Element	Value	Notes
	primary_region_code	106	S see table 16
Loop for TV-M in E			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	16	16th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	107	E see table 16
Loop for TV-M in W			
	SOGI_flag	1	service is a SOGI
	target_region_flag	1	country/region info follows
	service_flag	1	NIT or BAT
	SOGI_priority	16	16th level priority
	service_id	25001	TV-M see table 17
	target_region_loop_length	calculated	for single loop instance
TR loop	country_code_flag	1	country code follows
	region_depth	1	applies to primary region
	country_code	YYY	code for YYY
	primary_region_code	108	W see table 16