

## **Call for Expression of Interest on DNS Provision for “Application Discovery over Broadband” in HbbTV TV Sets**

The HbbTV Association invites expressions of interest (the "Expression of Interest") from potential suppliers ("Suppliers") for the provision of Internet Domain Name System (“DNS”) services for television sets implementing [ETSI TS 103 736 V1.3.1](#), “Hybrid Broadcast Broadband TV; Application Discovery over Broadband”<sup>1</sup>.

The HbbTV Specification for “Application Discovery over Broadband” is for deployments where signalling for HbbTV applications related to linear TV services uses an Internet DNS request to discover an application server operated by or on behalf of the broadcaster. This DNS request is a CNAME request for a subdomain of “hbbtvdns.org”. HbbTV invites information from organisations that may be interested in acting as a registrar for these subdomains.

The content and structure of the Proposal should follow the guidance given in this call for expression of interest (“the Call”). Details of how to submit your Expression of Interest and the deadline for submission are given in the Call.

Dated this 21<sup>st</sup> March 2024

Signed by

Vincent Grivet

(no signature – electronic delivery)

For and on behalf of the HbbTV Association

Attachment: Call for Expression of Interest for the provision of Internet Domain Name System (DNS) for Hybrid Broadcast Broadband Television (HbbTV)

1: Explaners can be found at <https://www.hbbtv.org/wp-content/uploads/2019/09/HbbTV-SPEC-00446-000-Application-Discovery-over-Broadband-Explained-2019-09-09.pdf> and <https://www.hbbtv.org/wp-content/uploads/2021/07/HbbTV-SPEC-00565-002-HbbTV-TA-Phase-2-Explained.pdf>

**Call for Expression of Interest**  
**Internet Domain Name System (DNS)**  
**Provision for Hybrid Broadcast Broadband**  
**Television (HbbTV)**

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## 1. Scope of the Call for Expression of Interest

This Call for Expression of Interest (“the Call”) seeks interest and an indicative, non-binding, commercial proposal for the operation of the “HbbTV DNS root” - a DNS registrar for “\*.hbbtvdns.org” domain used by the HbbTV Application specification for “Application Discovery over Broadband”. This includes the following requirements;

- Provision of the authoritative DNS server for CNAME requests under that domain
- Onboarding broadcasters and content providers ending in the addition of one or more CNAME entries for sub-domains of hbbtvdns.org. This will include establishing that the party making the request is a genuine representative of the broadcaster or content provider concerned.
- Updating and removing broadcasters and content providers as requested by the broadcaster or content provider concerned or by the HbbTV Association. This may include adding or removing CNAME entries as appropriate.
- Fault finding and problem investigation.
- Hand-over from the existing operator of the HbbTV DNS root for domains of the form<onid>.<servicename>.<country>.dvb.hbbtvdns.org as defined in clause 5.4.1 of TS 103 464 V1.3.1.
- Hand-over to a successor operator of the HbbTV DNS root when the contract would expire or be terminated.

More details can be found in clause 3.3 below.

## 2. Guidance for Submissions

### 2.1. Non Binding - Period of Validity

Responses are indicative and not legally binding. HbbTV would aim to decide within a period of 3-4 months of the deadline for responses.

### 2.2. Delivery of Proposal

The deadline for submitting a response shall be at 4pm CET four weeks from the date on the accompanying letter to this Call.

The response shall be submitted by the deadline by email to the <testmaterialrfp@hbbtv.org> email address.

### 2.3. Further Information

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

Queries should be clearly marked as confidential if the Supplier wishes them to be treated as such.

Potential responders are allowed to send in questions related to Call subjects within the first week from the date on the accompanying letter to this Call. Anonymized responses to these questions will be provided by HbbTV within 10 working days to all interested parties.

## 3 Requirements

### 3.1. Response Structure and Contents

Responses should follow the proposal structure and contents given in Annex 1.

### 3.2. Pricing

HbbTV expects to pay limited non-recurring, one-off, costs associated with establishing the “HbbTV DNS Root”, the technical infrastructure and operational processes. If there would be limited non-recurring, one-off projects or activities relating to the “HbbTV DNS root” then HbbTV would consider paying for these, for example on a “time and materials” basis.

HbbTV expects that the recurring costs associated with operating the “HbbTV DNS root” are borne by the broadcasters and content providers using it. The structure and amount of these fees are to be negotiated between HbbTV and Supplier as part of the appointment process.

HbbTV expects that the “HbbTV DNS root” will be free to use for TV set implementers and manufacturers without any access controls – if the latter were even technically possible.

### 3.3 Characteristics of Service

Here is a summary of the expected service.

- Establishment of an authoritative DNS server to respond to CNAME requests under \*.hbbtvdns.org specifically, requests of the form <server\_field>.a336.watermark.hbbtvdns.org and <onid>.<servicename>.<country>.dvb.hbbtvdns.org as defined in clauses 5.4.1 and 5.4.2 of TS 103 464 V1.3.1 respectively. The server is not to respond positively to requests outside these two specific forms.
- Establishing a mechanism for monitoring the behaviour, performance and load on the authoritative DNS server and escalating in the event of problems.
- Receiving applications from broadcasters and content providers for one or more new domains of the forms listed above, validating and processing those responses, signing a contract, collecting a fee, implementing the agreed entry in the authoritative DNS server. All applicants are to be treated equally.
- Receiving applications from broadcasters and content providers for modifying or removing one or more existing domains of the forms listed above, validating and processing those responses, collecting any fee, implementing the agreed entry in the authoritative DNS server.  
In exceptional circumstances (e.g. a broadcaster or content provider no longer trading), HbbTV may initiate the removal of an entry.
- Hand-over from the existing operator of the HbbTV DNS root.  
Note that active cooperation by the existing operator cannot be guaranteed.
- Active cooperation in the hand-over to a successor operator of the HbbTV DNS root if the contract would expire or be terminated by either party, with no commercial or technical barriers that would prevent this.
- Investigating faults and/or what could be attacks by hostile parties. See clause [3.6.2](#) below.
- The service shall be resilient, robust and reliable. Suppliers shall state the levels that they will guarantee to operationally support in their response to the call
- Maintenance of the authoritative DNS server including ensuring the software versions used are current and applying any security patches that are needed.
- Information on the use of the service is to be Confidential between Supplier and HbbTV. Supplier is to provide periodic reports to HbbTV about the use of the facility.
- HbbTV has a suite of unit tests for TV sets and STBs implementing its specifications. The possibility of some small addition to the HbbTV DNS Root for this unit test suite cannot be excluded.

### 3.4 Schedule

It is expected that the HbbTV DNS root could be operational within a small number of months (e.g. Sept 2024) of a contract being signed (e.g. May 2024).

### 3.5 General expertise

HbbTV expects that operating the “HbbTV DNS root” will require specific expertise as follows;

- Technical expertise in operating and maintaining Internet DNS servers.
- Operational expertise in processes, normal custom and practice for cost-effective ways to validate that an application is from a legitimate representative of the broadcaster or content provider on whose behalf the application is being made

### 3.6 Background Information

#### 3.6.1 Considerations on Potential Traffic at the HbbTV DNS Root

Since DNS CNAME requests should be cached by intermediate DNS servers at ISPs, the traffic reaching the HbbTV DNS root for a particular country within a single period defined by the TTL of the CNAME response should probably be no higher than the number of broadcaster (linear) TV channels in that country multiplied by the number of ISPs in that country and will probably be significantly lower. For requests of the form `<onid>.<servicename>.<country>.dvb.hbbtvdns.org` requests for non-existent domains are expected. NXDOMAIN responses should be cached but see below.

#### 3.6.2 Fault Finding Example

An example of fault finding is as follows.

- The HbbTV DNS root was receiving a large and steadily climbing amount of traffic, mostly for a small number of sub-domains for which there was no entry in the HbbTV DNS root.
- A dummy application server was setup and a CNAME entry created for one of those sub-domains in order to obtain an IP address and HTTP user agent.
- After further analysis, the provisional conclusion was that a particular model of a TV set was not caching NXDOMAIN responses and an individual ISP’s intermediate cache was not configured to cache NXDOMAIN responses. This resulted in each channel change by a user on each TV set of that model connected to that ISP resulted in an NXDOMAIN request going all the way to the HbbTV DNS root. This has been escalated to the manufacturer of the TV sets concerned.

## 4 Appointment Process

### 4.1 Evaluation and Appointment

Proposals will be opened and reviewed internally at the convenience of HbbTV Association. Within 6 weeks of the submission deadline, HbbTV Association will have completed a comparative assessment of Responses to decide which Response should be selected.

- The significant factors for the technical review shall be the quality of the Response, including the extent to which the Response demonstrates that Supplier understands the operation of internet DNS infrastructure and HbbTV’s requirements.
- The significant factors for the commercial/business review are the perceived ability and track record of the Supplier, the proposed delivery schedule and Supplier’s experience in offering / operating similar services.
- None of these factors is dominant and Responses which score highly on one factor may be rejected due to scoring badly on another.

Following this assessment, HbbTV Association will make a provisional appointment (the "Appointment"), at its entire discretion, of the Supplier who demonstrates the best ability to meet the requirements set out in this Call for Expression of Interest.

#### 4.2 Clarification of Proposals / Changes to Process

Notwithstanding any other provision of this RfI, HbbTV Association reserves, at its entire discretion, the right to:

- a) Conduct discussions with any or all potential Suppliers for the purpose of clarification of Responses;
- b) Waive, or decline to waive, any defect in any Response;
- c) Accept, reject, or negotiate any or all Response or the terms of any Response for the purpose of obtaining the best and final offer;
- d) Cancel or amend this RfI or issue other requests for information (and in doing so will endeavor to communicate transparently and in a timely manner with all Suppliers);
- e) Request Suppliers submitting Responses to resubmit Responses with the pricing for a modified scope;
- f) Select no Responses at all.

#### 4.3 Negotiation and Execution of Agreements

Once a Supplier has been provisionally appointed, HbbTV and the provisionally appointed Supplier will negotiate at least;

- The structure and value of the fees to be paid by the users of the service.
- A contract.

If the appointed Supplier and HbbTV Association are not able to reach agreement and execute such agreements within 30 days of the Appointment, HbbTV Association may declare the Appointment void and may provisionally appoint another Supplier or Suppliers or issue a new Call.

#### 4.4 Not Accepted Proposals

HbbTV Association 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

This activity is to be free of copyright and patents. Broadcasters and content providers applying for a DNS name of the form `<onid>.<servicename>.<country>.dvb.hbbtvdns.org` may use a trademark owned by them for the `<servicename>` in the DVB broadcast. Supplier is not to include any of their intellectual property in the project without prior agreement of HbbTV.

### 6 Exclusion of liability / Costs

The HbbTV Association has prepared this RfP in good faith with a particular interest for swift and cooperative progress in the deployment of HbbTV application discovery over broadband. To the extent permitted by law, the HbbTV Association excludes any liability (whether in contract, tort, negligence or otherwise) for any incorrect or misleading information contained in this Call.

Any costs or expenses incurred by any Supplier or other person under the present submission process will not be reimbursed by the HbbTV Association and neither the HbbTV Association 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 Call.

## 7 Confidentiality

Sections 1 to 7 of the Response may be shared with any member of the HbbTV Association. Sections 8 and 9 of the Response will only be shared with members who have been specifically tasked with considering the Response and will not be shared more widely.

## 8 Applicable Law and Dispute Settlement

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



## Annex 1: Response Structure

1. Table of Contents
2. Executive Summary
3. Service to be provided
4. Deviations from the RfI
5. Supplier's Project Personnel
  - 5.1. List of Project Members and contact information
  - 5.2. Background, Experience and Skill Sets of Project Members
  - 5.3. Source of specialised or scarce expertise
  - 5.4. Staff overlap with other HbbTV-related work
6. Schedule for deliverables
7. Supplier Information
  - 7.1. Corporate Information
  - 7.2. References
  - 7.3. Involvement with other test suite developments
  - 7.4. QA processes
  - 7.5. Contact Information
8. Payments and terms & conditions
  - 8.1. Prices and terms & conditions relating to Pricing, Pricing models, warranty
  - 8.2. Support and maintenance prices and terms
  - 8.3. 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 a wider audience within HbbTV may damage the chances of the Response being considered further.