



ATSC

ADVANCED TELEVISION
SYSTEMS COMMITTEE

Amendment No. 1 to ATSC Standard A/344:2019, “Persistent IDs”

Doc. A/344:2019 Amend. No. 1
29 July 2019

Advanced Television Systems Committee
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Revision History

Version	Date
Amendment approved	29 July 2019

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1. OVERVIEW

1.1 Definition

An Amendment is generated to document an enhancement, an addition or a deletion of functionality to previously agreed technical provisions in an existing ATSC document. Amendments shall be published as attachments to the original ATSC document. Distribution by ATSC of existing documents shall include any approved Amendments.

1.2 Scope

This document adds persistent identifiers to the Device Info Query.

1.3 Rationale for Changes

The web has evolved to the use of device-unique identifiers for various purposes including license-related identification and advertising tracking. These are read-only identifiers managed by the device. Privacy concerns and regulations in some regions require that such identifiers be disabled at the users' option. In addition to user “opt-in” / “opt-out”, these identifiers can be reset or regenerated through factory reset or other device operation.

Only authorized applications should have access, but ATSC requires that all executable code be signed by both the broadcaster and the author. This enables commercial agreements to be put in place to control the application usage and behavior with such identifiers since the broadcaster is always identified in the application acquisition. That is, a Receiver could choose not to execute applications on a per-broadcaster basis. “Bad actor” applications can have their certificates revoked.

Cookies and similar local “web” storage are not sufficient since they can be removed by the device for storage management reasons and by users wanting to remove cookies for other reasons and the user typically does not have control over which cookies are removed (all or nothing).

Unlike a desktop device, TVs do not have the ease of data entry for usernames and passwords that can facilitate other tracking options.

A persistent storage of globally unique identifiers that survive power cycles and is available to all applications is needed.

The advertising ID is exactly like the Google API, documented here and operating today in Android products:

<https://developer.android.com/training/articles/user-data-ids>

<https://support.google.com/googleplay/android-developer/answer/6048248?hl=en>

Both a device ID and advertising ID are needed since the user may wish to reset or disable them independently.

1.4 Compatibility Considerations

The proposal in this amendment is backwards compatible since the changes are the addition of two data items that are optional. (Existing) receiver implementations need not support the items. And, when supported by a receiver, applications are expected to ignore items that they do not understand

per the provisions of Section 9.1: “The Broadcaster Application is expected to gracefully ignore unknown keys and unknown values for existing keys, including unknown enumeration values.”

2. LIST OF CHANGES

Change instructions are given below. Unless otherwise noted, inserted text, tables, and drawings are shown in **red**; deletions of existing text are shown in **red-strikeout**. The text “[ref]” indicates that a cross reference to a cited referenced document should be inserted.

A/344 maintains a “revision log” of its included APIs from revision to revision by listing the changes in Table 9.1. In addition, each revision includes an Annex which captures the API from the previous edition in unchanged form. By maintaining the previous API definition in the document, implementers may look at the history of each API. When this amendment is finally rolled into the main revision document, Table 9.1 will need to be updated and the original text of the API modified below may be copied into the Annex for the revision.

2.1 Normative References

...

[ref] IETF: “A Universally Unique IDentifier (UUID) URN Namespace,” Doc. RFC 4122, Internet Engineering Task Force, July 2005.

9.13 Query Device Info API

The Query Device Info API provides an interface between a Broadcaster Application and the Receiver to retrieve device-specific information. It is a generic conduit between the Receiver and the Broadcaster Application to provide basic device information including make and model of device, along with optional additional key/value pair information about the device. The format and definition of the optional additional key/value pairs are manufacturer-specific and not specified here. Specific parameters may be defined as part of a business relationship between a broadcaster and a device manufacturer.

The two unique ID parameters (`deviceId`, `advertisingId`) in the response below are expected to be initialized once by the Receiver to afford long term persistence across all Services and Receiver power cycles and be provided by the Receiver depending on authorization granted by the user. The ability to authorize the disclosure of either the unique `deviceId` or `advertisingID` parameters, either per broadcaster, per Broadcaster Application or as a whole, affords increased privacy to the user.

The Query Device Info API request `params` object is optional. If `params` is omitted (or if `deviceInfoProperties` is omitted or is an empty array), the Receiver shall respond with only the device make and model. The Broadcaster Application can then use the device make and model to determine which additional properties to query. The `deviceInfoProperties` is an array of desired properties, and the Receiver provides the values of these properties in the response.

The Query Device Info API shall be defined as follows:

method: "org.atsc.query.deviceInfo"
params: An optional JSON object.
params JSON Schema:

```

{
  "type": "object",
  "properties": {"deviceInfoProperties": {
    "type": "array",
    "items": {"type": "string"}
  }}
}

```

`deviceInfoProperties` – This parameter is an array of strings, each representing a particular aspect of the device about which the Broadcaster Application is interested.

Response:

`result`: a JSON object containing the device make and model and optionally a request for additional information about a given device make/model.

`result` JSON Schema:

```

{
  "type": "object",
  "properties": {
    "deviceMake": {"type": "string"},
    "deviceModel": {"type": "string"},
    "deviceInput": {"type": "object"},
    "deviceInfo": {"type": "object"},
    "deviceId": {"type": "string"},
    "advertisingId": {"type": "string"}
  },
  "required": ["deviceMake", "deviceModel", "deviceInput"]
}

```

`deviceMake`: – This required string indicates the manufacturer of the Receiver.

`deviceModel`: – This required string indicates the model of the Receiver.

`deviceInput`: – This required object indicates the user input name and codes of the Receiver user interface. It is a collection of input key/value pairs where the key is the user input name and the value is the associated integer code. The minimum set of user input names is listed in [9.4].

`deviceInfo`: – This optional object includes key/value pairs. The `deviceInfo` is included in the response if the request included one or more `deviceInfoProperties` strings corresponding to information the Receiver can supply.

`deviceId`: – This optional string returns a globally unique UUID as defined in RFC 4122 [ref] using the urn:uuid syntax when authorized for the particular Broadcaster Application. When absent, it is not supported by the Receiver. When present and all zeros, the value of the user setting to provide this identifier is disabled for the given service indicating that the user has explicitly not authorized provision of the value.

`advertisingId`: – This optional string returns a globally unique UUID as defined in RFC 4122 [ref] using the urn:uuid syntax when authorized for the particular Broadcaster Application. When absent, it is not supported by the Receiver. When present and all zeros, the value of the user setting to provide this identifier is disabled for the given service indicating that the user has explicitly not authorized provision of the value.

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