ATSC Recommended Practice: A/351:2019 Amendment No. 1, appContextID

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Revision History

Version	Date
Amendment approved	20 January 2020

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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 describes recommended practices for the creation and use of appContextID.

1.3 Rationale for Changes

The changes described in this document are being proposed because there is no currently defined syntax or properties that impact how the appContextID attribute is created and used except to note that it defines a unique context for sharing web and cached resources. These are being used in the construction of Base URIs for resource access which are subject to Cross-Origin Resource Sharing (CORS) considerations. This change adds guidelines for the creation and use of appContextID.

1.4 Backwards Compatibility Considerations

There are no existing recommendations for the construction of appContextID, and this material conforms to A/331 syntax. This is therefore backwards compatible.

2. LIST OF CHANGES

Change instructions are given below in *italics*. Unless otherwise noted, inserted text, tables, and drawings are shown in blue; 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.

2.1 Normative References

2.2 Informative References

Add two new references:

[X] IETF: RFC 3986, "Uniform Resource Identifier (URI): Generic Syntax", Reston, VA, January 2005, https://tools.ietf.org/html/rfc3986.
[Y] W3C Recommendation, "Cross-Origin Resource Sharing", 16 January 2014.

2.3 Acronyms and Abbreviations

Add the acronym:

CORS – Cross-Origin Resource Sharing
URN – Universal Resource Name

2.4 Terms

Base URI – as defined in RFC 3986 [X]

2.5 Change Instructions

Add a new section X, "appContextID" (for readability, the following new text is shown in black).

A/331 defines `appContextID` as `xs:anyURI`, so the field must be a valid URI. If a URL is used, a valid scheme is required, e.g. "`http:`"; and if a URN is used, a valid NID is required, e.g. "smpte". Note that "atsc" not a valid NID. This section explains what to set `appContextID` to and expectations on its use.

When additional qualification is needed then the domain name should be prefaced by one or more symbols separated by a period, for example, "`http://kids.pbs.org`" where "`kids`" might identify a common name of a particular Broadcaster Application. Note that the resulting full "host" does not have to be resolvable on the Internet.

X.1 Origin

The origin, as defined in Cross-Origin Resource Sharing [Y], is constructed as follows:

```
ORIGIN = <scheme>://<hash_appContextID>:<port>[/<pathPrefix>]
```

where the tokens above are defined in RFC 3986 [X]. Note that the charset is very constrained. The host component must be a registered domain name under the control of the broadcaster. For example, a Broadcaster Application broadcast by KPBS that shares all web resources might use "`http://kpbs.org`".

It is expected that when a receiver forms an ORIGIN from the `appContextID`, that it is a statistically unique "hash" of `appContextID` combined with some device-specific information.

The ORIGIN should be the same for a Broadcaster Application that is either broadcast or available via broadband.

Such a resulting string is expected to reasonably prevent a Broadcaster Application or external entity from:

- Recovering the `appContextID` from the Base URI
- Creating the same Base URI from an `appContextID`
- Using a Base URI from one receiver to provide access to the same resources on another receiver

The above construction allows either a broadcast or broadband delivered Broadcaster Application to access the same local storage information over multiple services.

X.2 Base URI

The Base URI shall be either set the same as the ORIGIN if the Broadcaster Application is broadcast, otherwise the URL of the Broadcaster Application if available over broadband. It is constructed as follows:

```
<baseURL>/<pathToResource>
where:
<baseURL> =
<scheme>://<hashAppContextID>[:<port>][/<appContextID>]/<pathToResource>
<scheme> is standard URI elements as defined in RFC 3986 [X],
<hashAppContextID> is a "hash" of appContextID.
<appContextID> is the appContextId path prefix prepended to the path; and
<pathToResource> is the relative path supplied by ROUTE (e.g., Content-
Location from the EFDT [1])
```

If the resource is one of the listed media types below, the receiver should use the filename to create a folder below the `<appContextId>` and continue to extract the contents of the multipart file inside the created folder.

- Multipart/related
- Application/zip
- Multipart/signed
- Multipart/encrypted

X.3 Broadcaster Application Context Sharing

A service that contains its own `appContextId` but also references another `appContextId` should be able to access both sets of content. For example, the Base URI, `http://hashappContextId01:8000/appContextId01/index.html` should provide access to the `appContextId02` using the following syntax:

- `http://hashappContextId01:8000/appContextId02/someprivateresource`
- `http://hashappContextId01:8000/appContextId02/somemultipart.multipart/image.jpg`

– End of Document –