Pearl Network Consortium Broadcaster Application v1.11 Release Notes

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Release notes

This release contains the ATSC 3.0 Application Framework 1.11 as well as a separate Broadcaster starter kit. The starter kit contains SEVEN services with each service carrying a different test application.

This is the candidate application framework that will be used by the Pearl Network Consortium partners in 2023.

It conforms to ATSC 3.0 "A/344:2022-03 dated 31 March 2022" with additional support for extensions going through the specialist and ad-hoc groups within ATSC.

Application functionality

This release contains all the features of the previous major release (1.10 – dated 06 July 2022) PLUS the following new features:

BAAppear functionality modified and updated.

BAAppear functionality has now been updated to work correctly with compliant receivers. Most receivers have now also implemented BAAppear image / label pair. This therefore means that upon upgrading to version 1.11, broadcasters need to ensure that their default trigger image does not have any burnt-in navigation keys. This is because the left-hand side area of the trigger image will now be automatically populated with receiver's internal BAAppear image / label pair.

EventStream as an alternative to Application Scheduling Mechanism

EventStream support has now been added in the latest version of the framework. This allows various attributes from the broadcast stream to be used for triggering certain events.

Application Schedule mechanism is an IP based control mechanism whereas EventStream mechanism is broadcast based and is useful in cases of program overrun.

The EventStream mechanism acts as an alternative to the existing Application Scheduling system but requires equipment manufacturers to support SCTE-35 markers in the stream.

Verance Watermark detection and signaling

A mechanism for detecting watermarks has also been introduced in the latest version of the framework. Some preliminary testing has also been conducted on compliant receivers.

DASH and HLS SDKs

Both DASH and HLS SDKs have been updated to the latest versions in this release. This addresses some of the compatibility issues found in newer versions of the manifest.

Q Bar Application (BETA)

The beta Q Bar is included on Service 7 of the Starter kit is the beta version of our new Q Bar application. This allows broadcasters to experiment with the new UI design as well as test the application using their own content feeds.

Documentation

Several new Framework and Common application related documents have been published.

Updated 'Broadcaster Starter Kit' documentation

Several bug fixes and minor improvements

Broadcaster Starter Kit

The starter kit has been re-configured and contains SEVEN distinct services. Each service offers user a different application for testing and demonstration purposes. The services can either be changed by pressing CH_UP or CH_DOWN keys using an on-screen navigator OR by using the 'U' and the 'D' keys on the keyboard. The services are configured to rotate in a cyclic fashion. Thus, pressing U key when watching Service 7 will take the user back to Service 1.

Each service displays different video content in the background. This simulates a more realistic TV-like experience when using the starter kit for demonstration purposes. In addition, both **mp4** and **mpd** formats are now supported on each service.

The SEVEN services are configured as follows:

1. tag:run3tv.org,2023:globalServiceID/1

This service contains no application and is included for exception handling tests.
Note: This service is available only in the starter kit and not carried in the stream (PCAP).

2. tag:run3tv.org,2023:globalServiceID/2

This service contains FIELD TEST Application for data metrices + background A/V.
Application is delivered via broadband internet. (OTT)
Note: This service is available only in the starter kit and not carried in the stream (PCAP).

3. tag:run3tv.org,2023:globalServiceID/3 (OTT)

1. This service contains an example BAAppear image / text and 'Default Blue Menu application + background A/V.
2. Application is delivered via broadband internet. (OTT)
3. This service also contains the following:
   - Google DAI (see DASH section under FEEDS)
   - Madhive DAI (see HLS section under FEEDS)
   - Live stream support (see HLS section under FEEDS)

4. tag:run3tv.org,2023:globalServiceID/4 (IP)

1. This service contains Yotta CTA trigger and ‘Purple Yotta’ application + background A/V.
2. Application is delivered via broadband internet. (OTT)
3. This service also contains some examples of external applications

Note: This service is available only in the starter kit and not carried in the stream (PCAP).

5. tag:run3tv.org,2023:globalServiceID/5 (Lead Gen)

This service contains upgraded Lead Generation example depicting new trigger an associated L-Bar images. The service now supports BAAppear label which is superimposed on LeadGen image.

6. tag:run3tv.org,2023:globalServiceID/6 (RESCAN)

This service demonstrates a device-specific Re-tuning application which encourages viewers to re-scan their receivers in order to access latest services.

7. tag:run3tv.org,2023:globalServiceID/7 (Q-BAR)

This service contains a beta version of the new Q-Bar application.

8. tag:run3tv.org,2023:globalServiceID/8 (API-NRT – AV Service)

This service contains our API tester application which is delivered via NRT on a standard A/V service.
Note: This service is only available in the stream (PCAP).

9. tag:run3tv.org,2023:globalServiceID/9 (App Service-API App- IP)

This service contains our API tester application which is delivered via IP on an App Based service.
Note: This service is only available in the stream (PCAP).

10. tag:run3tv.org,2023:globalServiceID/10 (Radio Service - API App - IP)

This service contains our API tester application which is delivered via IP on a Radio service.
Note: This service is only available in the stream (PCAP).

Debug Console Notes

1. The debug console can be activated and deactivated by using the following (5) key press sequence:

   ARROW LEFT, ARROW LEFT, ARROW LEFT, ARROW DOWN, ARROW DOWN

   This ‘FIVE key press sequence’ acts as a toggle and displays / hides the console.

2. The ClientID can be displayed on the screen independently of the debug console by using the following (5) key press sequence:

   ARROW LEFT, ARROW LEFT, ARROW LEFT, ARROW UP, ARROW UP

Application Access

Two PCAP streams have been created for this release; a (default) unsigned version and a (new) signed version. Each PCAP contains the broadcast channels and applications.

The PCAPs can be downloaded from the following addresses:

UNSIGNED VERSION:

https://frwk-releases.a3fa.yottacloud.tv/pcaps/v1.11/Framework_Release.pcap

SIGNED VERSION:

https://frwk-releases.a3fa.yottacloud.tv/pcaps/v1.11/Framework_Release_Signed.pcap

These URLs are whitelisted (restricted to registered IP Addresses).

If issues are found, please contact us to add your IP Address to the list.

All CE manufacturers are encouraged to test these PCAPs to validate functionality.

Broadcast Configuration

The PCAP stream contains EIGHT broadcast services. Application is delivered via NRT within the stream.

Broadcast Channel Details

Service Name	SID	Major-Minor	GSID	Service Category	IP Address	UDP Port
R3IP	1	3-1	tag:run3tv.org,2023:globalServiceID/3	1	239.255.3.1	8000
R3LG	2	5-1	tag:run3tv.org,2023:globalServiceID/5	1	239.255.4.1	8000
R3RT	3	6-1	tag:run3tv.org,2023:globalServiceID/6	1	239.255.5.1	8000
R3QB	4	7-1	tag:run3tv.org,2023:globalServiceID/7	1	239.255.6.1	8000

R3NT	5	8-1	tag:run3tv.org,2023:globalServiceID/8	1	239.255.8.1	8000
R3AP	6	9-1	tag:run3tv.org,2023:globalServiceID/9	1	239.255.9.1	8000
R3RD	7	10-1	tag:run3tv.org,2023:globalServiceID/10	1	239.255.9.1	8000
ESG	257	N/A	N/A	4	239.255.0.255	8000

Application Loading

Broadcast NRT

Service Name	File	AppContextId	IP address	UDP Port
R3NT	api-tester.multipart	tv:api-test-app.run3tv.org	239.255.51.251	8000

Broadcast HELD

```
<HELD xmlns="tag:atsc.org,2016:XMLSchemas/ATSC3/AppSignaling/HELD/1.0/">
<HTMLEntryPackage
      appContextId=" tv:framework.run3tv.org"
      bcastEntryPackageUrl="framework111_R.multipart"
      bcastEntryPageUrl="run3tv-common/index.html"/>
</HELD>
```

Broadband

Service Name	URL	AppContextId
R3IP	**https://frwk-releases.a3fa.yottacloud.tv/framework-app/releases/v1.11.0/run3tv-common/index.html**	tv:framework.run3tv.org
R3LG	**https://frwk-releases.a3fa.yottacloud.tv/framework-app/releases/v1.11.0/run3tv-common/index.html**	tv:framework.run3tv.org
R3RT	**https://frwk-releases.a3fa.yottacloud.tv/framework-app/releases/v1.11.0/run3tv-common/index.html**	tv:framework.run3tv.org

R3QB	**https://frwk-releases.a3fa.yottacloud.tv/framework-app/releases/v1.11.0/run3tv-common/index.html**	tv:framework.run3tv.org
R3AP	**https://atsc3-api-tester.a3fa.yottacloud.tv/run3tv-common/index.html**	tv:api-test-app.run3tv.org
R3AP	**https://atsc3-api-tester.a3fa.yottacloud.tv/run3tv-common/index.html**	tv:api-test-app.run3tv.org

Broadband HELD (R3IP, R3LG, R3RT and R3QB)

```
<HELD xmlns="tag:atsc.org,2016:XMLSchemas/ATSC3/AppSignaling/HELD/1.0/">

<HTMLEntryPackage

      appContextId=" tv:framework.run3tv.org" bbandEntryPageUrl=" https://frwk-
      releases.a3fa.yottacloud.tv/framework-app/releases/v1.11.0/run3tv-
      common/index.html "/>

</HELD>
```

Installation

FRESH INSTALL

If installing a fresh copy, please follow the instructions exactly as outlined on npm site.

UPDATING YOUR CURRENT INSTALLATION

If upgrading from 1.10 to this release, please following the instructions on confluence or follow the procedure outlined below:

First, go to your working (current) 1.10.0 directory. Run / execute the following command:

npx @a3fa/a3fa-broadcaster-starter-kit@latest

Then execute:

npm i

Then execute:

npm run build

This concludes the update process. Run the default application in local emulator by executing the appropriate command. For windows platform, the command is as follows:

npm run win conf="./emulator/atscCmd-2023.mc.json"

After updating your existing release and upon running the default Common application (found on ServiceID/3), go to SETTINGS / System Info section and verify that both APP and FMW versions are as follows:

APP build: v1.11.0

FMW build: v1.11.0 (2023-02-22 11:44:10)

Framework Testing

Several new features have been added in this release. Most of these features have now been tested on the current CE devices (listed in subsequent sections). However, we encourage all partners to test these PCAPs and validate all newly added features.

This release is now available for OTA testing.

Electronic Service Guide Testing

The PCAP files for this release contain a valid ESG data service. This ESG data is timestamped at the time of recording. In order to recover and process this data successfully, the tester may need to either set the TV time manually to the time of recording (see Application Access section above), and/or set the time embedded in the stream on playout.

Using a Dektec ATSC3.0 modulator running ATSC3Express application the stream time can be set on the main window under **Time info insertion** section. The SW can also display when the capture was made by viewing the **PLP Source Selection** window and reading the **Start Time PTP** box.

Screen shot example below.