RUN3TV Framework version 2.4 Release Notes

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Release notes

This release contains the RUN3TV™ ATSC 3.0 application framework version 2.4 as well as a separate reference broadcaster starter kit.

The starter kit contains FIVE services with each service carrying a different test application.

It conforms to ATSC 3.0 "A/344:2024-04 dated 3 April 2024" with additional support for extensions going through the specialist and ad-hoc groups within ATSC.

Application functionality

The User experience application aka Q-Bar App is more content rich and has been designed to work with standard RSS feeds. It is currently being employed by several broadcasters who are planning to release their NEXTGEN TV application in 2025.

The primary purpose of this release is to align data measurement for Run3TV. This allows facts and statistics to be collected and represented accurately using numbers and graphs. Audience measurement companies can use these data metrices to quantify and understand user behavior, receiver population and application usage patterns.

This release contains all the features of release v2.3 (released on 31 May 2024) PLUS the following:

New Features

- A new method of 'time handling' for accurate reporting and prioritization of time sources based on receiver implementation - This includes capturing and processing various time sources such as Browser time, MPD time, Physical time, RMP Media time and Internet time.
- Introduction of a roll-off heartbeat to allow accurate data measurement.
- Updated Settings module to handle bespoke 'User Privacy', 'Application Settings' as well as creation of custom menus. Deprecation of the 'Preference' module.
- Support for Watermark reporting and call-to-action triggers for different launch sources.
- Major code re-factoring and clean-up of individual modules.
- API tester app updated for supporting several new features like fetch / fallback etc.
- New Unit test applications for QA and UAT testing.
- Unit testing of individual modules using Jest.
- Implementation of new application and data logger.
- Creation of JSDOCs and license output files for core modules.
- Updated Documentation for all public and private functions.
- Removal of all deprecated packages and modules from the framework code.
- New data fields for the purpose of accurate audience measurement.
- Introduction of a new CallSign reporting priority mechanism.

- Introduction of more granular opt-In flags for user privacy.
- Capturing API gaps on receivers which are not fully compliant with Run3TV framework.
- New QA test packs.

Documentation

Several documents have been updated, and some new Feature documents have also been created as part of this release. These include documents relating to SDK APIs, Common Settings, RSS feed, Q-Bar, RSS, AEAT Feed, Event Stream (SDK), Application Management and Sub-Apps. Please refer to the Confluence Helpdesk section for these documents.

All key documents are now also downloaded as part of the Starter Kit installation. These documents can be found in **/docs** folder.

Starter Kit

The starter kit has been re-configured and contains FIVE distinct services. Each service offers the 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 5 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, **mp3, mp4** and **mpd** formats are now supported.

The FIVE services are configured as follows:

1. tag:run3tv.org,2024:globalServiceID/1 (API_APP- IP – A/V Service)

This service contains standard API tester application which is delivered via IP on an **A/V based** service.

2. tag:run3tv.org,2024:globalServiceID/2 (API_APP- NRT – A/V Service)

This service contains a standard API tester application which is delivered via NRT on an **A/V based** service.

3. tag:run3tv.org,2024:globalServiceID/3 (OTT)

This service contains the Q-Bar Application which is delivered via IP on an **A/V based** service.
The app contains multiple content rails. Thes rails are designed to demonstrate different features.

4. tag:run3tv.org,2024:globalServiceID/4 (OTT - RADIO Service)

This service contains the Q-Bar Application which is delivered via IP on a service signaled as a RADIO Service.

5. tag:run3tv.org,2024:globalServiceID/5 (OTT - DATA Service)

This service contains the Q-Bar Application which is delivered via IP on a service signaled as a DATA Service.

NOTE: *When using a combination of unique **appContextIDs** and **HELD** parameters in the emulator configuration file, the emulator may behave erratically. This minor issue is going to be addressed in due course.*

Application Access

A signed PCAP has been created for this release. This PCAP contains all broadcast channels and associated applications. It can be downloaded from the following Google Drive location:

https://drive.google.com/drive/folders/1KHfgQ24xicwinJ0mmiMnp1MQKHZprgnB?usp=sharing

NOTE: *All CE manufacturers are encouraged to test this PCAP.*

Broadcast Configuration

The PCAP stream contains FIVE 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	5001	1-1	tag:run3tv.org,2024:globalServiceID/1	1	239.255.1.1	5001
R3NT	5002	2-1	tag:run3tv.org,2024:globalServiceID/2	1	239.255.2.1	5002
R3QB	5003	3-1	tag:run3tv.org,2024:globalServiceID/3	1	239.255.3.1	5003
R3RD	5004	4-1	tag:run3tv.org,2024:globalServiceID/4	2	239.255.4.1	5004
R3DT	5005	5-1	tag:run3tv.org,2024:globalServiceID/5	3	239.255.5.1	5005
ESG	5006	N/A	N/A	4	239.255.0.255	5006

Application Loading

Broadcast NRT

Service Name	File	AppContextId	IP address	UDP Port
R3NT	nrt-app.multipart	tv:api_app_nrt.run3tv.com	239.255.4.251	5002

Broadcast HELD

```
<HELD

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

    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="tag:atsc.org,2016:XMLSchemas/ATSC3/AppSignaling/HELD/1.0/
HELD-1.0-20210312.xsd">

<HTMLEntryPackage appContextId="tv:signed.org_nrt_app" bcastEntryPackageUrl="nrt-
app.multipart" bcastEntryPageUrl="index.html"></HTMLEntryPackage>

</HELD>
```

Broadband

Service Name	URL	AppContextId
R3IP	**https://run3tv-apitest.dev.run3tv.com/2024/index.html?params=HLD-S1**	tv:api_app_ip.run3tv.com
R3QB	**https:// run3tv-releases.dev.run3tv.com/v2.4.0/run3tv-common/index.html?callsign=HLD-S3**	tv:qbar_app_av.run3tv.com
R3RD	**https://run3tv-releases.dev.run3tv.com/v2.4.0/run3tv-common/index.html**	tv:qbar_app_radio.run3tv.com
R3DT	**https://run3tv-releases.dev.run3tv.com/v2.4.0/run3tv-common/index.html**	tv:qbar_app_data.run3tv.com

Broadband HELD (R3IP, R3QB, R3RD and R3DT)

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

    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="tag:atsc.org,2016:XMLSchemas/ATSC3/AppSignaling/HELD/1.0/
HELD-1.0-20210312.xsd">


<HTMLEntryPackage appContextId="tv:framework.run3tv.org" bbandEntryPageUrl="

https://run3tv-releases.dev.run3tv.com/v2.4.0/run3tv-
common/index.html"></HTMLEntryPackage></HELD>
```

Installation

FRESH INSTALL

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

UPDATING YOUR CURRENT INSTALLATION

If upgrading from the previous version (2.2 or 2.3) to this latest 2.4 release, please follow the procedure outlined in 'How to Upgrade to 2.4' document.

After updating your existing installation and upon running the new Starter kit, go to the Q-Bar application, (found on ServiceID/3), then go to SETTINGS / System Info section and verify that FMW version is as follows:

Framework: v2.4.0 (Fri Dec 20 2024 14:15:57 GMT+0000)

More on Settings and Privacy

In 2.2 framework release, a new SETTINGS panel was introduced in the Framework / Q-Bar application. A new 'settings' module was introduced in order to control application related settings, and a new 'preference' module was introduced in order to control User Privacy related options.

Subsequently, in 2.3 release, based on new legal requirements relating to California Law, some of these options were interchanged and modified under each module.

In this new 2.4 release, User Privacy related options have been extended and a new requirement to create custom menus has been addressed. As a result, "Preference" module (used in 2.2 and 2.3 versions) has been deprecated, and all Privacy and Application related settings are now handled by a single "Settings'' module. This is described in the 'How to Upgrade to 2.4' document.

Framework Testing

Several new features have been added to this release. Most of these features have now been tested on a selection of current CE devices, however, we encourage all partners to test these PCAPs and validate all newly added features. This release is now available for OTA testing.