Android Library Release Notes

> *As of version 5 the comScore libraries use a new public API.*
>
> *Upgrading existing implementations of versions 2 and 3 of the comScore library will require a small amount of code changes.*
>
> *These code changes are explained in an appendix of the implementation guides.*

Library Version 5.5.1.170927

Release Date: October 6, 2017

Application Tag Data Collection Model Version: 2.17

Streaming Tag Data Collection Model Version: 5.9

Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLANDR-87] Collect the application state that is detected when the library starts.
2. [TAGLANDR-88] Collect the origin of the library in label `ns_ap_env`.
3. [TAGLANDR-108] Improve storage access to persist collected data.
4. [TAGLANDR-118] Collect background usage time when the library cannot determine if the application is in the foreground.
5. [TAGLANDR-119, TAGLANDR-121] Prevent the library from determining if the application is in the foreground on Android 4.

Bug fixes:

1. [TAGLANDR-60, TAGLANDR-72, TAGLANDR-96, TAGLANDR-97] Ensure the collected cross-publisher unique ID value changes correctly after Google Play Services is disabled by the user.
2. [TAGLANDR-70] Ensure the deprecated `UncaughtExceptionHandler` does not cause other crash handling libraries to be suppressed.
3. [TAGLANDR-81] Remove obsolete `autoStartEventLabels` from `PublisherConfiguration` and `PartnerConfiguration`.
4. [TAGLANDR-91] Ensure the API methods introduced with [TAGLCPPS-25] are available on the public API.
5. [TAGLANDR-111] Ensure public API consistency with other libraries.
6. [TAGLCPPS-28, TAGLCPPS-34] Improve internal handling of state transitions and extra notification methods.

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.3.4.170714

Release Date: July 24, 2017

Application Tag Data Collection Model Version: 2.14

Streaming Tag Data Collection Model Version: 5.9

Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLCPPS-25] Improve support for DVR streams.
2. [TAGLCPPS-26] Improve Streaming Tag elapsed time calculation.
3. [TAGLANDR-58, TAGLANDR-62] Improve support for dynamically disabling the vCE component.
4. [TAGLANDR-74] Improve the logic for generating the cross-publisher unique device ID.

Bug fixes:

1. [TAGLCPPS-28, TAGLCPPS-34] Improve internal handling of state transitions and extra notification methods.
2. [TAGLANDR-50] Ensure the vCE component only uses weak references to the WebViews it interacts with.
3. [TAGLANDR-63] Ensure the `clearInternalData` and `clearOfflineCache` methods are executed correctly when they are called immediately after starting the library.
4. [TAGLANDR-64] Ensure the values the vCE component collects for view name are comparable to the values collected for iOS.
5. [TAGLANDR-65] Ensure the listener for library configuration changes - e.g., from calls to the `setPersistentLabel` method - is called from the task executor thread rather then from the thread that made the configuration change to prevent that thread from being temporarily locked.

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.3.1.170519

Release Date: May 24, 2017
Application Tag Data Collection Model Version: 2.14
Streaming Tag Data Collection Model Version: 5.8
Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLANDR-48] Improve viewability and meta information processing in the vCE component.
2. [TAGLANDR-52] Treat 301 and 302 HTTP response codes as successful transmission when `httpRedirectCaching` is turned off in the library configuration.
3. [TAGQA-1178] Add support for Common Visibility Measurement (CVM) to the vCE component.

Bug fixes:

1. [TAGLANDR-33] Ensure the vCE component uses does not account for status bar height when the application is in fullscreen or immersive mode.
2. [TAGLANDR-34, TAGLANDR-46] Ensure the vCE component correctly parses pixel URLs.
3. [TAGLANDR-41] Ensure the vCE component is not affected by the loss of reference to the current activity as fragments are garbage collected.
4. [TAGLANDR-47] Prevent exceptions from occurring when the vCE component inspects the view scale of a popup.

5. [TAGLCPPS-23] Ensure negative playback rate values are accepted by the `setPlaybackRate` method of the `StreamingAnalytics` class.

6. [TAGLCPPS-36] Prevent a crash from the system clock jump detection functionality when an implementation destroys its `StreamingAnalytics` object.

7. [TAGQA-1148] Ensure the vCE component calculates screen dimensions and device resolution values with the same logic as the Application Tag component.

8. [TAGQA-1150] Improve compatibility with the OutBrain SDK.

9. [TAGQA-1159] Ensure the cross-publisher unique device ID values are encoded correctly in HTTP requests from the vCE component.

10. [TAGQA-1166] Ensure the vCE component detects the current activity even when using lazy loading.

11. [TAGQA-1168] Prevent crashes when the vCE component access the view of a parent window.

Known issues and limitations:

▪ There were no known issues for this release.

Library Version 5.2.0.170406

Release Date: April 12, 2017

Application Tag Data Collection Model Version: 2.13

Streaming Tag Data Collection Model Version: 5.8

Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLANDR-17] Add API method for implementing Activation.

2. [TAGLANDR-18] Add collection of library environment properties.

3. [TAGLANDR-19] Modify processing of provided `PublisherConfiguration` to immediately generate the publisher-specific unique device ID.

4. [TAGLANDR-30] Allow processing of API notification methods calls prior to configuring and starting the library to improve data collection.

Bug fixes:

1. [TAGLANDR-21] Ensure cross-publisher unique device ID is (re)generated each time its value is retrieved.

2. [TAGLANDR-27, TAGLANDR-28] Ensure the `keepAliveMeasurement`, `labelOrder` and `uncaughtExceptionTracking` configuration properties on the `PublisherConfiguration` are correctly evaluated.

Known issues and limitations:

▪ There were no known issues for this release.

Library Version 5.1.0.170220

Release Date: February 24, 2017

Application Tag Data Collection Model Version: 2.11

Streaming Tag Data Collection Model Version: 5.8

Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLANDR-11] Add API methods for clearing all stored data and clearing the offline cache without flushing it to support advanced implementation scenarios.

2. [TAG-2937] Improve collection of automatically calculated Streaming Tag positions and unique playing time for players which support changing the playback rate. The library will now account for playback speed using the values provided for playback rate change notification method calls (if these calls appear in the implementation).

   Please note that playback rates can be *negative* to indicate reverse playback. The library uses the playback rate to calculate the current position in between playback state change notifications. Depending on the player's exact reverse playback capabilities, the playback scenario and execution timings, reverse playback past position 0 could cause the calculated position be a negative value.

3. [TAG-2938] Implement system clock jump detection to mitigate the effect of clock jumps on Streaming Tag collected positions, playing time and unique playback.

4. [TAG-2947] Add an API method to disable internal updates of the Streaming Tag current position and position-related metrics based on the progress of natural time.

Bug fixes:

1. [TAGCPPS-6] Prevent seeking while a stream is paused from being counted as playback in Streaming Tag measurement requests.

2. [TAGLANDR-4] Improve the solution implemented for version 5.0.6.161223.

3. [TAG-2985] Ensure Streaming Tag asset load counter is reset when a new `Asset` is provided to the `StreamingAnalytics` API.

Known issues and limitations:

- There were no known issues for this release.

Library Version 5.0.6.161223

Release Date: January 16, 2017

Application Tag Data Collection Model Version: 2.11

Streaming Tag Data Collection Model Version: 5.7

Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAGLANDR-2] Improved the build process to generate an alternative library deliverable which contains all the available Android processor architectures next to the existing library deliverable which contains a base mix of architect.

2. [TAGQA-1114] Changed the approach for using web views within the vCE component to prevent issues with other libraries.

Bug fixes:

1. [TAG-2876] Prevent unhandled exceptions when a `StreamingAnalytics` instance is simultaneously used from different threads.

2. [TAG-2879, TAG-2911] Ensure all provided configuration settings are consumed according to their specifications when the configuration window closes.

3. [TAG-2888] Ensure the foreground transitions delta is correctly populated in the collected data.

4. [TAG-2889] Prevent measurements from being transmitted when no client configurations are provided as the configuration window closes.

5. [TAGLANDR-4] Ensure the `c12` label is included correctly for partner stacks when an implementation uses a `PublisherConfiguration` as well as a `PartnerConfiguration`.

6. [TAGLANDR-6] Ensure persistent labels which are modified on an existing configuration are properly collected.

7. [TAGLANDR-8, TAGQA-1102] Prevent the vCE component from keeping a strong reference to `WebViewClient` objects from *IMA/Kaltura* after these objects are destroyed.

8. [TAGLCPPS-1] Prevent label values which represent numerical values beyond 999999 from being collected in scientific notation.

9. [TAGLCPPS-3] Ensure calls to `notifyBufferStop` to transition from *buffering during playback* state to *playing* state resume the collection of playing time.

10. [TAGQA-1070] Ensure the vCE component builds valid JSON strings.

11. [TAGQA-1113] Ensure the vCE component timely unbinds its listeners on a `WebView` when the `WebView` is destroyed.

Known issues and limitations:

▪ There were no known issues for this release.

Library Version 5.0.4.1601104

Release Date: November 4, 2016
Data Collection Model Version: 2.11
Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. [TAG-2802] Ensure the vCE component is immediately disabled - or not started - as soon as a provided `PublisherConfiguration` disables the vCE component.

Bug fixes:

1. [TAG-2820] Prevent compiler warnings referring to the use of API methods which are not recommended to be used.

2. [TAG-2849] Prevent calls to the `Aggregate` method from interpreting labels which are not provided in the arguments of the calls.

3. [TAG-2861] Rename the `notifyBufferEnd` method on the `StreamingAnalytics` class to `notifyBufferStop` to align with implementation documents and the API on other platforms.

4. [TAG-2863] Provide the `notifyCustomEvent` method on the `StreamingAnalytics` class.

Known issues and limitations:

▪ There were no known issues for this release.

Library Version 5.0.3.161102

Release Date: November 2, 2016
Data Collection Model Version: 2.11
Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

[TAG-2852] Rebuild the deliverables for version 5.0.3 of the comScore library with different compiler settings to prevent unnecessary *lint* warnings from appearing when an application project is built with the comScore library for the first time. *There were no code changes in this release.*

Library Version 5.0.3.160921

Release Date: October 28, 2016
Data Collection Model Version: 2.11
Supported OS Versions: 2.3 - 7.1 (Android API levels 9 - 25)

Feature changes:

1. First public release of comScore library version 5.x.
2. [TAG-2202] Include instrumentation for mobile in-application ad viewability for campaigns tagged with a comScore vCE tag by introducing a vCE component.
   This feature Android 4.0.3 (API level 15) or higher to function properly. If the application is running on devices with Android 4.0.2 (API level 14) or lower then this feature will not be enabled/available.
3. [TAG-2238, TAG-2242, TAG-2506, TAG-2645] Refactor and re-implement the public API and underlying internal logic. This includes changes like:
   - Rename most public API methods to introduce a new naming scheme as well as adherence to platform-specific naming conventions.
   - Implement improvements for performance and stability as well as for future-proofing the public API for implementations for combinations of different comScore products.
   - Implement a new approach to configuring the library, including support for multiple partner and/or client configurations while collecting data only once.
4. [TAG-2250] Include data collection model version label `ns_ap_smv` in the collected data.
5. [TAG-2291] Enable *Usage Properties Auto Update* by default.
6. [TAG-2444] Deliver the library as an AAR file instead of a JAR file.
7. [TAG-2491, TAG-2527, TAG-2596] Implement streaming analytics v5 API and data collection model features. This includes a completely new API for streaming analytics implementations.
8. [TAG-2738] Include label `ns_st_li=1` for live media types when using the streaming tag wrapper class for reduced requirements implementations.

Bug fixes:

1. [TAG-2553] Ensure that any label that is overridden by setting its value as a persistent label makes it into the measurement request.

Known issues and limitations:

- There were no known issues for this release.

Library Version 3.1608.19

Release Date: August 22, 2016

Supported OS Versions: 1.6 - 6.0

Feature changes:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2685] Fixed an issue which could randomly cause null pointer exception in the `Task.java` class to be thrown when the library tries to access storage.

Known issues and limitations:

- There were no known bugs prior to this release

Library Version 3.1607.05

Release Date: July 14, 2016

Supported OS Versions: 1.6 - 6.0

Feature changes:

- No feature requests were included in this release.

Bug fixes:

1. [TAG-2553] Fixed an issue which prevented the implementation from being able to override `c12` and `ns_ak` as *persistent labels*.

Known issues and limitations:

- There were no known bugs prior to this release

> *Releases from 2015 and earlier have been removed from the release notes.*