

IAB Tech Lab Podcast Measurement

Independent Certification – March 31, 2021



Company:	
Company name and address:	Julep Media GmbH Atelierstr 29 81671 München Germany
URL for company:	www.julep.de
Main contact and email address:	Christian Rymarenko COO Christian.rymarenko@julep.de
Company Overview:	Julep is a podcast platform for monetizing podcasts. Based in Germany, Julep provides a team of experienced media professionals with many years of experience in the creation and marketing of digital content.

Statement of Verification Provider

BPA Worldwide has reviewed the Julep Media system for conformance to the IAB Tech Lab Podcast Measurement Technical Guidelines.

Our examination was performed in accordance with IAB auditing guidelines. Our examination included reviews of platform architecture, filtering, file threshold levels, identify and aggregate uniques, metrics, publisher player recommendations, disclosures, and internal audit. The examination included those procedures we considered necessary in the circumstances to obtain a reasonable basis for rendering our opinion.

Based on our review, we are not aware of any material modifications that should be made to the Julep Media system for IAB Tech Lab Podcast Measurement Technical Guidelines compliance.

Submission:

Name: Richard Murphy, Executive Vice President
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Date: April 28, 2021

Compliance Key:	Satisfactory: Recommendation: Requirement: Not Applicable:	Meets guideline control, no action required Meets guideline control, process improvement recommended Does not meet guideline control, must be addressed before certification is issued This criteria is not applicable or not in scope
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Guidelines	Control	Compliance	Comments
I. Platform Overview			
	<p>Review overall system architecture of the platform.</p> <p>Review the company org structure as relates to podcast delivery and measurement.</p> <p>Identify tracking asset used for recording traffic, and source of logs/data used for calculating metrics (e.g. hosted download logs, 3rd party CDN, tracking redirect URL).</p> <p>Review publisher/podcast application, approval and set-up process.</p> <p>Determine if platform includes delivery/tracking of advertisements. Review advertiser, campaign, and insertion setup process if applicable.</p> <p>Determine if platform includes player software provided by the company.</p> <p>Log file collection, data validation and aggregation processes and controls.</p>	Satisfactory	<p>Julep Media provides hosting and monetization services to podcast publishers. They utilize an IAB Tech Lab compliant third-party service (AdsWizz) to manage the configuration and dynamic insertion of ads into their hosted content.</p> <p>BPA reviewed the following:</p> <ul style="list-style-type: none"> The workflow documentation, detailing the functions involved in delivery of podcast content and ads. This includes the integration between Julep Media and the ad service to assemble and deliver ads with content. The ad configuration and trafficking process, which can be managed directly by the publisher or by Julep Media’s ad operations team. The process of setting up podcast programs and episodes to set ad slots for dynamic insertion. The collection and processing of traffic events from the ad service provider through the CDN. All processing steps were reviewed, including sessionization, filtering, merge/deduplication, and aggregation functions to calculate qualified downloads.
II. Filtering			
Eliminate Pre-Load Requests Page 11	<p>Pre-loading of podcasts directly results in podcast downloads being counted when they should not. There are two IAB Tech Lab approved solutions to handle this:</p> <ul style="list-style-type: none"> Policy put in place to not allow pre-loading in players and on websites (e.g. preload=none for HTML5) Use a download threshold based 	Satisfactory	<p>Julep Media provides an embedded player for publishers/producers to distribute their content. The Julep player is designed to be IAB compliant and does not pre-load content.</p> <p>The pre-load policy is documented in the Julep Media support documentation for any publishers not using the Julep player:</p> <p>https://help.julephosting.de/support/solutions/a</p>

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	on ID3 header payload plus 1 minute of recording time to determine if request was for a play/ download or for pre-loading		rticles/80000546685-kann-ich-meinen-eigenen-web-player-nutzen- See Section III for details on the handling of download thresholds.
Eliminate Potential Bots and Bogus Requests Page 11	There are a number of scenarios where the raw requests include requests that should not be counted because they likely come from bots or from products that behave in ways that make them look like real downloads. IAB recommends that metrics providers filter potential bots and bogus requests. Filters shall include:		
	<ul style="list-style-type: none"> • IP threat filtering <ul style="list-style-type: none"> ◦ Known “safe” IP inclusion list also recommended 	Recommendation remediated to Satisfactory	<p>Julep Media has a function for blocking excluded IP addresses from traffic counts. At the time of the certification, this consists of a hard-coded list of IP addresses for blocking internal traffic.</p> <p>BPA Recommendation: BPA recommended implementing data from external sources, such as lists of known datacenters/cloud IPs, or analysis of suspicious behaviour at the IP level.</p> <p>Julep Media subsequently implemented cloud IP list support in their filtering process, using online IP lists from Google, AWS, and Azure, updated in real time within the filtering logic. This change has been verified in the code by the auditor and implemented in production.</p>
	<ul style="list-style-type: none"> • Domain threat filtering 	Recommendation	<p>Julep Media does not currently have referrer/domain-based filtering.</p> <p>BPA Recommendation: BPA recommends this as an added control.</p>
	<ul style="list-style-type: none"> • User Agent filtering 	Satisfactory	<p>Julep Media maintains an internal hard-coded list of user agents that is used for blocking non-human activity.</p> <p>Julep Media also uses external user agent parsing libraries for identifying podcast-specific non-human tools (e.g. StitcherBot) and other bots, which is updated on a monthly basis.</p>
	<ul style="list-style-type: none"> • Apple 2 byte range filtering 	Satisfactory	<p>Julep Media only counts downloads for listening sessions that meet the content threshold requirements. By definition, this would exclude 0-1 byte requests.</p>
Automatically	Apple watchOS Duplicate Downloads:	Satisfactory	Julep Media’s internal hard-coded exclusion

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Triggered Downloads Page 21	Filtering Guidance Downloads to an Apple Watch device appear to be duplicative of downloads to a user's iPhone after the watch performs its syncing cycle. Additionally, the majority of watchOS downloads were observed to be automated downloads and not user initiated. Given these concerns, it is recommended that the following Apple Podcasts app watchOS user agent requests should be filtered out altogether up front and not be counted as unique downloads/listeners: <ul style="list-style-type: none"> • UA's that begin with atc/ and include watchOS (for example atc/1.0 watchOS) • UA's that contain (null)/(null) watchOS* 		list includes strings for identifying and blocking Apple watchOS downloads.
Handling HTTP Requests Page 12			
	HEAD requests - these should not be counted because this is typically used to check for changes because no data is transferred in a HEAD request.	Satisfactory	Only GET requests are included in Julep Media traffic counts.
	GET requests: <ul style="list-style-type: none"> • 200 (ok request) should be counted • 206 (partial request) A partial request should only be counted if the download covers the 1 minute rule, and de-duplication based on IP Address/UA is being done to cover cases where the user might be skipping ahead. Determining whether the requests cover the 1-minute requirement might require reassembling of the requests. • 304 (not modified request) -> signal that user has existing file and wants to see if it changed. • Platform specific statuses: <ul style="list-style-type: none"> ○ 000 (Akamai partial request) Handled the same as 206. ○ 302 (redirect) for redirection based measurement services. 	Satisfactory	Julep Media only accepts codes 200 and 206 as valid status codes.

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III. Apply File Threshold Levels			
Page 13	<p>To count as a valid download, the ID3 tag plus enough of the podcast content to play for 1 minute should have been downloaded.</p> <p>If the podcast is too small or if it isn't possible to compute the file and ID3 sizes regularly, complete file downloads (100% of the file, including the ID3 tag) should be used.</p>	Recommendation remediated to Satisfactory	<p>Julep Media serves MP3 files and associated media from their own CDN servers. Raw logs are generated on the servers and collected nightly after the log file rotation happens at midnight, CET.</p> <p>When processing activity logs, the Julep Media platform loads the relevant metadata for each MP3 file (including ID3 tag size and bitrate in Kbps) and uses this to calculate the minimum download size for the file as follows:</p> <ul style="list-style-type: none"> • Tagsize + (Bitrate * 7680) <ul style="list-style-type: none"> ◦ 7680 = (60 seconds * 1024 bytes per Kb) / 8 bits per byte <p>If metadata is unavailable, the platform uses a default minimum download of 2Mb (based on an ID3 size of 300K and 196Kbps for the bitrate), as this will cover or exceed the most commonly found values in the content. If the file size is less than 2Mb, this will be used as the default instead.</p> <p>The resulting metadata is combined with the activity data to generate a JSON file, which is sent to the data server.</p> <p>On the data server, partial requests from all content servers are combined into a session array, indexed by a unique key based on the combination of:</p> <ul style="list-style-type: none"> • User (MD5 hash of IP address) • User Agent • Episode ID • Podcast ID <p>Partial requests for each session are aggregated into a combined range, and the total byte sum is calculated.</p> <p>If a minimum download size was calculated, the total requested bytes are compared to the minimum download size, and if they meet or exceed the minimum, a qualified download is counted.</p> <p>BPA Recommendation: In reviewing the logic for calculating qualified downloads, two potential risks were identified:</p> <ul style="list-style-type: none"> • When combining partial requests, the bytes are summed together without checking for overlap. This creates a risk that portions of the same range could be added in more than once. • If a minimum download size is

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			<p>calculated from metadata (not using the default), the total is compared to this value even if the file size itself is less than a minute. This could cause some under-counting of very small media files.</p> <p>Julep Media subsequently revised their calculation logic to combine partial requests into range blocks, eliminating any overlap before comparing the resulting bytes to the minimum threshold.</p> <p>Julep Media also revised their qualification logic so that if the file size is less than 2Mb, the file size will be used whether a 1-minute minimum was calculated or not.</p> <p>Both of these changes were verified in the code by the auditor and implemented in production.</p>
IV. Identify and Aggregate Uniques			
Identifying Uniques (for Downloads & Users): Page 13	Identifying unique requests is important in counting downloads for an episode and in counting audience size. The following method is recommended, and the details of the filtering methods should be kept transparent.		
	<p>Filtering using IP address + User Agent</p> <ul style="list-style-type: none"> A combination of IP (see below for IPv6 details) Address and UA is used to identify unique users and downloads. For example, if the same file is downloaded 10 times by 6 user agents behind one IP address that would count as 6 users and 6 downloads. Other methods may be used to identify unique users. Alternate methodologies must be reviewed and approved. 	Satisfactory	<p>Julep Media aggregates download activity based on the combination of:</p> <ul style="list-style-type: none"> User (MD5 hash of IP address) User Agent Episode ID Podcast ID
Metrics for IPv6 Addresses Page 16	<p>IPv6 addresses pose certain challenges due to the fact that IPv6 addresses are not static, with multiple new addresses being cycled on a singular device in a given time period.</p> <p>To address potential discrepancies, IPv6 addresses should be truncated to the first 64 bits before calculating uniques for the Listener and Download metrics.</p>	Not Applicable	Julep Media does not support IPv6 addressing.

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	Note that the IPv4 or partial IPv6 can be hashed for privacy reasons without adversely affecting the calculations.		
Play-Pause-Play Scenarios: Page 14	If a unique download is divided into multiple file requests, for example if a user plays the first half of an episode using a website audio player, clicks pause, and then resumes a half-hour later, then that should still be counted as one unique download. Care should be taken to not count these as multiple downloads/users.	Satisfactory	Julep Media aggregates all partial downloads for a given IP address/user-agent within a 24-hour calendar day ending when the log-files rotate at midnight, CET.
V. Generate Metrics			
Podcast Content Metric Definitions Page 15	Download: A unique file request that was downloaded. This includes complete file downloads as well as partial downloads in accordance with the rules described earlier	Satisfactory	Julep Media provides multiple metrics, including downloads, which are updated on a daily basis.
Page 16	Listener: data that represents a single user who downloads content (for immediate or delayed consumption). Listeners may be represented by a combination of IP address and User Agent as described earlier. The listeners must be specified within a stated time frame (day, week, month, etc.).	Satisfactory	Julep Media provides a metric for Unique Users/Listeners, which breaks out the unique listeners at the account and podcast levels.
Podcast Ad Metric Definitions Page 16	Ad Delivered: an ad that was delivered as determined by server logs that show either all bytes of the ad file were sent or the bytes representing the portion of the podcast file containing the ad file was downloaded.	Not Applicable	Julep Media provides dynamic ad insertion services through a third-party vendor (AdsWizz). All measurement of ad metrics is provided by the third-party provider.
Page 16	Client-Confirmed Ad Play: counts an ad that was able to prompt a tracking beacon from the client when the file was played. Whenever possible, metric should include information about how much of the ad was played using the markers: ad start, first quartile (25%), midpoint (50%), third quartile (75%), and complete (100%).	Not Applicable	See above.
High Level Metrics Page 18	The Content and Ad metrics described above should also be made available at 3 levels – publisher / show / episode	Satisfactory	All key metrics are available at the account (publisher) level, the podcast level, and the episode level.

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VI. Publisher Player Recommendations			
<p>Publishers are advised to factor in the following when they build their player / listener experiences.</p> <p>Hosting/measurement providers are advised to provide the following guidance to publishers using their own players.</p>			
Page 19	Do not implement Auto-play. This will result in a bad user experience for the user with audio they were not expecting to hear.	Satisfactory	<p>Julep Media provides an embedded player as the main way for podcasters to distribute their content. The Julep player is designed to be IAB compliant and does not auto-play content.</p> <p>The auto-play policy is documented in the Julep Media support documentation for any publishers not using the Julep player:</p> <p>https://help.julephosting.de/support/solutions/articles/80000546685-kann-ich-meinen-eigenen-web-player-nutzen</p>
Page 19	Do not Pre-load - unless the intent was clearly to play the podcast.	Satisfactory	<p>Julep Media provides an embedded player as the main way for podcasters to distribute their content. The Julep player is designed to be IAB compliant and does not pre-load content.</p> <p>The pre-load policy is documented in the Julep Media support documentation for any publishers not using the Julep player:</p> <p>https://help.julephosting.de/support/solutions/articles/80000546685-kann-ich-meinen-eigenen-web-player-nutzen</p>
Page 19	Use ID3v2 tags , so that the headers are located at the start of the podcast (not at the end). This allows players to use the ID3 data ahead of streaming time without downloading the full podcast file.	Satisfactory	Julep Media transcodes all uploaded MP3 files and consistently uses ID3v2 tags.
Page 19	ID3 tag sizes - recommend that the ID3 size be limited to 300kb with 800x800 px max for the art.	Satisfactory	Julep Media is responsible for image encoding for the media files that they host, and they ensure that the ID3 sizes are reasonable.
Page 19	File request - For a full download, ask	Satisfactory	Julep Media's player is coded in HTML5, so

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	for the entire file in one go. For a progressive download, ask for the file in slices (byte range). This way a full download can be distinguished from a progressive download.		the browser is responsible for the request and response types.
Page 19	Do not modify the enclosure URL when requesting media, don't add extra parameters.	Satisfactory	Julep Media's player uses only the enclosure URL. Guidance is available in the Julep Media support documentation for any publishers not using the Julep player: https://help.julephosting.de/support/solutions/articles/80000546685-kann-ich-meinen-eigenen-web-player-nutzen-
Page 19	Do not cache podcast episodes on your servers. Always download the latest episode from the enclosure URL for every app user wanting to listen.	Not Applicable	Julep Media's player runs directly in the user's browser and does not involve any secondary caching servers.
Page 19	Use the GUID - as opposed to episode URL, title, publication date, etc. - to identify new episodes in the RSS feed that should be automatically downloaded to a user's device. The GUID is designed to be persistent through changes to hosting environment, titles, etc.	Not Applicable	Julep Media's player does not automatically download episodes from the RSS feed, it only plays individual episodes. Guidance is available in the Julep Media support documentation for any publishers not using the Julep player: https://help.julephosting.de/support/solutions/articles/80000546685-kann-ich-meinen-eigenen-web-player-nutzen-
Page 19	Employ an "automatic download unsubscribe" behavior (e.g. - stop auto downloads after 5 episodes of non-listens).	Not Applicable	Julep Media's player does not automatically download episodes from the RSS feed, it only plays individual episodes.
Page 20	Do not automatically download all episodes (e.g. back catalog episodes) by default. This creates unnecessary drain on the publishers' servers and consumes users' bandwidth.	Not Applicable	Julep Media's player does not automatically download episodes from the RSS feed, it only plays individual episodes.
User Agent Structure Page 20	Provide enough details in the user-agent header to allow it to be consistently differentiated from the user agent of other devices. Whenever possible, this should be applied to both RSS feeds and audio files.	Not Applicable	Julep Media's player is coded in HTML5, so the user-agent is entirely determined by the browser.
	OS hosts should allow the user agent to be modifiable when using their libraries.	Not Applicable	See above.

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	Platforms should avoid adding unnecessary information (such as injecting user or session IDs) to the user agent string, and in encoding practices.	Not Applicable	See above.
	Platforms are recommended to submit their user agent header value to the IAB Spiders and Bots inclusion list so that it is not considered a bot and can be a signal used to determine the device information.	Not Applicable	See above.
	If the app or platform does employ the use of bots to index content, it is recommended to specify a user-agent that is distinct from the application user-agent and includes the word “bot” to clearly identify its use case.	Not Applicable	Julep Media does not use any bots for indexing content.