



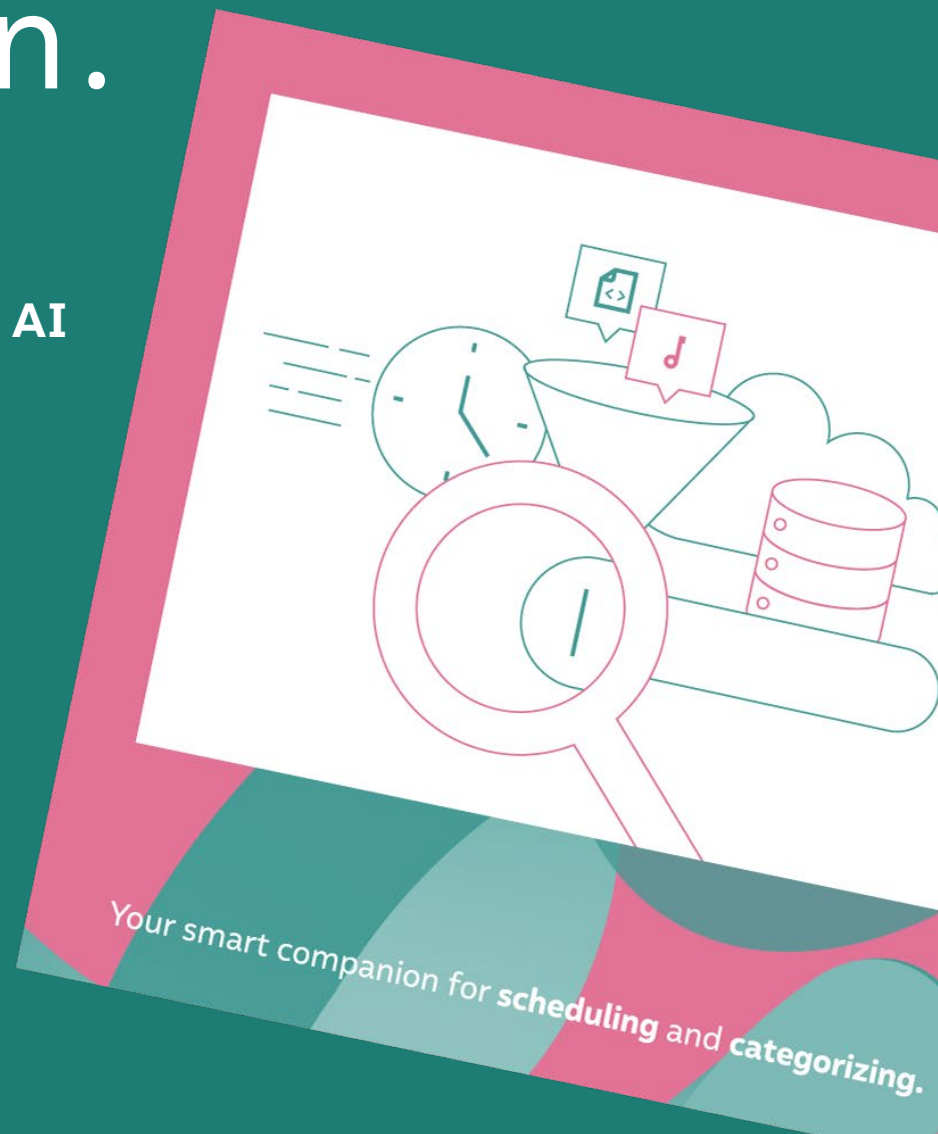
# musiccompanion.

*Smart Tagging with Music DBs and AI & LLMs*

**FROM THE IDEA OF BASIC TAGGING  
TO DELIVER. MEDIA MUSICCOMPANION. WITH AI**

## **DEMO NAB 2024**

- Introduction
- Demo (Tagging songs with AI)
- Roadmap
- Questions







# musiccompanion.

## INTRO (2017)

***How can we optimize song tagging and music planning by using machine learning?***

Master's thesis with EPFL Lausanne

"Facilitating music scheduling tasks using machine learning techniques for audience research and metadata extraction from audio."

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE  
LAUSANNE

Master Thesis

COMPUTER SCIENCE MASTER PROGRAM

---

Facilitating music scheduling tasks using machine learning techniques for audience research and meta data extraction from audio

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Company supervisor: Mathieu Habegger  
SwissMediaPartners AG  
<http://swissmediapartners.ch>

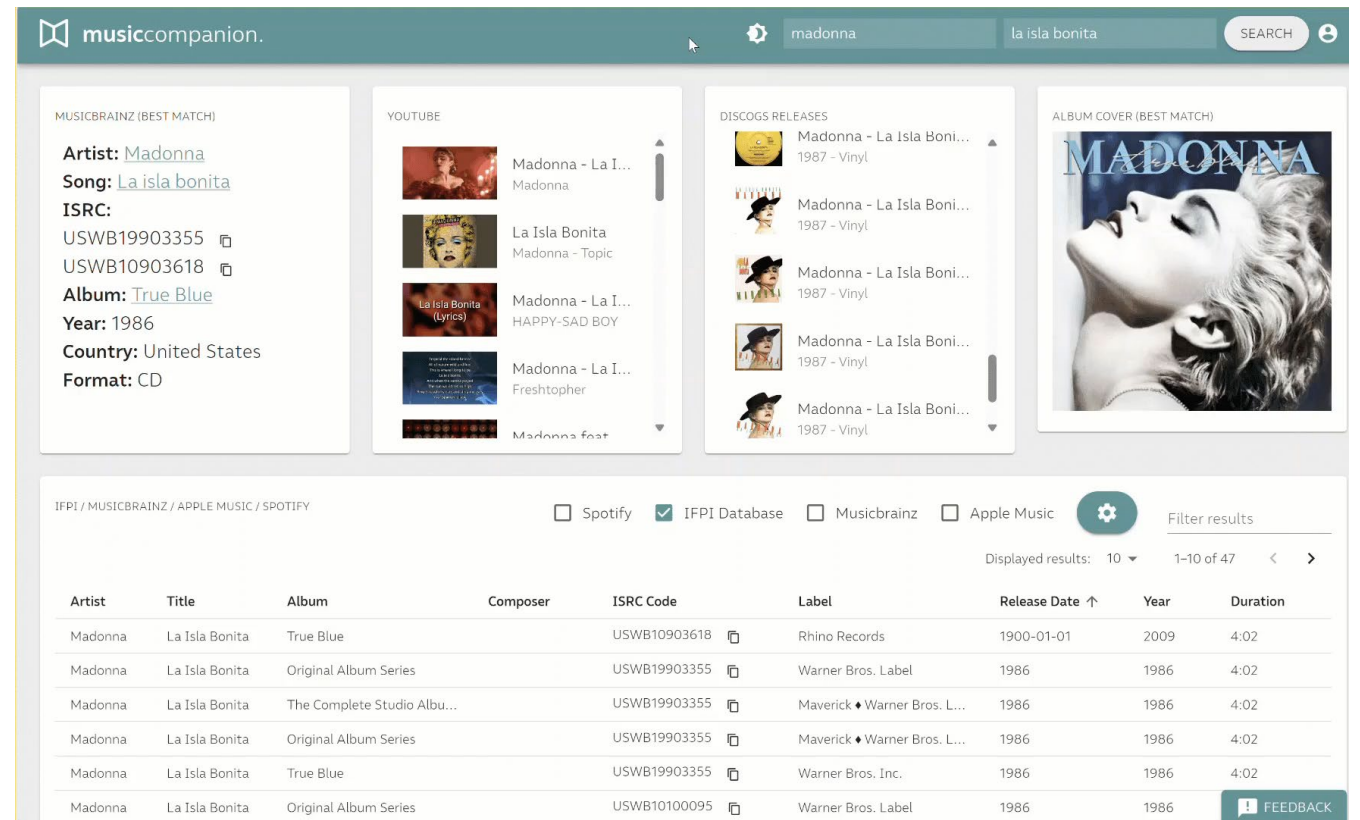
August 11, 2017



## INTRO (2018)

**Customer: How can we get the ISRC code into MusicMaster or into the Playout as quickly as possible?**

First version "MusicSearch" search engine and plugin for MusicMaster with **copy/paste**



The screenshot shows the musiccompanion search results for 'La isla bonita' by Madonna. The interface includes a search bar at the top with 'madonna' and 'la isla bonita' entered. Below the search bar, there are four main sections: MUSICBRAINZ (BEST MATCH), YOUTUBE, DISCOGS RELEASES, and ALBUM COVER (BEST MATCH). The MUSICBRAINZ section provides metadata for the song, including the artist (Madonna), song title (La isla bonita), ISRC code (USWB19903355), album (True Blue), year (1986), country (United States), and format (CD). The YOUTUBE section shows several video thumbnails. The DISCOGS RELEASES section lists various releases of the song. The ALBUM COVER section shows the album cover for 'True Blue'. At the bottom, there is a table of search results with columns for Artist, Title, Album, Composer, ISRC Code, Label, Release Date, Year, and Duration. The table shows six results for the song 'La Isla Bonita' by Madonna, with ISRC codes and release dates. A 'FEEDBACK' button is visible in the bottom right corner.

Artist	Title	Album	Composer	ISRC Code	Label	Release Date ↑	Year	Duration
Madonna	La Isla Bonita	True Blue		USWB10903618	Rhino Records	1900-01-01	2009	4:02
Madonna	La Isla Bonita	Original Album Series		USWB19903355	Warner Bros. Label	1986	1986	4:02
Madonna	La Isla Bonita	The Complete Studio Albu...		USWB19903355	Maverick • Warner Bros. L...	1986	1986	4:02
Madonna	La Isla Bonita	Original Album Series		USWB19903355	Maverick • Warner Bros. L...	1986	1986	4:02
Madonna	La Isla Bonita	True Blue		USWB19903355	Warner Bros. Inc.	1986	1986	4:02
Madonna	La Isla Bonita	Original Album Series		USWB10100095	Warner Bros. Label	1986	1986	

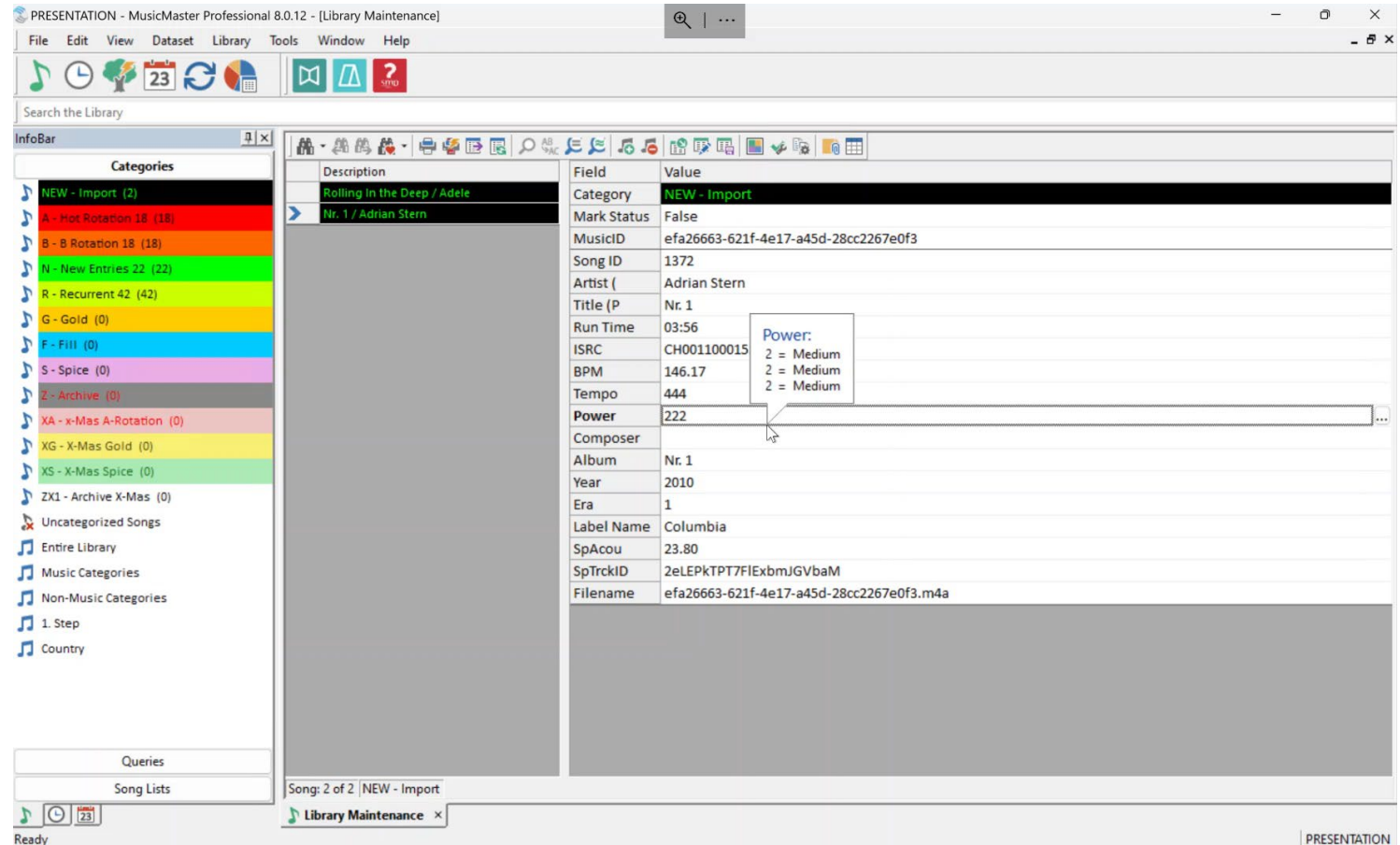


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## INTRO (2021)

**Can we get metadata and covers from musicsearch. from AppleMusic and Spotify directly back into MusicMaster?**

**musiccompanion.** becomes an add-on to MusicMaster



PRESENTATION - MusicMaster Professional 8.0.12 - [Library Maintenance]

File Edit View Dataset Library Tools Window Help

Search the Library

InfoBar

Categories

- NEW - Import (2)
- A - Hot Rotation 18 (18)
- B - B Rotation 18 (18)
- N - New Entries 22 (22)
- R - Recurrent 42 (42)
- G - Gold (0)
- F - Fill (0)
- S - Spice (0)
- Z - Archive (0)
- XA - x-Mas A-Rotation (0)
- XG - X-Mas Gold (0)
- XS - X-Mas Spice (0)
- ZX1 - Archive X-Mas (0)
- Uncategorized Songs
- Entire Library
- Music Categories
- Non-Music Categories
- 1. Step
- Country

Queries

Song Lists

Ready

Library Maintenance x

Description

Rolling in the Deep / Adele

Nr. 1 / Adrian Stern

Field	Value
Category	NEW - Import
Mark Status	False
MusicID	efa26663-621f-4e17-a45d-28cc2267e0f3
Song ID	1372
Artist (	Adrian Stern
Title (P	Nr. 1
Run Time	03:56
ISRC	CH001100015
BPM	146.17
Tempo	444
Power	222
Composer	
Album	Nr. 1
Year	2010
Era	1
Label Name	Columbia
SpAcou	23.80
SpTrckID	2eLEPkTPT7FIExbmJGVbaM
Filename	efa26663-621f-4e17-a45d-28cc2267e0f3.m4a

Song: 2 of 2 | NEW - Import

Power: 2 = Medium  
2 = Medium  
2 = Medium

PRESENTATION



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## TIMELINE 2014 - 2022

**2014**

Drop-In Tool.  
Automatic reading of metadata from MP3, MP4, Apple Files and WO-Wav with import into MusicMaster

**2018**

"MusicSearch" web tool in MusicMaster integrates data from IFPI, AppleMusic, Spotify database

**2021**

musicsearch. will be extended with the musiccompanion. application. Can write back data. Integration SpotifyAPI with advanced data

**2017**

Master's thesis with EPFL Lausanne on the recognition of metadata using machine learning

**2020**

Fingerprinting Integration in deliver.media engine. Artist, Titel, Label, ISRC and SpotifyID recognition



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## TIMELINE 2023 - 2024

### August 2023

- Windows Store Certification- **Self-Installer and Enterprise Installer**

### Oktober 2023

- Research and integration of first LLM and AI tagging

### Januar 2024

- MusicSearch is now **musiccompanion.ai**
- **Self-Subscription** with credit card for Starter, Standard and Pro

### April 2024

- NAB Beta-Release with Tagging
- Integration deliver.media library.

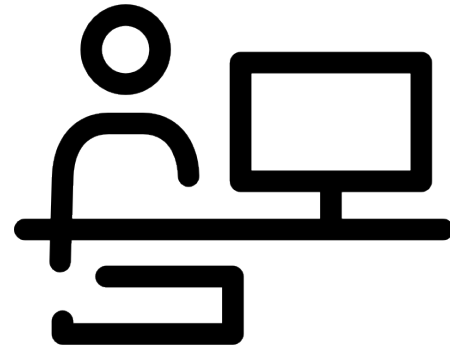
### Q3-Q4 (Roadmap)

- Extension of AI and LLM integration
- Connection of other providers
- New GUI





**NAB 2024 Beta Release**

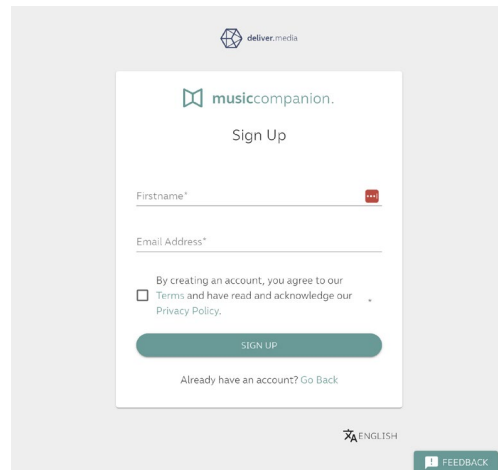


**Demo**  
**Mathieu Habegger**



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## AVAILABILITY – SIGN UP



musiccompanion.  
Sign Up

Firstname\*

Email Address\*

By creating an account, you agree to our Terms and have read and acknowledge our Privacy Policy.

Already have an account? [Go Back](#)

ENGLISH

Welcome to deliver.media

deliver.media Notifications <notifications@...>  
To: Michael Buholzer - SwissMediaPartners AG  
M: 24/04/2024 15:58

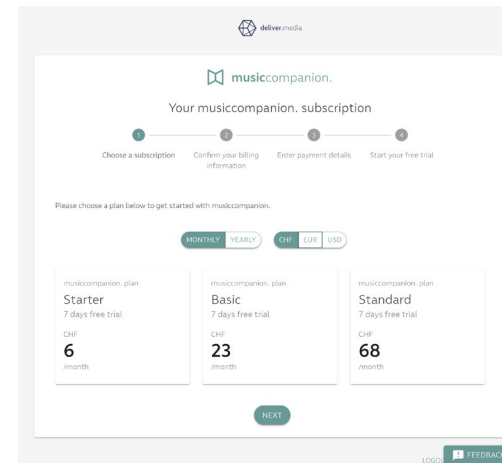
Verify your email  
Welcome to deliver.media

Hello Michael and welcome to deliver.media.  
To complete your registration, please verify your email address by clicking the button below:

Sincerely,  
Your deliver.media Team.

<https://deliver.media>  
This email was sent to [mb@smpeg.ch](mailto:mb@smpeg.ch). You are receiving this email because you signed up with musiccompanion by deliver.media. We are committed to your privacy. Learn more about our [privacy policy](#) and [terms & conditions](#).

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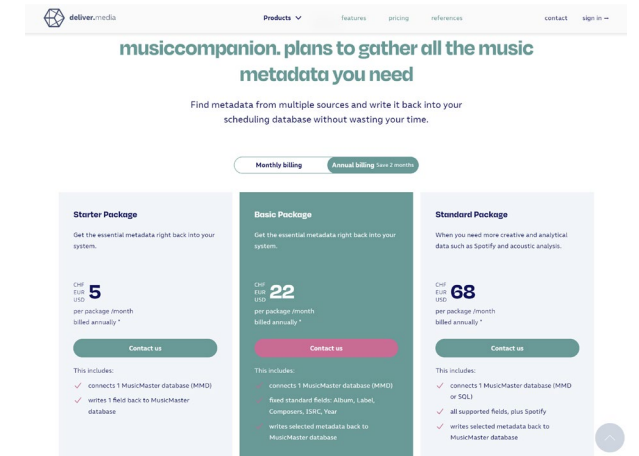
musiccompanion.  
Your musiccompanion. subscription

Choose a subscription → Confirm your billing information → Enter payment details → Start your free trial

Please choose a plan below to get started with musiccompanion.

MONTHLY	YEARLY	CHF	EUR	USD
musiccompanion. plan <b>Starter</b> 7 days free trial CHF 6 /month	musiccompanion. plan <b>Basic</b> 7 days free trial CHF 23 /month	musiccompanion. plan <b>Standard</b> 7 days free trial CHF 68 /month		

LOGOUT



musiccompanion. plans to gather all the music metadata you need

Find metadata from multiple sources and write it back into your scheduling database without wasting your time.

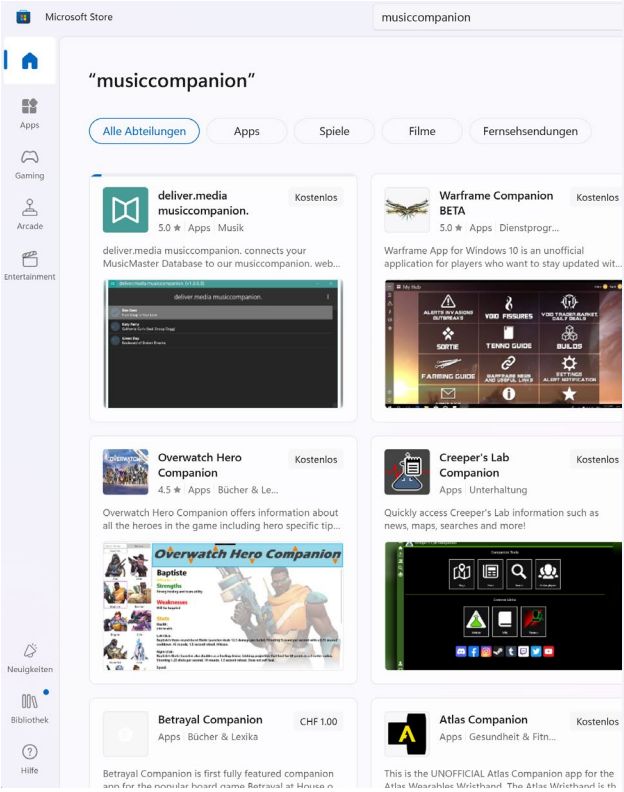
Monthly billing | Annual billing (save 2 months)

Starter Package	Basic Package	Standard Package
Get the essential metadata right back into your system. CHF 5 /month USD 6 /month per package /month billed annually? <input type="button" value="Contact us"/>	Get the essential metadata right back into your system. CHF 22 /month USD 23 /month per package /month billed annually? <input type="button" value="Contact us"/>	When you need more creative and analytical data such as Spotify and acoustic analysis. CHF 68 /month USD 68 /month per package /month billed annually? <input type="button" value="Contact us"/>




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## WINDOWS STORE



Microsoft Store
musiccompanion



**deliver.media  
musiccompanion.**  
deliver.media - SMP Solutions GmbH

Bietet In-App-Käufe an

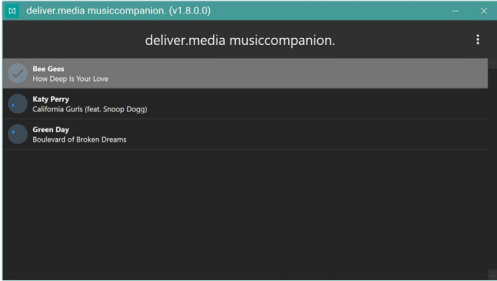
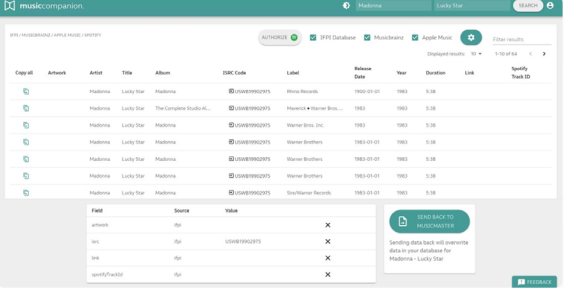
5.0 ★ | 3 Bewertungen

deliver.media musiccompanion. connects your MusicMaster Database to our musiccompanion. web-interface and allows you to write back...

Musik

**3** PEGI 3

**Screenshots**

**Beschreibung**

deliver.media musiccompanion. connects your MusicMaster Database to our musiccompanion. web-interface and allows you to write back information in just one click. Start gaining time while editing your music database today and speed up your programming.

**Ratings and reviews**

**5.0** ★

3 BEWERTUNGEN

[Alle anzeigen](#)

**Features**

- MusicMaster integration
- Search music and artist metadata
- deliver.media platform



# Infos of tagged song

localhost:4201/?artist=Sia&title=Unstoppable&integration=MUSICCOMPANION&musiccompanionsource=MUSICMASTER&musiccompanionuid=dece96df-8384-4c38-b988-653052ad5ccb&librarycontentid=f77b35a6-6d98-4e4c-be74-889e2cct1a507

musiccompanion. Sia Unstoppable SEARCH

IFPI / MUSICBRAINZ / APPLE MUSIC / SPOTIFY AUTHORIZE  IFPI Database  Musicbrainz  Apple Music Filter results

Displayed results: 10 1-10 of 108

Copy all	Artwork	Artist	Title	Album	ISRC Code	Label	Release Date	Year	Duration	Link	Spotify Track ID
		Sia	Unstoppable	NOW That's What I Call Music...	USRC11502934	NOW 84	2015	2015	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934	Monkey Puzzle Records/RCA R...	2015-11-04	2015	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934	Monkey Puzzle Records/RCA R...	2016-01-07	2015	3:38		
		Sia	Unstoppable	Unstoppable	USRC11502934	Monkey Puzzle Records/RCA R...	2016-01-21	2015	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934		2016-01-21	2016	3:38		
		Sia	Unstoppable	This Is Acting (Deluxe Version)	USRC11502934		2016-01-21	2016	3:38		
		Sia	Unstoppable	Unstoppable (The Remixes) - S...	USRC11502934		2016-01-21	2016	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934	Monkey Puzzle Records/RCA R...	2016-01-29	2015	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934	Monkey Puzzle Records/RCA R...	2016-02-02	2015	3:38		
		Sia	Unstoppable	This Is Acting	USRC11502934	Monkey Puzzle Records/RCA R...	2016-02-18	2015	3:38		

Displayed results: 10 1-10 of 108

AI INTEGRATION (DELIVER MEDIA LIBRARY)

MUSIIO CYANITE

Status ✓ COMPLETED

Genre pop 100%

Genre Detailed Pop 100% Electro Pop 53% Contemporary Pop 21%

Instruments synth 72% bass 68% beats 56%

Mood confident 100% heartfelt 92% bold 28%

Use case retro 100% party 97%

BPM 88 98% Variation:small

Energy medium Variation:small

Vocal Start (intro) 0:11

Vocal End (outro) 3:32

Keys Flat Gb minor

Keys Sharp F# minor

Camelot 11A

Content Type music 94%

Quality very high 100%

Preview 1 0:39:090-1:09:090

Preview 2 0:04:776-0:34:776

Preview 3 0:20:981-0:50:981

FEEDBACK

AI INTEGRATION (DELIVER MEDIA LIBRARY)

MUSIIO CYANITE

Status ✓ COMPLETED

Genre pop 100%

Genre Detailed Pop 100% Electro Pop 53% Contemporary Pop 21%

Instruments synth 72% bass 68% beats 56%

Mood confident 100% heartfelt 92% bold 28%

Use case retro 100% party 97%

BPM 88 98% Variation:small

Energy medium Variation:small

Vocal Start (intro) 0:11

Vocal End (outro) 3:32

Keys Flat Gb minor

Keys Sharp F# minor

Camelot 11A

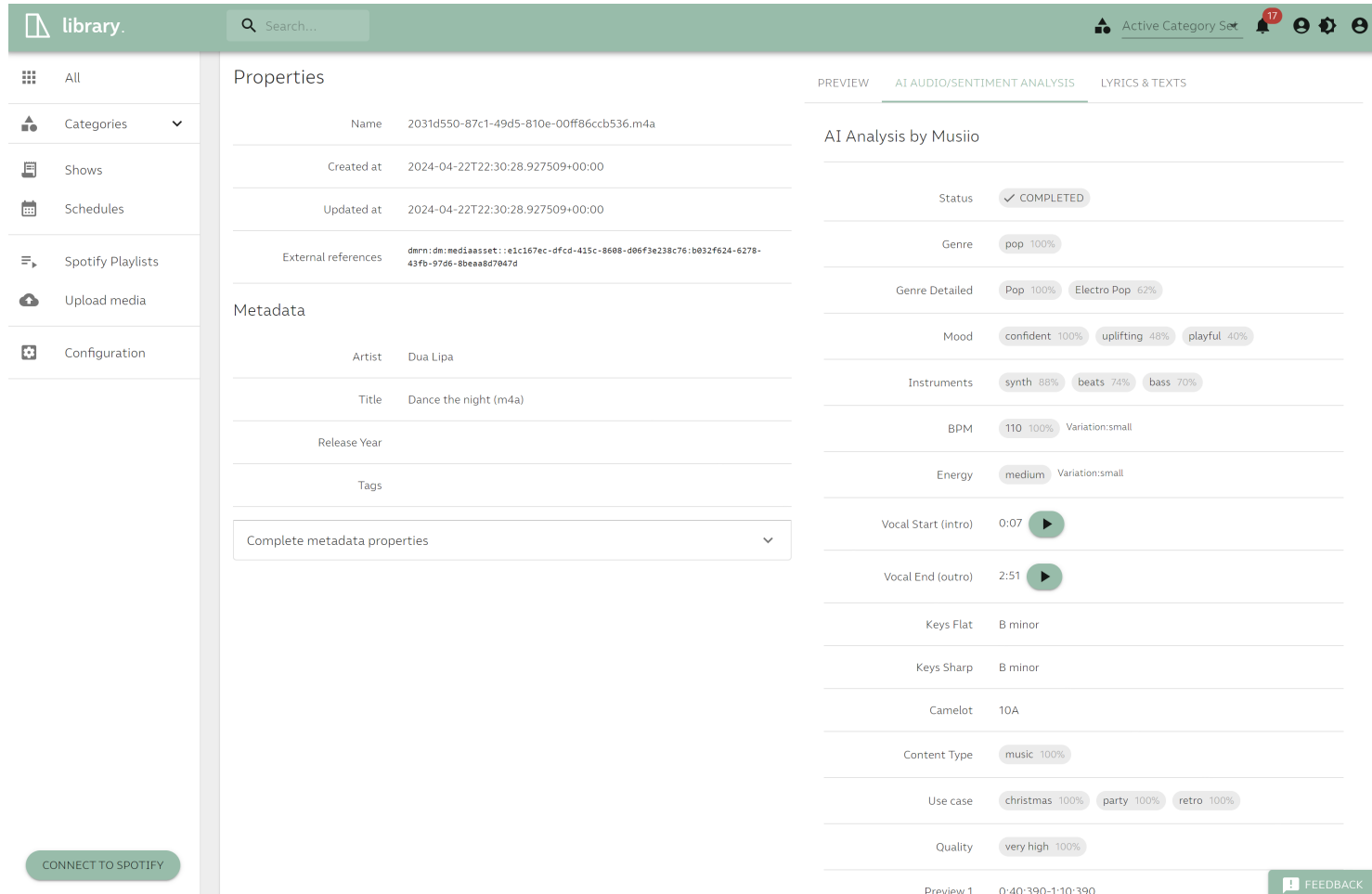
Content Type music 94%

Quality very high 100%

Preview 1 0:39:090-1:09:090

# musiccompanion.

## Integration in deliver.media library (2024/11)



The screenshot displays the 'library.' interface with a search bar and navigation menu. The main content area is divided into three sections: Properties, Metadata, and AI Analysis by Musiio.

**Properties**

- Name: 2031d550-87c1-49d5-810e-00ff86ccb536.m4a
- Created at: 2024-04-22T22:30:28.927509+00:00
- Updated at: 2024-04-22T22:30:28.927509+00:00
- External references: dmn:dm:mediasset::e1c167ec-dfcd-415c-8608-d06f3e238c76:b032f624-6278-43fb-97d6-8beaa8d7047d

**Metadata**

- Artist: Dua Lipa
- Title: Dance the night (m4a)
- Release Year: [empty]
- Tags: [empty]

**AI Analysis by Musiio**

- Status:  COMPLETED
- Genre: pop 100%
- Genre Detailed: Pop 100%, Electro Pop 62%
- Mood: confident 100%, uplifting 48%, playful 40%
- Instruments: synth 88%, beats 74%, bass 70%
- BPM: 110 100% Variation:small
- Energy: medium Variation:small
- Vocal Start (intro): 0:07
- Vocal End (outro): 2:51
- Keys Flat: B minor
- Keys Sharp: B minor
- Camelot: 10A
- Content Type: music 100%
- Use case: christmas 100%, party 100%, retro 100%
- Quality: very high 100%
- Preview 1: 0:40:390-1:10:390

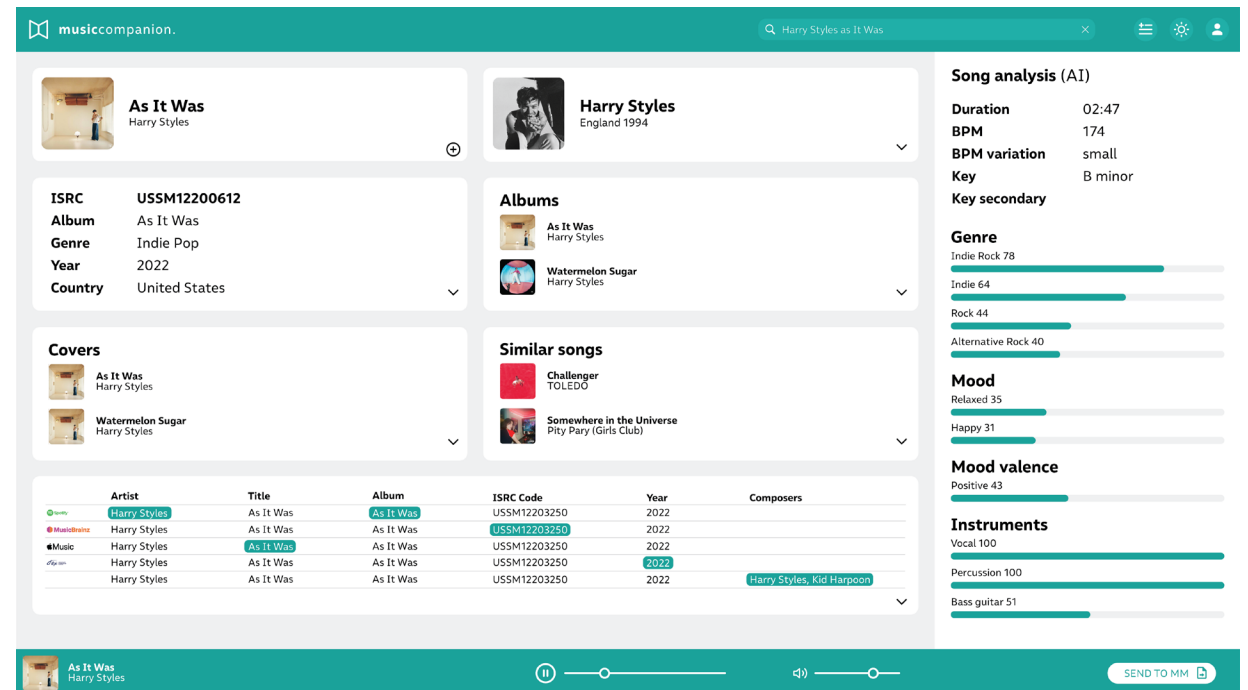
**Navigation and UI Elements:**

- Left sidebar: All, Categories, Shows, Schedules, Spotify Playlists, Upload media, Configuration
- Top bar: library., Search..., Active Category Set, 17 notifications, settings, and user icons
- Bottom left: CONNECT TO SPOTIFY



# ROADMAP

- New GUI Q4 2024
- Integration of additional tagging services
- Integration of research data
  - Airplay charts
  - Trending-Charts (Radios, Countries, Instagram TikTok)
- Trained Model for customers
  - Learning the tags from an existing database
  - Suggestion for category etc.



The screenshot displays the musiccompanion interface for the song "As It Was" by Harry Styles. The interface is divided into several sections:

- Header:** musiccompanion. with a search bar containing "Harry Styles as It Was".
- Album Card:** "As It Was" by Harry Styles, featuring the album cover.
- Artist Card:** "Harry Styles" from England, 1994, featuring a portrait of the artist.
- ISRC and Metadata:**
  - ISRC: USSM12200612
  - Album: As It Was
  - Genre: Indie Pop
  - Year: 2022
  - Country: United States
- Albums:** A list of albums including "As It Was" and "Watermelon Sugar".
- Covers:** A list of covers for "As It Was" and "Watermelon Sugar".
- Similar songs:** Recommendations for "Challenger" by TOLEDO and "Somewhere in the Universe" by Pity Pity (Girls Club).
- Song analysis (AI):**
  - Duration: 02:47
  - BPM: 174
  - BPM variation: small
  - Key: B minor
  - Key secondary: (empty)
  - Genre:**
    - Indie Rock: 78
    - Indie: 64
    - Rock: 44
    - Alternative Rock: 40
  - Mood:**
    - Relaxed: 35
    - Happy: 31
  - Mood valence:** Positive 43
  - Instruments:**
    - Vocal: 100
    - Percussion: 100
    - Bass guitar: 51
- Table:** A table listing tracks with columns for Artist, Title, Album, ISRC Code, Year, and Composers.
 

Artist	Title	Album	ISRC Code	Year	Composers
Harry Styles	As It Was	As It Was	USSM12203250	2022	
Harry Styles	As It Was	As It Was	USSM12203250	2022	
Harry Styles	As It Was	As It Was	USSM12203250	2022	
Harry Styles	As It Was	As It Was	USSM12203250	2022	Harry Styles, Kid Harpoon
- Footer:** Playback controls for "As It Was" by Harry Styles, including a "SEND TO MM" button.




# musiccompanion.


## Prototpye new GUI

musiccompanion.


☰
⚙️
👤



**As It Was**  
Harry Styles



**Harry Styles**  
England 1994

**Song analysis (AI)**

**Duration** 02:47

**BPM** 174

**BPM variation** small

**Key** B minor

**Key secondary**

**Genre**

Indie Rock 78

Indie 64

Rock 44

Alternative Rock 40

**Mood**

Relaxed 35

Happy 31

**Mood valence**

Positive 43

**Instruments**

Vocal 100

Percussion 100

Bass guitar 51

**ISRC** USSM12200612


**Album** As It Was


**Genre** Indie Pop

**Year** 2022


**Country** United States


**Albums**

 As It Was  
Harry Styles


 Watermelon Sugar  
Harry Styles


**Covers**





 As It Was  
Harry Styles


 Watermelon Sugar  
Harry Styles

**Similar songs**

 Challenger  
TOLEDO

 Somewhere in the Universe  
Pity Pary (Girls Club)

Artist	Title	Album	ISRC Code	Year	Composers
 Harry Styles	As It Was	As It Was	USSM12203250	2022	
 Harry Styles	As It Was	As It Was	USSM12203250	2022	
 Harry Styles	As It Was	As It Was	USSM12203250	2022	
 Harry Styles	As It Was	As It Was	USSM12203250	2022	
Harry Styles	As It Was	As It Was	USSM12203250	2022	Harry Styles, Kid Harpoon



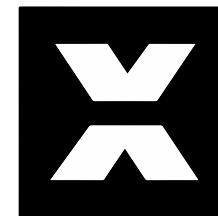
As It Was  
Harry Styles

⏸
⏮
⏭
🔊

SEND TO MM

 musiccompanion.

CUSTOMERS

 ch media

polona.MEDIA



DDJ media  
branded music & media

JINX







## INTEGRATIONS

- MusicMaster, deliver.media library., GSelector API [DB, MAM]
- Spotify (Metadata, Cover, Tagging [DB])
- IFPI (ISRC) [DB]
- Apple Music (Metadata, Cover, Tagging [DB])
- MusicBrainz
- ACRCLOUD (Metadata incl. ISRC, SpotifyID etc.) [FP]
- Musiio (AI-Tagging)
- Cyanite (AI-Tagging)
- ...



## TAKE AWAYS

### **deliver.media musiccompanion.**

- 10 years of experience with music tagging
- Easy integration into MAM and music scheduling system (e.g. MusicMaster)
- Aggregate multiple sources and services. To be expanded on an ongoing basis
- Write the data back to the MAM or music scheduling system

### **AI solution Musiio as a tagging service**

- Is part of Soundcloud.com
- Costs from 7 centimes per song
- Already integrated with MusicMaster and deliver.media library. (duplication protection)
- Model available for training/learning