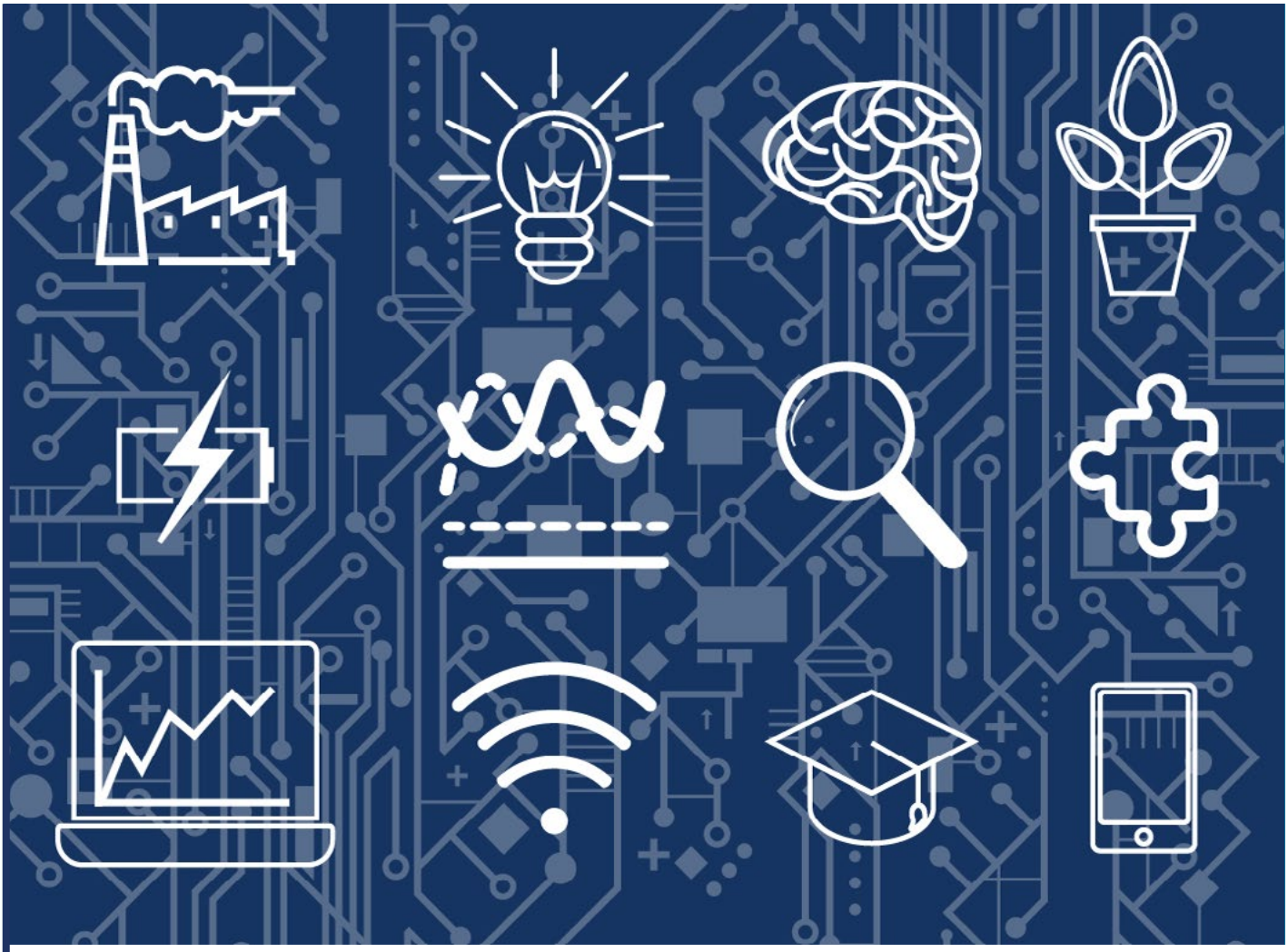
Intellectual Property Office

Music streaming metadata report and project update



The findings and opinions expressed within this report are those of the researchers and not necessarily the views of the IPO or the Government

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Music Streaming Metadata Mapping Report

This is an analytical report prepared by the UK Intellectual Property Office Economics Research and Evidence team.

April 2026

Dennis Collopy is MD at Menace Management and Research Fellow at the University of Hertfordshire, specialising in music and IPR related research such as various studies for UK Music and the IPO (e.g. reports on measurement methodologies, social media, and AI in IPR enforcement) . He also co-authored the 2019 pivotal IPO commissioned study on music metadata “Music 2025” that forms the background to this research. He has spent over 4 decades in music working across artist management, record labels and music publishing having been MD of Riva Music (signing the Clash and John Mellencamp) BMG Music Publishing (signing The Mission, Steve Silk Hurley, Maria McKee and working with Eurythmics and Clannad); EG Music Group (working with KLF, the Orb and Robert Fripp) and most recently his own Menace Music Management where he has worked in managing rights for featured artists , producers and song writers such as Matt Aitken, Steve Edwards, Lisa Millett, Frankie Miller, and Slowdive/Mojave 3’s Neil Halstead. Dennis is a former director of PRS and board member of the MPA.

ISBN: 978-1-915090-68-3

Music Streaming Metadata Mapping Report

Published by The Intellectual Property Office
April 2026

1 2 3 4 5 6 7 8 9 10

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This publication is available from our website at www.gov.uk/ipo

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Credits

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1.0 Executive Summary

1.1. Introduction

This report follows the publication of the UK Industry Agreement on Music Streaming Metadata in May 2023. The agreement was developed by a cross-industry working group, facilitated by the UK Government, to improve the quality of metadata in music streaming. The agreement set out commitments to:

- Establish a Technical Solutions Group (TSG) to review current workflows, standards, and technologies.
- Recommend improvements to deliver a 'core data set' for music streaming.
- Develop Key Performance Indicators (KPIs) to measure metadata flows in the digital supply chain.

The IPO commissioned a team of consultants to support the TSG by conducting interviews across industry to feed into the TSG's work developing the KPI project. This report provides a summary of findings including key issues from:

- 1-2-1 and small workshop interviews with a wide range of industry stakeholders
- Further written submissions including volumetric data supplied by sections of the industry
- Input and views from TSG members and other industry experts.

Views were provided from a cross section of the industry incorporating creators, publishers, record labels, CMOs, distributors/aggregators, DSPs, other experts and solutions firms. Key recurring issues reported by participants related to the accuracy of musical works data and the lack of alignment with recording metadata. This executive summary represents a snapshot of key findings with full detail in the relevant sections of this report.

1.2 Report Evidence Gaps

- **Creator representation:** There are a large and diverse number of music creators using music streaming services. It was therefore challenging to interact with a representative number of music creators. This was mitigated by the contributions from creator representative organisations under the CMM umbrella and several international creator organisations. Nonetheless, we recognise the paucity of younger self-releasing artists' contributions within this research.

- **Aggregator representation:** A substantial digital aggregator, purportedly responsible for a significant portion of daily uploads to the top DSPs, did not engage with our work. This means our findings cannot reflect the full picture of self-releasing 'direct artists' supplying accurate and complete metadata on delivery of recordings to the platform for onward delivery to the DSPs. We were able to interview two other direct artist platforms who confirmed minimal metadata vetting processes involved in delivering self-releasing creators' work to DSPs.

- **Publisher and DSP gaps**: Other gaps include being unable to interview one of the dedicated music publishing administration services that serve the self-releasing artist community. We also note the absence of one of the top DSPs in our findings however our findings are based on DSP' views and volumetrics contributions that cover the majority of the market.

1.3 Interview Findings by sector

The text below covers the key findings from the 1-2-1 interviews, further written responses, and other sources. The findings are presented on a sectoral basis. This section additionally includes input from industry expert TSG members.

1) Creators Interview Findings

- *Creative process complexities*: Multiple writers are frequently involved in the creation of a musical work. Writer shares and relevant writer metadata, such as IPIs, are not always agreed and shared at the point of creation. This results in frequent registration and ISWC delays that may be exacerbated through the use of interpolations or samples.
- *Issues with unique identifiers:* IPI, IPN and ISNI numbers are not used universally and are not always easily accessible. Despite the CMOs vital role in ensuring identifiers are accessible and verified, levels of accuracy and transparency vary. There was support for a greater uptake and recognition of ISNI numbers for session musicians.
- *Errors, omissions, and transparency:* Discrepancies are commonplace and include incomplete work registrations, multiple mismatched registrations and works listed in the PRS (ICE) database but not linked to a writer's IPI. Similar problems were mentioned by session musicians, producers and studio personnel.
- *Lack of understanding and need for improved education on metadata:* There is a frequent lack of understanding of music rights and metadata. The system is considered highly complex and bureaucratic and reliant on exclusionary jargon.

2) Music Publishers Interview Findings

- *Lack of authoritative ISRC/ISWC links at the time of release/delivery to DSPs:* The first sight an Authors Rights CMO or Special Purpose Vehicle (SPV) has of a recording to enable a link to the work is typically post usage. This prevents accurate writer credits being available on delivery of the recording and release by the DSP.
- *Access to IPI information:* Publisher access to IPI numbers is severely limited. 'Base numbers' are being entirely withheld by CMO's and there is a technical capability bar for access to 'name-numbers' .
- *Split ownership works problems*: In relation to 'split copyright' works there is no process to allow publishers to look sideways to other publishers at the work registration level. Each publisher can only provide authoritative information about its own represented writer(s).
- *Recording metadata:* Publishers are not in the ISRC / recording metadata supply chain so obtaining accurate recording metadata is problematic and often reliant on non - authoritative sources.
- *Competing' Data silos:* The efforts to link the musical works and recordings through their respective codes are replicated by many parties across the industry. Unless the information in these silos is shared, the resulting discrepancies between them require additional and unnecessary amounts of time and effort to resolve.
- *Anomalous claims (incorrect ISRC links, duplicates*), The absence of good common metadata enables accidental and intentional incorrect claims, such as a performer claiming authorship on a cover version or linking the incorrect ISRC to the musical work.

3) Labels Interview Findings

- *ISWC and ISRC links problem:* Labels cannot provide authoritative works information, other than what is supplied to them by artists. Therefore they are unable to provide accurate ISWCs to link to the relevant label-issued ISRC.
- *Lags:* The timeline for release of new works recordings is typically faster than the timeline for the creation of, and agreement to, the metadata about the underlying work. This means that data elements such as the ISWC often do not exist at the point of initial release of a recording of a new work.
- *Lack of label access to writer identifiers:* The IPI Database, which identifies writer contributions via an IPI code, is not open and labels have no access to it. Most labels therefore rely on writer names which can make reliable identification difficult. Similarly, most labels do not have good coverage of IPN Numbers for performers.,

- *Late and incomplete inputs to the label:* labels are often not directly involved in recording sessions. data flow form the artist, or artists team, is not standardised. Data can often be unstructured (e.g. email chains) and provided or amended at the 'eleventh hour.' This leaves labels with the challenge of piecing together a single view from multiple and/or incomplete sources.
- *Labels and publishing and works data:* Labels are not the 'source of truth' for works information and there is concern among some labels (and distributors) about the pressure to provide more works information in their feeds to DSPs.
- *ISRC Rules adherence:* There is no scaled registry where all existing ISRCs could be registered and located to help reduce and ideally eliminate ISRC duplication. This leads to some labels/distributors allocating new ISRCs for the same recording when there is a change of ownership or control.
- *Need for better integration of tools and databases:* To improve the accuracy and completeness of performer information, there should be greater cooperation and alignment with, and ideally, integration between existing database tools.

4) CMOs (Authors rights) Interview Findings

- *Works and recording links timing issues:* The most evident problem here is that often the first direct information the CMOs receive about the sound recording and the work used is from the DSP usage reports rather than the work rights holders.
- *Works Registration timing issues:* Works registration timing is problematic when registrations do not arrive until after usage details from DSP have been received.
- *Incomplete metadata from DIY platforms*: The lack of complete works metadata represents an ongoing issue, notably with independent distributors and DIY artists.
- *Claims issues for split copyrights:* 'Split copyrights' lead to frequent registration delays due to finalising shares and the joined-up shares picture can be impaired when there are multiple claims for a single work.
- *Poor historic data:* Older catalogues works data often does not meet the current registration standard.
- *ISRC and ISWC matching*: CMOs attempts to match ISRCs with ISWCs reveals the disparity between the number of ISRCs not mirrored by a corresponding number of matching ISWCs. There are also problems with the high proportion (50% in one case) of works in some CMOs' works databases that do not have ISWCs.
- *Mismatch between DSP ISWC and ISRC data:* ISRC and works title data from DSPs often do not match and there is rarely a match between the ISRC and ISWC. Works data

is often poor quality, even in some cases using the wrong ISWC. This is why CMOs may use a 3rd party dataset to correct the ISWC or match with the correct ISRC.

5) CMOs (Neighbouring Rights) Interview Findings

- *ISRCs benefits and drawbacks:* ISRCs are considered the fastest, most precise, and reliable sound recording identification mechanism, but the standard is not perfect, and its de-centralised assignment process allows for duplicates and bad data.
- *ISRC Rules adherence and duplicate ISRCs*: Ideally each sound recording will always have only one ISRC. Issues can occur when recordings catalogues change ownership. Many do not understand the ISRC rules and believe that the ISRC relates to each release of a recording or that they need to create a new ISRC to claim ownership of a recording.
- *ISRC rule adherence and the need for a central register:* The lack of an official central ISRC registry/database contributes to problems in maintaining data quality. Different rights owners may submit different ISRCs for the same sound recording and some rights owners submit the same ISRC more than once for different recordings.
- *Non-featured and session musician data:* There is generally an insufficient quantity of data relating to non-featured artists such as session musicians within metadata supplied by rightsholders and this more granular information is very sparsely populated within sound recording databases.
- *DIY Creator problems coping with rights and codes:* The complexity of rights and administration creates problems including the accuracy and completeness of metadata for self-releasing creators who have to manage five different codes and interact with three different CMOs.
- *Incomplete ISRC data fields:* There is frequent omission within the ISRC data of the sound recording qualification elements such as country of 1st publication, date of fixation, nationality of the rightsholder.
- *Data matching problems across NROs:* There are chronic problems with the accuracy of data matching, from usage through to royalty allocation endemic across the various neighbouring right CMOs.

6) Distributors Interview Findings

- *Metadata is sourced from labels/artists:* The metadata for release is supplied by labels and artists directly but the distributor can supply an ISRC if needed alongside UPC and barcode. Writer information and ISWC can be supplied but is not mandatory.
- *Label and DSP needs differ:* Label clients sometimes do not understand the value of completing all data fields. This is compounded by changing DSP metadata requirements including different rules for certain genres.
- *ISRC duplication and errors*: Duplicate ISRCs for the same recording are common and require action by the distributor. Deep catalogue recordings are prone to ISRC errors and there are cases of ISRC's being reused for different recordings.
- *Works and codes:* Including ISWC and IPI information is problematic for distributors as they do not collect ISWCs. Matching ISWC and ISRCs is not their priority which remains ensuring recording metadata to be delivered to the DSPs is of the right quality.

7) Aggregators Interview Findings

- *Poor quality of self-releasing artist metadata:* The increasing uses of ''artist direct' platforms has democratising access to DSPs. However this has come at a cost to data integrity as they enable anything to be distributed to DSPs. DIY artists can also be reluctant to spend time supplying all relevant information to support the metadata.
- *Minimal data checks on DIY platforms:* Aggregators are open platforms that allow anyone to upload their music, and their only regular check is for ISRC uniqueness when the ISRC is provided by the user. When songwriter information is compulsory there is no obligation to provide a ISWC or IPI relating to the work used.

8) DSPs Interview Findings

- *DSP access to ISWCs and IPI's:* DSPs do not have access to the ISWC & IPI databases. Access would help improve the accuracy and completeness of links between the recordings and the works, currently provided through ERN files.
- *Poor quality of works info in ERN files:* Labels and distributors ERN files typically provide writers names only. There is rarely an ISWC and distributors do not support delivery of the ISWC.
- *Quality of label metadata capture varies:* There are many different "scenarios" for record companies to capture data, and the data chain reveals different levels of authoritativeness in each scenario.

- *CMO reluctance to share writer information:* CMOs, and publishers do not share songwriter or composer information in their reports back to DSPs. This is problematic when DSPs are trying to understand matching issues.
- *Lack of ISRC accuracy impacts publishers***:** ISRC accuracy is an issue that impacts the publishing licensors matching process and can also affect the user experience on the platform.

9) Solutions Firms/Experts Interview Findings

- *DSP & CMO info gaps:* Notable data gaps reported included one DSP reportedly having limited works identifier coverage and one non-UK CMO only had 17% of all works discoverable by ISWC.
- *Missing works info and disputes cause delays:* Incomplete or disputed works information cause delays at CMOs and beyond. Examples include publishers often having IPI's for their signed writers only and works contributor details frequently not finalised at the point of usage.
- *DIY platform poor data quality*: A portion of works delivered by DIY aggregators to DSPs contain inconsistent, incorrect, or missing core metadata.

1.4. Interview Findings Key Takeaways

- The lack of authoritative ISWC/ISRC links is a major problem throughout the supply chain.
- Many creators and their close representatives struggle to fully understand and deal with all necessary metadata requirements.
- Current aggregator platform rules enable incomplete and inaccurate metadata to be supplied to DSPs.
- The ISRC and ISWC allocation processes are completely different with divergent outcomes with one a local process and the second a centralised system. The ISRC local system suffers from the absence of a reliable single global register resulting in a substantial number of duplicates.
- ISRCs can be allocated relatively quickly making it ideal for use in delivering new recordings through the supply chain to DSPs. By contrast the ISWC allocation process, although centralised, is more cumbersome.
- There are a lack of commonly used and easily accessible performer identifiers (e.g. lack of access to IPI and lack of adoption for ISNI)
- The most authoritative sources of accurate metadata were the authors rights CMOs for the musical work (since they produce the merged shares picture for the split copyrights)

and the record labels for the sound recording. Although both parties indicted that they are not the authoritative sources.

- The industry faces three significant challenges concerning standards and formats:
  - Low and/or slow adoption of new formats forcing stakeholders to maintain multiple formats, increasing complexity and potential for metadata inconsistency.
  - Where a standard format is adopted, inconsistent implementation is common.
  - There are a few elements within industry standards that lack comprehensive business rules and/or there are company specific style guides that affect metadata.

1.5 Volumetrics Summary and Conclusion

The volumetrics highlighted certain useful metrics which are summarise below.

1) Publishers

- The average number of recordings per work ranged from 1 to 4.
- The average number of writers per work varied considerably, ranging from 1.6 to 3-4 writers per work.
- The percentage of works registered with full writer IPI information ranged between 75% and 100% but dropped to 30-40% for works where the publisher had only partial control.
- The percentage of works registered with associated ISRCs reported were generally quite low, with one publisher including ISRC information in only 10% of registrations[1].

2) Labels

- For recordings with a writer IPI, other industry writer identifiers or ISWC within their system: labels indicated that most had zero IPI numbers associated with songwriters on their recordings, as well as zero industry identifiers attached to songwriters in their systems. ISWC capture was also zero to negligible.

3) CMOs (Authors' Rights)

- The figures supplied indicated an average of 1.71 writers per work.
- One respondent reported 87% of works registered with an ISWC
- Most works were registered complete with all controlled IPI numbers.
- 66% of works registrations were received from publishers and 33% from writers.

4) CMOs (Neighbouring Rights)

1 We note that music publishers may register all of the works under their control with various CMO's , even though not all of the controlled repertoire will be recorded and thus need a matching ISRC.

- Responses from Neighbouring Right Organisations (NRO) stated there were revisions on approximately 17 % of claims over the last 1 to 3 years.
- The percentage of recordings with more than one ISRC was 11% for the smaller NRO but 4.23% for the larger NRO.
- For recordings registered with complete performer and participant information including IPN/ISNI, the percentage was 73% for the smaller NRO but only 7% for the other NRO. However that 7% represented 24% of all active recordings and 90% of recordings by value.

5) Distributors

- The number of recordings subject to contributor revisions after initial delivery to DSPs is small relative to the size of repertoire under control at 5% of total recordings according to one contributor.
- The number of recordings with songwriter/composer/author credits in their system varied between 33% of one distributors catalogue and 100% for several other distributors. However, almost all distributors had zero recordings with any associated IPIs or ISWCs and it was clear most distributors do not capture IPI information nor ISWCs.

6) DSPs

- One of the five DSPs who took part in the interviews reported almost 100% of new recordings arrive with incomplete or inaccurate metadata.
- One DSP was able to segment the number of recordings registered per annum, showing a total of 47.8 million broken down into 1.17 million new recordings from the major record labels, 17.15 million from digital aggregators, and 29.56 million from independent record labels.
- In respect of recordings mapped to a musical work (ISWC-ISRC link) at the point of delivery: the metric was very low for most DSPs, with one stating that less than 0.1% of recordings were mapped to an ISWC on delivery.
- One DSP claiming there was 0% writer information in licensor CCID reports, but others stating rates of ISRC-ISWC mapping to be between 20% and 85%. One DSP mentioned a 71% link between the ISWC and the platform's own unique recording identifier.
- Data on streaming activity across different thresholds from one DSP showed that 82.43% of recordings received zero activity and a mere 0.0016% with plays in excess of 100 million.

- One DSP stated that at least one writer was named on 80% of ‘recordings with usage’. This indicates that for this DSP, 20% of recordings with usage have no writer information when delivered to the platform.
- Average number of writers per recording: only one DSP responded to this question, stating an average of 2 writers per recording.
- Percentage of recordings with duplicate ISRCs: The figures varied between DSPs with one claiming 4.5% of recordings had duplicate ISRCs, another 9.16%, and a third 23%.

What is most evident is that publishers struggle to deliver associated ISRCs at the point of registration and there is a distinct lack of creator/writer IDs available to labels and distributors and delivered to the DSPs at the point of release. As a result, the link between the ISRC and ISWC on arrival at the DSP is very low. The question of duplicate ISRCs also adds to the complexities within the supply chain even though almost all recordings arrive with an ISRC.

2.0 Background, aims and introduction

2.1 Background

In the era of digital music, metadata which describes who contributed to a track's creation and how, is essential to making sure music makers are accurately credited and paid. However, on occasion metadata is not accurate or complete, which can lead to significant delay to creators being paid for the use of their works and in some cases, they are not paid at all.

Music streaming metadata issues were brought to the forefront when the COVID-19 pandemic and subsequent lockdowns impacted the global economy in 2020. Music creators' live performances were stopped. The #BrokenRecord online campaign was launched by music creators to highlighting issues with the music streaming business model. This was followed by the 'Credits Due' Campaign which aimed to ensure accurate song metadata on all recordings at the point of creation.

The Digital, Culture, Media, and Sport (DCMS) Select Committee launched an inquiry into the Economics of Music Streaming. As part of their findings, published in July 2021, the Committee highlighted issues relating to music streaming metadata[2].

In the response[3], the Government at the time promised close work with the Credits Due campaign and highlighted the IPO commissioned report "Music 2025 – the Data Dilemma"[4] form 2019. This report set out some of the problems with metadata including lack of industry understanding and the rise of the DIY sector in the creation and distribution of music.

The Government facilitated discussions with a cross-industry metadata expert working group resulting in the UK Industry Agreement on Music Streaming Metadata[5], published in May 2023. The agreement sets out a positive commitment from players across the music streaming industry to improve metadata on music streaming services in the UK. It includes:

2 House of Commons, Digital, Culture, Media and Sport Committee, Economics of music streaming, Second Report of Session 2021-22, pages 51-52

3 House of Commons, Digital, Culture, Media and Sport Committee, Economics of music streaming: Government and Competition and Markets Authority Responses to Committee's Second report, Second Special report of Session 2021-22, pages 6-7

4 Music 2025: the music data dilemma - GOV.UK (www.gov.uk)

5 UK Industry Agreement on Music Streaming Metadata - GOV.UK (www.gov.uk)

- a shared ambition to progressively improve the quality and timeliness of work and songwriter metadata associated with new recordings on streaming services over a two-year period, including the consistent display of these credits
- agreement to take steps to ensure a core data set containing recording and work information is associated with all new recordings and provided to streaming services in similar timeframes as recording and artist metadata
- agreement to follow and promote good practice in industry

The agreement also committed to setting up two expert groups, the Education and Awareness Group (EAG) and the Technical Solutions Group (TSG).

The EAG was tasked with developing educational resources, raise awareness and improve standards of metadata alongside the Credits Due campaign and WIPO for Creators. The TSG was established to explore current workflows, standards and technologies and recommend improvements.

2.2 KPI project: Aims, objectives and scope

The TSG was also tasked with working to baseline and identify meaningful Key Performance Indicators (KPIs) to measure key points in the metadata chain.

The IPO commissioned a team of consultants to support the TSG in this KPI project in August 2023. The team included Dennis Collopy (Menace Management Ltd) and Karen Mulvee (Audiencenet). The team was tasked by the IPO to support the TSG with:

- cataloguing and mapping existing metadata flows and identifying key issues
- assisting baselining and identifying meaningful and achievable key performance indicators (KPIs) to be measured at relevant points in the metadata chain, and
- assisting the creation of a gap analysis of areas of potential improvement

This report brings together the work undertaken by the consultant team to support the TSG with this project.

2.3 Project Methodology

This report is the culmination of:

- findings from individual and small workshop interviews with a wide range of industry stakeholders
- further written submissions, and input and views from TSG members and other industry experts.

The information gathering process for this project was the following:

a) Dennis Collopy interviewed stakeholders using 5 initial open-ended questions[6] to capture different perspectives and views. These interviews were conducted online and, where possible, with the interviewees' approval recorded for transcription purposes. These transcripts were then anonymised and summarised in the Interview Findings section of this report.
b) Following on from the interviews, stakeholders were invited to respond to the granular 'follow-on' questions and contribute data to the volumetrics via a platform to fully anonymise responses to protect sensitive data. The results of this exercise can be found in the Volumetric Analysis section of this report.
c) During the above interview process stages, it was recognised that the follow-on and volumetric questions were ill-suited to capturing creators' perspectives, so an online survey was issued. This provided us with a fresh set of responses, insights from which are included in the relevant findings by sector.

There are some gaps in the research coverage. This includes the limited number of individual creators and their representatives interviewed for this project. It was challenging to determine a truly representative sample of music creators. However, this was mitigated somewhat by the contributions from creator representative organisations who engaged with this project. In addition, we were unable to engage with one of the largest self-releasing artist digital aggregators. Although we were able to interview two others who provided useful insights. Similarly, we were only able to interview one of the largest music publishing administration services that serve the self-releasing artist community.

To support the work, the consultants conducted a review of existing literature on the music streaming market which is available at Annex B. The review includes multiple sources of

6 These open ended questions are set out in full in the Interview Findings section of the report

existing data covering different facets of the music streaming ecosystem. This includes specifics on the metadata and streaming service usage and revenues.

2.4 Project Participation by Sector

Total Number of Interviewees (96)

These are broken down by sector below:

1. Creators /Creator Representatives	20
2. Music Publishers	18
3. Record Labels	11
4. CMOs (Authors Rights)	8
5. CMOs (Neighbouring Rights)	2
6. Distributors	10
7. Aggregators	2
8. DSPs	8
9. Standard Setting Orgs	5
10. Solutions, Rights Firms & Experts	12

Total Number of Direct Responses to IPO online questionnaire (52)

It was recognised the 1-2-1 interview process would not lend itself to detailed contributions from the wider creator community. As such the IPO conducted an online questionnaire which anonymised responses. This was completed in parallel with the 1-2-1 interview process. The direct responses to the IPO questionnaire were from the creator sector and almost exclusively from the session musician community. There were also a small number of UK based metadata solutions firms that provided responses.

Total Number of Responses on the Qual Platform (28)

These responses were in relation to a set of follow-on questions created by the TSG along with a request for 'volumetrics' i.e., specific metrics relating to different sectoral interviewees business to provide a numerical basis for the KPI project. This platform enabled responses to be uploaded. The responses on this platform included the following:

- Distributor/Aggregator X 5
- Music Publisher X 3
- Record Label/recorded music sector X 6
- Digital Service Provider X 5

- CMO - Authors Rights X 4
- CMO - Neighbouring Rights X 3
- Artist Manager X 1
- Recording artist X 1

2.5 Report Evidence Gaps

As noted in the project methodology, this section provides a detailed analysis of the gaps in our research and accordingly limitations of our findings. At the outset of the project the TSG, IPO and researchers assembled a list of potential interviewees. The list included recognised major stakeholders across various sectors.

1. Creator Community

Early on it was recognised that representing the views and experiences of the entire creator community through the interviews was beyond the scope of this project. It was decided to engage with a variety of different UK and international organisations who represent the creator community. These representative bodies offered to arrange online workshops with their members and also to include the organisations own views through their executive teams.

We also engaged representative bodies who focus on a specific subset of the creative process e.g. production, songwriting, studio performance. The Council of Music Makers (CMM) helped liaise with and set up interviews with their constituent members (MMF, MU, FAC, Ivors Academy and the MPG) so we believe the findings represent a fair view of the UKs professional creator community.

However the findings could not be said to fully reflect the views and experiences of the wider UK music making sector including DIY or self-releasing artists. Apart from Help Musicians and data from AFEM we were unable to source reliable data from the ever growing DIY community. This is the most obvious gap in our data which we believe should influence the eventual findings and recommendations.

2. Music Publishers

All 3 major music publishers and several large and long established independent publishers were interviewed. Nonetheless, there were notable gaps with two of the substantial

international players in the publishing sector unable to engage. This included those delivering publishing admin services to the self-releasing/DIY community.

Also, not all interviewees submitted responses to the 2nd stage highly detailed questions. Nonetheless we believe the overall contribution is representative of the key metadata issues experienced by the sector as a whole.

3. Record Labels

Of the three major labels only one could be said to have engaged fully and provided a comprehensive overview of metadata processes along with full responses to the volumetric questions. A second major label was willing to be interviewed, but did not provide answers to the volumetrics, but the third was not interviewed. Therefore this should not be seen as representing the views of all three major labels given.

One of the major labels failing engage was a genuine concern for researchers given the prominent role this 3rd entity has within the market. The independent label sector was very helpful in agreeing to interviews and for some respondents providing detailed data in the volumetrics.

Given the comprehensive responses from the one major label who fully engaged and from the independent sector, we believe this is representative of the sector as a whole.

4. Authors Right CMOs

We approached several CMOs, including those based in the USA and EU, and secured responses from 8 organisations. This reflects the views of CMOs actively involved with Anglo-American repertoire.

5. Neighbouring Right CMOs

Despite an interview set of two this was a very successful set of interviews that yielded excellent insights from the Anglo-American music markets. It indicated a somewhat different approached to handling metadata.

6. Distributors

The interviews with this sector were successful. All respondents were willing to share their insights given how important the metadata supplied by label partners is to their business model. The disparity in interviewees repertoire size enabled us to capture representative insights across the UK digital distribution market.

7. Aggregators

We managed to interview one of the largest aggregators and one much smaller platform serving the self-releasing DIY artist market. Both firms were willing and able to provide full responses to our initial questions but did not provide any kind of data within the volumetrics section. This lack of firm data is an important issue for the project as a whole given the acknowledged scale and importance of the DIY market.

The biggest gap in our entire research analysis comes from this sector with one substantial firm refusing to engage with this project. The fact remains without securing quantifiable and verifiable data from any of the key players in this sector it Is impossible to accurately judge the scale and reach of the platforms. The DIY market including platforms serving this market continues to grow and the impact on metadata quality ingested into the digital supply chain will increase.

8. Digital Service Providers (DSPs)

The 5 DSPs that took part [7]shared their views on the coherence of the current metadata supply chain with the multiple moving parts. In particular in relation to the musical work causing most problems ahead of their internal work to recording matching efforts. Responses to the volumetric questions contained valuable high-level insights although showed some issues (e.g. the distinction between major, independent and DIY releases).

9. Standard Setting Organisations

The standard setting organisations were able to provide some insights on metadata education, training and the specifics of the management and design of the core codes. None were able to articulate and supply data on the scale of the problems. Although one interviewee on the recorded music side recognised some issues expressed by other sectors. This included duplicate ISRCs and the lack of a complete understanding among labels of the rules relating to changes in ownership.

10. Solutions, and Rights Firms and Experts

This group of respondents included solutions firms who provided important views of the scale of the music metadata markets, such as matching rates and proportion of music works with ISWCs. The experts we interviewed were unable to provide current scaled data. However they offered insights as to the processes and issues within the metadata supply

[7] And represented circa 80% of the UK streaming market per CMA report in July 2022

chain. Very few experts spoke of the processes adopted by DSPs in handling works and recording data delivery from multiple divergent sources nor what happens post usage.

Summary and conclusion

We note the main gaps in our analysis relate to:

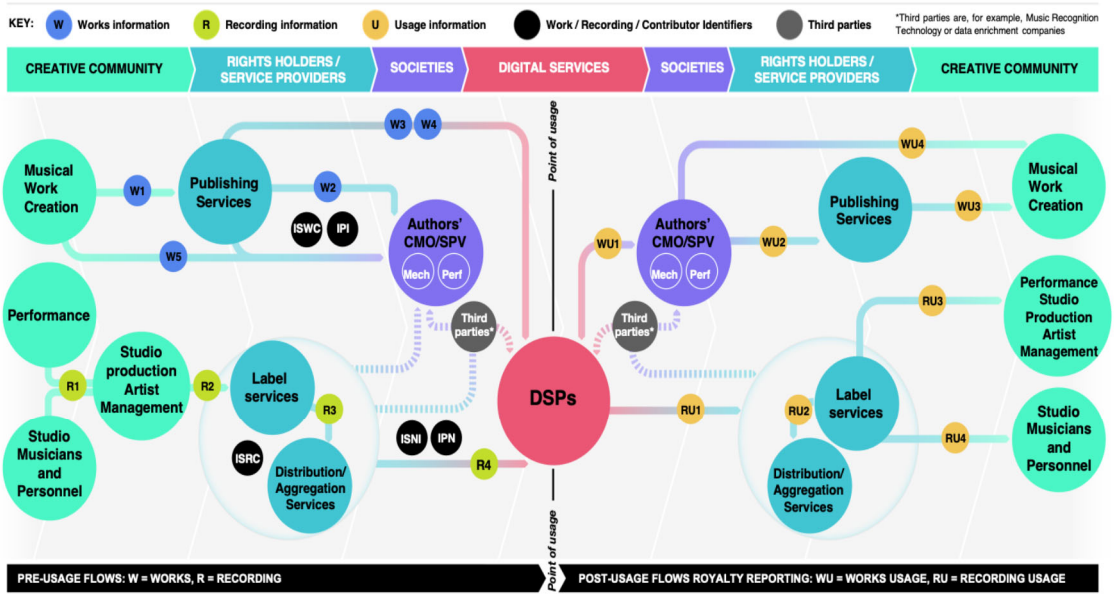
a) The limited number of individual creators, and their representatives interviewed
b) No project engagement from a significant digital aggregator
c) Only interviewed one of the music publishing administration services that serve the self-releasing artist community.

2.6 Flow of work and recording metadata map

One of the aims of this project was to visualise the flow of metadata from the point of creation through the different parts of the digital music supply chain for both the sound recording and the musical work. Annex B includes previous examples of metadata mapping workflows as part of literature review.

The visuals created for this project have been developed in close cooperation with the TSG. The visuals highlight the various intricate steps involved in creating and sharing metadata and how this data is received by the DSPs. This flow is based predominantly on a professional singer/songwriter scenario. Even in this most straightforward data journey, the visual below highlights the complexities in the metadata journey. Uniquely, this metadata map also represents the flow of metadata from the DSPs back through the supply chain to the creative community:

Flow of work and recording metadata in the music streaming ecosystem



WORK / RECORDING / CONTRIBUTOR IDENTIFIERS:
ISWC – INTERNATIONAL STANDARD MUSICAL WORK CODE, **IPI** – INTERESTED PARTY INFORMATION, **ISRC** – INTERNATIONAL STANDARD RECORDING CODE,
ISNI – INTERNATIONAL STANDARD NAME IDENTIFIER, **IPN** – INTERNATIONAL PERFORMER NUMBER

Unbroken lines represent common industry standard data flows. Dotted lines represent data flows that are less established and/or occasional data flows.

Flow of work and recording metadata: diagram legend

PRE-USAGE					POST-USAGE			
Works								
W1: Works information	**W2: Verified works information**	**W3: Works information for credit purposes**	**W4: Works information for lyrics**	**W5: Works information from unpublished writers**	**WU1: Usage reporting**	**WU2: Distribution of publishers' income with metadata**	**WU3: Onward payment to writers with metadata**	**WU4: Distribution of writers' income with metadata**
• Work Title • Work Sub-Title • Writer Name (co-writers) • Writer Identifier (IPI Number if known / available) • Writer Share	• ISWC (if known / available) • Work Title • Work Sub-Title • Writer Name • Writer Identifier (IPI Number) • Writer Share	As W2, excluding shares	As W2, excluding shares	The same dataset as W1 provided by unpublished Musical Work Creators directly to Authors' CMO.	DSP usage reporting to Authors' CMO/SPV (Special Purpose Vehicle) contains streaming usage data presented at a recording level with ISRC, Recording Title, Recording Sub-Title, Artist Name and Work & Writer info if known. Other usage info related to financial agreements may be reported.	Post analysis and claims, payment of Publisher income 'statement' (out of scope), will contain: • Recording info, incl. ISRC • Work info, incl. ISWC	Onward payment 'statement' from publishing services to Musical Work Creators (out of scope), likely to contain some metadata: • Recording info, incl. ISRC • Work info, incl. ISWC	Authors' CMO royalty distribution to Musical Work Creators containing usage / royalty data. May contain associated metadata.
Recording								
R1: Recording information for sessions	**R2: Recording information for master**	**R3: Recording information to distributor for release**	**R4: Recording information to DSP for launch**		**RU1: DSPs deliver usage reporting to recording licensors**	**RU2: Aggregation / distribution services deliver usage reporting to labels**	**RU3: Label services process usage and pay royalties**	**RU4: Label services pay studio musicians and personnel (usually at point of performance, rather than post-usage)**
• Recording Title • Recording Sub-Title • Artist Name • Artist Role • Contributor Name • Contributor ID (e.g. IPN Number) – by exception • Contributor Role • Instrument Type • Media Files Artist and team hold sessions and create recordings (assets and metadata). Final mixes of assets and metadata are gathered, often by studio production and artist management.	As R1, plus: • ISRC • Contribution IDs if available (e.g. ISNI) – by exception Label services collate recording (and product) metadata and assigns ISRCs to go to mastering studio. Mastering engineer creates masters. Label services receive final deliverables (media files and artwork) and finalise recording metadata (including recording and work contributions and samples).	As R2. Label services create final product metadata, determine campaign and deliver to distribution service, with instructions for delivery and launch.	As R2. Distribution service delivers recordings to DSPs, MRT services and other parties.		DSPs typically use their own proprietary formats, so data elements vary but typically include: • ISRC • Recording Title • Recording Sub-Title • Artist Name DSPs deliver usage reporting to licensors (aggregation/distribution services or label services, depending on the agreement).	Services use their own proprietary formats, so data elements vary but typically include: • ISRC • Recording Title • Recording Sub-Title • Artist Name In the scenario where the DSP has been licensed via an aggregation / distribution service on behalf of a label, this service forwards usage reporting to label services.	Royalties statements vary by label service but would typically include: • ISRC • Recording Title • Recording Sub-Title • Artist Name Label services process usage and determine royalties payable to contracted and featured artists (which may be paid via their management teams), and other third parties. Label services provide royalties reporting to artist and their representatives.	No data elements as payment precedes metadata collation. Payments to studio musicians are usually on a per session basis (see musiciansunion.org.uk/rates) at the point of performance.

Flow of work and recording metadata: identifier descriptions

ISWC (International Standard Works Code)

- **Governance**: ISO 15707, Registration authority CISAC, Various CMOs (Collective Management Orgs) are local or regional Registration Agencies.
- **Accessibility**: CMOs, IMEs (Independent Management Entities; a non-voting CISAC membership level) and Publishers have access to the ISWC Allocation Service (IAS) for new ISWCs and the ISWC Resolution Service (IRS) for existing ISWCs. Larger Publishers have direct access if technically capable and smaller Publishers through their local CMO. An individual look-up service is available (https://iswcnet.cisac.org/).
- **Adoption**: The key common international identifier for Works. Broadly used directly by all CMOs and Publishers. Some DSPs and 3rd Party data management/enrichment companies have special access to retrieve ISWC metadata. Direct access by Songwriters or general public is unusual, Songwriter access to ISWC is primarily through their local CMO or publisher.

IPI (Interested Party Information)

- **Governance**: Full governance authority CISAC (managed and maintained by SUISA obo CISAC).
- **Accessibility**: Full access to CISAC member CMOs and Client IMEs through CIS. Publishers currently have access through bulk file or API access to a restricted (lacking links between identities) or a similarly abridged version that is extracted and available via CD-ROM on a quarterly cycle. Direct access by Songwriters or general public is not possible.
- **Adoption**: The key common international identifier for Work Interested Parties (Songwriters and Publishers). Broadly used by CMOs and Publishers, in some instances compulsory for registration. Partial usage by Songwriters primarily through their local CMO or publisher.

ISRC (International Standard Recording Code)

- **Governance**: ISO 3901, Registration authority IFPI, various MLCs are local or regional Registration Agencies (responsible for assigning the 5 digit ISRC prefix to registrants). Individual ISRCs are assigned directly by Rights Owners (Year + Designation Code).
- **Accessibility**: widely available, with many public individual look-up services (e.g. https://isrc.ifpi.org/en/). Whilst there is no central ISRC registry, there are also many publicly available APIs that provide bulk programmatic access to multiple recordings databases (e.g. Spotify Public API).
- **Adoption**: widely adopted identifier for recordings, used by all recording producers, users and licensees of the recording, contributors to the recording, MLCs, broadcasting organisations, media libraries and archives, musicologists, teachers and software developers.

ISNI (International Standard Name Identifier)

- **Governance**: ISO 27729, governed by the ISNI International Agency (ISNI-IA) and operated by OCLC. ISNI Registration Agencies are licensed by ISNI-IA to assign ISNIs for their own purposes and also for other third-party clients.
- **Accessibility**: individual look-ups via public search database (https://isni.org/page/search-database/). Assignment and bulk retrieval is only available to Registered Agencies.
- **Adoption**: adopted by national library services across the world. Within the recording industry, some DSPs and labels are now using ISNI and a small number are Registered Agencies.

IPN (International Performer Number)

- **Governance**: Managed by SCAPR on behalf of all MLCs that are members of SCAPR (Societies' Council for the Collective Management of Performers' Rights) (over 60 MLCs)
- **Accessibility**: Available to all MLCs that are members of SCAPR via API and web application, to both allocate and retrieve IPN numbers. Additionally, the IPN retrieval service is now available to recording producers who sign up to the IPN User Agreement (via the 'IPN Dissemination Project' initiative), via both API and web application.
- **Adoption**: used by all MLCs but very limited outside of this community. To date, rollout to recording producers has largely focused on Major labels.

3.0 Interview Findings

Introduction

This part of the report covers the key findings from individual interviews and workshops, further written responses to the questions, and other sources as outlined in the methodology section. Findings are broken down by sector and also include input from industry expert TSG members.

In the initial interviews we asked the following open-ended questions of all industry sector interviewees:

1) Please describe how metadata is created and captured within your business.
2) Please describe what works and what does not, including examples of missing /incorrect metadata including any issues that may delay the assignment of an ISRC and/or an ISWC.
3) Please provide any use cases of problems encountered with incoming metadata and then communicating that same information to 3rd parties including Affiliates, Neighbouring Right CMOs, Distributors and DSPs.
4) Are you aware of any existing efforts to bring together the ISWC and ISRC? If so, please provide details.
5) Are you aware of any education and awareness initiatives focused on metadata standards and processes? If so, please provide details.

For the music creators' sector, we used a slightly different set of initial questions:

1) Please describe what works and what does not, including examples of missing / incorrect metadata and for cowritten works incorrect / disputed shares including any issues that may delay the assignment of an ISWC.
2) Please provide any examples of problems encountered with incoming metadata and then communicating that same information to 3rd parties including music publishers CMOs, distributors, labels, and DSPs.
3) Please provide any examples where you are aware of difficulties in obtaining or providing unique identifiers for yourself or collaborators.
4) Are you aware of any education and awareness initiatives focused on metadata standards and processes? If so, please provide details.

3.1 Creators Group Interview Findings

Introduction

We conducted interviews and an online survey across the main creator communities, including representatives from the Council of Music Makers (CMM) trade bodies (Ivors Academy, MU, MPG, FAC and MMF) songwriters, session musicians, producers (and other studio personnel), self-releasing artists, electronic artists, and music managers. The key findings are presented below.

3.1.1 Songwriters: multiple writers and fragmented ownership

Creative process

It is now common for songs to have many writers, sometimes working remotely and never meeting in person.. In other cases, songs may be written and demoed by one team of writers, then transferred to a different team of writers, before becoming part of a finished product. One songwriter reported a recent example where a major label R&B track listed 26 writers.

Some respondents commented that writer shares are usually not agreed at the point of creation of a song which some interviewees believed was still required. This should no longer delay registration due to the ISWC Allocation Service (IAS). This system, launched in September 2020, allows for an ISWC to be allocated from the outset without details of writer splits in place; the only metadata required for initial allocation is the song title and all the writers' IPIs. The use of samples and interpolations further complicates ownership and metadata.

The lack of agreement on shares at the point of creation may be partly attributable to uncertainty over who is entitled to be classified as a writer. One songwriter implied that some managers, producers and featured artists may take advantage of this uncertainty to unfairly claim writer shares.

Publisher registration process

Some songwriters reported that publishers often register only the writer(s) who is signed to them without considering whether other writers were involved. If writer shares have not been previously agreed, the publisher may claim the percentage they believe their writer is due without clarifying or verifying this information. There was a common belief that 'the system'

would automatically capture other parties' interests and merge the disparate information to correctly split writer shares. However, the experiences reported in our study suggest that this is not always the case. Linked to this one song may be registered multiple times by different publishers, with the total writer shares for that song equalling more or less than 100%.

DJ-writers: complexity in creation and release process

Electronic Dance Music (EDM) presents unique metadata issues due to frequent remixes, live performances, and unclear track titles. One interviewee reported that DJ mixes and mashups often contain uncleared samples, making it difficult to track and credit all contributors. Mixes may then be released as a recording in its own right, for example, on a radio show, a podcast, or a streaming platform. Each track within the mix should be eligible for its own ISRC, according to this respondent, but this is challenging in light of the IFPI standard to issue one ISRC for an entire recording i.e. the entire mix.

"[Identifiers] are a problem in the electronic genre where you're not really using the master [recording], and if you are, you're manipulating it. You're playing it live; it's being mashed up and turned into another recording, which has another ISRC… It is just exponential how many derivative pieces of content you can have for a particular recording."

EDM track titles are often not confirmed between creation and release, and sometimes not even when the tracks are disseminated on streaming platforms. One respondent reported that labels might test the market by naming tracks as IDs (e.g. ID 1, ID 2, etc.) to build hype around the anonymity of the DJs. Each track would have its own ISRC, but when that same (or possibly edited) track is 'officially' released later with a title rather than an ID, it would have a different ISRC. This may lead to confusion and difficulties with royalty payments.

3.1.2 Session musicians: complexity in recording projects

Line-up

Session musicians, also known as non-featured artists, are musicians that provide instrumental or vocal backing for a recording, typically on a freelance basis. In the UK, session musicians are required to complete a consent form for commercial recording sessions with the major record labels and many independent labels. These forms are collected by the label and the Musicians' Union (MU), and the MU passes this information to Phonographic Performance Limited (PPL) monthly via a data sharing agreement. This

process represents a key way in which session musician metadata, such as names and identifiers, is captured in the industry today.

Session musicians are often added or replaced during recording, but these changes are not always reflected in metadata. One organisation commented these changes in musician can be due to seeking a different style or standard of performance, while some may be omitted for editorial reasons. The organisation reported that these changes are rarely conveyed to the MU.

These issues are especially problematic for film soundtracks. A soundtrack is broken down into ‘cues’ (i.e. sections) and often different musicians play for different cues e.g.; a string section featured in some cues and not others. However the metadata associated with each cue usually lists the entire musician line-up rather than the specific musicians involved. One respondent suggested that a system enabling the correct musician data to be embedded into the master or stem recording, at the time of creation, would be invaluable.

Licensing

One respondent highlighted an issue whereby a Master Rights licence for a sound recording, granted by a record label to a third party, does not include cleared session musician rights. This respondent reported that users may not be signposted to the ‘appropriate Union or Guild’ that most Master Rights proformas advise to clear session musician rights through. This is in contrast to the USA, where most record labels have an agreement with SAG-AFTRA (the Screen Actors Guild–American Federation of Television and Radio Artists) to clear session musician rights automatically on a set percentage.

Recording titles

The lack of definitive track titles, particularly for major soundtrack recording projects, presents another metadata issue affecting session musicians. One respondent commented that the title of a recording may change between creation and release including the use of alias names for a project for confidentiality purposes. The final title for a recording may not always be communicated to the musicians involved and consequently it may take some time for musicians to register their interest with PPL. This issue is especially acute for film soundtracks, with temporary cue titles given a different name at registration stage, which are often not linked to the final title of the film.

3.1.3 General: issues with unique identifiers

Lack of consistent identification system

There are three main identifier numbers available for creators: IPI (Interested Party Information), IPN (International Performer Number) and ISNI (International Standard Name Identifier). However, respondents reported that these numbers are not used consistently or universally and are not always easily accessible. One songwriter and publisher said that CMOs have a vital role to play in ensuring IPIs and IPNs are accessible and verified, but levels of accuracy and transparency vary between CMOs.

Regarding session musicians, one membership organisation said that they would welcome a greater uptake and global recognition of ISNI numbers for session musicians, as this would help their internal processes. The organisation reported that many session musicians do not have an ISNI number.

It was also reported that some organisations have their own identifier system for their members in addition to IPIs, IPNs and ISNIs.

Misspelling and duplication of names

Most songwriters reported issues with the misspelling or incorrect duplication of their name during the writer or song registration process. Errors may occur when a writer is registered across different CMO databases, and further complexities arise if a writer uses an artist name or pseudonym (which is often the case). Uncommon or non-English language names were reported to be prevalent in the EDM genre, increasing the risk of errors when registering EDM writers. One respondent commented that some CMO databases are unable to accommodate special characters or accents, meaning that different databases have different spellings of the same name. The registration of co-writer names was seen as a common way in which errors could proliferate, since obtaining the correct information from co-writers can be reportedly challenging.

One songwriter said they tried to mitigate inaccuracies in the spelling of their name by having multiple IPI numbers: *“I've tried to pre-empt errors in my name or artist name that might occur by having multiple IPIs. I have one for my passport name and a few for all different spellings of my [professional] name. There might be others, but how would I know?”*

3.1.4 General: errors, omissions, and transparency

Errors, omissions, and a lack of transparency in metadata were widely reported among the creator community. One songwriter said it was common to discover discrepancies such as incomplete work registrations, multiple mismatching registrations and 'ghost accounts[8],' and sometimes works not being registered at all. In some instances, songs with similar titles might be conflated because they are mistaken for the same work. In other instances, a song might be transferred to and re-registered by a different publisher without the songwriter's knowledge. The lack of a notification system for creators, for example, to inform them of updates to a song's registration was seen as a basic gap in the metadata ecosystem.

An organisation representing session musicians commented on the particular challenges for accurate metadata in classical music. This is in part because the metadata captured by ISRCs does not include 'composer' or 'writer' and does not point to ISWC codes. Much classical music does not have distinct or descriptive titles and is therefore reliant on the composer name in order for the music to be identified (such as *James MacMillan's* Symphony No.4). Because composer names do not fit into any of the metadata categories required for an ISRC, composers are often listed as 'artists' on classical tracks, but this is inaccurate.

One writer suggested that the low entry-bar for uploading music to Digital Service Platforms (DSPs) exacerbates metadata problems for creators. The competitive environment for DSPs means that the upload process is often made as frictionless as possible, which can as a consequence result in lower standards for the metadata associated with a track.

A number of music producers highlighted the impact of poor quality metadata as not just leading to omissions and errors in royalty payments but also having wider financial implications. This is because credits are also often linked to awards (e.g. Grammys and Brits), which in turn help creators secure new work. According to these respondents, credits represent both financial and social capital.

8 A ghost account is one that appears to be a genuine working writer's account but lacks an appropriate IPI or other identifier to link the account to the actual active account. Monies allocable to these ghost accounts are not linked to the real writer account unless they can be identified by the writer and /or their representative

3.2 Music Publishers Group Interview Findings

The publishers who were interviewed were predominantly from the largest international music groups and a number of the key independent music publishers.

Q1. Describe how metadata is created and captured within your business.

Responses to our study showed that the basics of metadata capture are the same for all music publishers. The key activity is capturing all the relevant and necessary data sets to make a compliant Common Works Registration (CWR) submission to CMOs and other third parties.

Different types of publishing deal may affect the way in which metadata is captured. Under an original publishing deal, involving active songwriters, publishers generally receive song metadata from the writers themselves or their representatives. The exact nature of the publishing contract, for example, whether it is an exclusive songwriter agreement (ESA) or single songwriter assignment (SSA), may lead to nuances in how metadata is received and captured.

Under acquired catalogue deals, where one publisher has bought the catalogue of another publisher, the acquired works may be transferred with a data file or other form of data record. Administration agreements, where an original publisher mandates an administrator publisher to licence and collect on its behalf, also necessitate the transfer of data from one publisher to another. Data authority and accuracy will be variable depending on the quality of the data maintained by the original publisher.

Sub-publishing deals and co-publishing deals represent other forms of publishing agreement, again with different methods of metadata sharing and capturing. One respondent reported that their sub-publishing clients typically send them CWRs, which are then ingested directly into their own system.

Metadata from writers

Metadata received from writers, or their representatives usually includes elements such as work title, writer name(s), society, affiliation, writer share splits, and potentially writer IPI numbers. One respondent stated: *"We consider data that is delivered to us by the original copyright holders [writers] to be authoritative data."* This data would then be input to the publisher's internal system, often by a copyright team within the organisation, to create a

CWR submission. Many publishers reported that they use bespoke proprietary systems to capture, and store works metadata and prepare registration files.

Ideally, co-writer names and IPI numbers are delivered to publishers from the outset. However, many respondents commented that this is not always the case and obtaining co-writer information can be challenging. One respondent said that they try to acquire information from other publishers: *"At its simplest we'll make sure the information about our writer is correct and try to get as much as we can about the other writer from their publisher, but it's obviously not authoritative because we don't represent them and visa-versa."* Other respondents reported that they try to obtain co-writer IPI numbers from CMO databases, but this is a manual process and there is no guarantee that IPI numbers can be easily located – particularly since some songwriters do not have IPI numbers (either by choice or because they are yet to register with a CMO). While acknowledging the importance of thorough and accurate metadata for the purposes of a CWR, a number of publishers commented that they generally prioritise the metadata about their own contracted writers above co-writer metadata. One respondent stated: "We have to prioritise the writers we sign – that data will be perfect. It's the job of the societies and the copyright companies like PRS, ICE and all the other societies and externals to create that wider picture and complete the data."

Metadata from labels

Several publishers reported that it is beneficial to include 'label copy' metadata from record labels, such as the artist name, label name, ISRC, or release dates, alongside publishing metadata. This is because transacting both recording and publishing metadata to CMOs can help identify work exploitation and invoice direct licences accurately. However, publishers said there is no standard method for sourcing recording metadata. Sources can include third-party aggregators such as BMAT, the IFPI international ISRC database, labels themselves where existing relationships enable this, and data received from clients and licensees. Some publishers view ISRC search as a core activity, whereas others may see it as a peripheral data activity. However, one respondent noted that sourcing recording metadata is *"exposed to inaccuracy where these sources are not authoritative."*

Metadata from CMOs and the ISWC

Once publishers have registered their works with CMOs, they will receive metadata from the CMOs about those works. A key piece of metadata is the society ID, such as a PRS Tune Code, which is allocated to every registered work. Publishers generally receive society IDs from CMOs through two channels: i) copyright registration acknowledgement files (ACK

files), ii) subsequent royalty reporting, e.g. on common royalty distribution (CRD) files and iii) the society portal, notably for many smaller publishers who will use this every day.

Publishers may also receive ISWC information from CMOs after works have been successfully registered. However, CMOs such as PRS are not responsible for allocating ISWC numbers. Instead, after running its own eligibility checks, PRS/ICE submits works to CISAC (International Confederation of Societies of Authors and Composers) who manage and allocate ISWC numbers centrally. If an ISWC is successfully allocated to a work, the ISWC will then be added to the CMO's database. Some respondents highlighted the two new CISAC services for the sourcing of ISWCs: the ISWC Allocation Service (IAS) and the ISWC Resolution Service (IRS).

In addition to society IDs and potentially ISWCs, other metadata received by publishers from CMOs can include inbound usage and distribution files, which may include recording metadata.

Metadata from DSPs

Sometimes publishers or groups of publishers receive metadata from DSPs such as track reference codes and usage data.

Q2. Please describe any issues that may delay the assignment of an ISWC, including examples of missing /incorrect metadata and (for cowritten works) incorrect / disputed shares.

IPI numbers

The allocation of an ISWC is dependent upon all writer and co-writer IPI name numbers being included in the work metadata[9]. Most respondents reported that this requirement is the primary factor delaying the assignment of ISWCs because it is challenging to access and gather complete IPI information, particularly for co-writers signed to different publishers. One respondent commented: *"There is no easy way for a publisher to source IPI name numbers for non-controlled writers quickly and at scale … ahead of registration."* Another respondent pointed out that CISAC/SUISA does provide access to the IPI database for publishers, via i) the 'pocket book' CD-ROM that can be received quarterly, and ii) the 'CISNet for Rightsholders' portal. However, these services were described as not being user-friendly,

9 Although note the PRS-CISAC Accelerated ISWC Allocation Service, currently in proof-of-concept phase, which does not require writer IPI name numbers for a provisional ISWC to be allocated.

and comments from several respondents implied that they were not aware of, or did not use, these services.

Some respondents commented that even if they gain access to writer IPI name numbers, there may be separate challenges in linking these to IPI base numbers and True Names, as well as to writer display names.

Respondents also commented that although there have been improvements in current ISWC and the coming IPI access, these services still carry a high technical bar to their use which severely limits the size of the organisation that can utilise the services.

It was also noted that some genres, such as EDM and R'n'B, tend to involve a greater number of co-writers, thus amplifying the challenges of obtaining IPI numbers for all writers.

CMO affiliation

Some respondents reported that another issue which could delay the assignment of an ISWC arises when writers are not members of a CMO, as assignment of IPI numbers for non-members is a very manual task and disambiguation of common names is difficult (not aided by lack of full IPI access and writer/work contextual access). Some publishing firms said they would not submit a work for registration until a non-affiliated writer becomes a member of a CMO, to ensure proper validation and metadata completeness. Challenges and delays could also arise if international co-writers are members of CMOs in different countries.

Writer share splits

Some publishers noted that before ISWC allocation was centralised by CISAC it was managed by individual societies and ISWC allocation was often dependent on all writer shares being agreed. They pointed out, however, that this is no longer the case. The line-up of contributing writers has to be agreed (in other words, who will be receiving a share) but the exact share for each writer does not have to be agreed in order for an ISWC to be allocated. If there is any delay in deciding which writers will receive a share, this will delay ISWC assignment, but deciding the exact shares per writer will not. One respondent noted that difficulties in agreeing writer line-up and shares were more common among younger, less experienced writers, and particularly in certain genres which involve many writers, producers and samples.

Recording information

One respondent noted that delays in receiving information from record labels often delays them registering a song with a CMO, which would consequently delay the assignment of an ISWC. *"Often the song will get created, but we might not be registering it anywhere. We wouldn't consider it to be final as in there's still back and forth with the label. We're waiting perhaps to hear more about the release, the release date. It'd be great if we can get an ISRC."*

Duplicate ISWCs and catalogue acquisition

A number of respondents suggested there may be delays in the allocation of an 'authoritative' ISWC when the same work is registered by more than one publisher, or when catalogues are acquired. If, for example, a work with multiple co-writers is registered by different publishers, each providing slightly different or conflicting co-writer information, it is possible that duplicate ISWCs will be issued for the same work. It may take some time for this to be resolved via CMOs or via the IRS.

If a publisher acquires an existing catalogue of works, all with existing ISWCs, these works will usually need to be re-registered with a CMO to bring the publisher information up to date. One respondent reported that in the UK this process involves a duplicate ISWC being created by the CMO, which should then auto-merge with the existing ISWC once a certain financial threshold is reached and criteria met. The respondent said, however, that the timeline for merging was unclear and there was a lack of transparency over the process.

Territorial differences

Registering works in different countries was cited by some as another factor which could delay the assignment of an ISWC. This is because CMOs in different countries often have different registration requirements, including differing levels of criteria for a CWR. Particular differences were noted between the US and Europe.

Q3. Provide examples of problems encountered with incoming metadata and then communicating that same information to 3rd parties

Recording metadata

Several respondents reported issues with incoming recording metadata, particularly the ISRC. Inconsistent or incorrect ISRC information was described by one publisher as *"the biggest challenge we encounter"* because it could result in inaccurate or missed payments, impacting songwriter revenues. Respondents shared examples of invalid ISRC numbers,

duplicate or conflicting ISRCs, or incorrect ISWC to ISRC matches (made by a society or a third-party digital processing partner). One respondent commented that some distributors issue multiple ISRCs for the same recording, to be used in different contexts, while other distributors issue their own 'dummy' ISRC in addition to the original ISRC. The IFPI ISRC database was cited as the best place to research ISRC information, but according to some respondents it has limitations. For instance, it primarily comprises recordings released for the US streaming and digital radio market, therefore coverage of international recordings is more limited, and the database is not fully validated. One respondent stated that *"there is no definitive global database"* for ISRCs.

On a genre-specific level, one publisher reported that receiving metadata about classical recordings and audio-visual recordings tends to be problematic. This is because classical music metadata often does not fit neatly into 'title' and 'artist' fields, and cue names and numbers in AV recordings present similar challenges.

In terms of communicating recording metadata to CMOs, a number of respondents commented that it is very difficult to add new ISRCs to an existing work registration, when new recordings of an existing work are made. This is reportedly due to the reluctance of CMOs to ingest CWRs updated with new ISRC information, because CWRs are onerous to process. Simply updating a CWR is therefore usually not an option for publishers, so they may have to find alternative ways to add ISRCs to an existing registration.

Non-standardisation of CWR

Although the CWR is a near-universally accepted format, some respondents commented that different CMOs may use it in slightly different ways,. For one respondent, this means having to communicate slightly different versions of the same metadata to different societies, leading to additional administrative burdens.

Distributors and lack of ISWC

It was noted that distributors often do not or cannot include ISWCs in the metadata attached to the songs they distribute because there is no requirement for them to do so. This was reported to be particularly problematic for cover recordings, where a new ISRC is generated, but publishers are not able to deduce whether that ISRC 'belongs' to their work without having sight of the ISWC. In these instances, publishers usually have to rely on third party matching databases – but some genres, such as production music, are not always well represented in matching databases.

Inconsistency in writer names and IPIs

Some publishers remarked that a songwriter may have multiple IPIs, which might be used in different territories for different purposes. Some writers may prefer using their pseudonym IPI rather than their patronym IPI in certain circumstances, for example. One respondent commented that CMOs are not consistent in the way they handle multiple IPIs, meaning that publishers have to be mindful of how they submit IPIs to different societies.

Issues with foreign language writer names and song titles were noted by some respondents, particularly names and titles using unfamiliar character sets such as Southeast Asian languages. Respondents acknowledged that ISWC services nowadays work in UTF-8-character encoding standard, which can handle a wide range of characters, but there may nonetheless be data conflicts between ISWC information and writer names, if a writer has registered with a society whose system cannot handle foreign character sets or relies upon local translations.

USA data silos

Some respondents commented that rights management in the USA operates under 'data silos,' contributing to complexities in receiving and communicating metadata. One respondent described a *"very clear separation"* between performing rights organisations (PROs) and mechanical rights organisations (MROs) in the USA. This respondent explained that a US publisher would typically send a CWR to a PRO such as SESAC (the Society of European Stage Authors and Composers). SESAC would ingest the file and transfer some data to Harry Fox (its associated mechanical licensing organisation), who would then transfer some data to the MLC (the Mechanical Licensing Collective – an organisation established to administer blanket mechanical licences to eligible DSPs in the USA). According to this respondent, the CWR data that arrives at the MLC is usually incomplete, often without ISRC information. Another respondent reported that ISRCs are often missing in the MLC matching portal. It was also reported that IPI and ISWC information is not shared between PROs and MROs in the USA.

Data transfer between publishers

A number of respondents noted that acquisitions typically involve importing data from other publishers' systems, but the royalty and copyright systems used by different publishers may not always be compatible, potentially leading to data loss. Data migration between publishers and sub-publishers can also be risky. As one respondent said: *"A work can start out with complete writer-supplied data, then move through publishers and sub-publisher*

administrators who all use different databases. By the time it reaches the [local] society, it might be missing some of the metadata that was originally provided by the creators."

Complexity in reporting data

The digital and streaming era has brought with it greater complexity in reporting from CMOs and DSPs. One publisher reported that usage and royalty statements for its catalogue are now exceedingly long and complex, which presents challenges in communicating this information to writers. Publishers of all sizes are facing the technological challenges of ever-increasing data volumes from CMOs and direct licensing. CMOs need to be able to adapt and scale for the same challenges.

Speed of registration

A general point was raised that the speed at which metadata is received and sourced by publishers, and communicated onwards to CMOs, can affect the timing and likelihood of royalty payments. Some publishers may not be incentivised to provide fully complete or validated metadata to CMOs if what they do provide is sufficient to instigate payment. One respondent said: *"The tension in terms of the timing is you can spend a long time to get the data perfect, or you can get your part in quickly. The quicker you are, the more likely you are to get paid."*

Q4. Awareness of any existing efforts to bring together the ISWC and ISRC?

The Accelerated ISWC Allocation Service, recently launched as a proof of concept by PRS and CISAC as part of the Nexus programme, was welcomed, although it was noted by some that this was reliant on the ability of Spanish Point's technology to reconcile the ISWCs accurately, an aspect which at the time had not been tested.

Other aspects of the PRS Nexus programme[10] were also mentioned by most respondents, including the initiative developed to allow members to explore a subset of the PRS works database, The integration of the PRS and PPL databases was also highlighted: this provides a means for song rightsholders registering works with PRS to find any linked ISRCs in the PPL database, and vice versa for recording rightsholders, who can search the PRS database for relevant ISWCs when registering recordings with PPL. One respondent commented that there is potential to build on the features of this database integration.

10 https://www.prsformusic.com/works/nexus-programme

Some publishers pointed to the MLC's publicly available database, which includes ISWC and ISRC links. The MLC has reportedly engaged a number of third-party metadata solutions organisations to assist with ISWC-ISRC matching efforts.

MDX, the Music Data Exchange operated by SoundExchange in the USA, was mentioned by some respondents. The MDX portal facilitates the exchange of recording and publishing data between labels and publishers.

Respondents also mentioned several digital licensing collectives, digital processing partners, and other third-party organisations which specialise in matching ISWCs and ISRCs. These include BMAT, Blokur, Pex, Muzooka, AMRA, Salt, and Backoffice. There are also music industry working groups, such as the data exchange standard bodies, DDEX and the CISAC/ICMP ((International Confederation of Music Publishers) led SPF (Society Publisher Forum) as well as the ICMP Metadata Expert Group, which looks at metadata from a music publisher perspective.

Some respondents commented that an easier alignment of ISWCs and ISRCs can be achieved when a publisher has a partnership with an affiliated label or distributor.

3.3 Record Label Group Interview Findings

These interviewees included representatives from the major international record labels ('majors') and a number of successful independent labels, (including some nominated by the independent label trade body AIM) as well as the global 'voice of the recording industry' the IFPI.

Q1. Describe how metadata is created and captured within your business.

Metadata capture

Metadata capture starts at the recording stage but is complex because of the composition and recording processes can be involved and even 'chaotic' including changes over time such as the collaborators and contributors involved including writers and engineers. This would include whether samples are included in the recording. The metadata capture process

involves collecting information over the course of potentially many months, usually initiated when an agreement is signed for the intended release One interviewee added that there are always ways to service recordings before the complete or true metadata picture has been captured. Examples include some larger recording artists ‘dropping’ top secret tracks where almost no metadata information is shared until the last minute before release.

A&R teams can start the collection of metadata at the beginning of the creative process, before handing over to operations and product team. Each part of a label (legal, A&R, operations) handles metadata differently before it arrives in the central system. However, the 'norm' for recording is not a series of large studio sessions that label A&R are closely involved with. The label may well not be aware the sessions are taking place, and these could be informal ‘bedroom’ sessions.

Some labels use 3rd party software to create metadata for the core product elements which includes the ISRC and UPC. One label had an internal review process to ensure the metadata was complete for each release including basic data elements (title, artist) and ensuring it meets platforms’ specific guidelines.

Record labels are responsible for delivering the releases to the DSPs and as part of that currently the recording side of the Core Data Set (other than the performer identifiers such as IPNs) in an accurate and timely manner. This is because that metadata is needed to drive their core businesses, releasing recorded music to consumers. Their challenge is ensuring their own sources of release information provides accurate and complete data that complies with the different data-requirements and conflicting style guides of the major DSPs.

Metadata drivers/prompts

Although practices vary across different labels according to one respondent metadata is usually collated in two drivers or prompts that use spreadsheet templates for data capture. The first driver is the set-up of the overall Release (Release Artist, Release Title, Project Number, Types of Products and Track-listing) by the label. This metadata is submitted to the Operations Team who are responsible for assigning identifiers (ISRCs, catalogue numbers, barcodes) and for keying the data into a global label copy system. The second driver is the ‘Label Copy set-up’ involving delivery of the complete metadata, including contributions and sessions information. At this final stage, Quality Control checks are undertaken, and gaps are assessed, including confirmation of Artist DSP profiles, featured artists/remixers, and Preview Clip Start Times.

Different metadata capture scenarios

The metadata process for acquired, distributed and licensed recordings varies substantially. In these different scenarios, the metadata is sourced from the selling or licensor label and so the receiving label is very dependent on these third parties for the quality of the data and can involve major, independent and DIY distribution which adds layers to the different use cases. Additionally, the mechanisms for transmission and capture can vary depending on the scenario. DDEX messaging standards are preferred for metadata communication but only DDEX ERN (for delivery to DSPs) is prevalent but has limitations due to the use of different versions[11] and an incomplete take-up of specific composites.. The DDEX RIN[12] standard is still in the early stages of adoption and therefore not always feasible in every instance.

One trade body described several different scenarios for metadata capture each with their own unique challenges:

a) Record company, studio recordings;
b) Record company acquired recordings;
c) Record company, project-based recordings;
d) Self-releasing artist.

One label described the different scenarios for metadata capture within their own business that include their own unique data challenges broadly as:

a) Recording rights holder with responsibility for the creative process/delivery;
b) Recordings holder (i.e. under an exclusive license) and not responsible for the creative process/delivery;
c) Non-Exclusively licensed recordings for limited exploitation in the context of certain products;
d) Distribution-only recordings. i.e. not the rights holder and a 3rd party label are responsible for the data;
e) Acquired recordings.

Metadata related updates

The volume of metadata related updates varies a lot by label. Some labels trigger these for track related information as they do internal data quality exercises. For owned repertoire,

11 https://kb.ddex.net/implementing-each-standard/electronic-release-notification-message-suite-(ern)/

12 Recording Information Notification https://kb.ddex.net/implementing-each-standard/recording-information-notification-(rin)/

track data enhancements are routine e.g. titles, version titles and contributions. Other interviewees flagged the majority of their metadata updates relate to rights changes rather than track information.

Q2 Please describe what works and what does not, including examples of missing /incorrect metadata including any issues that may delay the assignment of an ISRC.

What (broadly) works

a) The current practice of gathering the contributions' credits by the label for new recordings was cited as an area that works broadly well;
   - It was claimed that the IFPI's ISRC guidelines are clear and implementation across the industry is reasonably robust. Crucially there was an understanding that an individual recording's ISRC code must stay the same when the catalogue is acquired by another label, even though the associated performer, musical work metadata can still change.
   - There was evidence that certain music publishers and record labels operating under common ownership may cooperate and interact regularly in relation to mutual metadata information including sharing relevant details for forthcoming releases. This relationship between the two 'sides' or divisions of the larger combined rights music firms has changed over the past decade. This cooperation typically includes where appropriate the affiliated publisher clarifying writer names and splits for their sister record label (especially in the USA). Nonetheless, even when the label and publishing business are commonly owned, they operate independently with less collaboration and connection than the above might suggest. This may be because the repertoire ownership is not always commonly controlled with recorded music ownership often being vested in the label, but the underlying composition rights handled by 3rd party music publisher(s).
b) The delivery of releases (recordings + metadata + deals/scheduling) to the various DSPs.
c) The usage reporting by different tracks/recordings received from the various DSPs.
d) The matching of DSP usage with in-house information to identify the relevant parties the label needs to pay including the main artist, any featured performers, producers and remixers.
e) Paying the right parties, usually on a royalties basis based on contractual terms
f) Providing royalty statements and data analytics to artists/managers.

What doesn't work as well

ISWC assignment and availability

The flow of publishing/work identifiers into labels to support the publishing sector were referenced by a number of interviewees as a key issue in the metadata ecosystem. Currently ISWCs do not usually exist at the point of creation or release for recordings of new works. That said very large numbers of releases are of 'covered,' remixed, remastered, or re-released works. In these scenarios the ISWC already exists or takes too long to be assigned or is not readily available at the time of release.

If an ISWC is available at the point of release as an ISRC then it can be included in the label copy data on day one to DSPs. However, labels will not hold back a recording due to a lack of certainty over works ownership. The data surrounding the ISWC may not be finalised for the time of release such as splits, publishers, IPIs and the connected author and composer data before release as the data is generally not readily available. In comparison, the ISRC is almost always assigned prior to release, and it is generally impossible to upload a recording to a DSP if an ISRC has not been assigned. The release process can be fluid and involve changes to tracks late in the pre-release cycle meaning the metadata will need to change.

New and duplicate ISRC allocation

One interviewee suggested there are inconsistent practices when a new ISRC code is allocated. For example, new ISRCs can be allocated incorrectly where there are only subtle changes to the underlying content without any meaningful creative input (e.g. the edit is only to a short period of silence after the recording itself, or a remaster is just a simple level change).However, there are scenarios where the allocation of duplicate ISRC codes is legitimate to ensure differentiation between exploitation of the same recording, for example a different ISRC for a soundtrack in comparison to the artist's original album. This is due to rights holders including streaming rights in non-exclusive, product specific licences to a recording and many streaming partners only report streams by ISRC.

New ISRC codes should not be allocated when a recording changes hands. Any ownership metadata is fluid and should be updated against the existing ISRC, although there are legitimate situations where this happens.

Duplicate ISRC code allocation can be due a number of factors including poor communication between multiple rights owners for the same recording. A unique point of allocation should always ideally be agreed between rights holding parties. ISRC allocation

typically involves verification across an internal database that includes ISRCs for owned, licensed and acquired content to protect against duplication. One contributor suggested aspects of the industry viewing an ISRC as an asset ID rather than the identifier for a specific recording contributes to increased level of ISRCs across the industry, particularly where the use of an ISRC as an asset ID has been built into certain systems. However, duplicate ISRCs can often occur especially when a label takes over a catalogue from another firm and doing so can involve losing streaming count and playlist data. One label suggested the duplicate ISRC issue is largely due to historical mismanagement of the code by some labels so likely a feature of catalogue repertoire rather than new releases.

ISRCs: Changing/updating existing recordings

Artists updating and changing existing recordings on DSPs which technically require a new ISRC but pressure to retain original ISRC to keep existing playlist and play count. The changes could be subtle (fade in on single version for the album) but technically should be a new ISRC. One label suggested the decision whether to use the existing or new ISRC is a subjective judgement call depending on the specifics of a given case. This is balance between an ISRC as a unique asset identifier against as an identifier for consistent underlying IP/contributions. For example, an ISRC might change in the case of a minor alteration to a recording whilst the underlying IP/contributions may remain the same in this case. Additionally, DSPs do not always correctly update ownership of tracks when catalogues change hands.

Lack of metadata awareness and education

The lack of awareness of the importance of accurate and complete metadata among key staff within a given label can lead to data gaps when collating information before an ISRC can be issued. This leads to incomplete incorrect data without standard processes in place. Artists and their representatives as well as those involved in the creative process similarly do not fully understand the importance of accurate and complete metadata at the point of creation to flow through the metadata value chain.

Works data responsibility and gaps

One label was resistant to taking responsibility for writer and works data as their firm is not an authoritative source. This view is widely held amongst label interviewees. This data is typically delivered by recording artists and/or 3rd party label depending on the metadata capture scenario. For example, creators typically do not know their IPI numbers and neither do labels have access to these numbers. Additional gaps were flagged consistently for non-

featured contributors, studio personnel contributions and studio sessions have proven particularly challenging.

According to one respondent, labels are reliant on publishers to provide accurate works information and associated metadata prior to or on releases but often data is wrong or incomplete, but the label cannot hold a release until these issues are resolved. Other interviewees suggested they do not rely on publisher source works data directly for release. They rely on the originators of the recording or the previous owners to provide this information alongside the recordings associated metadata where the new label was not responsible for the recording creation process e.g. existing catalogue transfer of ownership from another label.

Labels can act as a conduit between songwriters and DSPs but cannot validate the publisher data nor be held accountable for a DSP not fixing the data. Many labels intentionally do not share publisher data to DSPs as this data held is only correct at the point of capture and is not subsequently maintained or updated unless by request as this is not the label's data

Label data authority

A label can only be responsible for conveying data it possesses and is authoritative for e.g. sound recording metadata.. Each DSP has different processes, and some are good and relatively easy, but some genres have unique data issues with one described as '*the wild west'* given how the music is made with multiple contributors on all the tracks. It has been suggested that overall data quality can vary between different genres due to this. Frequently full writer information is not finalised and agreed, i.e. this is not confirmed at point of delivery to the label. The release process can be fluid and involve changes to tracks late in the pre-release cycle meaning the metadata will need to change.

One label trade body argued the requirements to deliver data should be made much easier. The industry is still structured according to different right types, with no single intermediary handling all the rights which means better data management is needed from each authoritative data source and data handler through the value chain. Data gaps can also emerge where changes to mandatory metadata field requirements by all parties requires constant enhancement of catalogue/older repertoire data for re-release.

Additional areas raised by respondents included; the full ingestion, display and pass-through of writer or performer credits by DSPs; the full uptake of DDEX ERN as the standard for digital release delivery, because some DSPs still operate their own proprietary formats, and many DSPs have a restricted ERN implementation (limited data elements, values and/or old versions). There were also expressed concerns regarding the flow of performer IPNs with access to the IPD database, directly or via a music licensing company as well as challenges in validating accurate and complete performer information especially where there are multiple contributors. The marked difference in how international rights in the recording and the composition function is a key problem for works data because a publisher's specific territorial rights may not correlate to the territorial rights needed by the releasing label(s) on any related recordings.

Q3. Please provide any use cases of problems encountered with incoming metadata and then communicating that same information to 3rd parties including Affiliates, Neighbouring Right CMOs, Distributors and DSPs.

Respondents highlighted examples of issues on incoming metadata which included where some of the required metadata is unavailable for older recordings or when a label acquires a recording that was created within a third-party project. It was also suggested DSPs do not always correctly update ownership of tracks when catalogues change hands.

Data checkpoints: incorrect versus missing data

One interviewee suggested although certain data checkpoints or hard stops could on the surface improve metadata e.g. requirements for data fields to be complete before passing through the metadata value chain, there is a risk this could cause more harm than good. For example, it could be argued having missing data is actually preferrable to partial or fudged data where incorrect data could be added to get through a given data requirement or checkpoint. Such discrepancies in incorrect data are harder to resolve than missing items. The real time sharing of update/identifiers is key to synchronicity as new data or corrections can be fed into the mix at any point in the chain from any number of sources.

Q4. Are you aware of any existing efforts to bring together the ISWC and ISRC

Initiatives highlighted by label respondents included:

- PRS Project Nexus and Accelerated ISWC Allocation Service. Major firms are aware of the current proof of concept trials to link the ISWC to the ISRC earlier in the release

process. There is clear potential for ISWC to be issued at the studio level, but this may only represent a minority of releases.

- CISAC's ISWC Allocation Service (IAS). There is a need to check the CISAC database to verify if an ISWC already exists – failure to do so may result in duplicates, but in principle labels could be first to request a new ISWC and this could then be picked up by publishers when they register. There is an awareness of this via DDEX. However, one label expressed their current distributor does not support ISWC input.
- Music Data Exchange (MDX) - SoundExchange
- Various for-profit data services companies such as Verifi Media and Blokur.
- There is potential for enforcing contractual obligations to better ensure works metadata is available at point of delivery of recording to the label.

A lot of work has been completed on the DDEX mapping system, and it is recognised there is potential to integrate DDEX within the song data structures. The fact that writer and rarely publisher data is not displayed on many services makes it harder to control and vet.

Multiple metadata IDs

The need to capture and use multiple different IDs can be problematic for the label, which needs to be cognisant of ISO standard identifiers as well as DSP mandated artist ID's This means that instead of every contributor having one single unique ID there is a plethora, which includes the IPI, IPN, ISNI and platform IDs. However it is important to note that this range of IDs serve different purposes. For example, some IDs identify artist personas and others exist to identify specific human beings. This is important for music creators who wish to not reveal their true identity and person using an alias.

Aliases, nicknames and partial names

Writer credits that include only aliases, nicknames and partial names (such as only a surname) are common, and it takes time to reveal a writers' true identities. There are often gaps in the writer names when the track is delivered. Pseudonyms are an issue given DSP requirements to provide accurate artist information. One respondent suggested the adoption and sharing of industry identifiers e.g. ISNI, IPN, IPI has helped begin to address this issue for contributors from across the metadata music streaming value chain.

Specific genre data quality issues

- Some genres were cited as having generally lower quality works data. This relates to how different the recording and the creation process can be in different genres with the contrast between country music and hip hop cited as an example by one label. The former is However; there is also recognition this may conflict with the existing heavy investments in local IT systems which has slowed integration across the industry.
- Author societies and/or their hubs (e.g. ICE) hold enormous pools of carefully matched recordings and works together with their ISRCs and ISWCs.

One label has created a credits programme platform that allows for the efficient capture of all the industry standard identifiers, including ISRC, IPN, IPI, ISWC and ISNI. Each of these identifiers could be passed onto the DSPs and CMOs through the various DDEX messages, including ERN and RDX as used by the DSPs and the NROs.

3.4 Authors Rights CMOs Interview Findings

This interviewee group included representatives from three of the largest CMOs in UK and Europe along with one from the USA. Other interviewees included an international Special Purpose Vehicle (SPV)[13] for independent music publishers and one of the main EU licensing and processing hubs.

Q1. Describe how metadata is created and captured within your business.

Works information

It was evident from the interviews that the most typical means for CMOs to capture metadata in relation to musical works are direct works registrations and use the Common Works Registration (CWR). Works registrations are usually carried out online by CMO members although it was recognised that some members still provide information in paper form using a standard file format. A large part of works registrations is carried out via CWR files from publishers, aggregators, societies, and Pan-European licensing hubs. The CWR files contain the metadata, typically including ISRC and ISWC.

13 Special Purpose vehicle – a term used to describe entities set up since the advent of the EC 2005 Recommendation providing various option including "Option 3" – the right for publishers to "choose a collective rights manager, to determine the entrusted online rights and their territorial scope" https://www.europarl.europa.eu/doceo/document/A-6-2007-0053_EN.html

One CMO mentioned that their songwriter/composer members can also bulk query the CMO database to search for their works information, whereas before they could only use an individual works query. Another CMO also advocated for the practice of registering many works in one go and with the aim to include as many details as possible at the first registration stage. This illustrated the challenges facing CMOs in not generating the works metadata as such but being responsible for collating the works data both for internal use and for onward transmission.

ISWC allocation System

Historically there has not been a willingness to allocate an ISWC to all works but the allocation of ISWCs has now become critical. The previous requirement from some CMOs to have a fully reconciled (i.e., 100% complete) ownership share picture is no longer a barrier when the ISWCs are assigned directly from the CISAC centralised registry, where no share information is required or captured). (The allocation of ISWCs has changed from a decentralised system that operated before 2020 and is now conducted via the centralised ISWC Allocation Service).

Metadata capture from DSPs, other CMOs and Publishers

For these CMOs there are two main sources of metadata capture. The first is via the CWR feed and the second, is from DSPs such as Spotify, Apple, Amazon via usage reports. These reports are often the first direct information the CMOs receive about the sound recording and the use.

The hubs have a further task to capture multiple CMO data and bring this together to develop a work registration picture across many territories. In addition, the EU hubs have direct relationships with music publishers (mainly Anglo-American) in relation to the licensing of their mechanical rights which post "Option 3"[14] enable them to license labels and DSPs directly, albeit through the hub whose role is to process those deals. The metadata related to this direct licensed repertoire comes from the relevant music publishers.

Metadata Enrichment

One respondent encouraged members to clean up historic metadata by providing missing IPI information and where appropriate ISWC information along with verifying titles and writer

14 Since the EC 2005 Recommendation, rightsholders have been able to withdraw their online rights from collecting societies to license them on a multi-territorial basis through the collective management organisation of their choice. This is known as the Option 3 market https://www.prsformusic.com/what-we-do/who-we-work-with/ice

names as this contributed to ‘data hygiene.’ This hub also used 3rd party services to complete and enrich members’ data.

Sharing Copyright Data

There was some disagreement over sharing copyright data as one interviewee claimed there is some sensitivity among certain CMOs sharing digital copyright data with other CMOs if the other CMO in question derives some benefit without bearing some of the costs. However, another CMO plans a to launch a linked database to enrich their metadata and to share with any organisation to compare links. They also plan to offer a portal to enable members to query IPIs. Another CMO is linked to various databases including CIS-NET, which enables them to enhance data, via their service provider. With one music publisher owned Copyright Hub, the data captured from their members is shared via CWR registrations to all global partners. This hub also sources data for enrichment including missing ISRCs.

Metadata Errors and conflicts

The development of machine learning tools has enabled CMOs to identify mismatches especially when dealing with data delivered to the CMO from a DSP. There are issues facing hubs relating to counterclaims which can vary across the different customers but there are plans to standardise the process. However, concerns were expressed about the CWR system’s ability to cope with previous or ‘lost’ claims as its focus is only on ‘forward’ claims.

Q2. Please describe what works and what does not, including examples of missing / incorrect metadata and for cowritten works incorrect / disputed shares including any issues that may delay the assignment of an ISWC and subsequent link to an ISRC.

General issues

Authors rights CMOs face distinct, wide ranging and complex issues in dealing with incorrect initial registration data and incorrect usage data from DSPs. A number of other headline issues were also identified including:

- *Metadata quality challenges*

  These challenges involve many inconsistencies including the overall provision of the ISRC, which is not always a hundred percent reliable despite the efforts made by certain DSPs. Other issues include the lack of standardisation in the way titles are presented, and metadata supplied by UGC providers was seen as very poor. However, there was a clear indication that received works data from CWR providers is mostly of a consistent quality.

- *Registration timing issues*

The question of works registration timing was a common problem especially when the registrations do not arrive until after the relevant CMO has started to receive usage details. There was also frustration expressed with the length of time taken to secure an ISWC despite the improvements stemming from the ISWC Allocation Service.

- *Uncertainty around the provenance of incoming ISRCs*

As has been noted in other interviews the absence of a central point of authority for ISRCs can cause problems. For authors rights CMOs, this uncertain provenance issue even involved recent fraudulent registering of 'dummy' works with ISRCs that were in fact associated with another completely different song. This lack of a central ISRC authority makes validation by CMOs very difficult and they have resorted to internal checking for anomalous patterns in new works registrations.

- *Poor historic data*

It was acknowledged that the focus of metadata problems may relate to the enormous number of new works currently arriving within the CMOs. However, one respondent highlighted the legacy of bad data issues associated with older catalogues. They noted that with many of these catalogue tracks, were they to be submitted today, would not pass the current works registration quality standard and would therefore not be acceptable.

Writer and claims issues

These are summarised below and highlight a number of problems under the following:

- *Cowritten works*

According to respondents so-called 'split copyrights' involving different writers and publishers commonly involve registration delays due to negotiations and finalising shares. DSPs typically have an 18-month window for back claims for these cowritten works. The issue is made more complicated because different publishers representing different creators register their claims for a single work all using CWR but without knowing details of the other owners or shares. In this common situation, the CMO is then expected to produce the joined-up shares picture and merge the different versions where appropriate. However, this process can be impaired where the incoming data from publishers and writers is inconsistent, with share claims sometimes exceeding 100%.

- *Cowritten works shares changes:*

Respondents drew attention to problems with documentation changes such as when two songwriters submit a work, and a third writer is later identified as having contributed to that same work. This writer change then needs to be added to the ISWC metadata, but the ISWC system will not recognise this as the same work, because of the different songwriter claims, and the system will need to assign a new ISWC. However, in this instance there are mechanisms in place for the CMOs to merge the two different ISWCs. The final 'merged' ISWC assigned is called the preferred ISWC and the original ISWC for the two songwriters is then archived.

- *Incorrect names*

Although malformed data/incorrect name spellings are common**,** according to one respondent the system does not rely on songwriter names and instead relies solely on an IPI number which means everything within the ISWC system is driven by knowing the IPI number. This reference to numeric rather than semantic identifiers is pivotal to understanding the ISWC system, but the statement calls into question the viability of accessing the IPI central database when/if the writer information available to the user is incorrect or malformed through misspellings or involves a pseudonym or a common name. Whilst it was recognised that pseudonyms can cause issues it was claimed that even with separate CAE/IPIs for a creator's true and adopted names these do not create separate ISWCs. This of course depends on the host CMO/Publisher linking the pseudonym IPI to the 'real' person IPI. if the various IPI name numbers for the same *person* are not linked together (i.e. have a common IPI base number) then the ISWC service would create a new ISWC unnecessarily. This is why it is important that there should be visibility of the name and base number relationships for publishers,

- *Non-CMO Member IPIs*

There was criticism of the lack of understanding of ISWC rules on IPIs for non-members and a belief these rules are not well known outside of Europe, especially the provision that an IPI number can be allocated even if the writer in question is not a member of a society.

- *Versions, Adaptations*

Every time there is a specific arrangement or adaptation of a work, it generates a different ISWC. Whilst the songwriter and performer linked information is often not accurate, the performer information can be used to identify the correct version of a work.

CISAC ISWC clarifications:

There is a desire to ensure the allocation of ISWCs is made easier and earlier in the release cycle. This is through the two processes. The first is the ISWC Allocation Service (IAS), where music publishers submit the musical work title and the IPI numbers of the creators, without share allocations or submitting the CWR, to secure an ISWC. The second is the new works notification process. This requires just one notification of a new work where the original publisher notifies the new work via their network of sub-publishers who in turn notify all the relevant societies worldwide of the new work. The original publisher host CMO makes this new work information available on CIS-NET. This is a centralised, distributed database to which 112 CMOs contribute their domestic repertoires and 62 with their international repertoire. CIS-NET contains almost 95 million works and more than 52 million ISWCs.[15]

Direct licensing

For digital repertoire, this involves a different tier of complexity for repertoire ownership data and licensing, and this process is managed by the Technical Online Working Group Europe (TOWGE) Steering Group in Europe which defines the repertoire subject to direct licensing or via a CMO /Hub.

'100% rule' for allocation of an ISWC

One CMO confirmed that the previous rule requiring all contributor shares to be identified and included, with shares totalling no more or less than 100%, is no longer an obstacle to obtaining an ISWC for a new work – thanks to the ISWC Allocation Service. The IAS does not require a new work to be registered with a collecting society before an ISWC can be issued, but it does require the IPI numbers of all contributors (since a society work number would not yet exist)[16]. The ISWC Resolution Service, which can reconcile ISWCs for existing works, does not require full IPI coverage because a society work number can be transacted as part of the Resolution request

CMO reliance on accuracy of data delivered

Societies are dependent on what is provided to them by their members and for some genres can include further data quality issues. For example, urban contemporary music, where there are frequently many contributors to a single piece of music, can often entail a lack of

15 https://www.cisac.org/services/information-services/cis-net

16 Again, note the PRS-CISAC Accelerated ISWC Allocation Service, currently in proof-of-concept phase, which does not require writer IPI name numbers for a provisional ISWC to be allocated.

splits agreement between the writers involved and their publishers, which in turn will delay a definitively agreed works registration.

CWR criticisms:
According to one US based CMO, the CWR format is a barrier for distributors and DSPs and the DDEX MWN format may be more aligned to the DDEX ERN industry-wide standard but CMOs all insist on using the 20-year-old CWR format. However, at the time of writing, the DDEX MWN, whilst able to convey Musical works data, does not support key aspects of works registration required by the CMOs, That said DDEX MWN is being further developed into a more comprehensive format for multi-territory/multi rights and usage registration from 2025.There is optimism among the music publishers this could eventually be the leading works format.

According to DDEX in late 2024 , MWN was developed to cater to the needs for exchanging work-level data between record companies and music publishers in the USA. Although usage of the full DDEX works standard (MWN, Music Works License and Letters of Direction) has not been widely adopted, it has been implemented between major companies. Recently there have also been MWN implementations by DSPs. MWN can communicate work information (on a share level) as well as the recording(s) in which the work has been used. DDEX recently were formally asked to expand the MWN standard to deal with additional requirements, some of which have been served by CWR, and some go beyond what CWR can deliver. DDEX stress that this extended MWN is not intended to replace CWR. A new version of MWN is expected by Q1 2025 and aims to cover all requirements of the existing MWN as well as CWR.

Incomplete metadata
This may be one of the most problematic areas for CMOs as the lack of complete metadata represents an ongoing issue with independent distributors and DIY artists whose own knowledge of how copyright law works in the sound recording and musical work is flawed. Some interviewees highlighted that many such firms leave out the composition data, especially when the tracks delivered to DSPs include samples.

Medley metadata
This type of release can cause problems where an individual song title is used as the main title to describe the combination of distinctly different works. Medleys also involve delays in securing final agreement for the component individual songs shares in the combined new ‘work.’

Cover Recordings

Cover recordings, which are performed by artists other than the original writers/performers, can be difficult for CMOs to track and especially problematic for identifying the linked ISRC.

ISRC and ISWC matching

One CMO collects ISRCs for matching with the ISWC and it is understood other CMOs also carry out a similar International Organisation for Standardization (ISO) music codes matching works. This ongoing matching process revealed that for one CMO, the relatively high number of ISRCs (130 million) was not mirrored by a corresponding number of matching ISWCs. There were in fact only 17.3 million ISWCs out of total 33 million works in their database, meaning just above 50% of this CMOs' works repertoire did not have ISWCs. Resolving this and improving the number of ISWCs in their database, has required an ongoing data comparison backfill from multiple sources.

ISRC Search tools

One CMO criticised Spotify's ISRC Finder for its limited search abilities meaning it provides only one link at a time for its limited search abilities. However, the website www.isrcfinder.com is not affiliated with Spotify but it does use the Spotify API. This search tool was not designed for general search but for filtering search results. PPL's database was not considered reliable for locating ISRCs, and MLC's database was considered unreliable and incomplete.

ISWC and IPI access

There were calls from some interviewees for more open access to existing ISWCs and IPIs.

Mismatch between DSP ISWC and ISRC data

Generally, the ISRC data received from DSPs is very good although the ISRC and works title data from some DSPs often do not match and there is no match between the ISRC and ISWC. However, DSP data quality varies and works data is often poor quality in some cases using the wrong ISWC. In this scenario, a CMO may have to use 3rd party dataset to add the correct ISWC or match with the correct ISRC.

Different data sources and metadata quality

There remain different challenges for CMOs in managing their domestic as well as, international repertoire and (for the EU Hubs) their administered repertoire. ICE has

changed the quality of works data over the past 10 years even with the enormous challenges of merging different national CMO databases into one.

USA market specific issues

Some interviewees highlighted issues specifically relating to the United States market. This included:

- The difficulties for the distributors in registering music works correctly, which it was claimed is partly responsible for 'lost' works data. One CMO argued for a work notification format that worked better than the CWR for the distributor community in making works registration more accessible and incentivising the distributors to assist in the administration of unmatched musical works. The preferred format was the DDEX MWN which it was argued was closer to the DDEX ERN industry wide standard.
- There are also still many problems with malformed and incorrect data in the USA and clear need to improve the validation process to rectify this. It was felt the introduction of the provisional ISWC could help resolve issues for multiple parties' registrations for a single work to create the necessary single song picture.
- The MLC database was criticised by another CMO as this database was initially built around the Harry Fox Agency (HFA) database as their authoritative source even though at the time of the MLC build, the HFA works data was not 100% correct.

Q3. Please provide any use cases of problems encountered with incoming metadata and then communicating that same information to 3rd parties including other CMOs, publishers, labels, and DSPs.

Two ISWCs but one ISRC

One CMO provided an example of dealing with an international music publisher, where they found the same ISRC had been used for two entirely different musical works, which should not be possible, and noted the publisher in question had not detected this anomaly.

Incorrect and duplicate ISRCs

Another issue flagged by one CMO was where publishers provide ISRCs that have already been used for a completely different recording having been given the ISRC information by the label. It was suggested this problem might be mitigated if there was a way of clustering multiple ISRCs together to show whether they each relate to the same underlying work.

ISRCs for UGC

It was noted that the ISRCs for user-generated content (UGC) differ from those initially delivered to audio streaming platforms and this represents an additional burden for the CMOs to handle.

Q4. Awareness of any existing efforts to bring together the ISWC and ISRC?

The Provisional ISWC

The granting of a provisional ISWC, through the Accelerated ISWC Allocation Service, is seen as an ideal means for ensuring labels can include an ISWC in their ERN feed to DSPs, who can then report usage on that ISWC to the CMOs to then align with the publishers' ISWC claims. The PRS-CISAC project was seen as a pivotal trial for enabling links between the ISWC and ISRC as early as possible in the release cycle.

DSP Databases

One CMO was certain the different DSPs must collect and retain records or links between ISRCs and ISWCs in their own databases. Another respondent also drew attention to the benefits for DSPs of the syndication of a database such as the MLC's that could replace what DSPs are having to do in-house at a very modest outlay. Such a scenario might help improve the uniformity of metadata across multiple DSPs and especially reduce variations in the ISWC and ISRC linkage.

CMO Database links

The current UK CMOs PPL and PRS cooperative efforts including their PRS database links are promising and can help when completing CWR.

ISWC and ISRC links

Another CMO plans to capture and start building links between ISRCs and ISWCs they receive and is leveraging existing or future data feeds from its partners to feed those links. However, there are current competition rules and governance rules that surround this process and there remains unanswered questions on the authoritative status for these links.

GDSDX in Japan:

The Global Digital Service Data Exchange (GDSDX) is an initiative led by the Japanese CMO JASRAC and supported by other Asian CMOs. This data exchange shares links between ISWCs, and society work codes and certain DSPs internal notifiers and aims to

"*provide a new cross-reference tool for matching streaming platforms' usage data with societies' metadata*"[17]

3.5 Neighbouring Rights CMOs Interview Findings

This interviewee group included the UK and USA neighbouring rights bodies and the international body representing neighbouring rights CMOs.

Q1. Describe how metadata is created and captured within your business.

Types of Sound Recording Metadata

According to one respondent the three top level components of recording metadata are:

1) *the base metadata* - which includes recording title, band/artist name, duration, genre, country of recording
2) *performer line-up data* - which includes featured and non-featured performers, studio personnel, and conductor
3) *rights ownership data*- including the details of the owner of the sound recording, which is usually a record label but can also be the performer in the case of independent self-releasing artists.

All three elements have their own challenges in terms of completeness and accuracy with some fields such as genre often poorly populated. It was noted also that the treatment of other core metadata elements such as "featuring" or "album version" is inconsistent and driven partly by different style guides required by each DSP.

Recording Metadata Capture

Sound recording metadata is sent to neighbouring rights CMOs in two different ways as repertoire and usage data. Repertoire Data is delivered via an authoritative ISRC into a sound recording metadata database and the data is delivered by labels directly or via their distributors. Usage Data includes all the distinct spellings, metadata combinations et al, as reported by licensees. The presence of ISRC in usage data is very inconsistent and this drives the need for matching systems that seek to identify which item of repertoire is being referred to in the textual usage data.

17 https://www.jasrac.or.jp/ejhp/release/2023/0419.html

Artist and performer metadata capture

This information comes to neighbouring rights CMOs from three main sources;

a) directly from the registered performers when they declare their contributions,

b) from international CMOs via reciprocal agreements, or

c) as part of label and/or authoritative third-party data feeds.

One interviewee suggested the metadata they received is not altered and must always 'synchronise' with that of the member rights owners. However, another NRO disagreed and stated they must frequently alter the metadata they receive. They are often in receipt of multiple registrations for the same sound recording and need to de-duplicate and merge this data. They also need to override some of the data that is provided, for example when they have resolved competing rights-ownership claims as the rights-owners do not always update their own records or re-deliver the corrected data.

There are three coordinated databases where artist data is ingested by the NROs:

a) ***International Performer Database (IPD*)**. This generates the performers' IPN identifier and the IPD records which the NRO holds the collection mandate on a per territory basis.

b) ***Virtual Recording Database (VRDB).*** The primary objective of the database is to allow CMOs to collaborate on establishing an authoritative performer line-up on recordings. CMOs are able to upload usage and find recording data that they do not already have in their local system. Once they have done so they then receive any future updates to the line-up on that recording through synchronisation files.

c) ***Repertoire Data Exchange (RDx).*** This is a joint venture between the two international record label trade bodies, WIN and IFPI, and is the industry data portal for the supply and exchange of performance (i.e., neighbouring) rights repertoire data between record companies and Music Licensing Companies.

Q2. Please describe what works and what does not, including examples of missing /incorrect metadata that may delay the allocation of an ISRC.

<u>What does not work well</u>

ISRC Rules adherence

One interviewee referred to the ISRC rules, which according to IFPI means "*a recording should only get a new ISRC if there's an audible difference being made*." Therefore ideally each sound recording would always have only one ISRC. However, with changes of ownership in recordings the acquiring party usually does not know all the actual ISRCs they

have acquired as part of that transaction and often rely on NROs for the ISRC information when acquiring sound recording catalogues.

There are also problems caused by catalogue changes when the prior owner/controller of the rights has not 'end-dated' their claims, and the new owner has not registered their claim. As a result, there could be a proliferation of ISRCs even though not at scale, although the assignment of new, duplicate ISRCs to existing recordings by firms claiming to be rights owners could become problematic.

Duplicate ISRCs – potential causes

One respondent also provided a likely explanation for the duplicate ISRC problem as resulting from what can be best termed as an '*ownership myth.'* According to this source, many within the recorded music sector do not understand the ISRC rules and believe that the ISRC relates to each release of a recording or that they need to create a new ISRC to claim ownership of a recording, neither of which is true.

This same source emphasised that an ISRC is meant to be an identifier of a distinct sound recording, which unless an audible change is made and a genuinely new sound recording is created, the same ISRC should persist with and be associated with that sound recording in all uses of it. Indeed, this respondent argued, the ISRC ideally would be embedded as a digital watermark or use something similar to permanently associate the recording with one ISRC. However, it was acknowledged that the actual code structure of an ISRC with the first 7 characters issued to a particular party, which is known as the ISRC stem, may have driven some of the observed poor behaviour especially in instances of catalogue transfers or changes of ownership or distribution.

Unusual ownership patterns

It was suggested that the clustering of ISRCs and looking across recordings with similar metadata could help resolve problems associated with incorrect ISRC information. This could include looking for any unusual patterns of ownership to prevent monies being paid to the wrong parties. However, this process was considered labour intensive and expensive to police effectively.

Non-featured and session musician data

One striking observation was the insufficient quantity of data relating to non-featured artists such as session musicians within metadata supplied by rightsholders. This respondent noted

this more granular, albeit relevant, information is very sparsely populated within sound recording databases.

What works well

One interviewee, whilst aware of criticisms of the ISRC standard, emphasised the positive attributes of the code and that *"ISRCs are the fastest, most precise, and reliable sound recording identification mechanism."* The same respondent acknowledged the ISRC standard is not perfect, and that its de-centralised assignment process allows for duplicates and bad data.

It was also noted that recent efforts including NROs collaborating with their licensees on data clean-up exercises to fill metadata gaps, including where there is no ISRC, has helped improve the quality of the usage data received by them.

Areas of improvement

ISRC rule adherence and the need for a central register

The interviews revealed the following key concerns among the respondents that would lead to improvements:

a) The decentralized assignment of ISRCs together with the lack of an official central ISRC registry/database contribute to problems in maintaining data quality. These concerns echo views expressed among some other sectoral responses.
b) Different rights owners submitting different ISRCs for the same sound recording. Arguably this is one of the main areas within the entire metadata supply chain where change is needed to address the problem of duplicate ISRCs.
c) There are also problems associated with sound recording rights owners submitting the same ISRC more than once but with different associated metadata for different tracks.

Standard data exchange formats

Even with the various DDEX message formats and tools like RDx that provide standard ways of exchanging recording data, there is an ongoing problem with firms not using these standards and relying instead on legacy/proprietary mechanisms for registering ISRCs.

Q3. Provide examples of problems encountered with incoming metadata and then communicating that same information to 3rd parties

Among the different responses the main examples of problems associated with metadata receipt and onward transmission included the following areas:

Creator problems

One interviewee drew attention to the complexity of rights and administration encountered by self-releasing, multifaceted musician/artist/writer/producer. It was argued that these creators and performers, just in the UK, have to manage 5 different codes (IPI, ISWC, ISRC, IPN and ISNI) on their own as well as the interaction with three different CMOs (PPL, PRS and MCPS). This complexity can clearly affect the accuracy and completeness of metadata provided by this substantial community of creators in the market.

Rightsholder disputes

NROs also indicated they have to contend with problems caused by conflicting rightsholders' claims. Notably it was apparent that different sound recording rightsholders will claim ownership of the exact same sound recording with conflicting claims triggering disputes. There is also a problem when different data submitters which includes rights owners, CMOs, or performers who can send conflicting participant line-up information which also can trigger disputes.

Rightsholder IDs

According to one source there is at the present time no standard identifier for record labels. This absence of a standard identifier for rightsholder labels is problematic and even though there is potential for the ISNI system to be deployed to disambiguate anomalies, it was noted that the adoption of this standard is currently low with linked data exchanges producing poor results.

Featured and non-featured performer definitions

One respondent stated that there is no internationally adopted definition for featured and non-featured performer contributions. This lack of consensus for these definitions can trigger different participant line-up information in different markets. Whilst the line-up on an individual sound recording should be a matter of fact and not be subject to any variance, it is equally apparent that different NROs manage the line-up data according to their own local distribution rules.

Incomplete ISRC data fields

One unique aspect of the ISRC information fields that apparently causes problems for the NROs is the frequent omission of the sound recording qualification metadata elements.

Metadata fields such as country of 1st publication, date of fixation, nationality of the rightsholder are often ignored and not submitted.

Data matching problems across NRO

One interviewee claimed there are chronic problems with the accuracy of data matching, from usage through to royalty allocation and these issues are endemic across the various neighbouring right CMOs. Solutions could involve cooperation between the IFPI/WIN created RDx portal and the SCAPR VRDB to include sharing the Core Data set. This solution could also include the IPD database to help enrich performer names submitted by RDx data sources with IPN numbers from the IPD database.

Q4. Awareness of any existing efforts to bring together the ISWC and ISRC?

Respondents identified similar efforts to bring the ISWC and ISRC together and echoed other sectoral responses in drawing attention to the PRS-CISAC initiatives targeting provisional ISWCs and ISRC/ISWC linking workflows. However, they also highlighted two north American initiatives, notably the MDX (Music Data Exchange) that operates alongside SoundExchange, which is evocative of similar initiatives run by PPL and PRS in the UK. The other initiative is the MLC's US public database of links and their DDEX BWARM monthly delivery of metadata.

3.6 Distributors/Aggregators Interview Findings

This group of interviewees included a variety of distributors (major and independent) as well as two aggregators (one small and one large).

Q1. Describe how metadata is created and captured within your business.

Distributors

A couple of the distributors interviewed set out how they have a metadata template that client labels complete setting out the required data for their releases. There are around 50 mandatory fields with different templates and metadata requirements for pop and classical releases. The metadata reported on the templates is ingested at high volume into the

system for validation which will highlight errors or missing information, but ISRC data can be updated.

One distributor requires their users to input metadata through their platform. After creating a profile, users can provide essential identifiers including IPI, IPN, and ISNI, alongside details like their legal name, performer name, affiliations to societies, and DSP links which the distributor releases.

Another distributor stated that metadata is created by their artists and labels directly, by creating their own profiles and then entering their metadata. The user's metadata attached to a released recording includes artwork, product title, artist information (including artist IDs, genre) and ownership information. The user is asked for an ISRC and if one is not available it will be provided along with the UPC and barcode. Writer information, IPIs and ISWCs associated with the release can be input but are not mandatory fields.

Aggregators

For self-service aggregators, the metadata is entered by the users via a User Interface (UI). Some use the platforms API or the XML interface with an automated interface for large volumes. The API enables updates to the metadata by the client, but the aggregator cannot deliver anything to a DSP unless they meet internal data standards such as UPCs and ISRCs. Invalid ISRCs are rejected, and the platform checks for ISRC uniqueness, although in the absence of a central repository of ISRC's it is unclear against what the platform is checking.

Aggregators operate open platforms allowing anyone to upload their music. But before the music is uploaded it still goes through a content review to ensure it fits with the DSP rules. The responsibility for metadata is on the artist.

A smaller aggregator explained the metadata was provided by whoever owned the sound recording. Capturing track level data including credits with songwriter information is compulsory (but not ISWC or IPI) as well as specific platform IDs. ISRCs are provided if the user does not have one.

Q2. Please describe what works and what does not, including examples of missing /incorrect metadata that may delay the receipt /allocation of an ISRC.

What works

In terms of what works one distributor ensures that, for digital releases, the track section will not be considered complete until every track has been given an ISRC. Their system will compare the ISRCs submitted, against the ISRCs they already have in their database to highlight any potential issue. The ISRC is also syntax validated.

One aggregator has a quality control application in which new repertoire goes through a range of checks including fingerprinting audio and vetting for copyright infringements.

Other comments included that supporting timely metadata updates and educating creators is helpful as are an International Standard Content Code (ISCC).

The starting point for metadata standards before delivery to DSPs by abiding by non-negotiable DSP rules, but the aim is for standards above those to improve overall data quality.

What does not work

In terms of what does not work there were comments across a number of categories. In terms of the flow of data, one distributor commented that labels do not always understand the relevance and importance of all the data fields. There were then several comments related to the data requirements of a DSP. This includes metadata requirements from DSPs changing frequently and different genres having different data requirements e.g., classical music releases are dictated by strict style guides (Opus et al), but pop release data issues revolve more around product level data. Extra DSP data demands such as delivery of publishing metadata would also be challenging as distributor systems are not set up for this beyond supplying the writer and publisher info usually from the label.

Distribution challenges

Interviewees also noted some distribution challenges. Split distribution can cause problems especially when one party wants to enrich the metadata. Also, where there is a change of distribution this often involves failure to transfer metadata to the new distributor. This seems to affect smaller labels most as they are less likely to retain independent records of metadata across all their releases and rely instead on third party services.

Data format challenges

There were also a number of comments about data format challenges, in particular related to ISRCs. There were several comments about duplicate ISRCs for the same product and distributors having to clean up duplicate ISRCs. To manage the process, some distributors allow for up to three different ISRCs for any singular recording in their system and then allocate 'preferred status' to just one. Other ISRC related comments include that older repertoire is often riven with historical ISRC errors, some label clients fail to secure ISRCs especially for one-off projects. In other cases, they may use incorrect ISRCs that were used in previous releases. Some responses suggested that the absence of a central ISRC database was an issue with one distributor using YouTube's Content ID to assess if an ISRC is unique.

Another aggregator, whilst supporting the principles and objectives of the UK industry metadata agreement, would struggle to resource the research needed to use and store ISWCs unless there was an API access to a CMO database.

DIY artist metadata quality

There were also some comments related to metadata quality associated with DIY artists. This includes some DIY artists being unwilling to commit to time to completing their metadata in full and the risk of them moving to other platforms that only ask for the bare minimum of metadata. Those DIY services may struggle to get users to understand the importance of metadata to the monetary side of their recorded music career.

Genre specific challenges

Other comments raised by interviewees included some genre specific challenges. Including that, in certain genres (e.g. French hip hop), there is a lot of anonymised information especially around contributor names and this it was noted was attributable to specific cultural nuances and norms associated with those genres. Also, that sample-heavy genres can cause issues with distributor reliant on users being honest but need to use a process of vetting releases for potential samples. Many 'beats' sample uses are non-exclusive so there is a clear need for sight of the license. Where the sample clearance is unclear these releases can cause problems on one DSP so are often excluded.

Other comments

Further comments include the struggle to get accurate data for neighbouring rights purposes including country of recording. Additionally, the gamifying of metadata has become an 'arms race' between digital platforms and how people enter data. This is mainly in relation to

credits in response to platform criteria for playlists. This is the primary artist, featured artist and remixer. Respondents also cited time pressures for releases contributed to reduced metadata quality and the lack of a trade body for distributors.

Q3. Please provide any use cases of problems encountered with incoming metadata and then communicating that same information to 3rd parties including labels and DSPs.

One distributor noted a challenge with incoming metadata being users with malicious intent try to exploit vulnerabilities in the digital value chain which are referred to as "anomalies". This included an example of someone posing as another successful artist.

However, the majority of comments from both the distributors and aggregators related to the flow of metadata to DSPs. Several of these comments focused on the differing data requirements of various DSPs. This includes some comments about the interaction between DDEX standards across different DSP platforms. There are differing style guide rules especially around title formats and genre mapping and different DSPs having different DDEX standards. There were also comments about different DSPs defining genre differently. In particular dedicated genre platforms may have a wider range of sub-genres when compared to a major DSP.

It was also noted that DIY, ‘direct-to-artist’ distribution platforms democratise access to DSPs, but this comes at a cost to data integrity given the ability for anything to be distributed to the DSPs. There has been a rise in fraudulent content, through attempts to get the content onto the DSPs by proxy via DIY platforms they service.

Several interviewees also touched on the issues related to some of the data codes. This includes inconsistency in Integrating ISWCs and IPIs. Also, that distributors do not collect ISWC information and for electronic releases many artists fail to register the work at all as the artists consider themselves producers rather than composers. Matching ISWC and ISRC codes can also be very challenging for distributors as the label clients often only have bare essential writer information.

Other comments from interviewees included the challenges of fragmented distribution deals and the reluctance to meet more stringent data requirements where there is a split distribution set up. This can also be the case when moving a repertoire from a DIY

distributor onto a label distributor and, when transferring distributors, all of the metadata must stay the same, to avoid losing play counts and playlisting.

Some other comments raised included that certain non-essential data such as performer line-ups become mandatory for neighbouring rights management. This included the priority is ensuring the metadata quality is up to a standard for it to be distributed on the recording side, so not much thought it given to capturing additional metadata for publishing. Additionally, music recognition technology firms obtain metadata from various undisclosed sources, leading to issues with 'authoritative' sources.

Q4. Are you aware of any existing efforts to bring together the ISWC and ISRC?

Interviewees raised the following examples:

- PRS Nexus Project and development of the Accelerated ISWC Allocation Service
- The IAS from CISAC

While not an existing initiative, one respondent distributor aimed to facilitate ISWC and ISRC links by transmitting the ISWC at the point of distribution whenever it becomes available. Another interviewee claimed that if a client had an ISWC available, that works data could be entered alongside the ISRC and passed to DSPs.

3.7 Digital Service Providers Interview Findings

This group comprises most of the biggest DSPs serving the UK marketplace.

Q1. Describe how metadata is created and captured within your business.

One DSP said at a high level, they require the content providers to send the metadata relevant to that content. The DSP details what data they expect and how they require it, along with all details on how that will be captured. Their proprietary system has been in place for two decades and offers a similar function to the Electronic Release Notification (ERN).

Content is uploaded to the DSP by record labels or distributors, and comprises three content types: music videos, sound recordings and art tracks. The core dataset includes the ISRC code; title (usually); subtitle, artist name, performer names and the roles. However, ISNI and

IPN identifiers are rarely supplied and for this DSP they were only includes in 1% of track data supplied.

Another DSP said the publishing/works information is obtained by sending the musical works information provided by labels or distributors to publishers and Collective Management Organisations (CMOs). This is done in monthly reports of the most popular recordings on the platform, representing 90% of the value generated during the previous month, in each country. They confirm the musical work, providing the ISWC and their ownership details. Hardly any publishers/CMOs in Europe provide the platform with songwriter or composer information ahead of the usage report stage because they consider that proprietary data.[18] The information supplied is ingested in their own system setting out works metadata ownership in each country. Many publishers, especially in the US, will proactively deliver works information to the platform and this can include a link to a sound recording with the ISRC code, so they can link the work info to the ISRC. This it was claimed was due to the different ways works royalty calculations are carried out in the US and Europe. In respect of the latter these calculations are done by the CMO who invoices the DSP but for the USA the DSP pays publishers monthly on the basis of the information provided to the DSP by the publishers (via the MLC).

Platforms also receive information through post-claims and invoicing. One DSP set out how, on a quarterly basis, they report usage and revenue to the publishing licensors (in Europe). They also provided a comparison with the US. In the US the payments are made monthly on the basis of publisher info supplied via the Mechanical Licensing Collective (MLC) whereas in the EU the CMOs invoice with claims but without providing the proprietary data on writers. This means the DSP cannot easily reconcile invoices, isolate conflicts, and only pay on what is cleared.

One platform set out that in Europe the time period for works claims to be resolved, either through rights conflict or correct owner identification issues led to market share payments, given the inherent acceptance that the data was bad and that payments could be approximated and late. This was in contrast to the US market.

18 This interviewee went on to describe their problem as " From the CMO point of view when they generate an invoice, that is the source of their distributions to the members. We don't agree because we want to be able to reconcile these invoices, isolate the conflicts, pay on what's cleared and what's not in conflict – to pay on that as soon as possible - and hold on to whatever is in conflict until those conflicts are resolved. But in the mind of the societies, it's already the end of the process and some of them distribute immediately or within a month to their members not allowing us to resolve the conflicts. That's where the disconnect is"

There were some comments about a trust issue between industry and some DSPs. One DSP believed labels have little incentive to provide accurate publishing data but unless they have access to unique identifiers to enable ISWCs to be allocated they end up using the label supplied works info as a fall back. This view was not shared by all DSPs, and one described the label supplied works information as the way to ingest works data and not as a fall back.

There is also reluctance for CMOs to share 'proprietary' rights data with the DSPs as there is a long-held belief among the CMOs that the DSPs would go direct to publishers and writers even though it is recognised CMOs are the only way to make this system work. The licence agreements with distributors and rights holders also mean they are the ones providing the platform with the information needed. It was also noted that the label provided publisher metadata also comes with the release, comprising songwriter names and arranger roles.

There were then further comments about some of the process specifics related to certain data types. One DSP stated they sourced the data from rights holders who deliver their products with an XML file. They currently only accept DDEX ERN 3.7 and 3.8 but do not yet support ERN 4.3. Rightsholders/content providers supply product level (artist name, barcode, European Article Number and Universal Product Code) and track level (title, artist, and potential publisher administration) data. But there is no direct data submission from publishers so data on work rights come just from the label/distributor. With this DSP they relied on the Mechanical Licensing Collective for publishing information for the USA but elsewhere was reliant on blanket licenses with various CMOs.

This DSP's metadata validation rules set a fairly basic level of minimum quality standards - UPCs, ISRCs, correct artist name, title information. If the minimum data standards were to be expanded, rejections would increase especially if they included musical works data.

Metadata flow is different depending on the use case. Labels deliver audio files, metadata, and publishing information and the DSP receives no data from publishers directly at the release stage. Labels or aggregators are the only source of the data and provide the song title and ISRC. The labels or aggregators can also input ISWC and writer names, but these are usually missing from this initial data feed.

Another platform saw the capture of works metadata as having different purposes One of these is to provide useful information to enhance the user experience such as credits and writer pages linked to recommendation tools. Another purpose for capturing the works data

was to enable the creation of stream usage reports, which are sent out to publishers' licensing bodies and then triggers the claims process that involves matching /linking the work to the recording.

DSPs capture metadata, including those elements under the "core" metadata if made available, from the DDEX ERN feeds provided by their content providers.

Q2. Please describe what works and what does not, including examples of missing / incorrect metadata that may delay the timely receipt of ISRC and matching ISWCs.

The majority of comments from DSPs about what does not work with the current process are centred around the volume of data being received by DSPs and the control they have over that data.

The sheer volume of content received makes troubleshooting very challenging. One DSP commented that there is little incentive to make sure metadata is correct given there are one million tracks uploaded per week along with ingestions from all of the large UGC delivery partners. Another DSP commented that self-released catalogues drive up the number of tracks on DSPs with independent artists likely to be much less aware of metadata standards.

There were then a number of comments about the amount of control DSPs have over data given they are at the end of the chain. DSPs set out how they cannot clean up metadata on behalf of content owners, so they have to push the onus for that back onto the distributor.

A number of the specific data issues that DSPs do not have the info to resolve relate to ISRCs and ISWCs. Some data conflicts identified by one DSP include a metadata mismatch to the wrong track; an incorrect match via an older repertoire database; or an incorrect ISRC; multiple ISRCs for the same track in different territories and then trying to work out the correct one. While writer names are a strong parameter for matching, but one DSP noted they receive minimal ISWC information.

Further comments related to ISRCs and ISWCs include DSPs reliance on content providers to supply ISRC and ISWC. It is rare to get any publishing information from content providers and even then, they may not be the authoritative source. Matching and a good claims process relies on the ISWC being available before a claim is made. ISWCs are often sent to DSPs after the claims are made. There are also some examples of bad practice with certain

tracks with incorrect ISRCs left uncorrected and passed on to certain aggregators who then assign new ISRCs. Many of the problems one DSP had seen on the sound recordings side are with multiple ISRCs often being tied to the same sound recording. This DSP found it hard to get ISWC information from labels and that there was a real disconnect with this data which created a challenge for them given they had historically relied on 3rd parties for this information.

One DSP described issues with how the integrity of the data when they receive it can impact on payments to songwriters. The DSP will often receive a song with one songwriter name attached to it, whereas in reality there might be a number of co-writers. Where there are multiple writers and the royalty splits are not correct before the work is on the DSP, it is very likely more than a hundred percent of the available royalty share for a song will be claimed in the end. Typically, these conflicts end up with songwriters being paid very late, because of the time needed to resolve the writer split conflict. Alternatively, the royalties end up in a pool or black box of unclaimed royalties because the platform cannot make sense of the available data.

There were some further comments related to the interaction with publishers. One DSP mentioned that publishers with the rights to use song lyrics actually often do not have the transcripts of the lyrics that they can send to the DSPs. Even when they do, they are not in a good quality. The question of the availability of lyrics was not explored in the interviews with the other DSPs or other sectors. The delay between the moment a DSP gets a new release on the platform and the point at which the publishing industry is able to identify the musical work is on average between three and six months.

Another issue flagged was the problem of European complexities and licensor data conflict. It was claimed that: licensing in Europe is very fragmented with both pan-territorial licensing and some localised societies with national market licences only, and associated ‘carve outs” to avoid duplication of pay-outs. There is apparently no easily accessible documentation of repertoire definitions including these ‘carve-outs.’

Q3. Provide examples of problems encountered with incoming metadata and then communicating that same information to 3rd parties

DSPs identified problems encountered with incoming metadata caused by formatting challenges, particularly around artist names and song titles, conforming to DDEX standards and missing participant data. This included users abusing the genre classifications, that are

crucial for search and prompts, by inserting multiple genres which is limiting their content on the platform. Certain DSPs also have a very specific set of guidelines and for others there is a need to cover more than streaming.

There were also comments about the quality of the metadata being received. One DSP commented that, for example, content creators with zero music industry experience have little chance of getting an ISWC. Also that there is a potential problem for DSPs if the publishing metadata comes from a non- authoritative source (e.g., the labels & distributors) as eventually the problem is for the publishers, CMOs and copyright licensing hubs to perform the matching.

There was also concern about the provenance of content as this impacts the availability and accuracy of metadata. Content delivered to the DSPs can be distinguished between known and unknown. Known content requires complete ISRCs (although fraudulent ISRCs have been spotted mainly from DIY platforms). Unknown content involves lots of gaps and missing metadata.

For User Generated Content (UGC) there may further issues in distinguishing known and unknown content and there are different rules applying to this within the USA and EU. There may be concerns due to the compliance provisions of Article 17 of the 2019 EU Directive on Copyright in the Digital Single Market.[19] The Directive makes clear in para 66 that the prevention of unauthorised 'online content sharing' regime applies to the larger service providers (defined as those with turnover in excess of €10 million and average monthly unique visitors above 5 million). As a result, currently all available content in EU is considered known and therefore authorised but in contrast in the USA, unknown content is still allowed on the service providers' platforms. Whether the EU Article 17 rules apply to the UK market post Brexit is unclear.

Q4. Awareness of any existing efforts to bring together the ISWC and ISRC?

DSPs shared various examples they have come across:

19 DIRECTIVE (EU) 2019/790 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0790

- Project Elixir, which was a collaboration between the Society of Authors, Composers and Publishers of Music, PRS for Music, and American Society of Composers, Authors and Publishers to improve links between ISRC/ISWC.
- They are aware some third-party metadata matching solutions businesses offer services to certain platforms to help with the matching issue, but the key issue is determining whether they can match the ISWCs to the existing store of ISRCs. It is not clear to other DSPs how effective these services are in serving creators interests downstream of the platforms
- In Latin America the major publishers have a back-office agreement with some societies to create a single database. This is based on the MLC model.
- Further integration of the publishers and music works information into any sort of DDEX structure would be welcome.

3.8 Solutions, Rights Firms & Experts Interview Findings

None of the interviewees in this category were rights holders but in the case of the solutions firms it was recognised that given they offer technical metadata matching solutions to various sectors (labels, publishers, CMOs and DSPs) they could offer unique perspectives and expertise in better understanding metadata flows across the digital supply chain.
The other participants in this category included rights managers (i.e. not rights owners/holders) acting for various parties such as individual creators or labels/publishers.
The third type of interviewee was the experts group made up of a small number of individuals with extensive experience in dealing with metadata challenges including in one case someone with deep knowledge of the music publishing sector, recording industry and collective licensing for both labels and publishers.

We asked the solutions firms as well as the rights managers cohort and the experts group the same five initial questions posed to the individual sectoral groups. In some cases, we showed them the different question sets for each sector (e.g., publishers, CMOs, distributors). Our hope was this would yield unique perspectives from those whose experience and in some cases, business covered most of the digital supply chain.

Q1. Describe how metadata is created and captured within your business.

The responses below are all from the solutions firms as these are the only participants in this sector who receive, and handle/process metadata almost always supplied by client rights holders or CMOs.

One solutions firm captures metadata via a web user interface where multiple stakeholders can input data into a central database. For larger batch or streaming data capture projects they use a comprehensive Extract, Transform and Load (ETL) toolkit to collect data from virtually any source and pre-process into DDEX notification formats.

Another firm processed both sound recordings and musical works metadata in standard formats (DDEX, MMD for recordings, CWR for works) or custom formats from clients. Once the metadata is ingested into its system, they run data quality checks, capture core fields for each entity to then reconcile with data from different sources to produce clusters that 'represent the same entity.' This clustering technique echoes similar solutions proposed by some NROs.

Another firm gets direct CWR delivery from major and independent publishers along with a data feed from the MLC and recording data from Merlin and the MLC. They have a database of 200 million recordings and 30 million works. Another firm has a database of 204 million recordings and 72 million works.

Q2. Please describe any issues that may delay the assignment of an ISWC, and /or ISRC including examples of missing /incorrect metadata and (for cowritten works) incorrect / disputed shares.

The firms interviewed set out a number of different points they had noticed relating to the delay of ISWC and/or ISRC. This included a claim that in the MLC works database only 17% are discoverable by ISWC and 50% of works in top publishers' catalogues in the MLC database have at least one conflicting entry. We note these claims are based on 2020 data.

One firm also reported that at one major DSP there was only 50% coverage of the musical work meaning 50% of the works used on the platform lacked any works identifiers. To compensate for this gap the platform created their own works identifier system (BOWI).[20] The intent of BOWI is to allow anyone to register works in real time as an open-source system. This same firm also reported that publisher clients do not always have the IPIs for

20 BOWI stands for 'Best Open Works Identifier' and is an alternative standard promulgated by Quansic (now part of Luminate) who also are the ISNI registration agency. Further information is available at https://bowi.io

all the contributors, and many times the number of contributors has not been finalised which complicates early ISWC assignment.

Other comments included still finding duplicate ISWCs as result of CMO and/or publishers providing either incomplete works data or providing the works data at the same time. Additionally, IPI shares need to add up to 100% (+/0.06%) so incomplete works or disputed shares are not eligible with delays at the CMO level due to lack of agreement. One firm noted that '*without clearly documenting and implementing robust Data Management and Governance programmes, it is very difficult to maintain high quality and trustworthy data, and many publishers interpret CWR standards differently.'*

Q3. Provide examples of problems encountered with incoming metadata and then communicating that same information to 3rd parties.

Respondents provided various examples including the role of DIY distributors. One firm shared a view that the DIY distributors issue a significant volume of music into the market, in many cases with lower levels of usage and often with inconsistent, incorrect, or missing core metadata. According to this source the DIY platforms do not require their customers to supply that data with the interviewee also suggesting that was because it is not considered good for the DIY platform business.

Other comments included issues with delays in the delivery of standard identifiers like ISWC to music publishers from the PROs. Data inputting can also cause problems with manual data spreadsheets being shared between several parties without strong input control mechanisms. This results in poor quality data and data management and leads to 3rd parties being sent inaccurate data.

There were also insights on some of the specifics around missing data including a lack of / incomplete information in certain core fields, non-trustable sound recording links, sound recordings missing their ISRCs, or malformed artist and title info and multiple formats used for encoding metadata beyond the standard utf-8[21]. We were also informed of a potential future problem for the ISRC coding system which it was claimed may be running out of codes to allocate given the current record label designation code is only 3 digits long.[22]

21 Unicode Transformation Format -8-bit

22 https://isrc.ifpi.org/en/isrc-standard/structure

Q4. Awareness of any existing efforts to bring together the ISWC and ISRC?

The respondents set out a number of different initiatives they were aware of. This includes BMAT Music Data Quality Solution, Tuneregistry.com, DDEX services, PRS nexus.

One DSP uses the Q2 confidence score tool (-100 to +100)[23] for matching the recording and the musical work there is also work to help DSP's identify potential issues and improve decision making.

Respondents also used their answers to this question to make some suggestions. One respondent set out how industry cooperation across IFPI, CISAC, SCAPR, ICMP was important given all have 'skin in the game' and represent important parties in the value chain. Additionally, record labels, music publishers and PROs need to be able to agree mechanisms to ensure verifiable links are created between ISRCs and ISWCs and these are made available to all commercial users. One respondent suggested there is a need for a global approach and for some of the entities in control of the identifiers to cede control and place the process in the hands of parties better equipped to manage the allocation process at scale and with speed.

3.9 Education and awareness: key findings across all sectors

1. **Creators**

Many creator respondents revealed a lack of understanding of copyright law and metadata fundamentals. For example, creators often did not appreciate the difference between performing and reproduction rights, which, when applied to music publishing, means the significance and value of their mechanical (reproduction) rights may be overlooked. It was common for creators to believe they only needed to join PRS, which deals with performing rights, rather than also joining MCPS or securing a publishing deal too, which would enable the administration of their mechanical rights. When registering a work with PRS, creators would often either omit mechanical rights information or complete it incorrectly (i.e. with no vehicle in place to handle their mechanical rights). Since streaming involves both performing and mechanical rights, the absence of (or incorrect) mechanical rights information means that creators cannot claim for or receive the full amount of streaming income they are due.

23 Confidence scores are routinely used in machine learning based systems to predict outcomes within a defined dataset. https://towardsdatascience.com/how-to-use-confidence-scores-in-machine-learning-models-abe9773306fa

Works with a mechanical rights gap are also less likely to be issued with an ISWC. The frequent lack of awareness of how musical works are managed, including how ISWCs work in general, means that songs are frequently registered *after* the release of a recording rather than before.

On the recording side of the industry, the importance of PPL in relation to neighbouring rights was not always well understood by creators. PPL's role also as the sole UK agent for ISRCs similarly evidenced a lack of awareness among self-releasing artists when it came to securing stems to create new ISRCs. Despite the efforts of PPL to ease the process for self-releasing artists to become their own rightsholders and own their own unique ISRC stem, it was reported that self-releasing or DIY artists still find the process onerous and difficult.

One manager commented that the overall metadata system does not work for creators. They said the system is complex, with many intermediaries and significant bureaucracy involved, and the use of industry jargon can be off-putting and exclusionary. Metadata was described as the *"unglamourous side of the business"* by this manager, which may be a further reason why creators often struggle to engage with metadata. Another respondent said: *"The system needs to change, based on how creators are, not change the creators [based] on how the systems are."*

Most respondents commented that there is a lack of education on metadata for creators and pointed to the need for more education and awareness initiatives. Existing initiatives highlighted by creator respondents included the CLIP (Creators Learn Intellectual Property) platform developed by WIPO for Creators and work carried out by DDEX. We were also made aware of several services offering creator credit tools and advice including Session, Audio Credit, and VevaSound. We note there was at the time little awareness of the PRS 2023 'Get Paid Guide' (a series of educational videos outlining the key metadata required by creators) among these interviewees.

2. Music Publishers

There was considerable awareness of educational initiatives among the music publishing sector respondents. These initiatives included WIPO's CLIP platform and the 'Credits Due' project developed by the Ivors Academy and the Music Rights Awareness Foundation. Also mentioned was the work carried out by DDEX and that of the UK Intellectual Property Office. The 'Get Paid Guide' was also highlighted, along with educational materials offered by other industry bodies such as the MLC in the USA. Music industry conferences and press campaigns were seen by some as an opportunity to draw attention to metadata issues.

One respondent commented that it would be beneficial to have a *"central point of reference"* for the whole music ecosystem, rather than potentially disparate information distributed at various stages throughout the industry process.

3. **Record Labels**

Across interviewees, there was a call for improved metadata awareness and training in the industry as most firms operate in silos. There was recognition among some interviewees of the need to better align formal and non-formal structures within the industry itself, since there are many artists and managers who do not fully understand the system. One interviewee suggested the rights system needs to be streamlined and there is a case for formal, certified metadata education across the industry. The IFPI was highlighted as providing detailed support for the correct implementation of the ISRC via their ISRC website.

Young and new industry entrant artists were in particular identified as needing better education on the need to collect correct metadata. However, it is recognised this is an issue across all creators and those involved in the creation process including recording artists, musicians, writers, remixers, producers of all ages and level of experience within the music industry.

4. **CMOs (Authors' Rights)**

There was some awareness of the PRS initiatives among CMOs, encompassing Project Nexus and the 'Get Paid Guide,' but the DDEX annual forum was the best known among respondents for improving awareness of metadata standards and processes. Notably, one European CMO had established its own dedicated education portal aimed at DIY creators, which provided an online tool allowing users to upload their sound files to DSPs with appropriate accompanying metadata.

5. **CMOs (Neighbouring Rights)**

Interviewees were familiar with various recent education and awareness campaigns such as 'Credits Due' and CLIP. However, one respondent recommended a shift of focus may be required, so that campaigns focus on what creators *need to know* – especially the need for specific creator identifiers such as IPI and IPN. At the time of the interviews there was little awareness of the 'Get Paid Guide.'

6. Distributors / aggregators

One interviewee noted that internal training and education within the company and across their label partners has led to data quality improvements. Another noted their pivotal role in educating DIY artists. As with other sectors, educational initiatives mentioned included the PRS Nexus project, CLIP, ‘Credits Due’ and the ‘Get Paid Guide.’

7. DSPs

Whilst among these interviewees there appeared to be less awareness of the educational initiatives mentioned by other sectors, there were some encouraging comments from DSPs, with one noting that they had witnessed a lot of activity at industry events about the ISWC allocation issue. One DSP also noted that they are very engaged with DDEX and ad-hoc working groups.

8. Solutions, Rights Firms, and Experts

As might be expected, the respondents in this group were aware of a number of initiatives. These included webinars made available by DDEX, CISAC, WIPO and IFPI, as well as discussion videos and seminars produced by several industry trade bodies (PRS, MPA and BPI). Respondents also noted there was guidance available from most music conferences including MIDEM, SXSW, and BIME. The experts and solutions firms also drew attention to the guides and documentation available from different DSPs and aggregators.

Summary

There was considerable overlap in the educational initiatives highlighted by respondents across all sectors, including those initiatives promulgated by both trade bodies and specialist agencies such as DDEX (which was the most widely known and cited). The main gaps in awareness and education seem to lie in the creator, distributor and DSP communities. The largest DSPs seemed very familiar with the issues, but there are some who are less well equipped to handle the issues at scale.

4.0 Volumetric analysis

The volumetrics are a specific set of metrics relating to each sectoral business and are designed to provide a numerical basis for the KPIs. The sectoral responses below show we secured quantitative data from five music publishers, six record labels, seven CMOs (of which four handled authors' rights and three dealt with neighbouring rights), five distributors and five DSPs.

4.1 Music Publishers

Responses from this sector came from a spectrum of different publishers, so the range of responses reflected those differences both in repertoire size and the processes involved in managing associated metadata. Responses highlighted the following:

1. **Total size of catalogue**: Reflecting the varying size of participants' businesses the responses varied from 2,500 works through to 1.8 million, 3.5 million and almost 5 million works. For those who chose to disclose this information, it was evident that the majority of their works (varying between 50% and 80%) were active i.e., generating streams/ plays/sales and thus revenues.
2. **Number of new works registrations per annum:** given the range in size of catalogue, there were similar variances in the number of new works registrations per year, from 550 to 300,000. In the case of the larger publishers, the majority of new works were non-UK in origin.
3. **Number of works registration revisions per annum**: responses similarly showed a range from 250 to 800,000 revisions per year, with one publisher revealing the majority of these (95%) were in respect of non-UK works.
4. **Percentage of works with recording information supplied by writer/client**: the range for this metric was quite extreme and seemed to align with the relative size of overall repertoire under control, as responses varied from 5% to 90%.
5. **Average number of recordings per work**: the average ranged from 1 to 4 recordings, with in one case a ten-fold difference in the number of ISRCs between active[24] and charting works.

24 Active Works or Recordings – describes any work or recording that generates streams/plays/sales and revenues..

6. **Average number of writers per work**: this varied considerably across respondents, from 1.6 to 3-4 writers per work. There was a clear difference on charting works: one firm had an average of as many as 4.3 writers on charting works compared to 1.82 writers on active works. There were also indications the average number of writers per work has increased since 2019.
7. **Percentage of works registered with ISWCs**: again there were appreciable differences in responses, with one firm stating just 19% of all new works were registered with ISWCs, and others reporting as many as 80%. The size of repertoire under control seemed to play a part in the registration-with-ISWC rate as certain larger firms reported lower rates, between 26% and 56%, and one claimed an increased rate for new works via the IAS.
8. **Percentage of works registered with full writer IPI information**: the range was between 75% and 100%, but the percentage dropped to 30-40% for works where the publisher had only partial control.
9. **Percentage of works registered with associated ISRCs**: the percentages reported here were generally quite low, with one publisher including ISRC information in only 10% of registrations. By contrast, the smaller firms included ISRC information in 95-100% of registrations.
10. **Receipt of new relevant metadata (i.e., a new ISRC)**: all respondents reported that they received updates regularly, sometimes daily, with most relying on monthly updates. Client updates were more likely to be submitted on an ad-hoc basis.

4.2 Record Labels

As with the music publishers, responses were received from a spectrum of different sized labels. Consequently, responses reflected differing repertoire size and internal processes.

1. **Total number of recordings currently available on streaming services**: Reflecting the varying size of participants' businesses the responses ranged between 26,000 and 2.4 million in the UK, and 26,000 and 3.1 million anywhere in the world.

Charting Recording- describes any work/track appearing in nationally recognised, industry supported official charts such as the UK's OCC

Some responses separated Frontline (FL) and Catalogue (Cat) [25] recordings and these revealed significant differences between the two categories, with splits ranging between 53% (FL) vs 47% (Cat) for one firm, 20% (FL) vs 80% (Cat) for another company, and 25% (FL) vs 75% (Cat) for a third label.

2. **Number of recordings for which streams have been reported by DSPs**: in most cases, the bulk of the repertoire under control had attracted streaming activity with similar ranges to the metrics above. This spectrum covered 26,000 to 2.3 million, with Frontline recordings accounting for 20% of one firm's streaming numbers and 28% for another. For such firms, Catalogue recordings still represented the majority of the streaming activity across their controlled repertoire.
3. **Number of new recordings created per annum**: responses ranged from 700 per year through to approximately 239,000 per year. The firm which provided the 239,000 metric stated that their average number of new recordings created per year since 2013 was 209,000.
4. **Number of recordings subject to contributor revisions after initial delivery to DSPs**: the percentages varied between 16% and 50% of recordings being subject to contributor revisions. In one case, there were discernible differences between Frontline (20%) and Catalogue (80%) repertoire.
5. **Number of recordings with songwriter/composer/author credited in record label systems**: the range covered zero through to 9,000, 30,476 and 2.85 million. The firms with larger repertoire size showed a higher proportion of recordings contained songwriter credits in their systems, and one noted only 8% of their recordings contained no works level data. The average number of writers credited per recording varied between 2 and 3 per work, with higher numbers on Frontline repertoire.
6. **Number of recordings with an IPI associated to any songwriters in record label systems**: the responses clearly indicated that most record labels had zero IPI numbers associated with songwriters on their recordings; only one firm had some IPIs on their recordings. This company revealed 21% of their active catalogue had IPIs linked to the associated songwriters.
7. **Number of recordings with any other industry identifier (e.g. ISNI, IPN) associated to any songwriters in record label systems**: most labels stated they had zero identifiers attached to songwriters in their systems, although some mentioned using

25 "Frontline" was defined as recordings with a P/C year of 2019 or later, and "Catalogue" as recordings with P/C year of 2018 or earlier.

Spotify Artist ID and IPNs. One firm mentioned the use of IPNs, ISNI and MusicBrainz IDs, with this firm having at least 1 songwriter on 38% of their active catalogue.

8. **Number of recordings for which an ISWC has been captured in record label systems for associated works/compositions**: most respondents indicated that zero ISWCs had been captured, with one label stating that any instance of ISWC capture was negligible, and another that they were uncertain because the ISWC information was not visible to them, even from their associated publishing firm.
9. **Estimated average number of ISRCs per "track"**: this was reported to be between 1.47 and 3, but there were obvious outliers such as one artist/title with 187 different ISRCs.

4.3 CMOs (Authors' Rights PROs and MROs)

Several CMOs were interviewed as part of this project, some based outside the UK, and there were significant differences in their responses. The sectoral responses highlighted the following:

1. **Total size of repertoire under control**: we were unable to distinguish between what was active versus 'all' catalogue in any of the responses. The stated repertoire sizes ranged from 2 million to 6.2 million, with 200,000 titles from the latter respondent representing UK works.
2. **Total number of works with an ISWC**: one CMO mentioned the figure of 5.2 million, and another the global total of approximately 80 million.
3. **Total number of works with an ISWC and one or more associated ISRCs**: one respondent provided the figure of 300,000 since the CISAC 100% IPI and shares rules changed in 2020. No other responses were given.
4. **Number of new works claims per annum**: one CMO stated they had 300,000 new works claims per year for non-UK repertoire, and 15,000 per year for UK repertoire. Another stated a total of 7.8 million ISWCs (to the end of 2023) and 6.9 million ISWCs (to the end of 2022), of which approximately 4.4 million ISWCs were for UK/PRS works across both years.
5. **Number of works claims revisions per annum**: we had limited responses to this question. One international CMO stated there were 11.3 million total revisions to the end of 2023, 3.2 million of which related to PRS works. Others stated the figure was unknown.
6. **Average number of writers per work**: figures provided by two respondents indicated an average of 1.71 writers per work.
7. **Percentage of works registered with an ISWC**: one CMO claimed that this was 87%, while the other respondents stated that the figure was unknown.

8. **Percentage of works with more than one ISWC**: all responses to this question indicated that 0% of works had more than one ISWC. One CMO mentioned that this was due to the CISAC archive process, through which duplicate ISWCs are identified, and the preferred version is used within the CISAC database while the redundant one(s) are removed and archived. We note there are currently 5.2 million archived ISWCs.
9. **Percentage of works registered complete with all controlled IPIs**: responses suggested that most works were registered complete with all controlled IPI numbers. However, apart from one CMO which provided a figure of 93%, others could not provide an exact number or believed the figure was only available at national CMO level.
10. **Prevalence of incorrect matching of recording (ISRC) to work (ISWC) and need for adjustment**: one CMO said that this was 'hard to determine in the longtail,' and another that it was 'not unheard of but not a common problem.'
11. **Percentage of works registrations received from publishers and writer members**: one CMO stated that 66% of registrations were received from publishers and 33% from writers. Another stated that only publishers' works registration information was available.

4.4 CMOs (Neighbouring Rights)

Responses are shown for the two NROs who agreed to share data. Their responses highlighted the following:

1. **Total size of repertoire under control**: this showed distinct differences in scale, with one NRO controlling 24.6 million recordings (of which 54.8% was active) and the other 118 million. 17.4% of the smaller NRO's entire repertoire was UK-originated, while 19.2% of its active repertoire was of UK origin. 7% of the larger NRO's repertoire[26] was UK-originated.
2. **Number of new recordings/ISRC claims per annum**: the smaller NRO saw 3.2 million claims in 2023 (11.6% of these were UK repertoire) and the larger NRO received 23 million new ISRCs per year, of which 1.2 million were UK-originated.
3. **Number of ISRC revisions per annum**: the smaller NRO reported 548,000 ISRC revisions in 2023 (8.5% were for UK repertoire and 91.5% non-UK repertoire) – equating to revisions on 17.1% of claims. The larger NRO reported 4 million revisions per year (of which 620,000 were for UK repertoire) – equating to revisions at an annual average of 17.4% during the previous 3 years.
4. **Percentage of recordings with more than one ISRC**: this metric was 11% for the smaller NRO. The percentage was lower (4.23%) for the larger NRO, but this nonetheless represented a large number of recordings by volume, around 5 million, often

26 A breakdown between 'entire' and 'active' repertoire was not provided by this respondent, with regard to the percentage of their repertoire that is UK-originated.

for legitimate reasons. According to this NRO, these reasons might include the exact same metadata used for different sound recordings that received more than one ISRC (explicit and non-explicit versions of a sound recording for example),

5. **Percentage of recordings registered with complete performer and participant information including IPN/ISNI**: The smaller NRO stated that this figure was 73%. The other larger NRO pointed to a much smaller number (7%) of all recordings by volume but stressed that the figure rose to 24% of active recordings and 90% of recordings by value.
6. **Percentage of recordings with multiple ISRCs that need merging / reconciliation**: neither CMO was able to answer.
7. **Prevalence of no recording matching and need for adjustment**: one NRO stated that 4% of recordings needed adjustment and intervention, but the other said this was never needed.
8. **Prevalence of incorrect entities and need for adjustments**: one NRO reported that incorrect entities were uncommon, with less than 50% of performer line-up adjustments made as result of incorrect performer entities. The other NRO estimated that around 200,000 recordings per year needed their performer entities adjusted.
9. **Percentage of recordings registrations received from labels / rights holders and performer members**: both NROs stated that they received registrations from the rightsholders rather than performers.

4.5 Distributors

The distributor responses highlighted the following:

1. **Total number of recordings currently available on streaming services**: responses varied widely, with catalogue size ranging from 29,000 to 23.6 million recordings in the UK, and 250,000 to 25.1 million anywhere in the world.
2. **Number of these recordings for which streams have been reported by DSPs**: responses were provided only by distributors with smaller catalogues, with responses ranging from 29,000 to 300,000.
3. **Number of recordings created per annum in distributor systems**: responses showed a range of 4,500 to 4.8 million. The 4.8 million figure was the average annual number for one firm between 2020 and 2023.
4. **Number of these recordings subject to contributor revisions after initial delivery to DSPs**: the figures provided here were quite small relative to the size of repertoire, with one distributor suggesting 5% of their total recordings were subject to contributor revisions, but with another saying it could not quantify the figure.

5. **Number of these recordings with songwriter/composer/author credited on them in distributor systems**: this question produced varying responses, with one distributor reporting that 33% of their catalogue contained writer credits, while several distributors reported 100%. Two firms claimed that 80% of their assets contained this information.
6. **Number of these recordings with an IPI associated to any songwriters in distributor systems**: responses showed that almost all of the firms had zero recordings with any associated IPIs, with one firm estimating 1% was the maximum. This was because distributors do not capture IPI information.
7. **Number of recordings with any other industry identifier (e.g. ISNI, IPN) associated to any songwriters in distributor systems**: responses were similar to the metric above, with most firms reporting that no other songwriter metadata was attached to any recordings in their catalogue. However, one firm mentioned that ISNI capture had begun.
8. **Number of recordings for which an ISWC has been captured in distributor systems for any associated works/compositions**: most respondents stated that there was no ISWC capture in their systems at all, but one suggested there was some ISWC capture, albeit applying to less than 20% of recordings.
9. **Estimated average number of ISRCs per "track" (for all versions by the same artist)**: the range reported here was 1.5 to 3 ISRCs per recording, although firms stressed that all versions have a unique ISRC which is assigned on delivery.

4.6 DSPs

The DSP responses highlighted the following:

1. **Total size of catalogue**: this varied from 73.5 million to 100 million and 150 million (all UK and world available. However, one DSP had a global catalogue of 230 million tracks, of which approximately 130 million were available in the UK.
2. **Number of recordings received per day**: DSPs reported figures between 33,000 and 131,000.
3. **Number of new recordings registered per annum**: only one DSP responded and reported a total annual figure of 1.17 million new recordings received from the major record labels, with a further 17.15 million p.a. received from digital aggregators, and 29.56 million from independent record labels. This total of 47.8 million was significantly higher than the Luminate figure of 38 million new ISRCs in 2023 which is included for reference purposes. We note the distinction between digital aggregators and independent labels is unclear and may differ between how DSPs and the record labels define them.

4. **Percentage of recordings mapped to a musical work (ISWC-ISRC link) at the point of delivery**: this metric was very low for most DSPs, with one stating that less than 0.1% of recordings were mapped to an ISWC on delivery.
5. **Percentage of ISRCs mapped to ISWCs in licensor Claim Confirmation and Invoice Details (CCID) reports**: responses varied a great deal, with one DSP claiming there was 0% writer information in CCID data, but others stating rates of ISRC-ISWC mapping to be between 20% and 85%. One DSP mentioned a 71% link between the ISWC and the platform's own unique recording identifier.
6. **Streaming activity across different thresholds**: only one DSP responded with data in addition to the Luminate data cited in Annex B Literature Review. This DSP noted that 82.43% of recordings received zero activity and another 16.3% had fewer than 10,000 plays. Only 0.9414% of available recordings received over 10,000 plays, with the bulk of this subset receiving fewer than 100,000 plays and a mere 0.0016% with plays in excess of 100 million.
7. **Number of works received daily**: the two DSPs who answered this question reported figures of 131,000 and 195,000, although the latter figure included new claims and not just new works.
8. **Number of writer and publisher/CMO claims received daily**: one DSP reported that 28,000 claims were received daily in Q4 2023, while another stated a figure of 96,000 claim files globally for Q3 2021, a large increase over the previous year's figure of 12,000.
9. **Percentage of recordings delivered with an ISRC**: this was close to 100% for most DSPs, although one mentioned a figure of 85.4%.
10. **Percentage of ISRCs linked to an ISWC on arrival**: this metric was not more than 0.1%, with one DSP stating labels and distributors do not supply the ISWC.
11. **Percentage of new recordings arriving with incomplete/inaccurate metadata**: one DSP reported that almost 100% of recordings arrive with incomplete or inaccurate metadata, given the low level of publishing information received in the ERN files.
12. **Percentage of recordings delivered with song information including writer details**: responses varied according to the different DSPs. One DSP claimed that close to 40% of recordings included writer names and roles (but not IDs), while another said that almost all recordings had song information (including a writer name). One respondent pointed to the low percentages of recordings provided with creator IDs: 4% with at least one IPI, 7% with one ISNI and 6% with one IPN. These low figures for provision of creator IDs were confirmed by other DSPs, with one claiming a mere 0.22% of recordings arrive with an IPI/ISNI. Another DSP, however, suggested that the figures were variable and dependent on the content provider.

We note that one DSP, rather than providing a percentage of (all) recordings delivered with writer details, stated that at least one writer was named on 80% of 'recordings with usage', which we took to mean recordings generating streams and thus royalties payable to rightsholders. This indicates that for this DSP, 20% of recordings with usage have no writer information when delivered to the platform.

13. **Average number of writers per recording**: only one DSP responded to this question, stating an average of 2 writers per recording.
14. **Percentage of recordings with conflicting artist/recording/rightsholder information**: according to one DSP, this was 4.76% of recordings.
15. **Percentage of recordings with duplicate ISRCs**: one DSP reported that 4.5% of recordings had duplicate ISRCs, another 9.16%, and a third 23%. The latter respondent highlighted the issue of multiple releases (typically compilations).
16. **Percentage of ISRCs registered by more than one recording data source (label/distributor/ aggregator)**: responses indicated a range of 2.45% to 10%.

4.7 Volumetrics Summary and Conclusion

The volumetrics highlight certain useful metrics for the KPIs, and we summarise these below.

Publishers

- The average number of recordings per work: ranged from 1 to 4 recordings, with in one case a ten-fold difference in the number of ISRCs for active[27] versus charting works.
- The average number of writers per work varied considerably, ranging from 1.6 to 3-4 writers per work. There was a clear difference on charting works versus active works.
- The percentage of works registered with full writer IPI information ranged between 75% and 100% but dropped to 30-40% for works where the publisher had only partial control.

The percentage of works registered with associated ISRCs reported here were generally quite low, with one publisher including ISRC information in only 10% of registrations.

Labels

27 Active Works or Recordings – describes any work or recording that generates streams/plays/sales and revenues..

Charting Recording- describes any work/track appearing in nationally recognised, industry supported official charts such as the UK's OCC

- Where data was supplied for streaming activity, Frontline (FL) and Catalogue (Cat) [28] recordings there were significant differences between the two categories, with splits ranging between 53% (FL) vs 47% (Cat) for one firm, 20% (FL) vs 80% (Cat) for another company, and 25% (FL) vs 75% (Cat) for a third label.
- For recordings with a writer IPI, other industry writer identifiers or ISWC within their system: labels indicated that most had zero IPI numbers associated with songwriters on their recordings, as well as zero industry identifiers attached to songwriters in their systems. ISWC capture was also zero to negligible.

CMOs (Authors' Rights)

- For the average number of writers per work, the figures supplied indicated an average of 1.71 writers per work.
- For the percentage of works registered with an ISWC this was 87% for one respondent.
- Most works were registered complete with all controlled IPI numbers.
- For works registrations, 66% of registrations were received from publishers and 33% from writers.

CMOs (Neighbouring Rights)

- For ISRC revisions per annum: one Neighbouring Right Organisation (NRO) stated there were revisions on 17.1% of claims and another that there was an annual average of 17.4% during the previous 3 years.
- The percentage of recordings with more than one ISRC was 11% for the smaller NRO but 4.23% for the larger NRO, which nonetheless represented around 5 million recordings by volume.
- For recordings registered with complete performer and participant information including IPN/ISNI, the percentage was 73% for the smaller NRO but for the other NRO the figure was much smaller (only 7%) for all recordings by volume. However, this represented 24% of all active recordings and 90% of recordings by value.

Distributors

- The number of these recordings subject to contributor revisions after initial delivery to DSPs was quite small relative to the size of repertoire under control (just 5% of their total recordings according to one firm).

28 "Frontline" was defined as recordings with a P/C year of 2019 or later, and "Catalogue" as recordings with P/C year of 2018 or earlier.

- The number of recordings with songwriter/composer/author credits in their system varied between, 33% of one firm's catalogue and 100% for several distributors. However, almost all firms had zero recordings with any associated IPIs or ISWCs and it was clear most distributors do not capture IPI information nor ISWCs.

DSPs

- One DSP was able to segment the number of recordings registered per annum, showing a total of 47.8 million broken down into 1.17 million new recordings from the major record labels, 17.15 million from digital aggregators, and 29.56 million from independent record labels.
- In respect of recordings mapped to a musical work (ISWC-ISRC link) at the point of delivery: the metric was very low for most DSPs, with one stating that less than 0.1% of recordings were mapped to an ISWC on delivery.
- As regards ISRCs mapped to ISWCs in licensor CCID report, there were distinctly different responses with one DSP claiming there was 0% writer information in the CCID data, but others stating rates of ISRC-ISWC mapping to be between 20% and 85%. One DSP mentioned a 71% link between the ISWC and the platform's own unique recording identifier.
- Data on streaming activity across different thresholds from one DSP echoed the longtail and head distribution evident in Luminate's data. 82.43% of recordings received zero activity and a mere 0.0016% with plays in excess of 100 million.
- For the recordings delivered with an ISRC, the figure was close to 100% for most DSPs, although one mentioned a figure of 85.4%.
- For ISRCs linked to an ISWC on arrival, this metric was not more than 0.1%, with one DSP stating labels and distributors do not supply the ISWC.
- In respect of new recordings with incomplete/inaccurate metadata on arrival, one DSP reported almost 100% of recordings arrive with incomplete or inaccurate metadata.
- For recordings delivered with song information, including writer details, the responses varied with one DSP claiming close to 40% of recordings included writer names and roles (but not IDs), while another said that almost all recordings had song information (including a writer name). However, the percentages of recordings provided with creator IDs were very low. One claimed a mere 0.22% of recordings arrive with an IPI/ISNI. Another DSP, however, suggested that the figures were variable and dependent on the content provider.

- One DSP stated that at least one writer was named on 80% of ‘recordings with usage’, indicating that for this DSP, 20% of recordings with usage have no writer information when delivered to the platform.
- Average number of writers per recording: only one DSP responded to this question, stating an average of 2 writers per recording.
- Percentage of recordings with duplicate ISRCs: The figures varied between DSPs with one claiming 4.5% of recordings had duplicate ISRCs, another 9.16%, and a third 23%.

What is most evident is that publishers struggle to deliver associated ISRCs at the point of registration and there is a distinct lack of creator/writer IDs available to labels and distributors and delivered to the DSPs at the point of release. As a result, the link between the ISRC and ISWC on arrival at the DSP is very low. The question of duplicate ISRCs also add to the complexities within the supply chain even though almost all recordings arrive with an ISRC.

5.0 Summary and recommendations

1. Introduction

The following aims to highlight the problems and issues involved in formulating a viable and successful KPI framework to improve the quality of metadata delivered within the digital music streaming supply chain. It includes a number of suggested additional measures and recommendations but is not intended to pre-judge the outcome of the TSG's ongoing KPI framework process.

2. Creators

The interviews with creators highlighted the various metadata problems facing this diverse and increasingly more disparate sector. These issues are often singular to certain creators for example EDM music makers or non-featured performers/ session musicians. Many independent and DIY creators operate professionally or semi-professionally although anecdotal evidence would suggest the majority are hobbyists. Most creator sub-groups seem to lack a firm grasp of the nuances and challenges of managing their rights and data without some form of professional intermediary such as a manager.

The need to correctly credit all contributors to the final version of musical works and recordings stands out as an issue for all creators. For musical works this includes co-writers, lyricists or writers of sampled works and for the final recording this includes any non-featured performers, producers, remixers and studio personnel. The current interest in uploading new recordings as soon as they are complete seems to exacerbate this problem. Full credits are rarely, if ever, formally agreed at the point of creation and recording, especially in the absence of well-informed intermediaries such as managers.

Additional key improvement areas include better initial registration of the musical work and minimum metadata provision rules at the point of upload of new recordings to aggregator platforms. Both points are discussed further below in this section.

Measuring the accuracy and completeness of metadata at the point of creation is clearly challenging to achieve among the creator communities. Ultimate responsibility for this may

therefore remain with others in the supply chain. That said, there may be opportunities within the CMM umbrella of UK music creator trade bodies to benchmark awareness among their members. Also, via regular surveys, to better understand the barriers for creators in managing their rights and data. This is explored further in the final recommendations.

3. Publishers

The metadata issues for publishers are dominated by two primary issues, namely, obtaining complete and correct writer credits and shares as well as accurate ISRC details for the linked recording.

The problems relating to writer credits are exacerbated for co-written works when an individual publisher does not act for all the signed writers. Issues begin with the delivery of new works where each signed writer is meant to provide title and writer information to their publisher. One interviewee commented that the number of recordings delivering this information as being typically low (10%).

In many cases at the registration stage, the data supplied by each of the publishers on a co-written split ownership work may be inaccurate with different shares claimed and non-controlled writers' names misspelt. The latter also constrains the ability for each publisher to deliver accurate IPI numbers for each co-writer.

The publisher is wholly reliant on the information supplied to it by its signed writer and/or any contract partner. As noted above, it is common for writer credits and shares to not be finalised at the time of release of a new sound recording. This further impairs the ability to match the work to the sound recording prior to release.

Being able to measure the accuracy and completeness of works received and then fully registered with CMOs, labels (in USA) and DSPs is a daunting task. There are also marked differences between the needs and abilities of the largest music publishers handling millions of works (including fractional shares) and the smaller bespoke publishers with smaller catalogues to assess the veracity of the works they receive and then register, all of which makes them more reliant on CMOs to provide the final merged shares and writers picture.

The publishers highlighted their limited ability to successfully link the registered works and ISWCs to accurate ISRCs representing the associated recordings. Many rely on 3rd party

solutions firms to create the links. They regard themselves as not being in the ISRC supply chain at all and thus not authoritative for the ISRC link.

4. **Labels**

Labels are best placed to secure and deliver the details of all the performing contributors to a sound recording, including the contracted featured artist, producer and remixers. However, this dataset may not always include complete and accurate non-performing contributor data, the addition of which necessitates metadata updates. The non-linear nature of creation and recording can also impair the ability of labels to deliver accurate and complete metadata at the time of release. Release scheduling, often determined by commercial pressures, can be prioritised ahead of confirmation of all contributor data.

Despite duplicate ISRC problems, in the main, a label's ability to issue the ISRC means it has the power to shape the quality of recording metadata provided at the point of release. Measuring the completeness of metadata at this stage of the streaming supply chain is clearly desirable as it is recognised the label is the most authoritative source of recording metadata accuracy and completeness, However it was evident there were varying levels of completeness of metadata in the ISRCs delivered by labels to DSPs in their ERN feeds. One label mentioned the level of metadata awareness within that firm was not ideal and impacted the level of completeness of lineups and credits.

The DSPs regard metadata delivered by labels as the most authoritative version. it was evident DSPs would ideally prefer the labels to also deliver all of the works information, including ISWC, alongside the ISRC as part of their ERN feeds. This may be the best step forward if the PRS Accelerated ISWC Allocation Service is successfully implemented and its aims embraced by labels and distributors.

5. **CMO authors rights**

These CMOs can offer a scaled anonymised view of the incoming works registration processes. Their central role within the streaming supply chain means that as intermediaries for the musical work they are best placed to offer opportunities to measure successful linkage of the ISWCs with ISRCs. The issues facing music publishers and creators in providing timely and accurate registrations of all musical works means only these CMOs are able to offer reconciled versions of the final shares picture. The frequent delays in agreeing shares for co-written works that are notably common for the most successful repertoire means that CMOs often receive usage data from DSPs before the works picture has been delivered or finalised, so their central and pivotal role also involves matching the ISWCs to

ISRCs to make claims to the DSPs. That said the fragmented nature of the European rights landscape involving multiple entities including the various CMO's, Hubs and SPVs means the ability of any single CMO/Hub such as PRS /ICE to match all works ISWCs to the relevant ISRCs is very constrained."

6. CMO Neighbouring Rights

Although the labels are the authoritative source of sound recording metadata in the streaming supply chain, neighbouring rights CMOs (NROs) are also an appropriate source of more complete contributor information, such as non-featured performers, and they can provide information on the levels of updates required to such information that can necessitate metadata updates to be delivered to distributors and onto DSPs. There was a call for improved integration of the different databases holding label and performer information and such a development could improve the availability of more complete contributor data that could usefully be made available to DSPs. This would be a welcome change for the creators, especially the non-featured contributors to recordings.

7. Distributors and Aggregators

The interviews with label distributors highlighted their role as principally one of ensuring the delivery of metadata from label partners onwards to the DSPs and ensuring the tracks delivered meet the DSPs' rules and guidelines. As such, the distributors' role in metadata entails delivery of the ISRC and providing the Universal Product Code aka UPC. The distributors are reliant on the completeness and accuracy of the data supplied by their partners and if this is not adequate must refer always back to the label. Although not all distributors may be able to measure the accuracy of ISRC data or the linkage with the ISWC at this stage of the supply chain, there remains a case for measuring the completeness of the core data fields the distributors receive from labels and their ability to include the ISWC in what they deliver to DSPs.

The aggregators' role is unique in the streaming supply chain, with some combining both the label and distributor role, and others acting more as a quasi-label and using 3rd party distribution platforms. A key problem is how to best assess the accuracy and completeness of metadata supplied by self-releasing creators to the aggregators and then delivered onto DSPs given what we understand from the interviews with other stakeholders are the minimal guardrails applied by the aggregator platforms. The fact that this sector has grown in volume exponentially over the past 5 years but with lax or poor metadata standards and

requirements may be the biggest barrier to improvement of metadata across the whole industry.

Yet it may be feasible to capture pockets of reliable information about the completeness of metadata delivered by aggregators that use 3rd party distribution platforms. There is also the possibility of obtaining regular updates on metadata delivery quality from both the neighbouring rights and authors rights CMOs, or conceivably from certain DSPs with a business link to the aggregators. However, it is challenging to find a way of measuring metadata improvements outside of those options and this arguably places even more emphasis on the need for expanded education and awareness campaigns aimed at self-releasing creators themselves. These are explored in the final recommendations below.

In the professional side of the industry (major and significant sized independent record labels), despite concerns expressed about legacy issues affecting both music publishing and recorded music data, there is genuine support for resolving the main issues in metadata. The DIY market by contrast appears to operate outside of the norms and aims of the higher value, lower volume professional market. The fact that the largest DIY platform would not, despite concerted efforts, engage with our work means these conclusions could benefit from further engagement from the DIY platforms.

8. DSPs

The engagement of the DSPs in this project has been positive and encouraging and it is clear these services need support to improve the quality of metadata. This means what data is actually delivered to them must be of a higher standard, especially in relation to the musical work. The DSPs have shown a desire to improve the quality of works information to better match with the recordings data, and some have even used alternative versions of the ISWC (e.g. BOWI) to try to improve the matching process. The barriers to improvement include the historical reluctance of CMOs in the EU to share works information comprehensively and proactively as well as the lack of access for the DSPs to the ISWC and IPI registries, both of which they argue would improve their ability to match works to recordings.

The DSPs see themselves as reliant on authors rights CMOs for works/recordings matches. It was observed that CMOs are best placed to offer a service where, having successfully matched the ISRC and ISWC for one recording from one DSP, they can offer a match for an incomplete one for the same work/recording from another DSP. The DSPs say they do not in fact match but need to understand the matching process. Being able to measure the matching process at each DSP is clearly desirable and if the PRS Accelerated ISWC

Allocation Service is successful clearly the DSPs would be a suitable location to measure the matching process in addition to the measurement at the CMOs.

Whilst DSPs assess the data accuracy, content quality and metadata as part of their Terms and Conditions, this process is commonly referred to as a score card for some but not all DSPs and is used to monitor distributors and aggregators' compliance with the DSP's guidelines[29] Although DSPs have the power to set the rules for their respective platforms and are thus positioned to strengthen them for completeness of data fields using their own score card approach, they cannot be responsible for the accuracy of the data they hold from content providers and rights holders.

9. Final recommendations

The proposals for improvements below include a number of actionable suggestions that could be implemented alongside the KPI's:

- *Educate the Educators.* It is clear that many UK creators learning music and technology are rarely, if at all, exposed to the metadata issues in music and certainly not the relationship between the two codes (ISRC and ISWC), and completeness of the core-data set when delivering new music. This may be because the educators themselves do not understand the importance of the issues. The HE accreditation agency JAMES[30] acknowledged this when they ran a course in 2023 for course leaders which in their opinion was only partly successful. The only education and training provider we are aware of that has tackled metadata consistently across the creator community is CMU' which runs workshops and training in the UK (and overseas) including for certain CMM trade body members.[31]
- *Educate music students:* There may be a case for certification, which HEI in the UK can easily absorb as part of their music and music technology courses and run in a similar way to the processes required before each student is allowed to use studio equipment.
- *Educate the DIY Creators;* This growing segment within the creator community is much less likely to access the kind of resources and tools available to those studying music in HE and FE. Given our understanding that DIY artists tend to use the best known digital aggregators such as TuneCore and Distrokid it is clear the quality of guidance provided on these platforms as to the importance of accurate and complete metadata is pivotal.

29 https://support.spotify.com/us/artists/article/metadata-formatting-guidelines/

30 Joint Audio Media Education Support https://www.jamesonline.org.uk/accreditation/accred_courses/

31 https://cmu.podia.com/cmu-masterclass-music-data

We note both such platforms provide some limited advice on metadata[32] but only alongside many other factors creators need to consider before using the platform. The quality and prominence of metadata related advice for these self-releasing creators is clearly a priority for future Education and Awareness programmes but are reliant on the cooperation of the key platforms involved.

- *Educate industry*: A similar metadata certificate to that proposed for music students could be offered to industry employers, and this could be conducted in a similar way to health and safety certifications or cyber security awareness [33] required routinely by and for large employers[34]. One major label adopted this certification approach process, which entailed every member of the firm's staff including senior executives, marketing and A&R as well as legal and finance staff undertaking metadata training.
- *Conducting regular music creator surveys*. These need to be robust and well designed and run consistently and frequently to map progress. This idea was discussed with WIPO for Creators as a means of better understanding the challenges facing creators. Partnering with music industry trade bodies, charities and the UK CMOs to run the survey would help secure appropriate reach among the creator community. However, to be successful such a survey needs to be brief and targeted in terms of question design as well as take account of demographic and socio-economic differences among the creator community to identify where resources need to be allocated.
- *Regular surveys of aggregator and DSP platforms guidance on metadata.* As noted above improving the quality and prominence of platform's metadata guidance for DIY creators is pivotal and regular surveying of this guidance may well help map progress and highlight efforts and initiatives to improve metadata awareness aimed at all music creators. It will also be useful to capture changes made to mandatory and optional fields especially after this report is published.

We note encouraging signs of further research work on improving metadata quality and accuracy as exemplified by the *Music Futures* 5-year AHRC funded programme launched in February 2025 as a collaborative project between three Liverpool based HE institutes.[35]

32 Tunecore https://support.tunecore.com/hc/en-gb/articles/115006503247-How-do-I-format-my-album-title-track-title-and-artist-name and https://support.tunecore.com/hc/en-gb/articles/360001315143-How-do-I-credit-artists-songwriters-and-other-contributors-on-my-release. Distrokid https://support.distrokid.com/hc/en-us/categories/360001857214-Uploading

33 Such as the programmes run by Meta Compliance https://www.metacompliance.com

34 In the UK such Health and Safety schemes have been in existence since 1974 . Examples include the Musicians Union guidance https://musiciansunion.org.uk/health-safety-wellbeing/health-and-safety and BECTU's Creative Industries safety passport set up under the auspices of Institution of Occupational Safety & Health https://bectu.org.uk/training/creative-industries-safety-passport/

35 https://www.liverpool.ac.uk/institute-of-popular-music/projects/music-futures/

The project leaders identified metadata issues as a core component of their research programme and highlighted their project would explore various licensing model options to inform the design of a regulatory sandbox. Key milestones include:

- Development of a semantic model to support interoperability of music metadata across formats
- A multi-tier knowledge system to enable harmonisation of music metadata
- Guidelines and recommendations for data governance
- Simulations assessing the impact of different licensing models on both the tech and music sectors
- Policy recommendations drawn from the sandbox findings and simulation outcomes

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7.0 Annex A: Glossary of Terms

General terms

Active Works or Recordings – describes any work or recording that generates streams/plays/sales and revenues.

CMO – Collective Management Organisations are licensing bodies which grant rights on behalf of multiple rights holders in a single blanket licence for a single payment and collect any royalties owed to the rights holders. CMOs and publishers may enact their obligations, where appropriate, via Special Purpose Vehicles (SPVs) see further definition below.

Charting Recording- describes any work/track appearing in nationally recognised, industry supported official charts such as the UK's Official Charts Company (OCC)

Catalogue categories

- *Front Line Recordings*- typically defined as new releases e.g. within the last 12 months
- *Recent Catalogue*– typically considered as releases between 1-5 years.
- *Deep Catalogue* – recordings more than 5 years old

Copyright Hub – a multi-territorial entity handling multiple national CMO works data and rights in the EU.

DSP - Digital Service Provider

PRO – Performing Rights Organisation

Recording – this is a sound recording – i.e. a musical work that is recorded creates a sound recording.

Releasing parties - those parties responsible for delivering the recording to service providers. This includes record labels, distributors and aggregators.

Special Purpose Vehicle (SPV) – these are joint ventures established by CMOs to license the repertoire of specific music publishers and other rights holders.

Service providers - providers of online music streaming services to consumers. For the purposes of this report this does not include User Generated Content platforms.

T**rack** - a synonym for a recording.

W**ork**- this describes a musical or lyrical work – i.e. a song or composition

Organisations

AMRA – American Music Rights Association

CISAC - Confédération Internationale des Sociétés d'Auteurs et Compositeurs

DCMS – Department for Culture, Media and Sport

DDEX – Digital Data Exchange
ICE – International Copyright Enterprise
IFPI – International Federation of the Phonographic Industry
IPO - UK Intellectual Property Office
ISO - International Organisation for Standardization
MCPS – Mechanical Copyright Protection Society
MLC - Mechanical Licensing Collective (USA)
MLC – Music Licensing Company (term used by certain CMOs)
NMPA - National Music Publishers Association (US)
PPL – Phonographic Performance Limited
PRS – Performing Right Society
RAAP – Recorded Artists, Actors & Performers (Irish CMO)
SACEM - Société des auteurs, compositeurs et éditeurs de musique (French CMO)
SCAPR – Society of Collection Agencies for Performers Rights
SESAC - Society of European Stage Authors & Composers (US PRO)
SOUNDEXCHANGE -
SUISA - SUISse Auteurs (Swiss Authors Rights CMO)
WIPO – World Intellectual Property Organisation

Identifiers and systems

BOWi- Best Open Works Identifier –an unofficial alternative to ISWC promulgated by Quansic and used by certain DSPs
CAE - Compositeur /Auteur /Éditeur (Composer/ Author /Publisher) – this code name is more generally referred to as an IPI (see below)
CCID – Claim Confirmation and Invoice Details
CIS-NET- network of databases (under CISAC's umbrella)
CWR - Common Works Registration
DSR – Digital Sales Report (DDEX standard for reporting of digital usage)
DURP- Distributor Unmatched Recordings Portal
EDI - Electronic Data Interchange
ERN- Electronic Release Notification
GRD - Global Repertoire Database
IPD - International Performers Database
IPI - Interested Party Identifier – this unique code is assigned to individual songwriters, composers and music publishers by Performing Rights Organisations. These may also be referred to as CAE numbers and are attached to ISWC numbers to include information about authorship.

IPN - International Performer Number - unique code to identify a performer and used in data exchanges between neighbouring right CMOs aka NROs.
ISNI - International Standard Name Identifier a code promulgated by Quansic and used to disambiguate names and identities by linking persona and stage names as well as differentiation of organisations involved in creative activities such as record labels.
ISRC - International Standard Recording Code – the unique code used to identify sound recordings.
ISWC - International Standard Musical Work Code – the unique code used to identify a song or composition.
ISWC ARS – ISWC Allocation and Resolution Service
MBID - MusicBrainz Identifier
MDX - Music Data Exchange
RDx – Repertoire-Data Exchange
RIN - Recording Information Notification
UPC - Universal Product Code
VRDB - Virtual Recordings Database

Legislation

DMCA – Digital Millennium Copyright Act
MMA – Music Modernization Act
Article 17 – Part of the 2019 EU Directive on Copyright in the Single Market

Representative bodies

AIM – Association of Independent Music
BPI – British Phonographic Industry
CMM – Council of Music Makers
FAC – Featured Artist Coalition
ICMP – International Confederation of Music Publishers
IMPEL - Independent Music Publishers e-Licensing
IMPALA - Independent Music Producers & Labels Association
IVORS – Ivors Academy
MERLIN - Independent Labels Digital Licensing Association
MMF – Music Managers Forum
MPA – Music Publishers Association
MPG – Music Producers Guild
MU – Musicians Union
UK Music

8.0 Annex B: Literature Review

8.1.Music Streaming market analysis 2023-2024

8.1.1 ISRC Numbers increase and Value v Volume (Head v Long Tail)

In the absence of other accessible globally scaled data sources , we have relied on figures produced by entertainment industry data provider Luminate on the numbers of ISRCs delivered and the volume (and value) of streams across the global streaming market. For the analysis below we rely on Luminate's 2023 and 2024 data, using a series of publicly available datasets on key metrics on sound recording releases.

Their data confirms that the bulk of new recordings receive minimal streaming activity and confirms the more commonly deployed 'tail' versus 'head' distribution of streaming activity to highlight the volume versus value proposition evident in music streaming. The head accounts for the majority of streams and the bulk of the value.

Luminate's South by Southwest (SXSW) Presentation in March 2024 also highlighted the disparity in music identifier coverage with their data indicating 97% coverage for the ISRC but a mere 20% coverage for the ISWC and 31% coverage for the IPIs.[36]

8.1.2 ISRC Volume Data

The number of ISRCs created annually has been increasing year on year with 16.4 million created in 2018 compared to 37.8 million in 2023.

In 2022 Luminate estimated there were **95.8k** new ISRCs delivered daily to DSPs, and this figure rose in 2023 by a further 10.8% to **103.5k** new ISRCs delivered daily to the DSPs , although the figure declined slightly (4.4%) to 99k per day in 2024.
Notably with the 2022 number only **4%** of the ISRCs delivered were through 'major' distribution with the remaining **96%** through independent distribution (as defined by Luminate) and DSPs that '*cater to creator network'.* The 2023 figure showed the proportion

36 Luminate (2024) SXSW 2024 Presentation . (March 2024). Data shared by Luminate https://luminatedata.com/reports/

of independently distributed repertoire had grown to 96.1% of the total [37], yet the 2024 figure showed a distinct change in the relationship between major and independent distribution with the majors now with 8.2% (more than double their previous year's share) and independents now on 91.8% of the total number of ISRCs delivered to DSPs.

Without a more granular breakdown of the independents' of ISRCs delivered we can only speculate as to the true size of the self-releasing artist community including those served by the digital aggregators such as Distrokid and Tunecore. We note the July 2025 estimate that "*nearly half the marketplace is made up of the independent music sector'* provided by Sony Music's CEO Rob Stringer. Yet this estimate includes the independent artists served by Sony's own independent distribution businesses, the Orchard and AWAL [38]

The main DSPs identify this segment as distributors serving 'independent artists' as opposed to 'label artists' (Apple) [39],or as 'artist distributors' as opposed to 'label distributors' (Spotify[40]). Whilst YouTube list 73 music distributors[41], Spotify list 17 as artist distributors, with Distrokid notably a preferred partner although Distrokid is not shown as a preferred partner of Apple Music.

8.1.3. . Streaming Volumes v Value

Luminate's annualised data visualisations also segment the digital service platforms (DSPs) stream counts and the figures cited below [42] highlight the vast majority of tracks attract a small number of streams on the DSPs.

Their figures also highlight how much of the enormous growth in new tracks being made available is in the long tail rather than in the head of music streaming's value distribution. Luminate's 2023 data showed continued increases in the numbers of ISRCs delivered each year since 2018 and an increased disparity between those generating an income from streaming and the majority who do not. From the 2023 Luminate stream count we know 25% (46.5 million) received zero streams and 42% (79.7 million) of the total only had 0-10 streams. In fact, the number of tracks with 1000 or less streams in 2023 was 158.6 million or **86%** of the total.

37 Luminate (2024) 2023 Year End Music Report .(January 2024) . Data shared by Luminate https://luminatedata.com/reports/

38 Ingham T. (2025) Cat Kreidich exits as President of Warner's indie distribution arm, ADA - Music Business Worldwide https://www.musicbusinessworldwide.com/cat-kreidich-exits-as-president-of-warners-indie-distribution-arm-ada/

39 https://artists.apple.com/partners Apple Music for Artists

40 https://artists.spotify.com/providers .

41 https://servicesdirectory.withyoutube.com/directory/#?services=preferred-music-distributor,music-distributo

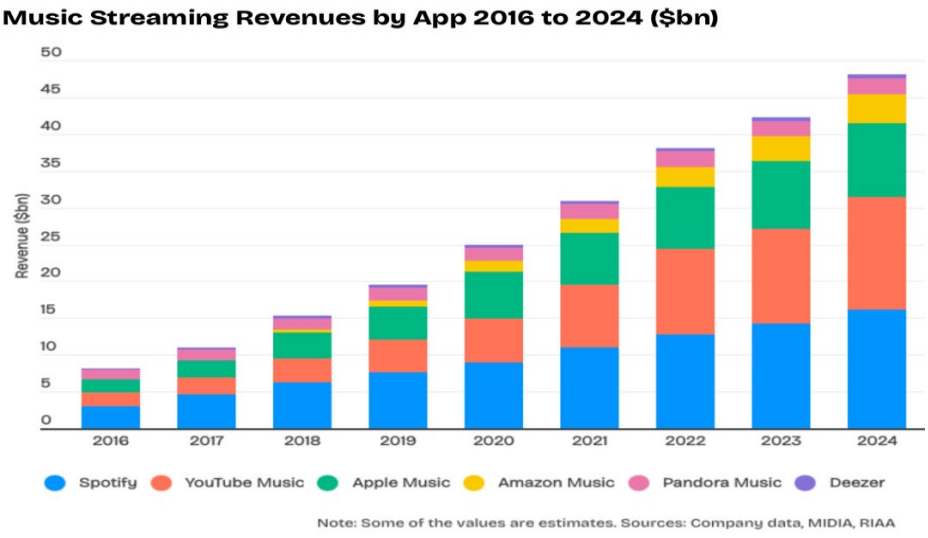
42 Luminate (2024) 2023 Year End Music Report .(January 2024) . Data shared by Luminate https://luminatedata.com/reports/

Arguably the majority of the 86% with very low stream counts stemmed from the 'independent artists' services sector. In turn this might lead us to conclude the professional independent label sector could account for between 8-10% of the total ISRCs[43] delivered, a still considerable number of between 14.7 million and 18.37 million releases. That means the major labels and their fully owned distributors (with 4% of the total number of ISRCs allocated) could account for approximately 7.16 million releases.

That said the numbers provided by one DSP (see Volumetrics Sectoral Breakdown Analysis section) indicates the independent label share of releases may be much greater (61.2%) than the above 8-10% figure suggests. Indeed that figure bears comparison with a recent statement made by Sony Music's Rob Stringer who claimed that; '*nearly half the marketplace is made up of the independent music sector*.'[44] The striking differences in these numbers may be due to different definitions used across the industry, especially as self-releasing artists often use their own 'record label' identity when releasing new recordings.

8.1.4 Music Streaming Platforms: Revenues

Spotify has consistently led in revenue generation; but YouTube is catching up and could surpass it in 2025 according to one source. [45]



43 . Indie label digital licensing body Merlin claim their members account for 15% of the current total global digital revenues but arguably that would not equate to 15% of the available tracks.

44 Ingham T. (2025) Cat Kreidich exits as President of Warner's indie distribution arm, ADA - Music Business Worldwide https://www.musicbusinessworldwide.com/cat-kreidich-exits-as-president-of-warners-indie-distribution-arm-ada/

45 Business of Apps (2025) Music App Report. www.businessofapps.com pp 9

Music streaming revenues have increased in every region, although some are primarily subscription-based economies (principally the US and Europe where almost 58% of revenues are generated)[46] and others (China, Latin America) are more based on advertising and in-app purchases.

Spotify is far ahead of other music streaming apps in the UK, with a 39% market share. Spotify has a slightly younger age demographics than the average, with more users in the 18-24 and 25-34 age brackets (58.5% are under 35) and less in the 45-54 and 55+. Apple skews towards post-35 years old (54%+) and Amazon has 29% in just the 35-44 year segment. 75% of YouTube Music users are under 44 years old.

According to industry research agency MIDIA, 2024 saw continued growth in global music subscriptions hitting over 818 million.[47]. The global market is dominated by just 5 DSPs, which account for almost 80% of the total market. Spotify's global market share was 32%, followed by TenCent (15%), Apple Music (12%), Amazon Music and YouTube Music (both 10%).

8.2. Metadata mapping workflows - previous examples

The visuals below highlight previous efforts to graphically represent the intricacies of metadata flows across the digital music supply chain with the most prominent and well-known ones coming from DDEX and the Music 2025 study. Additionally, a visual created for a 2022 European Commission funded study on Copyright Data Management is included to highlight efforts to represent the complexities in the flow of metadata .

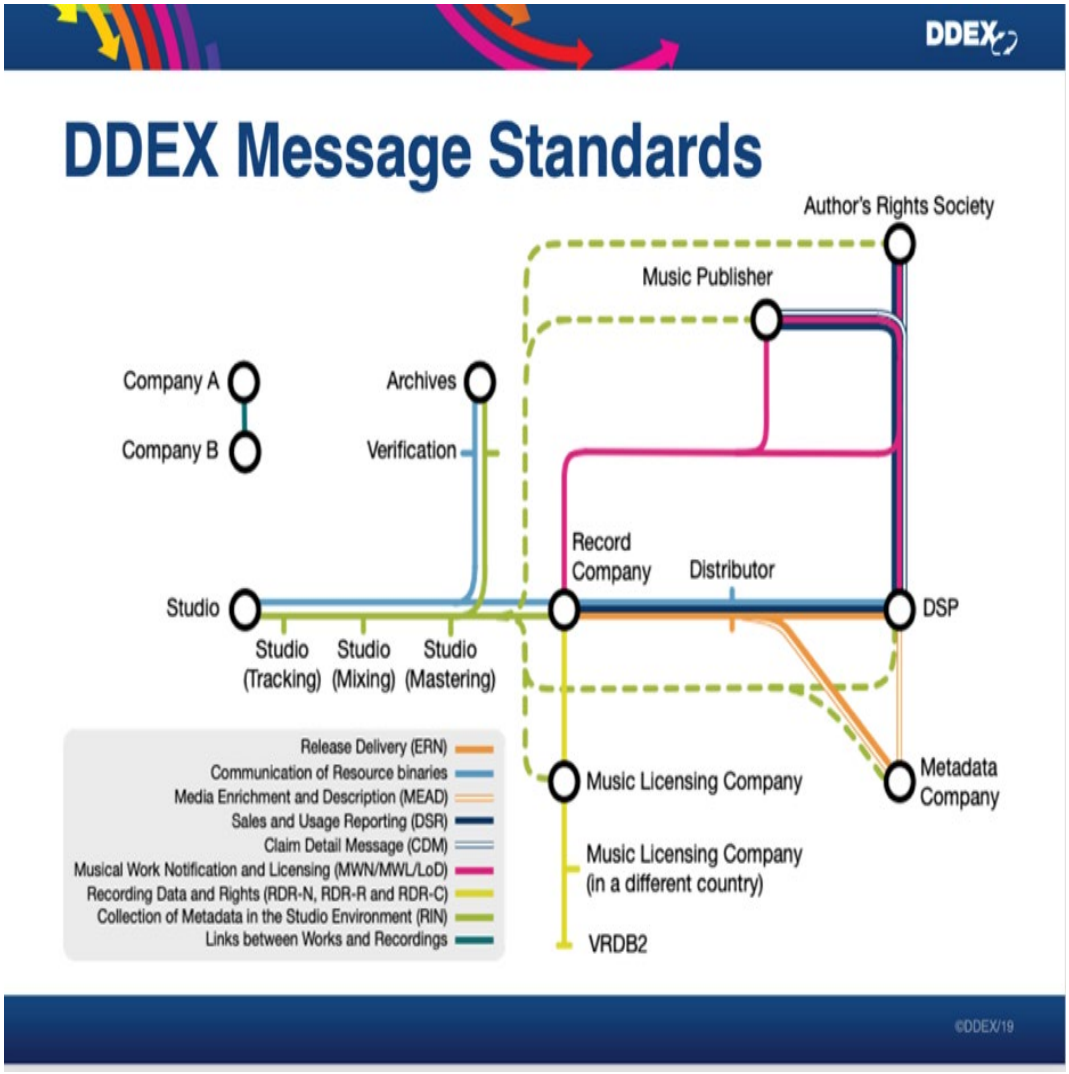
8.2.1. DDEX [48]

This diagram below "*shows how all of DDEX's standards flow between business partners and integrate with each other."*

46 ibid

47 https://www.midiaresearch.com/blog/music-subscriber-market-shares-2024-slowdown-what-slowdown#

48 Digital Data Exchange (2020) Standards https://ddex.net/standards/



8.2.2 European Commission 2022 Study on Copyright Data Management [49]

49 European Commission, Directorate-General for Communications Networks, Content and Technology, (2022) Study on copyright and new technologies : copyright data management and artificial intelligence. Publications Office of the European Union. Page 327. https://data.europa.eu/doi/10.2759/570559

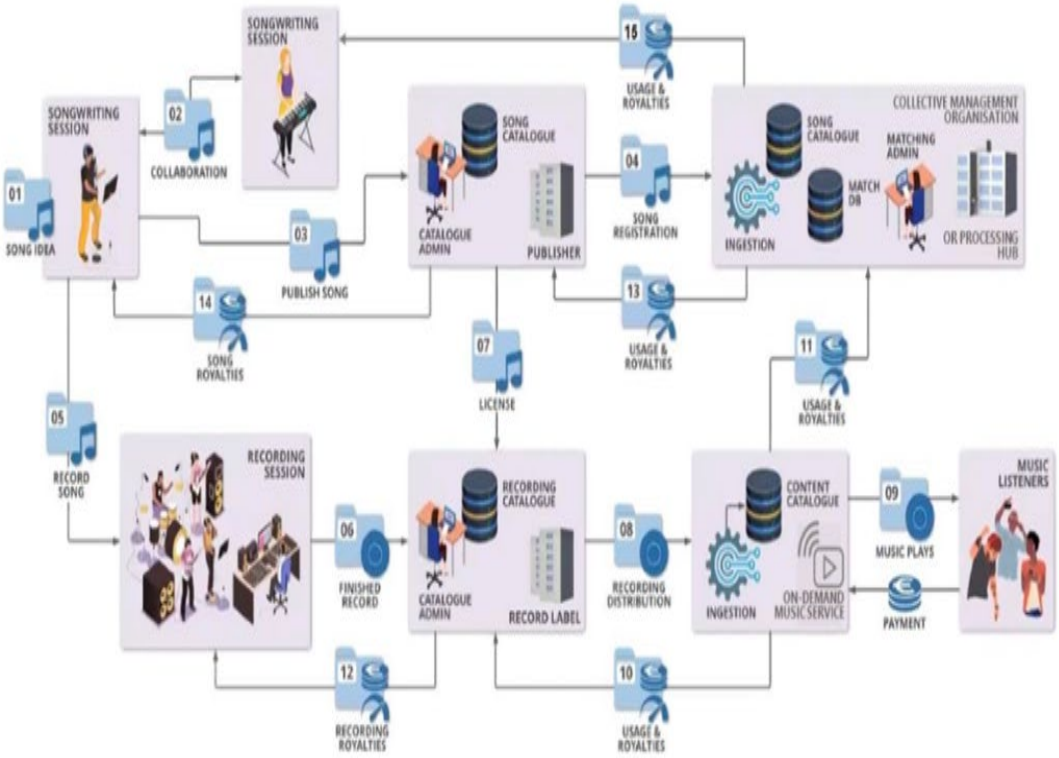


Figure 72: Flow of data pertaining to work and related subject matter, and counterflow of data pertaining to remuneration – example 1: music industry

Source: Stage Enterprises

8.2.3 Music 2025[50]

The visual below "represents the relationships between entities on the publishing side of the system and how these contrast with relationships around the sound recording"

50 Lyons et al (2019) Music 2025 : the Music Data Dilemma , Intellectual property Office. Page 50 https://www.gov.uk/government/publications/music-2025-the-music-data-dilemma

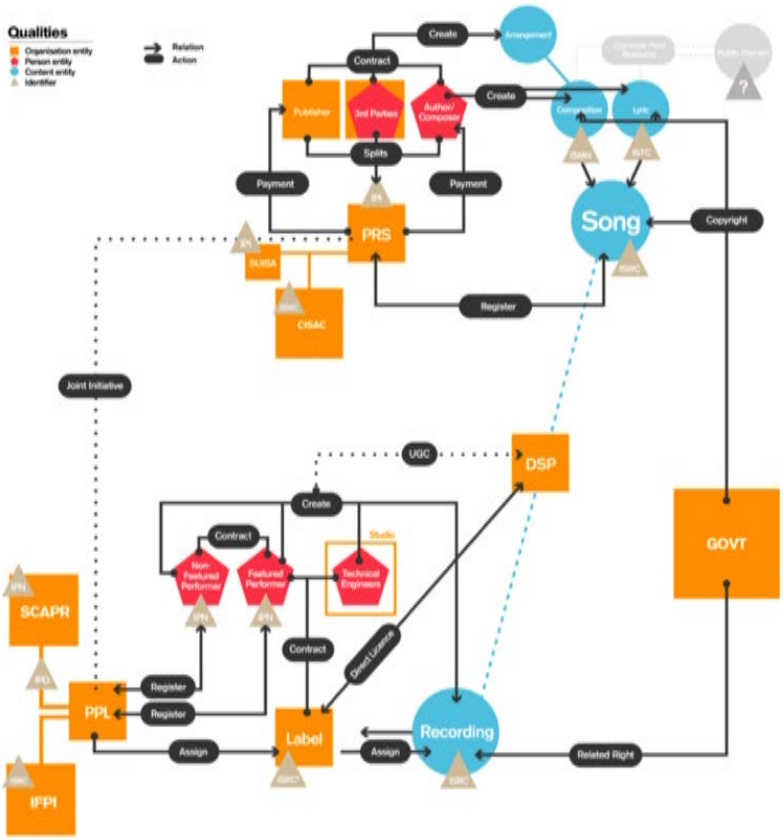


Figure 17: Data flow model for ISWC/ISRC

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Published: April 2026
CP2603037