



CopyrightCoins

The currency of royalties

– White Paper –
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Abstract

This white paper presents the CopyrightCoins: The problems it solves and its uses across content industries, its definition as a crypto-currency and its governance within a closed ecosystem, as well as the technology it is built upon.

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What we are seeing: change, limitations, breakage, and a way forward

The digital disruption of content industries such as music, film, photography, gaming and writing is providing authors with a global audience. This has and continues to change the landscape for creative content so much that [the EU is taking steps to manage copyright in its Digital Single Market](#) (and with all the complexities of the EU administration, not successfully in all parts). In the meantime, UK is Brexiting, which adds uncertainty to the system. Taken at a global level and considering all the different jurisdictions in which copyrighted online content is used and (not always) paid for, one can easily see the complexities faced by any owner of copyrighted content.

Digital is good, right? It's faster, cleaner... but this doesn't always translate to increased profits for industry participants, and it has made it increasingly complex for copyright owners to track, record and understand their income. Depending on the industry, it has also led to highly delayed payments, sometimes up to 3 years after a content has been paid for by the end-user. It's now widely recognised that many industries need to be disrupted and modernised – so much so that artists, writers, publishers and others often take the matter in their own hands to fight this evolution head-on.

Most often, smaller industry participants build a consortium and a legal case against other, larger incumbents (usually corporations), as they recognise the system is unfair to them. In other cases, startups emerge with new technological prowess and great David ambitions to take down and replace the Goliaths of their comparatively niche market segments (independent streaming, professional train photography...). When they're lucky, either actions make the papers. In almost every situation, however, one loses a lot of money, and most lose face.

So it is long overdue that a clever technology is used for a greater purpose: that of aligning interests and ambitions across content industries within an easy to use, fast and fair ecosystem. It is long overdue to put the power back into the hands of copyright owners. And it is long overdue that incumbents in these industries are recognised for the incredible growth they have fuelled in recent years, and for their main advantage: scale.

Like the introduction of the elevator to the stairs industry, our purpose is to work with incumbents, making the most of their competitive advantages to make more money, faster, to all online copyright owners, and solving headaches for all.

CopyrightCoins ("CCIM") is the trademarked cryptocurrency used for the payment of royalties for all current and future ecosystems of online digital content, including music (works and recording), photo, video, articles, design, 3d printing, videogame content and even UGC (User Generated Content).

CopyrightCoins provide more money, faster, to all owners of copyrighted online content.



Starting with the music industry

The global music business alone is \$41bn worth of royalties by 2030, stuck in the mud. This is not news: Few incumbents of the very complex industry capture most of the revenue. By starting with this content industry, CopyrightCoins is built with the most difficult problem to solve – making the ecosystem ready to be used seamlessly for all other content.

In 2017, global music has seen its highest growth rates following a 15-year 40% drop in revenue. This growth has been fueled by the booming online streaming market. The global recorded music market grew by 5.9% in 2016, to US\$15.7bn – just above its 1998 (pre-digital) record of \$13.8bn. The US alone achieved double-digit growth for the first time in 2016 at 11.4% with \$7.65bn, from \$6.87bn in 2015.

The online music market alone is €6.7bn globally in 2016, with the US accounting for 2/3rd of revenue, but Asia has the largest and faster growing customer base. 112 million users paying streaming subscriptions have driven streaming revenue growth of 60.4% in 2016 - online services income now accounts for 50% of all music revenues for the first time.

It's a promising future for the industry overall, with growth expectations to \$41bn by 2030, driven by streaming which is expected to generate \$34 billion (83%) of total revenue. Based on these numbers, our founding partner Internet Music Group (see "The ecosystem" section) estimates it will be worth €25bn by 2020.

But streaming is a malfunctioning system, and other trends reshaping the industry draw a not so promising picture:

- The rise of millennials drives the rise of streaming and the fall of physical album sales
- Consumption is changing to playlists rather than albums, nano-payments and subscriptions rather than purchases
- Becoming an oligopoly: The top 4 Digital Service Providers ("DSPs" Spotify, Deezer, Apple Music and Napster) stream over 75% of worldwide content in 2016
- Bad copies ("covers") and copyright infringement are rampant and impact online music sales

For many, especially independent artists and writers, the game is lost before it's even played. New digital formats were said to have killed the industry while streaming is hailed as its saviour, but streaming has been bad for business so far – an example:

"Artist Matt Farley [reports] revenue around \$20,000 in 2016, down from previous years as his music is increasingly streamed rather than downloaded, which is more lucrative. [...] A six-hour, 200-track Spotify playlist would earn him about a dollar each time it's played in full."

The Streaming Problem: How Spammers, Superstars, and Tech Giants Gamed the Music Industry
Adam K. Raymond, Vulture, July 5th, 2017



DSPs have a hard time tracking copyright infringement or users abusing the system. Fake artists and bad copies “steal” revenue from original copyright owners. This is facilitated by the DSP’s wide search criteria, and large user-base. For example, Spotify has over 100 million daily active users and has recently (2016) been tackled for being unable to spot fake artists; Google/Youtube waited for years before shutting down Youtube-MP3, a Youtube content downloader.

Even when it works, it doesn’t work: As at 5 July 2017, it takes 291 million individual streams to be #1 on Spotify. The top 250-300 copyright owners (music labels, creators and music publishers) generate 95% of the industry’s turnover but any payment of royalties can take up to 3 years to reach them due to the complexities of the copyright relationships, and the way the industry has been built historically. Management of copyrights globally is beyond complexity, and has gotten worse with digital where trillions upon trillions of lines of data are managed by each rights management organisation, locally, on outdated systems.

Clearly, the music industry is not adapted to the online digital business. It is:

- **Complex:** Incorrect, incomplete metadata is shared across all DSPs, rights collection societies and copyright owners, and needs to be reconciled “by hand”. Rights management organisations are country-based and need to reconcile records with others. Communication is a nightmare.
- **Inefficient:** Licensing, calculating, reporting and collecting royalties is time consuming and inefficient for modern streaming services. It can take years for owners to receive a cent from their work.
- **Neither accountable nor transparent:** Relationship from stream to payment cannot be audited. There is no clear chain as to whom has taken a piece of royalty revenue on the way from the streaming to the copyright owner.

The result is in frustrated artists and producers, copyright owners that don’t get their fair share (and have no way to prove it), man-hours and money lost in paper-trailing transactions and in the resulting copyright infringement cases.



CopyrightCoins

CopyrightCoins (CCIM) and its use in any ecosystem of digital content distribution are here to provide more money, faster, to all online copyright owners, without an intermediary.

CCIM is a blockchain-enabled cryptocurrency (see “Technology” sections for details and explanations) built over the last 3 years, managed and controlled within our closed ecosystem, and it cannot be mined publicly.

“CCIM” stands for “CopyrightCoins of Internet Media” (see “The ecosystem” section for details on Internet Media Copyright Association). As an interesting side-note, it also represents the roman numerals for “1199”:

- “1” relates to creativity and initiative, new beginnings, self-reliance and tenacity, striving towards to achieve success, attainment and happiness
- “9” resonates with service to others, leadership and leading others by positive example, altruism and benevolence, and endings and conclusions

CCIM evolves within a decentralised, secure and immutable ecosystem. Accurate metadata for any piece of content and all related transactions (including readership and payments transactions) are recorded onto a blockchain. Combined with our in-house tokenised nano-payments, it guarantees near-instant payment and drastically reduced management fees. With our distributed ledger technology, single streams are licensed - accurate reporting is automatic.

Regardless of the online content being paid for, the premise is simple:

1 click = 1 licence = 1 payment

So what are the long-term benefits of moving to CopyrightCoins?

As a consumer of online content, owning CCIM means supporting the online copyright owners in their long-term development, and to help them reboot their industry via a fair system of exchange. We also envision the CopyrightCoins ecosystem to be a fundraising platform for the artists of the future.

CCIM will bring power back into the hands of those who create the content. Any online copyright owner will find use in CCIM not only as the receiving party of any royalty transaction, but also to represent his or her interests at the Internet Media Copyright Association (“IMCA”), the governance body of the CopyrightCoins ecosystem. 1 owner of CopyrightCoins = 1 vote within IMCA (see “Governance” section for details).

Any distributor of royalties, such as rights collecting societies, will use CCIM as to represent the interests of its industry's copyright owners, to help them negotiate their fair rate of pay, and allow faster, recorded, immutable and audit-able payments.

All of this at a much reduced cost (and reduced headaches!) as full, instant reporting will be



provided to all owners of CCIM. Service providers can also tap directly into the blockchain via our API (see “Technology” section for details).

So what does that mean for the music industry, for example?

As you will see in the “Ecosystem” section, CopyrightCoins is the technology behind focused efforts within each industry, led by companies built within the ecosystem specifically to answer the needs of their industry incumbents. As mentioned above, it all starts with music, our first love.

Our first company represents music writers, publishers, artists and labels’ interests in the industry, and serves to create a common agreement of all parties based on the CCIM technology.

It provides DSPs with access to the unique Music as a Service (“MaaS”) platform from which the DSPs request the use of the copyright for streaming. This is an online platform on top of CCIM and exclusively managed by the music-focused company. In beta testing at the time of writing, it is a simple online licensing platform, streamlining and automating the entire process as well as reporting procedures. Put simply, thanks to our “1 click = 1 licence = 1 payment” framework, the DSPs can just request use for the licence “as a service”. This platform, combined with instant reporting, will offer DSPs with drastically reduced reporting costs, data reconciliation nightmares, and licensing agreement complications.

This is also in recognition to the DSPs’ clear advantage in the industry: scale. CCIM will remove the pain (and needlessness) of licensing and reporting, while putting it back into the hands of copyright owners. DSPs will be able to focus on their core business, improve their margins; Copyright management houses and collecting societies focus on physical use of copyrights (shows, CDs, disks, etc.).

Trust in on its way back into the industry.



CopyrightCoins ecosystem

Important: Key concepts in this section are underlined.

CopyrightCoins are the technological backbone to a greater initiative: Putting trust and fairness back into the payment for online content. To achieve this feat, CopyrightCoins is managed within a closed ecosystem made of companies with specific purposes and focus, from governance to financial management to representing the interests of specific industries. Each company as a dedicated team and acts independently, with CCIM at its core.

Internet Media Copyright Association (“IMCA”):

Internet Media Copyright Association’s primary purpose is to provide a stable economic platform for CCIM. Governed by its members (see “Governance” section), it is responsible for building and maintaining a healthy, liquid and stable CCIM market for the benefit of CopyrightCoins owners.

IMCA is the holder of all CCIM wallets (crypto-world proxy for “bank account”) and is the central bank for CCIM: The only body allowed to issue new CCIM to the market. It has the power (see “Governance” section) to issue more CCIM to the public market, therefore managing price inflation to reasonable levels.

As such, it is the owner of all CopyrightCoins, and new purchasers of the crypto-currency have to register at IMCA to open a wallet and in turn purchase CCIM from IMCA.

Funds received directly by IMCA in exchange for new CCIM are used for the development of the technology and the financing of the ecosystem. Other issuers of CCIM (other companies in the ecosystem) may use CCIM as an investment vehicle for their own purposes – in each instance, part of a separate funding cycle for which new communication (including terms & conditions) will be issued on a case-by-case basis.

Note: After CCIM is purchased from IMCA, it can be traded on all approved exchanges and the crypto and fiat currencies managed by those exchanges.

All data is managed on-chain. Each CopyrightCoins owner has a wallet, and each wallet an address (or “bank account number”) on the CopyrightCoins blockchain (see “Technology” section).

IMCA is a not-for-profit association under Estonian law.

Internet Music (“IM”) Ltd.:

Internet Music is a music rights representation and management company representing the commercial interest of all music industry participants, from DSPs to labels, publishers, artists and writers. Its role is to provide a direct service to industry incumbents and eliminate intermediaries in the music supply chain from creation to end user, with the aim to reduce friction, maximise revenues and provide instant payment of online streaming royalties.

IM operates for the benefit of copyright owners and creators, who assign the administration of their online rights to it. IM will give copyright owners and creators the unique opportunity and power to reimagine and reboot the music industry.



To facilitate its services and make them available to a broad user base, and on a custom basis (not all copyright owners need the same level of representation), IM has built Music as a Service (“MaaS”), an online licensing platform for music copyright. It provides DSPs with access to the unique Music as a Service (“MaaS”) platform from which the DSPs request the use of the copyright for streaming. This is an online platform built on top of CCIM and exclusively managed by the music-focused company. In beta testing at the time of writing, it is a simple online licensing platform, streamlining and automating the entire process as well as reporting procedures. Put simply, thanks to our “1 click = 1 licence = 1 payment” framework, the DSPs can just request use for the licence “as a service”. This platform, combined with instant reporting, will offer DSPs drastically reduced reporting costs, data reconciliation nightmares, and licensing agreement complications.

IM is the holder of all music “smart contracts”: A set of rules that defines who gets paid which amount under which conditions. This is the future of copyright management.

All data is managed on-chain. Each smart contract has an address on the copyright blockchain called “CopyrightID” (see “Technology” for details).

IM is a not-for-profit limited partnership under United Kingdom law.

CCIM Exchange (“CCIME”):

CCIME is the digital clearing house and reporting structure for all CopyrightCoins transactions. It is the link between IMCA and all other on-chain companies in the ecosystem, starting with IM. Therefore, it is the link between each CCIM wallet address and each CopyrightID. With a very small technical team, it clears all transactions as correct within microseconds, flags abnormalities in the system, and manages reporting of all on-chain transactions for each of the ecosystem’s companies.

This is a Business to Business (B2B) service for CCIM only: no other crypto or fiat currencies are part of these transactions.

It is a for-profit business, taking a fee on reporting and transactions to be incorporated.

The future of the ecosystem:

After the successful implementation of Internet Music Ltd for the music industry, the ecosystem team will focus its attention in building the same style of representative bodies for other content industries:

- Articles, blogging (also in beta testing)
- Photography and visual arts
- Video and filming (proof of concept partner approached)
- Video game content
- And many others (design, 3D printing, IPTV...)

Thor Pettersen, Founder of CCIM and its ecosystem, and his team are also looking into building



an online copyright exchange based on smart contracts, allowing for “shares of copyright” to be traded on the blockchain.

Technology: Definitions

The CopyrightChain:

The CopyrightChain is the technological backbone of CCIM ecosystem. It is our adaptation of blockchain technology. It is our in-house and secure distributed ledger technology, built on a trusted network operated and administered by IMCA. The CopyrightChain has been designed and developed based upon principles and forks from the [Waves](#), [bigchainDB](#) and early [Eris \(now Monax\)](#) platforms.

The CopyrightChain allows for tokenised licensing and acts as a digital clearinghouse for copyright, with unique metadata:

- It hosts the copyright smart contracts, which include the CCIM fee asked by the owners of the contract for the use of their content, as well as their name, address, and all other relevant metadata for that particular piece of content
- It hosts all changes to the contract on any of these data points
- It hosts the rule of licensing and payment of royalties for each individual contract
- Each owner of the contract is assigned a number of CopyrightShares based on the individual’s agreed ownership of the contract
- Each copyright smart contract is identified by a CopyrightID created upon registration (see “CopyrightID” below)

It helps simplify and clarify business and licensing relationships:

- Copyright release for a CopyrightID takes place within each industry-representing body’s platform (for example, Internet Music Ltd.’s Music as a Service)
- Copyright can be accessed by any DSP through Content as a Service (“CaaS”) derivatives such as Music as a Service for the music industry
- All transactions are time-stamped, immutable, secure and verifiable

As such, the CopyrightChain is accessible by all industry-representing body within the CCIM ecosystem.

CopyrightChain uses a transaction structure optimized for use with smart contracts, user-defined assets, and transactions with multiple inputs and outputs. It is the best choice for achieving enterprise-grade throughput, scalability, and privacy. The CopyrightChain model lends itself to massive parallelization and transaction processing. It is also the data model required by best-in-class privacy solutions.

The CCIM chain:

The CCIM chain is built on the same technology as the CopyrightChain, however its sole purpose is to record ownership of CopyrightCoins (not copyright) within a wallet, and changes thereof. The wallet is a multi-currency wallet and can hold other currencies besides CCIM.



It hosts the following information:

- Upon registration of a new user, a CCIM wallet is created and assigned a CCIM wallet ID: Each CCIM wallet is identified by an address (just like an IBAN for a bank account, but on the blockchain)
- Each wallet has the details of the user, for Know Your Customer (“KYC”) and Anti-Money Laundering (“AML”) purposes; which include but are not limited to: first and last name, age, nationality, physical address, passport / ID
- The amount of CCIM within a wallet at any given time, as well as the record of all transactions to and from each wallet

The CCIM chain also holds the record of all publicly available supply of CCIM, as well as the record of the CCIM available within IMCA (its central “bank”) and not accessible publicly (as under escrow) – see “Governance” section for details.

As such, the CCIM chain is entirely managed and only accessible by IMCA and CCIME.

CopyrightCoins (“CCIM”):

Outside of the CCIM ecosystem, CCIM is a trade-able cryptocurrency on any authorised exchange, and to any other crypto or fiat currency managed by these exchanges. However, the first issuer of CCIM is IMCA.

Within the ecosystem, CCIM is the crypto-currency used to pay owners of CopyrightShares: CopyrightShares are allocated at the time of registration according to agreed percentage owned by each interested party (see “CopyrightChain” above). CopyrightShares are proof of copyright ownership.

Per our framework, 1 click = 1 license = 1 payment, in CCIM.

In the future, CCIM will be the cryptocurrency of all copyrighted digital content:

- CCIM will be used to pay royalties for all online digital content
- CCIM will be used to purchase or sell CopyrightShares to other users, across industries and/or to the general public
- CCIM will be used by copyright owners to raise funds for a new piece of content

As such, it will be in the interest of all parties within and outside the ecosystem that CCIM is traded publicly, and that its value increases over time.

One CCIM is composed of 100 million “Thorbits” (equivalent of the “Satoshi” for the Bitcoin and the “cent” for the Euro), allowing for nano-payments for each click.

Consensus:

Because each node in a blockchain network independently validates the contents of the blockchain, all nodes must agree on what constitutes validity to have a mutually consistent view of the history of the system.



Technology: Processes

Interface to other systems:

With the aim of working with incumbents within each industry, and to be able to scale sufficiently and to be able to take advantage to the best of blockchain, CopyrightChain supports the Interledger protocol and runs a subset of smart contracts expressible using Crypto-Conditions. Crypto-conditions are part of the Interledger Protocol and provide additional security.

Registering a copyright on the CopyrightChain (creating a smart contract):

The purpose of copyright registration is to record a verifiable account of the date and content of the content in question, so that in the event of a legal claim, or case of infringement or plagiarism, the copyright owner can produce an undisputable copy of the work from a reliable source. In our ecosystem, this is also the creation of a smart contract, allowing the automated payment of royalties to their rightful owners, in a matter of minutes.

For music, two types of copyright are concerned (hence the complexity of this industry):

- [The traditional © symbol](#) for “copyrighted content” applies to the composition, musical score, lyrics, as well as any artwork or cover designs, as all of these are individually subject to copyright in their own rights
- The second type of copyright is [the ® symbol](#), which applies to the sound recording itself

Copyright law recognises the problematic nature of covers (especially for content not under copyright © anymore) which is unique to sound recordings, and gives sound recordings distinct protection in their own right that is separate from that in the underlying work.

Our ecosystem can only accommodate online copyrighted content due to its digital nature, and does not include live performances, printed material, or any other means of traditional distribution of copyrighted content. The raw content metadata is never stored within our ecosystem but rather kept securely in the providers existing data storage infrastructure.

To register content, copyright owners (or their legal representation) access the dedicated platform (such as Music as a Service for Music) and enter all required content asked by the system, which will depend on the type of content. This first registration creates a unique time-stamp as the basis for evidence of ownership and is registered on the CopyrightChain.

**Copyright release:**

After the copyright smartcontract is registered, it will be released within the dedicated licensing platform (see “Platforms” section below). This process will depend on the type of content and the consortium reached within each industry-representative company in the CCIM ecosystem.

Reporting on the CopyrightChain and CCIM chain:

From CopyRightID and wallet address to transaction references, to KYC/AML (“Know Your Customer”/“Anti-money Laundering”) data, CopyrightChain is designed to support a vast array of metadata and to support selective disclosure of any information.

Reporting is performed automatically on-chain, however each platform (see “Platforms” section below) will incorporate specific reporting procedures as defined by their users and for the best use within their industry.

As mentioned above, reporting is performed by CCIME. Specific reporting can be performed by users themselves via the API.



Technology: Platforms

As mentioned in previous sections, CCIM is but the technological backbone to solving the complex problems in the payment of royalties for copyrighted digital content. In the effort of the CCIM ecosystem and team to harmonize industries around a common set of rules and agreed procedures, each industry-representative body within the ecosystem (such as Internet Music Ltd. for the music industry) builds its own platform on top of the “raw” CCIM technology.

Also mentioned above, music being our first area of focus, we have started with the two platforms below to help us set the groundwork in building the future of each industry.

Music as a Service (“Maas”):

Currently in beta testing, MaaS is a cloud service for music copyright (works and recording – see “Technology: Processes” section above) registration and licensing. MaaS removes the need for a DSP (like Spotify or Apple Music) to ingest music/content into their own storage centres, and to make clear the relationship between copyright owners, licensing agreements and users of the licence. This eliminates the expense of hardware acquisition, provisioning and maintenance, music licensing and ingestion, as well as reporting and litigation nightmares for all parties.

Other benefits of the MaaS model include:

- **Flexible payments:** Rather than purchasing a digital copyright package for a set period of time, the DSPs subscribe to a MaaS license and pay-per-use, under our 1 click = 1 licence = 1 payment (using the CopyrightChain and CCIM Chain’s tokenized nano-payment facilities). Transitioning costs to a recurring operating expense allows DSP to exercise better and more predictable budgeting. DSPs can also terminate MaaS offerings at any time to stop those recurring costs, which give more companies access to music offerings without enormous up-front payments.
- **Scalable usage:** Cloud services like MaaS offer high scalability. Amazon Web Services is a great example of such scalability.
- **Automatic updates:** Rather than handling ingestion of new music/content, DSP can rely on a MaaS to automatically update the music offering with the latest releases. This further reduces the burden on in-house staff.
- **Accessibility and persistence:** Since content is delivered over the Internet, end-users can access the music from any Internet-enabled device and location through DSP (acting as a white label solution) and under the DSPs own brand. Internet Music Ltd. or CCIM are completely invisible to the end user, unless of course the DSP wants the user to their own subscription pay in CCIM.
- **Reporting and payments:** CCIME takes most of the extremely resource-demanding processes of reporting and payments away from the DSP.



Governance

CCIM are exclusively managed and governed by IMCA. Its mission is to support and coordinate the efforts of the CopyrightCoins community by helping to create greater awareness of the benefits of the CopyrightCoins in the payment of royalties for copyrighted online content.

Providing more money, faster for Copyright owners and at same time creating Content as a Service (CaaS) for the Digital Service Providers (DSP or retailers) that provide the consumer-facing proposition for music, videos, articles, pictures, design, User Generated Content, gaming etc.

Governance mechanisms for CopyrightCoins:

Implementing a governance mechanisms for CopyrightCoins will contribute to “controlling” the spontaneous, uncoordinated and unpredictable interaction of users and other stakeholders. Our goal is to produce a greater degree of order in the ecosystem and therefore strengthening regularity and stability of the CopyrightCoins itself.

Informal power structures:

The designation of IMCA governance procedures will aim to break up any informal power structures that might be growing in the ecosystem always with the goal of distribute influence in a fair and transparent way.

External governance:

CopyrightCoins is not a company or a legal entity but a financial infrastructure fueled by the CopyrightChain with CopyrightShares (or tokens) representing real value in the flow of royalties. Even though it's difficult to exert undue influence on a financial infrastructure, external governance will make that impossible under the law. IMCA has as a goal that all registrations and trading of Copyrights will be regulated in the same way a stock market regulates companies and their shareholders.

Internal governance:

Internal governance gives a voice to owners of CopyrightCoins and serves as a basis for community referendum on fundamental matters pertaining to CopyrightCoins.

Governance system by the law:

A governance system by the law (self-imposed and otherwise) can prevent owners of CopyrightCoins from lobbying effectively for an impromptu and by majority governance system. IMCA will not accept large pools of CopyrightCoins owners (as seen in bitcoin where pools of miners have had large ownership and often try to influence on major decisions) to change the laws of Governance.



CCIM owner protection:

IMCA governance rules wishes to make a shift in focus from currency regulation to owner protection, based on “investor protection” best practices. It is a clear and present goal of IMCA that suitable measures of investor protection must be implemented to safeguard the interests of CopyrightCoins owners.

Proxy investors/owners and advisors:

Due to the simplicity of “voting practices” in the IMCA ecosystem there will be no differences between owners of CopyrightCoins and their advisers (as in artist and their agents). The ultimate responsibility lies with the receiver of CopyrightCoins, whether they are received as royalty payments or bought as part of a potential “investment” into the crypto-currency.

Permissioned network:

CopyrightChain creates a consortium of computers that increases its decentralization and resilience based on both jurisdictional diversity and geographic diversity (somewhat similar to existing licensing laws of today). Through IMCA, owners of CopyrightCoins get the express authority to validate new transactions and to participate in the consensus mechanism. Consequently, CopyrightChain creates a system of hierarchy where members have different set of rights.

Triple Entry Accounting system (“TEA”):

A wallet address. Every transaction of royalties via CCIM debits one wallet and credits another. The account sending the value digitally signs the transaction, and this digital signature is stored in the third column of the TEA. Consequently, the third column forms the CopyrightChain and the integrity of every transaction is ascertained by reading the CopyrightChain (see “Technology” section above for details).

Business process automation:

IMCA uses business process automation built on consortium and a network that is capable of moving in different directions and that can be optimized for the implementation of future changes as the DSP’s business models evolve.

The CopyrightChain allows for transparent governance within IMCA. While this, at times, can be a challenge, it is certainly less of a challenge to ensure evolution of the network in question than where the network is un-permissioned and subject to public governance challenges.

The end result is that it is easier to govern royalty payment processes and registration of Copyrights via the data management solution used by the network.



The Digital Signature Certificate Authority (“DSCA”):

IMCA maintains a public database of all public keys or encryption keys of digital signatures along with their legally identified owner. To effect this, IMCA issues digital signature certificates. All transactions which happen on the TEA require a public key and a private key to digitally sign the transaction, and IMCA now verifies the identity of the signatory every time. All of it creates an undeniable, immutable and future proof record of transactions.

Sybil tolerance:

Some blockchain networks (such as Bitcoin) allow anyone to add their node to the network. That brings the concern that someone could add so many nodes that they effectively control the network. It’s known as a Sybil attack. Bitcoin makes Sybil attacks unlikely by making them prohibitively expensive.

In our CopyrightChain network, IMCA controls the member list, so Sybil attacks are not an issue.

Permissions and transparency:

Permissions are rules about what users can do with data. An identity, which signifies the holder of a unique private key, can be granted a permission for each transaction type. The CopyrightChain is setup to incorporate all owners of copyright that are consortium “members” (record labels, music publishers, musicians, collecting societies, and support providers such as lawyers and agents). Permissions hold the key to transparency and are usually based upon existing contractual agreements that can be transferred to “smart contracts” in CopyrightChain.

Dual integration:

Dual integration is the process of integrating a specific legal contract into a specific smart contract running on a distributed data store, such as CopyrightChain. This allows parties to use established dispute resolution processes in the jurisdiction(s) of choice while also using a smart contract as the primary mechanism for administering the data-driven interaction that attends to the agreement between the parties.

Smart contracts and Tokenization:

Smart contracts give IMCA the ability to implement processes which can be executed safely anywhere and remain immutable and verifiable. This increases IMCA’s compliance requirements and ensures that royalties transfer is according to copyright owners share (CopyrightShare) in the copyright (identified by CopyrightID).

Deterministic computation:



All participants in the IMCA ecosystem must be able to compute the licensing of Copyrights and achieve the same result. The two most important factors in computing a Copyright license request are accuracy and timestamp, however randomness is to be avoided in each node of the ecosystem, something that is not possible in a decentralized blockchain network. Handling of accuracy and producing identical timestamps is the very definition of deterministic computation and can only be achieved in a permissioned and private network like CopyrightChain.

Outside a deterministic computation framework, it is highly improbable that the members of a consortium ecosystem will have their computer clocks so finely tuned that they are exactly the same – down to the millisecond.

Content and addressable storage:

Each data file and all of the blocks within it are given a unique fingerprint called a cryptographic hash. CopyrightChain removes duplicates across the network and tracks version history for every file. Each node stores only content relevant to that member, plus indexing information that helps figure out who is storing what. When looking up content, the network will find nodes storing the content behind a unique hash.



Disclaimers

Legal Disclaimer:

Please read this section carefully. You should consult your legal, financial, tax and other professional advisor(s) before taking any action in connection with this white paper.

This White Paper is intended to present relevant information to potential purchasers (each a Purchaser) in connection with the generation, sale and electronic transmission of CopyrightCoins, including information about the ecosystem. The information contained in this White Paper is not intended to be exhaustive or to create a contractual relationship.

Nothing in this White Paper shall be deemed to constitute a prospectus of any sort, a solicitation for investment or investment advice nor does it in any way pertain to an offering or a solicitation of an offer to buy any securities in any jurisdiction.

This White Paper is not composed in accordance with, and is not subject to, laws or regulations of any jurisdiction which are designed to protect investors. However, as mentioned under “Governance” section, the ecosystem follows and implement the most stringent best practices in investor protection, Know Your Customer (“KYC”) and Anti-Money Laundering (“AML”). This takes into consideration any laws or regulations in any countries for the best common denominator and to serve as a basis of service for investors around the world.

To the maximum amount permitted by applicable law, the CopyrightCoin team expressly disclaim and shall not be liable for any and all responsibility for any direct or any indirect, special, incidental, consequential or other losses of any kind, in tort, contract or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with (i) Purchaser’s acceptance of or reliance on any information contained in this White Paper, (ii) any error, omission or inaccuracy in any such information or (iii) any action resulting therefrom.

Note to purchasers:

The acquisition of CCIM involves a high degree of risk and it is recommended that each Purchaser conduct its own careful examination of all relevant information and risks about CCIM and its ecosystem, notably the disclosures and risk factors set out below. If any of the following risks actually occurs, the ecosystem may be materially and adversely affected, including the Purchaser’s CCIM being rendered worthless or unusable.

Accuracy of information in this white paper:

This White Paper includes market and industry information and forecasts that have been obtained from internal surveys, reports and studies, where appropriate, as well as market research, publicly available information and industry publications. Such surveys, reports, studies, market research, publicly available information and publications generally state that the information that they contain has been obtained from sources believed to be reliable, but there can be no assurance as to the accuracy or completeness of such included information.



Neither the CCIM team, IMCA and its affiliates or subsidiaries, nor any of their respective directors, officers, agents, employees, shareholders and/or advisers has conducted any independent review of the information extracted from third party sources, verified the accuracy or completeness of such information or ascertained the underlying economic assumptions relied upon therein. Consequently, we do not make any representation or warranty as to the accuracy or completeness of such information and shall not be obliged to provide any updates on the same.

Forward looking statements:

All statements, estimates and financial information contained in this White Paper, made in any press releases or in any place accessible by the public and oral statements that may be made by any company or representative of the CCIM ecosystem that are not statements of historical fact, constitute "forward-looking statements". Some of these statements can be identified by forward-looking terms such as "aim", "target", "anticipate", "believe", "could", "estimate", "expect", "if", "intend", "may", "plan", "possible", "probable", "project", "should", "would", "will" or other similar terms. However, these terms are not the exclusive means of identifying forward-looking statements.

Such forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause actual events or results, performance or achievements to differ materially from the estimates or the results implied or expressed in such forward-looking statements. These factors include, amongst others:

1. changes in political, social, economic and stock or cryptocurrency market conditions, and the regulatory environment in the countries in which CCIM ecosystem companies conduct their respective businesses and operations;
2. the risk that CCIM ecosystem companies may be unable or execute or implement their respective business strategies and future plans;
3. changes in interest rates and exchange rates of fiat currencies and cryptocurrencies;
4. changes in the anticipated growth strategies and expected internal growth of CCIM ecosystem companies;
5. changes in the availability and fees payable to IMCA and other ecosystem companies, where relevant, in connection with their respective businesses and operations;
6. changes in the availability and salaries of employees who are required by CCIM ecosystem companies to operate their respective businesses and operations;
7. changes in preferences of customers of CCIM;
8. changes in competitive conditions under which CCIM ecosystem companies operate, and the ability of them to compete under such conditions;
9. changes in the future capital needs of CCIM ecosystem companies and the availability of financing and capital to fund such needs;
10. war or acts of international or domestic terrorism;
11. occurrences of catastrophic events, natural disasters and acts of God that affect the businesses and/or operations of CCIM ecosystem companies;
12. other factors beyond the control of CCIM ecosystem companies; and
13. any risk and uncertainties associated with CCIM and its related businesses and



operations and the underlying assets (each as referred to in the White Paper).

Nothing contained in this White Paper is or may be relied upon as a promise, representation or undertaking as to the future performance or policies of CCIM ecosystem companies. Further, the team disclaims any responsibility to update any of those forward-looking statements or publicly announce any revisions to those forward-looking statements to reflect future developments, events or circumstances, even if new information becomes available or other events occur in the future.

Language of white paper:

This white paper and any other publicly available information about CCIM and its ecosystem may have been prepared in multiple languages. In the event of any inconsistencies between one version and another, the English language version shall prevail.

Considerations in the purchase of CCIM:

CCIM are non-refundable. IMCA and other companies in the CCIM ecosystem, where relevant, is not obliged to provide CCIM holders with a refund for any reason, and CCIM holders will not receive money or other compensation in lieu of a refund. Statements set out in the white paper are merely expressions of the CCIM team's objectives and desired work plan to achieve those objectives and no promises of future performance or price are or will be made in respect to CCIM, including no promise of inherent value and no guarantee that CCIM will hold any particular value.

CCIM are provided on an "as is" basis and we make no representations or warranties of any kind, whether express, implied, statutory or otherwise regarding CCIM, including any warranty of title, merchantability or fitness for a particular purpose or any warranty that CCIM and its ecosystem will be uninterrupted, error-free or free of harmful components, secure or not otherwise lost or damaged. Except to the extent prohibited by applicable law, all parties and representatives of the CCIM ecosystem disclaim all warranties, including any implied warranties of merchantability, satisfactory quality, fitness for a particular purpose, non-infringement, or quiet enjoyment, and any warranties arising out of any course of dealings, usage or trade.

CCIM is not an offering of securities, commodities or swaps, or a financial instrument of any kind. Purchases and sales of CCIM are not subject to the protections of any laws governing those types of financial instruments. This white paper and all other documents referred to in this white paper including the written terms and conditions by which Purchaser agrees to purchase CCIM do not constitute a prospectus or offering document, and are not an offer to sell, nor the solicitation of an offer to buy an investment, a security, commodity, or a swap on either a security or commodity.

CCIM are not designed for investment purposes and should not be considered as a type of investment. CCIM may have no value, and IMCA is not and shall not be responsible for or liable for the market value of CCIM, its transferability and/or the availability of any market for CCIM through third parties or otherwise. It shall be explicitly cautioned that if CCIM are made available



on an exchange, such exchange, if any, may not be subject to regulatory oversight, and IMCA does not give any warranties in relation to any exchange services providers.

Purchases of CCIM should be undertaken only by individuals, entities, or companies that have significant experience with, and understanding of, the usage and intricacies of cryptographic tokens, including Ether, and blockchain based software systems. Purchaser should have a functional understanding of storage and transmission mechanisms associated with other cryptographic tokens. While IMCA will be available to assist purchasers of CCIM during the sale, IMCA will not be responsible in any way for loss of BTC, ETH or CCIM or fiat currency resulting from actions taken by, or omitted by purchasers. If you do not have such experience or expertise, then you should not purchase CCIM or participate in the sale of CCIM. In addition to the risks included above, there are other risks associated with your purchase, possession and use of CCIM, including unanticipated risks. Such risks may further materialize as unanticipated variations or combinations of the risks discussed in this white paper.

Insurance:

Unlike bank accounts or accounts at financial institutions, CCIM are uninsured unless you specifically obtain private insurance to insure them. Thus, in the event of loss or loss of utility value, there is no public insurer or private insurance arranged by IMCA to offer recourse to Purchaser.

Security risks:

Token generation events and initial coin offerings are often targeted by hackers and bad actors. Hackers may attempt to interfere with the Purchaser's digital wallet or private key storage system, the CopyrightChain's smart contracts or the availability of CCIM in any number of ways, including without limitation denial of service attacks, Sybil attacks, spoofing, smurfing, malware attacks, or consensus-based attacks. Any such attack may result in theft of Purchaser's CCIM.

CCIM purchased by Purchaser may be held in the CCIM owner's digital wallet or vault, which requires a private key, or a combination of private keys, for access. Accordingly, loss of requisite private key(s) associated with the owner's digital wallet or vault storing CCIM will result in loss of such CCIM. Moreover, any third party that gains access to such private key(s), including by gaining access to login credentials of a hosted wallet or vault service Purchaser uses, may be able to misappropriate Purchaser's CCIM. IMCA or any other company in the CCIM ecosystem is not responsible for any such losses. Failure of the Purchaser to map a public key to such the Purchaser's electronic and/or hardware device used to store public and private keys (Purchaser's wallet) may result in third-parties being unable to recognize buyer's CCIM balance when and if they configure the initial balances of a new blockchain based upon the System.

If Purchaser sends fiat or cryptocurrency to IMCA from an exchange or an account that Purchaser does not control, CCIM will be allocated to the account that has sent the counterpart for the exchange; therefore, Purchaser may never receive or be able to recover CCIM in his or her own name. Furthermore, if Purchaser chooses to maintain or hold CCIM through a cryptocurrency exchange or other third party, Purchaser's CCIM may be stolen or lost.



Advances in cryptography, or other technical advances such as the development of quantum computers, could present risks to cryptocurrencies which could result in the theft or loss of CCIM. Internet transmission risks There are risks associated with using CCIM including, but not limited to, the failure of hardware, software, and internet connections. IMCA shall not be responsible for any communication failures, disruptions, errors, distortions or delays you may experience when using ecosystem and CCIM, howsoever caused. Transactions in cryptocurrency may be irreversible, and, accordingly, losses due to fraudulent or accidental transactions may not be recoverable. Cryptocurrency transactions are deemed to be made when recorded on a public ledger, which is not necessarily the date or time when the transaction is initiated.

Irreversible nature of blockchain transactions:

Transactions involving CCIM that have been verified, and thus recorded as a block on the blockchain, generally cannot be undone. Even if the transaction turns out to have been in error, or due to theft of a user’s CCIM, the transaction is not reversible. Further, at this time, there is no governmental, regulatory, investigative, or prosecutorial authority or mechanism through which to bring an action or complaint regarding missing or stolen cryptocurrencies. Consequently, IMCA may be unable to replace missing CCIM or seek reimbursement for any erroneous transfer or theft of CCIM.

Amendments to protocol:

The development team and administrators of the source code for blockchain could propose amendments to such network’s protocols and software that, if accepted and authorized, or not accepted, by the network community, could adversely affect the supply, security, value, or market share of CCIM.

Risk of attacks

Any successful attacks present a risk to the CCIM, expected proper execution and sequencing of CCIM, and expected proper execution and sequencing of contract computations in general. Despite the efforts of IMCA and our technological partners, the risk of known or novel attacks exists. These attacks, may also target other blockchain networks, with which the CCIM interact with and consequently the CCIM may be impacted also in that way to the extent described above.