

Maarten Zeinstra, M.Sc. (i6113013)

2015-2017 part-time LL.M. programme

*Intellectual Property and Knowledge Management*

Supervised by Dr. A. Ramalho & Prof. Dr. M. Pugatch

11.356 words

# Content Recognition Technologies

---

A measure for an effective, appropriate, and  
proportionate digital market?



This thesis is made available under a Creative Commons Attribution 4.0 license. You are free to download, transmit, and build upon this work, as long as you mention the name of the author and link to the license. The full license text is available at <https://creativecommons.org/licenses/by/4.0/>.

# Table of Contents

<b>Foreword</b>	<b>5</b>
<b>Abbreviations and Definitions</b>	<b>7</b>
<b>1. Introduction</b>	<b>9</b>
1.1 Research background and research question	10
1.2 Content Recognition Technologies	11
<b>2. Status Quo</b>	<b>13</b>
2.1 Intermediary liability	14
2.1.1 Hosting	15
2.1.2 Monitoring obligations	16
2.2 Current legal status of CRTs	18
<b>3. Proposed EU legislation</b>	<b>20</b>
3.1 Policy Background	21
3.2 Article 13	23
3.3 Definition from the acquis	23
3.3.1 Content Recognition Technologies	24
3.3.2 Information Society Service Providers	25
3.3.3 Effective CRTs	26
3.3.4 Proportionate CRTs	28
3.3.5 Appropriate CRTs	30
3.3.6 Adequate information on CRTs	31
<b>4. Legal Compatibility of mandatory CRTs</b>	<b>34</b>
4.1 Fair and equitable obligations	34
4.2 Fundamental rights	36
4.3.1 Freedom of Expression	36
4.3.2 Protection of Personal Data and right of private and family life	37
4.3.4 Balance of fundamental rights	38

4.3 E-Commerce Directive	39
4.3.1 Proposed article 13	39
4.3.2 Hosting	40
4.3.3 Monitoring obligations	41
4.4 Practical Compatibility	41
4.4.1 Legal issues surrounding the technical concept of content	42
4.4.2 Exceptions and limitations within the European Copyright Framework	43
4.3.3 Territorial interoperability	46
4.4.4 formalities in the copyright framework	47
<b>5. Conclusions</b>	<b>48</b>
5.1 CRTs	48
5.2 Mandatory CRTs are incompatible with the current acquis	48
5.3 Voluntary CRTs need to be regulated	49
5.4 Recommendation	50
5.5 Further study	50
<b>6. Bibliography</b>	<b>52</b>
6.1 Acquis	52
6.1.1 European Union legislation	52
6.1.2 European Union Treaties	53
6.1.3 International Treaties	53
6.2 Case law	53
6.2.1 Court of Justice of the European Union	53
6.2.2 Opinion of Advocate General	54
6.2.3 Unites States Court of Appeals	54
6.3 Commentary	54
6.3.1 Paper, articles, books	54
6.3.2 Communique of the European Union, Council and Committee	55
6.5 Websites	56

## Foreword

In my work as an advisor in copyright and technology at Kennisland over the past 8 years I increasingly have had to deal with intellectual property. I have been involved in projects that translate legal structures into technologies and used technology as a medium to do comparative showcases of Europe's complex copyright framework.

This LL.M. is not be my first Masters, I have an M.Sc. in Philosophy of Technology and a B.Eng in Software Engineering. I have always been fascinated with structures and systems that I do not understand (yet). I have applied this curiosity mostly to technology and its role in society.

The topic of my philosophy of technology thesis is understanding the nature of our mediated interaction with the world through computer screens.<sup>1</sup> In this new master thesis I seem to be re-assessing that topic, although be it from the perspective of law. In this thesis I explore the intertwined nature of technology and law by doing a legal doctrinal expository research to the interaction between a technological measure to control the rights of rightsholders, and the current *acquis* including a possible addition to it proposed by the European Commission (EC).

As you will read in the following pages, Content Recognition Technologies (CRT's) have taken an important place in the European Digital Single Market (DSM). To such an extent that the EC has proposed that internet platforms implement technologies to match user uploaded content to third party reference lists, to determine if the content is legally on their platforms. This is a clear case where technology and law mediate our experience of the world.

From the perspective of a technologist I have experience with these kind of technologies. For example, I have been a project lead for a project called videorooter.<sup>2</sup> This project created a perceptual hashing standard that can be used to track media use online, a technology that is often referenced within the rationale of the proposed legislation.

---

<sup>1</sup> Zeinstra (2009), 'A postphenomenological approach to understanding interactive screens'.

<sup>2</sup> Videorooter.eu.

I would like to thank my employer Kennisland who has given me the opportunity to do this master. I also wish to thank my girlfriend Lisette, whose never ending support, critical reading and patience has helped me bring this LL.M. to a good conclusion.

August 2017,

Amsterdam

## Abbreviations and Definitions

As most scholarly texts of law this document contains a frequent abbreviations, they are placed below in alphabetical order of the abbreviation.

<b>Abbreviation</b>	<b>Meaning</b>
Article 13	Article 13 of the proposed Directive on copyright in the Digital Single Market
Acquis	Acquis communautaire, including European legislation, European treaties, case law of the CJEU, etc. <sup>3</sup>
AG	Advocate General
API	Application Programming Interface, a technological means for two machines to communicate us a standard set of words.
Commission	The European Commission
Content	All forms of media on the Internet, these include still images (e.g. photography), moving images (video and GIFs), audio and 3D works
CFREU	Charter of Fundamental Rights of the European Union
CJEU	Court of Justice of the European Union, previously called ECJ
CMO	Collective Management Organisation
CRT	Content Recognition Technology
DNS	Domain Name Server, a technical service used to transform a domain name (e.g. example.com) to an ip-address.
DRM	Digital Rights Management
DSM	Digital Single Market
The DSM Directive	proposed Directive on copyright in the Digital Single Market, Procedure 2016/0280/COD
EC	European Commission
ECJ	European Court of Justice, see CJEU
E-Commerce Directive	Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market

---

<sup>3</sup> Conform the Glossary of the European Union as stated on <http://eur-lex.europa.eu/summary/glossary/acquis.html> [accessed on 27-05-2017].

EU	European Union
EUIPO	European Union Intellectual Property Office
E-Privacy Directive	Directive 2002/58/EC concerning the processing of personal data and the protection of privacy in the electronic communications sector [2002] OJ L 201/37 (E-Privacy Directive)
GDPR	Regulation 2016/679 General Data Protection Regulation
IA	Commission Staff Working Document Impact Assessment on the modernisation of EU copyright rules Accompanying the document Proposal for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market and Proposal for a Regulation of the European Parliament and of the Council laying down rules on the exercise of copyright and related rights applicable to certain online transmissions of broadcasting organisations and retransmissions of television and radio programmes
InfoSoc Directive	Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society.
ISP	Internet Service Provide
ISSP	Information Society Service Provider
JURI	Legal affairs committee of the European Parliament
MEP	Member of European Parliament
MS	Member State of the European Union
TEU	Treaty C 326/15 on the European Union
TFEU	Treaty C 326/95 on the Functioning of the European Union
TPM	Technological Protection Measure
Trade Secret Directive	Directive (EU) 2016/943 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use, and disclosure
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
WIPO	World Intellectual Property Organization

# 1. Introduction

The trade in and enjoyment of works vested with copyright and related rights have been increasingly occurring in the digital market. Over 50% of Europeans use the internet to access culture and entertainment.<sup>4</sup> This means that internet platforms that provide access to content take a significant role in the European economy. Specifically the role of these intermediaries – internet platforms – have changed since the digital revolution.

Internet platforms are undergoing a “progressive shift from ownership to access-based models”.<sup>5</sup> These models are used on platforms like YouTube, SoundCloud, Wikimedia projects, etc. These platforms are intermediaries between the consumer and the rightholder, and due to their scale and the limited means to control rights it has become difficult to manage the rights of works uploaded to these platforms.<sup>6</sup>

Various technologies have been developed to try and remedy this problematic rights management. For example, platforms like Spotify and Netflix that use streaming technology in a subscription model. These platforms have direct agreement with rightholders or their representatives, and do not have these issues.

Open platforms that allow users to upload subject-matter vested with copyright or related rights cannot control the content they offer in the same manner. They have developed efficient take-down procedures, where a rightholder can actively request the removal of material from the platform if this is uploaded by a user without permission of the rightholder.

This notice-and-takedown system is being automated and made more efficient.<sup>7</sup> Several platforms are actively working towards so-called Content Recognition Technologies (CRTs). These technologies automatically recognise works that are held by rightholders and act on preset actions by these rightholders.

---

<sup>4</sup> Digital Single Market Strategy for Europe pg. 6 and a number is set to grow to at least 88% in 2020. Additionally, the DSM could create an additional 250 billion Euro of economic growth in Europe in the course of the mandate of the Commission until 2020. Digital Single Market Strategy for Europe, pg. 2.

<sup>5</sup> IA pg. 137.

<sup>6</sup> Farrand, B. (2016), pg. 397.

<sup>7</sup> Angelopoulos, A. (2016), pg. 247.

Then, on 14 september 2016 the EC published a proposal for a directive<sup>8</sup> on copyright in the Digital Single Market (the DSM Directive) that contains an obligation to implement measures such as CRTs.<sup>9</sup> The DSM Directive describes several interventions in the EU copyright framework “to reduce the differences between national copyright regimes and allow for wider online access to works by users across the EU”<sup>10</sup>. One of these intervention is for Information Society Service Providers (ISSPs) to take measures to ensure the functioning of agreements concluded with rightholders, such as the use of CRTs. This is described in article 13 of the DSM Directive.

This current market practice of using CRTs and the proposal gives the opportunity to a legal doctrinal expository research into the technology in the current *acquis* and to explore the consequences of creating a legislation that warrants these technologies for all ISSPs.

## 1.1 Research background and research question

The increasing use of what can be called CRTs creates an interesting research topic. In addition, the recent proposal by the EC require ISSPs to adopt measures such as CRTs to enforce rights of rightholders makes this topic timely and gives some urgency to the analysis of the technology. This leads to a question about the role of these technologies within the current legislative framework, and whether explicitly adding CRTs to this proposed Directive is compatible with the *acquis*.

The practical legal integration of CRTs in real world situations does not only rely on compatibility with the *acquis*, but also relies on possible implementation in the EU Member States. Is the European Digital Single Market sufficiently harmonised to warrant CRTs and are there other issues beside the collisions with the *acquis* that provides issues?

This leads to the following research question:

*What is the legal and practical compatibility of content recognition technologies with the current *acquis communautaire*?*

---

<sup>8</sup> Art. 288, TFEU: ‘[...] binding, as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods. [...]’.

<sup>9</sup> <https://ec.europa.eu/digital-single-market/en/copyright> [accessed on 31 October 2016]

<sup>10</sup> Explanatory memorandum of proposal of the DSM Directive on copyright in the Digital Single Market, pg. 2.

The thesis does not discuss the technology of a CRT itself but it will look at the consequences of an (hypothetical) implemented CRT and its interaction with intellectual property rights within the European Union.

The research question is currently increasingly relevant because of the proposed article 13 of the DSM Directive where ISSPs need to take measures such as CRTs to ensure the functioning of agreements concluded with rightholders. The CRT in light of this article creates a different legal status of the CRT within the European internal market, since CRTs are currently solely voluntary measures that cannot be made compulsory by courts.<sup>11</sup> These two perspectives on CRTs provides a good position for a contrasting analytical reflection of the legal and practical compatibility of these CRTs.

This study sources its legal language from the European *acquis*, the Directives and Regulations of the EU and the decisions of the CJEU. Where it concerns the proposal of CRTs in the DSM Directive the study is based on the text of the proposed DSM Directive of September 2016.<sup>12</sup>

The following chapters explore this question. Chapter 2 describes the status quo, specifically intermediary liability for ISSP, and the current uses of CRTs. Chapter 3 describes the proposed legislation, its policy background and how we should read the proposed legislation in terms of definitions of operative words from the *acquis*. Chapter 4 describes the legal compatibility. It describes in what sense CRTs directly clashes with the *acquis*. It continues to describe practical (in)compatibilities in relation to territoriality of rights, limitations and exceptions to rights, etc. Finally, the conclusion in chapter 5 discusses the overall perspective of CRTs within the European legal framework.

## 1.2 Content Recognition Technologies

In order to understand CRTs it is important to have a sense on how these type of technologies work. CRTs are technologies that can recognize media and take action upon that recognition. They mostly work in one of two ways: by watermarking or by

---

<sup>11</sup> The reason and legal basis of this is described in section 2.1.2.

<sup>12</sup>

<https://ec.europa.eu/digital-single-market/en/news/proposal-directive-european-parliament-and-council-copyright-digital-single-market> [accessed 26 October 2016].

fingerprinting/hashing content that is included in the recognition repository (reference files).<sup>13</sup>

Watermarking adds information to the content. This can be either by overlaying information regarding ownership information, but it can be also be a subtle as adding non perceptual changes to the file that serve as identification numbers. The strength of watermarking is that you can add personal watermarks and therefore identify the person that is responsible for infringing activities. The weakness of watermarking is that they can be broken relatively easily.<sup>14</sup>

Fingerprinting and hashing is a technique whereby the content is mathematically reduced to a unique number that can identify the file. Depending on the mathematical technique this allows either verbatim file identification<sup>15</sup>, of files that are bit by bit the same or perceptual identification<sup>16</sup> of a file. The strength of hashing, in the case of perceptual hashing<sup>17</sup>, is that it can identify files that deviate slightly from the original, are obtained by different processes. The weakness of these types of CRTs is that collisions may occur. These are situations when the mathematical technique of two different files result in the same identification-code.

---

<sup>13</sup> IA, ANNEX 12A, pg. 164 and Ricolfi M. et al. (2011), pg. 13.

<sup>14</sup> By re-encoding the file, removing the watermark, etc.

<sup>15</sup> Called cryptographic hashing.

<sup>16</sup> Called perceptual hashing.

<sup>17</sup> Perceptual hashing is a relatively new way of creating a hash of a file. Ricolfi et al. (2011) make no mention of this technique.

## 2. Status Quo

Most widely used platforms that are active in Europe like Google, YouTube, Soundcloud, Pinterest, Vimeo, Facebook, and DailyMotion use CRTs in some form or another.<sup>18</sup> These platforms use technologies that are made available by companies like audible magic<sup>19</sup>, TinEye<sup>20</sup>, and bmat<sup>21</sup>. YouTube's CRT is a platform in itself called Content ID with over 50 million reference files<sup>22</sup>. Reference files are used to match content uploaded by rightsholders to content uploaded by users. Content ID can detect rights vested in works from audio, video, sound and embedded in sound like lyrics and melody.<sup>23</sup> Google also has a reverse image search<sup>24</sup> that allows users to search for the same and similar images as to an image on their computer.

The current uses of CRTs tend to track uses, presence, and potentially automate the generation of notice-and-takedown procedures for artists and CMOs. Or to automate receiving notice-and-takedowns by connecting rightsholders directly to the available repository of works, as in Content ID. These CRTs are not mandatory measures to enforce the copyright and related rights of the rightsholders of the works vested with these rights. They are services that help these rightsholders to manage rights of their works that are uploaded by users which are not necessarily the rightsholder.

This chapter explores the position of CRTs in relation to current legislation. It analyses what the functioning of these technologies are within the current acquis. As CRTs are not required by law, are they an exponent of current legislation? Can CRTs be forced on ISSPs through an injunction in courts?

---

<sup>18</sup> Section 2 of Annex 12 of the IA, except for Facebook. Source [audiblemagic.com/](http://audiblemagic.com/) [accessed on July 31 2017].

<sup>19</sup> Audible Magic, they have a repository of music that they can scan against.

<sup>20</sup> [www.tineye.com](http://www.tineye.com) [accessed on 31-07-2017].

<sup>21</sup> [bmat.com](http://bmat.com), BMAT works clients mostly include CMOs.

<sup>22</sup> <https://www.youtube.com/intl/en-GB/yt/about/press/> [accessed on 31-07-2017].

<sup>23</sup> <https://support.google.com/youtube/answer/6175220> [accessed on 31-07-2017].

<sup>24</sup> [images.google.com/](http://images.google.com/) [accessed on 31-07-2017] A reverse image search is a CRT, they match user uploaded images to their own repositories.

The chapter starts by analysing the liability of the ISSPs when they make infringing material available via their platforms, since this legal responsibility is what CRTs help to prevent or circumvent.

## 2.1 Intermediary liability

The E-Commerce Directive determines the circumstances in which liability should be limited for ISSPs. In general an ISSP is not liable for transmitting (mere conduit)<sup>25</sup>, caching<sup>26</sup>, or hosting<sup>27</sup> infringing information as long as they have neither knowledge nor control over the infringing works.<sup>28</sup> Once the ISSP is notified it can become directly liable for the infringing work. When an ISSP gains knowledge or awareness of illegal activities it needs to act expeditiously “to remove or to disable access to the information concerned”<sup>29</sup> or lose the benefit of this exemption of liability. This regime is further strengthened by a prohibition on general obligations to monitor traffic, and hosted content.

This regime has been used for the past decades to have ISSPs self-regulate their copyright enforcement role in the emerging digital market.<sup>30</sup> ISSP self regulate to keep their limited liability and to avoid injunctions in cases of continued infringement.<sup>31</sup> This is why ISSPs employ CRTs to strengthen their hosting exemption of the E-Commerce Directive.

CRTs are however not employed for all types of intermediaries. CRTs are rarely employed for transient copies, where the limited liability for transmitting and caching applies. This is because the possibly infringing material is only temporarily on the service of the ISP or ISSP and thus there is little risk for continued infringement. For services that rely on transmitting or caching, cases of continued infringement are continually started by the service’s users and therefore have a different nature than uploaded material that remains on the servers of the service. CRTs are therefore closely connected to the hosting exemption of article 14 of the E-Commerce Directive.

---

<sup>25</sup> Art. 12 E-Commerce Directive.

<sup>26</sup> Art. 13 E-Commerce Directive.

<sup>27</sup> Art. 14 E-Commerce Directive.

<sup>28</sup> Recital 42 E-Commerce Directive.

<sup>29</sup> Recital 46 E-Commerce Directive.

<sup>30</sup> Farrand, B. (2016), pg. 398.

<sup>31</sup> Pursuant to Art.8 of the InfoSoc Directive and Arts. 9 and 11 of the Enforcement Directive. See also Kulk, S. and Zuiderveen Borgesius, F (2012). section. 4.

The next section discusses this hosting exemption in relation to relevant case law of the CJEU as they are most relevant for CRTs. The subsequent section relates the hosting exemption and CRTs to the prohibition on general obligations to monitor information that the ISSP stores.

### 2.1.1 Hosting

The hosting exemption is described in article 14 of the E-Commerce Directive. The article describes that the service provider is not liable for the information stored at the request of a recipient of the service as long as the provider does not have knowledge or is aware of any illegal activity. When this knowledge or awareness is attained the service provider needs to act expeditiously to remove or disable access to the information.

CJEU case law furthermore states that the role played by the ISSP needs to be “[...] neutral, in the sense that its conduct is merely technical, automatic and passive, pointing to a lack of knowledge or control of the data which it stores.”<sup>32</sup> and that the ISSP “[...] has not played an active role allowing it to have knowledge or control of the data stored. The operator plays such a role when it provides assistance which entails, in particular, optimising the presentation of the offers for sale in question or promoting them. [...]”<sup>33</sup>

This intermediary liability is applicable for the ISSPs that were mentioned in the preamble of this chapter. The CJEU confirmed that both search engines<sup>34</sup> and social networks<sup>35</sup> are to be seen as hosting providers. As such these limitation on intermediary liability apply to the parties that adopt CRTs.

Employing a CRT does not remove the liability exemption in the current *acquis* as long as the ISSP acts expeditiously when the technologies detects possible infringing work on their service. Rightsholders can still request an injunction in cases of continued infringement, regardless of whether the intermediary is responsible.<sup>36</sup>

This study already described CRTs are automatic and technical processes to match content to an external reference list. As such CRTs are the mere technical automatic and

---

<sup>32</sup> Google France and Google, Joined Cases C–236/08 to C–238/08, § 114 and Farrand (2016), pg. 402.

<sup>33</sup> L'Oréal and Others, C-324/09, § 145 subpoint 6.

<sup>34</sup> Google France and Google, Joined Cases C–236/08 to C–238/08, § 106.

<sup>35</sup> SABAM, C–360/10, § 33.

<sup>36</sup> Kulk, S. and Zuiderveen Borgesius, F (2012), pg. 56.

passive processes that are discussed above and thus do not limit the exemption of liability of the ISSPs that employ them.

### 2.1.2 Monitoring obligations

There is a prohibition to impose general obligation to monitor on ISSPs: “to monitor the information which they transmit or store, nor a general obligation actively to seek facts or circumstances indicating illegal activity” pursuant to article 15 of the E-Commerce Directive. Any such obligation would after all destroy the limitation of liability described above, as it would put the ISSP into a position that they themselves would have to gain knowledge or awareness of illegal activities and lose their ‘neutral’<sup>37</sup> position.

The CJEU has a few judgements concerning this prohibition for MS to impose monitoring obligations on ISSPs. The following discussion will look at those that concern both the hosting exemption and the prohibition to impose an obligation to monitor. Especially in relation to the CJEU judgement in SABAM<sup>38</sup> as it deals directly with the hosting exemption.<sup>39</sup>

Other CJEU judgement also deals with general obligation to monitor. Mc Fadden<sup>40</sup>, for example, explains the mere conduit exemption in relation to the monitoring exemption and states that monitoring of all information must be excluded from the outset.<sup>41</sup> Also the case Scarlet Extended<sup>42</sup> deals with the mere-conduit exemption as the CJEU in Scarlet Extended prohibits MS from adopting measures which would require an ISP to carry out general monitoring of the information that it transmits on its network.<sup>43</sup>

---

<sup>37</sup> Farrand, B. (2016), pg. 402.

<sup>38</sup> SABAM, C-360/10.

<sup>39</sup> Mc Fadden and Scarlet Extended are not analysed in depth as they with the mere conduit exemption. Mc Fadden, C-484/14, specifies the mere conduit exemption in § 87 “As regards, first, monitoring all of the information transmitted, such a measure must be excluded from the outset as contrary to Article 15(1) of Directive 2000/31, which excludes the imposition of a general obligation on, inter alia, communication network access providers to monitor the information that they transmit.” and Scarlet Extended, C-70/10, § 35 “Consequently, those rules must, in particular, respect Article 15(1) of Directive 2000/31, which prohibits national authorities from adopting measures which would require an ISP to carry out general monitoring of the information that it transmits on its network”.

<sup>40</sup> Mc Fadden, C-484/14.

<sup>41</sup> Mc Fadden, C-484/14, § 87.

<sup>42</sup> Scarlet Extended, C-70/10.

<sup>43</sup> Scarlet Extended, C-70/10, § 35.

SABAM defines what monitoring is further in relation to hosting. Thereby further establishing that a CRT is a form of monitoring that is discussed in the E-Commerce Directive. Specifically, the CJEU established the following steps to identify a service that monitors:<sup>44</sup>

- first, that the hosting service provider identify, within all of the files stored on its servers by all its service users, the files which are likely to contain works in respect of which holders of intellectual-property rights claim to hold rights;
- next, that it determine[sic] which of those files are being stored and made available to the public unlawfully; and
- lastly, that it prevent files that it considers to be unlawful from being made available.

The steps of monitoring in Sabam are the same steps of a CRT in its normal operation as discussed in the preamble of this chapter. What the court does not specify, likely due to lack of technical insight, is that a CRT always needs a reference file to be able to recognise files.<sup>45</sup>

As the CRT can be clearly identified as a system for monitoring the conclusion of that judgement also applies to CRTs. Meaning that a national court cannot issue an injunction for a “a system for filtering:

- information which is stored on its servers by its service users;
- which applies indiscriminately to all of those users;
- as a preventative measure;
- exclusively at its expense; and
- for an unlimited period,

which is capable of identifying electronic files containing musical, cinematographic, or audio-visual work in respect of which the applicant for the injunction claims to hold intellectual property rights, with a view to preventing those works from being made available to the public in breach of copyright.”<sup>46</sup>

---

<sup>44</sup> SABAM, C-360/10, § 38.

<sup>45</sup> The IA does recognise this need and sees it as a necessary cost for the rightsholders. IA, pg. 151.

<sup>46</sup> SABAM, C-360/10, § 53.

In SABAM lies a strong basis that the CRTs are monitoring mechanisms that a national court cannot issue an injunction or impose an obligation to employ CRTs for general monitoring. Still, these technologies are being adopted by large ISSPs. Why they are currently used is explored in the next section.

## 2.2 Current legal status of CRTs

The previous sections have shown that ISSPs have no direct legal requirement to create CRTs. Deploying a CRTs has no influence on the intermediary liability of the ISSP other than to possibly strengthen their position. However, It seems that in an economy of scale these technologies are a logical product of EU's current legislative framework of intermediary liability.<sup>47</sup>

ISSPs that offer rightsholders access to systems based on CRTs like Content ID retain their limited liability by offering rightsholders connected to these platforms options to deal with infringing work. rightsholders can only do so by uploading reference files to the platform. Without a reference file content cannot be matched and therefore the ISSP cannot become aware of infringing material other than by regular notices-and-takedown procedures.

Well-operating CRTs therefore are a market solution that strengthen the limited liability position of a platform by automating the process of identification and putting the process of take-down into the hands of the rightsholders, as in YouTube's Content ID.<sup>48</sup> This does however not mean that the CRT in this form is fully compatible with the *acquis*.<sup>49</sup>

CRTs can also be seen as an outcome of informal governance in the EU.<sup>50</sup> Farrand (2016) describes how previously to the current EU Commission the EU relied on a number of informal and soft-governance mechanisms instead of formal rules to regulate the market. With the new EC in 2014 this path of informal and self regulation might change for this

---

<sup>47</sup> And of course similar regimes like the U.S. Code Title 17 Chapter 5 § 512 "Limitations on liability relating to material online". An analysis of these similar regimes are out of scope for the purpose of this study.

<sup>48</sup> Angelopoulos C. (2016), pg. 194.

<sup>49</sup> Kulk, S. and Zuiderveen Borgesius, F (2012), pg. 58.

<sup>50</sup> Farrand, B. (2016), pg. 409.

intermediary liability. The next chapter explores an article in the proposed DSM Directive that explicitly mentions CRTs.

### 3. Proposed EU legislation

This chapter explores the proposed DSM Directive, its policy background, and the EC's right to act before sourcing definitions for several operative words of article 13 that references CRTs from the current *acquis*.

The EU strives for a well-functioning market place, described in the DSM Strategy.<sup>51</sup> The strategy described a modernisation of the EU copyright Framework and includes the following objectives<sup>52</sup>:

1. Better access for consumers and businesses to digital goods and services across Europe
2. Creating the right conditions for digital networks and services to flourish
3. Maximising the growth potential of the Digital Economy

The EU already implemented some of these objectives<sup>53</sup> and has now proposed new steps. These new steps are part of a list of activities that the EU stated that it will perform to modernise the European legal framework in Europe.<sup>54</sup>

[...]

- iv. clarifying the rules on the activities of intermediaries in relation to copyright-protected content and, in 2016,
- v. modernising enforcement of intellectual property rights, focusing on commercial-scale infringements (the 'follow the money' approach) as well as its cross-border applicability.

[...]

Article 13 imposes frontiers on the free movement of services by imposing limitation in the internal market of these services, namely the CRT. The EC proposed the legislation to lessen the frontiers for the free movement of goods, the copyright protected works. As such

---

<sup>51</sup> [https://ec.europa.eu/priorities/digital-single-market\\_en](https://ec.europa.eu/priorities/digital-single-market_en) accessed on 31 october 2016

<sup>52</sup> Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions, A Digital Single Market Strategy For Europe. 6.5.2015 COM(2015) 192 Pg. 20.

<sup>53</sup> *idem*.

<sup>54</sup> Digital Single Market Strategy for Europe, pg. 8.

it tries to balance the free movement of goods versus the freedom to provide services.<sup>55</sup> The impact assessment (IA) of the proposed Directive<sup>56</sup> argues that the EU strikes this balance in order to respect and to promote the diversity of the cultures of the member states.<sup>57</sup> After implementation, the article should allow rightholders to more effectively exercise their rights within a more harmonised legal framework, which in turn should foster investment in creativity and innovation leading to increased competitiveness, according to the EC.<sup>58</sup>

The EU has no specific competence to regulate the field of copyright.<sup>59</sup> However, the EU can act based on the need to build the EU internal market.<sup>60</sup> Given that market building competence the EU needs to perform a subsidiarity and proportionality check.<sup>61</sup> The EU only has competence when the EU's legislative actions cannot be sufficiently achieved by the Member States.<sup>62</sup> The Commission gives shape to this by providing arguments that it has competence in light of this principle of subsidiarity by having public consultations and publishing impact reports. The below section briefly describe these publications in light of the proposed Directive.

### 3.1 Policy Background

The proposed article in the DSM Directive that argues for measures such as CRTs finds its roots in a JURI Committee report<sup>63</sup> that evaluates the InfoSoc Directive. The committee calls on the EC and the EU legislature “to consider solutions for the displacement of value from content to services; stresses the need to adjust the definition of the status of intermediary in the current digital environment”<sup>64</sup> The report argues that these tools can be improved upon or do not fit the rapid changes in the DSM.

---

<sup>55</sup> Respectively art. 26 and art 56 of the TFEU.

<sup>56</sup> Commission Staff Working Document Impact Assessment on the modernisation of EU copyright rules.

<sup>57</sup> As described in Art. 167(4) TFEU and referred to by the IA.

<sup>58</sup> Commission Staff Working Document A Digital Single Market Strategy for Europe - Analysis and Evidence, pg. 5.

<sup>59</sup> Ramalho, A. (2014), pg. 179.

<sup>60</sup> Art. 114 TFEU.

<sup>61</sup> Ramalho, A. (2014), pg. 198.

<sup>62</sup> Art. 5(3) TEU.

<sup>63</sup> Report on the Implementation of Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society.

<sup>64</sup> Ibid. pg. 15.

It argues that conflicting jurisprudence exists at the different EU member states as to the liability of online platforms.<sup>65</sup> This conflicting jurisprudence is specifically on the scope of the hosting category of limited liability, what it entails to be aware of an infringement, and what it means to act expeditiously.

The EC published the IA and an Analysis and Evidence Report<sup>66</sup> that addresses these issues in preparation for later proposed legal intervention that, among others, resulted article 13 of the DSM Directive. The preferred solution that this IA describes is an obligation on these online services to put in place “appropriate and proportionate technologies, and to increase transparency vis à vis rightholders”<sup>67</sup> This would allow “[...] right holders to better exploit and control the distribution of their content online. It is likely to encourage the conclusion of agreements for the use of content and to generate additional revenues for rightholders”<sup>68</sup>.

To sum up, the policy background driving the inception of the article is that the current EU legal framework does not match up with the shift of ownership to access-to-content models on internet platforms. This, coupled with legal uncertainty of the current framework, creates the perceived problem that rightholders cannot exercise their rights on the internet in an efficient manner. According to the IA this leads to a dysfunctional online content market. Article 13 of the proposal of the DSM Directive is an attempt by the EC to remedy this situation.

The proposed article is a departure from the soft mechanism that were discussed in the previous chapter. A regime that, including the intermediary liability, the EC stated that provided the legal certainty needed to allow Internet-based services to evolve.<sup>69</sup> As such it provides a good basis to discuss the legal compatibility of CRTs within these two regimes.

---

<sup>65</sup> Commission Staff Working Document A Digital Single Market Strategy for Europe - Analysis and Evidence, pg. 56 and note 187. The Analysis states that the CJEU has 4 judgements on Article 14 of the e-Commerce Directive, and that at least 7 MS legislated notice-and-action procedures.

<sup>66</sup> Commission Staff Working Document A Digital Single Market Strategy for Europe - Analysis and Evidence.

<sup>67</sup> IA, pg. 192.

<sup>68</sup> Executive Summary of the Impact Assessment on the modernisation of EU copyright rules, pg. 3.

<sup>69</sup> Commission Staff Working Document A Digital Single Market Strategy for Europe - Analysis and Evidence, pg. 55.

The next section discusses the article itself followed by a section on the definitions sources from the *acquis*.

## 3.2 Article 13

Article 13 consists of three paragraphs. The first paragraph states that ISSP that hosts and makes available material by their users must take measures to ensure the functioning of agreements concluded with rightholders. Here it is striking that the article uses the term host as is the category of ISSP that currently uses CRTs often.

The article goes on to introduce CRTs as an example of those measures:

“Those measures, such as the use of **effective content recognition technologies**, shall be **appropriate** and **proportionate**. The service providers shall provide rightholders with **adequate information** on the functioning and the deployment of the measures, as well as, when relevant, adequate reporting on the recognition and use of the works and other subject-matter.”<sup>70</sup>

Paragraph two of the proposed article introduces mandatory complaints and redress mechanisms for users of the ISSP. Paragraph three introduces an obligation for MS to facilitate cooperation between the ISSP and rightholders, for example to develop best practices.

Finally, worth highlighting is that the language of the article is non-exhaustive. By mentioning measures *such as* CRTs, the article leaves the door open for other measures, including effective editorial control by humans. This study however limits its analysis to CRTs.

## 3.3 Definition from the *acquis*

Article 13(1) should not be read in isolation, it receives its definitions and boundaries from existing policy instruments of the EU and common understanding of the referenced

---

<sup>70</sup> Art. 13(1) Proposed DSM Directive, highlights are my own.

technology. This chapter references these existing instruments to get to the fullest understanding of the article possible prior to its implementation.

Legal definitions are drawn from the *acquis* to be able to determine the reach of the proposed CRT. This section describes what a CRT is in within the proposed Directive and what an ISSP is. It includes definitions on what an effective, proportionate, and adequate CRT is.

Reporting on the use of the works is according the recitals of the DSM Directive not part of the functioning of the CRT and we see its in-depth analysis as out of scope for this document.

### 3.3.1 Content Recognition Technologies

**“Information society service providers [...] shall, [...], take measures [...] such as the use of [...] content recognition technologies [...].”**

The EC gives a terse self referencing definition of Content Recognition Technologies: Content recognition technologies, content identification technologies or automatic content recognition technologies help to identify content by online services.<sup>71</sup> From both a legal and a technological perspective this definition does not give a clear indication on the meaning of the EC.

It is however possible to combine the introduced ideas and concepts of the EC’s companion document to the proposed Directive into a definition of CRTs to understand what kind of technology is proposed if the proposed article is included in the final DSM Directive.

CRTs match content to a reference list of content held by a third party. The concept is simple, for each piece of content a CRT asks a third party reference list: “Do you have this content?”. Although the question is relatively simple, its technological execution provides a challenge.

A compounded definition reads “A CRT in the normal course of its operation is designed to ensure the functioning of agreements or to prevent the availability of protected

---

<sup>71</sup> Based on first paragraph Pg. 164 IA.

subject-matter, which are not authorised by the rightsholder of any copyright or related right”.

The EC lists examples of product that does matching on protected subject-matter that is transposed from its original mode or form of expression.<sup>72</sup> It does not mention these technological issues of content matching.

### 3.2.2 Information Society Service Providers

The article references Information Society Service Providers. It is important to define this concept to be able to determine the extent of affected parties:

“**Information society service providers** that store and provide to the public access to **large amounts** of works or other subject-matter uploaded by their users **shall** [...]”<sup>73</sup>

An ISSP is defined in the *acquis* as “any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services.”<sup>74</sup>

In the preliminary ruling of in the CJEU case of *McFadden*<sup>75</sup>, where the CJEU provides that “normally provided for remuneration” is not limited to economic activity that requires the service to be paid for by those for whom it is performed.<sup>76</sup> Rather, the courts provides that the interpretation of “goods or services normally provided for remuneration” should include services or goods provided for free for “purposes of advertising the goods sold or services supplied by that service provider”.<sup>77</sup> Meaning that platforms that normally are free like YouTube, Wikipedia, GitHub, and Coub.com are still included.<sup>78</sup>

---

<sup>72</sup> For example, Google’s Cloud Vision API. Pg. 170 of ANNEX 12A.

<sup>73</sup> Excerpt from article 13 of the DSM Directive. Emphasis is my own.

<sup>74</sup> Article 1(2) of Directive 98/34/EC as amended by Directive 98/48/EC and pursuant to Recital 17 of Directive 2000/31/EC as restated in recital 17 of the E-Commerce Directive.

<sup>75</sup> *Mc Fadden*, C-484/14.

<sup>76</sup> *Mc Fadden*, C-484/14, § 41.

<sup>77</sup> *Mc Fadden*, C-484/14, § 43.

<sup>78</sup> This is confirmed in the *Papasavvas*, C-291/13, § 58 subpoint 1.

Directive 98/48/EC further defines the ISSPs for the following words within the definition<sup>79</sup>:

- “at a distance” means that the service is provided without the parties being simultaneously present,
- “by electronic means” means that the service is sent initially and received at its destination by means of electronic equipment for the processing (including digital compression) and storage of data, and entirely transmitted, conveyed, and received by wire, by radio, by optical means or by other electromagnetic means,
- “at the individual request of a recipient of services” means that the service is provided through the transmission of data on individual request.

ISSPs by this definition do explicitly not include radio broadcasting services, and television broadcasting services<sup>80</sup> as the directive where this definition is described explicitly excludes these categories.<sup>81</sup> This raises the question whether internet radio and television broadcasting services are included in article 13.

The list of affected ISSPs is further limited by article 13 to those service providers that allow uploads by users. This leaves out retailers (Nike, Amazon, etc.), but includes consumer-to-consumer online marketplaces (Etsy, eBay, AirBnB, Alibaba, etc.) and forums (Reddit, 4chan, Quora, etc.).

Additionally, applicable ISSPs that need to implement measures such as an CRT are limited by those that have licensing agreements and/or are not eligible under liability exemption of article 14 of the E-Commerce Directive. This will be discussed in the section on the interaction with the E-Commerce Directive.

### 3.3.3 Effective CRTs

“[...] Those **measures, such as the use of effective content recognition technologies**, shall be appropriate and proportionate. [...]”

It is not a stretch to view a CRT as a Technological Protection Measure (TPM). TPMs are technologies “designed to prevent or restrict acts not authorised by the rightholders of

---

<sup>79</sup> Directive 98/48/EC Art. 1(2).

<sup>80</sup> Falling under point (a) of Article 1 of Directive 89/552/EEC.

<sup>81</sup> Büllesbach A., Gijrath S., et al. (2010) pg. 286.

any copyright, rights related to copyright [...]”<sup>82</sup> The European Union introduces a protection against the circumvention of these TPMs in article 6 of the InfoSoc Directive. Those acts are of course reproduction, communication to the public and making available to the public or distribution of the rightholders work.<sup>83</sup>

Likewise, CRTs are a technological measure that are intended to ensure functioning of agreements and to prevent the availability of subject-matter vested with copyright or related rights. The difference in the proposed article 13 is however that an obligation is created on the ISSP to apply the technological measure to the works of the rightholders, instead of the rightholder applying the measure without obligation to their own works.

When a CRT is to be read as an TPM, an effective CRTs should then be read in the light of the InfoSoc Directive, which states that “Technological measures shall be deemed *effective* where the use of a protected work or other subject-matter is controlled by the rightholders through application of an access control or protection process, [...], which achieves the protection objective.”<sup>84</sup> Acknowledging this application of effective has limiting effect on what it means to demand an effective CRTs as the proposed article does.<sup>85</sup> Since TPMs that do not achieve the protection objective are not protected, since they are not effective.<sup>86</sup>

This means demanding an effective CRT means that the CRT needs to be not (yet) circumvented. The questions arises whether such an uncircumventable CRT exists and whether demanding CRTs to be effective can still be called appropriate and proportionate?

TPMs also appear in judgements of the CJEU<sup>87</sup> and opinions of the AG<sup>88</sup> which both confirms this connection between CRTs and TPMs but also limit the applicability of the CRT. The judgement for states among others that TPMs are to be defined broadly<sup>89</sup>, thereby making the connection between CRTs and TPMs stronger. However, the same judgement

---

<sup>82</sup> Recital 47 InfoSoc Directive.

<sup>83</sup> As pointed out by Opinion of 19 September 2013, Nintendo and Others, C-355/12, EU:C:2013:581 § 45 and in the judgement of 23 January 2014, Nintendo and Others, C-355/12, EU:C:2014:25 § 25.

<sup>84</sup> Art. 6(3), second sentence InfoSoc Directive, and van Eechoud, Hugenholtz, van Gompel, et al.; Jan 2009, pg. 153.

<sup>85</sup> van Eechoud, Hugenholtz, van Gompel, et al. (2009), pg. 153.

<sup>86</sup> Ibid., pg. 154.

<sup>87</sup> Nintendo and Others, C-355/12.

<sup>88</sup> Opinion of Nintendo and Others, C-355/12.

<sup>89</sup> Nintendo and Others, C-355/12, § 27.

also includes a limitation of the CRT. The judgement argues that a TPM must not go beyond what is necessary for the purpose to pursue the objective of preventing the availability of subject-matter not authorised by the rightsholder.<sup>90</sup> This judgement will come into play in balancing the CRT in relation to fundamental rights.

Finally, the CJEU judgement of SABAM<sup>91</sup> argues that effective monitoring would require that all that all or a at least a substantial amount of the information on the platform is monitored.<sup>92</sup> Here the courts creates a presumption that CRTs need to monitor all information in order to be effective. The judgement ties the effective CRT more closely to the restriction to create general obligations to monitor, since every effective CRT would be a general obligation to monitor.

To conclude, this understanding of an effective CRT can therefore be refined to include that to benefit from legal protection a CRT must be effective. Also that in order to be effective the CRT cannot go beyond what is necessary to pursue the objective of preventing infringing subject-matter and that effective CRTs create the presumption that all or almost all information on the ISSP needs to be monitored. This raises the doubt whether this balance between limiting the scope of the technology with the monitoring all information can be met at all.

### 3.3.4 Proportionate CRTs

**“[...] Those measures, such as the use of effective content recognition technologies, shall be [...] proportionate. [...]”**

The principle of proportionality in copyright law is relatively new<sup>93</sup>, being introduced in the discourse by the InfoSoc Directive<sup>94</sup> and Enforcement Directive<sup>95</sup>. The principle of proportionality here is that constitutional rights, like the right to property<sup>96</sup>, should be

---

<sup>90</sup> Nintendo and Others, C-355/12, § 31.

<sup>91</sup> SABAM, C-360/10.

<sup>92</sup> SABAM, C-360/10, § 37.

<sup>93</sup> Fischman Afori, O. (2014) pg. 890.

<sup>94</sup> Art. 8(1) InfoSoc Directive.

<sup>95</sup> Art. 3(2) Enforcement Directive.

<sup>96</sup> Art. 1 of Protocol I to the European Convention on Human Rights.

balanced against each other on a case-by-case basis. Meaning that constitutional rights are not absolute, rather they are relative.<sup>97</sup>

To comply with the principle of proportionality a three factor evaluation is devised.<sup>98</sup>

1. Is the measure suitable? There needs to be a causal relationship between the CRT and the objective of the measure.
2. Is the measure necessary? The measure needs to be the least restrictive alternative – given equal effectiveness.
3. Is the measure proportionate *stricto sensu*? There needs to be a balance of interest and no excessive burde imposed on other interests in relation to the aim of the measure.

This evaluation needs to be published in the form of an Impact Assessment by the EC. The next paragraphs first explore the CJEU case law before coming back the to justification in relation to this evaluation in the IA.

Additionally, the CJEU did make some guidelines for the national authorities. Member states need to make sure “to [not only] interpret their national law in a manner consistent with [the EU *acquis*] but also to make sure they do not rely on an interpretation of it which would be in conflict with the fundamental rights protected by the Community legal order or with the other general principles of Community law”.<sup>99</sup> Meaning that the principle of proportionality is a complex balancing act between many different types of rights.

The opinion of the ongoing CJEU case *Stichting Brein*<sup>100</sup> helps to provide some basic context. The case is significant as it discusses a technological measure – banning a website from an ISP. AG Szpunar describes measures as proportionate “[...] to the significance and seriousness of the copyright infringements committed, which is for the national court to determine”<sup>101</sup>. Although not binding the AG’s opinion gives a relation to the seriousness of copyright infringement.

---

<sup>97</sup> Fischman Afori, O. (2014), pg. 895.

<sup>98</sup> Ramaldo (2017). pg. 83.

<sup>99</sup> Judgement of 6 November 2003, *Lindqvist*, C-101/01, EU:C:2003:596 § 87 and many others like the judgement in *Ordre des barreaux francophones and germanophone and Others*, C-305/05, § 28.

<sup>100</sup> Opinion of *Stichting Brein*, C-610/15.

<sup>101</sup> Opinion of *Stichting Brein*, C-610/15, § 76.

In relation to CRTs as monitoring technology, the CJEU argues in the judgements of *L'Oréal and Others*, *Scarlet Extended*, and *SABAM* that an act of general monitoring is incompatible with requirements of fairness, cost, and proportionality as put forth in the Enforcement Directive.<sup>102</sup> Meaning that regardless of creating a mandatory measure to monitor that measure, like CRTs, would not only have issues with the prohibition of article 15 of the E-Commerce Directive, but most also balance other fundamental rights.

As such, a proportionate CRT needs to be measured in regard of national legislation, EU *acquis*, fundamental rights, and is measured to the significance and seriousness of the copyright infringement. This raises important questions regarding the possibility of a CRT that can balance all these rights and to how stable this balance can become. It furthermore raises questions about the current implemented CRTs as soft mechanisms, do they balance the rights that are discussed above?

Any online service would have a compliance cost for needing to achieve this balance. The CJEU states that these costs cannot have substantial negative economic impact.<sup>103</sup> These costs would, according to the IA, likely be proportionate to the quantity and dependant to the type of content that the ISSP offers. The IA does not foresee high costs as it sees that most ISSP discussed in the IA already has some CRTs implemented.<sup>104</sup> The IA here makes the assumption that the current CRT achieve this balance of fundamental rights, which might be wrong. The IA concludes that a measure such a CRT as proposed in the DSM Directive “is considered to strike the necessary balance between copyright and other fundamental freedoms.”<sup>105</sup> The next chapter will explore whether this is the case.

### 3.3.5 Appropriate CRTs

An appropriate CRT is one that ensure the functioning of agreements concluded with rightholders for the use of their works or other subject-matter or to prevent the availability on their services of works or other subject-matter identified by rightholders.

---

<sup>102</sup> *L'Oréal and Others*, C-324/09, § 139, and *Scarlet Extended*, C-70/10, § 36, and *SABAM*, C-360/10, § 34.

<sup>103</sup> *Vodafone*, C-58/08, §53 and Ramalho (2017). pg. 83.

<sup>104</sup> Addendum 12A of the Commission Staff Working Document Impact Assessment on the modernisation of EU copyright rules.

<sup>105</sup> IA, pg. 154-155.

Given that the CRT can be seen as a technological measure to prevent the availability of subject-matter protected by copyright or related rights, its limits as to appropriateness can be determined by case law in relation to the legal protection against circumvention of technological measures in the InfoSoc Directive.

In relation to blocking mechanisms – or preventing availability – we can look at the Opinion of AG Cruz Villalón in *TeleKabel Wien*<sup>106</sup> where the AG related the appropriateness solely in relation to the action of the users to possibly circumvent the measure.<sup>107</sup> The AG argues that blocking a website through removing entries from a DNS and blocking an IP-address by internet service provider is an appropriate measure in relation to the protection of the rightholders of movies that were available on that website. According to the AG it is not sufficient that the measure can easily be circumvented because most user will not have the knowledge to do that and user might be informed that the site is offering illegal content and refrain from using it.

Given this example of an appropriate technological measure, the appropriateness of a CRT can then be determined in relation to its goal. The obligation for ISSPs to implement an appropriate CRTs is thus limited to the agreements with rightholders and the definition of a work vested with copyright or related right.

Whether a CRT can be deemed appropriate in relation to this is questionable. CRTs are designed to detect content, not the use of that content. Most notably, it is not clear whether a CRT can be developed that can distinguish between an accepted use of a work that is covered by an exception or limitation to copyright as described in the InfoSoc Directive.

### 3.3.6 Adequate information on CRTs

“providers shall provide rightholders with **adequate information on the functioning and the deployment of the measures**”

---

<sup>106</sup> UPC Telekabel Wien, C-314/12.

<sup>107</sup> The appropriateness of a blocking measure discussed in the Opinion of UPC Telekabel Wien, C-314/12, is blocking of a website through IP-address blocking and DNS blocking by an ISP.

The recitals of the DSM Directive provide a description of what the EC foresees with adequate information. It describes adequate information on the functioning and the deployment of the measures as “information on the type of technologies used, the way they are operated and their success rate for the recognition of rightholders' content”<sup>108</sup>.

This raises the questions whether adequate information on the functioning and the deployment means providing access to the tools, to be reproducible by third parties? If so, does that not limit the acquisition or development of these technologies by the market? Also given the DSM we need to keep in mind that these measure needs to work across jurisdictions, in order to not increase the burden on ISSPs and rightsholders by having a plurality of CRTs per jurisdiction per platform.

The EC’s Analysis and Evidence reports states that “The algorithms and other tools used by online platforms are of course central to their competitiveness and ability to respond to market demands and are understandably considered to be business secrets. The issue is how to balance their need for confidentiality and commercial freedom against the need to enable their users to make informed decisions.”<sup>109</sup>. While this quote is taken from the report’s section for a different proposed article, it does also reverberate for the issues at stake about adequate information on CRTs.

A balance exists between what adequate information on CRTs is and what constitute forcing ISSPs to publish a trade secret as described in the Trade Secret Directive. The Trade Secret Directive describes information as a trade secret when they confirm to the following requirements:<sup>110</sup>

- it is not generally known among or readily accessible to people within the circles that normally deal with the kind of information in question;
- it has commercial value because it is secret;
- it has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret;

While the general working of matching content is known to people within the circles that deal with that kind of information, the specific implementation and effectiveness of these

---

<sup>108</sup> Recital 39 of the DSM Directive.

<sup>109</sup> Commission Staff Working Document A Digital Single Market Strategy for Europe - Analysis and Evidence, pg. 54.

<sup>110</sup> Paraphrased from art.2(1) of Directive 2016/943.

CRTs are generally kept as a trade secret by the companies.<sup>111</sup> We need to wonder if the requirement proposed by article 13 requires the ISSP to disclose their trade secrets.

If not, the concept adequate information is limited and it becomes uncertain if adequate information about the used CRT can be established without a court that evaluates and protects the trade secret.<sup>112</sup>

---

<sup>111</sup> The EC's ANNEX 12 of the IA can only identify terse information about this technology. Personal experience in researching and building this technology on videorooter.eu has shown proven the same.

<sup>112</sup> In accordance to Art. 9(2) of the Trade Secret Directive.

## 4. Legal Compatibility of mandatory CRTs

Up until now the analysis was to CRTs in the current *acquis* and their current uses, and the background and the definitions from operative words in article 13 of the proposed DSM Directive. CRTs are already a functional part of the digital market in Europe, they are being used by ISSPs to keep their intermediary liability exemption as discussed in chapter 2. What changes if these measures be made mandatory like in the proposed EU Directive?

This chapter describes this possible legal (in)compatibility of mandatory CRTs. It discusses the view of a CRT as a TPM, CRTs in light of the Enforcement Directive and E-Commerce Directive, and CRTs in relation to fundamental rights. It also discusses some legal practical barriers of CRTs, like the interaction of CRTs with exceptions and limitations to copyright, and territoriality of rights.

In this chapter the concept of effective CRTs are tested that are proportionate and appropriate given the definitions of the previous chapter.

### 4.1 Fair and equitable obligations

The Enforcement Directive states that a MS cannot provide for measures to ensure the enforcement of intellectual property rights<sup>113</sup> that are not fair and equitable, unnecessarily complicated or costly, or entail unreasonable time-limits or unwarranted delays.<sup>114</sup> Even though the DSM Directive does not actively mention that it leaves this directive intact, it seems unreasonable that the courts will deviate from this article. The question here becomes whether imposing a CRT would be fair and equitable given this article.

For TPMs, like a CRT, the court argues that it is relevant to take into account “[...] the relative costs of different types of technological measures, of technological and practical aspects of their implementation, and of a comparison of the effectiveness of those different types of technological measures about the protection of rightsholders rights, that effectiveness however not having to be absolute.”<sup>115</sup>

---

<sup>113</sup> The DSM Directive covers a subsection of rights that are included in Enforcement Directive. recital 6 of the Enforcement Directive.

<sup>114</sup> Art. 3(1) Enforcement Directive.

<sup>115</sup> *Nintendo and Others*, C-355/12, § 33.

This test is a moving horizon in terms of technology development. This means that what might be overly costly and complicated could be commonplace over time. In the past the CJEU has consistently decided that CRTs or filtering systems are overly complicated and overly costly.<sup>116</sup>

Annex 12A of the IA lists 13 services that offer CRTs to the public. Of those only 4 had public listing of their prices, at the time of writing the annex, for identifying media. Some of these services had completely different purposes to the CRTs mentioned in article 13.<sup>117</sup> It is useless to use these as a comparison whether the technology is out there. Media recognition exists but that does not mean that it exists for this purpose and widely available for the ISSPs that need to implement it. Given the current state of technology these technologies are unnecessarily complicated.

To expand on this, note that the EC only found 13 examples of highly specialized organisations that offer these technologies and that these are subdivided into music, images, and video, it is unlikely that this is a market with a high number of participating companies. This is an indication that these services might be overly costly and/or its technologies rely on patents or trade secrets.

So for example, a new video hosting platform cannot acquire the same quality of technology that a Content ID has – as there are no services that reach that size of reference files. Does it need to start collecting reference works for millions of popular works to achieve any form of effectiveness? Could a fair and equitable measure like a CRT for a start-up be less efficient than the more mature platforms in the field, considering that the practical aspects of their implementation need to be taken into account?<sup>118</sup>

---

<sup>116</sup> L'Oréal and Others, C-324/09, EU:C:2011:474 § 139, Scarlet Extended, C-70/10, §§ 36, 39, 48, SABAM, C-360/10, § 34, §§ 46-47.

<sup>117</sup> Recognize.im is for example completely tailored to detecting product packages in real life situations and not digital verbatim copies. INA works for direct pirated copies but not for verbatim copies or remixes. Google's Cloud Vision API is about understanding the content of an image, not recognizing copies; it can detect whether an image has a princess in it, not recognise if that princess is Leia or Elsa, or a cosplay or parody of these fictional characters.

<sup>118</sup> This of course creates a disbalance to the fundamental right of Freedom to conduct a business. See also Angelopoulos, C. (2017). pg. 47.

## 4.2 Fundamental rights

Fundamental rights – as described in the Charter of Fundamental Rights of the European Union<sup>119</sup> – must be balanced in questions regarding measures of enforcement to have a CRT that adheres to the principle of proportionality<sup>120</sup>, as nothing suggest that intellectual property as a right is inviolable and must for that reason be absolutely protected.<sup>121</sup> The Charter provides several relevant articles that must be balanced: Right for Private and Family Live<sup>122</sup>, Protection of Personal Data<sup>123</sup>, Freedom of Expression<sup>124</sup>, Right to Property<sup>125</sup>, Freedom to Conduct a Business<sup>126</sup>, and the Right to an Effective Remedy<sup>127</sup>.

Whereas Right to Property (e.g. Copyright)<sup>128</sup> and Right to an Effective Remedy have been discussed, Freedom of Expression, Protection of Personal Data and Right for Private and Family Live have not. The next section explore the interaction of CRTs and mandatory CRTs to see what balance must be struck.

### 4.3.1 Freedom of Expression

Policy advocacy organisations describe article 13 and its CRTs as a “censorship machine”. 31 organisations signed a public letter to urge European institutions to reject the Article.<sup>129</sup> They argue that rightsholders can block the spread of copies of their work regardless if these copies are used for excepted uses of copyrighted works or where copyright is limited.

The balance between exercising the exclusive rights of the rightsholder of a work vested with copyright or similar rights needs to be balanced to this Freedom of Expression. As the

---

<sup>119</sup> Charter Of Fundamental Rights Of The European Union (CFREU), C 364/1

<sup>120</sup> As already mentioned in section 3.3.4. relevant CJEU decision on this can be found SABAM, C-360/10, and Promusicae, C-275/06. These confirm that the protection of the fundamental Right to Property must be balanced against the protection of other fundamental rights in the cases of monitoring content for possibly infringing works.

<sup>121</sup> SABAM, C-360/10, § 43.

<sup>122</sup> Art. 7 of the CFREU.

<sup>123</sup> Art. 8 of the CFREU.

<sup>124</sup> Art. 11 of the CFREU.

<sup>125</sup> Art. 17 of the CFREU, Art. 17(2) concerns specifically about intellectual property.

<sup>126</sup> Art. 16 of the CFREU.

<sup>127</sup> Art. 47 of the CFREU.

<sup>128</sup> Pursuant to art. 17(2) of the CFREU.

<sup>129</sup> <https://stopthecensorshipmachine.net/> [accessed on 17-04-2017].

CJEU states in the decision *Tele2 Sverige*: “the retention of traffic and location data could nonetheless have an effect on the use of means of electronic communication and, consequently, on the exercise by the users thereof of their Freedom of Expression, guaranteed in Article 11 of the Charter [...]”<sup>130</sup>

An obligation to implement a CRT at any ISSP might indeed create this overly greedy process that retains data that affects the fundamental right to freedom of expression. If transparency, redress mechanisms are also not adequately present and when external public authority that is tasked with maintaining this balance cannot manage this properly this right will be surely compromised.

#### 4.3.2 Protection of Personal Data and right of private and family life

A CRT scans and compares media files, it is not unimaginable that a ISSPs sends this data to third parties to compare to external repositories of reference files. This is the case when a CRT is an external service to the ISSP. AudioMagic is such an external company, as is SoundHound and other similar companies. As such they can also transmit identifiable information about natural persons to third parties.

The proposed DSM Directive precludes this, article 20 of that DSM Directive states that “processing of personal data carried out within the framework of this Directive shall be carried out in compliance with Directives 95/46/EC and 2002/58/EC.” These directives and the coming General Data Protection Regulation (GDPR)<sup>131</sup> that will repeal 95/46/EC ensure that the CRT cannot transmit any personal data to third parties without a ground.<sup>132</sup>

Creating an obligation to implement a CRT creates a market for these types of technologies. When external companies start collecting harmonised ways of tracking media files across platforms – even when they do not represent them in their repository of reference files – they can start to create identifiable information as defined in the GDPR.

Even though no personal data can be communicated by the ISSP without a sufficient ground in accordance to the GDPR, a CRT can still impact the private life of the ISSP’s user. For a CRT to properly function it needs to analyse every uploaded file on its service.

---

<sup>130</sup> *Tele2 Sverige*, C-203/15, § 101.

<sup>131</sup> GDPR, Regulation (EU) 2016/679.

<sup>132</sup> As described in Art. 6 of the GDPR.

This includes those that are shared privately or selectively. In doing so it can go beyond the mere requirements of the tool.

For example, when a CRT works based on *understanding* the content of a clip where people do cosplay<sup>133</sup> or create a parody, for example dressing up like princess Leia. A CRT might recognise a character of a copyright protected work, where that character does not exist outside that protected subject-matter. It flags that work and makes it available to the copyright holder. That rightholder might gain access to a restricted community shared video and thus breaches the private life of that person. Even if the rightholder does not get access to the work, it might need to prove that the work is not infringing by discussing it with this third party.

Another example is when a user uploads an image to multiple sites, for example to Facebook.com, Imgur.com and Blogger.com. In this example all use an external CRT service that receive the same file of identifier of that file. Regardless whether the file matches a reference file, the CRT service now knows that this file occurs on these platforms, thereby possibly be able to build a profile of those sites or their users.

While CRTs are not *prima facie* incompatible with Protection of Personal Data, having systems in place that track media files might generate issues with Europe's laws in the interaction with Protection of Personal Data and right of private and family life.

#### 4.3.4 Balance of fundamental rights

In the end it is the MS that has to seek this balance of fundamental rights.<sup>134</sup> In the above cases we have seen that the CJEU is not sympathetic for filtering and monitoring technologies dealing with content uploaded by users. The principle of proportionality comes into play again, can the right to property be properly balanced with these other fundamental rights? As Kulk and Borgesius already state “it is questionable whether the rights of internet users would be respected in [filtering systems]”<sup>135</sup>. The EC has a similar doubt which they voiced in their Impact Assessment by stating “The freedom of expression

---

<sup>133</sup> dressing up as a character from fictional stories, including books, series, and films.

<sup>134</sup> Promusicae, C-275/06, § 68.

<sup>135</sup> Kulk, S. and Zuiderveen Borgesius, F (2012). pg. 58.

and information may be affected negatively in cases where the services limit user uploaded content in an unjustified manner”.<sup>136</sup>

The EC however believes that this would not lead to significant increases in unjustified cases of prevented uploads compared with the current situation,<sup>137</sup> which raises the question again whether the current regime of using CRT as a soft self regulating instrument actually balances these rights.

It could for example mean that the effectiveness of the technology needs to be reduced in order to protect the private lives of the users, and that the rightsholder will not receive any detailed reporting about their subject-matter on the services of the ISSPs. In its most extreme misuse it might indeed create an overly complicated unnuanced censorship machine.

### 4.3 E-Commerce Directive

As mentioned in chapter 2, Article 14 (hosting) and article 15 (no general obligation to monitor) of the E-Commerce Directive are most relevant to the compatibility of ISSPs that gain an obligation to implement measures such as a CRT. While chapter 2 concluded that CRTs do not limit the liability exemption of the E-Commerce Directive, creating an obligation for them does goes directly against the CJEU case-law concerning these two articles.

If a CRT does become a mandatory measure what does that leave intact of the current liability regime for intermediaries? The next sections explore this question more in depth. Regardless of the current liability regime, the CJEU already provided a judgement that a balance must be struck between the freedom to conduct a business and the protection of intellectual property rights.

#### 4.3.1 Proposed article 13

This section deals specifically with the proposed article, since its wording might deviate from other hypothetical mandatory CRTs but still has some interesting paragraphs.

---

<sup>136</sup> IA, pg. 153.

<sup>137</sup> Ibid. pg. 153.

For example, it is pertinent to mention that the proposed DSM Directive does not intend to leave intact or not affect existing rules in the E-Commerce Directive, as the E-Commerce Directive is not explicitly excluded from the scope clause in article 1(2)<sup>138</sup> of the DSM Directive.<sup>139</sup> This means that any clashes between the two Directives will lead to having articles in the DSM Directive have legal precedence over articles in the E-Commerce Directive.

Also, that article in the proposed Directive is further explained in recital 38, which describes the foreseen interaction between the DSM Directive and the E-Commerce Directive. The recital states that if an ISSP has a licensing agreement it needs to implement effective technologies, such as CRTs, regardless if they are exempt under article 14 of the E-Commerce Directive. Meaning that if the hosting exemption is applicable to an ISSP, the ISSP does not have to take part in licensing agreements. This means that the liability exemption remains applicable as long as you don't enter into agreements with third parties.

Prima Facie, article 13 of the proposed Directive is not at odds with articles 14 and 15 of the E-Commerce Directive. Since it only an obligation to monitor and then makes the ISSP liable that was previously exempt in articles 14, when they have agreements with rightsholders.<sup>140</sup>

This seems strange, and might create the perverse impulse to not enter in agreements with rightsholders to maintain their limited liability. Similarly, most of these ISSP might not have a choice but to enter into some agreement with these rightsholders. Again it seems at odds with the freedom to conduct a business.

### 4.3.2 Hosting

As seen in section 2.1.1 the hosting exemption of article 14 of the E-Commerce Directive limits the liability of an ISSP that hosts information for its users as long as it is not aware of any infringing material. As long as they have not played an active role in the hosted material their making available of the information needs to be technical, automatic and passive, pointing to a lack of knowledge or control of the data which the ISSP stores.

---

<sup>138</sup> Angelopoulos (2017), pg. 34.

<sup>139</sup> Which is contradicted on the IA, pg. 153.

<sup>140</sup> Angelopoulos (2017), pg. 35.

The question here arises what effect a mandatory measure such as a CRT would impact this neutrality concept that was put forth by SABAM and Scarlet Extended.<sup>141</sup> Does this mean that the hosting safe harbour is lost when employing a CRT. Within the context of the DSM proposal Angelopoulos (2017) sees this as a large incompatibility.<sup>142</sup>

Given a mandatory CRT without this context such a measure would also face this issue whether the CRT plays an active role within the setting of this article. As such this is to be considered to be incompatible with the article 14 of the E-Commerce Directive.

#### 4.3.3 Monitoring obligations

Articles 15(1) of the E-Commerce Directive is directly at odds with CRTs as a mandatory measure.<sup>143</sup> Here the CJEU judgement in SABAM cannot be more clear. They defines the role for a system of filtering<sup>144</sup> almost completely identical to a CRT. The judgement continues to state that this would require active observation of files stored by users with the hosting service provider and would involve almost all of the information.<sup>145</sup> Consequently this would destroy the limited liability regime as active observation is prohibited to keep that exemption intact. Any injunction or mandatory measure would require the ISSP to carry out general monitoring, which is prohibited by this article.<sup>146</sup> Given this alone the mandatory CRT is incompatible with the *acquis*.

Even if this direct incompatibility did not exist it is a question whether a CRT that is proportionate and appropriate is even possible. The question remains whether the current regime of the voluntary CRT is actually proportionate to other fundamental rights.

### 4.4 Practical Compatibility

This section deals with the legal practical compatibility of mandatory CRTs. This explores the technical<sup>147</sup> compatibility by looking at the practical legal integration of the

---

<sup>141</sup> Farrand (2016). pg. 402.

<sup>142</sup> Angelopoulos (2017). pg. 36.

<sup>143</sup> Angelopoulos (2017). pg. 47.

<sup>144</sup> SABAM, C-360/10, § 53.

<sup>145</sup> *Ibid.* § 37.

<sup>146</sup> *Ibid.* § 38.

<sup>147</sup> There is a difference between technical and technological compatibility. Whereas the discussions on the technological describe the theory and mechanics of digital content

technology in real world situations. The compatibility of a mandatory CRT does not only rely on manners of the *acquis*, but also relies possible implementation of the mandatory measure like the proposed article. Is the European Digital Single Market sufficiently harmonised to warrant this article and are there other issues beside the collisions with the *acquis* that provides issues? This section does not discuss the technology of a CRT itself but it will look at the consequences of an (hypothetical) implemented CRT and its interaction with intellectual property rights. What happens when mandatory CRTs are implemented, what might happen to national implementation and CRTs.

#### 4.4.1 Legal issues surrounding the technical concept of content

CRTs introduce the legal concept of *content* as protected subject-matter into a technological language where content can mean any piece of structured information and can be described in many ways. Content created and described in a file with file format X cannot be one-to-one compared with the same content describe in a file with file format Y, since the information contained therein is not in the same place or not stored at all.<sup>148</sup>

Additionally, content can be stored in different qualities or resolutions. For example Youtube has up to 24 versions of a single video.<sup>149</sup> This means that even though content can be stored in the same standard of information structuring, this does necessarily mean that this is stored in an identical file, even though it is identified as the same content according to the law.

Comparing content is then not as simple for computers as it might seem. While the annex of the IA does not describe the above noted problem, it does introduces two types of

---

recognition, discussion on the technical describe the systemic issues of the way a technique is used.

<sup>148</sup> There is not one register of different file formats. However FileInfo.com has been collecting file extensions since 2005 to work as an inofficial registry. A file extension is an indication of the file format. They are used interchangeably here. According to this index there are close to 2,000 different file format for major content types. [retrieved 170202]

<sup>149</sup> YouTube allows up to 6 different quality standards for the same video, it stored the same content in the same information structure but these are 6 different files. It also uses 4 standards for 'encoding' a video. This means that most videos on YouTube have around 24 different files representing the same protected subject-matter. To make it even more complicated, YouTube allows users to upload video's in 9 different file formats that are not of the same file format or resolution of the videos it outputs. <https://support.google.com/youtube/troubleshooter/2888402?hl=en> [accessed on 03-02-2017].

methods that allows bypassing of this problem: adding a watermark to files and reducing information of files to a fingerprint. Both have their own technological challenges and limits the usefulness of CRTs.<sup>150</sup>

An additional mismatch exists between the legal concept of content and that of the technological concept of content. Whereas subject-matter that is vested with copyright is the same regardless of the mode or form of its expression<sup>151</sup> technological matching of files does not take this into consideration. A text vested with copyright is thus regardless of its form of expression. The exclusive rights it conveys to its creator apply when the text is presented as a text file, as an image, being read aloud (like an audiobook), and translated.

Finally, content can be embedded into other works, video's might contain an image, poster, or background music. Video can contain a scrolling bar of text, subtitles, or other texts. So, even though matching might be possible for the content directly presented in files, any derivative or work that changed medium can become additionally problematic.

To conclude, several legal and technological interaction concerning the word content exist, clearly the legislator has the broader legal concept in mind, that of protected subject-matter regardless of technical form of expression. This technical form of protection clashes with the working of the technology.

In relation to an effective measure this raises the question whether the CRT needs to reach its goals with the technical concept of content or the legal concept of content (subject-matter) vested with copyright?

#### 4.4.2 Exceptions and limitations within the European Copyright Framework

Copyright and neighbouring rights are national rights that are partly harmonised in the InfoSoc Directive.<sup>152</sup> This directive lists a series of exceptions and limitations to copyright.

---

<sup>150</sup> Watermarking is very fragile to changes, watermarks are easily corrupted or removed from a file. Fingerprinting or hashing are less fragile to changes in the file but have a risk of false positives and can easily be circumvented by changing the content to a certain threshold. For example by horizontally flipping an image, speeding up a movieclip, etc.

<sup>151</sup> Art. 2(1) Berne Convention.

<sup>152</sup> InfoSoc Directive.

<sup>153</sup> The interaction between an implemented mandatory CRT and these exceptions and limitation might prove problematic.

Especially exceptions and limitations related to acts of copying by specific types of parties might prove problematic for a CRT.<sup>154</sup> It would require the CRT to not only determine whether the work matches a reference file, it needs to determine whether the user falls under one of the exceptions or limitations. Additionally, incidental inclusion<sup>155</sup> has already proven problematic in US courts.<sup>156</sup> In the case of *Lenz v. Universal Music Corp* a baby was dancing for 20 seconds while a song by the artist Prince was playing in the background. The different court cases took more than 10 years and concluded that copyright holders must first conduct an analysis of whether the material constitutes fair use.

<sup>157</sup>

Since these European exceptions and limitations have various implementation status across the Union it is unlikely that two member states will have the same state of facts in any case concerning the legality of material published that is not infringing according to these rules. Applicable law likely various between member states and it will be difficult for courts to rule on this cases in a cross-border manner a risk of irreconcilable judgements exists. In such cases each actions would have to be decided per member state.<sup>158</sup>

---

<sup>153</sup> Art. 5, InfoSoc Directive lists 20 optional exceptions and 1 mandatory exception. More national limitations and exceptions to copyright might exist on national level covered under the that fall under the previous existing exception of 5(3)(o) of the infoSoc Directive.

<sup>154</sup> Specifically articles:

5(2)(c) – Reproduction by libraries, archives and museums;

5(2)(e) – Reproduction of Broadcasts by social institutions;

5(3)(a) – Illustration for teaching or scientific purposes;

5(3)(b) – Use for the benefit of people with a disability;

5(3)(c) – Reporting by the press on current events;

5(3)(d) – Quotation for criticism or review;

5(3)(f) – Use of public speeches or public lectures.

<sup>155</sup> Art. 5(3)(i), InfoSoc Directive.

<sup>156</sup> In the case of *Lenz v. Universal Music Corp.*, 801 F. 3d 1126 - Court of Appeals, 9th Circuit 2015.

<sup>157</sup> Harvard Law Review. *Lenz v. Universal Music Corp.* Ninth Circuit Requires Analysis of Fair Use Before Issuing of Takedown Notices.

<sup>158</sup> Painer, C-145/10, § 150 subpoint 1.

## COPYRIGHT EXCEPTIONS

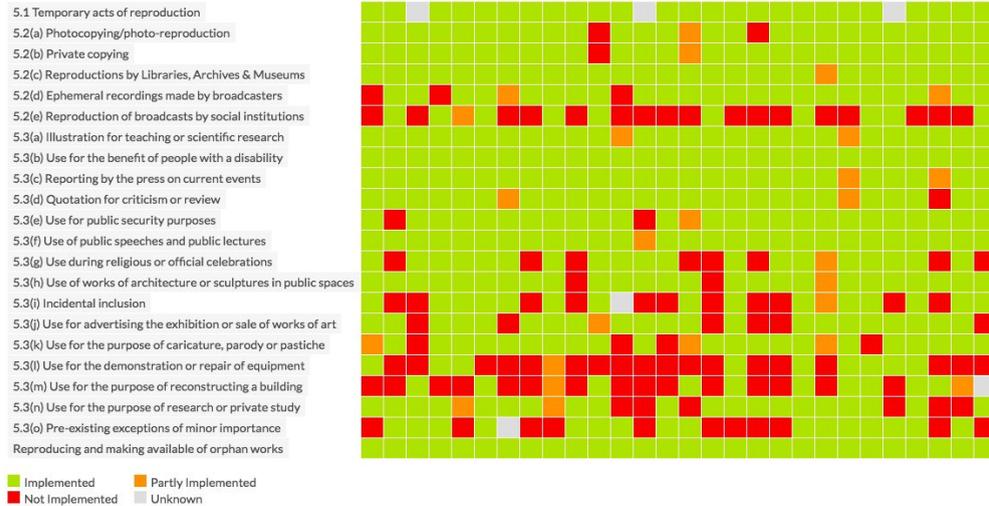


Fig. 1 screenshot from CopyrightExceptions.eu, Zeinstra, M. (2016) [last accessed on 05-02-2017].<sup>159</sup>

Thus, given the nature of a CRT and the territoriality of different rights it will prove difficult to have one CRT that can recognise limitations and exceptions to copyright across Europe. Given that limitations and exceptions will most likely be a problem for CRTs this becomes an additional complexity.

Any CRT, mandatory or not, will have to make this balance between the rightsholders and the permitted used of set forth in article 5 of the InfoSoc Directive. The Infosoc Directive itself already stated that a “fair balance of rights and interests between the different categories of rightholders, as well as between the different categories of rightholders and users of protected subject-matter must be safeguarded.”<sup>160</sup> Any CRT can disrupt this balance and thus making this a matter of proportionality again.

Finally it is worrisome that voluntary measures employed by ISSPs might not always provide the same scrutiny to the exceptions and limitations of the works as they do to the rights of the rightsholders. As Quintais (2017) concludes on TPMs “the application of

<sup>159</sup> A web platform created by the author, based on Westkamp G, (2007) and updated using a network of national experts.

<sup>160</sup> Recital 31, InfoSoc Directive.

TPMs overrides the possibility for end-users to exercise most limitations potentially applicable to online sharing<sup>161</sup>

### 4.3.3 Territorial interoperability

The InfoSoc Directive already states: “[...] In an increasingly networked environment, differences between technological measures could lead to an incompatibility of systems within the Community. Compatibility and interoperability of the different systems should be encouraged [...]”<sup>162</sup> CRTs that are not compatible to each other, or across national boundaries will lower the effectiveness of them.

The issue of territoriality also becomes of interest in terms of the call for best practices as described in article 13(3) of the proposed DSM Directive. If these best practices include anything like standards of the CRT we might see the creation of a multitude of 27 standards<sup>163</sup> that the ISSP need to comply with, bearing in mind that one standard can only cover one type of medium or use.

For example, if each member states sets a different standard for a CRT that can recognise images and one internationally operating rightholder needs to interact with all these standards than that rightholder has 27 different types of technological interactions. Likewise, an internationally operating ISSP needs to implement 27 different standards and work with a different standard per jurisdiction.

The proposed article that requires measures such as a CRT does not remedy this situation and might lead to a complicated and overly costly implementation of CRTs. As the recital above ends with: “It would be highly desirable to encourage the development of global systems.”<sup>164</sup>

This means that a CRT that is regulated as a mandatory measure but with national regulation probably faces cross border effectiveness issues. Any mandatory CRT should therefore be regulated as EU measure, not a national measure.

---

<sup>161</sup> Quintais (2017) pg. 194.

<sup>162</sup> Recital 54, InfoSoc Directive.

<sup>163</sup> At least one per member state.

<sup>164</sup> Recital 54, InfoSoc Directive.

#### 4.4.4 formalities in the copyright framework

The Berne convention prohibits any formalities for the enjoyment of copyright by rightsholders.<sup>165</sup> Creating any obligation for ISSPs to register works for the full enjoyment of their copyright i.e. proper enforcement of rightsholders works. CRTs in some forms could therefore be incompatible with the Berne convention.

Rightsholder could still enjoy their full rights without having their works in the reference files of a CRT. This still means that ISSP that offer CRTs cannot close their other means of notification of infringing works. ISSP still need to maintain their notice-and-takedown options.

Formalities can still be a problem depending on how a mandatory CRT as a registration system is introduced. Van Gompel<sup>166</sup> argues that only formalities can be introduced for the purpose of facilitating rights clearance that are “not a prerequisite for protection or that entail the loss of protection during the existence of copyright”<sup>167</sup>.

Even though voluntary formalities do not affect the enjoyment of copyright and are thus not in violation of the Berne convention,<sup>168</sup> given the presence of these CRTs on the large ISSPs and the rationale behind the proposed article it seems that the CRT can have a significant effect on the ability to exercise the rights vested in the works that are available on these ISSPs. As such they can practically impact the enjoyment of the rights of a rightsholder.

---

<sup>165</sup> Art. 5(2), Berne Convention and thus by reference in the TRIPS Agreement and the WIPO Copyright Treaty.

<sup>166</sup> van Gompel, S. (2013). pp. 1425-1458.

<sup>167</sup> Ibid. pg. 1439.

<sup>168</sup> Ibid. pg.1425.

## 5. Conclusions

### 5.1 CRTs

The progressive shift from ownership to access-based models that ISSPs are going through has effects on the way rightsholders can exercise their rights. Subscription based models like Netflix and Spotify are one example of that shift. The more problematic example are open platforms like YouTube, Facebook, SoundCloud, etc. Here user can upload material that can be infringing on the copyright and related rights of rightsholders

Automated notice-and-takedown processes that lead to CRTs strengthen the limited liability of ISSPs when dealing with user uploaded material. They give rightsholders transparency and control over material that they hold (exclusive) rights over. The ISSP however still keep their liability exemptions from articles 12-15 of the E-Commerce Directive. CRTs therefore already have a role in our digital single market.

### 5.2 Mandatory CRTs are incompatible with the current acquis

The proposed DSM Directive states that measures such as CRTs need to become mandatory to ensure the functioning of agreements concluded with rightsholders. In this form CRTs are moved from tools that help rightsholders and ISSPs to manage notice-and-takedown procedures to a legal tool that should be able to be relied upon in court.

This would be a incompatible with several CJEU courts cases and a deviation from current policy directions, specifically the E-Commerce Directive and the Enforcement Directive. Also having the necessary legal embedding for these kind of measures, like requiring effective CRTs that are appropriate and proportionate are problematic and are incompatible with current CJEU court cases.

CRTs as an effective TPM furthermore limits the extend of the measure. CRTs that are not effective can be circumvented by users without infringing this protection on TPMs. Furthermore, TPMs that go beyond the objective which achieves the protection objective are likewise not protected.

The largest issue is the balance of fundamental rights that is required for any mandatory measure. Mandatory CRTs would have difficulty to pass the three factor evaluation of the principle of proportionality. Yes there is a causal relationship between the CRT and an objective of managing rights and automatically detecting possible infringements. But whether it is the least restrictive is doubtful and depends on how the measure is shaped in legislation. The current text of the proposed does seem to fail this factor. The study provided a substantial amount of questions regarding the balance of interests in relation to the aim of the measure. Both in terms of practical nature as territoriality but also in terms of fairness and equitability and fundamental rights is a balance difficult to find.

### 5.3 Voluntary CRTs need to be regulated

Regardless of the mandatory nature of CRTs practical legal issues exist that do warrant legislative intervention. Recognition of content on platforms is one thing, but automatically determining that these works are actually infringing is another. Limitations and exceptions to copyright and related rights cannot be done by a strictly technical process analysing the content, rather it needs to take the status of the user into account as well. It is highly doubtful that this can be done with current technology.

Additionally, while the rights of the rightsholders have been mostly harmonised in the InfoSoc Directive, these limitations and exceptions are still territorially determined. Similarly, one piece of content can have a different rightsholder per jurisdiction. Requiring that each ISSP set up a content register with rights status of these work per jurisdiction will definitely overly costly for the ISSP.

Introducing legislation that introduces CRTs as a measure in a directive might generally lead to complications on their national implementation. When these transpositions provide slight deviations they can impose an implementation nightmare for ISSPs as they would have to keep track of 28 transpositions and possibly additional nationally created standards.

Finally, given the complicated nature of the exercising of copyrights and similar rights on the internet means that some forms of CRTs come very close to introducing formalities as prohibited in the Berne conventions. Whether these CRTs when they are not mandatory can still create a de facto formality that is prohibited by the Berne Convention can be subject for further study.

## 5.4 Recommendation

CRTs are an outcome of current legislation, they strengthen the limited exemption of intermediary liability. Making a CRT as a mandatory measure certainly has incompatibilities with the current *acquis*. However, leaving these technologies unregulated probably creates or maintains a disbalance between the rights of the users and the rights of the rightsholders of works vested with copyright and related rights.

Due to these incompatibilities the EC should not argue to create mandatory measures like CRTs, unless they want to radically change their policy direction and make changes to existing directives. However, CRTs need to be regulated within the European DSM since their incompatibility also exists with the current CRTs used by ISSPs.

Legislation about CRTs should include a fair balance with fundamental rights, not be mandatory to be in compliance with the E-Commerce Directive, not create overly costly obligations for ISSPs, consider limitations and exceptions to copyright and related rights.

As such I would suggest that if the EC wants to walk in this minefield of incompatibility, it should rather focus on creating open standards and ways to lower the costs of implementing voluntary CRTs for ISSPs.

## 5.5 Further study

A direction for further study is to devise such a balance measure containing CRTs. To overcome that problems of fundamental rights, excessive burdens that limit the freedom to conduct a business, barriers to entrance to the market, cross border issues, etc. one might consider a CRT as a voluntary measure that is run as a service by the EUIPO. Making the technology rely on open standards, using fingerprinting technology, might guarantee and make sufficiently transparent the measure of a CRT within the EU. As long as the measure would not introduce a formality within the EU copyright framework.

As said in this study, CRTs are a moving horizon. Meaning that the balance of rights in relation to the possibilities of technologies will change over time. As does its interaction with the *acquis*. For example in recent CJEU judgements hyperlinking cases are increasingly treated as primary copyright infringement. CRTs as discussed in this study might also apply to linked content. Similarly YouTube has started to apply Content ID on

live streams – for example of people playing games – which raises additional questions about the nature of this in relation to another body of case law. Technology for enforcement and Copyright are stuck with each other and will remain to provide interesting topics for study.

## 6. Bibliography

### 6.1 Acquis

#### 6.1.1 European Union legislation

Directive 89/552/EEC of the Council 1989 on the coordination of certain provisions laid down by Law, Regulation or Administrative Action in Member States concerning the pursuit of television broadcasting activities [1989] L 298

Directive 98/48/EC of the European Parliament and of the Council amending Directive 98/34/EC laying down a procedure for the provision of information in the field of technical standards and regulations [1998] L 217/18

Directive 2000/31/EC of the European Parliament and of the Council on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market [2000] L 178/1 (E-Commerce Directive)

Directive 2001/29/EC of the European Parliament and of the Council on the harmonisation of certain aspects of copyright and related rights in the information society [2001] OJ L 167/10 (InfoSoc Directive)

Directive 2002/58/EC of the European Parliament and of the Council concerning the processing of personal data and the protection of privacy in the electronic communications sector [2002] OJ L 201/37 (E-Privacy Directive)

Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of intellectual property rights [2004] L 195/16 (Enforcement Directive)

Directive 2016/943 of the European Parliament and of the Council on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure [2016] L 157/1 (Trade Secrets Directive)

*Proposal* for a Directive of the European Parliament and of the Council on copyright in the Digital Single Market [2016] 2016/0280 (COD) (DSM Directive)

Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC [2016] L 119/1 (GDPR)

### 6.1.2 European Union Treaties

Consolidated versions of the Treaty on European Union and the Treaty on the Functioning of the European Union [2007] OJ C 326/01 (TFEU)

Consolidated Version Of The Treaty On European Union [2012] C 326/13 (TEU)

### 6.1.3 International Treaties

Berne Convention for the Protection of Literary and Artistic Works [1979] (Berne Convention)

Agreement on Trade-Related Aspects of Intellectual Property Rights [1994] (TRIPS)

WIPO Copyright Treaty [1996]

## 6.2 Case law

### 6.2.1 Court of Justice of the European Union

Judgement of 6 November 2003, Lindqvist, C-101/01, EU:C:2003:596

Judgement of 26 June 2007, Ordre des barreaux francophones and germanophone and Others, C-305/05, EU:C:2007:383

Judgement of 29 January 2008, Promusicae, C-275/06, EU:C:2008:54

Judgement of 23 March 2010, Google France and Google, Joined Cases C-236/08 to C-238/08, EU:C:2010:159

Judgement of 8 June 2010, Vodafone and Others, C-58/08, EU:C:2010:321

Judgement of 12 July 2011, L'Oréal and Others, C-324/09, EU:C:2011:474

Judgement of 24 November 2011, Scarlet Extended, C-70/10, EU:C:2011:771

Judgement of 1 December 2011, Painer, C-145/10, EU:C:2011:798

Judgement of 16 February 2012, SABAM, C-360/10, EU:C:2012:85

Judgement of 23 January 2014, Nintendo and Others, C-355/12, EU:C:2014:25

Judgement of 27 March 2014, UPC Telekabel Wien, C-314/12, EU:C:2014:192

Judgement of 11 September 2014, Papasavvas, C-291/13, EU:C:2014:2209

Judgement of 15 September 2016, Mc Fadden, C-484/14, EU:C:2016:689

Judgement of 21 December 2016, Tele2 Sverige, C-203/15, EU:C:2016:970

## 6.2.2 Opinion of Advocate General

Opinion of 19 September 2013, Nintendo and Others, C-355/12, EU:C:2013:581

Opinion of 26 November 2013, UPC Telekabel Wien, C-314/12, EU:C:2013:781

Opinion of 8 February 2017, Stichting Brein, C-610/15, EU:C:2017:99

## 6.2.3 Unites States Court of Appeals

*Lenz v. Universal Music Corp.*, 801 F. 3d 1126 - Court of Appeals, 9th Circuit 2015

## 6.3 Commentary

### 6.3.1 Paper, articles, books

Angelopoulos, C. (2016). European Intermediary Liability in Copyright: a Tort-Based Analysis.

Angelopoulos, C. (2017). On Online Platforms and the Commission's New Proposal for a Directive on Copyright in the Digital Single Market.

Büllesbach A., Gijrath S., et al. (eds), (2010). 'Part II: e-Commerce Directives', in Concise European IT Law (Second Edition), Concise Commentary of European IP Law, Volume 1.

Van Eechoud, Hugenholtz, van Gompel, et al. (2009). Harmonizing European Copyright Law.

Farrand, B. (2016). Chapter 15: The Future of Copyright Enforcement Online: Intermediaries Caught Between Formal and Informal Governance in the EU', in Irini A. Stamatoudi, *New Developments in EU and International Copyright Law*, Information Law Series, Volume 35.

Favale, M. (2014). A Wii Too Stretched? The ECJ Extends to Game Consoles the Protection of DRM -- On Tough Conditions.

Van Gompel, S. (2013). Copyright Formalities in the Internet Age: Filters of Protection or Facilitators of Licensing. *Berkeley Technology Law Journal*, 28(3).

Kulk, S. and Zuiderveen Borgesius, F (2012). Filtering for Copyright Enforcement in Europe after the Sabam cases. *European Intellectual Property Review* 2012, issue 11, p. 54-58.

Ramalho, A. (2014). Conceptualising the European Union's Competence in Copyright – What Can the EU Do?

Ramalho, A. (2017). Beyond the Cover Story – An Enquiry into the EU Competence to Introduce a Right for Publishers.

Ricolfi M. et al., *Survey of Private Copyright Documentation Systems and Practices* (2011), pg. 13.

Quintais, J.P. (2014). Chapter 4: Between Rights and Limitations: Mapping the Space for the Legalisation of the Online Use of Copyright Works, in *Copyright in the Age of Online Access: Alternative Compensation Systems in EU law*, Information Law Series, Volume 40.

Westkamp, G. (2007). *The Implementation of Directive 2001/29/EC in the Member States*, Part 2.

### 6.3.2 Communique of the European Union, Council and Committee

Commission Staff Working Document *A Digital Single Market Strategy for Europe - Analysis and Evidence*, 6-5-2015,

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52015SC0100> [accessed on 31-10-2016] (Analysis and Evidence)

Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions A Digital Single Market Strategy For Europe, 6-5-2015,

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0192> [accessed on 31-10-2016]

Commission Staff Working Document Impact Assessment on the modernisation of EU copyright rules, 14-9-2016, available at

<https://ec.europa.eu/digital-single-market/en/news/impact-assessment-modernisation-eu-copyright-rules> [accessed on 31-10-2016]

Commission Staff Working Document Executive Summary Of The Impact Assessment on the modernisation of EU copyright rules, 14-9-2016, available at

<https://ec.europa.eu/digital-single-market/en/news/impact-assessment-modernisation-eu-copyright-rules> [accessed on 31-10-2016]

Explanatory memorandum of proposal of the DSM Directive on copyright in the Digital Single Market, 14-9-2016,

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52016PC0593> [accessed on 31-10-2016]

Report on the implementation of Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society, 24-06-2015, (2014/2256(INI)) (Reda Report) [accessed on 31-10-2016]

## 6.5 Websites

[http://ec.europa.eu/internal\\_market/consultations/2013/copyright-rules/index\\_en.htm](http://ec.europa.eu/internal_market/consultations/2013/copyright-rules/index_en.htm) [accessed on 31-10-2016]

<http://eur-lex.europa.eu/summary/glossary/acquis.html> [accessed on 27-05-2017]

[http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2256\(INI\)&l=en](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2256(INI)&l=en) [accessed on 31-10-2016]

[http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2256\(INI\)&l=en](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2014/2256(INI)&l=en) [Accessed on 09-08-2017]

<https://ec.europa.eu/digital-single-market/en/copyright> [accessed on 31-10-2016]

<https://ec.europa.eu/digital-single-market/en/news/digital-single-market-strategy-europe-an-alyis-and-evidence-swd2015-100-final> [accessed on 31-10-2016]

<https://ec.europa.eu/digital-single-market/en/news/impact-assessment-modernisation-eu-copyright-rules> [accessed on 31-10-2016]

[https://ec.europa.eu/priorities/digital-single-market\\_en](https://ec.europa.eu/priorities/digital-single-market_en) [accessed on 31-10-2016]

<https://images.google.com/> [accessed on 09-08-2017]

<https://stopthecensorshipmachine.net/> [accessed on 17-04-2017].

<https://support.google.com/youtube/answer/6175220> [accessed on 31-07-2017]

<https://support.google.com/youtube/troubleshooter/2888402?hl=en> [accessed on 03-02-2017]

<https://www.audiblemagic.com/> [accessed on 31-07-2017]

<https://www.youtube.com/intl/en-GB/yt/about/press/> [accessed on 31-07-2017]

Source [audiblemagic.com/](https://www.audiblemagic.com/) [accessed on 31-07-2017]

[www.bmat.com](http://www.bmat.com) [accessed on 31-07-2017]

[www.tineye.com](http://www.tineye.com) [accessed on 31-07-2017]

<https://harvardlawreview.org/2016/06/lenz-v-universal-music-corp/> [accessed on 28-08-2017]