

# International Study on the Impact of Copyright Law on Digital Preservation

## Singapore's Legal Position

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### 1. Introduction

1. Singapore is a relatively young nation. However, this does not mean that preserving the nation's heritage is any less important. Because of Singapore's unique geographical location and her migrant population, Singapore's culture and history have been subjected to the confluence of the combined cultures of China, India, Malaysia, Indonesia and the British, who colonized Singapore in 1819. After independence in 1965, though Singapore's aggressive land use policies have enabled the country to modernize, progress was not achieved at the expense of its heritage, which the Singapore government was at pains to preserve. The Preservation of Monuments Board,<sup>1</sup> the designated statutory board for heritage preservation, has actively taken steps to preserve the numerous artifacts such as hotels, places of worship, colonial offices, piers, parks and monuments left on the island. This has been made possible because it works together with the Urban Redevelopment Authority,<sup>2</sup> a government body responsible for planning Singapore's national land use policy for physical development.<sup>3</sup> Thus various historical landmarks have been identified, accorded special legislative protection<sup>4</sup> and placed under the oversight of a special statutory board.<sup>5</sup>

#### 1.1 Preservation of Museum Collections and Government Records

2. But the preservation of Singapore's heritage is not only about protecting buildings and monuments. Our heritage would encompass records such as official documents, books, manuscripts, reports, maps, plans, charts, photographs, tape and video recordings of TV and radio programming, speeches and interviews. It also comprises

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<sup>1</sup> Preservation of Monuments Board, About MICA: Preservation of Monuments Board, <http://www.mica.gov.sg/aboutus/pmb.html> (last visited Jul. 1, 2008).

<sup>2</sup> Urban Redevelopment Authority, Conservation Matters: Overview, <http://www.ura.gov.sg/conservation/conservation.htm> (last visited Jun. 17, 2008).

<sup>3</sup> Urban Redevelopment Authority, Introduction, <http://www.ura.gov.sg/about/ura-intro.htm> (last visited Jun. 17, 2008).

<sup>4</sup> Preservation of Monuments Act, c. 239, 1985 rev. ed. (Sing.).

<sup>5</sup> The Preservation of Monuments Board, a statutory board of the Ministry of Information, Communications and the Arts (MICA). The Board's objectives are the preservation of monuments of historic, traditional, archaeological, architectural or artistic interests, to protect and augment the amenities of these monuments, to stimulate public interest and support in the preservation of these monuments and to take appropriate measures to preserve all records, documents and data relating to these monuments.

various physical items which form the collections of the various museums in Singapore. In Singapore, responsibility for collecting, preserving and managing Singapore's museum collections rests with the Heritage Conservation Centre. However, a quick perusal of the Heritage Conservation Centre and the museums' websites will show that they do not seem to have digitized their collections or made digital records of their collections available for online access and viewing, perhaps for copyright reasons.<sup>6</sup>

3. In contrast, the National Archives of Singapore ("NAS") has been more proactive in this regard. The NAS has responsibility for public and private archival records. It is statutorily empowered to classify, identify, preserve and restore public records that are of national or historic significance.<sup>7</sup> There are departments in the NAS dedicated to the capture and storage of digital records of documents, images and audio-visual onto digital form.<sup>8</sup> Access to many of these records is available online via the Access to Archives Online Singapore (a<sup>2</sup>o) database, which is itself a database of databases for public archives,<sup>9</sup> textual archives,<sup>10</sup> private textual records,<sup>11</sup> building plans and maps,<sup>12</sup> oral history interviews,<sup>13</sup> photographs<sup>14</sup> and audio-visual materials.<sup>15</sup> By providing evidence of government actions and enabling public access to these records, the NAS promotes accountability of government actions and the rights of the citizens of Singapore to a transparent and efficient government.<sup>16</sup>

## **1.2 Preservation of Books, Photographs, Films and Other Intellectual Output**

4. While the NAS is responsible for preserving public records, the National Library Board ("NLB") is responsible for preserving private records in the form of books, photographs, films, sound tracks and other printed matter.<sup>17</sup> It is a legal requirement for two copies of all such materials published in Singapore to be deposited with the

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<sup>6</sup> See e.g. National Museum of Singapore, Images Copyright Clearance (under Resources/Images Copyright Clearance), <http://www.nationalmuseum.sg/> (last visited Jul. 1, 2008).

<sup>7</sup> National Heritage Board Act, c. 196A, 1994 rev. ed., §§ 17(2), 19 (Sing.).

<sup>8</sup> National Archives, Our Organisation – A Look at the Departments at NAS, <http://www.nhb.gov.sg/NAS/OurOrganisation/> (last visited Jun. 16, 2008)

<sup>9</sup> Government Records Information Database (GRID), <http://www.a2o.com.sg/a2o/public/grid/index.html> (last visited Jun. 12, 2008).

<sup>10</sup> Speech-Text Automated Retrieval and Search System (STARS), <http://stars.nhb.gov.sg/stars/public/> (last visited Jun. 12, 2008).

<sup>11</sup> Private Records Information System (PRISM), <http://prism.nhb.gov.sg/prism/public/prism/pindex.htm> (last visited Jun. 12, 2008).

<sup>12</sup> Cartographic & Architectural Records Database Singapore (CARDS), <http://cards.nhb.gov.sg/cards/public/cards/> (last visited Jun. 12, 2008).

<sup>13</sup> Collection of Oral History Recording Database (CORD), <http://cord.nhb.gov.sg/cord/public/internetSearch/> (last visited Jun. 12, 2008).

<sup>14</sup> Picture Archives Singapore (PICAS), <http://picas.nhb.gov.sg/picas/public/internetSearch/> (last visited Jun. 12, 2008).

<sup>15</sup> Moving Image and Sound Archives Singapore (MISAS), <http://misas.nhb.gov.sg/avs/public/internetSearch/> (last visited Jun. 12, 2008).

<sup>16</sup> National Archives of Singapore, About NAS: Who We Are, at <http://www.nhb.gov.sg/NAS/AboutNAS/WhoWeAre.htm> (last visited Jun. 12, 2008).

<sup>17</sup> National Library Board Act, c. 197, 1996 rev. ed., § 2 (Sing.).

NLB.<sup>18</sup> (This requirement is no different from the copyright deposit requirements in other countries.<sup>19</sup>) As the statutory depository for local publications, NLB has the responsibility to acquire, catalogue, preserve and make this collection of local cultural heritage available for present and future generations.<sup>20</sup> There is some indication in a 2005 report by the NLB that it is starting to embark on a process of digitizing its old and rare books and resources collection with a view to its preservation and ensuring its continued accessibility.<sup>21</sup> Although the report indicates that the NLB “will draw up a comprehensive digital preservation policy framework for Singapore libraries, museums and archives”,<sup>22</sup> to date, this framework or a draft of it has not been released to the public.

5. Nonetheless, perhaps as part of its changing focus and emphasis on preserving electronic cultural resources, at a seminar held by the NLB on 7 July 2006, the NLB indicated that provisions for the legal deposit of electronic resources would be introduced into law. However, to date, this has not come to pass. Notwithstanding the absence of express legal sanction for such functions, the NLB has, in October 2006, launched a Web Archive Singapore (“WAS”) programme. The WAS is a repository of some 1,000 Singapore-related “research-worthy” websites, ranging from official government websites to websites of registered societies, arts groups and personal websites.<sup>23</sup> The archive seeks to showcase various facets of Singapore life, to document the country’s documentary heritage on the Internet and to serve as a research tool and a record of online content that may no longer exist on the original sites.<sup>24</sup> The WAS is operated using software tools – a web crawler, and indexer and a search and navigation application – recommended by the International Internet Preservation Consortium. The published criteria for selecting sites for inclusion on the WAS are, that the site content has to be of national significance and interest, has historical or research value, be about some prominent personalities, display web innovation, be published by persons authoritative and knowledgeable in their fields or are personal homepages published by notable Singaporeans or residents.<sup>25</sup> In a more recent report in the newspapers, the NLB has confirmed that it is adding blogs to its

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<sup>18</sup> *Id.*, § 10 (deposit of library materials).

<sup>19</sup> Legal Deposit Libraries Act 2003, c. 28 (U.K.); Copyright Act 1968, c. 63, § 201 (Austl.); Copyright Act 1976 § 407, 17 U.S.C. § 407 (U.S.).

<sup>20</sup> National Library Board Singapore, Publishing and Legal Deposit for Posterity, at [http://newsletter.nlb.gov.sg/back\\_jun\\_jul06/features/active/index10.asp](http://newsletter.nlb.gov.sg/back_jun_jul06/features/active/index10.asp) (accessed 12 Jun 2008).

<sup>21</sup> National Library Board Singapore, *LIBRARY 2010: LIBRARIES FOR LIFE – KNOWLEDGE FOR SUCCESS* 30 (2005), [http://www.nlb.gov.sg/ShowBinary/BEA\\_Repository/corporate/Publications/L2010Report](http://www.nlb.gov.sg/ShowBinary/BEA_Repository/corporate/Publications/L2010Report) (last visited Jun. 16, 2008).

<sup>22</sup> *Id.*

<sup>23</sup> National Library Board Singapore, Web Archive Singapore, <http://was.nlb.gov.sg/wera/index1.php> (last visited Jun. 12, 2008).

<sup>24</sup> National Library Board Singapore, National Library Board starts to archive web (Oct. 25, 2006), [http://dl.nlb.gov.sg/digital/2006/10/national\\_library\\_board\\_starts\\_1.html](http://dl.nlb.gov.sg/digital/2006/10/national_library_board_starts_1.html) (last visited Jun. 12, 2008).

<sup>25</sup> National Library Board Singapore, Copyright/Disclaimer statement for Web Archive Singapore, <http://was.nlb.gov.sg/wera/copyright.html> (last visited Jun. 17, 2008); National Library Board Singapore, Web Archive Singapore User FAQ: Q6: What are our criteria for selecting these websites, <http://sgblogs.com/entry/archives-singapore-blogs/172778> (last visited Jun. 17, 2008).

WAS,<sup>26</sup> provided that the blogs are “produced by individuals who are recognised experts in their respective fields of knowledge, famous personalities or award-winning blogs.”<sup>27</sup> While the NLB accepts requests for archiving Singapore websites on a case by case basis,<sup>28</sup> it would seem that the NLB has proceeded to archive existing websites by sending emails to mail accounts of administrators of these websites. Administrators who do not want their sites to be archived have to write to NLB to opt out of the archiving process.<sup>29</sup>

### **1.3 Educational and Research Institutions**

6. And perhaps because of the want of a national digital preservation policy framework, some progressive institutions have embarked on their own independent digital preservation initiatives, particularly where these are driven by the needs of education and research. One of the earliest known efforts at digital preservation took place in the 1980s. As early as 1988, the Law Faculty of the National University of Singapore (“NUS”) took steps to digitize the colonial and early law reports of Singapore, to preserve them because they were old, fragile and disintegrating.<sup>30</sup> Known as CAESAR, the database organized the judgments in a manner that facilitated their easy accessibility online by legal scholars and researchers. Electronic access also ensured that there would be continued access to these resources without further deterioration to these rare and important legal reports. Much work and resources were expended to scan, digitize, clean up and insert meta information about the judgments to the electronic versions of the judgments. At about the same time, the Computer Information Services Division of the Attorney-General’s Chambers embarked on a programme to digitize the existing statutes and regulations of Singapore. Known as IMPRESS, it was for the internal use of the legal officers of the Supreme Court and Subordinate Courts of Singapore and the Attorney-General’s Chambers. All these databases were subsequently merged as LawNet by the Singapore Academy of Law. In 1996, the Law Faculty transferred its CAESAR database to the Singapore Academy of Law in exchange for a licence from the Academy to use and access the official electronic repository of Singapore caselaw and statutory materials, LawNet.

7. The work done by the Law Faculty on CAESAR received close support and assistance from the NUS Libraries. In turn, NUS Libraries has embarked on a selective programme to digitize rare books and newspapers pertaining to the history of Singapore and the Southeast Asia region. Thus its digitized collections include books and publications published in the 1830s, historical records and newspapers of pre-war Singapore as well as Japanese publications on Southeast Asia during World War

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<sup>26</sup> Keith Lin, *Local blogs being added to S’pore’s historical archives*, STRAITS TIMES (Sing.), Jan. 7, 2008.

<sup>27</sup> *Id.*

<sup>28</sup> National Library Board Singapore, Web Archive Singapore User FAQ, <http://was.nlb.gov.sg/wera/index1.php> (last visited Jun. 12, 2008).

<sup>29</sup> National Library Board Singapore, Notification of Website Archiving, on file (last visited Jun. 12, 2008).

<sup>30</sup> This exercise sought to digitize the various Straits Settlement reports, of which very few complete and intact copies remain in existence.

Two.<sup>31</sup> All these collections are accessible online via the NUS Libraries' website.<sup>32</sup> Other valuable work done by the NUS Libraries include the creation and assembly of various indexes and bibliographies on Singapore literature, publications and other resources.<sup>33</sup> However, access to some of these databases is restricted to NUS staff and students. Another example of digital preservation is the work done by the Legal Heritage Committee of the Singapore Academy of Law, which has been actively involved in the documentation of Singapore's legal heritage, to collect and preserve documents, photographs and artifacts relating to Singapore's legal and constitutional history.<sup>34</sup>

8. Yet another example is the Integrated Virtual Learning Environment ("IVLE") system deployed by the NUS. Although strictly not a digital repository but an electronic learning resources, staff members from the various faculties and departments are encouraged to deposit teaching resources which they developed in the IVLE so that these resources can be used for the teaching programmes in NUS, including access for cross-faculty and cross-module instruction purposes.<sup>35</sup> And while there have been some discussions in NUS about the setting up of a repository of staff journals, books and other publications, no formal steps have been taken by NUS to do so. Instead, some Faculties such as the Law Faculty have elected to participate in international repositories such as the bepress Legal Repository and the Legal Scholarship Network of the Social Science Research Network ("SSRN") by contributing its refereed journals and publications to these repositories.<sup>36</sup> This contrasts with other universities in Singapore such as the Nanyang Technological University ("NTU"), which has started to set up its own Digital Repository at NTU ("DR-NTU") that aims to capture, store and preserve the scholarly output of its staff and make it available to the global research community through open access protocols.<sup>37</sup>

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<sup>31</sup> NUS Libraries, Digitized Collections, [http://libpweb.nus.edu.sg/web/appmanager/lib/desk?\\_nfpb=true&\\_pageLabel=DesktopLabel\\_DigitizedColl](http://libpweb.nus.edu.sg/web/appmanager/lib/desk?_nfpb=true&_pageLabel=DesktopLabel_DigitizedColl) (last visited Jun. 17, 2008).

<sup>32</sup> *Id.*

<sup>33</sup> NUS Libraries, Our Databases, [http://libpweb.nus.edu.sg/web/appmanager/lib/desk?\\_nfpb=true&\\_pageLabel=DesktopLabel\\_OurDatabases](http://libpweb.nus.edu.sg/web/appmanager/lib/desk?_nfpb=true&_pageLabel=DesktopLabel_OurDatabases) (last visited Jun. 17, 2008); NUS Libraries, Our Publications, [http://libpweb.nus.edu.sg/web/appmanager/lib/desk?\\_nfpb=true&\\_pageLabel=DesktopLabel\\_ourPub](http://libpweb.nus.edu.sg/web/appmanager/lib/desk?_nfpb=true&_pageLabel=DesktopLabel_ourPub) (last visited Jun. 17, 2008).

<sup>34</sup> Singapore Academy of Law, *ANNUAL REPORT 2005/2006* at 4, [http://www.sal.org.sg/Lists/AnnualReports/Attachments/2/SAL\\_AR\\_2006.pdf](http://www.sal.org.sg/Lists/AnnualReports/Attachments/2/SAL_AR_2006.pdf) (last visited Jun. 16, 2008).

<sup>35</sup> National University of Singapore, E-learning @ NUS (Jul. 2003), <https://www.alumni.nus.edu.sg/alumNET/alumnus/article.jsp?issue=jul2003&id=feature4> (last visited Jun. 16, 2008).

<sup>36</sup> For instance, the Law Faculty's Singapore Journal of Legal Studies and the Singapore Year Book of International Law are participants of and contributors to the SSRN.

<sup>37</sup> Nanyang Technological University, Digital Repository at Nanyang Technological University, <http://repositorytest.ntu.edu.sg/> (last visited Jun. 18, 2008). The DR-NTU system uses DSpace, the open source solution for accessing, managing and preserving scholarly works. See Nanyang Technological University, FAQ, [http://repositorytest.ntu.edu.sg/drntu/DR\\_FAQ.htm](http://repositorytest.ntu.edu.sg/drntu/DR_FAQ.htm) (last visited Jun. 18, 2008).



## 2. Overview of Copyright and Related Rights as Applied to Digital Preservation

### 2.1 Introduction

9. It will be evident from a description of the preservation activities taking place in Singapore that preservation work can be broadly divided into two categories: the preservation of buildings, museum collections and artifacts and the preservation of various documents, books, audio-visual material and other records of this heritage, be they government or private records. There is already in place a clear, cogent and systematic policy and strategy for the preservation of buildings and works of architecture.<sup>38</sup> Some work is also done to preserve museum artwork and collections,<sup>39</sup> as well as government records and documents. However, the same could not be said for a cogent and systematic policy and strategy for preservation of non-governmental documents and other records. Aside from the efforts of the NLB arising from the legal deposit requirements and the incipient work on the WAS, there is otherwise limited participation of the non-government stakeholders such as educational institutions, publishers and individual authors and potential donors as regards the digital preservation of their works and collections, although there is certainly awareness of the importance of digital conservation and best practices for digital preservation.<sup>40</sup> Perhaps some of the reservation and hesitation could be explained by the lack of support and sanction for digital preservation in Singapore's copyright laws. It is to this that I now turn.

### 2.2 Overview of Copyright

10. Singapore's copyright laws are reasonably up-to-date, because of Singapore's accession to international intellectual property treaties such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) in 1994, the WIPO Copyright Treaty ("WCT")<sup>41</sup> and the WIPO Performances and Phonograms Treaty 1996 ("WPPT")<sup>42</sup> in 1996,<sup>43</sup> as well as Singapore's implementation of its free trade

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<sup>38</sup> This includes identifying and researching the buildings for their historical, architectural and cultural merits for conservation, facilitating and coordinating preservation measures with the private sector, documenting and guiding building owners and professionals in their conservation works, and undertaking close consultations with professionals and owners of buildings before deciding on policies and guidelines. See Urban Redevelopment Authority, *supra* note 2.

<sup>39</sup> The National Heritage Board does solicit donations of artwork for its museums. See National Heritage Board, Approved Museum Scheme (Mar. 2007), <http://www.nhb.gov.sg/WWW/attach/AMS - Application Form for Double Tax Deduction.pdf> (last visited Jun. 17, 2008); National Heritage Board, Public Art Tax Incentive Scheme (Mar. 2008), <http://www.nhb.gov.sg/WWW/images/downloads/PATIS - More Info.pdf> (last visited Jun. 17, 2008).

<sup>40</sup> NUS Libraries, 2007 University CIO & Digital Library Forum (Jul. 19-20, 2007), [http://www.lib.nus.edu.sg/forum07/dl\\_home.html](http://www.lib.nus.edu.sg/forum07/dl_home.html) (last visited Jun. 17, 2008).

<sup>41</sup> WIPO Copyright Treaty, Dec. 20, 1996, 36 I.L.M. 65, WIPO Doc. CRNR/DC/94 (1997).

<sup>42</sup> WIPO Performances and Phonograms Treaty, Dec. 20, 1996, 36 I.L.M. 76, WIPO Doc. CRNR/DC/96 (1997).

<sup>43</sup> Singapore acceded to the WCT and WPPT in April 2005. See WIPO, Contracting Parties: WCT, [http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty\\_id=16](http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=16) (last visited Jun. 17, 2008); WIPO, Contracting Parties: WPPT, [http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty\\_id=20](http://www.wipo.int/treaties/en/ShowResults.jsp?lang=en&treaty_id=20) (last visited Jun. 17, 2008).

agreement with the United States, the United States Singapore Free Trade Agreement (“USSFTA”). However, as the following review will demonstrate, Singapore’s copyright laws can be further improved with the introduction of additional provisions that deal specifically with digital preservation issues. As an exhaustive review of Singapore’s copyright laws is not possible in this paper, only a summary of the most salient provisions will be given.

### 2.2.1 Subject Matter of Copyright

11. Singapore’s copyright law does provide reasonably strong protection for the exclusive economic rights of copyright in works and other subject matter. The subject matter of copyright encompasses literary, artistic, dramatic and musical works as “authorship works”,<sup>44</sup> and sound recordings,<sup>45</sup> cinematograph films,<sup>46</sup> television and sound broadcasts,<sup>47</sup> cable programmes<sup>48</sup> and published editions<sup>49</sup> as “entrepreneurial works” (or “subject-matter other than works” or “other subject-matter”). Computer programs are protected as literary works in the Copyright Act,<sup>50</sup> as are databases and multimedia works as “compilations” whose selections or arrangements of contents constitute intellectual creations.<sup>51</sup> The duration of protection has been extended to life of the author plus 70 years for authorship works,<sup>52</sup> and 70 years for sound recordings<sup>53</sup> and cinematographic works.<sup>54</sup> Broadcasts, cable programme services and published editions receive protection for 50 years,<sup>55</sup> 50 years<sup>56</sup> and 25 years<sup>57</sup> respectively.

### 2.2.2 Exclusive Economic Rights

12. The exclusive economic rights conferred on the copyright owner of an authorship work encompass the rights to, or to authorize others<sup>58</sup> to:

- reproduce the work in a material form,<sup>59</sup> which includes the right to convert the work onto a sound recording or film<sup>60</sup> or into or from a digital or other

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<sup>44</sup> Copyright Act, c. 63, 2006 rev. ed., §§ 26, 27 (Sing.) [hereinafter *Copyright Act*].

<sup>45</sup> *Id.*, § 82.

<sup>46</sup> *Id.*, § 83.

<sup>47</sup> *Id.*, § 84.

<sup>48</sup> *Id.*, § 85.

<sup>49</sup> *Id.*, § 86.

<sup>50</sup> *Id.*, § 7A.

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*, § 28.

<sup>53</sup> *Id.*, § 92.

<sup>54</sup> *Id.*, § 93.

<sup>55</sup> *Id.*, § 94.

<sup>56</sup> *Id.*, § 95.

<sup>57</sup> *Id.*, § 96.

<sup>58</sup> *Id.*, § 9 (acts comprised in copyright include the exclusive right to authorize a person to do that act in relation to that work, adaptation or other subject-matter).

<sup>59</sup> *Id.*, § 26(1)(a)(i), (1)(b)(i).

<sup>60</sup> *Id.*, § 15(1).

electronic machine-readable form,<sup>61</sup> and includes the making of a copy of a work which is transient or incidental to some other use of the work;<sup>62</sup>

- publish the work if it is unpublished;<sup>63</sup>
- perform the work in public;<sup>64</sup>
- “communicate the work to the public”,<sup>65</sup>
- make an adaptation of the work;<sup>66</sup> and
- enter into a commercial rental arrangement in respect of the work (a computer program).<sup>67</sup>

13. First introduced in 2004, the right to “communicate the work to the public” encompasses the original rights of broadcasting and inclusion in a cable programme service.<sup>68</sup> In addition, it also includes the new “making available” right.<sup>69</sup> This right, introduced via Singapore’s accession to the WCT and the WPPT,<sup>70</sup> recognizes the right of the copyright owner to authorize any communication of his works to the public, by wire or wireless means, in such a way that members of the public may access these works from a place and at a time individually chosen by them.

14. The exclusive economic rights conferred on the copyright owner of an entrepreneurship work (other subject-matter) encompass the rights to, or to authorize others<sup>71</sup> to:

- make a copy of the work;<sup>72</sup>
- publish the work if it is unpublished;<sup>73</sup>
- cause it to be seen or heard in public;<sup>74</sup>
- enter into a commercial rental arrangement in respect of the work (a sound recording);<sup>75</sup> and

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<sup>61</sup> *Id.*, § 15(1B).

<sup>62</sup> *Id.*, § 15(1A).

<sup>63</sup> *Id.*, § 26(1)(a)(ii), (1)(b)(ii).

<sup>64</sup> *Id.*, § 26(1)(a)(iii).

<sup>65</sup> *Id.*, § 26(1)(a)(iv), (1)(b)(iii).

<sup>66</sup> *Id.*, § 26(1)(a)(v). This includes a right to reproduce, publish, perform, communicate and adapt an adaptation. *Id.*, § 26(1)(a)(vi).

<sup>67</sup> *Id.*, § 26(1)(c).

<sup>68</sup> *Id.*, § 7(1) (definition of “communicate”).

<sup>69</sup> *Id.*

<sup>70</sup> WCT art 8; WPPT arts 10, 14.

<sup>71</sup> *Id.*, § 9 (acts comprised in copyright include the exclusive right to authorize a person to do that act in relation to that work, adaptation or other subject-matter).

<sup>72</sup> *Id.*, § 82(1)(a) (sound recordings); § 83(a) (cinematograph films), § 84(1)(a) (TV broadcasts), (b) (sound broadcasts); § 85(1)(a), (b) (cable programmes), § 86 (published edition of work).

<sup>73</sup> *Id.*, § 82(1)(c) (sound recordings).

<sup>74</sup> *Id.*, § 82(1)(d) (sound recordings – as a “digital audio transmission”); § 83(b) (cinematograph films); § 84(1)(c) (TV and sound broadcasts); § 85(1)(c) (cable programmes).

<sup>75</sup> *Id.*, § 82(1)(b).



- rebroadcast it or communicate it to the public.<sup>76</sup>

15. A person who, not being the owner of the copyright, and without the licence of the owner of the copyright, does in Singapore, any act comprised in the copyright, and not being entitled to do so under any provision of the Copyright Act, commits an act of copyright infringement<sup>77</sup> (described as acts of “primary infringement”). A person who does not commit the act of primary infringement himself but instead authorizes a third party to commit the act of infringement in Singapore may also be liable in “authorizing infringement” if he had granted or purported to grant the right to do the act complained of.<sup>78</sup>

16. The copyright owner's rights are also infringed by importing for sale, distribution or hire,<sup>79</sup> or selling or exhibiting or offering for sale in public,<sup>80</sup> an article in which the work or subject-matter is embodied, where the person carrying out these acts knows or ought reasonably to know that the making of the article was carried out without the consent of the copyright owner (described as acts of “secondary infringement”). The copyright owner can sue an infringer in respect of any of these primary and secondary infringements, and seek damages or an account of profits, an award of statutory damages in lieu of damages or an account of profits.<sup>81</sup> The owner may also seek an order for delivery up or disposal of the infringing articles,<sup>82</sup> or seek border enforcement measures to prevent the importation of, and also to seize, the infringing articles.<sup>83</sup> Additionally, primary and secondary infringements can also be the subject of criminal proceedings,<sup>84</sup> which, in special cases and on application by the copyright owner, may be initiated by the owner.<sup>85</sup> Penalties range from fines of up to S\$100,000 and imprisonment for a term of up to 5 years.<sup>86</sup>

### **2.3 Performance Rights**

17. Additionally, protection under Singapore's copyright laws is available against unauthorized uses<sup>87</sup> of live performances<sup>88</sup> for a period of 70 years from the year of performance.<sup>89</sup> The rights against unauthorized use refers to the making of a direct or indirect recording of the performance, communicating the performance to the public,

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<sup>76</sup> *Id.*, § 83(c) (cinematograph films), § 84(1)(d) (TV and sound broadcasts), § 85(1)(d) (cable programmes).

<sup>77</sup> *Id.*, § 31 (infringement by doing acts comprised in copyright in works), § 103 (infringement by doing acts comprised in copyright in other subject-matter).

<sup>78</sup> *Ong Seow Pheng v. Lotus Development Corp.*, [1997] SGCA 23, [1997] 3 S.L.R 137 (C.A. Sing.).

<sup>79</sup> *Copyright Act*, §§ 32, 104.

<sup>80</sup> *Id.*, §§ 33, 105.

<sup>81</sup> *Id.*, § 119.

<sup>82</sup> *Id.*, §§ 120, 120A.

<sup>83</sup> *Id.*, §§ 140A-140LA.

<sup>84</sup> *Id.*, § 136.

<sup>85</sup> This is by way of a private fiat issued by the Attorney-General. *See e.g.* Criminal Procedure Code, c. 68, 1985 rev. ed., § 342 (Sing.).

<sup>86</sup> *Copyright Act*, § 136.

<sup>87</sup> *Id.*, § 252.

<sup>88</sup> *Id.*, § 246(1) (definition of “performance”).

<sup>89</sup> *Id.*, § 246(1) (definition of “protection period”).

making a copy of a recording of the performance, causing the performance to be seen and heard live in public, publishing an unpublished recording of the performance and making the recording available to the public.<sup>90</sup>

## 2.4 Moral Rights

18. Singapore's copyright law recognizes only the right of paternity but not the right of integrity. Thus the moral rights recognized in our copyright laws are a subset of the full suite of moral rights as recognized under the Berne Convention.<sup>91</sup> Under the Copyright Act, the right of paternity is manifested as a duty not to falsely attribute authorship of the work or identity of the performer of a performance, either by way of inserting another person's name on the work or recording of the performance, or publishing, selling, performing in public, communicating or making available the work or performance, knowing that the other person whose identity is indicated is not the author or performer,<sup>92</sup> and a duty not to falsely represent an altered work or recording of a performance as unaltered.<sup>93</sup> The person whose authorship or identity has been falsely attributed may bring a civil action for redress in damages and an injunction against such false attribution.<sup>94</sup> Such an action for breach of moral rights is without prejudice to any other right of civil or criminal action or remedies such as that for copyright infringement.<sup>95</sup>

## 3. Digital Preservation and Copyright

### 3.1 OAIS Digital Preservation Model

19. The practice of digital preservation invariably engages copyright issues. Adopting the definition of "digital preservation" as set out by the American Library Association ("ALA") to refer to the policies, strategies and actions to ensure the "accurate rendering of authenticated content over time, regardless of the challenges of media failure and technological change" as applied to "both born digital and reformatted content",<sup>96</sup> digital preservation will involve the three distinct and broad steps of content creation, content integrity and content maintenance.<sup>97</sup> Since different definitions of digital preservation exist with their attendant differences in practices regarding digital preservation, for purposes of this paper, reference will be made to the Open Archival Information System ("OAIS") Reference Model, an ISO standard

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<sup>90</sup> *Id.*, § 252(1).

<sup>91</sup> Berne Convention for the Protection of Literary and Artistic Works, Sept. 8, 1886, completed at Paris (1896), revised at Berlin (1908), completed at Berne (1914), revised at Rome (1928), at Brussels (1948), at Stockholm (1967), revised at Paris Jul. 24, 1971, amended Sept. 28, 1979, art. 6*bis* [hereinafter "*Berne Convention*"]. See also SAM RICKETSON, *THE BERNE CONVENTION FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS: 1886-1986* at ¶ 8.93 (1987).

<sup>92</sup> *Copyright Act*, §§ 188 (duty not to attribute falsely authorship of work or identity of performer of performance), 190 (duty not to attribute falsely the authorship of reproduction of artistic work).

<sup>93</sup> *Id.*, § 189.

<sup>94</sup> *Id.*, § 192.

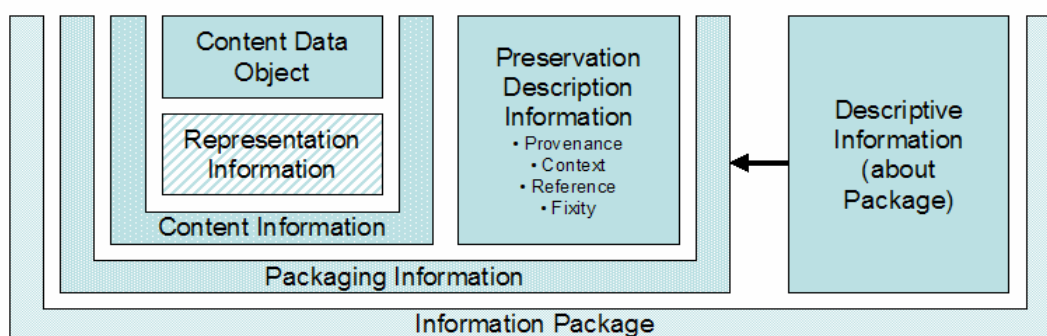
<sup>95</sup> *Id.*, § 193.

<sup>96</sup> American Library Association, Definition of Digital Preservation (Jun. 24, 2007), <http://www.ala.org/ala/alcts/newslinks/digipres/index.cfm> (last visited Jun. 18, 2008).

<sup>97</sup> *Id.*

which establishes a system for archiving information, both digitalized and physical, with an organizational scheme which sets out the functionalities and responsibilities for preserving information and making it available to a designated community.<sup>98</sup>

20. The three steps involved in digital preservation as described by the ALA can be mapped onto the OAIS Reference Model. The content creation step largely corresponds to the creation of the Content Information and Preservation Description Information components in OAIS and the content integrity step largely corresponds to the creation of the Preservation Description Information and Packaging Information components in OAIS. All this information, together with the Descriptive Information, constitutes the information object which is a self-contained object for digital preservation. And in turn, the content maintenance step will involve the management, administration and grant of access to the Information Package in OAIS. The following diagram sums up the relationships between the various components of an Information Package as described in the OAIS Reference Model.



**Figure 1: Information Package Concepts and Relations (adapted from OAIS, Figure 2.3)**

21. The OAIS Reference Model further outlines six functional components whose roles and functions are summarized in the table below.

OAIS Functional Components	Roles and Responsibilities
Ingest <sup>99</sup>	Accepting Submission Information Packages from Producers, preparing Archival Information Packages for storage, and ensuring that Archival Information Packages and supporting Descriptive Information become established within OAIS
Archival Storage <sup>100</sup>	Storing and retrieving Archival Information Packages
Data Management <sup>101</sup>	Populating, maintaining and accessing a wide variety of information e.g. catalogs and inventories, access statistics,

<sup>98</sup> Consultative Committee for Space Data Systems, *REFERENCE MODEL FOR AN OPEN ARCHIVAL INFORMATION SYSTEM*, 2-5 to 2-6 (Jan. 2002), <http://public.ccsds.org/publications/archive/650x0b1.pdf> (last visited Jun. 18, 2008) [hereinafter *OAIS*]. It is an ISO Standard, *SPACE DATA AND INFORMATION TRANSFER SYSTEMS -- OPEN ARCHIVAL INFORMATION SYSTEM -- REFERENCE MODEL* (ISO 14721:2003).

<sup>99</sup> *Id.*, at 1-11 (definition of Ingest); 4-1; para. 4.1.1.2 at 4-5 to 4-6.

<sup>100</sup> *Id.*, at 1-8 (definition of Archival Storage); 4-1; para. 4.1.1.3 at 4-6 to 4-8.

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	billing, security controls
Administration <sup>102</sup>	Controlling the operation of the other OAIS functional entities
Preservation Planning <sup>103</sup>	Monitoring the OAIS environment and providing recommendations to ensure that OAIS information remains accessible to Designated User Community over the long term
Access <sup>104</sup>	Making the archival information holdings and related services visible to Consumers via the Disseminated Information Packages

**Table 1: OAIS Functional Components**

22. Pursuant to these six classes of functionalities provided by OAIS, the OAIS Reference Model also describes the interaction between OAIS and its Management and the Producer (the persons or client systems who provide the information to be preserved)<sup>105</sup> as well as the Consumer (the persons or client systems who interact with OAIS services to find the preserved information of interest and to access that information in detail).<sup>106</sup> It is useful to note that the OAIS Reference Model acknowledges that the right to physical ownership or possession of the “Content Information” to be preserved does not necessarily connote ownership of intellectual property rights to this information.<sup>107</sup> The OAIS Reference Model also recognizes that OAIS and its Management may need to modify the Content Information where it has to be migrated to a new representation form (in the event that the Content Information is not in a form that is convenient for Consumers e.g. when the format in which the Content Information is stored has become obsolete or not well supported by prevailing software, hardware or protocols).<sup>108</sup> Thus, the OAIS Reference Model recognizes the importance for the OAIS and its Management to secure the necessary legal rights to enable the preservation of information,<sup>109</sup> and briefly describes them as falling within one of three categories, namely copyright implications, authority to modify the Representation Information and agreements with external organizations.<sup>110</sup> However, the OAIS Reference Model acknowledges that “[i]t is beyond the scope of this document to provide details of national and international copyright laws.”<sup>111</sup>

23. This paper seeks to examine the various legal issues arising from the interactions between OAIS, the Producers and the Consumers. In addition, the requirement for the OAIS Management to exercise sufficient control over the archival information must be balanced against the rights and interests of the copyright authors, performers,

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<sup>101</sup> *Id.*, at 1-9 (definition of Data Management); 4-2; para. 4.1.1.4 at 4-8 to 4-10.

<sup>102</sup> *Id.*, at 1-7 (definition of Administration); 4-2; para. 4.1.5 at 4-10 to 4-12.

<sup>103</sup> *Id.*, at 4-2; para. 4-12 to 4-14.

<sup>104</sup> *Id.*; para. 4.1.1.7 at 4-14 to 4-16.

<sup>105</sup> *Id.*, at 1-12 (definition of Producer).

<sup>106</sup> *Id.*, at 1-8 (definition of Consumer).

<sup>107</sup> *Id.*, at 3-2.

<sup>108</sup> *Id.*, at 3-3.

<sup>109</sup> *Id.*, at 3-2.

<sup>110</sup> *Id.*, at 3-2 to 3-3.

<sup>111</sup> *Id.*, at 3-2.

owners and licensees. In this regard, it may be apposite to summarize the relationship between the parties and the issues in this diagram:

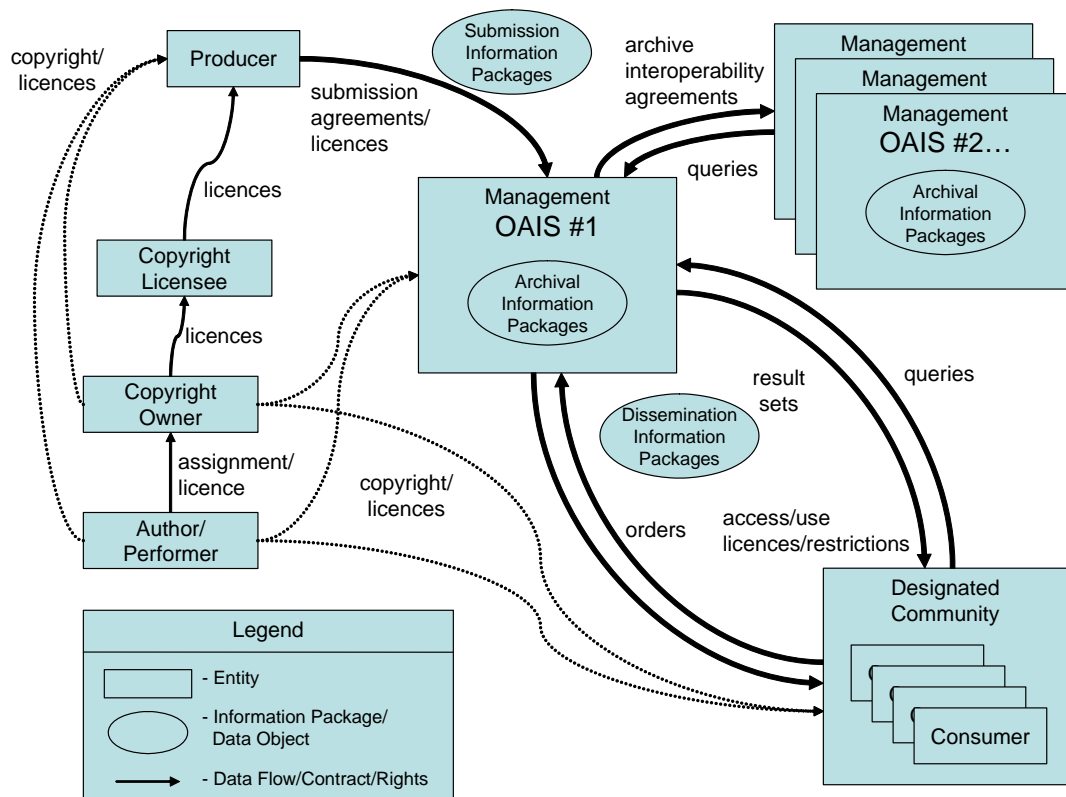


Figure 2: OAIS and its High Level External Interactions (adapted from OAIS, figure 2-4)

### 3.2 Classification of Preserved Works

24. There are several possible classifications of these works which may be the subject of digital preservation. Described as Data Objects in the OAIS Reference Model, these Objects, which may be works, performances or other subject-matter under the laws of copyright may be further classified based on the characteristics of their storage: they may either be existing, non-digital works such as works in printed form (“Physical Object”)<sup>112</sup> or are “born-digital” works (“Digital Object”), that is, works that are already in digital form.<sup>113</sup> This classification affects the analysis of the rights to be exercised in ingesting or storing these works in digital form. This classification is also necessitated by the fact that some copyright laws only provide for preservation of works that are not “born-digital” works, that is, Physical Objects.

25. Data Objects may also be classified based on their origin as government works, works in the public domain, published works and unpublished works. Such a classification may impact on the analysis of the ownership of copyright in the works as well as the scope of copyright in such works. Thus, in some jurisdictions, no copyright attaches to government works,<sup>114</sup> but not in jurisdictions such as

<sup>112</sup> *Id.*, at 1-12 (definition of “Physical Object”), 4-20.

<sup>113</sup> *Id.*, at 1-10 (definition of “Digital Object”), 4-29.

<sup>114</sup> See e.g. U.S. Copyright Act 1967, § 105, 17 U.S.C. § 105 (U.S.).

Singapore.<sup>115</sup> Ascertaining the origin and authorship of works is also necessary to ascertain the duration of copyright protection for the work and when copyright in the work lapses.<sup>116</sup> If copyright in a work lapses before July 1, 2004, its Singapore copyright lapses<sup>117</sup> notwithstanding the fact that on that date, the duration of copyright protection for works and other subject-matter was extended to life plus 70 years and 70 years respectively.<sup>118</sup>

26. Works may be further classified as being published or unpublished. As copyright encompasses the right to publish a work if it is unpublished,<sup>119</sup> the right of publication is a valuable right for the author or copyright owner. In fact, copyright in unpublished works in Singapore subsists indefinitely,<sup>120</sup> and may not be reproduced or communicated except under narrow exceptions applicable to libraries and archives. These exceptions will be examined below.

### 3.3 Ingesting

27. In the ingestion process, OAIS would be accepting the transfer of Submission Information Packages (“SIPs”) from the Producer, validating the SIPs, transforming them into Archival Information Packages (“AIPs”), validating the AIPs and extracting the Description Information from the AIPs for inclusion in OAIS.<sup>121</sup> The transformation of SIPs into AIPs may involve file format conversions, data representation conversions or reorganization of content information in the SIPs.<sup>122</sup>

28. Digital preservation is not only about converting SIPs in the form of Physical Objects as original targets of preservation into digital AIPs, but also converting SIPs which are Digital Objects into the accepted archival formats. Some OAIS archives may opt to conduct as little transformation on the Digital Object as possible in order to keep costs down and to insure the integrity of the data.<sup>123</sup> However, transformations may necessary in order to ensure that the SIPs conform to the archive's data formatting and documentation standards.<sup>124</sup> For instance, transformations may be made where the data is collected in an application format that is not widely available in which case it will be transformed into a more commonly accessible format.<sup>125</sup> The OAIS process also requires as part of the ingestion process the generation and storage

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<sup>115</sup> *Copyright Act*, § 197.

<sup>116</sup> For instance, if copyright in a work conferred under the U.K. Imperial Copyright Act 1911 lapses before Apr. 10, 1987, it does not acquire any copyright under the Singapore Copyright Act. *Id.*, § 242.

<sup>117</sup> *Id.*, §§ 263-266. This choice of the “appointed day” (Jul. 1, 2004) is somewhat specious since the duration of copyright protection in works is for the period up to the expiration of the calendar year in which the author of the work died or when the work was first published. *See id.*, §§ 28, 29, 47, 78, 92-96, 108, 132, 185(4)(b), (5)(b), 193(3), (4), (4A), 212, 219(4), 232. *See also id.*, § 7(1) (definition of “protection period” as the period ending at the end of the period of 70 calendar years).

<sup>118</sup> Intellectual Property (Miscellaneous Amendments) Act 2004 (Sing.).

<sup>119</sup> *Copyright Act*, § 26(1)(a)(ii), (b)(ii).

<sup>120</sup> *Id.*, §§ 27(1), 28(3)-(6), 197(3)(a). But this does not apply to other subject-matter, which have to be “published” before copyright can accrue. *See id.*, §§ 92-96.

<sup>121</sup> *OAIS*, *supra* note 98, at 4-1, 4-5 to 4-6.

<sup>122</sup> *Id.*, at 4-6.

<sup>123</sup> *Id.*, at A-14.

<sup>124</sup> *Id.*, at 4-6.

<sup>125</sup> *Id.*, at A-14.



of Representation Information which adequately describes the digitized Data Object in order to preserve the meaning of the Digital Object.<sup>126</sup> Digital Objects also have to be suitably documented by way of their Descriptive Information for preservation, distribution and independent usage purposes.<sup>127</sup>

### 3.3.1 Transferring and Transforming the Physical or Digital Data Object

29. It will be clear from this description of the ingestion process as part of the OAIS Reference Model that the ingestion process engages primarily the reproduction, communication to the public and adaptation rights in copyright in the Physical or Digital Object that is sought to be preserved. When the SIP is transferred from the Producer to the OAIS Archive, if this is done by way of electronic transfer, copies of the SIP will be made as part of the transmission process, either by the Producer, the OAIS Archive or by Internet intermediaries if the SIP is digitally transmitted via the Internet. Where copies, including temporary copies, are made as part of the transmission process, they would at first sight infringe the rightholder's rights as the right of reproduction includes the making of a copy which is transient or incidental to the use of the work.<sup>128</sup> In addition, such transmissions may ostensibly engage the rightholder's right of "making available" the work to the public,<sup>129</sup> although it is submitted that where this transfer between the Producer and the OAIS Archive is characterized as a one-off private transmission, the "to the public" requirement may arguably not be satisfied.<sup>130</sup> However, such transfers from the Producer to the Archive may be allowed by an express or implied term or licence, whereupon any such temporary or transient reproductions that are also made incidentally as part of the

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<sup>126</sup> *Id.*, at 4-21 to 4-23. The Representation Information comprises in turn structure information and semantic information.

<sup>127</sup> *Id.*, at 1-12 (definition of Physical Object).

<sup>128</sup> *Copyright Act*, §§ 15(1A), 252(1B).

<sup>129</sup> *Id.*, §§ 26(1)(a)(iv), (1)(b)(iii), 82(1)(d) (sound recordings – as a "digital audio transmission"), 83(c) (cinematograph films), 84(1)(d) (TV and sound broadcasts), 85(1)(d) (cable programmes).

<sup>130</sup> This point has yet to be considered by Singapore courts. U.S., Australian and Canadian decisions that have considered this point appear to be split in their determination of whether a private transmission would constitute a breach of the "making available to the public" right (or its equivalent, the "distribution" right, under U.S. copyright law). *See e.g.* *Hotaling v. Church of Jesus Christ of Latter-Day Saints*, 118 F.3d 199 (4th Cir. 1997); *A&M Records, Inc. v. Napster Inc.*, 239 F.3d 1004, 1014 (9th Cir.2001) ("Napster users who upload file names to the search index for others to copy violate plaintiffs' distribution rights."); *BMG Music v. Gonzalez*, 430 F.3d 888, 891 (7th Cir. 2005) (holding that downloads from P2P networks compete with licensed broadcasts and diminish the authors' receipt of royalties from broadcasters); *Interscope Records v. Duty*, 2006 WL 988086, \*2 (D.Ariz. 2006) ("Therefore, the mere presence of copyrighted sound recordings in Duty's share file may constitute copyright infringement."); *Universal Music Austl. Pty Ltd. v. Sharman License Holdings Ltd.*, [2005] FCA 1242, [356], [420] (Fed. Ct. of Austl.). *But see* *BMG Canada Inc. v. John Doe*, 2005 FCA 193, 252 D.L.R. (4th) 342, 39 C.P.R. (4th) 97, [2005] 4 F.C.R. 81, ¶¶ 51-52 (Fed. Ct. App., Can.) (distribution right not infringed absent a positive act by the owner of a shared directory running P2P software); *Perfect 10 v. Google, Inc.*, 416 F.Supp.2d 828, 844 (C.D.Cal. 2006) ("A distribution of a copyrighted work requires an "actual dissemination" of copies."); *Elektra Entertainment Group, Inc. v. Barker*, 2008 WL 857527, \*4 (S.D.N.Y. 2008) ("the support in the case law for the "make available" theory of liability is quite limited"); *Atlantic Recording Corp. v. Howell*, 2008 WL 1927353 (D.Ariz. 2008) (holding that merely making a copy available does not constitute "distribution").

technical process of making or receiving a communication will be allowed.<sup>131</sup> And reproductions and communications “made” by the Internet intermediaries as Internet service providers in conveying the SIP from the Producer to the Archive would generally be excused as they are made pursuant to the transmission, routing and provision of Internet connections.<sup>132</sup>

30. Of course, the fundamental object of the preservation exercise is for the Archive to make a substantially identical and complete digital copy of the object to be preserved, when transferred or transmitted from the Producer to the Archive. The rights of reproduction will be invariably engaged,<sup>133</sup> even if it involves digitizing or converting a Physical Object into a Digital Object or its digital representation.<sup>134</sup> In addition, in the process of converting and transforming the SIP into an AIP, there may also be issues of adapting (defined as creating a version, arrangement, translation or transcription which is not a reproduction of<sup>135</sup>) the original Physical or Digital Object into a form which the Archive uses.

31. In the ingesting process, the Archive may be independently creating from the SIPs its own selection or arrangement of AIPs as a compilation or database. It may thus acquire its own copyright in such databases or compilations. But the Archive's rights in such a compilation or database<sup>136</sup> does not derogate from the fact that without the necessary “chain of rights” either by way of licences from the rightholder or reliance on any supporting copyright limitations or exemptions under copyright law, such a compilation or database built, adapted or modified from copies of the Physical or Digital Objects in which third parties may have rights may itself be infringing.<sup>137</sup>

32. Where the Digital Object as a Data Object is protected by technological measures which include both access control measures<sup>138</sup> that prevent the Archive from gaining access to the Object (and thus interfering with the Producer's transfer of the Object to the Archive), as well as copy control measures (also described as “technological protection measures”)<sup>139</sup> that prevent or limit the transfer or making of a substantially

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<sup>131</sup> *Copyright Act*, §§ 38A, 107E.

<sup>132</sup> *Id.*, §§ 193B, 252A.

<sup>133</sup> *Id.*, § 10(1) (“A reference to the doing of an act in relation to a work or other subject-matter shall be read as including a reference to the doing of that act in relation to a substantial part of the work or other subject-matter”).

<sup>134</sup> *Id.*, § 15(1B) (“Without limiting the meaning of the term ‘reproduced’, for the purposes of this Act, a literary, dramatic, musical or artistic work, including a reproduction of such work in the form of a sound recording or cinematograph film, is reproduced if it is converted into or from a digital or other electronic machine-readable form, and any article embodying the work or reproduction of the work in such a form is taken to be a reproduction of the work.”).

<sup>135</sup> *Id.*, § 7(1) (definition of “adaptation”).

<sup>136</sup> *ZYX Music GmbH v. Chris King*, [1995] F.S.R. 566 (Eng. H.C.); *Virtual Map (Sing.) Pte. Ltd. v. Suncool International Pte. Ltd.*, [2005] 2 SLR 157; [2005] SGHC 19 (High Ct. Sing.).

<sup>137</sup> *Virtual Map (Singapore) Pte. Ltd. v. Singapore Land Authority*, [2008] SGHC 42, [61] (High Ct. Sing.)

<sup>138</sup> *Copyright Act*, § 261B(1) (defining “technological access control measure” as “any technology, device or component that, in the normal course of its operation, effectively controls access to a copy of — (a) a work or other subject-matter; or (b) a performance...”).

<sup>139</sup> *Id.*, § 261B(1) (defining “technological protection measure” as “any technology, device or component that, in the normal course of its operation, effectively prevents or limits the doing of — (a) in relation to a copy of a work or other subject-matter, any act comprised in the copyright in the work

identical and complete copy of the Object by the Archive, one or more of these technological protection measures will need to be circumvented. While Singapore's copyright law does not prohibit the circumvention of copy control measures, they do prohibit the circumvention of access control measures.<sup>140</sup> And since the law also prohibits the sale or other commercial dealing in circumvention devices<sup>141</sup> or provision of circumvention services,<sup>142</sup> a Producer or an Archive without the requisite technical know-how may be placed in an invidious position of having to distinguish between circumventing copy control measures, which is allowed, but not access control measures, which is not allowed, and acquiring the requisite technical know-how itself without technical assistance from third parties, unless it is able to bring itself within one of the exceptions to the circumvention of technological measures.<sup>143</sup> An examination of the exceptions will confirm that while an exception exists to enable a non-profit library or archive to circumvent technological access control measures,<sup>144</sup> this is only for the sole purpose of determining whether to acquire a copy of the work or subject-matter or recording, and not for purposes of digital preservation.

### 3.3.2 Building the Preservation Description Information and Descriptive Information Database

33. But there may be less acute copyright issues where the Archive builds its own selection or arrangement of Preservation Description Information and Descriptive Information about the archived Digital Object. To the extent that such discrete units of information supplied by or derived from the Producer-supplied SIP, either from the Data Object or from its Preservation Description Information, are merely facts, they are not protected as original works in the law of copyright in Singapore.<sup>145</sup>

34. However, even if such facts are not protected by the economic rights in copyright, a mislabeling or misidentification of the work as being authored by another, particularly in relation to the Provenance, Context and Reference elements of the Preservation Description Information, may amount to a breach of a duty not to falsely

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or subject-matter; or (b) in relation to a copy of a performance, an unauthorised use of the performance”).

<sup>140</sup> *Id.*, § 261C(1)(a).

<sup>141</sup> *Id.*, § 261C(1)(b).

<sup>142</sup> *Id.*, § 261C(1)(c).

<sup>143</sup> A non-profit archive or library is not liable for the criminal offence of circumventing technological access measures or manufacturing, offering or otherwise trafficking in any device or providing any service for circumventing technological measures. *Id.*, § 261C(9). However, it would seem that this exemption is of limited utility to non-profit libraries and archives, since they are not exempted from civil liability for circumventing technological access measures, and it is unlikely that they will undertake any trafficking or provision of any services for circumvention.

<sup>144</sup> *Id.*, § 261D(1)(a).

<sup>145</sup> *Robert John Powers School Inc. v. Tessensohn*, [1993] 3 S.L.R. 724, [1993] SGHC 204 (High Ct. Sing.). Singapore does not have a “database right”, unlike the EU countries. It only recognizes a “compilation” right for databases. And a compilation has to be a “selection or arrangement” which “constitutes an intellectual creation”. *Copyright Act*, § 7A(2). In this regard, Singapore's copyright law is likely to be more closely aligned to the approach of the U.S. Supreme Court in *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991), rather than that in Australia in *Desktop Marketing Systems Pty. Ltd. v. Telstra Corp. Ltd.*, [2002] FCAFC 112 (Full Ct. Fed. Ct. Austl.) and in the U.K. in *Walter v. Lane*, [1900] A.C. 539 (H.L. Eng.).

attribute or misrepresent authorship or identity of the performer,<sup>146</sup> a breach of the right of paternity as one of the moral rights of the author or performer. The Archive must also be careful not to represent the AIP as being the unaltered work of the author or performer, where such a work has indeed been transformed from the SIP<sup>147</sup> e.g. where the display resolution, ratio or format has been altered in converting a work from analog to digital form<sup>148</sup> or into or from widescreen format,<sup>149</sup> or where the work has been edited for various reasons e.g. because of constraints of storage space, a musical, artistic or audio-visual work is stored in lossy compression instead of lossless form.<sup>150</sup> However, because Singapore's copyright law does not recognize the right of integrity (or the right to object to derogatory treatment) as a moral right,<sup>151</sup> the author or performer will not be able to pursue a complaint under Singapore copyright law that the transformation and subsequent archival of the Data Object amounts to a distortion, mutilation or other derogatory action to the work that would be prejudicial to his honour or reputation.<sup>152</sup> Actually, it is in relation to the author or performer's right of integrity that digital preservation and archiving will have the greatest impact, since the digital archival process of ingesting (and the subsequent processes of storage, data management and access) may entirely change the significance of the author's work or performer's performance, by altering the "location, period or 'atmosphere' of the piece", which may prejudice the author or performer.

35. But where such meta information, even as facts, either as Preservation Description Information or Descriptive Information, is technically bound to the Digital Object as part of its rights management information,<sup>153</sup> the Archive is legally obliged not to knowingly remove or alter the Preservation Description Information or the Descriptive Information, either by modifying the SIP or by integrating the Digital Object in the SIP into the AIP, without the consent of the owner or exclusive licensee of the work or subject-matter or the performer of the performance, where to do so will induce, enable, facilitate or conceal an infringement of copyright in the work or

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<sup>146</sup> *Copyright Act*, §§ 188, 190. See also Performances (Moral Rights, etc.) Regulations, 2006, S.I. 2006/18 (inserting Copyright, Designs and Patents Act 1988, c. 48, § 205C (U.K.) (right to be identified as a performer)).

<sup>147</sup> *Id.*, § 189.

<sup>148</sup> Wikipedia, Display Resolution, [http://en.wikipedia.org/wiki/Display\\_resolution](http://en.wikipedia.org/wiki/Display_resolution) (last visited Jun. 23, 2008).

<sup>149</sup> Wikipedia, Widescreen, <http://en.wikipedia.org/wiki/Widescreen> (last visited Jun. 23, 2008).

<sup>150</sup> Wikipedia, Lossy compression, [http://en.wikipedia.org/wiki/Lossy\\_compression](http://en.wikipedia.org/wiki/Lossy_compression) (last visited Jun. 23, 2008).

<sup>151</sup> Cf. Performances (Moral Rights, etc.) Regulations, 2006, S.I. 2006/18 (inserting Copyright, Designs and Patents Act 1988, c. 48, § 205F (U.K.) (right to object to derogatory treatment of performance)).

<sup>152</sup> *Berne Convention*, Article 6<sup>bis</sup>(1). However, the author or performer may be able to pursue a common law claim in defamation. See SAM RICKETSON, *THE BERNE CONVENTION FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS: 1886 – 1986*, ¶ 8.115 at 475 (1987).

<sup>153</sup> *Copyright Act*, §§ 258 (definition of "rights management information" as information which identifies the work, subject matter or performance, identifies its author, owner of copyright, performer, information about the terms and conditions of use of the work, subject matter or performance and any numbers and codes), 260(1) (providing that rights management information must be attached to or embodied in a copy of a work, subject matter or recording of a performance, or appears in connection with the communication or making available to the public of a copy of the work, subject matter or recording of a performance).

subject matter or an unauthorized use of the performance.<sup>154</sup> The Archive may also be guilty of a criminal offence for doing so,<sup>155</sup> unless it operates not for purposes of obtaining a commercial advantage.<sup>156</sup> As there are no applicable exceptions to this right against modification of rights management information, in the Archive's defence, it may arguably be contended that an Archive's removal or alteration of any Preservation Description Information and Descriptive Information about the archived Digital Object which may be part of the Digital Object's rights management information is not *knowingly done* with a view to inducing, enabling, facilitating or concealing copyright infringement. But this argument is premised on successfully contending that the OAIS ingesting process involving the reproduction, transmission and adaptation of the Digital Object does not objectively constitute "an infringement of the copyright" in the work, subject matter or performance.<sup>157</sup> In this regard, the Archive may either require a licence from the rightholder for its digital preservation and archiving practices, or have to successfully rely on the limited exceptions for preservation under the Copyright Act, to avoid breaching the rights management provisions. Alternatively, the Archive could consider the technical feasibility of retaining the Digital Object with its attendant Preservation Description Information and Descriptive Information in the SIP and encapsulating that as an Information Package, while adding the Archive's own Preservation Description Information and Descriptive Information to constitute the AIP. This measure appears to be supported under the OAIS Reference Model in relation to its discussion about Descriptive Information and Access Aids,<sup>158</sup> and how each Package Description can encapsulate various Associated Descriptions.<sup>159</sup>

### 3.3.3 Capturing the Representation Information

36. The OAIS Reference Model is noteworthy in one respect. The use of the Representation Information component as a wrapper for the Content Data Object was proposed by the OAIS Reference Model to assist in mediating access to the underlying format in which the information is stored. It critically provides some measure of protection against technical obsolescence and ensures long term preservation.<sup>160</sup> This is one of the more unique and original elements of the OAIS Reference Model. However, the capturing of Representation Information in turn introduces legal issues in relation to the intellectual property rights in the Representation Information. Where the Representation Information assists in mapping the Data Object into a recognizable and meaningful form, its description of the formats or data structures, described as Structure Information, and the additional information as to the language and special meaning associated with all the elements of the Structural Information, described as Semantic Information, have to be captured as

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<sup>154</sup> *Id.*, § 260(2).

<sup>155</sup> *Id.*, § 260(6).

<sup>156</sup> *Id.*, § 260(7), (8).

<sup>157</sup> *Id.*, § 260(2)(c).

<sup>158</sup> *OAIS*, *supra* note 98, at 4-30.

<sup>159</sup> *Id.*, at 4-35.

<sup>160</sup> Julien Masanes, *Technical Information Needed for Long-term Preservation of Digital Documents*, *INTERNATIONAL PRESERVATION NEWS* 12-13 (May 29, 2003), available at <http://www.ifla.org.sg/VI4/news/ipnn29.pdf> (last visited Jun. 17, 2008).

well.<sup>161</sup> Storing simple formats and descriptions of Representation Information in the Archive would generally be free of intellectual property issues. Likewise, most public standards generally are royalty-free and may be captured in the Archive without substantial intellectual property issues.<sup>162</sup> However, some standards require a royalty for their usage, typically founded on patent rights, and a separate copyright licence arrangement for their storage.<sup>163</sup> These issues would have to be carefully considered in the choice and selection of the requisite Representation Information to be added to the archive.

37. The OAIS Reference Model also describes the storage and archiving of the Representation Rendering Software and Access Software as an alternative to storing the full Representation Information,<sup>164</sup> to enable the Content Data Object to be displayed in an understandable form. However, even if the Archive may have the requisite licences to use the software in question for rendering purposes, the software licences may restrict the circumstances and purposes to which the software may be stored. Very few End User Licence Agreements (“EULAs”) indicate that the software vendor contemplate that copies of their software be archived as part of Representation Information in an archive, though it may be contended that this usage is implied as part of the backup rights that vendors grant software users in their EULAs. An alternative may be to rely on the statutory rights to backup software which are commonly found in copyright legislation.<sup>165</sup> It would seem that archiving such software in the Archive is also consistent with the statutory restrictions upon which such backup copies of software may be used. (In the case of Singapore, backup copies of software may only be used in lieu of the original copy in the event that the original copy is lost, destroyed or rendered unusable.<sup>166</sup>) In fact, under Singapore copyright law, it is arguable that where support for the software is no longer available, or where the software runs on obsolete hardware, the law entitles the software licensee to adapt the software “as an essential step in the utilization of the computer program ... in conjunction with a machine” provided that it is used in no other manner.<sup>167</sup> And the Archive as the licensee of such software will be able to exercise such rights regardless of any provisions in the EULA that operate to the contrary.<sup>168</sup>

### 3.3.4 OAIS Agreement between the Producer and Archive

38. With a view to better managing the copyright issues, the OAIS Reference Model encourages the Producer and the Archive to reach an agreement as a prelude to the ingesting process of delivering or transferring the Data Object (and its the Content Information, the Preservation Description Information and Descriptive Information)

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<sup>161</sup> *OAIS*, *supra* note 98, at 4-20 to 4-23.

<sup>162</sup> WIPO, Standards, Intellectual Property Rights (IPRs) and Standards-setting Process, <http://.wipo.int/standards.htm> (last visited Jul. 2, 2008).

<sup>163</sup> *Id.*

<sup>164</sup> *OAIS*, *supra* note 98, at 4-22 to 4-24.

<sup>165</sup> *See* U.S. Copyright Act 1976 § 117, 17 U.S.C. § 117 (U.S.); *Copyright Act*, § 39.

<sup>166</sup> *Id.*, § 39(1)(b).

<sup>167</sup> *Id.*, § 39(3). This provision is derived from the U.S. Copyright Act 1976. *See* 17 U.S.C. § 117(c).

<sup>168</sup> *Copyright Act*, § 39(4).



from the Producer in the SIPs to the OAIS Archive.<sup>169</sup> The technical choices regarding the Packaging Information should also be agreed.<sup>170</sup> Presumably, where the Producer has either intellectual property rights to the Physical or Digital Object or has been licensed with various rights to the Object, subject to any copyright provisions which enable the digital preservation process, it should assign, license or sublicense the necessary rights to the Archive in order for the ingestion process to be carried out effectively. Thus, under Singapore copyright law, where the Producer has licensed rights to a Digital Object, it may transfer the Digital Object and its licensed rights to the Archive as an out-and-out transfer operating akin to an assignment, provided there are no express terms prohibiting or imposing constraints on the transfer of the Digital Object, or restricting the Producer from copying or adapting the licensed Digital Object.<sup>171</sup> Of course, where the Producer has effected a digital transfer of the Digital Object to the Archive, it is no longer allowed to retain any copy of the transferred Digital Object.<sup>172</sup> The recommendations in the OAIS Reference Model as to a submission agreement between the Producer and Archive seems to largely presume that the Producer is in a position to transfer or supply the necessary “chain of rights”.<sup>173</sup> As analyzed above, this assumption does not always hold true since third parties such as the copyright owner, the exclusive licensee, the author and the performer may be able to restrain various aspects of the ingesting process which are not licensed or permitted in law.

39. The OAIS Reference Model further notes that the OAIS Archive has to “assume sufficient control over the Content Information and Preservation Description Information so that it is able to preserve it for the [l]ong [t]erm.”<sup>174</sup> As noted above, when the OAIS Archive prepares and generates the AIPs from the SIPs, it may perform various transformations such as scanning the Physical Object into Digital Object form, or modifying the Preservation Description Information. However, as is noted above, the right of the Producer to control over the Content Information (Data Object and its Representation Information) and the Preservation Description Information cannot be to the derogation of the rightholder’s rights in the Data Object and its Representation Information and to the author or performer’s moral rights in the Preservation Description Information.

40. The Consultative Committee for Space Data Systems, which is the author of the OAIS Reference Model, seems to be aware of this lacuna in its original recommendations. In this regard, it has produced a draft paper which has recommended that the Producer and OAIS Management first negotiate a submission agreement which thoroughly defines the different Data Objects which are to be transmitted to the OAIS archive, the means used to transfer this data, the transfer schedule and other issues.<sup>175</sup> This would involve, *inter alia*, working out the

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<sup>169</sup> *OAIS*, *supra* note 98, at 2-9.

<sup>170</sup> *Id.*

<sup>171</sup> *Copyright Act*, § 193F.

<sup>172</sup> *Id.*, § 193F(3).

<sup>173</sup> *See OAIS*, *supra* note 98, at 3-2.

<sup>174</sup> *Id.*

<sup>175</sup> Consultative Committee for Space Data Systems, *RECOMMENDATION FOR A PRODUCER-ARCHIVE INTERFACE METHODOLOGY ABSTRACT STANDARD* 2-2 (May 2004),

relationship between the Producer and the OAIS Archive, sorting out the intellectual property issues and defining the duration of storage and the conditions for access to the preserved data.<sup>176</sup> But as noted above, the agreement between the Producer and the Archive may not sufficiently encapsulate all the legal rights necessary for the Archive to carry out its work in the ingesting process in digital preservation. In fact, as the subsequent analysis will show, any agreement between the Archive and the Producer and between the Producer and any interested third party should also encapsulate the Archive's subsequent practices in storing, managing, administering, preserving and granting access to its data archives. Given the difficulties in identifying these interested third parties<sup>177</sup> and the attendant problems in negotiating and securing the necessary consistent and comprehensive licences from them to address all the different aspects, it may be more apposite for the Archive to rely on statutory exceptions in copyright to conduct its data preservation duties.

### **3.4 Archival Storage and Data Management**

41. After the ingestion process, the generated and validated AIPs would be permanently stored and maintained pursuant to the archival storage process.<sup>178</sup> This process also refreshes the media on which the archive holdings are stored, performing routine and special error checking, providing disaster recovery capabilities and providing queries on the AIPs to enable access to the archive database.<sup>179</sup> The archive database would be maintained pursuant to the data management process, which populates, updates and accesses the Descriptive Information, and administers the database through the maintenance of various schema and view definitions and relational associations between the different AIPs.<sup>180</sup>

42. Both OAIS processes will inevitably engage the rightholder's right of reproduction in the Data Object, which has been analyzed above in relation to the ingesting process. In addition, to the extent that the data management process manipulates and updates the Descriptive Information, where it does so erroneously and misattributes the Data Object, it may be exposed to an action by the author or performer for breach of his right of paternity or integrity. This has also been analyzed above in relation to the ingesting process, in conjunction with the process of building the Preservation Description Information and Descriptive Information databases.

### **3.5 Access**

43. The preservation of information does not necessarily connote its access. For instance, for sensitive information which is confidential in nature, it may only be necessary to preserve the information, and no one will be granted access. This may be the only way to prevent loss of historically important but politically or militarily

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<http://public.ccsds.org/publications/archive/651x0b1.pdf> (last visited Jun. 19, 2008) [hereinafter *OAIS Producer-Archive Ingest Standard*].

<sup>176</sup> *Id.*, at 3-11 to 3-12.

<sup>177</sup> For instance, some of these old works may be of unknown authorship, and issues may arise as to whether they have been published or not, for purposes of determining if copyright in such works has lapsed.

<sup>178</sup> *OAIS*, *supra* note 98, at 4-2, 4-6 to 4-8.

<sup>179</sup> *Id.*, at 4-2.

<sup>180</sup> *Id.*, at 4-8 to 4-10.

sensitive material.<sup>181</sup> For instance, under the National Heritage Board Act, government departments may impose “any conditions or restrictions” to limit access to public records in public archives such as the NAS.<sup>182</sup> In consequence, NAS only enables access to unclassified public archives at least 25 years after the records have been closed and transferred from the respective creating and transferring government agency,<sup>183</sup> though it would seem that in some instances, NAS may accept conditions imposed by the source agency, or restrict access to records which pertain to national security and defence, law enforcement, personnel records, and records whose disclosure would endanger the life or physical safety of a person.<sup>184</sup>

44. That notwithstanding, the mandate for most OAIS Archives is not only to preserve but also to enable access to the digitally preserved AIPs, subject to any access restrictions that may be imposed for them.<sup>185</sup> The access component under the OAIS Reference Model thus refers to the coordination of Consumer's and Designated Communities' access to the OAIS Archive to generate a Dissemination Information Package (“DIP”) for on- or off-line delivery of the required Data Object. The class of Consumers who have access to the OAIS Archive may also be subsequently enlarged or down-sized, and the Designated Community may be an expanding or shrinking community.<sup>186</sup> In addition, OAIS Archives may enter into sharing, exchanging and cooperating archive agreements and may also seek to achieve inter-operability of their Archives in this regard.<sup>187</sup> All these functions are encapsulated under the access component of the OAIS Reference Model.

45. Access to the OAIS Archive potentially exposes the Archive to its greatest copyright liability for enabling multiple infringing reproductions of the Data Objects by the Consumers and the Designated Communities. The Archive is unlikely to avail itself of the Internet intermediaries' safe harbour defences in the Singapore Copyright Act because in this instance, the Data Objects are supplied by the OAIS Archive as the primary network,<sup>188</sup> and the Data Objects are not stored on the Archive “at the direction of [the OAIS Consumer as] a user”<sup>189</sup> (unless the Archive in question has obtained the DIP from another Archive with which it has a cooperative agreement). In addition, if it can be contended that the Consumer and Designated Communities have abused their access to and the supply of copies of the Data Object to them, the Archive may also be liable for indirect copyright liability in an action for “authorizing infringement” if it has the requisite knowledge and control over the actions of the

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<sup>181</sup> *OAIS Producer-Archive Ingest Standard*, *supra* note 175, at 3-12.

<sup>182</sup> National Heritage Board Act, c. 196A, 1994 rev. ed., § 22(2) (Sing.).

<sup>183</sup> National Archives of Singapore, Access to Unclassified Public Archives, <http://www.a2o.com.sg/a2o/public/html/Access.htm> (last visited Jun. 24, 2008); National Archives of Singapore, Accessing Our Collections: The Treasure Trove – Our Holdings, <http://www.nhb.gov.sg/NAS/OurCollections/TheTreasureTrove.htm> (last visited Jun. 24, 2008).

<sup>184</sup> National Archives of Singapore, Access Conditions, <http://www.a2o.com.sg/a2o/public/html/permission.jsp> (last visited Jun. 12, 2008).

<sup>185</sup> *OAIS*, *supra* note 98, at 3-5.

<sup>186</sup> *Id.*, at 3-3.

<sup>187</sup> *Id.*, at 6-1 to 6-9.

<sup>188</sup> *Copyright Act*, §§ 193B(1)(a), 193C(1)(a).

<sup>189</sup> *Id.*, §§ 193B(2), 193D(1)(a).

Consumers and Designated Communities.<sup>190</sup> For this reason, many archives deploy copy protection and watermark measures to prevent Consumers from reproducing these works while accessing them.<sup>191</sup> However, where the Consumer legitimately accesses these works from an Archive, transient and incidental electronic copies of works or subject matter that are made as a result of the viewing, listening or utilization of the material are excused.<sup>192</sup>

46. It may also be contended that such Archives have also made available such Data Objects to the public by enabling their access. Of course, some OAIS Archives may limit or restrict access to certain types of Data Objects, or permit access only to those Consumers or Designated Communities with the requisite clearance.<sup>193</sup> But it may be successfully contended that enabling such access to a community constitutes granting access “to the public”, and is not just access “in private”.<sup>194</sup> As the Australian High Court explained in *Telstra Corporation Ltd v. Australasian Performing Right Association Ltd*:

[A] transmission may be to individuals in private circumstances but nevertheless be to the public. Moreover, the fact that at any one time the number of persons to whom the transmission is made may be small does not mean that the transmission is not to the public. Nor does it matter that those persons in a position to receive the transmission form only a part of the public, though it is no doubt necessary that the facility be available to those members of the public who choose to avail themselves of it.<sup>195</sup>

47. It also follows that any transient and temporary copies of works or subject matter made in the course of communicating or making available the works will not be absolved if the act of making the communication itself constitutes an infringement,<sup>196</sup> or if the work or subject matter as a Data Object on the Archive that is sought to be transmitted is an infringing reproduction in the first place.<sup>197</sup> And where public access to the work or subject matter is not supposed to have been granted because the work or subject matter is unpublished, but it was nevertheless granted in breach of various access restrictions, the copyright owner or author may sue for breach of his publication rights because reproductions of the work, copies of the film or records embodying the sound recording have been supplied to the public, whether by sale or otherwise.<sup>198</sup>

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<sup>190</sup> *Ong Seow Pheng v. Lotus Development Corp.*, [1997] SGCA 23, [1997] 3 S.L.R 137 (C.A. Sing.), *rev'g Lotus Development Corp. v Ong Seow Pheng*, [1997] 1 S.L.R. 484 (High Ct. Sing.); *Moorhouse v. Univ. of N.S.W.*, (1975) 133 C.L.R. 1, [1976] R.P.C. 151 (High Ct. Austl.).

<sup>191</sup> See e.g. National Heritage Board, How does NAS prevent its photographs being downloaded and published at other web sites?, <http://picas.nhb.gov.sg/picas/public/internetSearch/Faq.jsp> (last visited Jun. 24, 2008).

<sup>192</sup> *Copyright Act*, § 193E.

<sup>193</sup> *OAIS*, *supra* note 98, at 3-5.

<sup>194</sup> This may be contrasted with the ingesting process where the transfer of the SIP is between two parties only – the Producer and the Archive. See also *supra* note 130.

<sup>195</sup> *Telstra Corp. Ltd. v. Australasian Performing Right Assoc. Ltd.*, 191 CLR 140, 155 (1997), [1997] HCA 41 (High Ct. Austl.) (Gaudron and Dawson J.J.).

<sup>196</sup> *Copyright Act*, §§ 38A(1)(b), (2)(b), 107E(1)(b).

<sup>197</sup> *Id.*, §§ 38A(3), 107E(2).

<sup>198</sup> *Id.*, § 24(1).

48. Furthermore, in making available a Data Object whose rights management information has been removed or altered without consent, an action may be maintained by the copyright owner, exclusive licensee or performer against the Archive for any distribution, communication or making available these copies of works, subject-matter or recordings of performances.<sup>199</sup> The Archive may also be guilty of a criminal offence for doing so,<sup>200</sup> unless it is able to contend that it is operating not for purposes of commercial advantage.<sup>201</sup>

### **3.6 Administration and Preservation Planning**

49. The OAIS process of administration involves soliciting archival information for the OAIS and negotiating submission agreements with Producers, establishing standards and policies for establishing and maintaining the Archive, and auditing submissions of SIPs and AIPs to the Archive.<sup>202</sup> The OAIS process of preservation planning involves monitoring the needs of the Designated Community of users and changes in digital technologies, information standards and computing platforms.<sup>203</sup> Arising from this, the preservation planning process develops preservation strategies and standards, including new data packaging designs and data migration plans,<sup>204</sup> which are executed by the replace media component of the OAIS archival storage and data management processes.<sup>205</sup>

50. Thus because information in the Archive has to be preserved over a long period of time, “[n]o matter how well an OAIS maintains its current holdings, it will eventually need to migrate much of its holdings to different media and/or to a different hardware or software environment to keep them accessible.”<sup>206</sup> This may be driven by improved cost-effectiveness of new hardware, obsolescence of some media types and the introduction of new media, new packaging designs, existing media decay and new consumer-service requirements.<sup>207</sup> The migration may involve the replacement of existing media (refreshment), transferring the Archive to new media (replication), transferring the Archive to new media with a change to the organization (packaging) of the Archive (repackaging) and transferring the Archive and also altering the Content Information or the Preservation Description Information (transformation).<sup>208</sup> And where the Content Information is altered because the format is altered, this may also necessitate changes to Representation Information,<sup>209</sup> including changes to the

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<sup>199</sup> *Id.*, § 260(4). The owner, licensee or performer must also show that the Archive knows or ought reasonably to know that the distribution, importation, communication or making available to the public of copies of the altered work, subject matter or recordings of performance will induce, enable, facilitate or conceal an infringement of copyright in the work or subject matter or an unauthorized use of a performance.

<sup>200</sup> *Id.*, § 260(6).

<sup>201</sup> *Id.*, § 260(7)-(8).

<sup>202</sup> *OAIS*, *supra* note 98, at 4-10 to 4-12.

<sup>203</sup> *Id.*, at 4-12 to 4-13.

<sup>204</sup> *Id.*, at 4-14.

<sup>205</sup> *Id.*, at 4-7.

<sup>206</sup> *Id.*, at 5-1.

<sup>207</sup> *Id.*, at 5-1 to 5-2.

<sup>208</sup> *Id.*, at 5-2 to 5-9.

<sup>209</sup> *Id.*, at 3-3

Access Software stored to preserve the look and feel of the presented information.<sup>210</sup> The Archive may even be upgraded or enhanced to increase or improve it, through the creation of new editions of the AIP,<sup>211</sup> or be backed up on a different physical site for disaster recovery purposes.<sup>212</sup>

51. From a copyright perspective, all these processes will involve additional reproductions and adaptations of the Data Objects and their related information in the Archive, as well as reproductions and adaptations of the Representation Information, which may include the necessary Access Software. As noted above, all these reproductions and adaptations will need to be licensed by the rightholders, unless these activities may be brought within existing exceptions to copyright law. While the migration of computer software as part of the Representation Information may be permitted, as noted above in relation to the OAIS ingesting process, the migration and backup of other digital resources will not fall within the backup rights exception for computer programs. This is because there are no general backup rights under Singapore's copyright law.<sup>213</sup>

52. If so, the OAIS archive may need to rely on the other exceptions and limitations under Singapore's copyright law, in particular, those that are relevant to the preservation process.

#### **4. Exceptions and Limitations to Permit Digital Preservation**

53. Although the OAIS Reference Model notes the need for to an agreement to be reached between the Producer and the Archive, in some instances, the Producer may not have the requisite rights to licence or transfer to the Archive to enable the Archive to conduct its digital preservation duties. In such an instance, the Archive may also have to reach an agreement with the rightholder, author or performer of the work, subject-matter or performance that constitutes the Data Object of the SIP. Of course, this is likely to be a practical problem in relation to anonymous or pseudonymous works, and in particular, unpublished anonymous or pseudonymous works,<sup>214</sup> where it is not possible to trace and track down the identity of the author, let alone the identity of the rightholder. Where it is possible to ascertain the date of first publication of the work, the Archive may be able to wait for the lapse of copyright protection in the work.<sup>215</sup> But in instances where digital preservation is a matter of some urgency, where, for instance, the medium on which the work is recorded or presented is decaying and the work needs to be urgently preserved, for otherwise, it would be

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<sup>210</sup> *Id.*, at 5-11 to 5-12.

<sup>211</sup> *Id.*, at 5-9.

<sup>212</sup> *Id.*, at 4-8.

<sup>213</sup> This contrasts even more unfavourably when comparing the Singapore Copyright Act with the Australian Copyright Act, which provides for various "space-shifting" rights for end users. *See* Copyright Act 1968, c. 63, §§ 43C, 47J, 109A, 110AA (Austl.).

<sup>214</sup> Unpublished anonymous and pseudonymous works will have indefinite copyright, as their duration of protection subsists until the expiration of 70 years after the calendar year in which the work was first published. *See* Copyright Act, § 29(1).

<sup>215</sup> Copyright Act, § 133(2).



irreversibly lost, seeking the requisite licence clearance from the author or rightholder may not be a feasible option.

54. Provisions do exist in Singapore's copyright law that provide that certain types of uses of works or subject matter shall not constitute infringements of copyright in the work or subject matter. Some reliance may be had to these provisions for purposes of reproducing, adapting, communicating or making available the work for purposes of digital preservation.

#### **4.1 Fair Dealing**

55. Fair dealing in relation to a work or subject matter will not constitute an infringement of copyright in the work or subject matter.<sup>216</sup> There are two classes of fair dealing exceptions: the general fair dealing exception and specific fair dealing exceptions. The specific fair dealing exceptions refer to uses of the work for purposes of criticism or review<sup>217</sup> and for reporting of current events.<sup>218</sup> However, neither specific fair dealing exception seems applicable, since the primary purposes of digital preservation work is to accurately reproduce the work, and any criticism or review of the preserved work is ancillary to the preservation exercise, and will be considered the fruits of research built on the archive. Nor would digital preservation be considered an aspect of "reporting of current events" or "news", since preservation is not only about protecting news reports, but also records of other nature. In any event, fair dealing for purposes of news reporting is confined to activities carried out by a newspaper, magazine, periodical, broadcaster or cable programming service.<sup>219</sup>

56. It would seem that digital preservation may be better legitimized as general "fair dealing". In 2004, Singapore amended the existing section 35 of the Copyright Act<sup>220</sup> to render it a generic fair dealing provision that serves as a catch-all for all fair dealing activities. Fair dealing is no longer confined to "research and study".<sup>221</sup> In a paper released to explain the rationale for the revision to create an "enhanced fair dealing" regime, the Intellectual Property Office of Singapore ("IPOS") explained:

The fixed list [of copyright defences in the Copyright Act] has the advantage of giving members of the public the certainty of what is allowable under fair dealing. For example, with regards to research and private study, the Copyright Act states clearly that copying an article in a periodical publication, or a "reasonable portion" of a work (which is also carefully defined), is considered fair dealing. However, this fixed list may not have the flexibility to deal with unique circumstances which may arise. For example, the fixed list does not allow the limited quoting of copyrighted material other than for research or private study. In addition, the list of specific exceptions may not be responsive towards the emergence and use of new technologies in the use of works.

The proposed provision benefits all users of copyright materials. It preserves the advantages of the current system, by retaining the fixed list system. At the same time, it introduces more flexibility, by enabling fair use to go beyond the specific purposes listed. It does this by allowing all permitted

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<sup>216</sup> *Id.*, §§ 35, 109.

<sup>217</sup> *Id.*, §§ 36, 110.

<sup>218</sup> *Id.*, §§ 37, 111.

<sup>219</sup> *Id.*

<sup>220</sup> As well as the corresponding section 109 of the Copyright Act.

<sup>221</sup> *Id.*, § 35(1A). *See also* section 109(2).

acts to be assessed according to a set of factors to determine if they constitute "fair use" of copyrighted material.<sup>222</sup>

57. The set of factors referred to by IPOS are set out in section 35 and they are:
- (a) the purpose and character of the dealing, including whether such dealing is of a commercial nature or is for non-profit educational purposes;
  - (b) the nature of the work or adaptation;
  - (c) the amount and substantiality of the part copied taken in relation to the whole work or adaptation;
  - (d) the effect of the dealing upon the potential market for, or value of, the work or adaptation; and
  - (e) the possibility of obtaining the work or adaptation within a reasonable time at an ordinary commercial price.<sup>223</sup>

58. While the revised section 35 and its five factors have yet to be examined by Singapore courts, in a decision of the Singapore High Court in *Aztech Systems Pte. Ltd. v. Creative Technology Ltd.*,<sup>224</sup> the court examined the previous section 35 and its (then) four factors in some detail (factor (e) was introduced in 2004) and noted that factor (a), the commercial or non-commercial nature of the purpose, is an important factor for or against a consideration of whether a dealing is fair.<sup>225</sup> Where the Archive operates on a non-profit basis or in discharge of a statutory function, it may be easier to persuade the court that the digital preservation process is "fair dealing". And since the digital preservation process invariably entails preserving the entire work, where the work as a whole needs to be copied for the purpose for which it is to be used, the court may be prepared to treat factors (b) and (c) together and consider that in so copying the work, the dealing is still considered fair.<sup>226</sup> The factor that would be of some prejudice to digital preservation would arguably be factor (d), the adverse effect that enabling access to the preserved Data Object in the Archive would have on the potential market for the work or adaptation. However, if the Data Object is legitimately acquired by the Producer and possession and control of it is subsequently transferred to the Archive, the archived Data Object is arguably a legitimate copy and a substitute for the original Data Object, and as long as both the AIP and the original Data Object are not made available at the same time, this would ameliorate arguments about the adverse impact the AIP would have on the market for the Data Object. In any event, this issue can be managed by enabling access to the Data Object through the Archive only when it is no longer available on the market, or cannot be obtained within a reasonable time at an ordinary commercial price,<sup>227</sup> which relates to factor (e) as listed in section 35 as well as a precondition for the exercise of the special statutory provisions for enabling preservation in sections 48 and 113. (These latter provisions will be discussed below).

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<sup>222</sup> IPOS, Copyright (Amendment) Bill Consultation Paper (23 July 2004).

<sup>223</sup> *Id.*, § 35(2). See also section 109(3) for a similar list of factors.

<sup>224</sup> *Aztech Systems Pte. Ltd. v. Creative Technology Ltd.*, [1996] SGHC 127, [1996] 1 S.L.R. 683 (H.C. Sing.).

<sup>225</sup> *Id.*, [54].

<sup>226</sup> *Id.*, [55].

<sup>227</sup> *Cf.* *Copyright Act*, §§ 48(3), 113(3).

59. Finally, as the Singapore High Court noted in *Aztech Systems*, the factors listed in section 35 are not intended to be exhaustive. Above all, the court considers the matter of “public interest” and in that case, held that it was in the public interest to enable reverse engineering of computer software.<sup>228</sup> Likewise, it is clearly in the public interest to implement a digital preservation process as outlined above and undertaken for non-commercial purposes by non-profit institutions for purposes of preserving our cultural, religious and literary heritage. On analysis, notwithstanding the “fuzzy” nature of the application of the various factors in section 35, digital preservation seems to be permissible fair dealing in Singapore’s copyright laws. However, so far, the analysis above is focused on the OAI ingesting, storage and data management processes. Where the OAI Archive seeks to make the archived Data Object publicly accessible, particularly in relation to a subscription fee or charge, this may adversely alter the balance in relation to a consideration of factors (d) and (e) against the rightholder, especially where rightholders have also taken steps to digitally preserve their works and make them accessible via their own heritage or historical databases.

#### **4.2 Preserving a Work in a Library or Archive**

60. Special defences exist to support the work of libraries and archives in providing their users access to their resources. Many of these defences are found in Part III, Division 5 and Part IV, Division 6 of the Copyright Act. For purposes of these defences, a library is defined as one that is not conducted for profit,<sup>229</sup> and an archive is defined as referring to the NAS or a non-profit body that retains a collection of documents or other material of historical significance or public interest for the purpose of conserving and preserving these documents or other material.<sup>230</sup>

61. Thus, subject to a declaration by the library or archive officer that after reasonable investigation, a copy of a work, sound recording or film cannot be obtained within a reasonable time at an ordinary commercial price,<sup>231</sup> sections 48(1) and 113 enable a library or archive to make a copy of the work, recording or film in its collection:

- for preservation and archival purposes;<sup>232</sup>
- for purposes of research that is being carried out at the library or archive in which the work is held or at another library or archive;<sup>233</sup>
- as a substitute for the damaged or deteriorated publication of the work; and<sup>234</sup>
- to replace a lost or stolen publication of the work.<sup>235</sup>

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<sup>228</sup> *Aztech Systems Pte. Ltd. v. Creative Technology Ltd.*, [57]-[58].

<sup>229</sup> *Copyright Act*, § 45(1). It is provided that a library shall not be taken to be established or conducted for profit by reason only that the library is owned by a person carrying on business for profit. *See id.*, § 13.

<sup>230</sup> *Id.*, § 7(4).

<sup>231</sup> *Id.*, §§ 48(3), 113(3).

<sup>232</sup> *Id.*, §§ 48(1)(a), 113(1)(a), (2)(a).

<sup>233</sup> *Id.*, §§ 48(1)(a), 113(1)(a), (2)(a).

<sup>234</sup> *Id.*, §§ 48(1)(b), 113(1)(b), (2)(b).

<sup>235</sup> *Id.*, § 48(1)(c), 113(1)(c), (2)(c).

62. In addition, section 48(2) also allows the library or archive to make “a single copy” of a work so held in its collection, other than for the purposes outlined above. The differences in language between these two subsections in the same provision mean that section 48(2) entitles the library or archive to make a single copy of a work in its collection for any reason other than for preservation or replacement purposes,<sup>236</sup> whereas section 48(1) presumably entitles the library or archive to make copies of a work in its collection for preservation or replacement purposes. It would seem that section 48(1) (and by corollary, section 113) entitle the library or archive to make as many copies of a work as may be necessary, as long as such copies are referable to the purposes of preservation or replacement, and are accompanied by a declaration in the prescribed form.<sup>237</sup> And the right to make copies for preservation or replacement purposes extends to unpublished works.<sup>238</sup>

63. Since under the Copyright Act, a copy of a work includes a digitized copy of a work,<sup>239</sup> at first sight, this implies that sections 48(1) and 113 enable libraries and archives to digitize or convert into digital form Digital Objects and not just Physical Objects. However, these provisions can be narrowly construed to sanction only the “making of a copy of the work”, and not the communication or making available of the work to the public.<sup>240</sup> It may be presumed that where the provision entitles the library to use the digital copy as a substitute for the physical copy, it also permits the library to grant access by users to the electronic copy. However, what the section does not say is whether there can be *multiple simultaneous users* for that one electronic copy, or whether as a one-for-one substitute for that physical copy, *only one user can have access to it at any point in time*.

64. In addition, if the library or archive is also part of an educational institution, it may be entitled to make a record of a sound broadcast or cinematograph film of a TV broadcast or of a cable programme for a course of instruction at the educational institution.<sup>241</sup>

65. Subject to this limitation, it would seem therefore that sections 48 and 113 sanction the OAIS processes of ingesting, archival storage and data management, but not the grant of access to the Archive.<sup>242</sup> In this regard, the right of the library or

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<sup>236</sup> Cf. Copyright Act 1968, c. 63, § 51A (Austl.) (defining purpose as “administrative purposes” - purposes directly related to the care or control of the collection).

<sup>237</sup> Cf. Copyright Act 1968, c. 63, §§ 110BA, 112AA (Austl.) (right to make a copy for preservation purposes limited to 3 copies).

<sup>238</sup> Cf. Copyright Act, §§ 48(4), 113(4). The provisions also usefully note that the supply of a copy of an unpublished work made under sections 48 and 113 to another library or archive for research purposes does not constitute publication of the work.

<sup>239</sup> *Id.*, § 15(1B) (providing that a reproduction of a work includes a reproduction from non-digital into digital or other electronic machine-readable form).

<sup>240</sup> It is noteworthy that the equivalent Australian provision, section 51A, has been revised to provide for communication of a reproduction of work that has been preserved. See Copyright Act 1968, c. 63, § 51A(3), (3A), (5) (Austl.).

<sup>241</sup> Copyright Act, § 115. Cf. *id.*, § 115A (copying of sound recording, film, TV and sound broadcast and cable programme for course of instruction in media).

<sup>242</sup> This appears to reflect the outdated nature of Singapore's preservation provisions in its Copyright Act. See also, *supra* note 240.

archive to make its Archive accessible has to be found in another provision in the Singapore Copyright Act.

### **4.3 Accessing a Work in a Library or Archive**

66. Section 45 enables a not-for-profit library or an archive to make a copy of a work, including an article contained in a periodical publication, or the whole or part (that is, more than a substantial copy) of a literary, dramatic or musical work other than an article, for a user who makes a signed declaration requesting for a copy of the work for purposes of his research or study.<sup>243</sup> Section 45 was revised in 2004 to encompass the making available of electronic resources to library users.<sup>244</sup> Section 45 does not seem to draw a distinction between an article or the work as part of the library's or archive's original collection, or one which has been preserved or archived in its collection pursuant to section 48,<sup>245</sup> although the latter would admittedly call for a broader interpretation of the meaning of "acquiring" a publication or published work in electronic form as part of its collection.<sup>246</sup> Presumably, this entitles a library or archive that has digitally preserved its collection to make copies work available to its Consumers and Designated Communities under section 45, provided the written requests for the article or work and formal declarations that the article or work is required for purposes of research and study have been made,<sup>247</sup> and provided that other search and validation requirements have been satisfied.<sup>248</sup>

67. Section 45(7A) further provides that if a library or archive acquires an electronic collection comprising articles in periodicals and other works, copyright in the articles and works is not infringed if this collection is made available online for access within the premises of the library, and the user cannot make an electronic copy of the article or work through the use of any library or archive equipment. Furthermore, the library or archive must not enable the user through its equipment to communicate the article or work. It would appear that this provision is intended to apply primarily to resources such as its CD-ROM and DVD resources which are available for access only "within the premises of the library" by library or archive users using "equipment supplied by the library or archive". Where the Archive acquires a network licence for the use of such resources online *e.g.* via the Internet, there will be no need to rely on this provision. Additionally, it would seem that even if a library or archive makes its preservation Archive available for online access, access should be restricted to computers or equipment on its physical premises, and it has to take steps to ensure that users cannot "make [ ] electronic cop[ies] of the article or work ... or communicate the article or work".<sup>249</sup> What is envisaged seems to be some kind of monitoring system or the application of technological measures to the DIP that the

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<sup>243</sup> *Copyright Act*, § 45(1), (5).

<sup>244</sup> *Id.*, § 45(7A).

<sup>245</sup> *Cf. id.*, § 45(5)(a) (stating that the work has to "form part of the library or archives collection").

<sup>246</sup> *Id.*, § 45(7A).

<sup>247</sup> *Id.*, § 45(1)(a), (b).

<sup>248</sup> *See id.*, § 45(2)-(5). Thus, where a copy of a work is requested under section 45, the authorized officer of the library or archive must make a declaration that he has, after reasonable investigation, satisfied himself that a copy (not being a secondhand copy) of the work cannot be obtained within a reasonable time at an ordinary commercial price.

<sup>249</sup> *Id.*, § 45(7A)(a), (b).

Archive has to implement when Consumers access the Archive. As applied to OAIS Archives which are presumed to be electronic collections of Data Objects that are acquired by the library or archive, this means that no remote access to the OAIS Archives is permissible under section 45(7A).

68. A separate provision, section 45(9), provides that a library or archive may, pursuant to a signed declaration from a Consumer,<sup>250</sup> make an “electronic copy”<sup>251</sup> of an article or a whole or substantial part of a work “for communication to” the Consumer on his request for purposes of his research and study. (This provision would appear to be separate and distinct from section 45(7A), since section 45(7A) only enables the Consumer to access the article or work, but not to make an electronic copy or to communicate the article or work.) Certain other conditions have to be satisfied, such as requiring the library officer to issue a special section 45(9) notice to the Consumer before the electronic copy “is communicated”, and requiring the officer to destroy the electronic copy made after it has been communicated.<sup>252</sup> The requirement for a library or archive to “communicate” the electronic copy of the requested article or work to the user suggests that the library may not make an electronic copy of the work on *e.g.* a floppy disk or CD-ROM or print it out and then hand its physical form over to the Consumer because the requested copy would not be “transmitted by electronic means” as required by the new right of communication. Nor can the library or archive supply a physical copy of the work to the Consumer. It also introduces an additional level of compliance, because the electronic copy made by the librarian or archive has to be destroyed after it has been transmitted to the Consumer.

69. Even then, a purposive reading of section 45(9) will suggest that the provision does not call for the library or archive to destroy the OAIS Archive copy of the Data Object (the AIP) after it has been supplied to the Consumer, only the intermediate electronic copy or DIP that it has made for this purpose. However, the library or archive has to be careful to ensure that copies of any DIP that it transmits to the Consumer that is within its control are deleted. For instance, if communications are via email, the librarian has to delete the email from his accounts. So a librarian has to keep the declaration submitted by the user, but may not keep the actual communication records to show that the electronic copy was transmitted to the user. In practical terms, this requires a librarian to save *only* the email, *but not* the *attachment to the email* which contains the electronic copy of the work transmitted to the user, as proof that the electronic copy was transmitted to the user. An officer-in-charge of a library or archive has to be careful about observing this rule because he is legally obliged to take all reasonable precaution and exercise all due diligence to avoid any breaches of section 45, failing which he is exposed on conviction to a fine of up to \$1,000.<sup>253</sup>

70. Notwithstanding the additional obligations imposed on the Consumers and officers of the library or archive, this analysis shows that section 45(9) is of wider

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<sup>250</sup> Copyright Regulations, c. 63, Reg. 4 (Sing.), reg. 9A.

<sup>251</sup> *Copyright Act*, § 7(1) (defining “electronic copy” as “a copy of the work or subject-matter in an electronic form”).

<sup>252</sup> *Id.*, § 45(9)(ii).

<sup>253</sup> Copyright Regulations, c. 63, Reg. 4 (Sing.), reg. 9(1) read with reg. 9(3).



application than section 45(7A), since it permits a library or archive to communicate an electronic copy to the Consumer. It would appear to be more useful to OAIIS Archives seeking to make available online and remote access to (and optionally supply) electronic copies of the archived Data Objects to Consumers, and enable Archives to transmit these copies electronically to the Consumers. The only drawback appears to be a marginal catch-22 result from the operation of this provision: since section 45(9) only enables the OAIIS Archive to communicate the electronic copy to a user who makes a request, how is the user to make the request if he does not have access to the copy in the first place? The provision seems to presume that the user's first access to the copy of the work is to a physical copy, for which he then requests access to an electronic copy. Alternatively, the user's first access may be to an index that sufficiently describes the work for which access to an electronic copy is sought. These possible restrictions may somewhat hinder the Archive's operation as a fully online library or archive.

71. On a separate note, since no Archive is totally comprehensive, OAIIS Archives may need to enter into sharing, exchange and cooperative agreements with other archives. Section 46 provides some legal sanction for such arrangements. It enables libraries to make inter-library copies of articles or works, for the purpose of enabling the requesting library to include the copy in its collection (but not in substitution for an equivalent subscription), as well as to enable the requesting library to meet a section 45 request for a library resource which it does not have.<sup>254</sup> Section 46 exempts the supplying library, stating that "an action shall not be brought against the body administering that first-mentioned library, or against any officer or employee of that library, for infringement of copyright by reason of the making or supplying of that copy".<sup>255</sup> Presumably this exemption extends to the supplying and transmitting via electronic means of an electronic copy of the work, which may be an electronic resource, by the supplying library to the requesting library. This is an important exception for libraries and archives, since with the advent of the digital library comes greater opportunities for library sharing and pooling of resources, particularly if certain libraries have specialist resources and library users demand a seamless experience of access to all available resources. But while this provision will help libraries in relation to inter-library loans, it is to be applied only in an *ad hoc* manner and is clearly not designed to permit the requesting library to use this as a substitute to build its own collection.

72. Section 47(1) enables libraries, archives and their users to make copies of and to communicate unpublished but copyrighted "old" works<sup>256</sup> in its collection, for the purpose of research or study.<sup>257</sup> A separate rule in section 47(2) enables libraries and archives to make and communicate copies of unpublished theses to a person who satisfies the library that he requires it for purposes of research or study.<sup>258</sup> A parallel provision exists in section 112 to permit a library or archive to make a copy or

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<sup>254</sup> *Copyright Act*, § 46.

<sup>255</sup> *Id.*, § 46(3).

<sup>256</sup> The Act describes an "old" work as a work that remains unpublished more than 50 years after the death of the author, *and* the making or communication of copies takes place more than 75 years after the time or period when the work was made. *See id.*, § 47(1).

<sup>257</sup> *Id.*, § 47(1).

<sup>258</sup> *Id.*, § 47(2).

communication of an “old”<sup>259</sup> unpublished sound recording or cinematograph film or other subject-matter included in the recording or film for a user for his research or study purposes. At first sight, these provisions appear applicable to the OAIS data archival process. However, a close examination will confirm that these provisions do not sanction the *a priori* acts of a library or archive in reproducing (as in ingesting, storing and managing) and communicating (as in granting access to) the work as a Data Object in its Archive, before a user makes a request for such works or subject matter for his research or study. Libraries and archives will still need to rely on provisions such as sections 48 and 113 to enable them to digitize and preserve these “old” works before they can be made available under the former provisions.

## 5. Suggestions for Reform

73. This analysis shows that the digital preservation process will invariably engage the rightholder's exclusive economic rights of reproduction, communication and adaptation. Transforming the Data Object may also adversely impact on the author's right of integrity. Preserving the author's right of paternity, especially where the authorship information is embedded in the Digital Object as part of its rights management information, may be difficult, where the Digital Object needs to be modified or adapted to suit the data storage format chosen by the Archive, with a view to long term preservation. In addition, the Archive may need to circumvent any technological measures protecting the Digital Object, in order for the ingesting and subsequent storage process to be properly conducted. Currently, no applicable exceptions exist in Singapore copyright law to permit a library or archive to derogate from any rights management information or technological measures which may interfere with its digital preservation duties. And exceptions that permit libraries and archives to circumvent technological protection measures but not access control measures, or permit them to circumvent these measures but not provide them with the tools, equipment or services for this purpose, will arguably have the effect of subjugating the public interest in digital preservation of collections with important cultural, religious, historical heritage value to the decisions made by rightholders, decisions which may be made many years ago with a view to protecting the immediate commercial value in such works or subject matter but certainly not to stymie digital preservation.

74. Given the fact that it may be infeasible and difficult to secure licences for all these activities undertaken by the Archive, the success of the digital preservation process would seem to rely heavily on statutory sanctions in the law of copyright. The review above shows that while some data preservation provisions currently exist in Singapore's copyright law, these do not seem to have been explicitly directed at the peculiar problems of digital preservation, particularly since they divide up the digital preservation process as separate provisions that deal with copying the work or subject-matter under the preservation provisions and making it available under the dissemination provisions. It is noteworthy that the preservation provisions only seem to permit the library or archive to “make a copy” of the work, but not to make an

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<sup>259</sup> The Act describes an “old” recording or film as one in which copyright subsists in the recording or film but the making or communication of copies takes place more than 50 years after the time or period when the recording or film was made. See *id.*, § 112.

adaptation of the copy of the work, which, as noted above, may be necessary for long term digital preservation purposes. In this regard, it is also noteworthy that the dissemination provisions in Singapore's copyright law allow the Archive to disseminate its Digital Objects only when the Consumer needs it for research or study, but not when the Consumer seeks to use the Digital Object for purposes other than research or study *e.g.* where the Digital Object is no longer commercially available from the rightholder and the Consumer needs it for purposes not related to research or study.

75. Reliance on the fair dealing provision seems to permit an Archive to make a copy or an adaptation of a work or subject matter. However, given the open-textured nature of the factors that have to be considered, in the absence of a definitive judicial interpretation and application to the digital preservation process, an Archive has no definite assurance that its ingestion and storage processes will be fair dealing. It will have even less assurance that this will remain fair dealing when it makes the contents of its Archive accessible to the Consumers and the Designated Community.

## 6. Conclusion

76. Any copyright law has always sought to balance the interests of the rightholders against the interests of the public in ensuring adequate access to works and other intellectual creations. The role played by libraries and archives in digital preservation ensures that the rich cultural, religious and historical heritage value of any civilization is not lost in the ensuing technological rush, but is preserved for use by posterity. While the law of copyright has recognized the importance of preservation and sanctioned physical preservation, it has neither fully understood nor recognized the complex and inter-related issues relating to digital preservation. Notwithstanding the recent revisions made to Singapore's copyright law, this review in relation to digital preservation shows that more needs to be done. Branch Rickey, a famous US baseball manager, once said, "It is not the honor that you take with you, but the heritage you leave behind."<sup>260</sup> By preserving our heritage, we are preserving our ideals, our codes and our spirit for future generations to come. Let us fully harness the technology we have developed that has created the digital information revolution to preserve our legacy, and not allow technology to leave us behind.

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<sup>260</sup> Thinkexist.com, Branch Rickey Quotes, [http://thinkexist.com/quotation/it\\_is\\_not\\_the\\_honor\\_that\\_you\\_take\\_with\\_you-but/200098.html](http://thinkexist.com/quotation/it_is_not_the_honor_that_you_take_with_you-but/200098.html) (last visited Jun. 28, 2008).