

# Contact a Family ICT Case Study

## Overview

This document sets out the development of the ICT systems for the charity Contact a Family, in particular its choice to implement systems based on Open Source software. The document sets out the context in which the systems were developed rather than concentrating solely on the technical architecture of the chosen solutions.

A brief glossary is included for further information on the software elements selected, as well as abbreviations used in this document.

## Licence

This work is licenced under the Creative Commons Attribution-NonCommercial-ShareAlike Licence. A copy of the legal code ( the full licence ) can be viewed at the end of this document but, in brief, you are free to copy, distribute, display, and perform the work; to make derivative works under the following conditions: you must give the original author credit; you may not use this work for commercial purposes; if you alter, transform, or build upon this work, you may distribute the resulting work only under a Licence identical to this one.

For any reuse or distribution, you must make clear to others the Licence terms of this work. Any of these conditions can be waived if you get permission from the copyright holder. Your fair use and other rights are in no way affected by the above.

## Contact a Family

### *Organisation Activities*

Contact a Family is a UK-based charity serving to provide information, support and advice to families with disabled children. Information and advice are distributed through a freephone helpline, factsheets, and the Contact a Family Directory - an extensive publication covering specific medical conditions, rare disorders and UK support groups.

Families as well as health and social care professionals can access Contact a Family's services on a local basis, via its helpline, and also via its electronic services. The organisation additionally has a campaigning, consultation and awareness-raising role.

One of its innovative services is a linking scheme to enable families to contact each other and provide mutual support. The existing service provided by the helpline has recently been supplemented with a secure web-based service ( <http://www.makingcontact.org> ) which won the Telephone Helpline Association 2004 award for best secure e-mail service. It was also short-listed for The community Care Awards 2004 and The Guardian Public Service Awards 2004.

Further information regarding its services and mission can be found on its website:

- Contact a Family homepage: <http://www.cafamily.org.uk>

- Organisation plan: <http://www.cafamily.org.uk/strategy.html>
- Frequently Asked Questions: <http://www.cafamily.org.uk/moreFAQ.html>

## **Organisation Structure**

Contact a Family's head office is located in central London, where approximately 35 staff work on the organisation's core functions and administration. There are also office presences in Scotland, Northern Ireland and Wales aimed at strategic services such as lobbying and campaigning. Other local services are organised on a regional or project basis, typically with offices of less than five workers, which may be a mixture of full-time and part-time staff, plus volunteers. Additionally Contact a Family has a number of volunteer representatives in areas where it does not have offices.

## **ICT Systems**

### ***Historical Development of Systems (pre 2001)***

Contact a Family became a registered charity in 1979, although activities had begun in 1974. By the beginning of the 1990s, Contact a Family was an organisation with a turnover around £0.5m - at the end of the 1990s it had tripled to around £1.5m. Responsibility for the organisation's ICT systems at that time lay with the member of staff who also had the remit for fundraising and finance. In the early 1990s it was using shareware software, which unfortunately meant that little training was available, although an in-house manual did start to be produced. There were around 12 computer users, who were not networked. Sharing the organisation's database was difficult, with updates submitted via hardcopy for the master version.

The organisation's first computer network was subsequently installed via a student on a final year IT course placement, using Novell software.

By the mid 1990s, the database had moved to FoxPro, but this showed a skills gap – it was difficult to modify and update. After 2 years, the problems were becoming acute, and the database was moved to Microsoft Access. This coincided with the organisation procuring more structured ICT support through a recently-formed ICT start-up consultancy, sourced through the Charity Fair event. The organisation's users moved to Microsoft Office, and the first file server was put in place, using an early version of SuSE Linux, which was the solution preferred by the consultancy. At the same time, the computer network's other infrastructure was updated.

Although the head office now shared the database across the network, local offices had bespoke versions built for them, and they were mailed data every 6 weeks – there was no other synchronisation.

### ***Development of current systems (post 2001)***

With an accurate view of the organisation's requirements and planned activities, the Director of Finance and Resources, who had been responsible for the organisation's ICT systems, was able to generate sufficient buy-in at senior level to ensure that ICT issues were taken seriously as part of the organisation's core information activities. Hence, with a view to proposed enlargement, and before the situation became unmanageable, a project bid to the Department of Health in 2000 for information-related activities, such as the provision of a telephone helpline, also included the recruitment of a full-time ICT Manager. The bid was successful, and **Ryan Cartwright, Contact a Family's IT Manager**,

came in to post in January 2001.

Other changes that took place included the relocation to the present head office premises, the implementation of a new telephone system, and use of a leased line instead of ISDN.

## ***IT Manager Brief***

Ryan's brief for the development of the organisation's systems was to formulate an ICT strategy, and find a way to effectively share the database, along with any other infrastructure implications this would entail. Ongoing support for the organisation's users was also essential. The budget for the entire upgrade of the organisation's information systems was £50,000, spread over three years.

## **ICT Requirements**

### ***General users***

Computer users at Contact a Family had similar requirements to many other organisations:

- productivity software (word processing, spreadsheets...)
- sharing internal information related to Contact a Family – both the medical conditions and contact management database, plus operational information like schedules
- e-mail
- web browsing.

### ***Database***

The function of the new version of the database was to give all staff access to accurate information to assist enquiries from outside the charity. This would include information about:

- services
- support groups
- other organisations.

A list of over 3000 medical conditions was also to be included, in a hierarchical structure to ensure statistical and contact information was properly structured. Finally, statistical information about enquiries to the charity needed to be stored and managed.

To determine exact functionality, and interface requirements, a working group of staff was formed who met regularly to discuss requirements. Ryan used existing examples in order to frame discussions, as presenting users with a “blank sheet” did not elicit the most useful responses. The examples-based approach had the effect of increasing user awareness, empowering them further in determining their requirements via asking the right kinds of questions.

### ***Intranet***

For groupware-type functionality, an accurate assessment of Contact a Family's users based on feedback identified requirements for:

- display of in/out status for staff
- room booking
- diary sheet showing free/busy status in advance, but *not* the exact contents of people's office schedules
- “out of office” auto-replies for e-mail.

## Proposed Solution

To fulfil the organisation's requirements, Ryan proposed the integration of the internal information sharing requirements, via an intranet, with the medical conditions database. To make this as effective as possible, Ryan was keen to pursue a web-enabled solution.

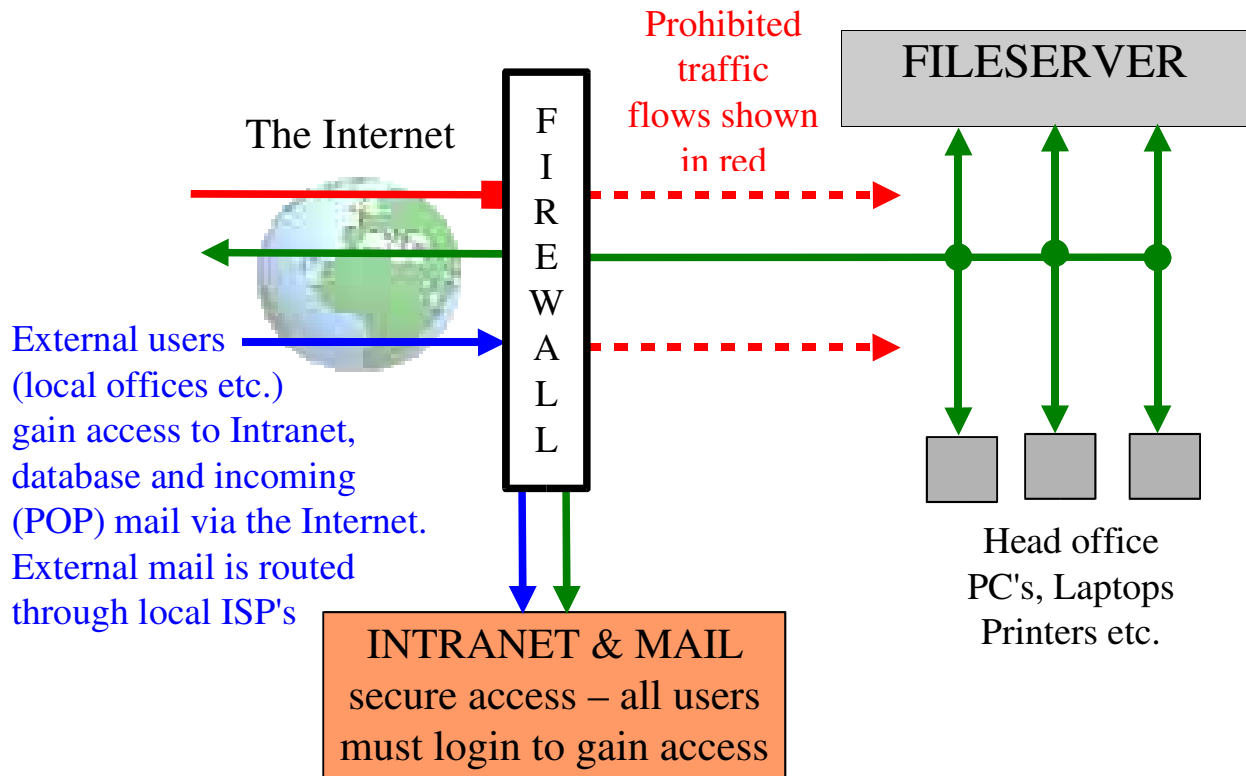
Although he had not implemented a web-enabled database previously, Ryan was aware that websites could have database back-ends, and this could have several benefits:

- minimal learning curve for users as people were generally familiar with a browser and website forms, rather than learning a new interface
- single login for the intranet and database, to make it accessible remotely without the need for a Virtual Private Network (VPN). Using a VPN held the disadvantage of users needing to have client software installed on the computers where they were accessing the system, which was inflexible and more difficult to support if users were working from home, for instance. Such a solution would also have implications of licence costs for using a proprietary system.

Initial discussions with suppliers and advisers suggested that a web-enabled solution could be prohibitively expensive, but Ryan pursued the idea, as above all, he had seen such solutions work, and did not want the extra support requirements associated with extra software. Upgrading of the existing infrastructure (e.g. fileserver) and the development of the database were to take place in parallel, and so quotes were obtained for both elements.

Desktop systems would remain as Microsoft Windows clients (with MS Office).

## Diagram of Head office infrastructure



## Implementation Options

### Servers - Proprietary Solution

Obtaining a quote for a proprietary-based systems running Microsoft (MS) Windows 2000 and MS Exchange showed that a significant proportion of the budget would be consumed via licensing costs for the servers. This did not bode well for the organisation's intended future expansion.

### Servers - Open Source Solution

The alternative for the servers was to implement an Open Source operating system. The organisation had already been running SuSE (albeit an early version) very reliably, and Ryan had previously implemented a version of Red Hat for a peer-to-peer network of 15 machines, so the concept was not brand new to either party. A quote for equivalently specified servers equated to a quarter of the cost of a proprietary solution, mainly because of the absence of software licence costs.

However, the Open Source solution would not, as delivered, have all the functionality (and associated support requirements) of MS Exchange. After user consultation, Ryan realised that the actual *required* functionality could be provided via some programming, and so eliminated the need for MS Exchange in the organisation's requirements.

## Web-enabled Database

The company who were already providing Contact a Family's support suggested that the in-house (but Open Source) system they were using for support calls and upcoming project could be adapted for Contact a Family's requirements. This would result in the company supplying a modified form of its existing PERL libraries, to be interfaced with MySQL, along with a PERL-based front-end, both of which would interface seamlessly with an Apache web server. Ryan stipulated that Contact a Family would receive the source code for the entire solution, along with the right to alter and distribute it – the Open Source model. Extra consultancy time for adapting the software was added, but the resulting quote was well within budget. Another advantage of running a web based database was seamless integration with a proposed Intranet system.

## Chosen infrastructure

Having assessed the alternatives, Contact a Family chose the Open Source solution, comprising:

- Two server machines, both running SuSE Linux as their Operating System:
  - one for file and print serving within the head office, using Samba
  - one for housing the database, web and mail-servers
- Apache to be used for the organisation's intranet webserver and database interface delivery
- Exim for the mailserver, including “out of office” autoreplies.
- an old low specification computer being used for the organisation's firewall, built from scratch and based on Linux and IPTables software.
- PERL, and MySQL for construction of the database
- PERL implementations for groupware functions such as the diary sheet and in/out board

## Implementation

At implementation stage, it became apparent that the ICT consultancy's understanding of the database requirements were not sophisticated enough. Coupled with restructuring at the consultancy's end, the project began to slip against time-scales. Ryan used the time to consult further with his users on their requirements. Eventually, the database was partially delivered, with further development carried out by Ryan in-house. This showed an immediate benefit of pursuing an Open Source solution – whilst it can be argued that legal recourse would be an option in such cases, it would require a very tight contract, which most voluntary and community sector organisations cannot afford to set up, nor enforce. Hence avoiding a proprietary solution meant in this case that Contact a Family was able to secure its solution and maintain an ongoing relationship with its supplier despite problems with the project and, with the exception of Ryan's time, at no additional cost to the project.

## Current situation

Following the process outlined above has brought Contact a Family to a stage now where:ICT is seen to be reliable, and has been central in the expansion of Contact a Family's services and methods of delivery. Staff have access to an intranet fulfilling their requirements:

- groupware functions as well as integration with the central database. As mentioned above, apart from holding information on conditions, the database records enquiries, and assists staff in their delivery of advice and support.
- other organisation information held on the intranet include items like the staff handbook and reports. Locating the database on the webserver has meant that all staff can access the database, whilst keeping the Local Area Network (LAN) at Contact a Family's head office secure. Latest developments include the addition of RSS feeds and virus information to pages.
- the ICT function has now expanded from 1 full-time post to include a part time assistant role to support all Contact a Family's 70-plus staff across the UK
- local offices have access to the organisation's database, and are gradually having their ICT upgraded (roll out of broadband, client-server networks...). Staff not located at the head office collect their e-mail directly from head office mailservers, but, for added security, use ISP email servers for outgoing mail.

## Key organisation benefits

Key benefits for Contact a Family of its current architecture have been:

- integration of ICT systems, such as the database and intranet
- high level of system reliability (e.g. the servers have not crashed in 3 years, and have only needed to be restarted 4 times and then only because of power cuts and hardware failure, with all maintenance and patches applied with the systems running)
- implementation of Open Source software has meant that ICT systems were developed and evolved in a way exactly tuned for Contact a Family's needs. This has been coupled with substantial cost savings compared to proprietary solutions
- the IT Manager's skills and profile have developed in tandem with the organisation's
- external support needs have been minimised – indeed, by investing in its staff, Contact a Family has benefited by being able to draw on a wide set of skills tuned to the organisation's requirements, and thereby has been able to afford the development and support of an increasingly comprehensive set of systems
- savings made through the use of Open Source solutions have enabled the charity to increase its effectiveness in its core activities.

## Key Learning Points

At the same time, not everything went smoothly with the ICT systems development for this project, and these are felt to be the key learning points:

- ICT systems development undoubtedly benefited from buy-in at high-level, together with adequate budgeting
- choosing an Open Source solution effectively saved the database project when things started to go wrong, and would also have been important if any member of the implementation team had been made unavailable – at worst, new developers could have been called in, with access to the software's

source code

- accurate user consultation coupled with ongoing feedback enhanced the delivered solutions
- project management and collaborative working methods required more skill and resource than initially allocated.

## Further Information

This case study has been compiled by Adrian De Luca and Ryan Cartwright, both part of a working group examining the potential that Open Source software has for the Voluntary and Community sector – see <http://www.socialsource.org.uk> for more details.

Ryan also sits on the advisory panel for the ICT Consortium (<http://www.ictconsortium.org.uk>) , and can be reached at [itmanager@cafamily.org.uk](mailto:itmanager@cafamily.org.uk).

The latest copy of this study can be found at <http://www.cafamily.org.uk/oss/> .

## Glossary & Abbreviations

Apache – (<http://www.apache.org>) - an Open Source http (web) server (<http://httpd.apache.org/>), managed by the Apache Software Foundation.

Exim - (<http://www.exim.org>) - a message transfer agent developed at the University of Cambridge for use on Unix systems connected to the Internet.

ICT – Information & Communications Technology, used interchangeably with “IT” – Information Technology

Iptables - (<http://www.iptables.org>) - iptables is part of a framework inside the Linux kernel, which enables packet filtering, network address [and port] translation (NA[P]T) and other packet mangling. It is one of the fundamental building blocks of many firewall solutions, both commercial and free (zero cost)

MySQL - (<http://www.mysql.org>) - an Open Source relational database server application.

LAN – Local Area Network

Open Source - (<http://www.opensource.org> or <http://www.fsf.org>) - a method of software licencing, whereby the end user is given access to the source code of the software along with varying rights to modify and/or distribute the code without penalty. It is the freedoms within the licence which give Open Source its characteristics, but other features usually include community development and support methods, and a low or zero initial cost

PERL - (<http://www.perl.org>) - Practical Extensive Reporting Language, a scripting language used extensively across the internet with good interfaces to web server applications

[RSS - Really Simple Syndication \(or variously: Rich Site Summary or RDF Site Summary\) – an XML-based method for syndicating web content \(usually in the form of “headlines” or brief summaries\)](#)

[Samba - \(<http://www.samba.org>\) - an Open Source/Free Software suite that provides seamless file and print services to SMB/CIFS \(Microsoft Windows\) clients.](#)

# Creative Commons Legal Code

## ***Attribution-NonCommercial-ShareAlike 2.0***

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS LICENCE DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE INFORMATION PROVIDED, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM ITS USE.

### ***Licence***

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC Licence ("CCPL" OR "LICENCE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS Licence OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

#### **1. Definitions**

**a.** "Collective Work" means a work, such as a periodical issue, anthology or encyclopaedia, in which the Work in its entirety in unmodified form, along with a number of other contributions, constituting separate and independent works in themselves, are assembled into a collective whole. A work that constitutes a Collective Work will not be considered a Derivative Work (as defined below) for the purposes of this Licence.

**b.** "Derivative Work" means a work based upon the Work or upon the Work and other pre-existing works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgement, condensation, or any other form in which the Work may be recast, transformed, or adapted, except that a work that constitutes a Collective Work will not be considered a Derivative Work for the purpose of this Licence. For the avoidance of doubt, where the Work is a musical composition or sound recording, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered a Derivative Work for the purpose of this Licence.

**c.** "Licensor" means the individual or entity that offers the Work under the terms of this Licence.

**d.** "Original Author" means the individual or entity who created the Work.

**e.** "Work" means the copyrightable work of authorship offered under the terms of this Licence.

**f.** "You" means an individual or entity exercising rights under this Licence who has not previously violated the terms of this Licence with respect to the Work, or who has received express permission from the Licensor to exercise rights under this Licence despite a previous violation.

g. "Licence Elements" means the following high-level license attributes as selected by Licensor and indicated in the title of this Licence: Attribution, Noncommercial, ShareAlike.

**2. Fair Use Rights.** Nothing in this license is intended to reduce, limit, or restrict any rights arising from fair use, first sale or other limitations on the exclusive rights of the copyright owner under copyright law or other applicable laws.

**3. Licence Grant.** Subject to the terms and conditions of this Licence, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

a. to reproduce the Work, to incorporate the Work into one or more Collective Works, and to reproduce the Work as incorporated in the Collective Works;

b. to create and reproduce Derivative Works;

c. to distribute copies or phonorecords of, display publicly, perform publicly, and perform publicly by means of a digital audio transmission the Work including as incorporated in Collective Works;

d. to distribute copies or phonorecords of, display publicly, perform publicly, and perform publicly by means of a digital audio transmission Derivative Works;

The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats. All rights not expressly granted by Licensor are hereby reserved, including but not limited to the rights set forth in Sections 4(e) and 4(f).

**4. Restrictions.** The license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

a. You may distribute, publicly display, publicly perform, or publicly digitally perform the Work only under the terms of this Licence, and You must include a copy of, or the Uniform Resource Identifier for, this Licence with every copy or phonorecord of the Work You distribute, publicly display, publicly perform, or publicly digitally perform. You may not offer or impose any terms on the Work that alter or restrict the terms of this Licence or the recipients' exercise of the rights granted hereunder. You may not sublicense the Work. You must keep intact all notices that refer to this Licence and to the disclaimer of warranties. You may not distribute, publicly display, publicly perform, or publicly digitally perform the Work with any technological measures that control access or use of the Work in a manner inconsistent with the terms of this Licence Agreement. The above applies to the Work as incorporated in a Collective Work, but this does not require the Collective Work apart from the Work itself to be made subject to the terms of this Licence. If You create a Collective Work, upon notice from any Licensor You must, to the extent practicable, remove from the Collective Work any reference to such Licensor or the Original Author, as requested. If You create a Derivative Work, upon notice from any Licensor You must, to the extent practicable, remove from the Derivative Work any reference to such Licensor or the Original Author, as requested.

**b.** You may distribute, publicly display, publicly perform, or publicly digitally perform a Derivative Work only under the terms of this Licence, a later version of this Licence with the same Licence Elements as this Licence, or a Creative Commons iCommons license that contains the same Licence Elements as this Licence (e.g. Attribution-NonCommercial-ShareAlike 2.0 Japan). You must include a copy of, or the Uniform Resource Identifier for, this Licence or other license specified in the previous sentence with every copy or phonorecord of each Derivative Work You distribute, publicly display, publicly perform, or publicly digitally perform. You may not offer or impose any terms on the Derivative Works that alter or restrict the terms of this Licence or the recipients' exercise of the rights granted hereunder, and You must keep intact all notices that refer to this Licence and to the disclaimer of warranties. You may not distribute, publicly display, publicly perform, or publicly digitally perform the Derivative Work with any technological measures that control access or use of the Work in a manner inconsistent with the terms of this Licence Agreement. The above applies to the Derivative Work as incorporated in a Collective Work, but this does not require the Collective Work apart from the Derivative Work itself to be made subject to the terms of this Licence.

**c.** You may not exercise any of the rights granted to You in Section 3 above in any manner that is primarily intended for or directed toward commercial advantage or private monetary compensation. The exchange of the Work for other copyrighted works by means of digital file-sharing or otherwise shall not be considered to be intended for or directed toward commercial advantage or private monetary compensation, provided there is no payment of any monetary compensation in connection with the exchange of copyrighted works.

**d.** If you distribute, publicly display, publicly perform, or publicly digitally perform the Work or any Derivative Works or Collective Works, You must keep intact all copyright notices for the Work and give the Original Author credit reasonable to the medium or means You are utilizing by conveying the name (or pseudonym if applicable) of the Original Author if supplied; the title of the Work if supplied; to the extent reasonably practicable, the Uniform Resource Identifier, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work; and in the case of a Derivative Work, a credit identifying the use of the Work in the Derivative Work (e.g., "French translation of the Work by Original Author," or "Screenplay based on original Work by Original Author"). Such credit may be implemented in any reasonable manner; provided, however, that in the case of a Derivative Work or Collective Work, at a minimum such credit will appear where any other comparable authorship credit appears and in a manner at least as prominent as such other comparable authorship credit.

**e.** Webcasting Rights and Statutory Royalties. For the avoidance of doubt, where the Work is a sound recording, Licensor reserves the exclusive right to collect, whether individually or via a performance-rights society (e.g. SoundExchange), royalties for the public digital performance (e.g. webcast) of the Work, subject to the compulsory license created by 17 USC Section 114 of the US Copyright Act (or the equivalent in other jurisdictions), if Your public digital performance is primarily intended for or directed toward commercial advantage or private monetary compensation.

## **5. Representations, Warranties and Disclaimer**

UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE,

INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON INFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

## **6. Limitation on Liability.**

EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENCE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## **7. Termination**

**a.** This Licence and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this Licence. Individuals or entities who have received Derivative Works or Collective Works from You under this Licence, however, will not have their Licences terminated provided such individuals or entities remain in full compliance with those Licences. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this Licence.

**b.** Subject to the above terms and conditions, the Licence granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different Licence terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this Licence (or any other Licence that has been, or is required to be, granted under the terms of this Licence), and this Licence will continue in full force and effect unless terminated as stated above.

## **8. Miscellaneous**

**a.** Each time You distribute or publicly digitally perform the Work or a Collective Work, the Licensor offers to the recipient a Licence to the Work on the same terms and conditions as the Licence granted to You under this Licence.

**b.** Each time You distribute or publicly digitally perform a Derivative Work, Licensor offers to the recipient a Licence to the original Work on the same terms and conditions as the Licence granted to You under this Licence.

**c.** If any provision of this Licence is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this Licence, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable.

**d.** No term or provision of this Licence shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent.

**e.** This Licence constitutes the entire agreement between the parties with respect to the Work Licenced here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This Licence may not be modified without the mutual written agreement of the Licensor and You.

Creative Commons is not a party to this Licence, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever, including without limitation any general, special, incidental or consequential damages arising in connection to this Licence. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licensor hereunder, it shall have all rights and obligations of Licensor.

Except for the limited purpose of indicating to the public that the Work is Licenced under the CCPL, neither party will use the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time.

Creative Commons may be contacted at <http://creativecommons.org/>.