Making Creative Commons More Effective with Usage Management

Matthew Paul Bohnsack

University of New Mexico
Albuquerque, New Mexico USA

bohnsack@gmail.com

April 28, 2012

Table of Contents

1 Introduction
- Abstract
- Motivation
- Creative Commons
- Flickr
- Usage Management

2 System Design

3 Implementation

4 Future Work

5 Conclusions

Abstract

Motivation

- Creative Commons is being used more and more
- Easy to find images on the web licensed under different CC licenses
- Very easy to make a mash-up document containing “found images”
- Not so easy to make sure you’re following all the rules when you create derivative works (mash-ups)
- Is your intended use 100% compliant with dozens or hundreds of assets you’re using, each of which might have a slightly different Creative Commons license?
- If an asset you want to use has a license incompatible with your intended use, is there an easy way for you to acquire an alternative license that lets you use the asset in the way you want to?
- Doing this sort of thing today is pretty difficult
- Adding some automated machine reasoning to the process could make it all much easier and possibly make the proper use of combined CC content a more widespread practice

Creative Commons Overview

- Creative commons is a nonprofit organization that works to increase the amount of creativity available in “the commons”
- Provides free, easy-to-use legal tools that provide a simple, standardized way to pre-clear usage rights to creative work for copyright owners
- Lets copyright holders easily change from default of “all rights reserved” to “some rights reserved”
- Not an alternative to copyright
- Applies on top of copyright
- Guidelines for marking text, images, audio, and video
- Guidelines for publishing via a file sharing network or social networking site
- Some support for embedding license information as meta-data within digital files

Creative Commons Overview (cont.)

- Not changeable or revocable
- I.e., once someone has received a copy, the work is perpetually licensed under the license it was received under
- View is always permissible under CC
- Non-exclusive licenses possible

CC Licenses Have Three Layers

- Machine Readable (CC Rights Expression Language - CC REL)
- Human Readable (Commons Deed)
- Legal Code (Lawyer Readable)

Creative Commons Licenses

- Six licenses are provided by CC, not including the complications of locale-specific licenses, license versions, or CC0 (Public Domain “no rights reserved”)
  1. Attribution / CC BY
  2. Attribution-ShareAlike / CC BY-SA
  3. Attribution-NoDerivs / CC BY-ND
  4. Attribution-NonCommercial / CC BY-NC
  5. Attribution-NonCommercial-ShareAlike / CC BY-NC-SA
  6. Attribution-NonCommercial-NoDerivs / CC BY-NC-ND
- Non-exclusive licenses, yielding CC+:

  http://wiki.creativecommons.org/CCPlus

Attribution

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of the licenses offered. Recommended for maximum dissemination and use of licensed materials.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
  - **to Remix** – to adapt the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

Attribution-ShareAlike

This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
  - **to Remix** – to adapt the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **Share Alike** – If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

Attribution-NoDerivs

This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **No Derivative Works** – You may not alter, transform, or build upon this work.

Attribution-NonCommercial

This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
  - **to Remix** – to adapt the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **Noncommercial** – You may not use this work for commercial purposes.

Attribution-NonCommercial-ShareAlike

This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
  - **to Remix** – to adapt the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **Noncommercial** – You may not use this work for commercial purposes.
  - **Share Alike** – If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

Attribution-NonCommercial-NoDerivs

This license is the most restrictive of the six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

- You are free:
  - **to Share** – to copy, distribute, and transmit the work
- Under the following conditions:
  - **Attribution** – You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **Noncommercial** – You may not use this work for commercial purposes.
  - **No Derivative Works** – You may not alter, transform, or build upon this work.

CC REL

- The Creative Commons Rights Expression Language
- RDFa (Resource Description Framework in attributes) for HTML Web pages and resources referenced therein
- XMP (Extensible Metadata Platform) for stand-alone media
- `http://wiki.creativecommons.org/CC_REL`

RDFa in HTML

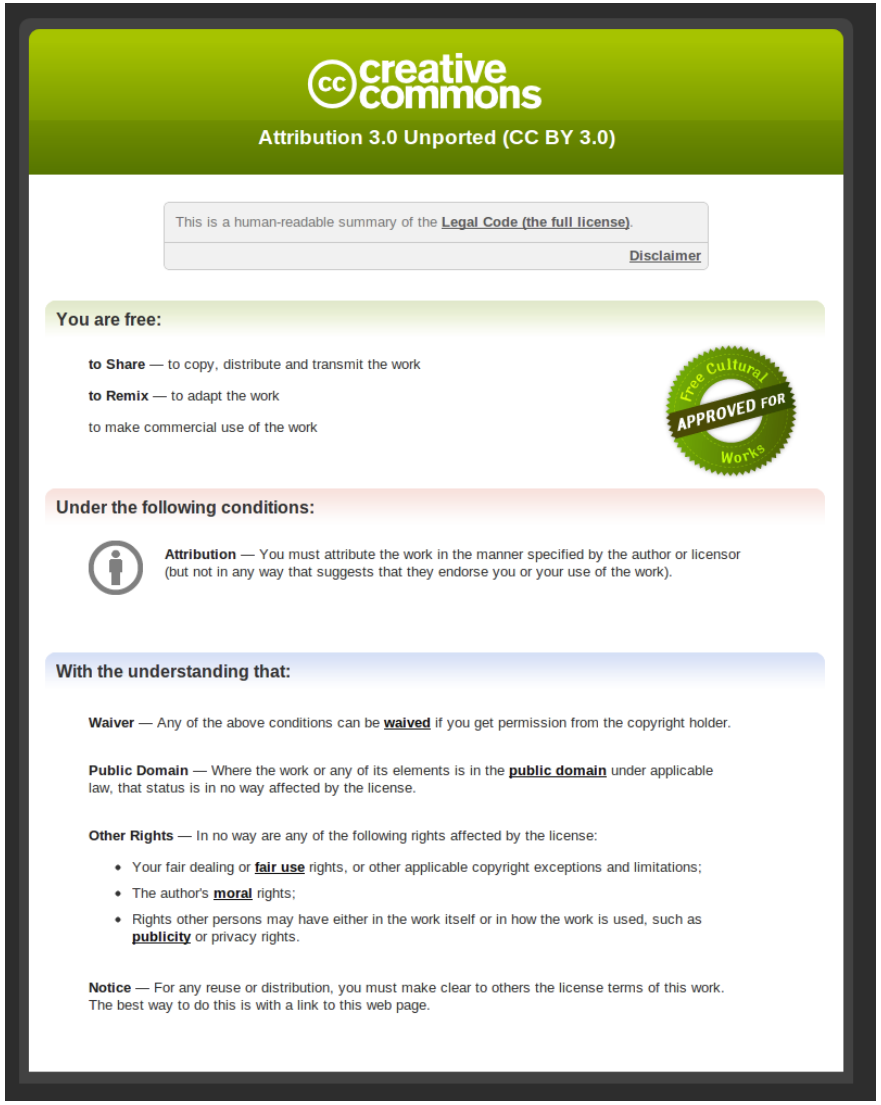
- Can simply associate web content with a CC license:

```
<div about="" instanceof="cc:Work" xmlns:cc="http://creativecommons.org/ns#"
     xmlns:dc="http://purl.org/dc/elements/1.1/" align="center">

    <a rel="license" href="http://creativecommons.org/licenses/by/3.0/">
    <img alt="Creative Commons License"
         src="http://i.creativecommons.org/l/by/3.0/us/88x31.png" /></a><br />

    <span property="dc:title">The Lessig Blog</span>,
    a <span rel="dc:type" href="http://purl.org/dc/dcmitype/Text">
    collection of texts</span>

    by <a property="cc:attributionName" rel="cc:attributionURL"
        href="http://lessig.org/"> Lawrence Lessig </a>,<br />

    is licensed under a
    <a rel="license" href="http://creativecommons.org/licenses/by/3.0/">
    Creative Commons Attribution License</a>.<br />

    There are
    <a rel="cc:morePermissions" href="http://lessig.org/blog/other-license">
    alternative licensing options</a>
</div>
```

- But what are the semantics of `http://creativecommons.org/licenses/by/3.0/`?

License Deed Webpage

- Can a machine derive this page's semantics?



creative commons

Attribution 3.0 Unported (CC BY 3.0)

This is a human-readable summary of the Legal Code (the full license).

Disclaimer

You are free:

to Share — to copy, distribute and transmit the work

to Remix — to adapt the work

to make commercial use of the work

Free Cultural APPROVED FOR Works

Under the following conditions:

Attribution — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

With the understanding that:

Waiver — Any of the above conditions can be waived if you get permission from the copyright holder.

Public Domain — Where the work or any of its elements is in the public domain under applicable law, that status is in no way affected by the license.

Other Rights — In no way are any of the following rights affected by the license:

- Your fair dealing or fair use rights, or other applicable copyright exceptions and limitations;
- The author's moral rights;
- Rights other persons may have either in the work itself or in how the work is used, such as publicity or privacy rights.

Notice — For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page.

RDF Embedded in License Deed Webpage

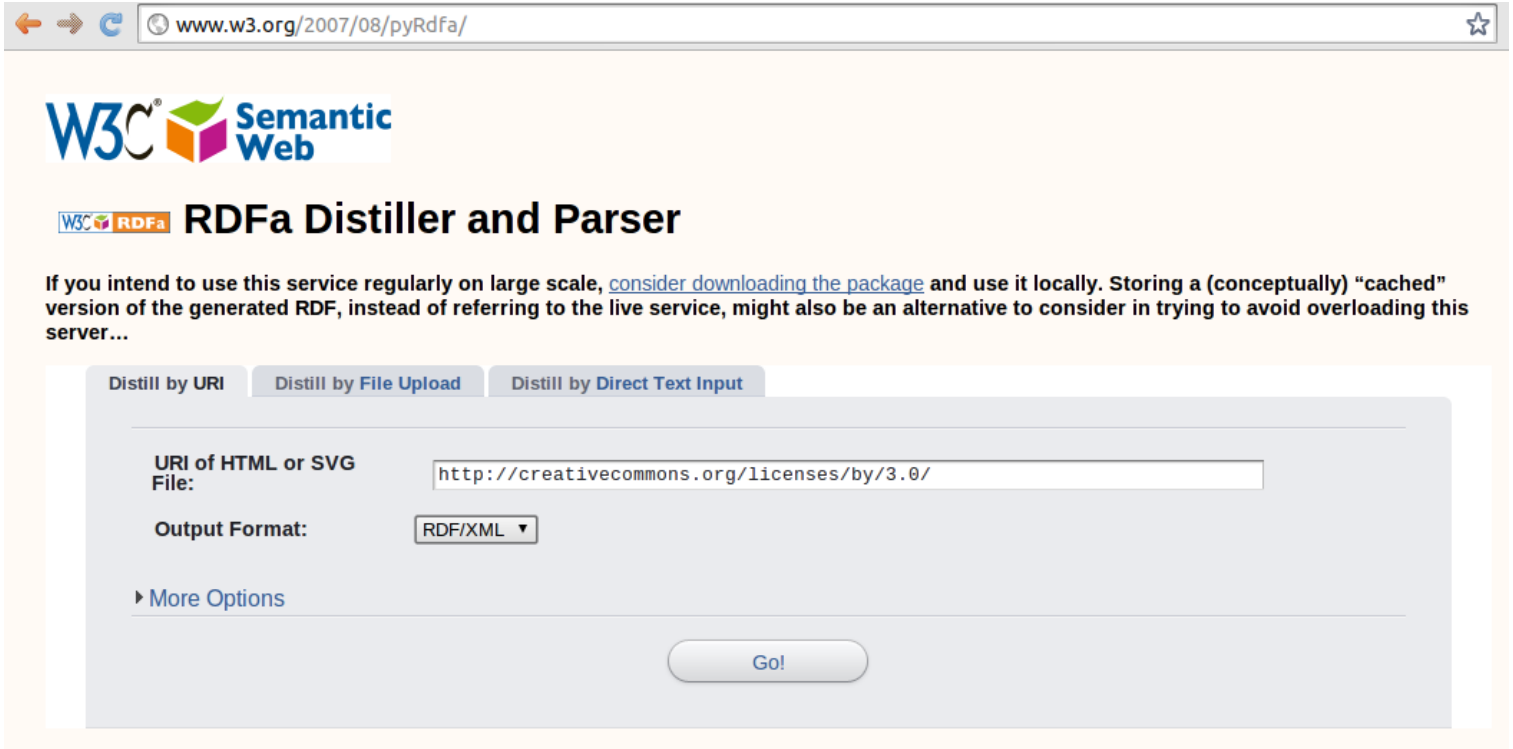
- The previous webpage contains the following embedded RDF:

```
<!-- RDF code here for backwards compatibility.  Please use the
     license's RDFa instead. -->
<!-- <rdf:RDF xmlns="http://creativecommons.org/ns#" xmlns:rdf="http://www.w3.org/1999/02/22-
      rdf-syntax-ns#">
<License rdf:about="http://creativecommons.org/licenses/by/3.0/">
    <permits rdf:resource="http://creativecommons.org/ns#DerivativeWorks"/>
    <permits rdf:resource="http://creativecommons.org/ns#Distribution"/>
    <permits rdf:resource="http://creativecommons.org/ns#Reproduction"/>
    <requires rdf:resource="http://creativecommons.org/ns#Attribution"/>
    <requires rdf:resource="http://creativecommons.org/ns#Notice"/>
</License>
</rdf:RDF> -->
```

- From this, a machine can determine that this license:
  - Permits:
    - `#DerivativeWorks`, `#Distribution`, `#Reproduction`
  - Requires:
    - `#Attribution`, `#Notice`
- However, what do these things mean? How are they implemented?

RDFa Embedded in License Deed Webpage

- In addition to the RDF shown on previous slide, CC License Deeds also have embedded RDFa
- You can see that a machine can parse this data with something like the RDFa Distiller and Parser Tool:



RDF Generated by RDFa Distiller

```
<?xml version="1.0" encoding="utf-8"?>
<rdf:RDF
  xmlns:cc="http://creativecommons.org/ns#"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:dct="http://purl.org/dc/terms/"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:xml="http://www.w3.org/XML/1998/namespace"
>
  <rdf:Description rdf:about="http://creativecommons.org/">
    <dct:title xml:lang="en">Creative Commons</dct:title>
    <dc:title xml:lang="en">Creative Commons</dc:title>
  </rdf:Description>

  <cc:License rdf:about="http://creativecommons.org/licenses/by/3.0/">
    ...
    <dct:creator rdf:resource="http://creativecommons.org/"/>
    <dc:creator rdf:resource="http://creativecommons.org/"/>
    <cc:requires rdf:resource="http://creativecommons.org/ns#Attribution"/>
    <cc:requires rdf:resource="http://creativecommons.org/ns#Notice"/>
    <cc:permits rdf:resource="http://creativecommons.org/ns#DerivativeWorks"/>
    <cc:permits rdf:resource="http://creativecommons.org/ns#Reproduction"/>
    <cc:permits rdf:resource="http://creativecommons.org/ns#Distribution"/>
    <dct:identifier xml:lang="en">CC BY 3.0</dct:identifier>
    <dct:title xml:lang="en">Attribution 3.0 Unported</dct:title>
    <dc:identifier xml:lang="en">CC BY 3.0</dc:identifier>
  </cc:License>
</rdf:RDF>
```

CC RDF Schema

- License RDF(a) references `#DerivativeWorks`, etc., in the CC namespace that's defined by a schema that's human-readable and machine-readable RDF.
- But... how immediately machine actionable is this schema?
- Partial screenshot below:

- We would like to investigate replacing or augmenting RDF(a) in the license deed with a license that's described with our DSL

DSL-Based License Deed

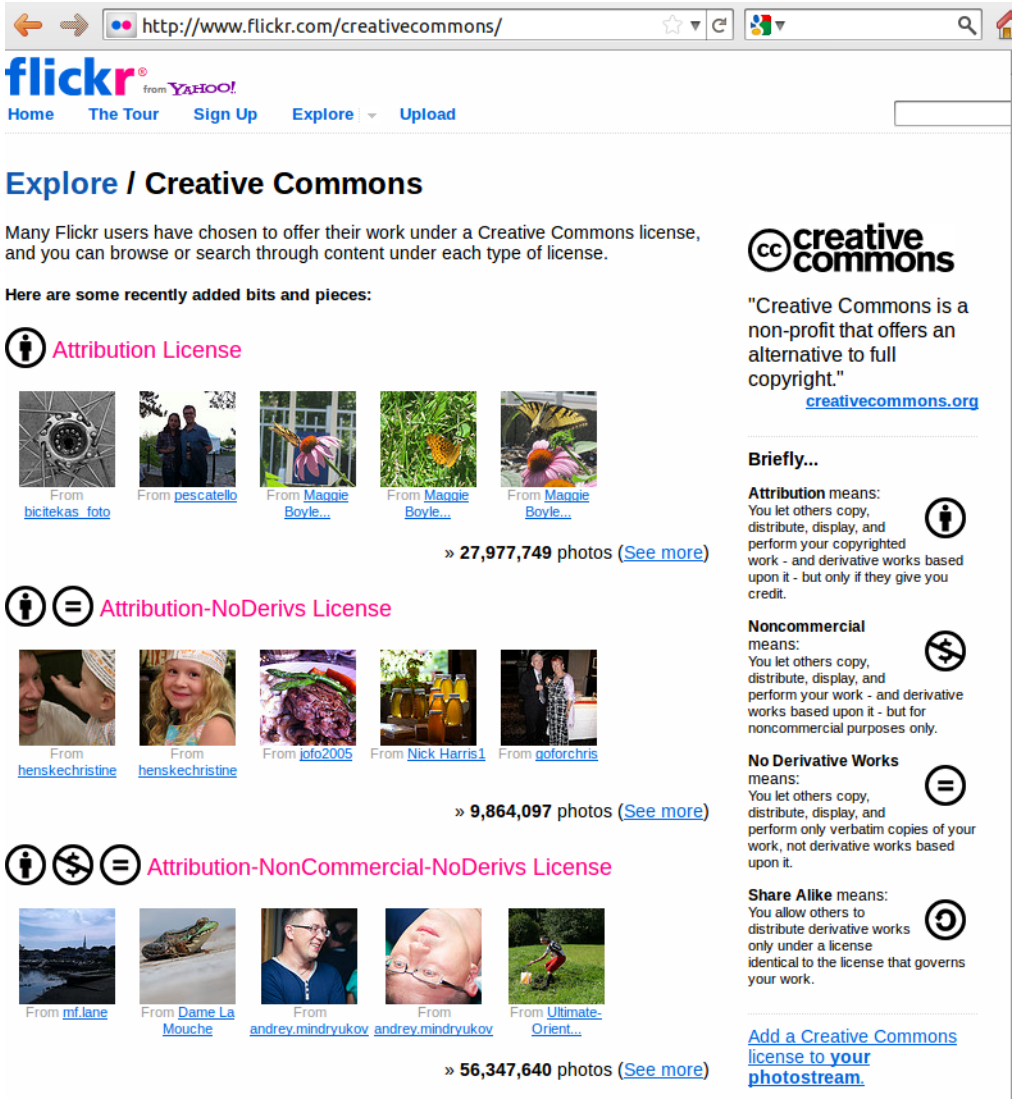
- By investigating replacing the contents of a license like `http://creativecommons.org/licenses/by/3.0/` with something that expresses the license in terms our DSL, we hope to:
  - Maintain equivalent license semantics
  - Express the semantics in a form that is easier for humans to read and write
  - Enable a machine to more directly execute the license and reason over it

XMP for Stand-Alone Media

- LaTeX package on CTAN (`xmpincl`)

```
%PDF-1.4
%ÐÔÅØ
3 0 obj
<< /pgfprgb [/Pattern /DeviceRGB] >>
endobj
12 0 obj <<
/Type /Metadata /Subtype /XML
/Length 925·····
>>
stream
<?xpacket begin='' id='W5M0MpCehiHzreSzNTczkc9d'?>·
<?xpacket begin='' id=''?><x:xmpmeta xmlns:x='adobe:ns:meta/'>·
<rdf:RDF xmlns:rdf='http://www.w3.org/1999/02/22-rdf-syntax-ns#'>·
<rdf:Description rdf:about=''·
xmlns:xapRights='http://ns.adobe.com/xap/1.0/rights/'>·
<xapRights:Marked>True</xapRights:Marked> </rdf:Description>·
<rdf:Description rdf:about=''·
xmlns:dc='http://purl.org/dc/elements/1.1/'>·
<dc:rights>·
<rdf:Alt>·
<rdf:li xml:lang='x-default' >This work is licensed under a <a rel="license" href="http://creativecommons.org/licenses
ion-NonCommercial-ShareAlike 3.0 Unported License</a>.</rdf:li>·
</rdf:Alt>·
</dc:rights>·
</rdf:Description>·
<rdf:Description rdf:about=''·
xmlns:cc='http://creativecommons.org/ns#'>·
<cc:license rdf:resource='http://creativecommons.org/licenses/by-nc-sa/3.0/'/>·
</rdf:Description>·
</rdf:RDF>·
</x:xmpmeta>·
<?xpacket end='r'?>·
endstream
endobj
13 0 obj
<< /S /GoTo /D (Outline0.1) >>
endobj
16 0 obj
(Creative Commons)
endobj
17 0 obj
<< /S /GoTo /D (Outline0.1.1.3) >>
endobj
20 0 obj
CreativeCommons.pdf
"CreativeCommons.pdf" [converted] 2987L, 357501C
```

Flickr 1


http://www.flickr.com/creativecommons/
flickr from YAHOO!
Home The Tour Sign Up Explore Upload
Explore / Creative Commons
Many Flickr users have chosen to offer their work under a Creative Commons license, and you can browse or search through content under each type of license.
Here are some recently added bits and pieces:
Attribution License
From bicitekas_foto
From pescatello
From Maggie Boyle...
From Maggie Boyle...
From Maggie Boyle...
» 27,977,749 photos (See more)
Attribution-NoDerivs License
From henskechristine
From henskechristine
From jofo2005
From Nick Harris1
From goforchris
» 9,864,097 photos (See more)
Attribution-NonCommercial-NoDerivs License
From mf.lane
From Dame La Mouche
From andrey.mindryukov
From andrey.mindryukov
From Ultimate-Orient...
» 56,347,640 photos (See more)
creative commons
"Creative Commons is a non-profit that offers an alternative to full copyright."
creativecommons.org
Briefly...
Attribution means: You let others copy, distribute, display, and perform your copyrighted work - and derivative works based upon it - but only if they give you credit.
Noncommercial means: You let others copy, distribute, display, and perform your work - and derivative works based upon it - but for noncommercial purposes only.
No Derivative Works means: You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it.
Share Alike means: You allow others to distribute derivative works only under a license identical to the license that governs your work.
Add a Creative Commons license to your photostream.

Flickr 2

gettyimages®

Live chat

Purchasing multiple images now or later? Contact us for information on our special volume pricing.

Image:

92851906

Choose a license type:
- Individual
- Flexible license pack (e.g. multiple uses)

Save money with a Flexible license pack!
Offering you unlimited use across multiple types of media.

Select a pack:
Advertising pack: print, outdoor, web

This use covers: Use, within selected territory, industry and duration, in any commercial or promotional campaign. Uses include: Print ad - Magazine and newspaper, Print ad - Directory, Print ad - Free-standing insert, Print ad - Event program, Display - Billboard, Display - Outdoor and transit, "Web - Electronic brochure, email and direct promotion", Web - Advertisement.

Questions about licensing

Purchasing images and footage

In which territories will the image appear?

Afghanistan
Albania
Algeria
American Samoa
Andorra
Antarctica
Australia
Austria
Bangladesh

Add >

Your selections:

United States

Remove

Missing territory? Please call for a quotation.
Tip: For multiple selections, hold down 'ctrl' or 'cmd'.

What is the start date of the image?
6 | August | 2011

What is the duration of the image use?
Up to 3 months

What is the industry of the product or service that the image is promoting?
Automotive

Industry: Automobiles, motorcycles, parts & accessories, repair services, trucks, toll related services

Get pricing

Flickr 3

I'd like to use a photo I found on Flickr. How do I do that?

Our members share an incredible amount of amazing work on Flickr. If there is an image you'd like to use, look for the "Request to license" link near the license on the photo page. We've partnered with Getty Images who will review the image, determine if it's a good fit for licensing through them, and work out all the details if so.

Not all members have this enabled. If you don't see it you can also contact the member directly. As a member of Flickr, you can move your mouse over someone's buddy icon and click the little arrow to open the "person menu." Then select "Send FlickrMail" and compose your message. When you contact a photographer, it's best to include as much info as possible about the photo, yourself, and how you want to use the photo.

Flickr 4

Flickr 5

http://creativecommons.org/licenses/by/2.0/deed.en

creative commons

Attribution 2.0 Generic (CC BY 2.0)

This is a human-readable summary of the Legal Code (the full license).

Disclaimer

You are free:

to Share — to copy, distribute and transmit the work

to Remix — to adapt the work

to make commercial use of the work

Free Cultural APPROVED FOR Works

Under the following conditions:

Attribution — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

With the understanding that:

Waiver — Any of the above conditions can be **waived** if you get permission from the copyright holder.

Flickr 6

License

© All Rights Reserved

Request to license Renan Viana's photos via Getty Images

Flickr 7

gettyimages® + flickr

International

What is 'Request to license'?

You've found an amazing photo on Flickr. Now, how do you go about getting the permission to use it?

Request to license is a way for you to license the rights through Getty Images so you can use a photo. You pay a licensing fee for the rights to use a photo based on the licensing model and the rights you are purchasing.

When you submit a request, our team of Getty Images editors will:
- Review the photo to determine if it's a good fit for licensing through us
- Contact the photographer
- Handle the details like releases and pricing

How long do I have to wait?
It takes between two and seven days to arrange licensing. To find creative stock images available for immediate licensing, search now.

How do I get started?
So that we can keep you up to date on the status of your request, you'll need to sign in or register.

How much does it cost?

Prices start at just **5 USD** - it all depends on the size* you need and how you plan to use it.

Extra small - 280 x 211 px	$5
Small - 500 x 340 px	$35
Medium - 700 x 500 px	$125
Large - 2100 x 1400 px	$325

*Size is an estimate based on a typical horizontal image; actual size is shown on the image details page.

Photo URL on Flickr

Submit request

Flickr 8

flickr® from YAHOO!

Signed in as matthew.bohnsack (1 new)

Home You Organize & Create Contacts Groups Explore Upload

Set a license for this photo

You can associate a Creative Commons license with your content if you wish, to grant people the right to use your work under certain circumstances. For more information on what your options are, please visit the Creative Commons website.

You can also set a default type of license for everything you upload into Flickr. Change your default here.

Note Don't forget to make sure that you have all the necessary rights and you won't be infringing on any third parties with any content that you license on Flickr. As per our Community Guidelines, accounts are intended for members to share content that they themselves have created.

Anyone can see this photo (edit)

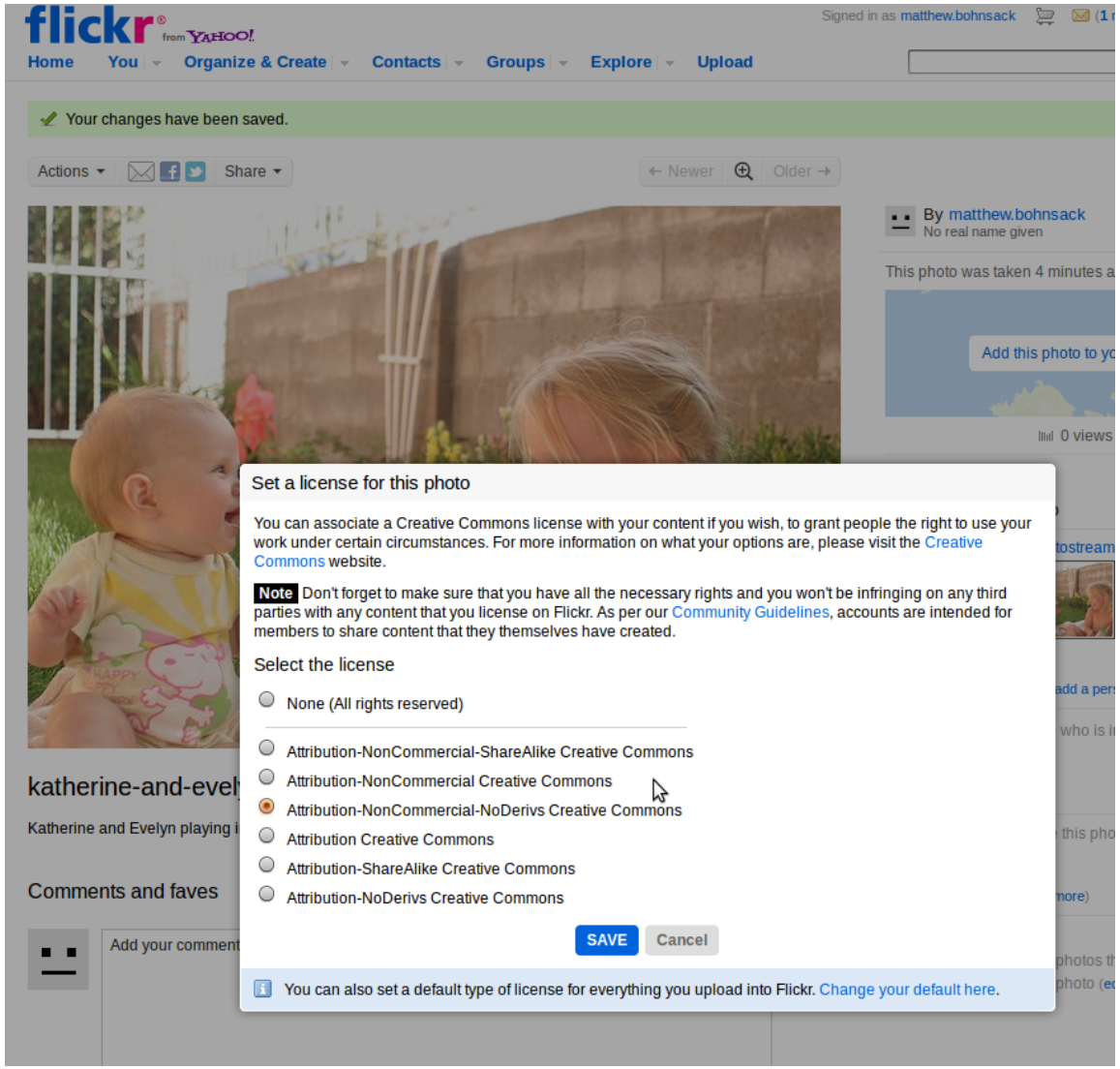
Select the license

- (●) None (All rights reserved)
- ( ) Attribution-NonCommercial-ShareAlike Creative Commons
- ( ) Attribution-NonCommercial Creative Commons
- ( ) Attribution-NonCommercial-NoDerivs Creative Commons
- ( ) Attribution Creative Commons
- ( ) Attribution-ShareAlike Creative Commons
- ( ) Attribution-NoDerivs Creative Commons

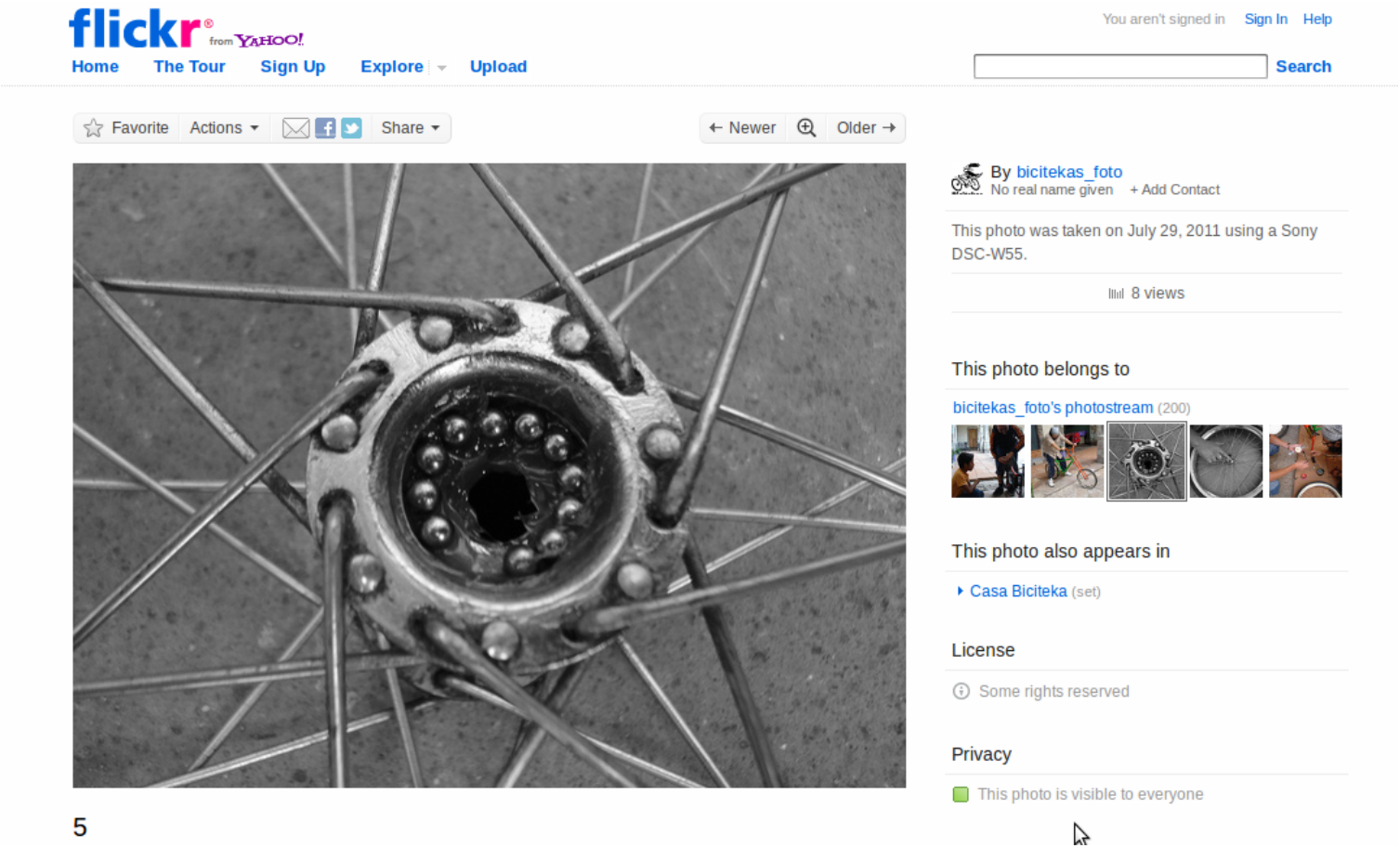
SAVE

Or, return to the photo page.

Flickr 9


flickr from YAHOO!
Signed in as matthew.bohnsack
Home
You
Organize & Create
Contacts
Groups
Explore
Upload
Your changes have been saved.
Actions
Share
Newer
Older
By matthew.bohnsack
No real name given
This photo was taken 4 minutes a
Add this photo to yo
0 views
Set a license for this photo
You can associate a Creative Commons license with your content if you wish, to grant people the right to use your work under certain circumstances. For more information on what your options are, please visit the Creative Commons website.
Note Don't forget to make sure that you have all the necessary rights and you won't be infringing on any third parties with any content that you license on Flickr. As per our Community Guidelines, accounts are intended for members to share content that they themselves have created.
Select the license
None (All rights reserved)
Attribution-NonCommercial-ShareAlike Creative Commons
Attribution-NonCommercial Creative Commons
Attribution-NonCommercial-NoDerivs Creative Commons
Attribution Creative Commons
Attribution-ShareAlike Creative Commons
Attribution-NoDerivs Creative Commons
SAVE
Cancel
You can also set a default type of license for everything you upload into Flickr. Change your default here.
katherine-and-evel
Katherine and Evelyn playing i
Comments and faves
Add your comment

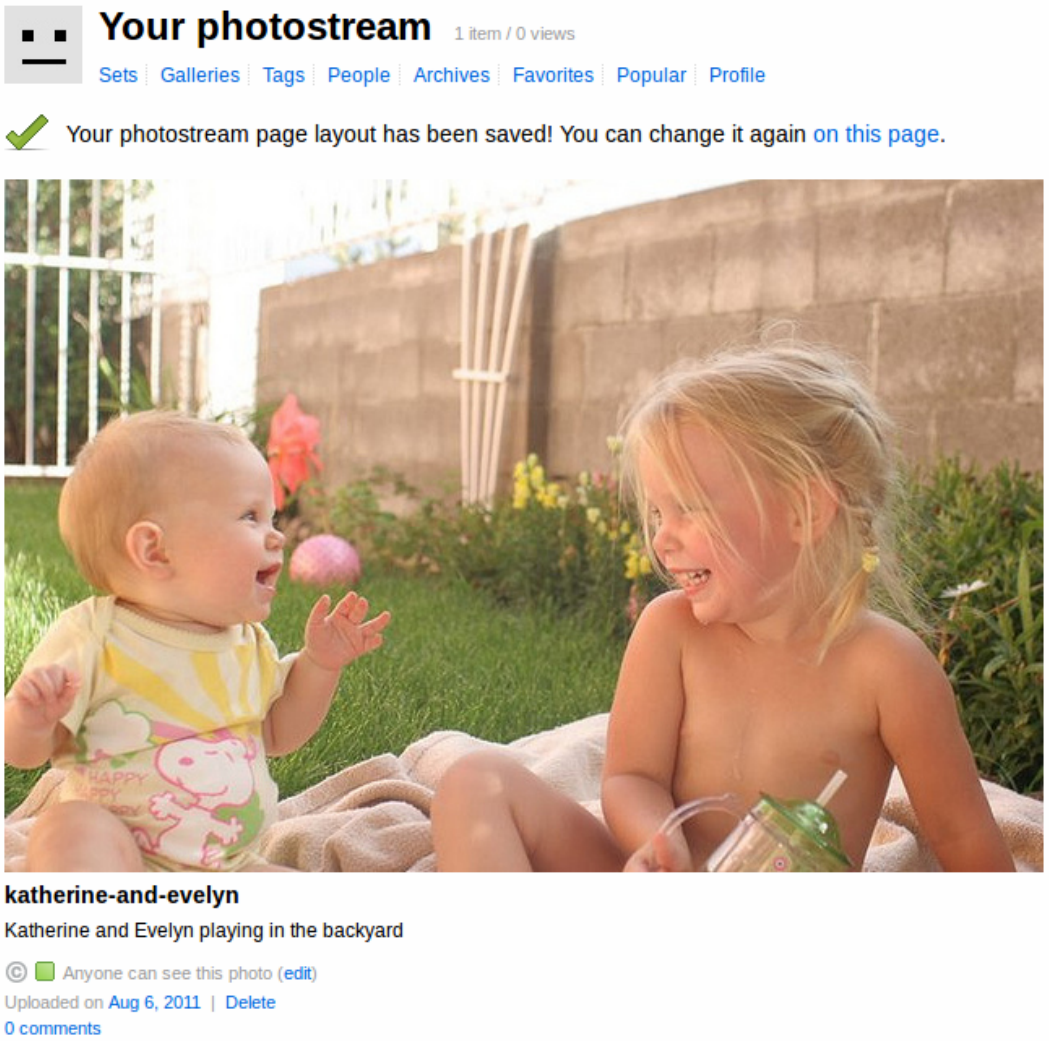
Flickr 10


flickr from YAHOO!
You aren't signed in Sign In Help
Home The Tour Sign Up Explore Upload
Search
Favorite Actions Share
Newer Older
By bicitekas_foto
No real name given + Add Contact
This photo was taken on July 29, 2011 using a Sony DSC-W55.
8 views
This photo belongs to
bicitekas_foto's photostream (200)
This photo also appears in
Casa Biciteka (set)
License
Some rights reserved
Privacy
This photo is visible to everyone
5

Flickr 11

This photo has Some Rights Reserved
View all sizes: Medium 500 • Medium 640 • Large
katherine-and-evelyn
By Matthew Bohnsack

Flickr 12


Your photostream
1 item / 0 views
Sets | Galleries | Tags | People | Archives | Favorites | Popular | Profile
Your photostream page layout has been saved! You can change it again on this page.
katherine-and-evelyn
Katherine and Evelyn playing in the backyard
Anyone can see this photo (edit)
Uploaded on Aug 6, 2011 | Delete
0 comments

Flickr 13

Owner settings (show more)

Attribution, Noncommercial (edit)

Want to license your photos through Getty Images?

Anyone can see this photo (edit)

Flickr 14

Your account / Eligibility for Getty Images invitations

Note: Visitors to your photos won't see the "Want to license your photos through Getty Images?" link. Only you see this note about the account setting. To make the "Want to license..." link go away, just choose the option you'd like below and click "Save".

Flickr has partnered with Getty Images to offer a service for Flickr members to license their work. Learn more about our partnership with Getty Images.

Licensing your work via Getty Images

The Flickr Collection on Getty Images is an invitation-only program, where editors at Getty Images as well as people in the Flickrverse can request to license your images. There are several ways to bring your photography to their attention. Learn more....

If you are interested in receiving invitations, here are your options:

- ○ **Allow Getty Images editors to invite my photos and display a "Request to License" link on my photos.**
  This is the best way to make your public photos available for a licensing request. A Getty Images editor will review the request and send you a FlickrMail. You can then approve or deny the request.
- ◉ **Allow Getty Images editors to invite my photos (but please no link).**
  If you don't want a "Request to License" link on your photos, but still want Getty Images editors to be able to invite your photos, choose this option.
- ○ **No thanks, I don't want to license my photos through Getty Images.**

SAVE

Or, return to your account page.

Usage Management

- AAA aAAAA aaaaa AAAAAAAAAA
- Bb bb b b BBBBBBBBBB bbbBB
- c CCCC ccCCC ccc cCCCcCc C

Table of Contents

1 Introduction

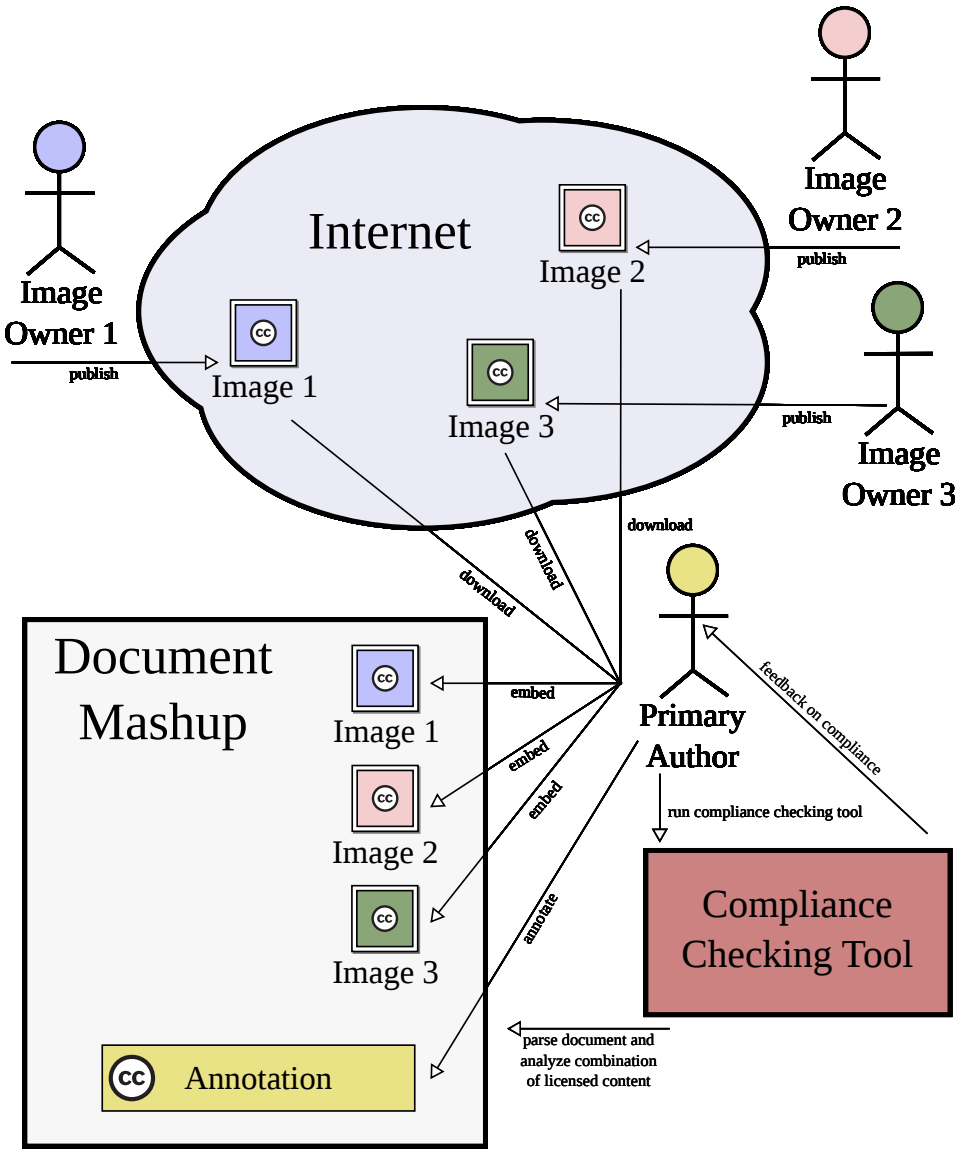
2 System Design
- Use Cases
- Component Design

3 Implementation

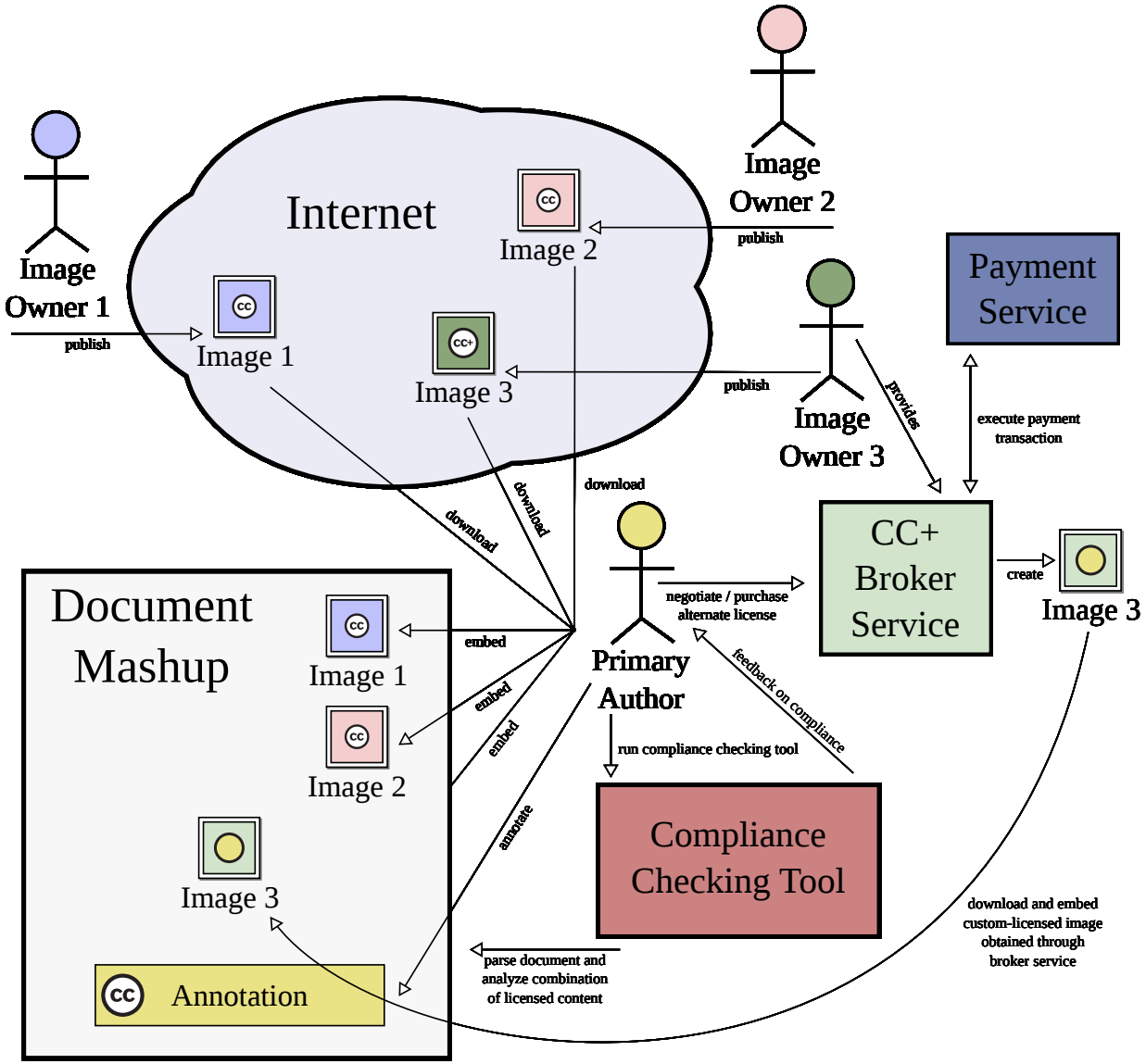
4 Future Work

5 Conclusions

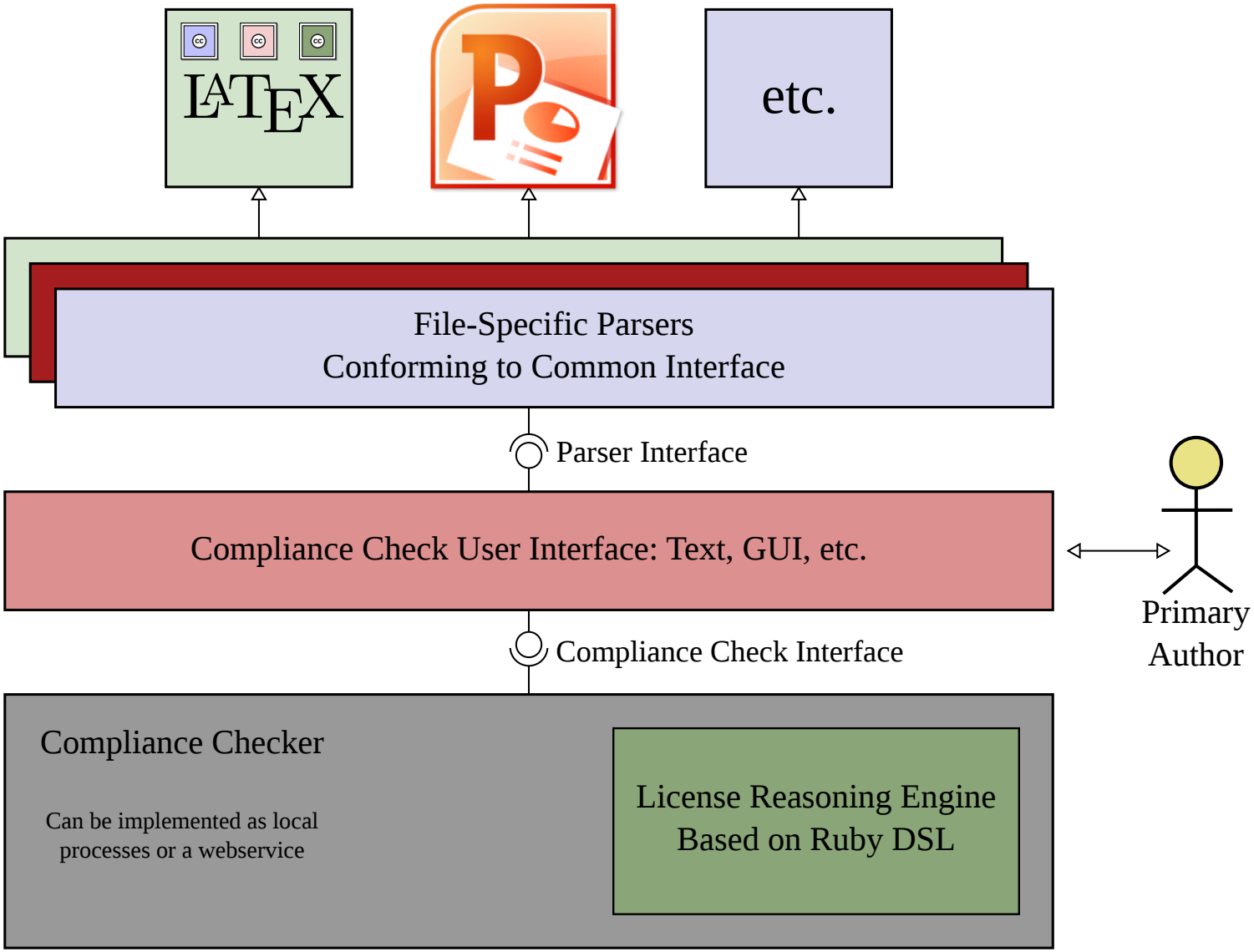
Use Case #1: Simple Use



Use Case #2: Including the CC+ Broker Service



Compliance Checking Tool



License Reasoning Engine

Yet to be designed and implemented

CC+ Broker Service

Yet to be designed and implemented

Table of Contents

1 Introduction

2 System Design

3 Implementation

4 Future Work

5 Conclusions

Test LaTeXDocument

```latex
% LaTeX document that includes all possible types of CC-licensed images
% "CC-*:" tokens and their values are the annotations that the compliance
% checking tool uses:
% CC-Lic: BY
% CC-Attribution-Name: Matthew Bohnsack
% CC-Attribution-URL: http://bohnsack.com/
% CC-Commercial-Use: T
\documentclass[mathserif,xcolor=dvipsnames,hyperref={bookmarks=true}]{beamer}
\usepackage{eulervm}
\usepackage{courier}
\usepackage{listings}
\usefonttheme{structurebold}
\usecolortheme[named=Maroon]{structure}
\usetheme{Antibes}
\usecolortheme{lily}
\useoutertheme{infolines}
\setbeamertemplate{navigation symbols}{}

\newcommand{\mytitle}{Test Document 01}
\newcommand{\myauthor}{Matthew Paul Bohnsack}

\title{Test Document 01}
\author[Matthew Bohnsack]{Matthew Paul Bohnsack}
\institute[UNM]{University of New Mexico\\Albuquerque, New Mexico USA}

\begin{document}

\begin{frame}
    \titlepage
\end{frame}

\section{Introduction}

\subsection{Some Images}

%%%%%%%%% My images %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\begin{frame}[t]
    \frametitle{My image under CC0}
    \begin{center}
        \includegraphics[width=0.8\textwidth]{../images/mine/cc0.jpg}
    \end{center}
\end{frame}
\begin{frame}[t]
    \frametitle{My image under CC BY}
    \begin{center}
        \includegraphics[width=0.8\textwidth]{../images/mine/cc-by.jpg}
    \end{center}
\end{frame}
\begin{frame}[t]
    \frametitle{My image under CC BY-SA}
    \begin{center}
        \includegraphics[width=0.8\textwidth]{../images/mine/cc-by-sa.jpg}
    \end{center}
\end{frame}
```

Test Script

```
#!/usr/bin/ruby

require '../lib/parsers.rb'
require 'pp'

latex_test_docs = %w{documents/01/doc.tex}

latex_test_docs.each do |doc|
  l = LaTeXDocument.new(doc)

  puts "Document \"#{doc}\" has been marked with the following annotations:"
  puts "  CC-Lic: #{l.annotation.lic}"
  puts "  CC-Attribution-Name: #{l.annotation.attr_name}"
  puts "  CC-Attribution-URL: #{l.annotation.attr_url}"
  puts "  CC-Commercial-Use: #{l.annotation.commercial_use}"
  puts "Document \"#{doc}\" has #{l.images.size} images with the following licenses:"
  l.images.each_with_index do |photo, i|
    puts "  #{i+1}) #{File.basename(photo.fname)}:"
    puts "    License: #{photo.license}"
    puts "    Attr Name: #{photo.attr_name}"
    puts "    Attr URL: #{photo.attr_url}"
  end
end
~
```

Test Output

```
[matthew@vortex ~/rcs/Matthew_Bohnsack_MS_Thesis/code/test]$ ./test.rb
Document "documents/01/doc.tex" has been marked with the following annotations:
  CC-Lic: BY
  CC-Attribution-Name: Matthew Bohnsack
  CC-Attribution-URL: http://bohnsack.com/
  CC-Commercial-Use: T
Document "documents/01/doc.tex" has 13 images with the following licenses:
  1) cc0.jpg:
    License: http://creativecommons.org/publicdomain/zero/1.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  2) cc-by.jpg:
    License: http://creativecommons.org/licenses/by/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  3) cc-by-sa.jpg:
    License: http://creativecommons.org/licenses/by-sa/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  4) cc-by-nd.jpg:
    License: http://creativecommons.org/licenses/by-nd/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  5) cc-by-nc.jpg:
    License: http://creativecommons.org/licenses/by-nc/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  6) cc-by-nc-sa.jpg:
    License: http://creativecommons.org/licenses/by-nc-sa/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  7) cc-by-nc-nd.jpg:
    License: http://creativecommons.org/licenses/by-nc-nd/3.0/
    Attr Name: Matthew Bohnsack
    Attr URL: http://bohnsack.com/
  8) cc-by.jpg:
    License: http://creativecommons.org/licenses/by/3.0/
    Attr Name: Carl Friedrich Gauss
    Attr URL: http://en.wikipedia.org/wiki/Carl_Friedrich_Gauss
  9) cc-by-sa.jpg:
    License: http://creativecommons.org/licenses/by-sa/3.0/
    Attr Name: Arthur C. Mellette
    Attr URL: http://en.wikipedia.org/wiki/Arthur_C._Mellette
```

Table of Contents

1 Introduction

2 System Design

3 Implementation

4 Future Work

5 Conclusions

Table of Contents

1 Introduction

2 System Design

3 Implementation

4 Future Work

5 Conclusions
- Conclusions
- Thanks!, Questions?

Conclusions

- AAA aAAAA aaaaa AAAAAAAAAA
- Bb bb b b BBBBBBBBBB bbbBB
- c CCCC ccCCC ccc cCCCcCc C

Thanks!, Questions?

- Thanks!
- Questions?

References