

SKA Software Development

Licensing and Copyright in SKA software



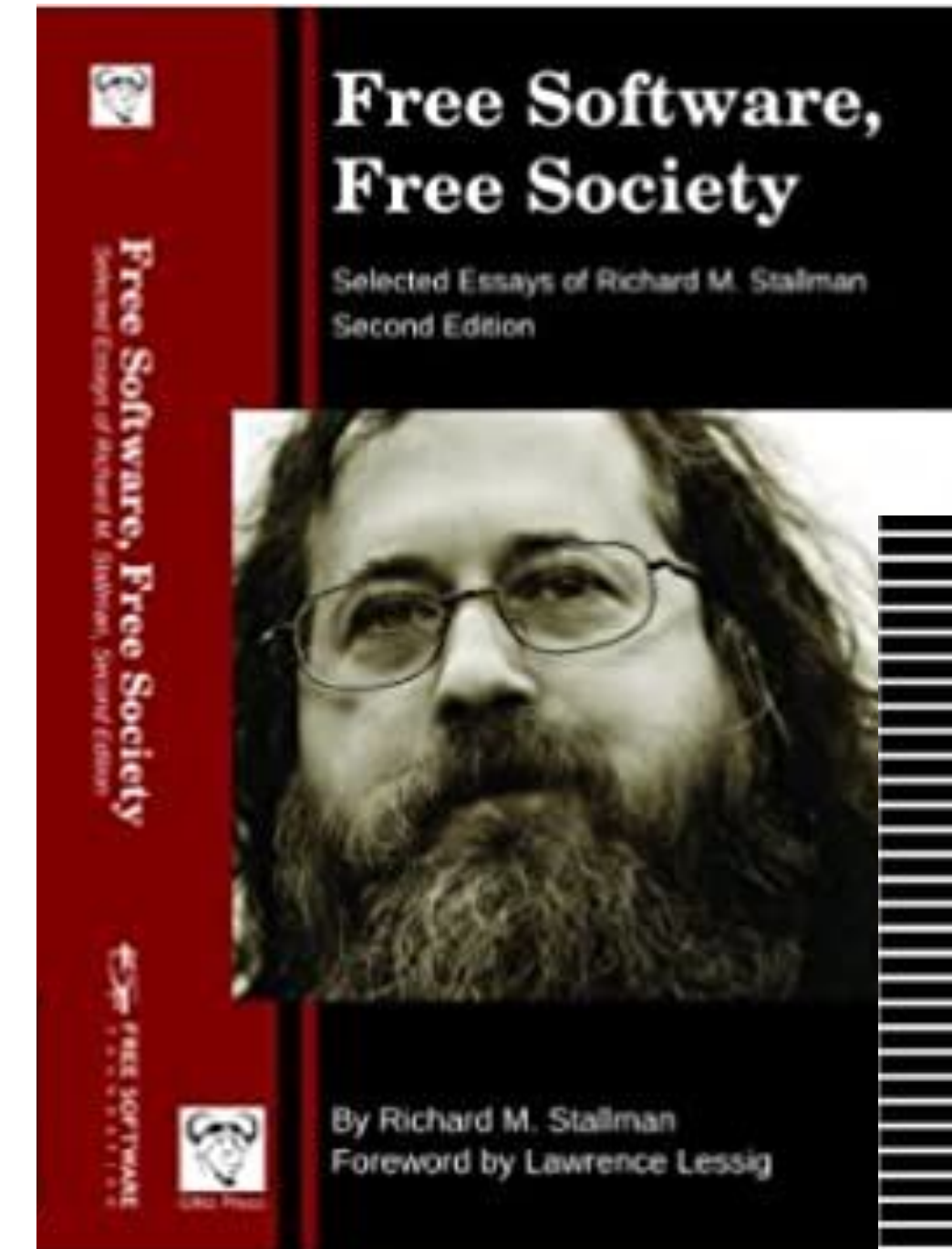
SQUARE KILOMETRE ARRAY

Exploring the Universe with the world's largest radio telescope

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Workshop on Open Source Software Lifecycles

I'm not a lawyer

But I've been passionate about free libre open source software for a long time and I'm happy to have the opportunity to share some thoughts about it.



SKA Software Development

-  Australia (DoI&S)
-  Canada (NRC-HIA)
-  China (MOST)
-  France (CNRS)
-  Germany (MPI)
-  India (DAE)
-  Italy (INAF)
-  Netherlands (NWO)
-  New Zealand (MED)
-  Portugal
-  South Africa (DST)
-  Spain (MICINN)
-  Sweden (Chalmers)
-  UK (BEIS/STFC)



 SKA Members
*SKA Observatory founding members



 African Partner Countries

* [Juande Santander-Vela: Scaling agile software development processes around the world](#)

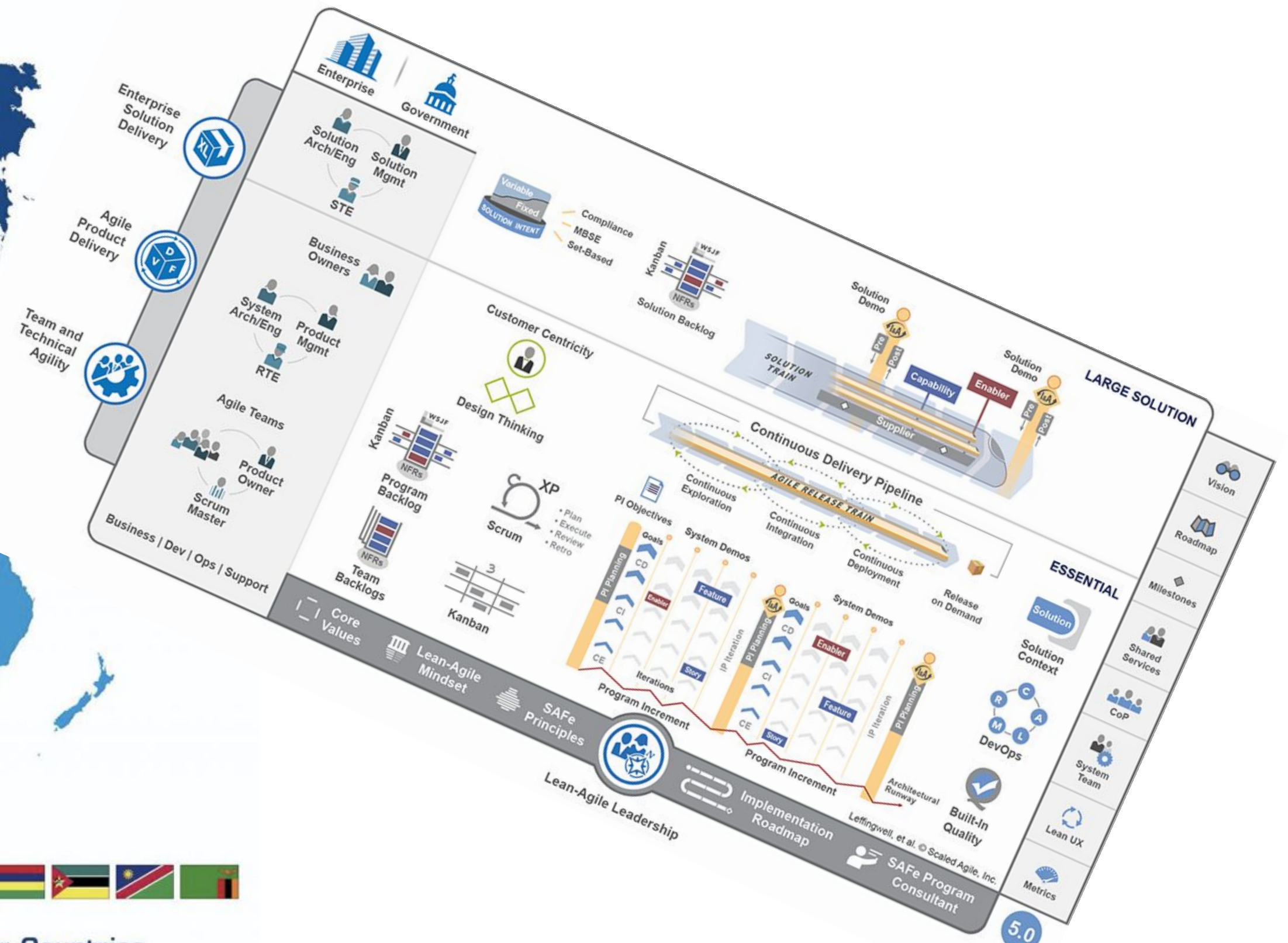


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SKA Software Development - agile processes



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* [Juande Santander-Vela: Scaling agile software development processes around the world](#)



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SKA peculiarities

- Not only globally distributed but involving different research institutes, universities and private companies from different countries
- Possibly high turnover of developers joining and leaving the collaboration
- Firmware and Software development are managed under the same umbrella
- Managing of both in-kind and cash contributions
- Contracting effort VS contracting finished software products
- **50 years operations lifetime**



Software we develop

As software engineers , what do we need?

- Need to enable the global collaboration, both technically and culturally, overcoming barriers between countries and institutions
- Need to efficiently share information. Streamline onboarding processes and access to documentation
- Visibility and transparency, common code ownership
- Fast flow and quick feedback
- Lower the barrier to contribution and compliance issues



Ingredients for a successful open source collaboration

- Has an ethos, that is aligned with the research world. We're not in it for the money or for generating profit
- Generates motivation and engagement in the developers who are proud of contributing to the project
- Puts **people first** and welcomes contributors



Open source management - an industrial benchmark

- Focus on security and compliance
- Adoption and development of open source code growing from 36% to 70% in the last 5 years
- 99% of code bases contain open source software
- 33% of code bases contain unlicensed software
- 67% of code bases have license conflicts

* [Synopsys Cybersecurity Research Center \(CyRC\) "OPEN SOURCE SECURITY AND RISK ANALYSIS REPORT"](#)

* [Gartner, Technology Insight for Software Composition Analysis](#)



Even Microsoft is doing it!



The screenshot shows the GitHub repository page for `microsoft/vscode`. At the top, there is a navigation bar with links for 'Why GitHub?', 'Team', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing'. A search bar and 'Sign in'/'Sign up' buttons are also present. Below the navigation, the repository name 'microsoft / vscode' is displayed, along with statistics: 2.9k Watch, 99.8k Star, and 15.7 Fork. A secondary navigation bar includes 'Code', 'Issues (5k+)', 'Pull requests (210)', 'Actions', 'Projects (3)', 'Wiki', 'Security', and 'Insights'. A 'Join GitHub today' banner is visible, stating 'GitHub is home to over 50 million developers working together to host and review code, manage projects, and build software together.' Below this, the file path 'vscode / LICENSE.txt' is shown. The main content area displays the license text: 'microsoft/vscode is licensed under the MIT License. A short and simple permissive license with conditions only requiring preservation of copyright and license notices. Licensed works, modifications, and larger works may be distributed under different terms and without source code.' A table summarizes the license terms:

Permissions	Limitations	Conditions
<ul style="list-style-type: none">✓ Commercial use✓ Modification✓ Distribution✓ Private use	<ul style="list-style-type: none">✗ Liability✗ Warranty	<ul style="list-style-type: none">ⓘ License and copyright notice

Below the table, it notes 'This is not legal advice. Learn more about repository licenses.' The commit history shows a recent commit by 'chrisdias' with the message 'remove blank line (my best checkin ever)'. It also lists '5 contributors' and shows the file details: '21 lines (17 sloc) | 1.06 KB'. The file content is partially visible, showing 'MIT License' and 'Copyright (c) 2015 - present Microsoft Corporation'.



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Software we use

Not only we develop bespoke software for our projects, but we make use of a great number of open source software products

- Astropy, TANGO controls, ...
- Can we strategically collaborate to this ecosystem?
- How can our development processes comply with this necessity?



TANGO



astropy-powered
astropy.org

Choose a license

- Developed by Github in the effort of increasing the number of licensed project
- Easy to understand
- Pushes some defaults
- Uses SPDX format

Choose an open source license

An open source license protects contributors and users. Businesses and savvy developers won't touch a project without this protection.

{ Which of the following best describes your situation? }



I need to work in a community.

Use the **license preferred by the community** you're contributing to or depending on. Your project will fit right in.

If you have a dependency that doesn't have a license, ask its maintainers to **add a license**.



I want it simple and permissive.

The **MIT License** is short and to the point. It lets people do almost anything they want with your project, like making and distributing closed source versions.

Babel, **.NET Core**, and **Rails** use the MIT License.



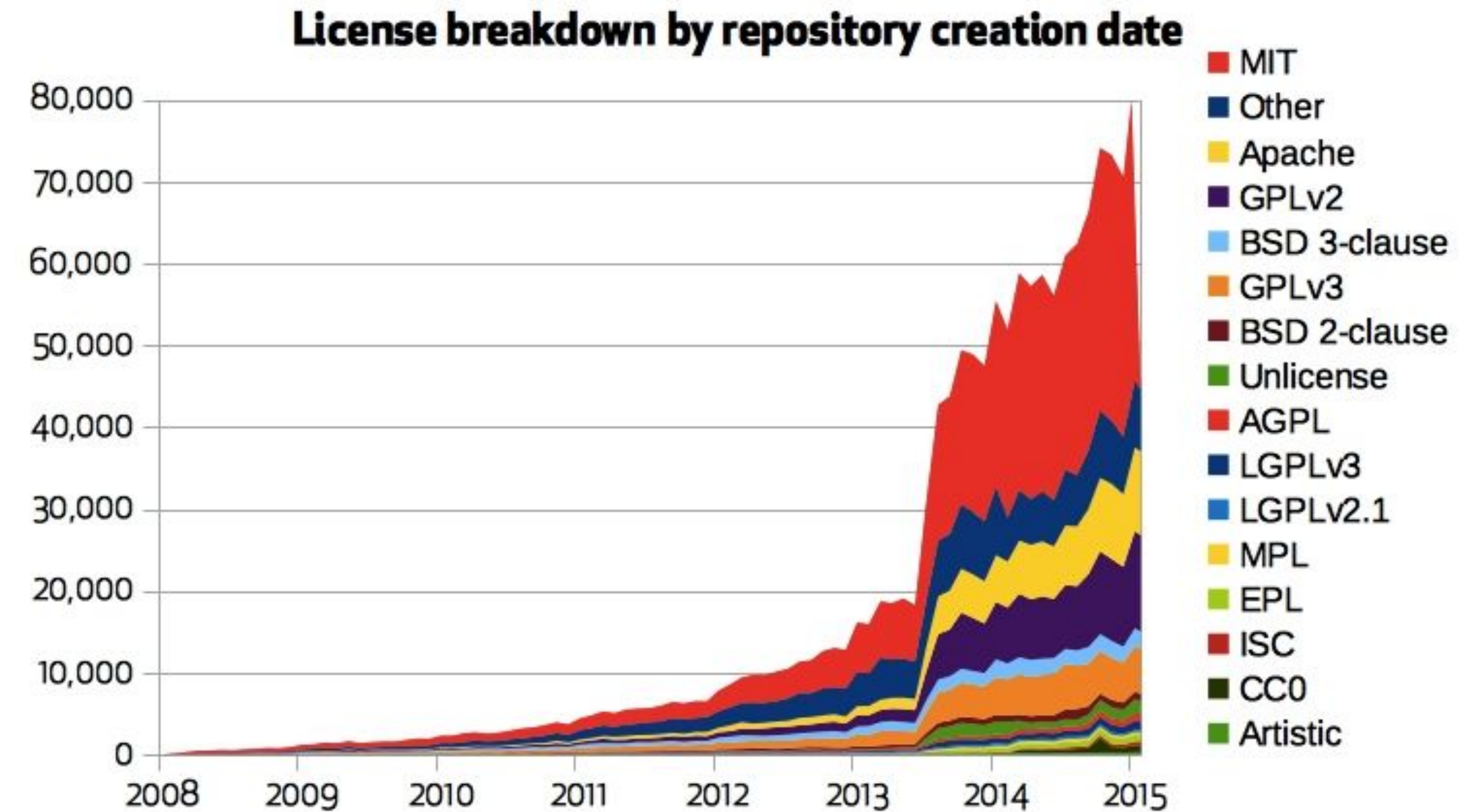
I care about sharing improvements.

The **GNU GPLv3** also lets people do almost anything they want with your project, *except* distributing closed source versions.

Ansible, **Bash**, and **GIMP** use the GNU GPLv3.

What's the trend?

Rank	License	% of projects
1	MIT	44.69%
2	Other	15.68%
3	GPLv2	12.96%
4	Apache	11.19%
5	GPLv3	8.88%
6	BSD 3-clause	4.53%
7	Unlicense	1.87%
8	BSD 2-clause	1.70%
9	LGPLv3	1.30%
10	AGPLv3	1.05%



credit: Ben Balter <https://github.blog/2015-03-09-open-source-license-usage-on-github-com/>

So we decided



- To manage the software development according to well known open source practices
- To adopt a permissive license

Engineering, Social Collaboration, Compliance



SAY IT LOUD

SKA High-Level Overview document

...

Being a publicly-funded project, the SKA is committed to the principles of Open Science, making all of its science data publicly available after a proprietary period, and also, where possible, to Open Source software development.

...



Proposal for the SKA IGO IP policy

*To the fullest extent possible, software Background IP and Foreground IP used for SKA Project purposes shall be provided on a permissive open source basis, under the standard 3-clause BSD license[1] or any updated version of this license as advised by SKAO. **

** Yet to be approved!*



SKA Software Standards

All SKA software shall have a software license which is a legal instrument governing the use or redistribution of software. ...

The documentation associated with SKA software shall also carry a license unless it is covered by the software license. ...

All software licenses for SKA software shall be agreed with the SKA Organisation prior to the software being adopted or developed. ...

*The SKA Organisation will always agree to a 3 clause BSD license for software (provided there are no compatibility issues) and will favour open-source permissive licenses with attribution since they minimize compatibility issues. ... **

* https://developer.skatelescope.org/en/latest/development/fundamental_sw_requirements.html

Licensing Guidelines

*SKA organisation promotes a model of open and transparent collaboration. In this model collaboration is made possible using permissive licenses, and not by pursuing the ownership of code by the organisation.**

Clear instructions on how to apply license to your code and how to correctly state the copyright holders

* <https://developer.skatelescope.org/en/latest/projects/licensing.html>

Not only source code licensing

- SKA document template includes CC-BY license
- SKA documents default to UNRESTRICTED visibility
 - And document updates will move to UNRESTRICTED, unless there are IP reasons not to do so.
- Source code documentation is published on the web under CC-BY license



GENERAL DOCUMENT TEMPLATE

Document Number	SKA-TEL-SKO-0000000
Document Type	DTE
Revision	A
Author	A.N. Other
Date	2017-05-09
Document Classification	UNRESTRICTED
Status	Draft

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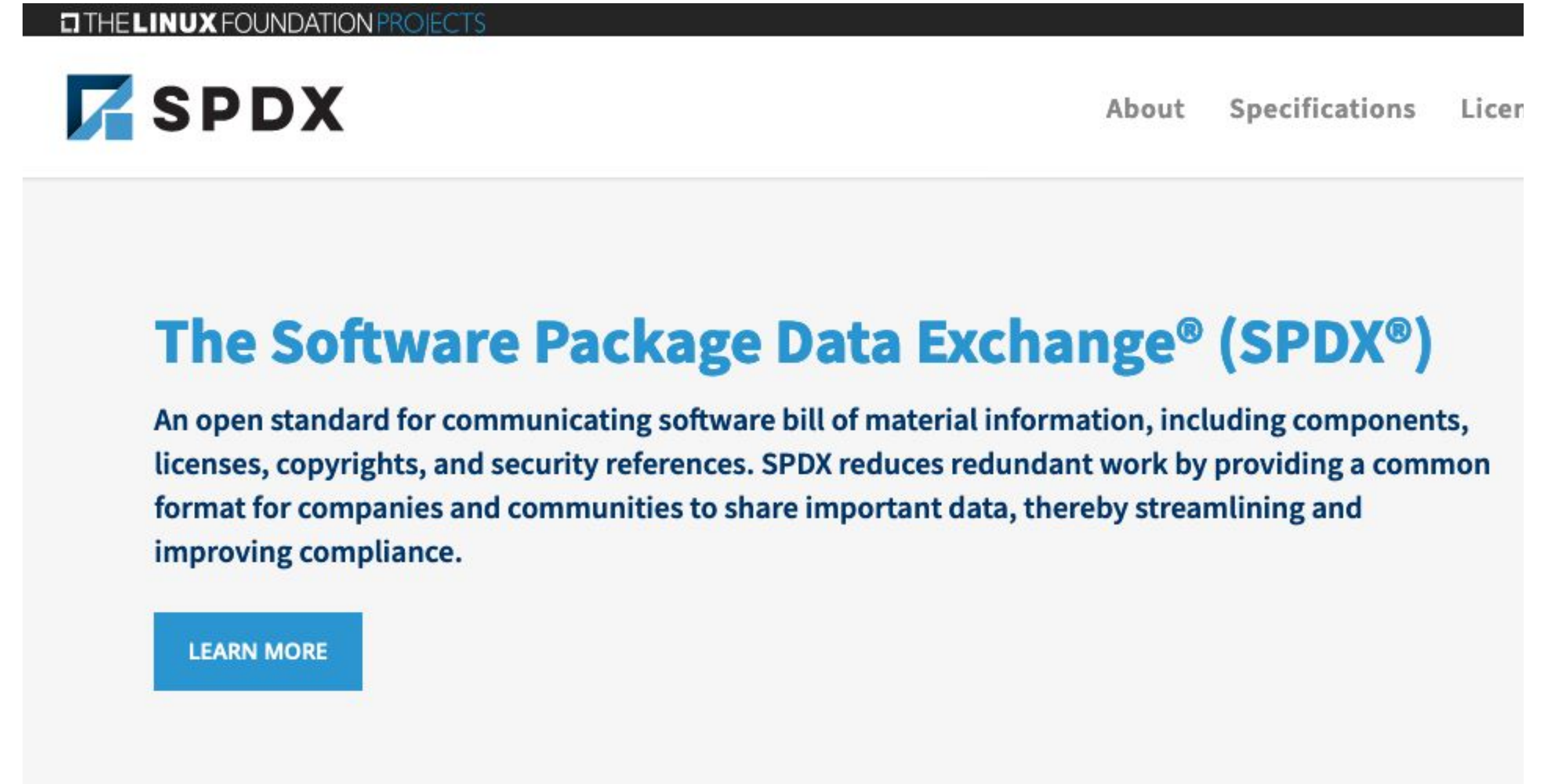
Based on a work at gitlab.com/ska-telescope/developer.skatelescope.org.

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SPDX standard

- An official standard to identify open source licenses
- Machine readable
- Maintained by the Linux foundation
- Widely adopted
- If adopted consistently it would help ensuring compliance



THE LINUX FOUNDATION PROJECTS

SPDX About Specifications Licen

The Software Package Data Exchange® (SPDX®)

An open standard for communicating software bill of material information, including components, licenses, copyrights, and security references. SPDX reduces redundant work by providing a common format for companies and communities to share important data, thereby streamlining and improving compliance.

[LEARN MORE](#)

Licensing Tools



[Gitlab templates](#) to the rescue:

- File templates
- Repository templates

The repository for this project is empty

You can get started by cloning the repository or start adding files to it with

Clone ▾

+ New file

+ Add README

+ Add LICENSE

The screenshot shows the GitLab web interface. At the top, the navigation bar includes the GitLab logo and links for 'Projects', 'Groups', and 'More'. The breadcrumb trail indicates the current location: 'ska-telescope > templates-repository > Repository'. The main content area is titled 'New file' and shows the file name 'LICENSE' with a dropdown menu set to 'LICENSE'. To the right, there is an 'Apply a template' dropdown menu, which is currently open, showing a search filter and a list of templates under the group 'ska-telescope', with 'default_license' selected. Other UI elements include a 'No wrap' toggle and a 'text' dropdown.

Open source support initiatives

Many big players in the IT world are happy to support open source initiatives:

- <https://www.atlassian.com/software/visualstudio/open-source-license-request>
- <https://about.gitlab.com/solutions/open-source/>



In essence



- SKA development practices are modeled on the basis of an open source collaboration
- The choice of a permissive license minimizes the compliance headaches
- Need to embrace these principles at organisational level, we've got great support from our Legal and Communications offices
- Plug into the open source ecosystem
- Tool your licensing implementation



Open questions

- Still some resistance mostly from academia, while playing very well with industrial partners
- Some unsolved questions about dual licensing, missing relevant expertise
- Still building compliance processes and governance model for open source software dependencies

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Questions ?

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Based on a work at <https://docs.google.com/presentation/d/1AKYP9dPBxnqukuCqJL2TuXgDRl44yzn2pa8pxpY0wq4/edit#slide=id.p1>.

www.skatelescope.org