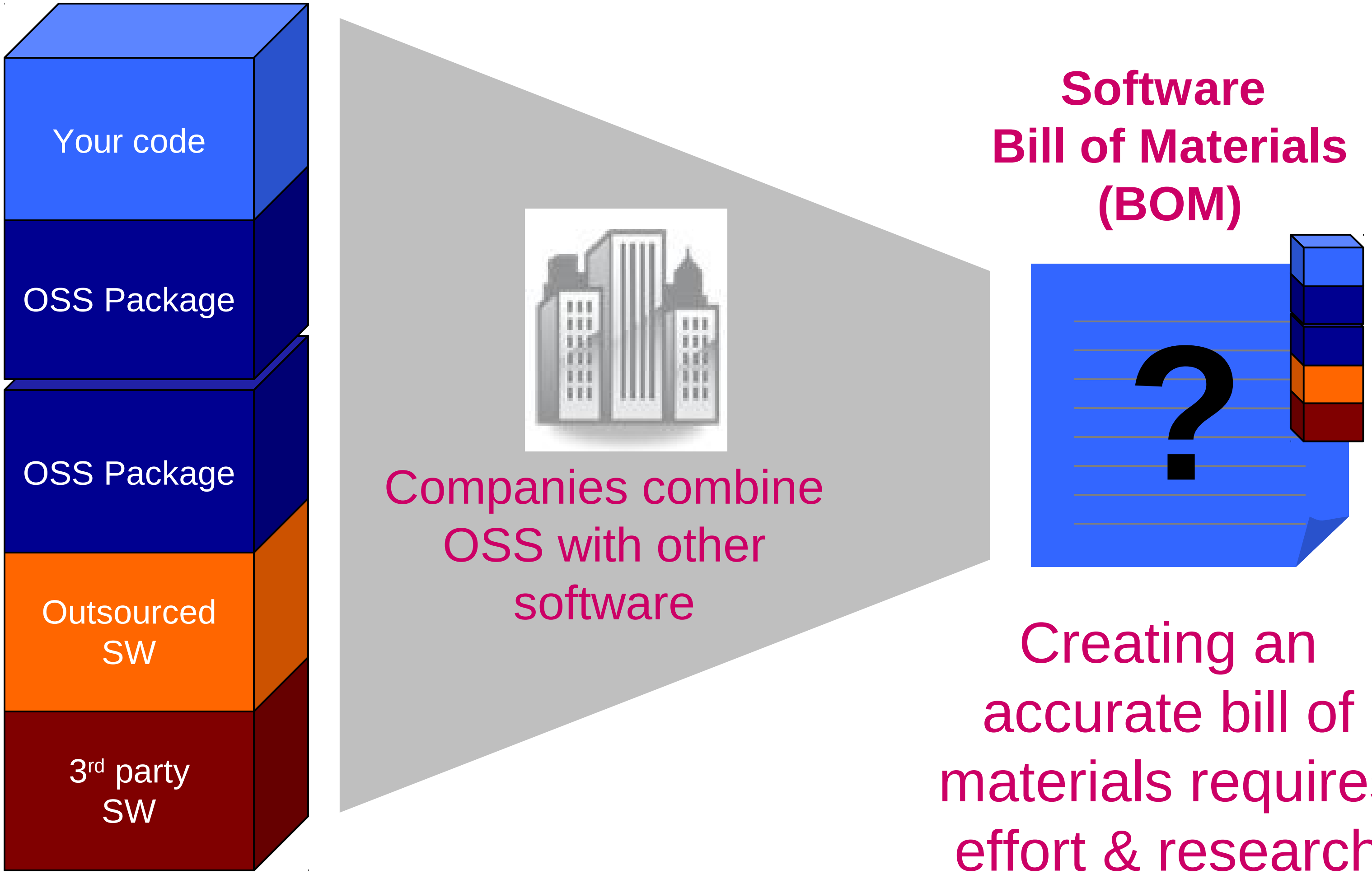
Sharing Open Source License and Copyright Data with SPDX

Martin Michlmayr, Hewlett-Packard
tbm@hp.com

Agenda

- The Problem
- Overview of the SPDX Spec
- Tools to Help
- SPDX and Distributions
- Current Status and Future

Open Source Compliance: The Challenge

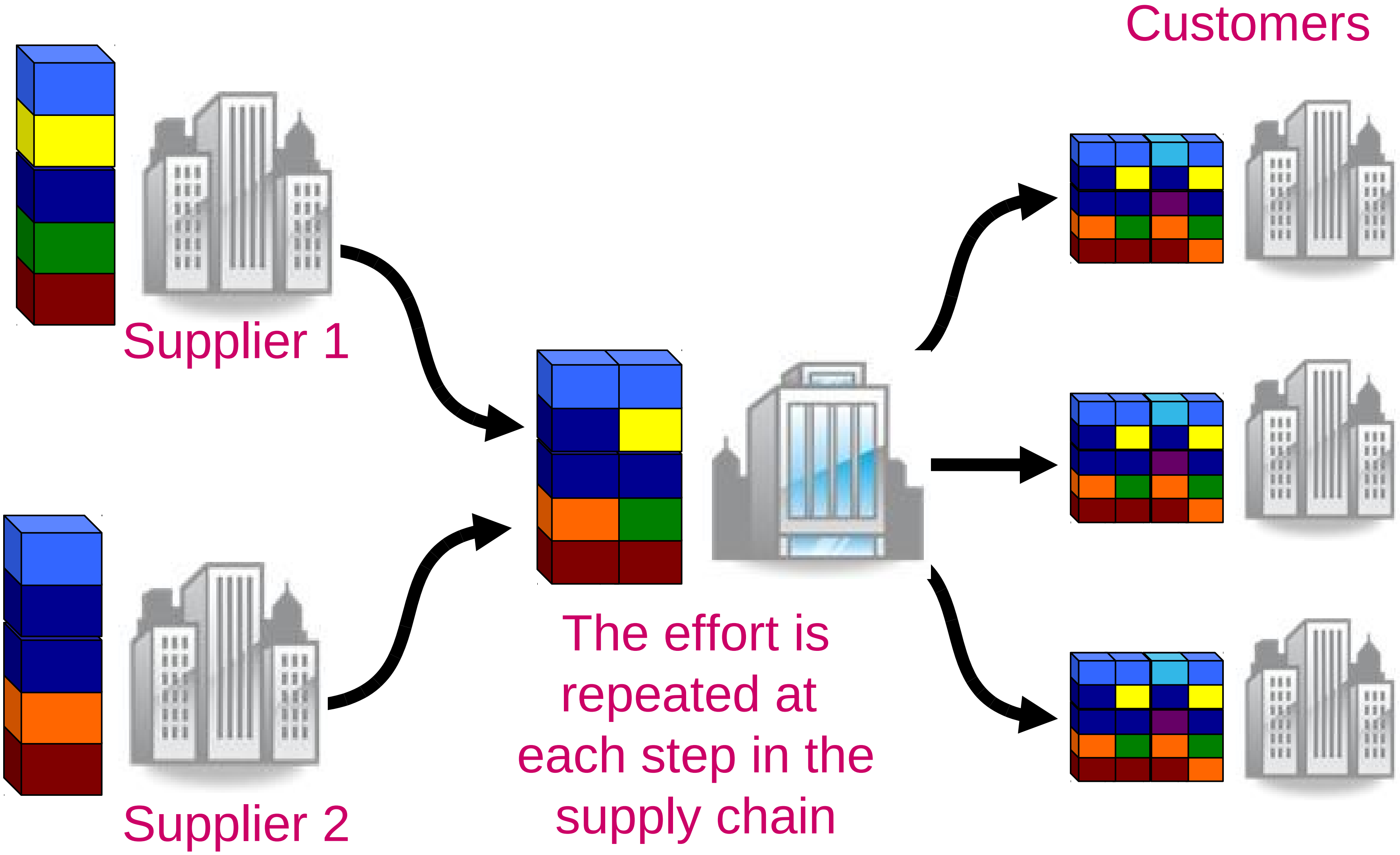


Companies combine OSS with other software

Software Bill of Materials (BOM)

Creating an accurate bill of materials requires effort & research

Open Source Compliance:
The Challenge



The effort is repeated at each step in the supply chain

Software Package Data Exchange (SPDX)

- SPDX - A standard format for communicating the components, licenses and copyrights associated with a software package.

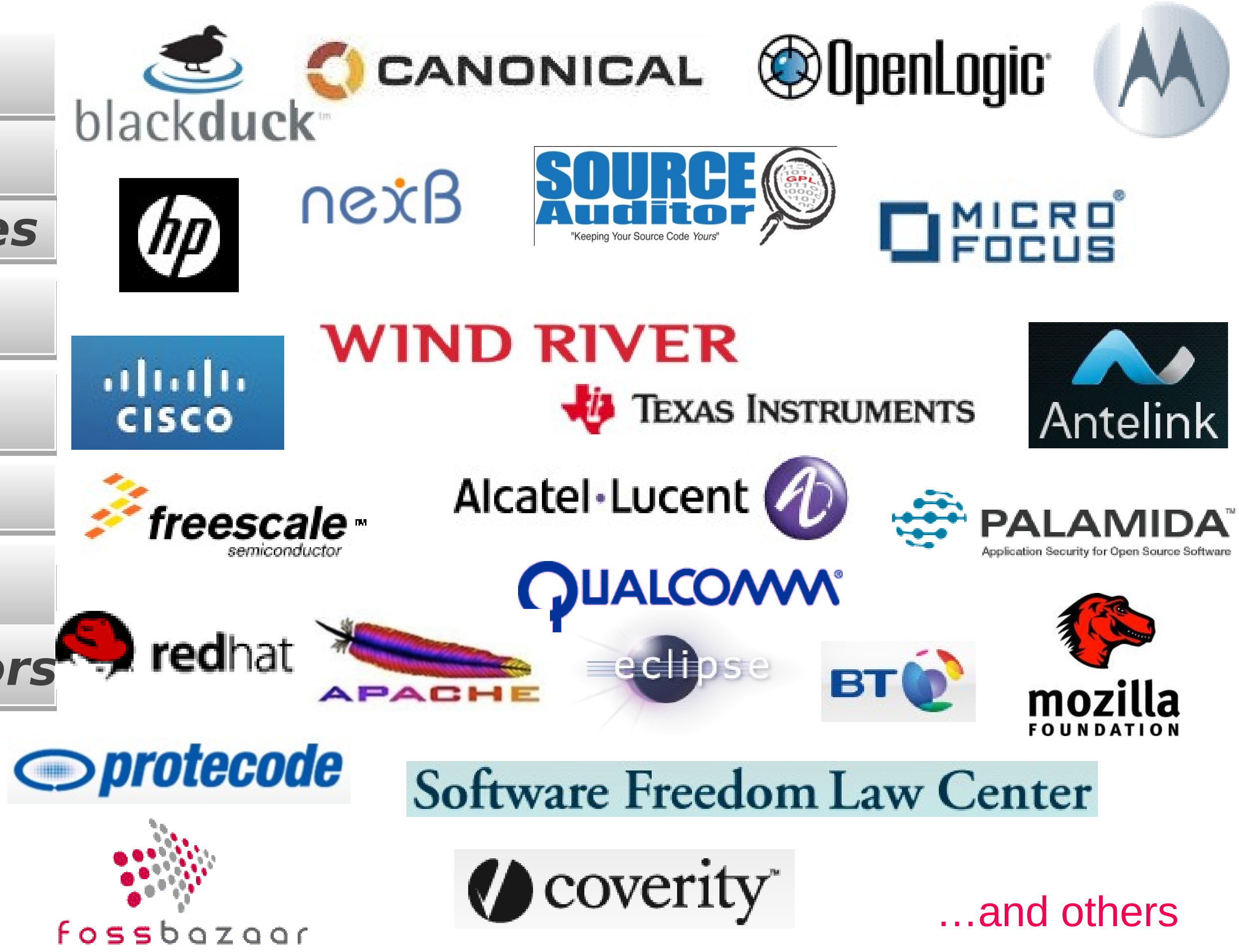
- Key pillar in Linux Foundation’s Open Compliance Program

What it Means to You

Embedded & SW Supply Chains	Save Time/Money Better Compliance
Open Source Developers	Help Users Comply With Your Licenses
Consumers of SW & OSS	Understand Licensing of the Code You Use

Participants

- *OSS Organizations*
- *End-Users*
- *Integration & Services*
- *Device OEMs*
- *Applications*
- *OS Distributions*
- *Systems*
- *Semiconductor Vendors*



…and others

Participation is from a range of organizations and across various roles

Working Group Operation

- The working group runs similarly to an open source project without centralized constitution or bylaws
- Intellectual property contributed by participants members is covered under the Creative Commons license (CC-BY-3.0)
- Structure
  - General Meeting and mailing list
  - Teams: Technical, Business, Legal
- Very inclusive process
  - Self-subscription for interested participants
  - Those willing to “do” can influence direction
  - Mailing lists, wiki, phone calls, BOFs…
  - http://spdx.org

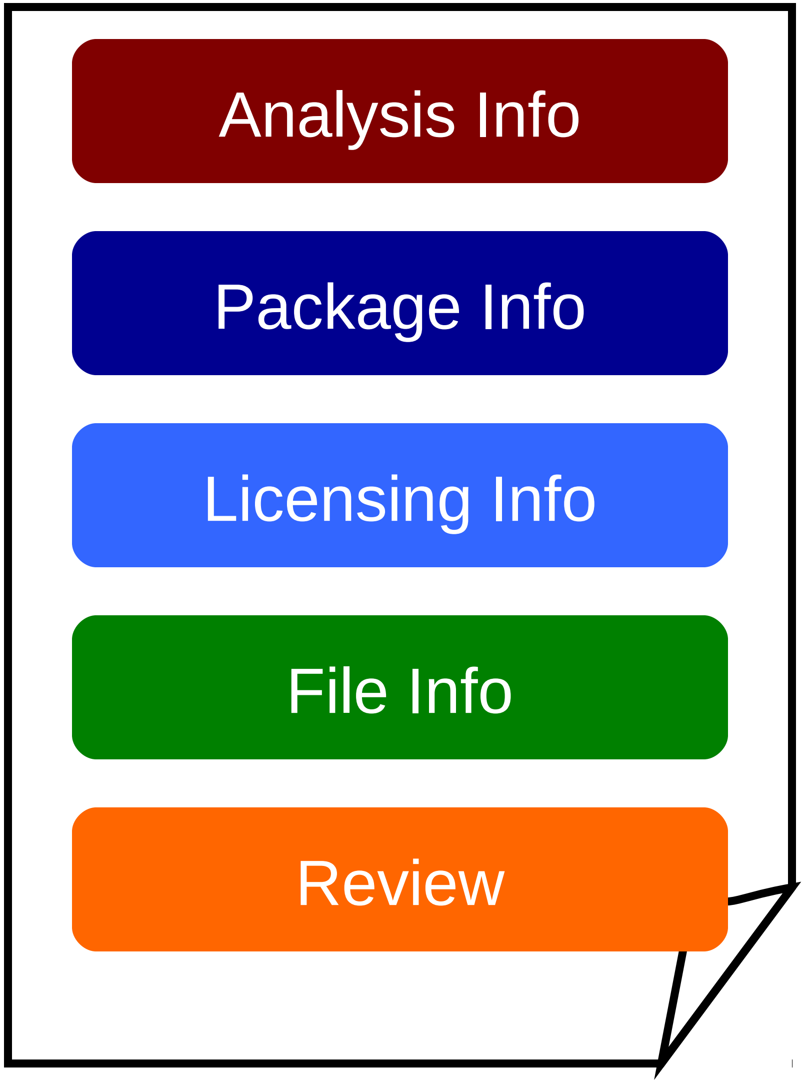
Specification Goals

- A file format for license and copyright information to accompany packages
  - Guiding Principle**: Just the facts – no interpretations**

- A standardized short form to refer to the official version of common licenses

- Benefits
  - Allows easy exchange of license information between companies reducing burden on both suppliers and consumers
  - Avoids due diligence redundancy where the same source code package is analyzed multiple times by different receivers
  - Provides a unified method for exchanging license information

The SPDX File



Analysis Info

Package Info

Licensing Info

File Info

Review

Info about source of this SPDX™ file

Associates SPDX™ file with a software package (tarball, zip, archive)

Text of licenses that are not in SPDX™ standard list

License associated with each file. Refers to std.license list on SPDX™ or a non-standard license included with the file

Log of 3rd party reviews

File is in RDF/XML form; can be converted to tag value or spreadsheet.

Analysis Information

- SPDX Version (used in creation of SPDX file)
- How this info was generated
  - Manual review (who, when)
  - Tool (id, version, when)
- Creator (who created the SPDX file)
- Creator License (license of data in file)

Package Information

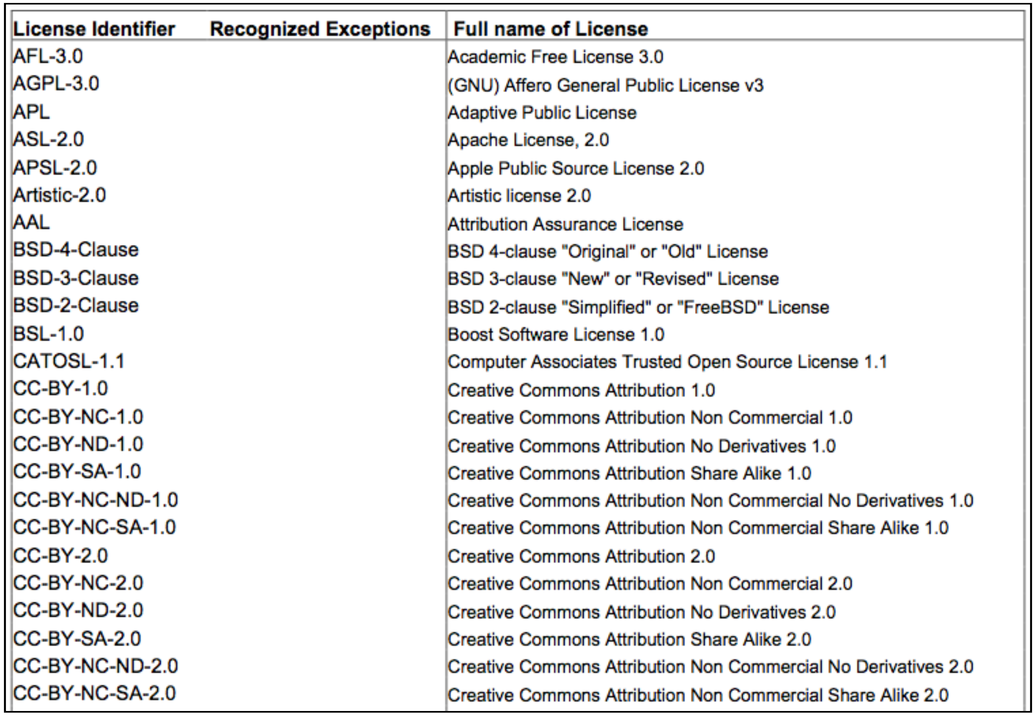
- Formal Name of Package (Full name given by originator and version information)
- Package File Name (Name package obtained under (.tar, .rpm, etc.))
- Package Checksum (to unambiguously map file to a package)
- Package Download Location (download URL)
- Licensing for Package
  - Declared License- License that has been asserted for the package
  - Concluded License- License that Creator has concluded
- Copyright Text
- Description of Package (optional)

Licensing Info

- This section is for licenses not on the standard list.
- Aim for ~90% coverage with standard short forms; no plan to be exhaustive
- Background: ~20 licenses cover most code; OSI recognizes 67 licenses as open source

The SPDX List of “Standard Licenses”

SPDX license repo



License Identifier	Recognized Exceptions	Full name of License
AFL-3.0		Academic Free License 3.0
AGPL-3.0		(GNU) Affero General Public License v3
APL		Adaptive Public License
ASL-2.0		Apache License, 2.0
APSL-2.0		Apple Public Source License 2.0
Artistic-2.0		Artistic license 2.0
AAL		Attribution Assurance License
BSD-4-Clause		BSD 4-clause "Original" or "Old" License
BSD-3-Clause		BSD 3-clause "New" or "Revised" License
BSD-2-Clause		BSD 2-clause "Simplified" or "FreeBSD" License
BSL-1.0		Boost Software License 1.0
CATOSL-1.1		Computer Associates Trusted Open Source License 1.1
CC-BY-1.0		Creative Commons Attribution 1.0
CC-BY-NC-1.0		Creative Commons Attribution Non Commercial 1.0
CC-BY-ND-1.0		Creative Commons Attribution No Derivatives 1.0
CC-BY-SA-1.0		Creative Commons Attribution Share Alike 1.0
CC-BY-NC-ND-1.0		Creative Commons Attribution Non Commercial No Derivatives 1.0
CC-BY-NC-SA-1.0		Creative Commons Attribution Non Commercial Share Alike 1.0
CC-BY-2.0		Creative Commons Attribution 2.0
CC-BY-NC-2.0		Creative Commons Attribution Non Commercial 2.0
CC-BY-ND-2.0		Creative Commons Attribution No Derivatives 2.0
CC-BY-SA-2.0		Creative Commons Attribution Share Alike 2.0
CC-BY-NC-ND-2.0		Creative Commons Attribution Non Commercial No Derivatives 2.0
CC-BY-NC-SA-2.0		Creative Commons Attribution Non Commercial Share Alike 2.0

List of most common licenses (100+)

Include common exceptions

Standardized license names

Exact text of licenses Available on SPDX website – URLs won’t change

File Information

- File Name
- File Type (source, binary, archive)
- File Check Sum
- Concluded License (license determined by SPDX file creator)
- Copyright Text
- Artifact Project Name (from which project it came)

Review

- Reviewer
- Review Date
- Review Comment

SPDX Tools

- Objectives
  - Reduce the effort of creating, consuming and validating SPDX documents
  - Provide a translation from the technical document (e.g. RDF/XML or tag-value format) and a more readable format
  - Provide a mechanism for validating SPDX documents
  - Enable contributions and review of the tool implementation by the broader technical community through open source licensing

SPDX and Distros

- Distros do a lot of license review when adding a new open source package
- No unified format used by distros (e.g. Debian uses free-form debian/copyright; DEP5 proposal for machine-readable debian/copyright)
- SPDX (or derived format) would allow more collaboration between distros: would reduce work for everyone, make it easier to find potential problems, etc
- Distros are a good way of working with upstream: getting SPDX adopted by open source projects directly.

The Future

- How to indicate cruft – files not relevant for package licensing obligations
- How to model hierarchical / associated packages
- License of SPDX files: currently PDDL; CC0 with disclaimer under discussion
- Develop guidelines for templatizing of licenses
- Adoption of SPDX: SPDX as required standard in supply chain
- Adoption of SPDX in upstream projects