

4/11/18

GitHub Constellation

Qualcomm

Open Source and Standards Collaboration

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Qualcomm Technologies, Inc.





From the
smartphone to 5G,
it all starts
with Qualcomm

\$50+ billion cumulative
investment in R&D

Qualcomm Standards Bodies and Industry Organizations

410



Standards and industry
memberships

2K



Employees participating in
standards and industry
memberships

- Cellular
- Automotive
- Wireless Connectivity
- IOT
- Multimedia
- Device Connectivity
- Security

Qualcomm Open Source Participation

2.5K



Projects vetted for use,
modification or contribution

2K



Employees trained to interact
closely with Open Source *

- Enablement Projects
- Business assistance projects
- Personal Projects

How are Open Source and
Standards similar and different?

A word cloud featuring various terms associated with open-source software and community collaboration. The words are arranged in a circular pattern, tilted at different angles. The colors of the words include shades of blue, green, red, and purple. The words are: design, commoditize, interoperable, document, interface, test, efficient, open, organization, industry, develop, member, share, collaborate, license, participate, compromise, implementations, contribute, and community.

design commoditize interoperable document interface
community license efficient test
collaborate open
share organization
participate industry
develop member
implementations
compromise
contribute


“Open source software is commodity software. It's a level playing field in which anyone can participate.”

“It [a standard] is used to define an interface between two (or more) entities such that they can interact in some predictable fashion and to ensure certain minimum requirements are met. Standards exist to encourage and enable multiple implementations.”




Why do SDOs want to collaborate
with Open Source?






 This repository

[Pull requests](#) [Issues](#) [Marketplace](#) [Explore](#)

 [github](#) / [linguist](#)

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[Code](#) [Issues 73](#) [Pull requests 49](#) [Projects 0](#) [Insights](#)

Language Savant. If your repository's language is being reported incorrectly, send us a pull request!

[syntax-highlighting](#) [language-grammars](#) [language-statistics](#) [linguistic](#)

[5,718 commits](#) [14 branches](#) [127 releases](#) [696 contributors](#) [MIT](#)

[Branch: master](#) [New pull request](#) [Create new file](#) [Upload files](#) [Find file](#) [Clone or download](#)

 [ildude](#) Update Travis Config (#4080)

Latest commit 49593a6 3 days ago

.github	Add issue and pull request templates (#3972)	3 months ago
bin	Handle repo cleanup race more elegantly (#3930)	4 months ago
ext/linguist	drop max token len to 32 (#3925)	4 months ago
lib	Replace Kotlin language grammar (#4065)	3 days ago
samples	Support for PICO-8 as Lua variant (#4072)	3 days ago
script	Add script to alphabetise submodule list (#4054)	a month ago
test	Add script to alphabetise submodule list (#4054)	a month ago
tools/grammars	Whitelist 4 new TextMate grammar fields (#4039)	a month ago
vendor	Replace Kotlin language grammar (#4065)	3 days ago
.gitattributes	Merge branch 'master' into 1233-local	4 years ago
.gitignore	Replace the tokenizer with a flex-based scanner (#3848)	5 months ago

Find Standards

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IEEE STANDARD

IEEE Std 802-2014 (Revision to IEEE Std 802-2001) - IEEE Standard for Local and Metropolitan Area Networks: Overview and Architecture

Description: This standard provides an overview to the family of IEEE 802® standards. It describes the reference models for the IEEE 802 standards and explains the relationship of these standards to the higher layer protocols; it provides a standard for the structure of IEEE 802 MAC addresses; it provides a standard for identification of public, private, prototype, and standard protocols; it specifies an object identifier hierarchy used within IEEE 802 for uniform allocation of object identifiers used in IEEE 802 standards; and it specifies a method for higher layer protocol identification. (The PDF of this standard is available at no charge compliments of the GETIEEE Program. Visit <http://standards.ieee.org/getieee802/> for more details.)

Working Group: [WG802.1 - Higher Layer LAN Protocols Working Group](#)

Oversight Committee: [C/LM - LAN/MAN Standards Committee](#)

Sponsor: [C - IEEE Computer Society](#)

STATUS:

Active Standard

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* actual savings vary per standard

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PLEASE FILL OUT THE INFORMATION BELOW TO SUBMIT YOUR LIAISON INQUIRY. *Required

Topic: Contact a Staff Liaison

*First Name: *Last Name: *Email Address: *Confirm Email Address: *Your Message: *Preferred Method of Contact: Daytime Phone: Country/Province Code:
(if outside the U.S.)Extension (optional): How did you hear about IEEE
(optional):☐ I'm not a robot

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[IEEE Code of Ethics](#)
[IEEE Intellectual Property Rules](#)
[Policies and Procedures for Corporate Standardization](#)

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2. The membership team will review the completed application form within 48 hours of receipt. An invoice will be sent to the primary contact via email.
3. Full membership is granted upon payment of required appropriate membership dues to IEEE.
4. A welcome letter will be sent to the primary contact when full membership is granted.
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Paper Application Information

You may obtain a hard-copy application by sending an email to corp-mem@ieee.org

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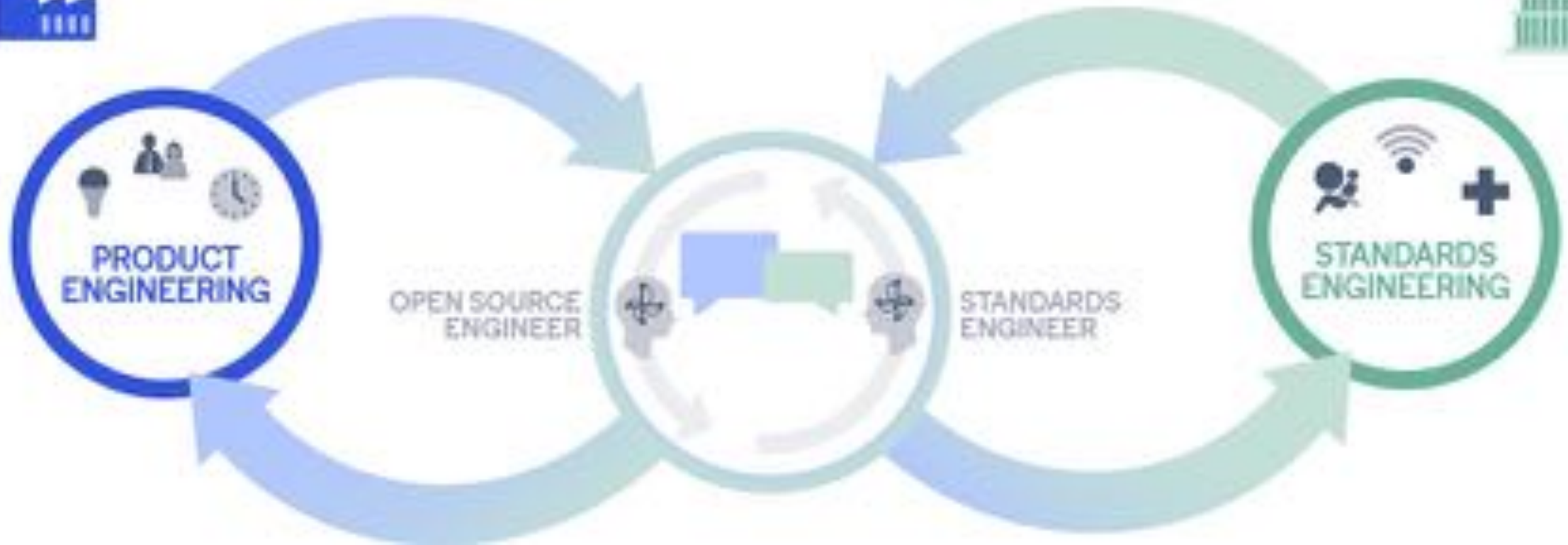
Email: 

How should SDOs collaborate using
Open Source?

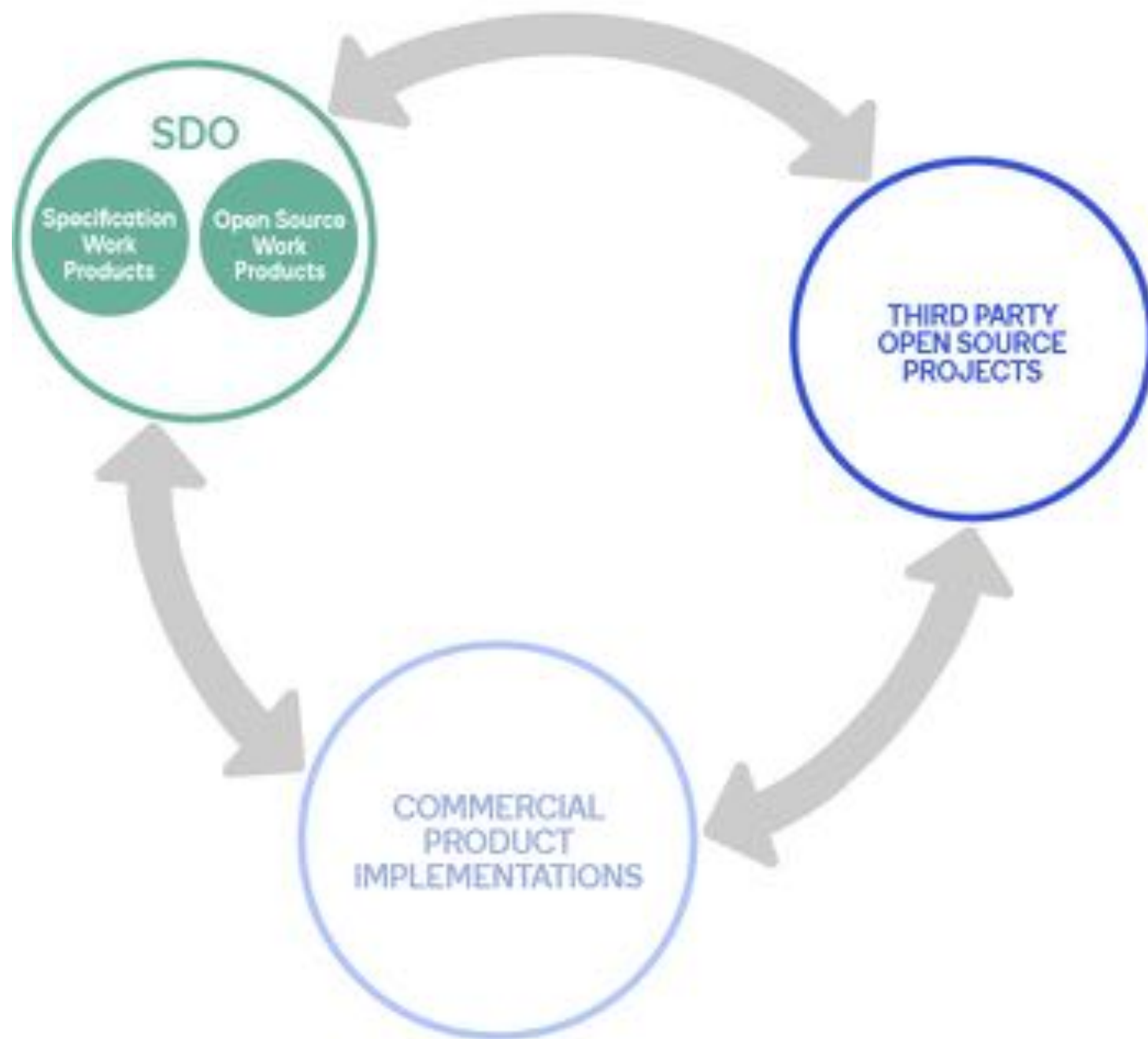
COMPANY



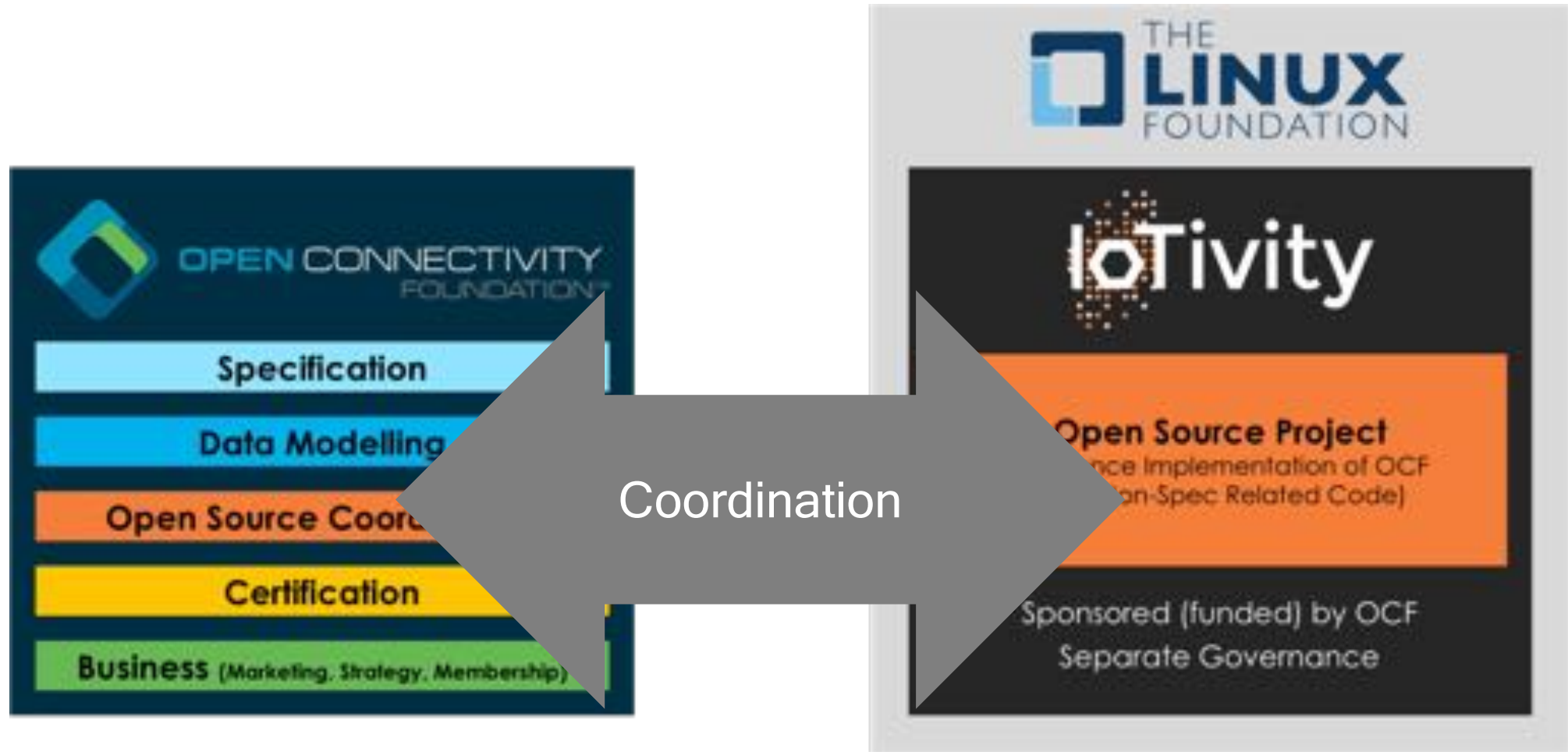
SDO





Open Source participation enables feedback loops across the board



Open Connectivity Foundation and IoTivity



 This organization Search Pull requests Issues Marketplace Explore



Open Mobile Alliance

Delivering Standards for Global Connectivity

<http://openmobilealliance.org/> github@omaorg.org

Repositories 11 People 4 Projects 0

Search repositories... Type: All Language: All

OMA_Lwm2M_for_Developers

Public · OMA LightweightM2M specifications and Lwm2M Developer Tool Kit for public review.

[iot](#) [m2m](#) [internet-of-things](#) [specification](#) [lwm2m](#) [oma](#)

★ 112 🗲 27 1 issue needs help Updated 8 days ago

openmobilealliance.github.io

Publication. Contains OMA Technical pages.

● HTML ★ 4 🗲 8 Updated 10 days ago

OMA_Dictionary

Public · dictionary for oma specifications

● HTML ★ 1 🗲 5 Updated 22 days ago

svg_images


Temporal repository to store all the svg images created for Lwm2M v1.1


Top languages


JavaScript ● HTML ●

People

4 >



 This organization Search Pull requests Issues Marketplace Explore



IETF HTTP Working Group

<https://httpwg.github.io/>

Repositories 5 People 4 Projects 0

Search repositories... Type: All Language: All

Pinned repositories

http-extensions

HTTP Extensions in progress

● Python ★ 145 🗲 38

wg-materials

HTTP Working Group Materials

● HTML ★ 35 🗲 20

http-core

Core HTTP Specifications

● HTML ★ 16 🗲 1

http-core

Core HTTP Specifications

[http](#) [standards](#) [rfc](#) [ietf](#)

● HTML ★ 16 🗲 1 Updated 4 hours ago

http-extensions

HTTP Extensions in progress

[http](#) [standards](#) [ietf](#) [httpbis](#)

● Python ★ 145 🗲 38 Updated 12 hours ago

Top languages


● HTML ● Python

Most used topics

[http](#) [ietf](#) [standards](#)

People

4 >



IETF Hackathons

IETF Hackathons encourage developers to collaborate and develop utilities, ideas, sample code and solutions that show practical implementations of IETF standards.

The IETF Hackathons aim to:

- Advance the pace and relevance of IETF standards activities by bringing the speed and collaborative spirit of open source development into the IETF
- Bring developers and young people into IETF and get them exposed to and interested in IETF

Past IETF Hackathons have covered a range of topics including: DNS, HTTP 2.0, NETVC, OpenDaylight, ONOS, VPP/FD.io, RiOT, SFC, TLS 1.3, WebRTC, YANG/NETCONF/RESTCONF. New technologies are always encouraged.

The [next IETF Hackathon](#) will be held in London, March 17-18, 2018.

Can Open Source improve
collaboration with lessons from
Standards development processes?

“Foster an open ecosystem by establishing interoperable APIs, ensuring interoperable implementations with vendor commitments and open source tools.”







<https://pixabay.com/en/abstract-blur-britain-british-1239439/>

“The fast pace of updates to these projects has created some unexpected problems for the people who deploy and use them.”

Kevin Fleming, Bloomberg

<https://opensource.com/article/18/2/important-conversation>



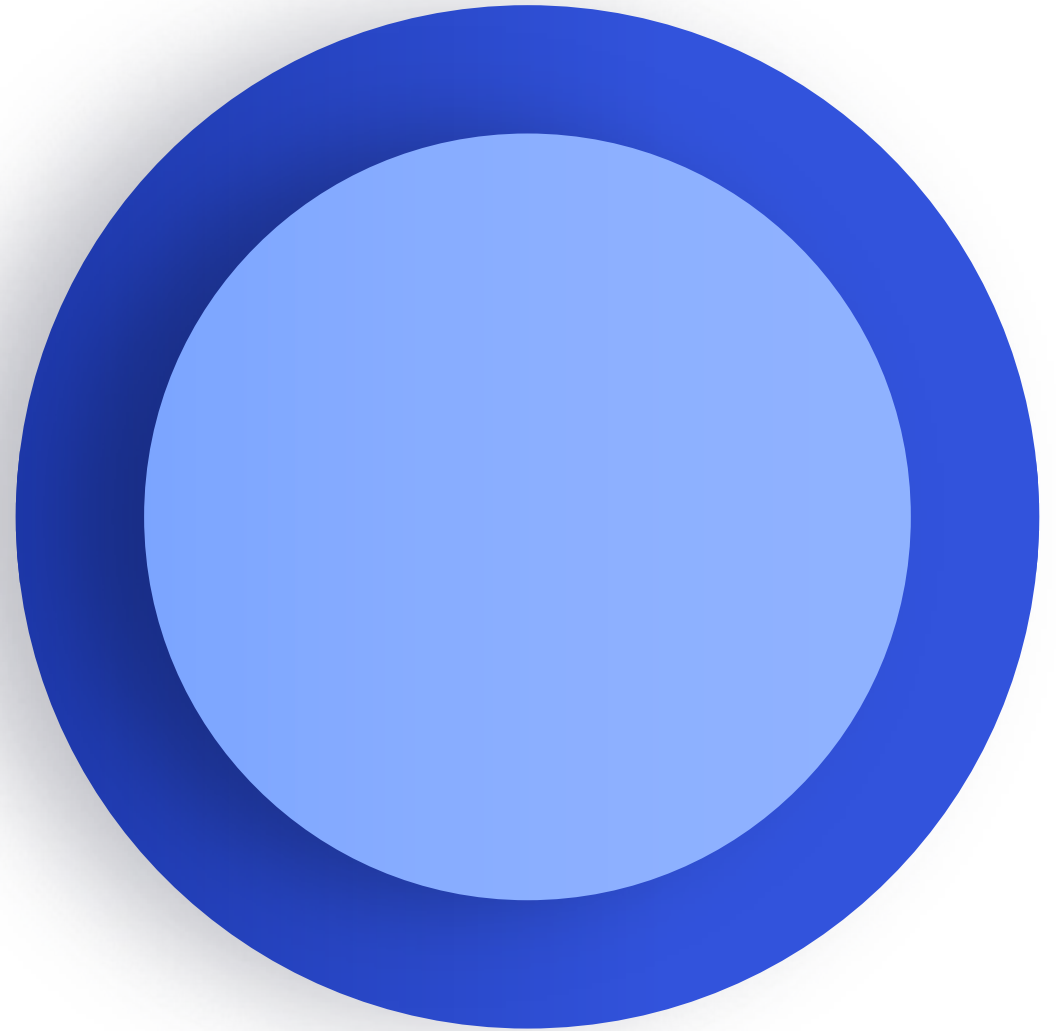


IP Policy

- Many SDOs have FRAND or disclosure-only IP policies
 - Have worked very well
- Using only RF Open Source licenses will not work in all situations, it may:
 - Make unclear what is “standards essential”
 - Only apply RF terms to the specific implementation
 - Reduce motivation to contribute and participate in technology areas that require a large R&D investment
- Better to keep SDO IP policy intact
 - Make OSS license copyright-only (suggest BSD or MIT)
 - Add an explicit pointer to the SDO IP policy

Call to Action

What can we do?



Educate!

- OSPO - Open Source Program Office
- ISPO - Industry Standards Program Office

Robert Burns: Oh would some power the gift give us, To see ourselves as others see us.

What your ISPO & SDO needs to learn about Open Source

- Open Source Compliance and effect of non-compliance
 - Review of the software products and contributions
 - Inbound & Outbound processes and policy
- Open Source Development practices
 - CI/Testing
 - Community parity
 - Security
- Open Source Community best practices
 - Issues/Bug tracking, Documentation, Chat
 - Fair and efficient review and responses
 - Monitoring and metrics for project health

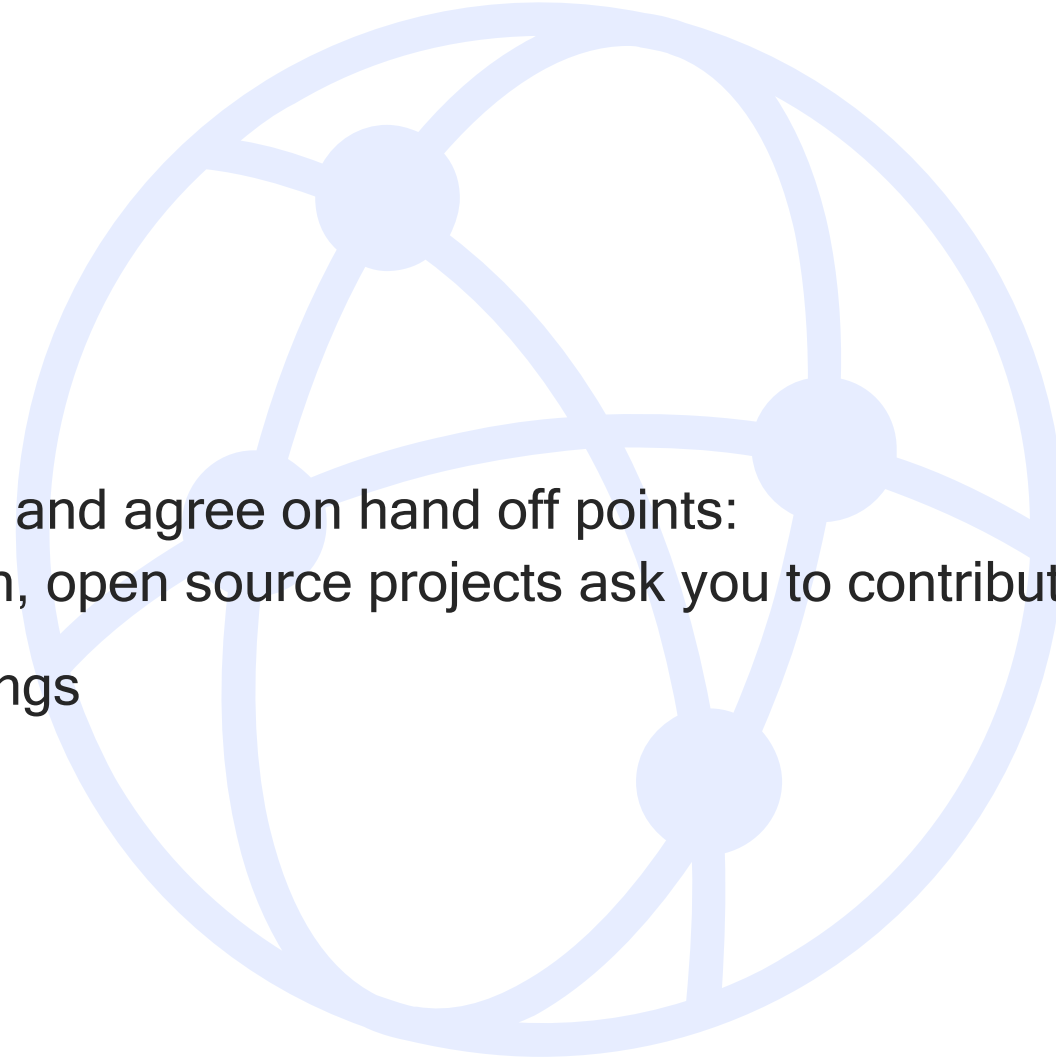


What OSPO & Open Source can learn from ISPOs & SDOs

- Expectation of complete releases and high quality standards
- Governance and Antitrust compliance
- Interoperability and backwards compatibility
 - “There are numerous examples I can cite where open source projects are updated so frequently that new versions will, usually unintentionally, break backwards compatibility.” - Kevin Fleming
- Long term strategy, roadmaps, and planning
- Clear rules for contributors, participation and IP declaration

Our internal collaboration between OSPO & ISPO

- Collaborate on:
 - Training
 - Awareness
 - Compliance
 - Outreach
- Align review processes and agree on hand off points:
 - “SDO’s ask you to join, open source projects ask you to contribute.”
- Regular strategy meetings






Standards and Open Source will blend further over time





Thank you!

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