# FOSSLight 소개 및 사용 가이드

LG전자 민경선

LG Open Source

# CONTENTS

# FOSSLight의 역사

2006

**Embedded Linux TV**

# 2006 – Embedded Linux


## OPEN SOURCE SOFTWARE NOTICE

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- Linux kernel 2.6.11
- busybox

LGPL LIBRARIES:
- glibc

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- Nanox

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This offer is valid for a period of three(3) years from the date of the distribution of this product by LG Electronics.

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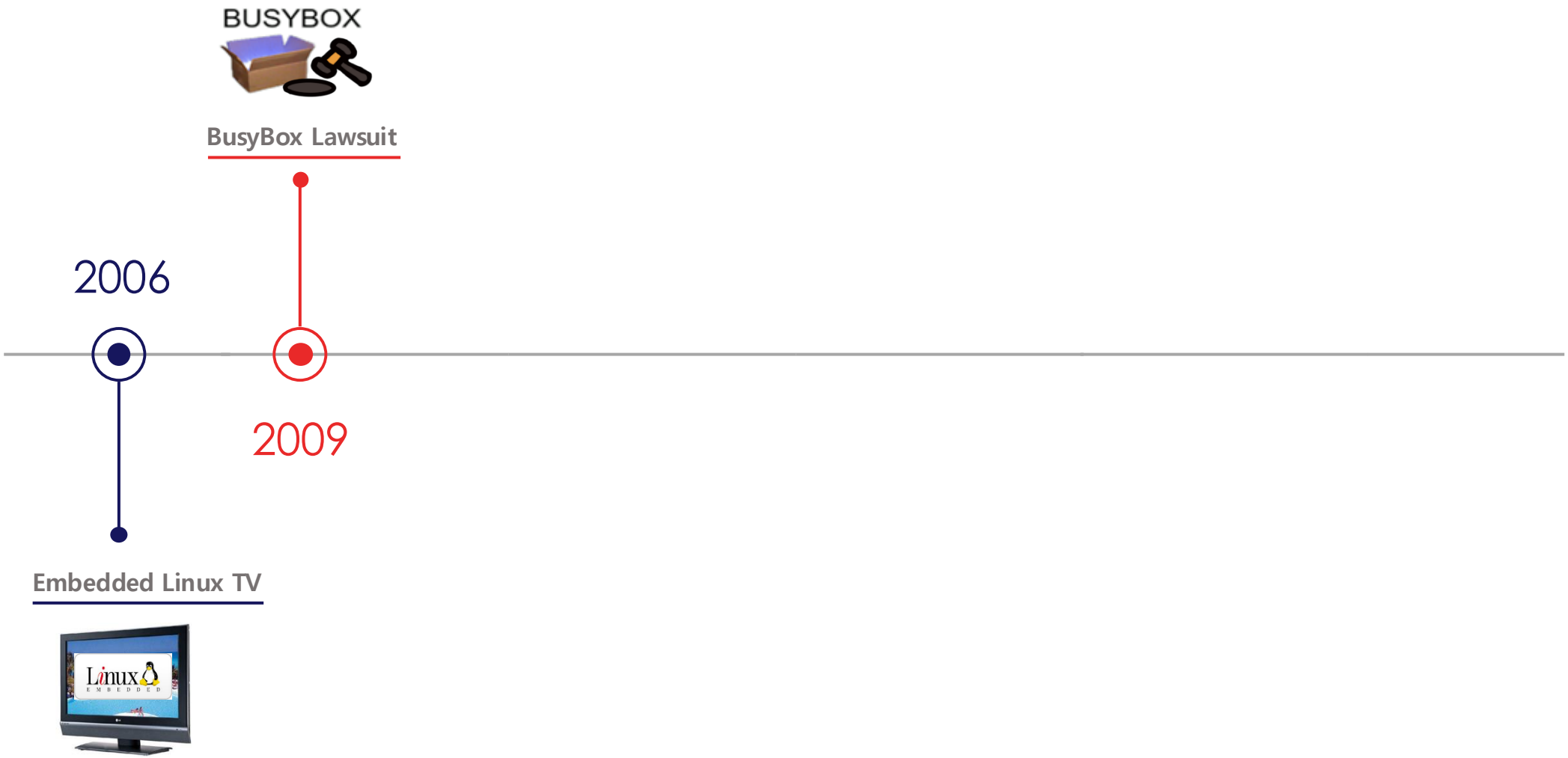
- This software is based in part on the work of the Independent JPEG Group.
- This software includes the Zlib compression library, developed by Jean-loup Gailly and Mark Adler. Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

# FOSSLight의 역사



# 2009

기사 주소: http://www.dt.co.kr/contents.html?article_no=2009121702010860744[illegible]




## TV · 셋톱박스 저작권 위반 `피소`

박상훈 기자 nanugi@dt.co.kr | 입력: 2009-12-16 20:34

**SFLC, 14개업체 제소… 오픈소스 라이선스 관리 시급**

삼성전자, 휴맥스 등 국내 대표 가전 업체들이 잇달아 오픈소스 저작권 위반으로 소송에 휘말리고 있어 수출의 걸림돌로 작용할 수 있다는 우려가 나오고 있다.

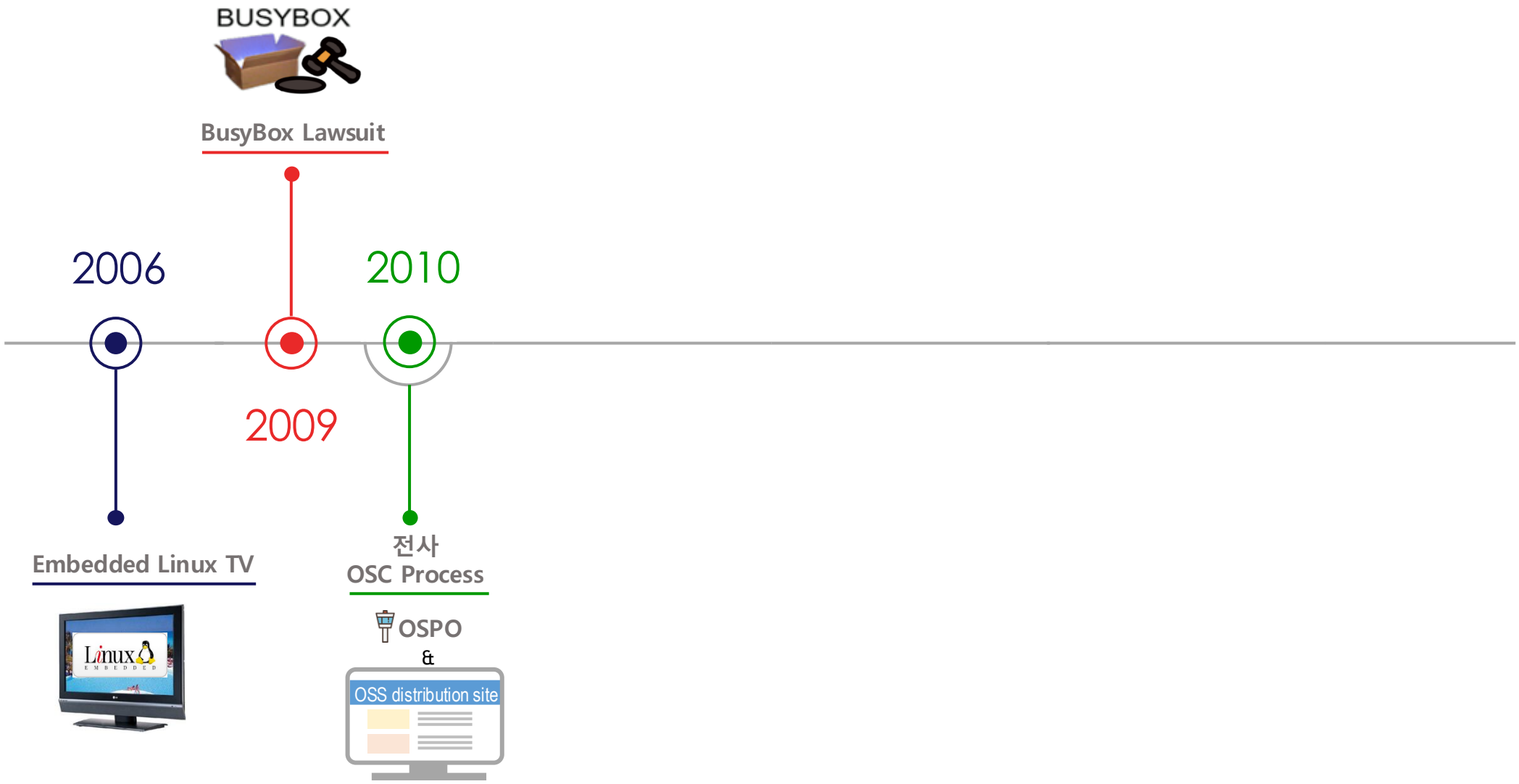
소프트웨어자유법률센터(SFLC)는 14일(현지시간) 뉴욕 남부 지방법원에 삼성전자를 비롯한 14개 업체를 저작권 위반으로 제소했다. SFLC는 오픈소스 개발자들을 법률적으로 지원하는 비영리 단체로, 이번 소송은 리눅스 툴 패키지인 `비지박스(BusyBox)'의 개발자를 대신해 법적 대응에 나서는 형태를 취하고 있다.

SFLC는 소장을 통해 삼성전자, 휴맥스 등이 HDTV, 셋톱박스용 소프트웨어를 개발하면서 `비지박스'를 사용했지만 소스코드를 공개하지 않아 `GPL 버전2' 라이선스를 위반했다고 주장했다. SFLC는 삼성전자의 LCD HDTV인 LN52A650와 LA26A450, 휴맥스의 HDTV DVR 제품인 `iCord HD' 등을 언급하며 여기에 사용된 소프트웨어(SW)의 소스코드 공개와 함께 이들 제품의 판매금지, 이익배분, 손해배상 등을 요구했다.

소송 소식이 알려지자 전문가들은 `올 것이 왔다'는 반응이다. 그동안 우리나라는 오픈소스를 폭넓게 활용하는 대표적인 수혜국가로 알려져 왔지만 정작 라이선스 관리에 대해서는 사각지대에 머물러 있었다. 실제로 삼성전자는 지난 8월 셋톱박스 SW 관련 오픈소스 저작권 위반 소송에 휘말린 데 이어 이번에 또 소송을 당했다.

이번에 문제가 된 LN52A650는 `보르도'란 브랜드로 더 널리 알려진 제품으로, 삼성전자가 TV 판매 40년 만에 세계 TV 시장 1위로 올라서는데 결정적인 역할을 했다는 평가를 받고 있다. `iCord HD' 역시 휴맥스의 유럽 시장 공략의 1등 공신으로 평가받

# FOSSLight의 역사



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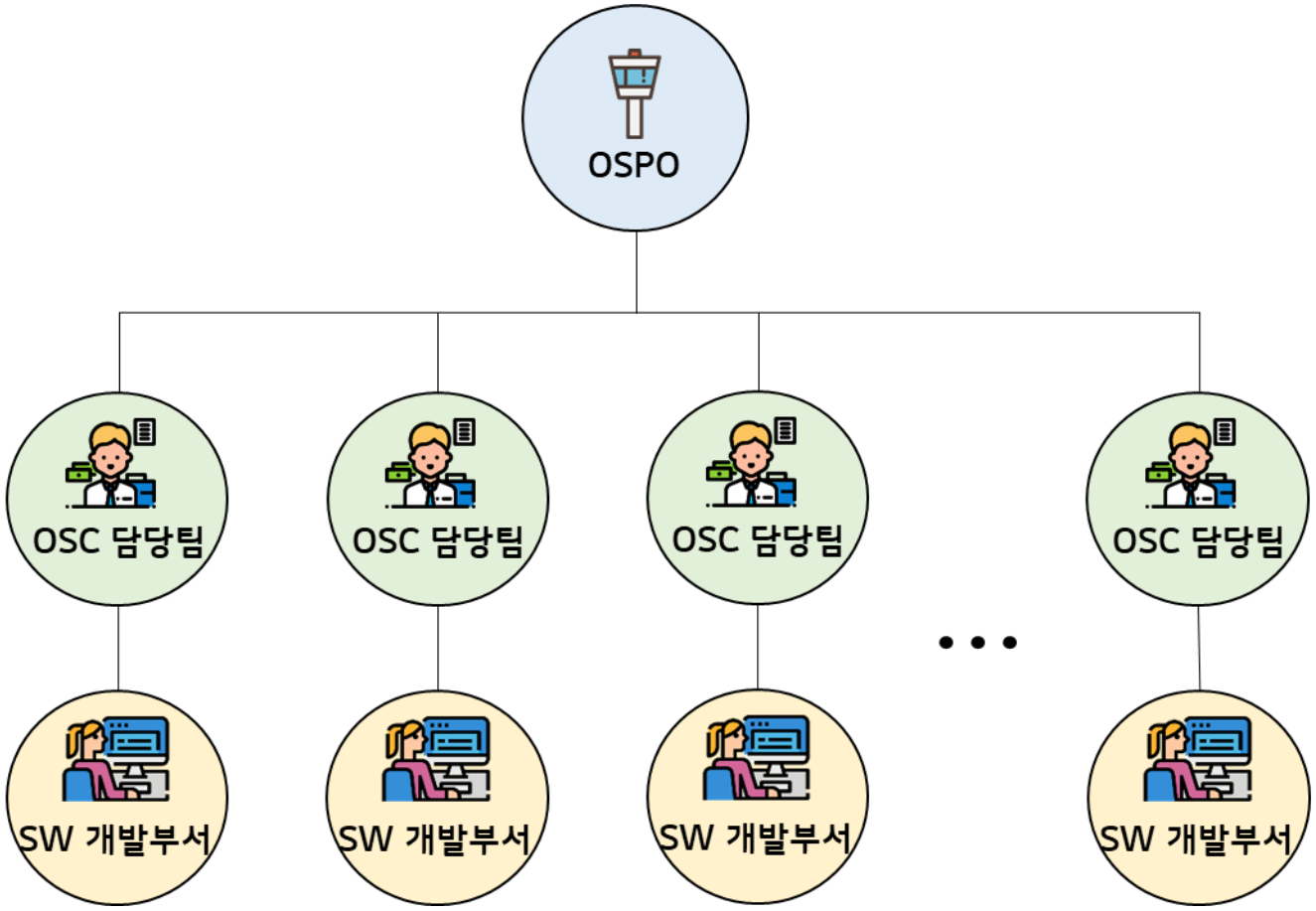

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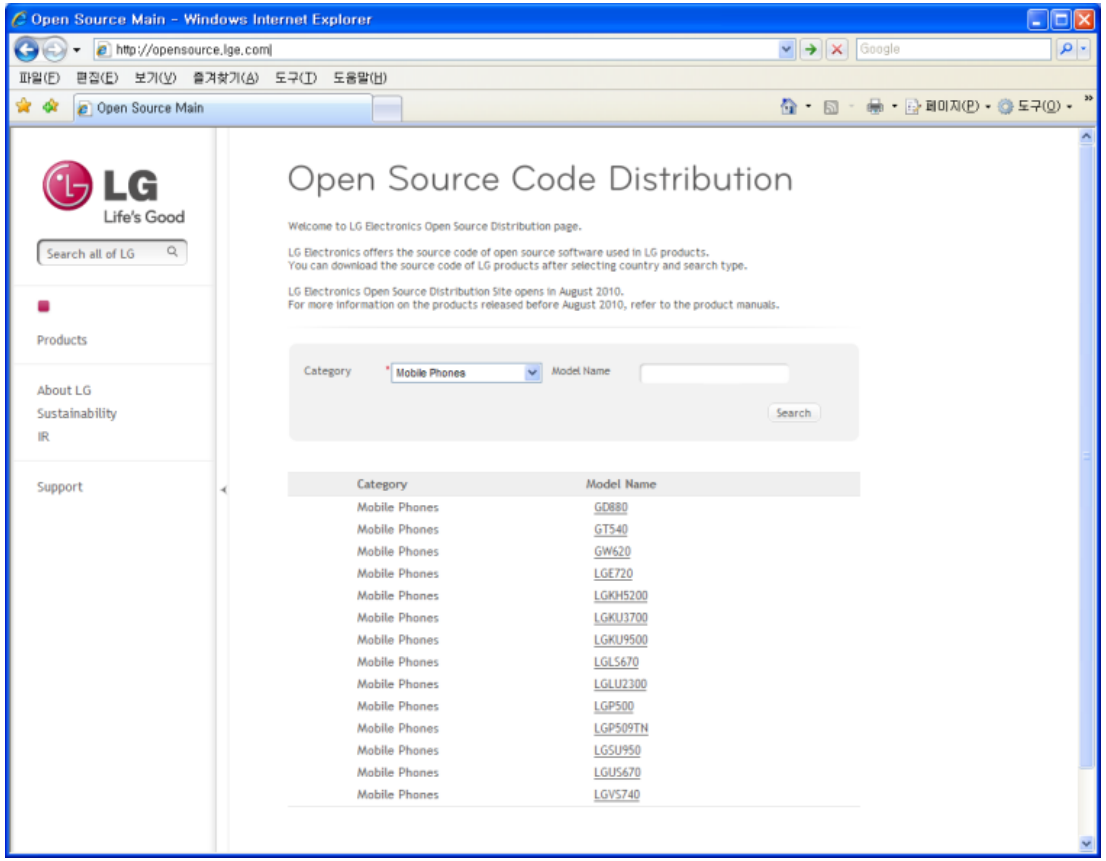

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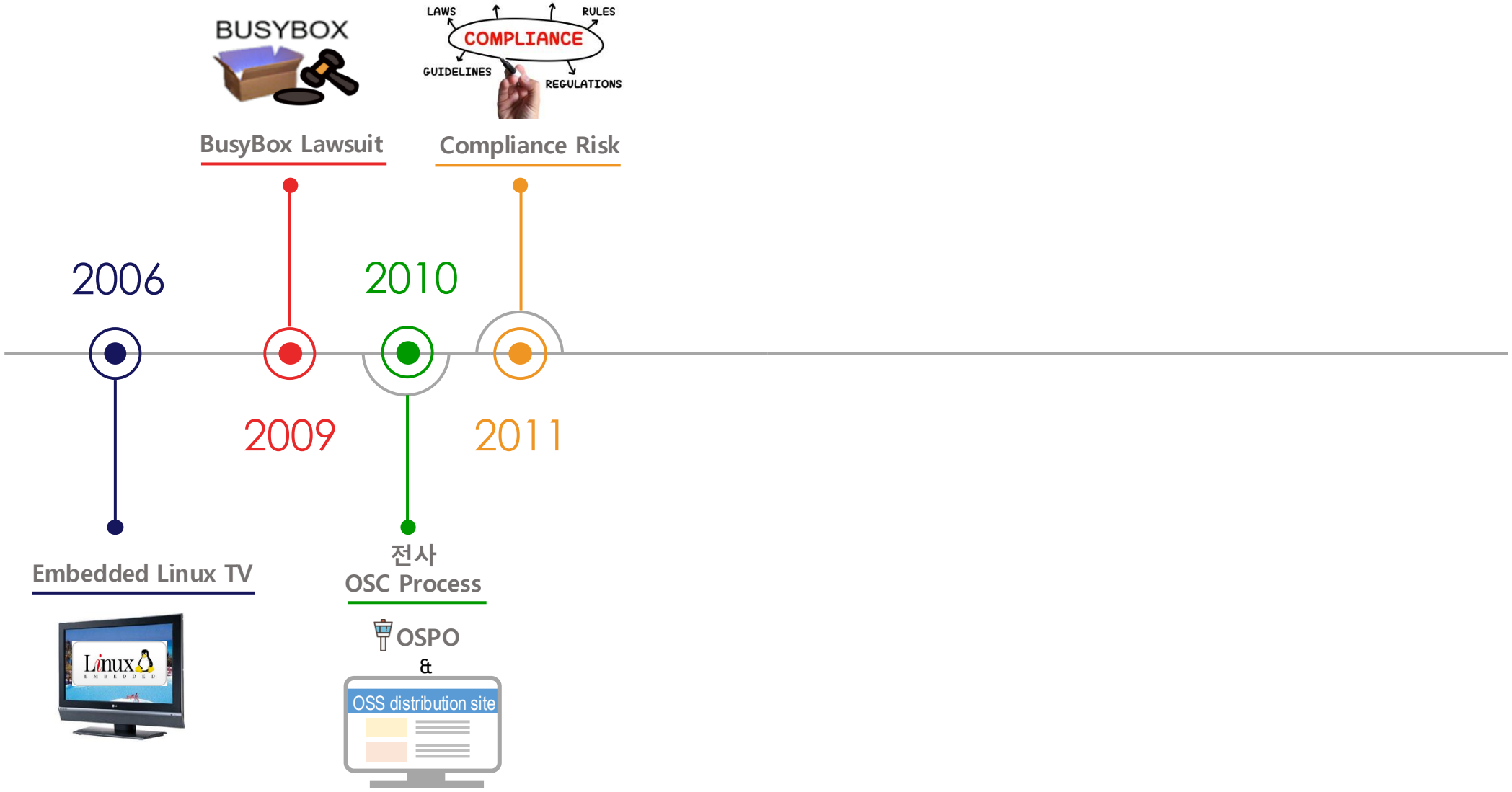
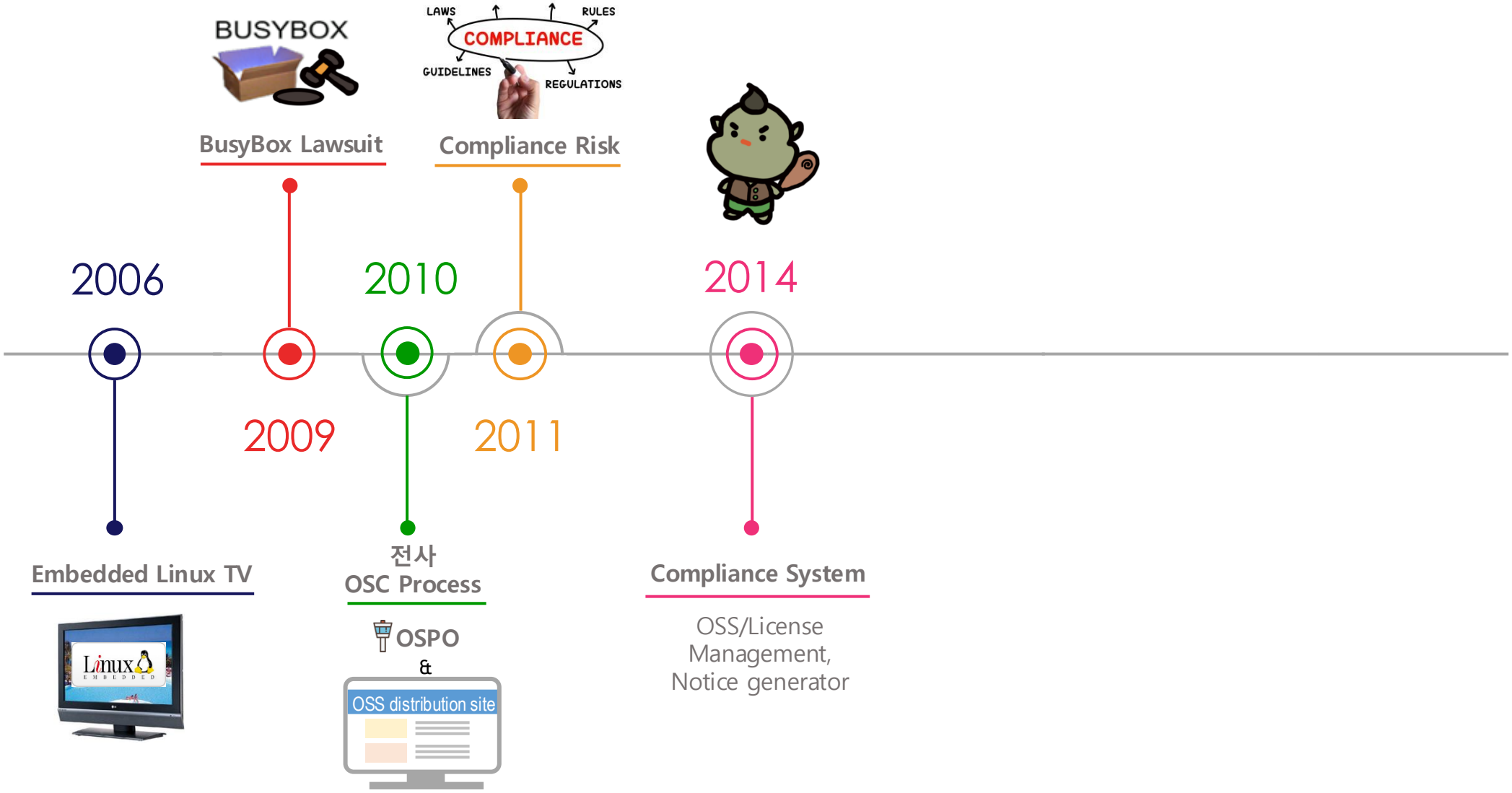
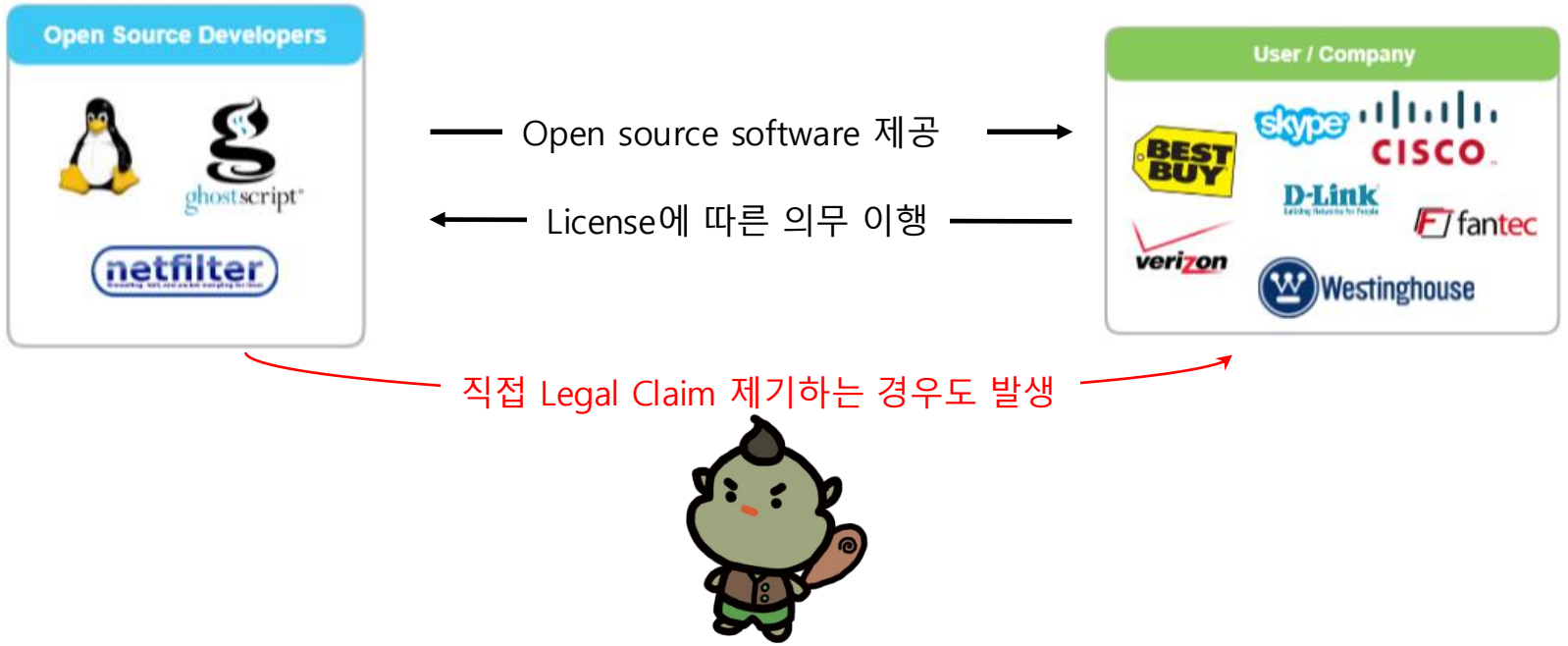


# 2011 – Compliance Risk

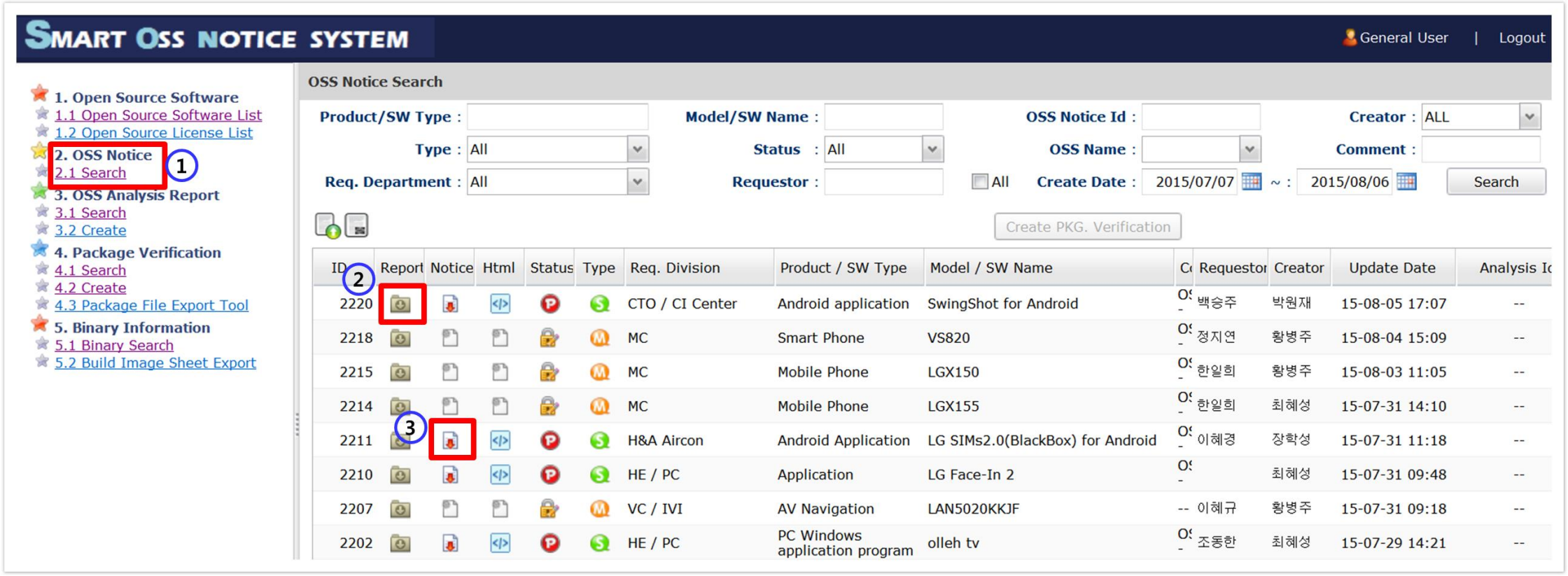

# FOSSLight의 역사



# 2014


Open Source Developers
ghostscript
netfilter
Open source software 제공
License에 따른 의무 이행
User / Company
BEST BUY
skype
CISCO
D-Link
fantec
verizon
Westinghouse
직접 Legal Claim 제기하는 경우도 발생

# 2014 – Compliance System



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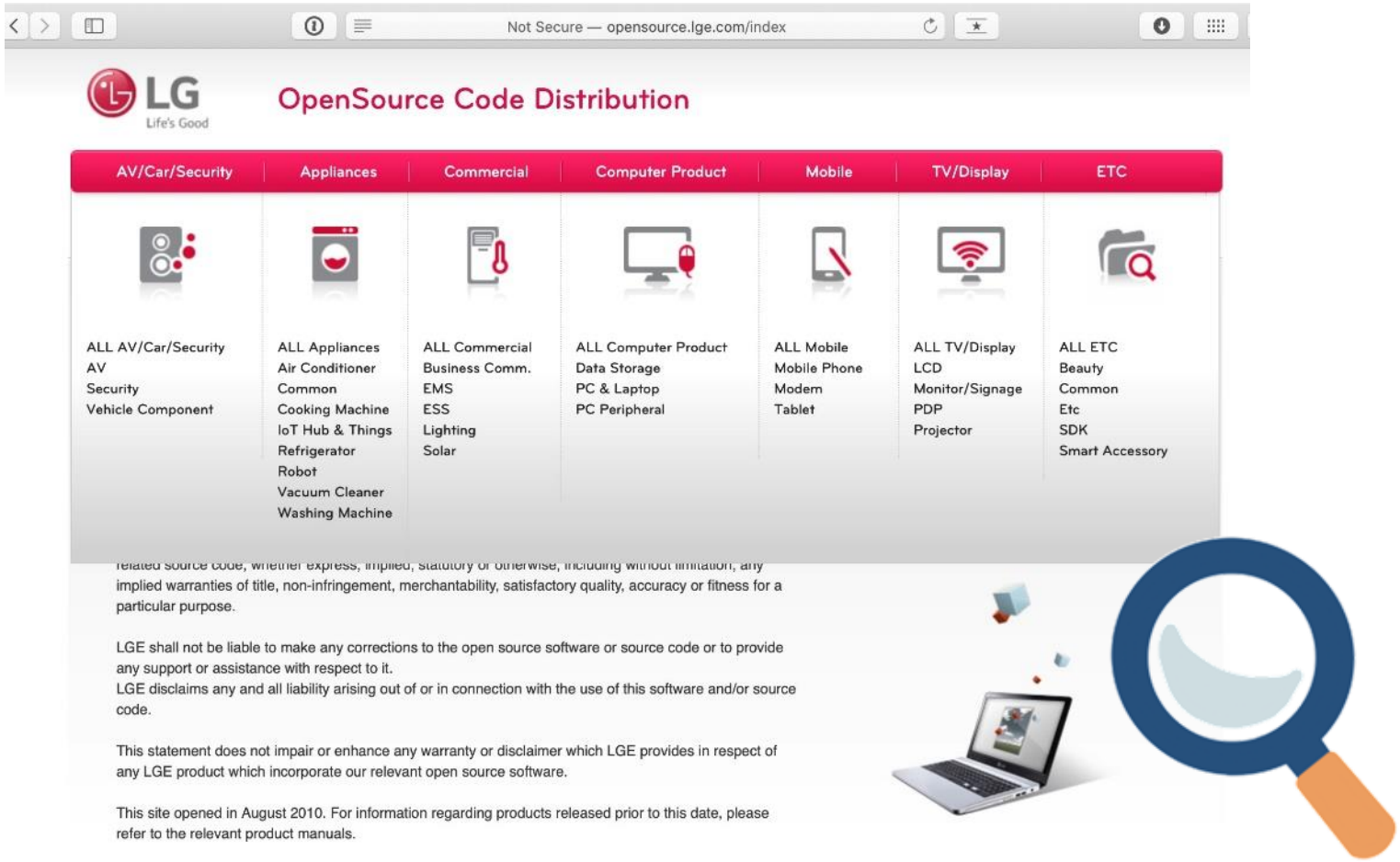

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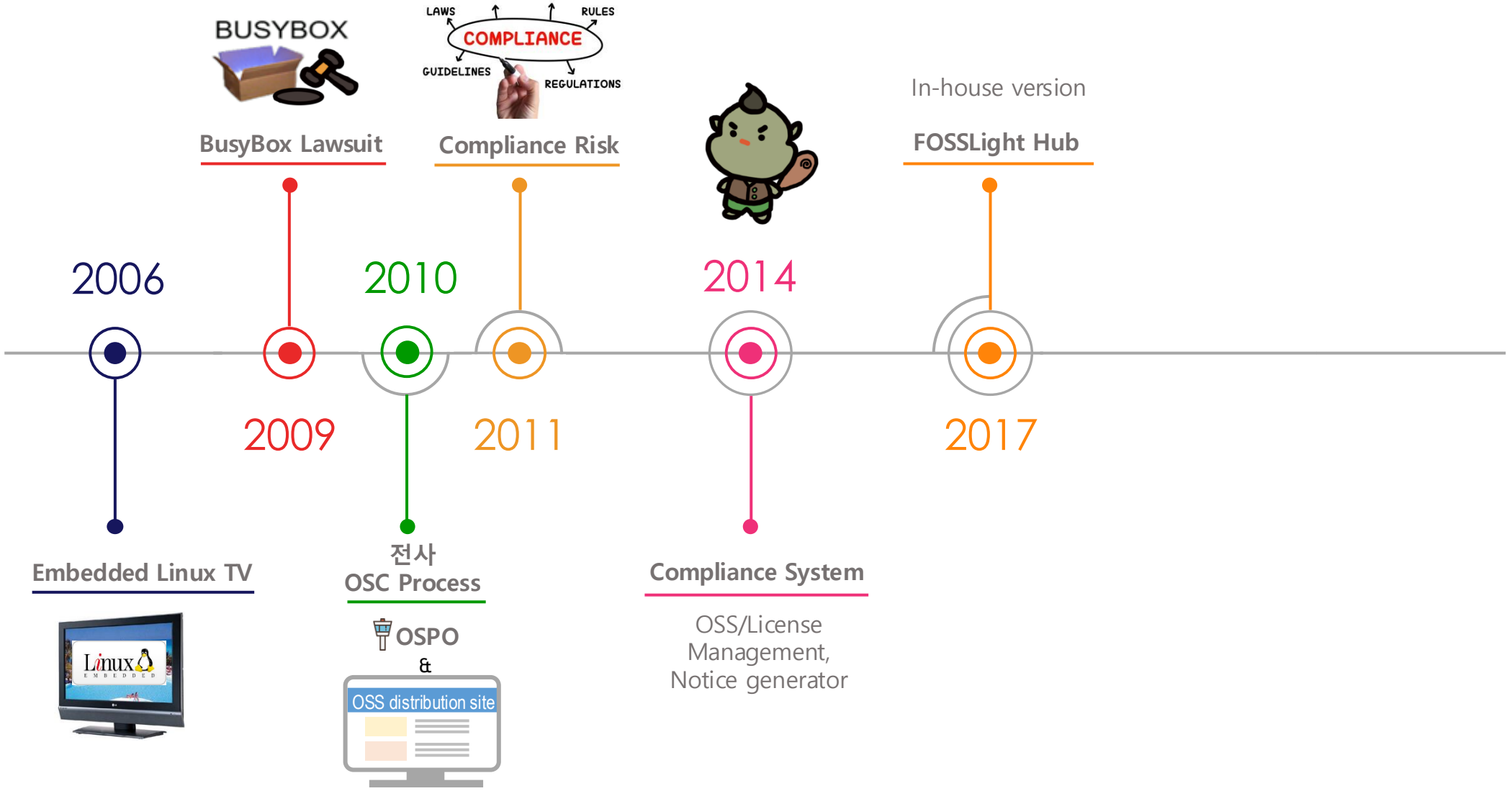

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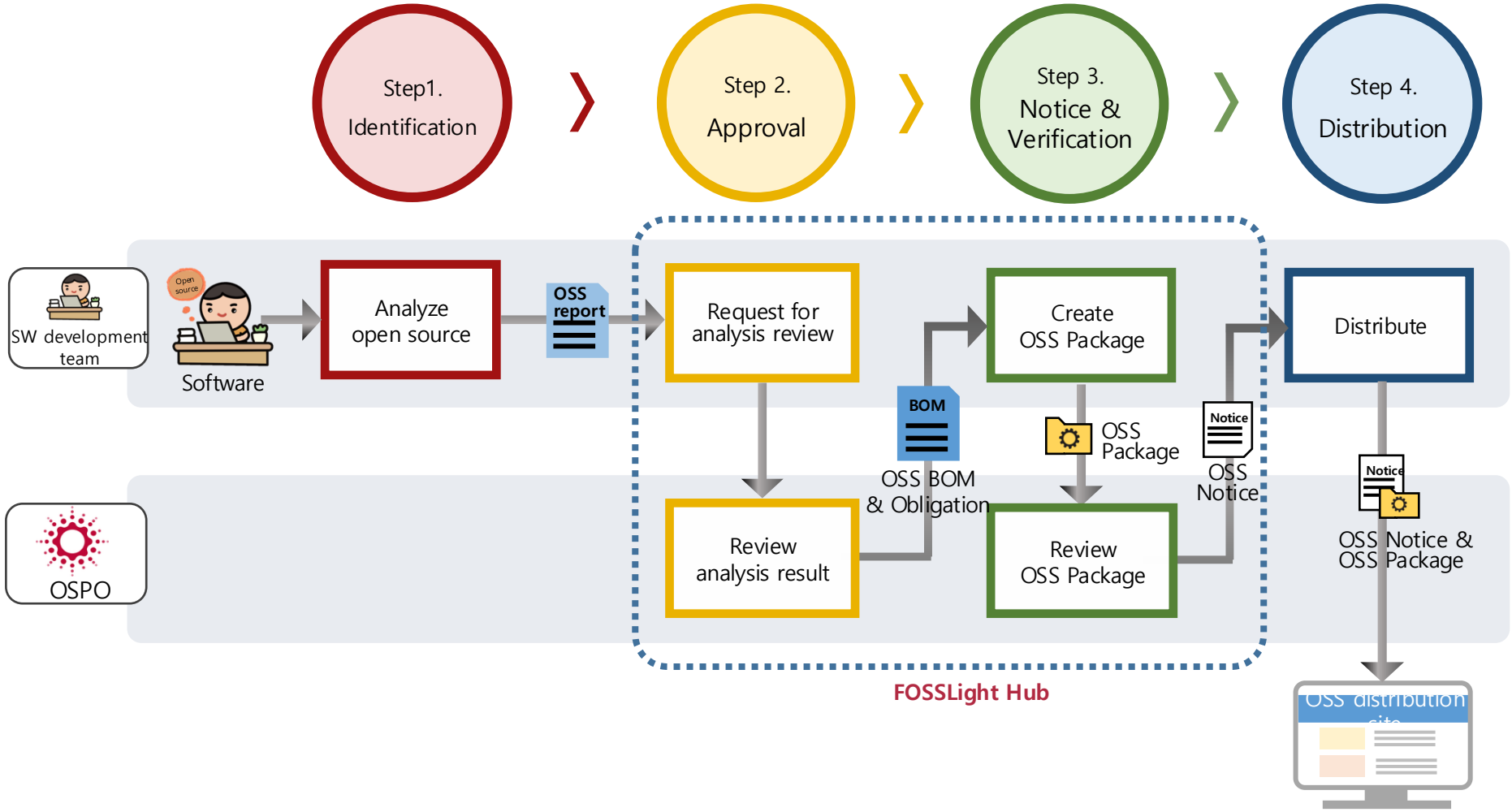

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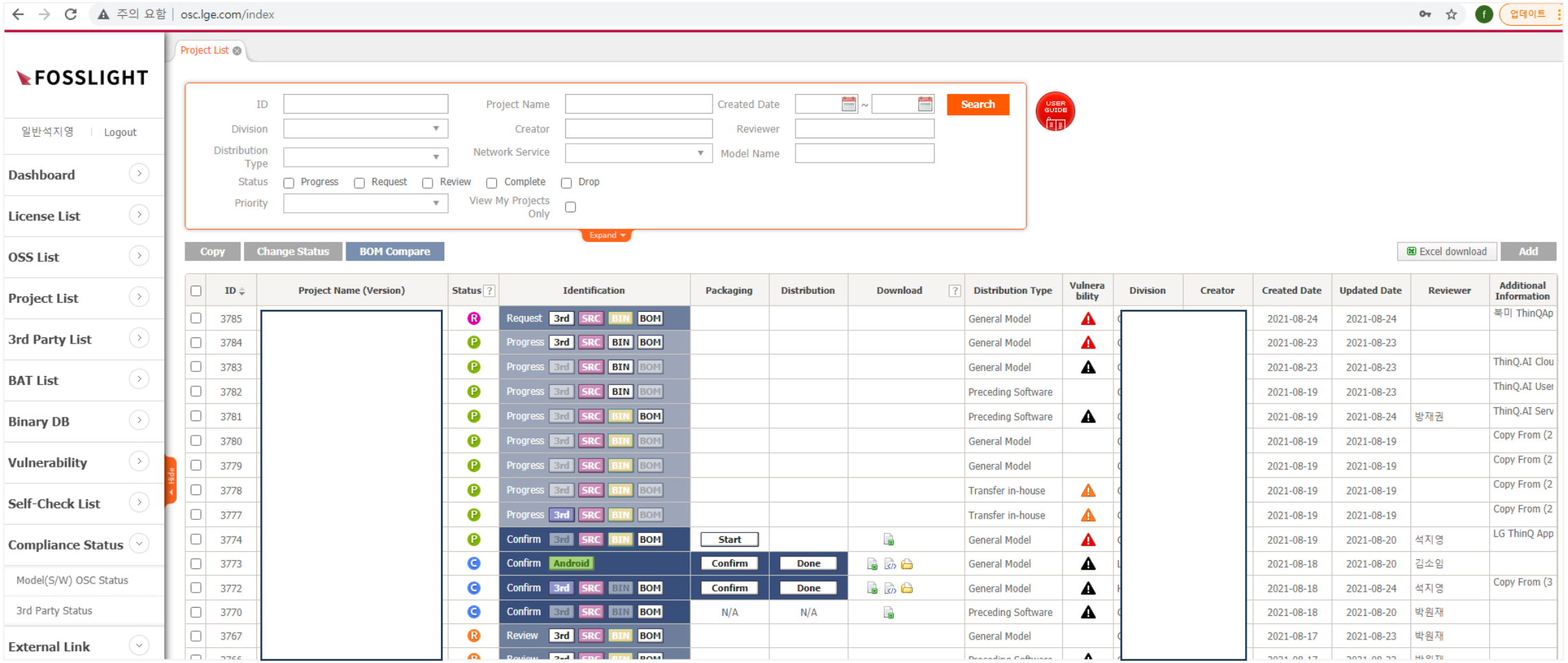

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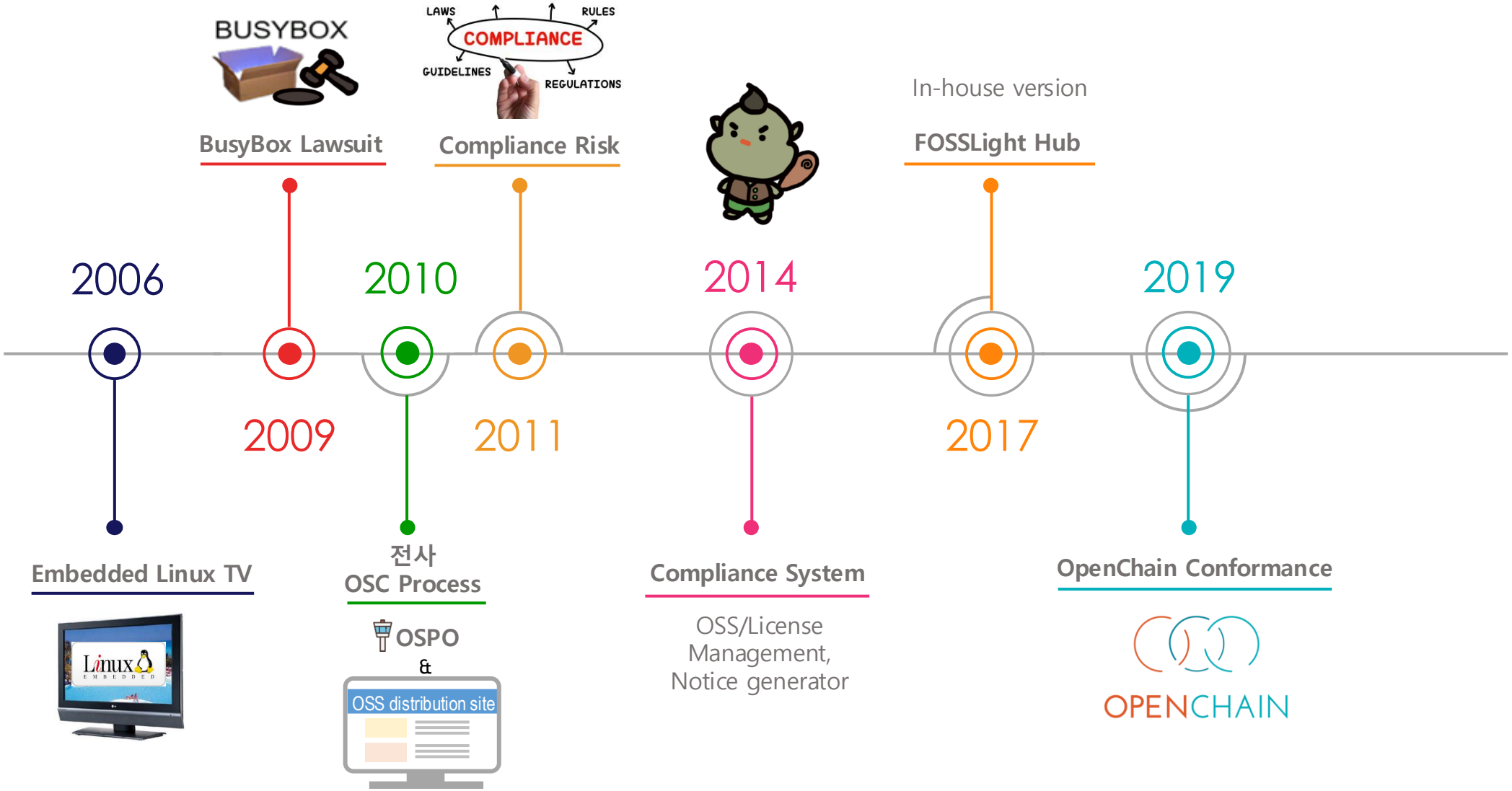
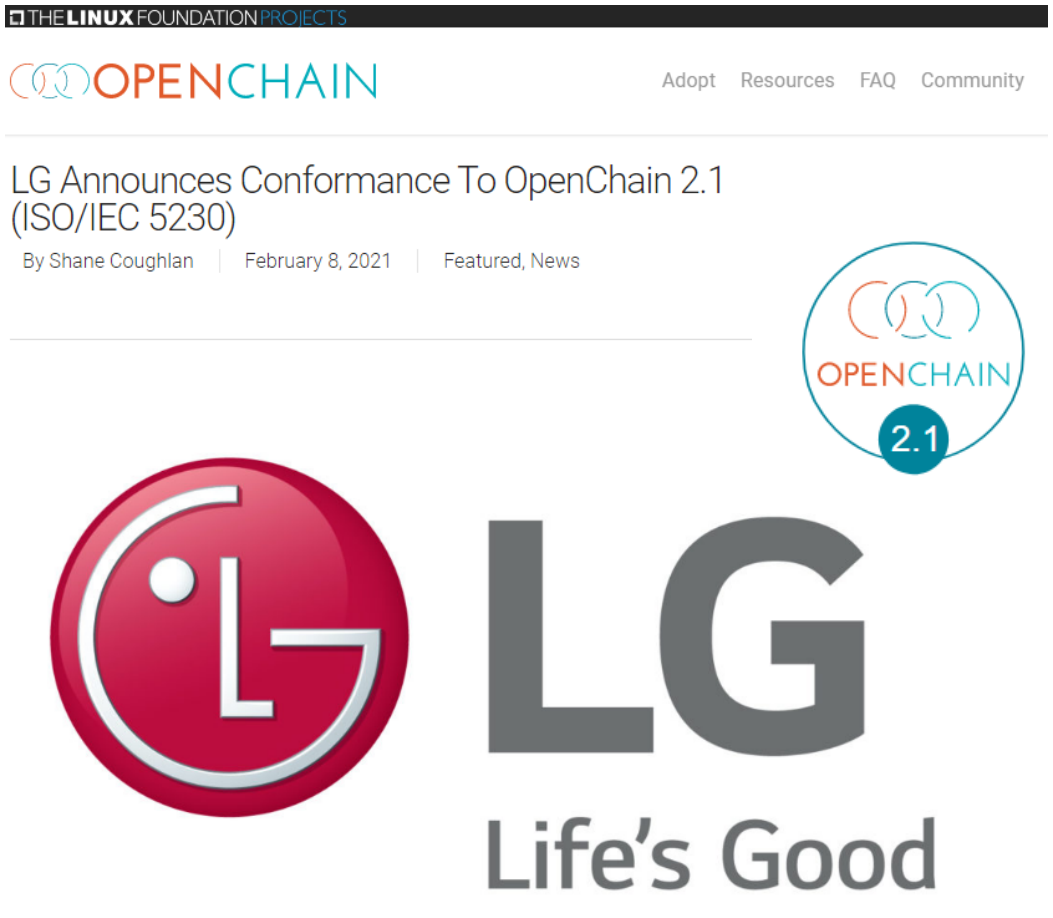


# 2019 – OpenChain Conformance


THE LINUX FOUNDATION PROJECTS

OPENCHAIN

Adopt Resources FAQ Community

LG Announces Conformance To OpenChain 2.1 (ISO/IEC 5230)

By Shane Coughlan | February 8, 2021 | Featured, News

OPENCHAIN 2.1

LG

Life's Good

Today the OpenChain Project announced LG Electronic's conformance to OpenChain 2.1 (ISO/IEC 5230), the International Standard for open source license compliance. This standard defines the

OpenChain Spec.

1. Program Foundation
1.1. Policy
1.2. Competence
1.3. Awareness
1.4. Program scope
1.5. License Obligations

2. Relevant tasks defined and supported
2.1. Access
2.2. Effectively resourced

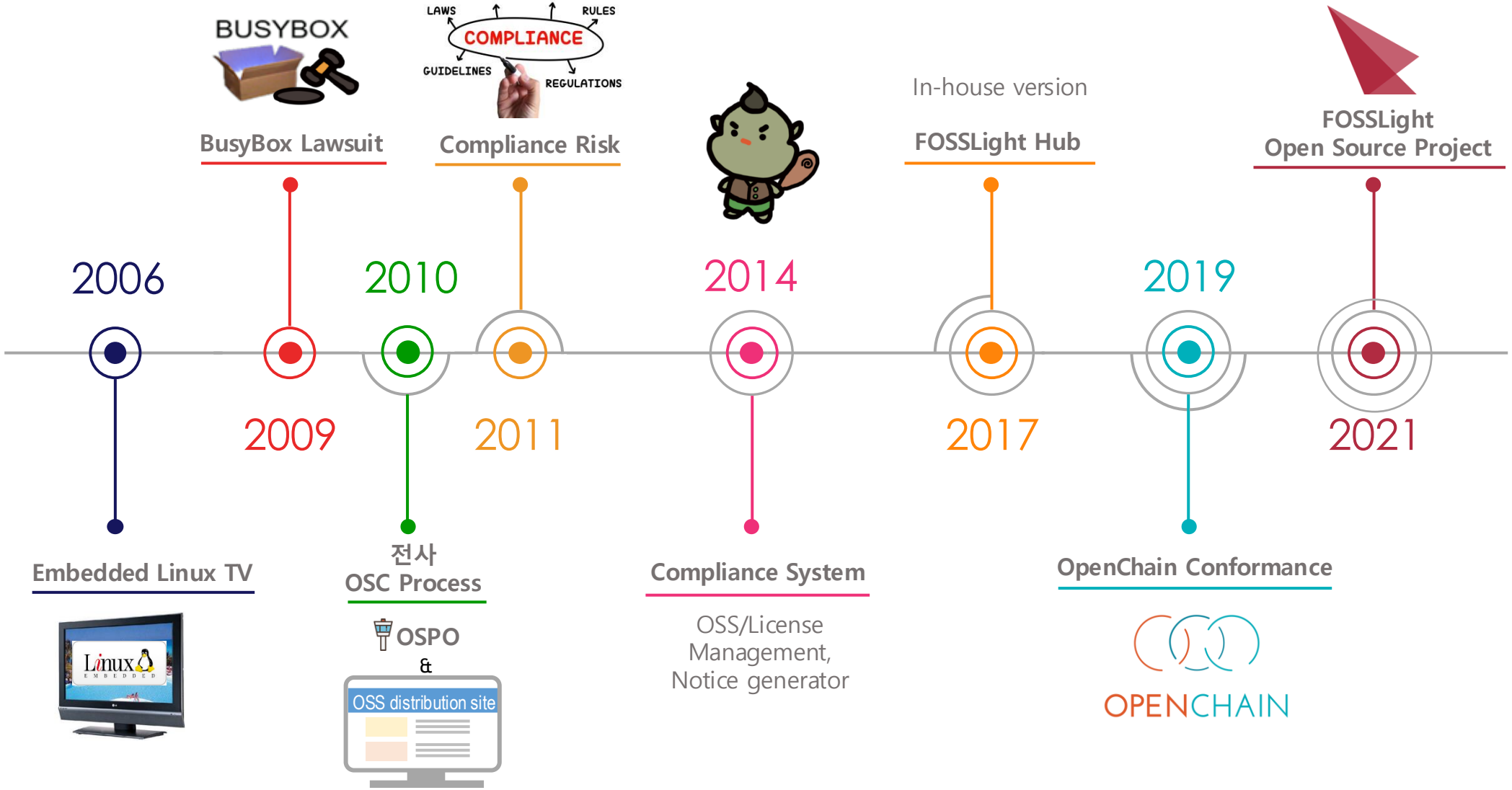
3. Open source content review and approval
3.1. Bill of materials
3.2. License compliance

4. Complinace artifact creation and delivery
4.1. Compliance artifacts

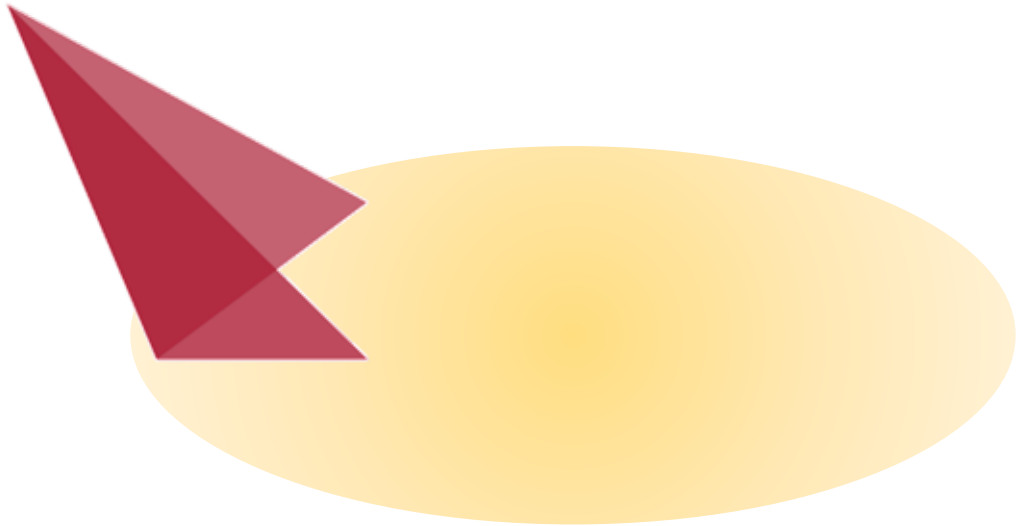
5. Understanding open source community engagments
5.1. Contributions

6. Adherence to the spcification requirements
6.1. Conformance
6.2. Duration

# FOSSLight의 역사



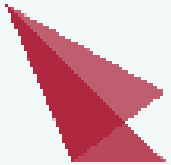
# 2021 – FOSSLight Open Source Project



FOSSLight

FOSS (Free and Open Source Software) + Light

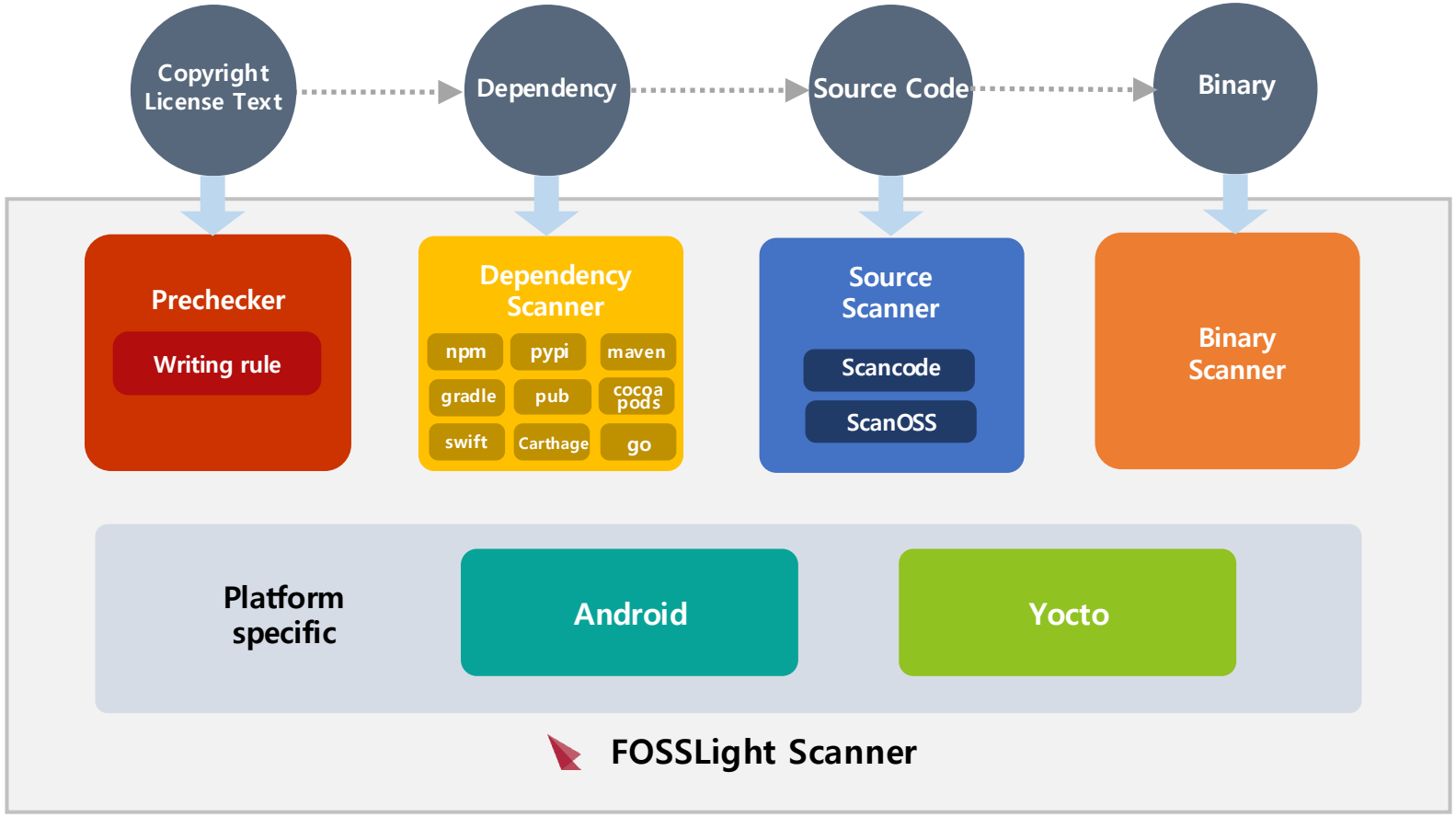
# FOSSLight Scanner



# About FOSSLight Scanner

- 오픈 소스 분석을 한번에 수행 가능한 툴
- 소스 코드, 바이너리, 디펜던시에 대한 오픈 소스 분석 가능
- LG전자가 오픈 소스로 공개한 오픈 소스 분석 툴
- 오픈 소스 정보를 포함한 보고서(Report) 생성
  - cyclonedx, spdx , csv, excel, json, yaml 포맷 지원

# FOSSLight Scanner



# FOSSLight Scanner – Dependency

- **Transitive Dependency까지 확인하여 오픈소스 이름 및 버전, 라이선스를 검출함**
- **지원 패키지 매니저 : Gradle, Maven, NPM, PIP, Pub, Cocoapods, Swift, Carthage, Go 등**

Dependency 분석을 위해서는 미리 수행에 필요한 전제 조건 수행 필요함


| ID | Source Name or | OSS Name | OSS Version | License | Download Location | Homepage |
|---|---|---|---|---|---|---|
| - | [Name of the Sc | [Name of the OSS used i | [Version Number | [License of the C | [Download URL or a specific location within a VCS for the OSS] | [Web site that serves as the OSS's home page] |
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| 2 | pubspec.yaml | pub:async | 2.5.0-nullsafety.1 | BSD-3-Clause | https://pub.dev/packages/pub:async/versions/2.5.0-nullsafety.1 | https://www.github.com/dart-lang/async |
| 3 | pubspec.yaml | pub:cached_network_ima | 2.3.2+1 | MIT | https://pub.dev/packages/pub:cached_network_image/versions/2.3.2+1 | https://github.com/Baseflow/flutter_cached_netwo |
| 4 | pubspec.yaml | pub:characters | 1.1.0-nullsafety.3 | BSD-3-Clause | https://pub.dev/packages/pub:characters/versions/1.1.0-nullsafety.3 | https://www.github.com/dart-lang/characters |
| 5 | pubspec.yaml | pub:charcode | 1.2.0-nullsafety.1 | BSD-3-Clause | https://pub.dev/packages/pub:charcode/versions/1.2.0-nullsafety.1 | https://github.com/dart-lang/charcode |
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| 7 | pubspec.yaml | pub:collection | 1.15.0-nullsafety.3 | BSD-3-Clause | https://pub.dev/packages/pub:collection/versions/1.15.0-nullsafety.3 | https://www.github.com/dart-lang/collection |
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| 10 | pubspec.yaml | pub:crypto | 2.1.5 | BSD-3-Clause | https://pub.dev/packages/pub:crypto/versions/2.1.5 | https://www.github.com/dart-lang/crypto |
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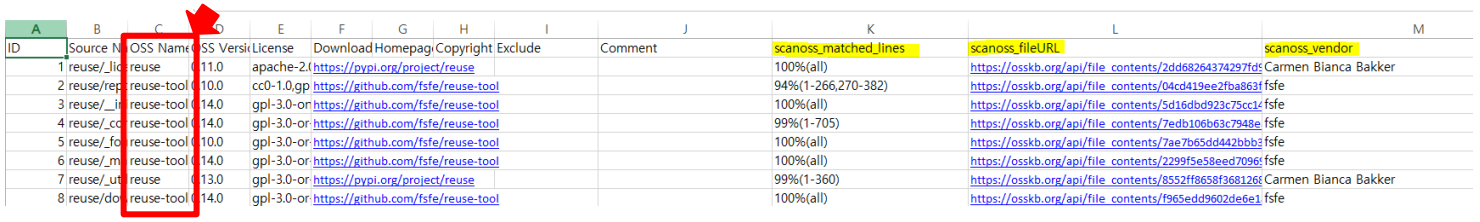
| 12 | pubspec.yaml | pub:file | 5.2.1 | BSD-3-Clause | https://pub.dev/packages/pub:file/versions/5.2.1 | https://github.com/google/file.dart |
| 13 | pubspec.yaml | pub:flutter | 1.22.0 | BSD-3-Clause | https://pub.dev/packages/pub:flutter/versions/1.22.0 | http://flutter.dev |
| 14 | pubspec.yaml | pub:flutter_blurhash | 0.5.0 | MIT | https://pub.dev/packages/pub:flutter_blurhash/versions/0.5.0 | https://github.com/fluttercommunity/flutter_blurh |
| 15 | pubspec.yaml | pub:flutter_cache_manage | 1.4.2 | MIT | https://pub.dev/packages/pub:flutter_cache_manager/versions/1.4.2 | https://github.com/Baseflow/flutter_cache_manage |

# FOSSLight Scanner – Source

- 소스 코드를 분석하여 오픈소스 및 버전, 라이선스를 검출
- 여러 스캐너 지원을 통해 String Search뿐만 아니라 Snippet 매칭 지원



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| 3 | 2 | reuse/rep | reuse-tool | 0.10.0 | cc0-1.0,gp | https://github.com/fsfe/reuse-tool | | | | | 94%(1-266,270-382) | https://osskb.org/api/file_contents/04cd419ee2fba863f | fsfe |
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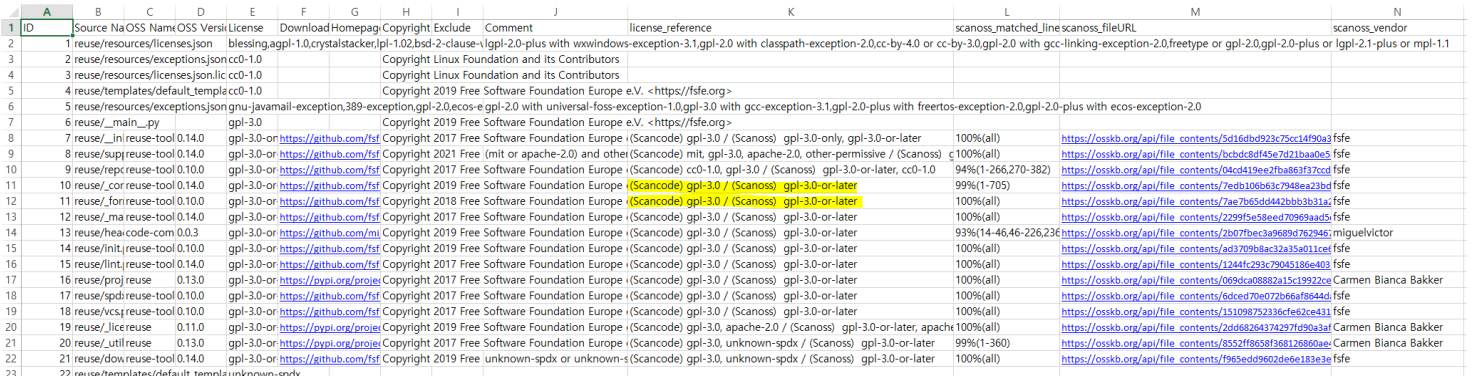

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| 2 | 1 | reuse/resources/licenses.json | | | blessing,a | gpl-1.0,crystalstacker, | lpl-1.02,bsd-2-clause-\ | lgpl-2.0-plus with wxwindows-exception-3.1,gpl-2.0 with classpath-exception-2.0,cc-by-4.0 or cc-by-3.0,gpl-2.0 with gcc-linking-exception-2.0,freetype or gpl-2.0,gpl-2.0-plus or | | | | | lgpl-2.1-plus or mpl-1.1 |
| 3 | 2 | reuse/resources/exceptions.json | | | cc0-1.0 | | | Copyright Linux Foundation and its Contributors | | | | | | |
| 4 | 3 | reuse/resources/licenses.json.lic | | | cc0-1.0 | | | Copyright Linux Foundation and its Contributors | | | | | | |
| 5 | 4 | reuse/templates/default_templa | | | cc0-1.0 | | | Copyright 2019 Free Software Foundation Europe e.V. <https://fsfe.org> | | | | | | |
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| 7 | 6 | reuse/__main__.py | | | gpl-3.0 | | | Copyright 2019 Free Software Foundation Europe e.V. <https://fsfe.org> | | | | | | |
| 8 | 7 | reuse/__in | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-only, gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/5d16dbd923c75cc14f90a3 | fsfe |
| 9 | 8 | reuse/sup | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2021 Free (mit or apache-2.0) and othe | | (Scancode) mit, gpl-3.0, apache-2.0, other-permissive / (Scanoss) c | | 100%(all) | https://osskb.org/api/file_contents/bcbdc8df45e7d21baa0e5 | fsfe |
| 10 | 9 | reuse/rep | reuse-tool | 0.10.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) cc0-1.0, gpl-3.0 / (Scanoss) gpl-3.0-or-later, cc0-1.0 | | 94%(1-266,270-382) | https://osskb.org/api/file_contents/04cd419ee2fba863f37ccd | fsfe |
| 11 | 10 | reuse/_co | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2019 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 99%(1-705) | https://osskb.org/api/file_contents/7edb106b63c7948ea23bd | fsfe |
| 12 | 11 | reuse/_fo | reuse-tool | 0.10.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2018 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/7ae7b65dd442bbb3b31a2 | fsfe |
| 13 | 12 | reuse/_ma | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/2299f5e58eed70969aad5 | fsfe |
| 14 | 13 | reuse/hea | code-com | 0.0.3 | gpl-3.0-or | https://github.com/mi | | Copyright 2019 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 93%(14-46,46-226,23 | https://osskb.org/api/file_contents/2b07fbec3a9689d762946 | miguelvictor |
| 15 | 14 | reuse/init | reuse-tool | 0.10.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2019 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/ad3709b8ac32a35a011ce | fsfe |
| 16 | 15 | reuse/lint | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/1244fc293c79045186e403 | fsfe |
| 17 | 16 | reuse/proj | reuse | 0.13.0 | gpl-3.0-or | https://pypi.org/proje | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/069dca08882a15c19922ce | Carmen Bianca Bakker |
| 18 | 17 | reuse/spd | reuse-tool | 0.10.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/6dced70e072b66af8644d | fsfe |
| 19 | 18 | reuse/vcs | reuse-tool | 0.10.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0 / (Scanoss) gpl-3.0-or-later | | 100%(all) | https://osskb.org/api/file_contents/151098752336cfe62ce431 | fsfe |
| 20 | 19 | reuse/_lice | reuse | 0.11.0 | gpl-3.0-or | https://pypi.org/proje | | Copyright 2019 Free Software Foundation Europe | | (Scancode) gpl-3.0, apache-2.0 / (Scanoss) gpl-3.0-or-later, apache | | 100%(all) | https://osskb.org/api/file_contents/2dd68264374297fd90a3af | Carmen Bianca Bakker |
| 21 | 20 | reuse/_util | reuse | 0.13.0 | gpl-3.0-or | https://pypi.org/proje | | Copyright 2017 Free Software Foundation Europe | | (Scancode) gpl-3.0, unknown-spdx / (Scanoss) gpl-3.0-or-later | | 99%(1-360) | https://osskb.org/api/file_contents/8552ff8658f368126860ae | Carmen Bianca Bakker |
| 22 | 21 | reuse/dow | reuse-tool | 0.14.0 | gpl-3.0-or | https://github.com/fsf | | Copyright 2019 Free | | unknown-spdx or unknown-s | (Scancode) gpl-3.0, unknown-spdx / (Scanoss) gpl-3.0-or-later | 100%(all) | https://osskb.org/api/file_contents/f965edd9602de6e183e3e | fsfe |
| 23 | 22 | reuse/templates/default_templa | | | unknown-spdx | | | | | | | | | |

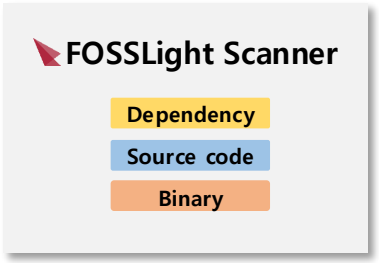
# FOSSLight Scanner - Binary

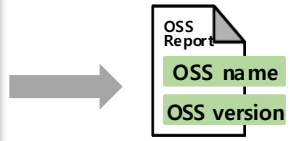
- 바이너리 목록 추출하여 Database에서 오픈소스 정보 확인
- Jar 파일에 대하여 보안 취약점 확인도 가능


| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ID | Source Na | OSS Name | OSS Versi | License | Download Location | Homepage | Copyright Text | Exclude | Comment | Vulnerability Link |
| 2 | 22 | lib/aho-cc | hankcs:ah | 1.2.3 | Apache License Version 2.0 | hankcs/AhoCorasickDoubleArrayTrie | | | | OWASP Result. | |
| 3 | 23 | lib/androi | vaadin.ext | 0.0.201311 | Apache License 2.0 | http://developer.android.com/sdk | | | | OWASP Result. | |
| 4 | 24 | lib/annota | jetbrains:a | 22.0.0 | The Apache Software License V | JetBrains/java-annotations | | | | OWASP Result. | |
| 5 | 25 | lib/ant-1.1 | apache.an | 1.10.12 | | https://ant.apache.org/ | | | | OWASP Result. | https://nvd.nist.gov/vuln/search/results?form_type=Ad |
| 6 | 26 | lib/checke | checkerfra | 3.12.0 | The MIT License | https://checkerframework.org | | | | OWASP Result. | |
| 7 | 27 | lib/comm | commons- | 1.9.4 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-beanutils/ | | | | OWASP Result. | https://nvd.nist.gov/vuln/search/results?form_type=Ad |
| 8 | 28 | lib/comm | commons- | 1.5.0 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-cli/ | | | | OWASP Result. | |
| 9 | 29 | lib/comm | commons- | 1.15 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-codec/ | | | | OWASP Result. | |
| 10 | 30 | lib/comm | commons- | 3.2.2 | http://www.apache.org/licenses/ | http://commons.apache.org/collections/ | | | | OWASP Result. | https://nvd.nist.gov/vuln/search/results?form_type=Ad |
| 11 | 31 | lib/comm | apache.co | 1.21 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-compress/ | | | | OWASP Result. | https://nvd.nist.gov/vuln/search/results?form_type=Ad |
| 12 | 32 | lib/comm | apache.co | 2.9.0 | https://www.apache.org/licenses/ | https://commons.apache.org/dbcp/ | | | | OWASP Result. | |
| 13 | 33 | lib/comm | commons- | 2.1 | http://www.apache.org/licenses/ | http://commons.apache.org/digester/ | | | | OWASP Result. | |
| 14 | 34 | lib/comm | commons- | 2.11.0 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-io/ | | | | OWASP Result. | https://nvd.nist.gov/vuln/search/results?form_type=Ad |
| 15 | 35 | lib/comm | apache.co | 2.2.1 | https://www.apache.org/licenses/ | LICENSE-2.0.txt | | | | OWASP Result. | |
| 16 | 36 | lib/comm | apache.co | 3.12.0 | https://www.apache.org/licenses/ | https://commons.apache.org/proper/commons-lang/ | | | | OWASP Result. | |
| 17 | 37 | lib/comm | commons- | 1.2 | http://www.apache.org/licenses/ | http://commons.apache.org/proper/commons-logging/ | | | Exclude | OWASP Result. Excluded due to Binary DB. | |
| 18 | 38 | lib/comm | commons- | 1.2 | Apache-2.0 | | | | | Binary DB Result | |

# FOSSLight Scanner를 통한 SBOM 생성

- FOSSLight Scanner 실행하여 오픈소스 분석 보고서 생성




| | Source Name or Path | OSS Name | OSS Version | License | Download Location | Homepage | opyright Tex | Exclude | Comment | ependencie |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | package.json | npm:lge-example | 1.0.0 | Apache-2.0 | https://github.com/LGE-OSS/example | https://www.npmjs.com/package/lge-example | | | root packa | npm:copy-. |
| 2 | package.json | npm:copy-anything | 2.0.6 | MIT | https://github.com/mesqueeb/copy-anything | https://www.npmjs.com/package/copy-anything | | | direct | npm:is-wha |
| 3 | package.json | npm:is-what | 3.14.1 | MIT | https://github.com/mesqueeb/is-what | https://www.npmjs.com/package/is-what | | | transitive | |
| 4 | requirements.txt | pypi:CacheControl | 0.12.11 | Apache Software License | https://pypi.org/project/CacheControl/0.12.11 | https://github.com/ionrock/cachecontrol | | | transitive | pypi:msgpa |
| 5 | requirements.txt | pypi:Deprecated | 1.2.14 | MIT License | https://pypi.org/project/Deprecated/1.2.14 | https://github.com/tantale/deprecated | | | transitive | pypi:wrapt( |
| 6 | requirements.txt | pypi:Jinja2 | 3.1.2 | BSD License | https://pypi.org/project/Jinja2/3.1.2 | https://palletsprojects.com/p/jinja/ | | | transitive | pypi:Marku |
| 7 | requirements.txt | pypi:MarkupSafe | 2.1.3 | BSD License | https://pypi.org/project/MarkupSafe/2.1.3 | https://palletsprojects.com/p/markupsafe/ | | | transitive | |
| 8 | requirements.txt | pypi:PyGithub | 2.1.1 | GNU Library or Lesser Gen | https://pypi.org/project/PyGithub/2.1.1 | https://github.com/pygithub/pygithub | | | transitive | pypi:Depre |
| 9 | requirements.txt | pypi:PyJWT | 2.8.0 | MIT License | https://pypi.org/project/PyJWT/2.8.0 | https://github.com/jpadilla/pyjwt | | | transitive | |
| 10 | requirements.txt | pypi:PyNaCl | 1.5.0 | Apache License 2.0 | https://pypi.org/project/PyNaCl/1.5.0 | https://github.com/pyca/pynacl/ | | | transitive | pypi:cffi(1.1 |
| 11 | requirements.txt | pypi:PyYAML | 6.0.1 | MIT License | https://pypi.org/project/PyYAML/6.0.1 | https://pyyaml.org/ | | | transitive | |
| 12 | requirements.txt | pypi:XlsxWriter | 3.1.8 | BSD License | https://pypi.org/project/XlsxWriter/3.1.8 | https://github.com/jmcnamara/XlsxWriter | | | transitive | |
| 13 | requirements.txt | pypi:appdirs | 1.4.4 | MIT License | https://pypi.org/project/appdirs/1.4.4 | http://github.com/ActiveState/appdirs | | | transitive | |
| 14 | requirements.txt | pypi:attrs | 23.1.0 | MIT License | https://pypi.org/project/attrs/23.1.0 | https://www.attrs.org/en/stable/changelog.html | | | transitive | |
| 15 | requirements.txt | pypi:beautifulsoup4 | 4.12.2 | MIT License | https://pypi.org/project/beautifulsoup4/4.12.2 | https://www.crummy.com/software/BeautifulSoup/bs4/ | | | transitive | pypi:soupsi |
| 16 | requirements.txt | pypi:binaryornot | 0.4.4 | BSD License | https://pypi.org/project/binaryornot/0.4.4 | https://github.com/audreyr/binaryornot | | | transitive | pypi:charde |
| 17 | requirements.txt | pypi:boolean.py | 4.0 | BSD-2-Clause | https://pypi.org/project/boolean.py/4.0 | https://github.com/bastikr/boolean.py | | | transitive | |
| 18 | requirements.txt | pypi:certifi | 2023.7.22 | Mozilla Public License 2.0 | https://pypi.org/project/certifi/2023.7.22 | https://github.com/certifi/python-certifi | | | transitive | |
| 19 | requirements.txt | pypi:cffi | 1.16.0 | MIT License | https://pypi.org/project/cffi/1.16.0 | http://cffi.readthedocs.org | | | transitive | pypi:pycpa |
| 20 | requirements.txt | pypi:chardet | 5.2.0 | GNU Lesser General Public | https://pypi.org/project/chardet/5.2.0 | https://github.com/chardet/chardet | | | transitive | |

SRC_FL_Source | SRC_FL_Dependency | BIN_FL_Binary

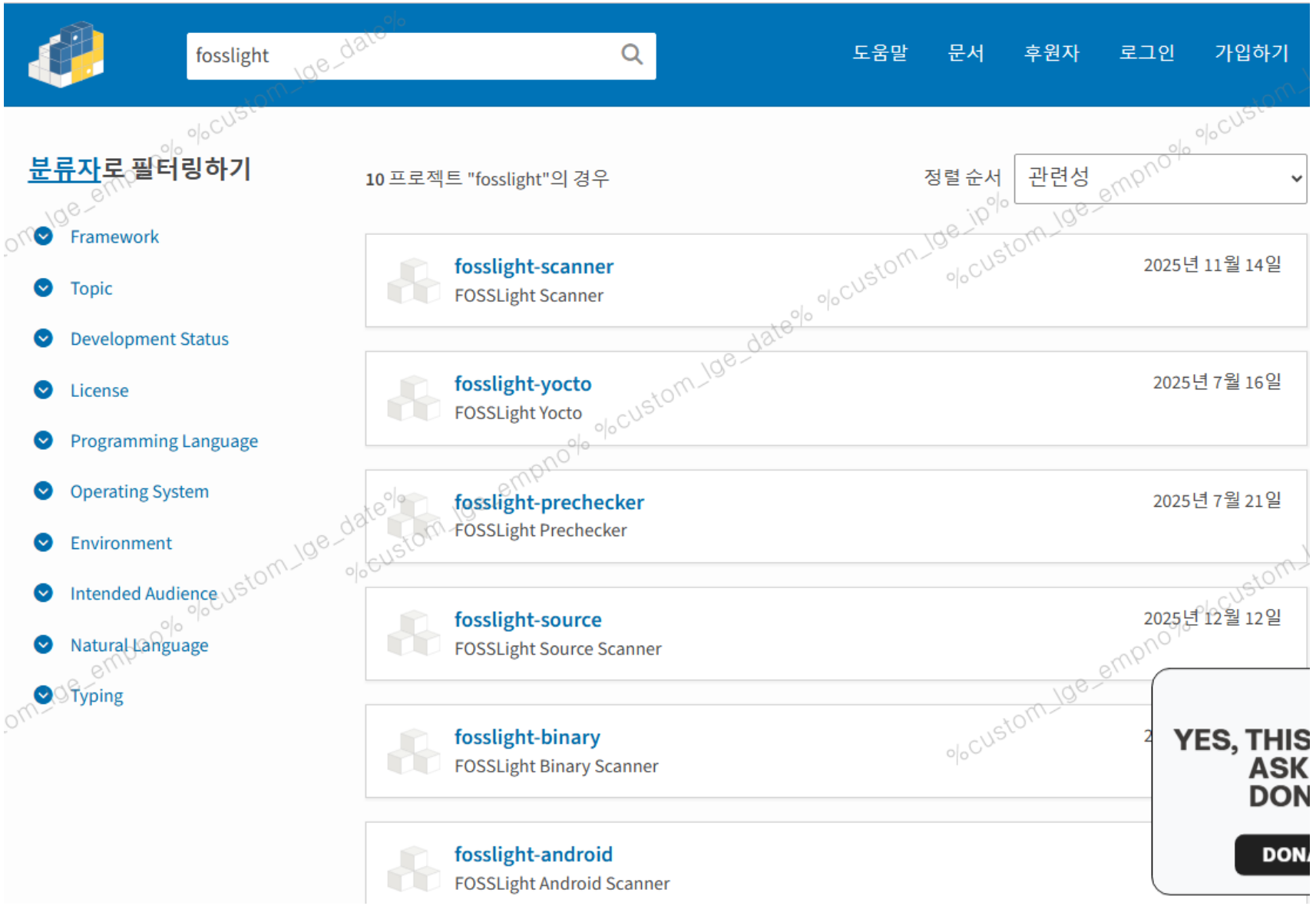
# FOSSLight Scanner 설치 및 실행

# FOSSLight Scanner OS별 지원 형식

| | Ubuntu | Windows | MacOS |
|---|---|---|---|
| 실행 파일 (.exe) | FOSSLight Binary Scanner | FOSSLight Binary Scanner,<br>FOSSLight Dependency Scanner | FOSSLight Binary Scanner |
| PyPI 패키지 | 전체 Scanner 지원 | | |

- 실행 파일
  - FOSSLight Dependency Scanner (Windows만 가능)
    - https://github.com/fosslight/fosslight_dependency_scanner/releases
  - FOSSLight Binary Scanner (Ubuntu, MacOS, Windows 가능)
    - https://github.com/fosslight/fosslight_binary_scanner/releases

# FOSSLight Scanner PyPI 패키지



# Pypi 통해 설치 방법

- **Python Package로 설치**

```
$ pip install fosslight_scanner
```

- **FOSSLight Scanner 한 번에 설치 가능**
  - FOSSLight Dependency Scanner
  - FOSSLight Source Scanner
  - FOSSLight Binary Scanner

❖ **하기 Scanner는 별도로 설치해야 함**

- FOSSLight Android Scanner ($ pip install fosslight_android)
- FOSSLight Yocto Scanner ($ pip install fosslight_yocto)
- FOSSLight Prechecker ($ pip install fosslight_prechecker)

# FOSSLight Scanner 실행 방법

- **여러 FOSSLight Scanner의 통합 버전**

```
$ fosslight [Mode] [option1] <arg1> [option2] <arg2>
```

- Mode:

| | |
|---|---|
| all | 모든 Scanner 실행 |
| source | FOSSLight Source Scanner 실행 |
| dependency | FOSSLight Dependency Scanner 실행 |
| binary | FOSSLight Binary Scanner 실행 |
| compare | FOSSLight reports 를 비교 |

- Options:

| | |
|---|---|
| -h | Help message 출력 |
| -p <input path> | 분석할 경로 (default: 현재 위치 path) |
| -w <link> | 다운받아 분석할 링크 |
| -f <format> | 결과 파일 포맷 (default: excel, 여러 개 지정 가능) |
| -e <exclude path> | 분석 결과에서 exclude 처리하고자하는 경로 |
| -o <output path> | 결과 파일 저장 경로(파일명 지정 가능) (default: fosslight_report_{date}) |
| -c <number> | 분석 수행할 프로세스 수 (default: 시스템의 cpu 수 -1) |
| -r | Raw data 보존 |
| -t | Progress Bar 숨기기 |
| -v | FOSSLight Scanner 버전 출력 |

- Options for only 'all' or 'dependency' mode

| | |
|---|---|
| -d <dependency_arg> | Dependency 분석을 위한 추가 arguments |

# FOSSLight Scanner 실행 방법

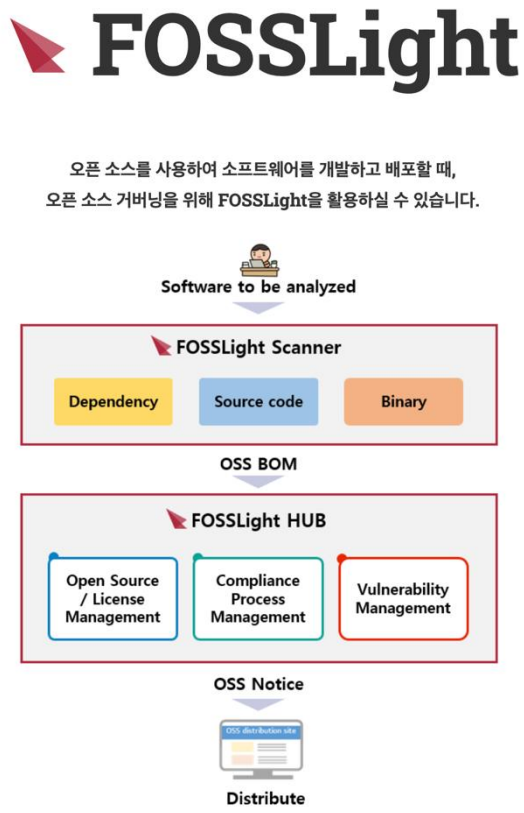
```
fosslight –p path_to_analyze
```

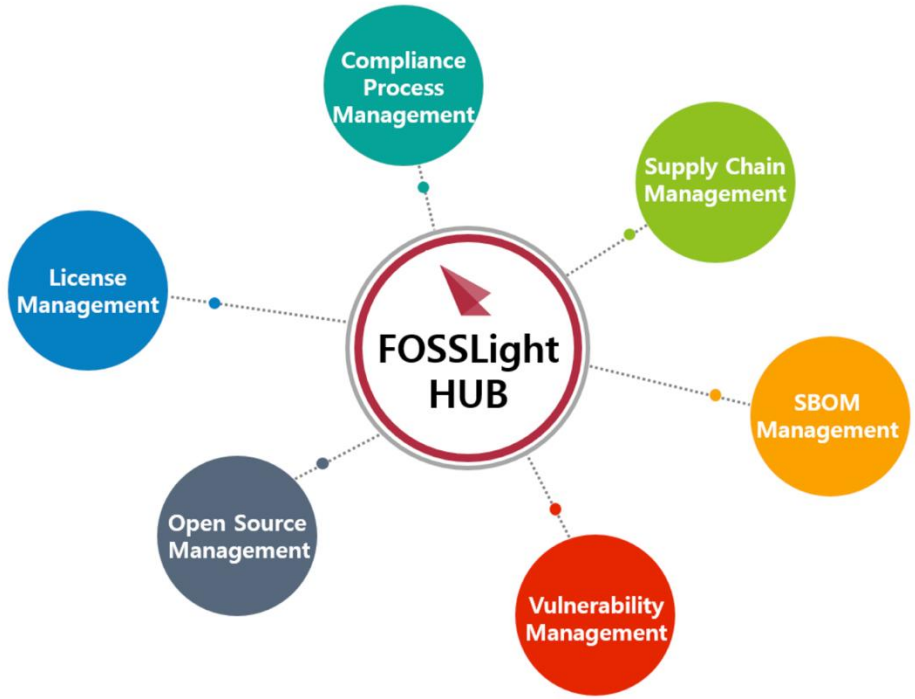
# FOSSLight Hub

# FOSSLight Hub



## 오픈 소스 거버넌스를 위한 오픈 소스 관리 도구

# FOSSLight Hub

## 오픈소스 및 라이선스 관리

- 오픈소스 정보 통합 관리
- 라이선스 의무사항 및 제약사항 확인
- 오픈소스 일괄 등록

## 컴플라이언스 프로세스 관리

- 올인원 오픈소스 컴플라이언스 수행
- 고지문 자동 생성 및 공개 소스코드 검증
- 이슈 트래킹

## 보안취약점 관리

- 보안취약점 조회
- 프로젝트별 보안취약점 모니터링 (자동 메일 알림)

## 사전점검

- 오픈소스 자동 분석
- 라이선스 자동 검출
- 라이선스 의무사항 및 보안취약점 알림

## SBOM 관리

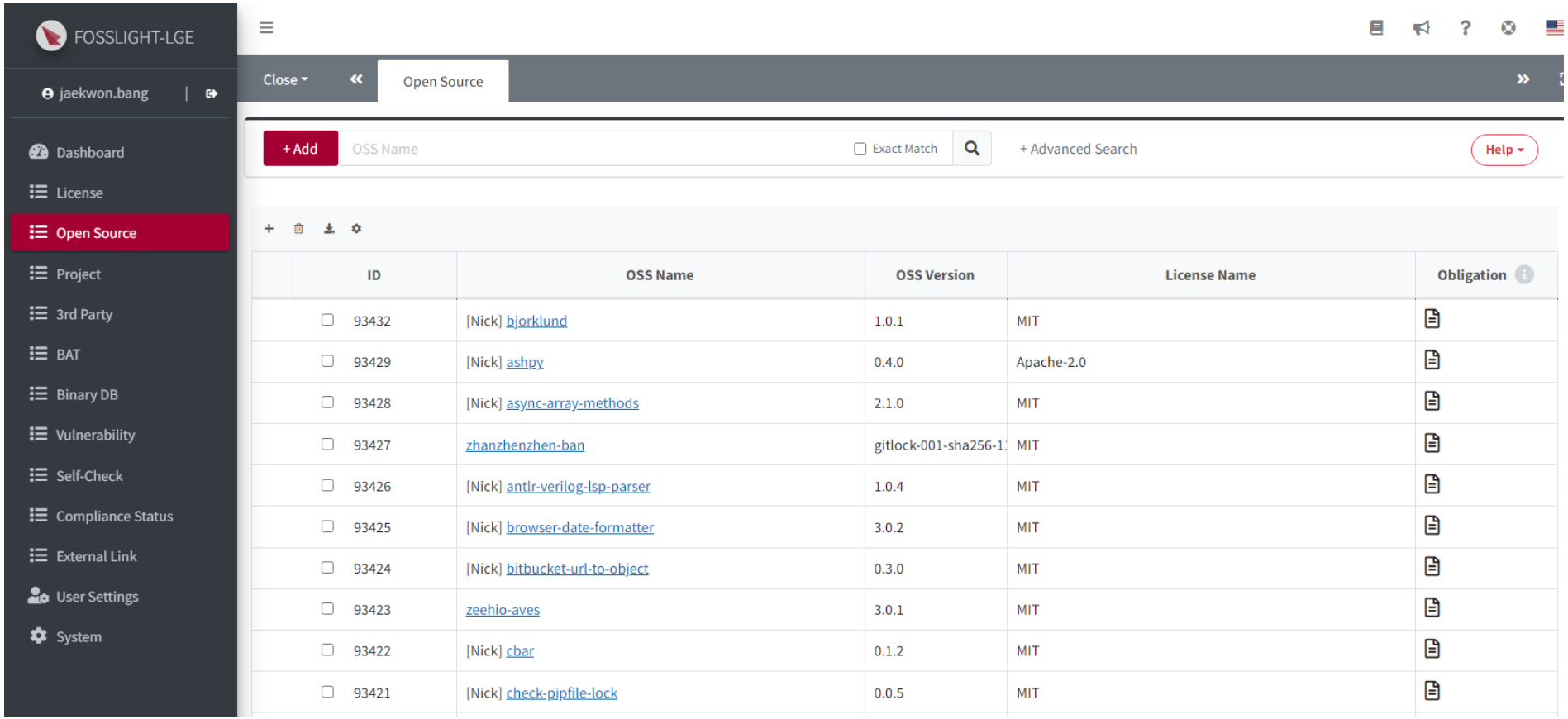
- 오픈소스 및 상용 소프트웨어 목록 관리
- 소프트웨어별 사용 프로젝트 검색
- SPDX, CycloneDX 문서 지원 (ISO 표준)

## SW 공급망 관리

- 공급받은 타사 소프트웨어 관리
- 오픈 소스 확약서 관리
- 프로젝트 자동 연계

# 오픈소스 관리

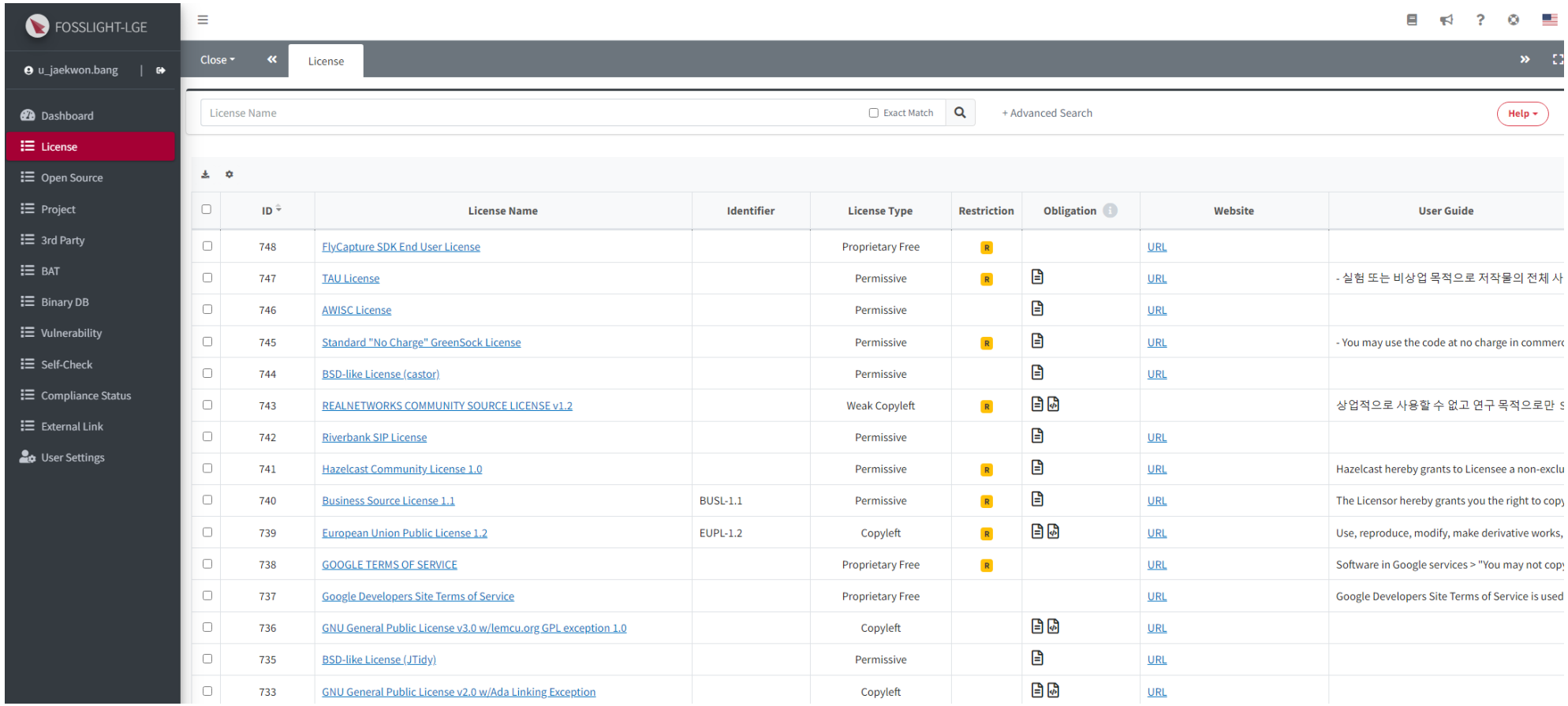
- 오픈소스 버전별로 라이선스 및 의무 사항 관리




| ID | OSS Name | OSS Version | License Name | Obligation |
|---|---|---|---|---|
| 93432 | [Nick] bjorklund | 1.0.1 | MIT | |
| 93429 | [Nick] ashpy | 0.4.0 | Apache-2.0 | |
| 93428 | [Nick] async-array-methods | 2.1.0 | MIT | |
| 93427 | zhanzhenzhen-ban | gitlock-001-sha256-1 | MIT | |
| 93426 | [Nick] antlr-verilog-lsp-parser | 1.0.4 | MIT | |
| 93425 | [Nick] browser-date-formatter | 3.0.2 | MIT | |
| 93424 | [Nick] bitbucket-url-to-object | 0.3.0 | MIT | |
| 93423 | zeehio-aves | 3.0.1 | MIT | |
| 93422 | [Nick] cbar | 0.1.2 | MIT | |
| 93421 | [Nick] check-pipfile-lock | 0.0.5 | MIT | |

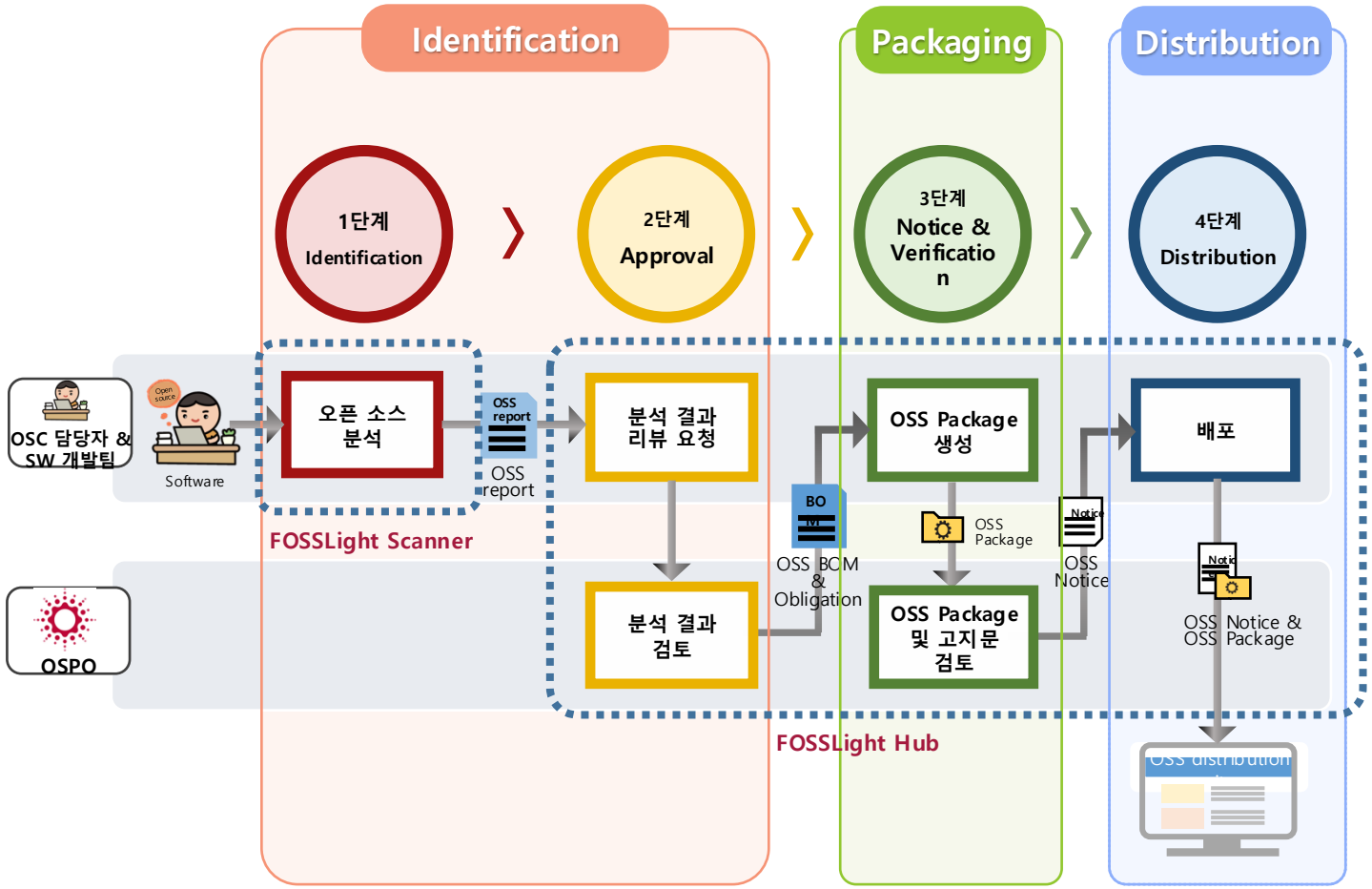
# 라이선스 관리

- 라이선스별로 의무사항, 제약사항, 준수사항 관리



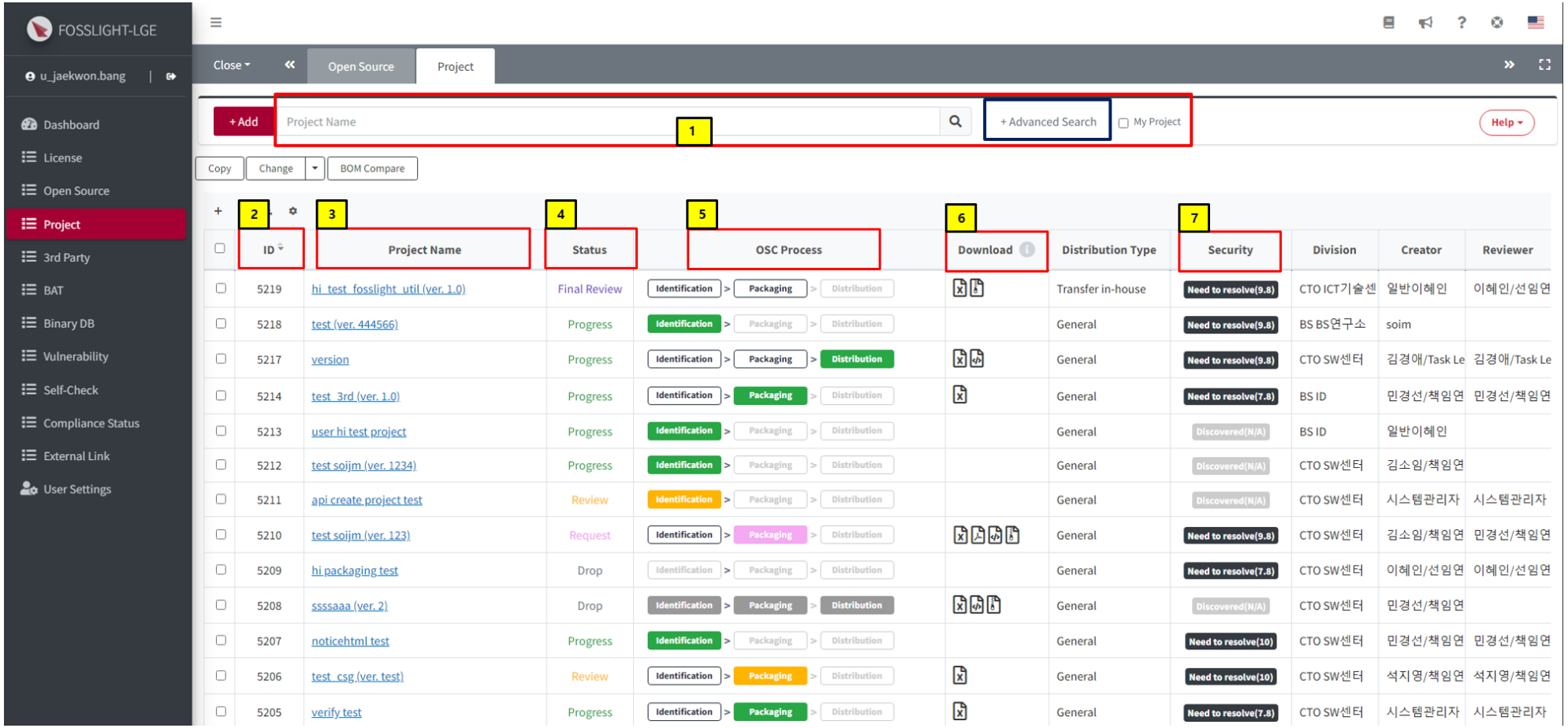

| ID | License Name | Identifier | License Type | Restriction | Obligation | Website | User Guide |
|---|---|---|---|---|---|---|---|
| 748 | FlyCapture SDK End User License | | Proprietary Free | R | | URL | |
| 747 | TAU License | | Permissive | R | | URL | - 실험 또는 비상업 목적으로 저작물의 전체 사 |
| 746 | AWISC License | | Permissive | | | URL | |
| 745 | Standard "No Charge" GreenSock License | | Permissive | R | | URL | - You may use the code at no charge in commerc |
| 744 | BSD-like License (castor) | | Permissive | | | URL | |
| 743 | REALNETWORKS COMMUNITY SOURCE LICENSE v1.2 | | Weak Copyleft | R | | | 상업적으로 사용할 수 없고 연구 목적으로만 s |
| 742 | Riverbank SIP License | | Permissive | | | URL | |
| 741 | Hazelcast Community License 1.0 | | Permissive | R | | URL | Hazelcast hereby grants to Licensee a non-exclu |
| 740 | Business Source License 1.1 | BUSL-1.1 | Permissive | R | | URL | The Licensor hereby grants you the right to copy |
| 739 | European Union Public License 1.2 | EUPL-1.2 | Copyleft | R | | URL | Use, reproduce, modify, make derivative works, |
| 738 | GOOGLE TERMS OF SERVICE | | Proprietary Free | R | | URL | Software in Google services > "You may not copy |
| 737 | Google Developers Site Terms of Service | | Proprietary Free | | | URL | Google Developers Site Terms of Service is used |
| 736 | GNU General Public License v3.0 w/lemcu.org GPL exception 1.0 | | Copyleft | | | URL | |
| 735 | BSD-like License (JTidy) | | Permissive | | | URL | |
| 733 | GNU General Public License v2.0 w/Ada Linking Exception | | Copyleft | | | URL | |

# 참고) LG전자 오픈소스 컴플라이언스 프로세스



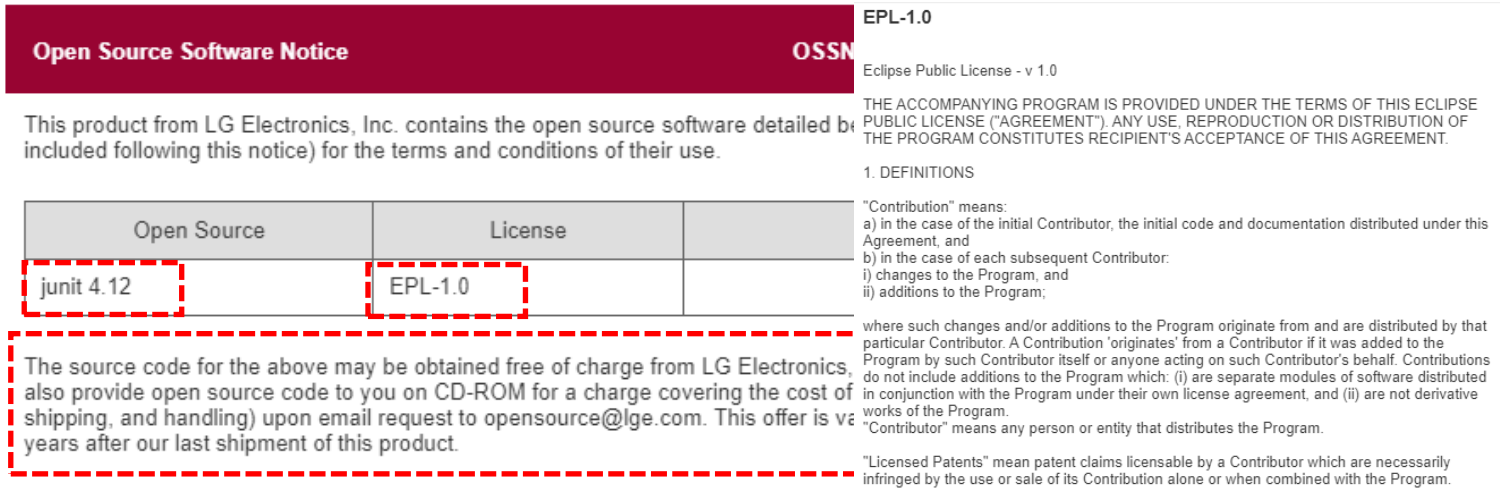
# 컴플라이언스 프로세스 관리

- 단계별 프로세스 진행 및 이력 조회
- 프로젝트 검색, 부서별 검색, 오픈소스별 검색



# OSS 고지문 발급

- 사용된 Open Source 및 저작권, License를 고지하기 위한 OSS 고지문 발급
- 공개할 소스코드 취합한 OSS Package 리뷰
- 지원 포맷 : HTML, TEXT, SPDX, CycloneDX



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| Open Source | License | |
|---|---|---|
| junit 4.12 | EPL-1.0 | |

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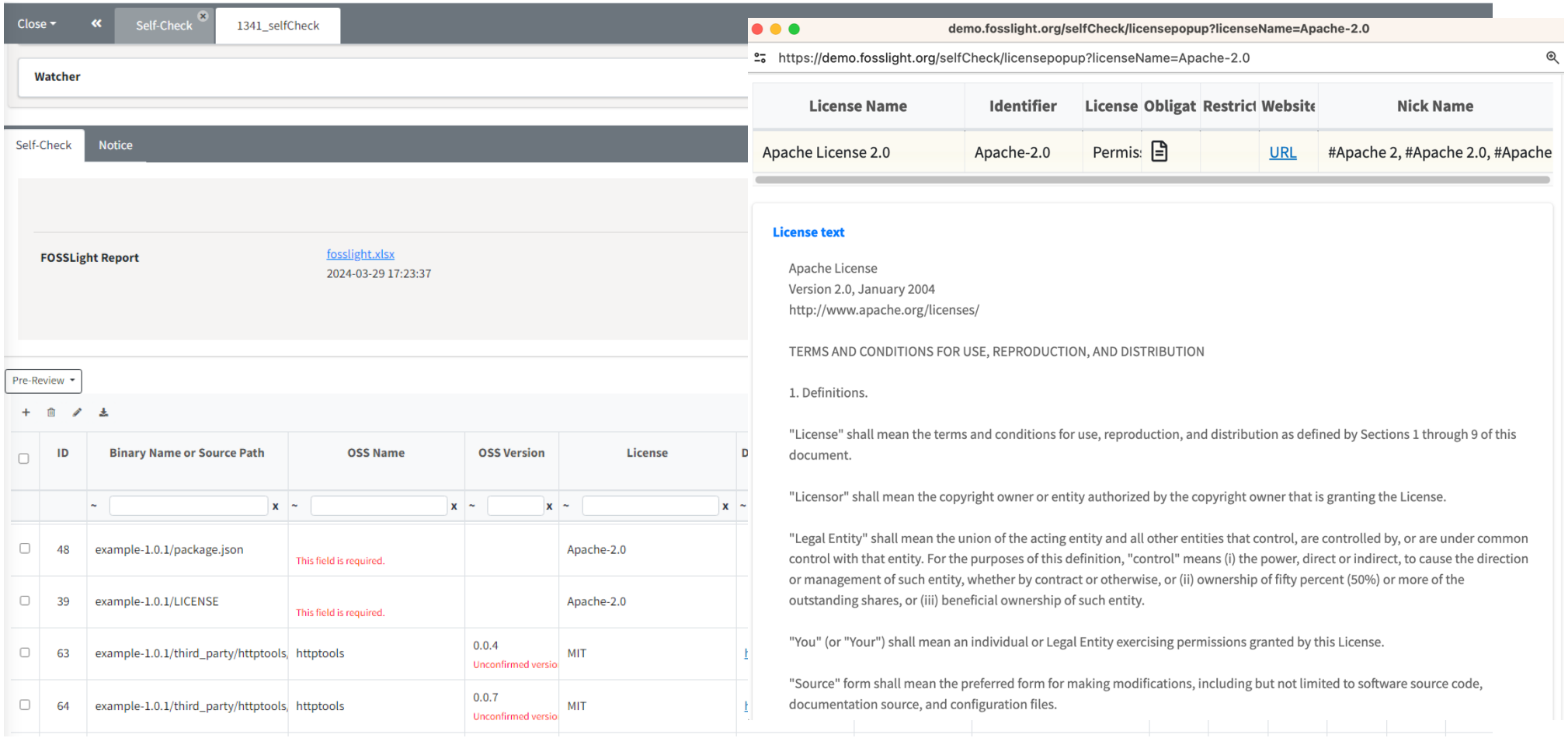
"Licensed Patents" mean patent claims licensable by a Contributor which are necessarily infringed by the use or sale of its Contribution alone or when combined with the Program.

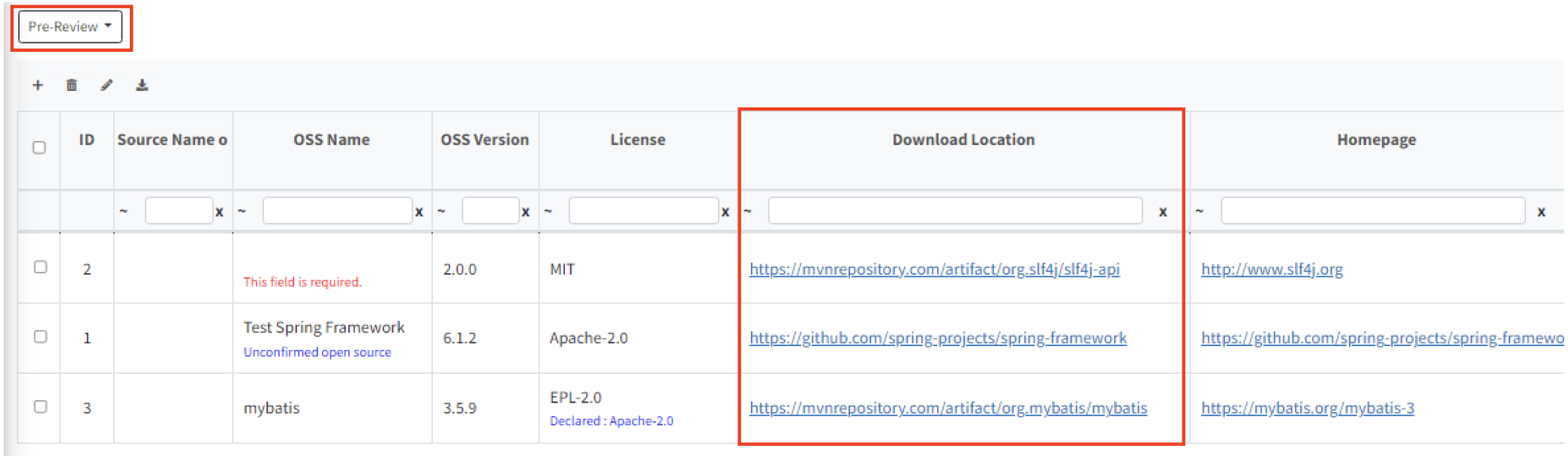
# 사전 점검

- 프로젝트에서 사용할 오픈소스와 라이선스 리스트를 업로드하여
  각각의 의무 사항 및 보안취약점 정보를 확인할 수 있음



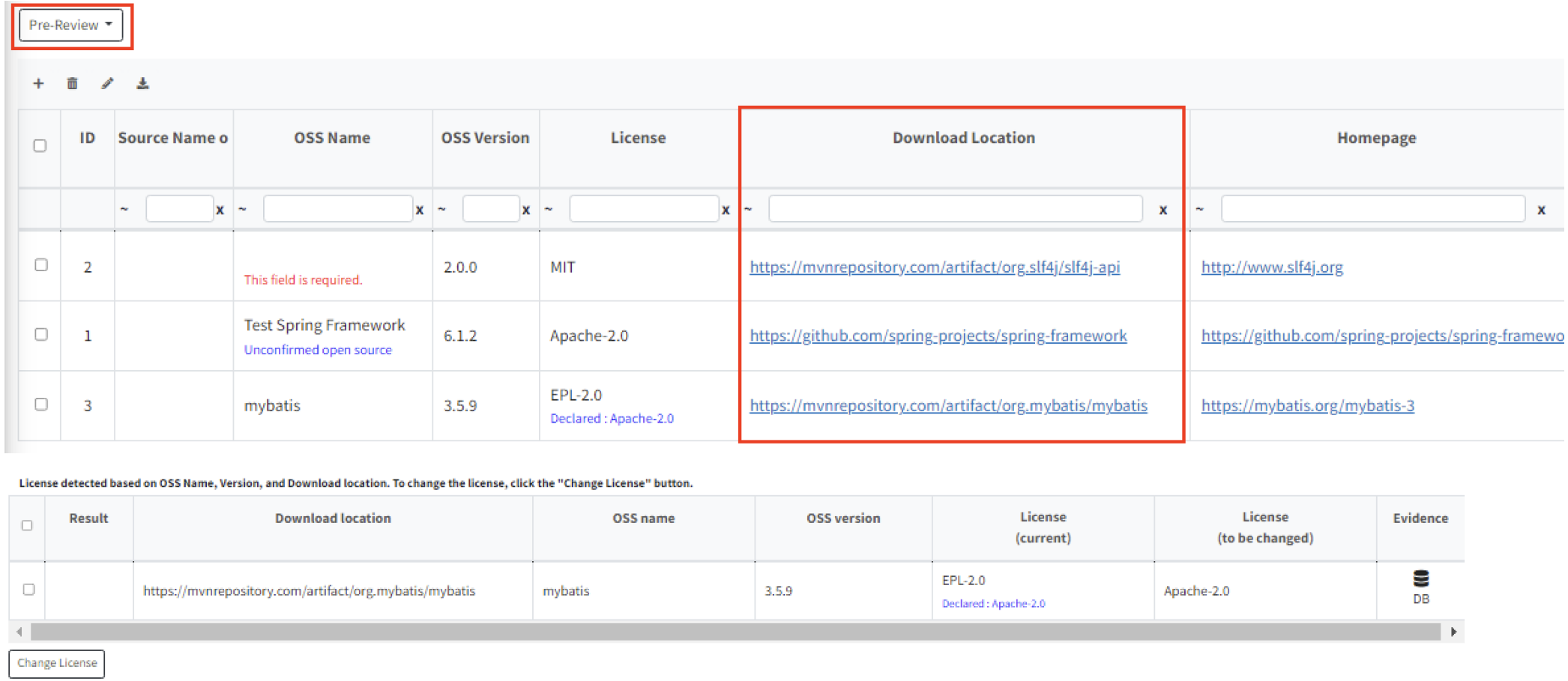
# 사전 점검 (Pre-Review)

- 오픈소스를 다운로드한 URL만 알아도 오픈소스와 라이선스 정보를 확인할 수 있음



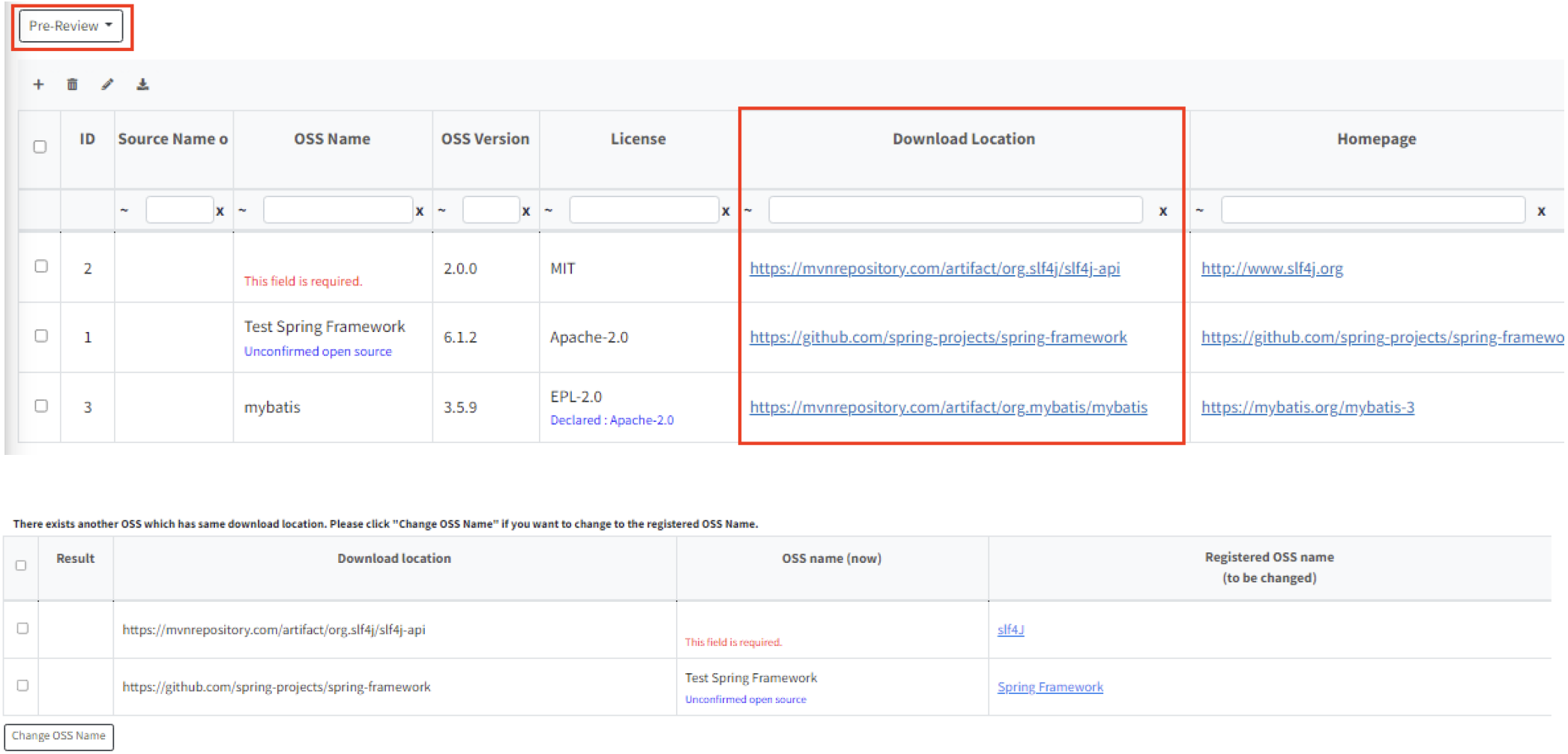
# 사전 점검 (Pre-Review)

- 오픈소스를 다운로드한 URL만 알아도 라이선스 정보를 확인할 수 있음



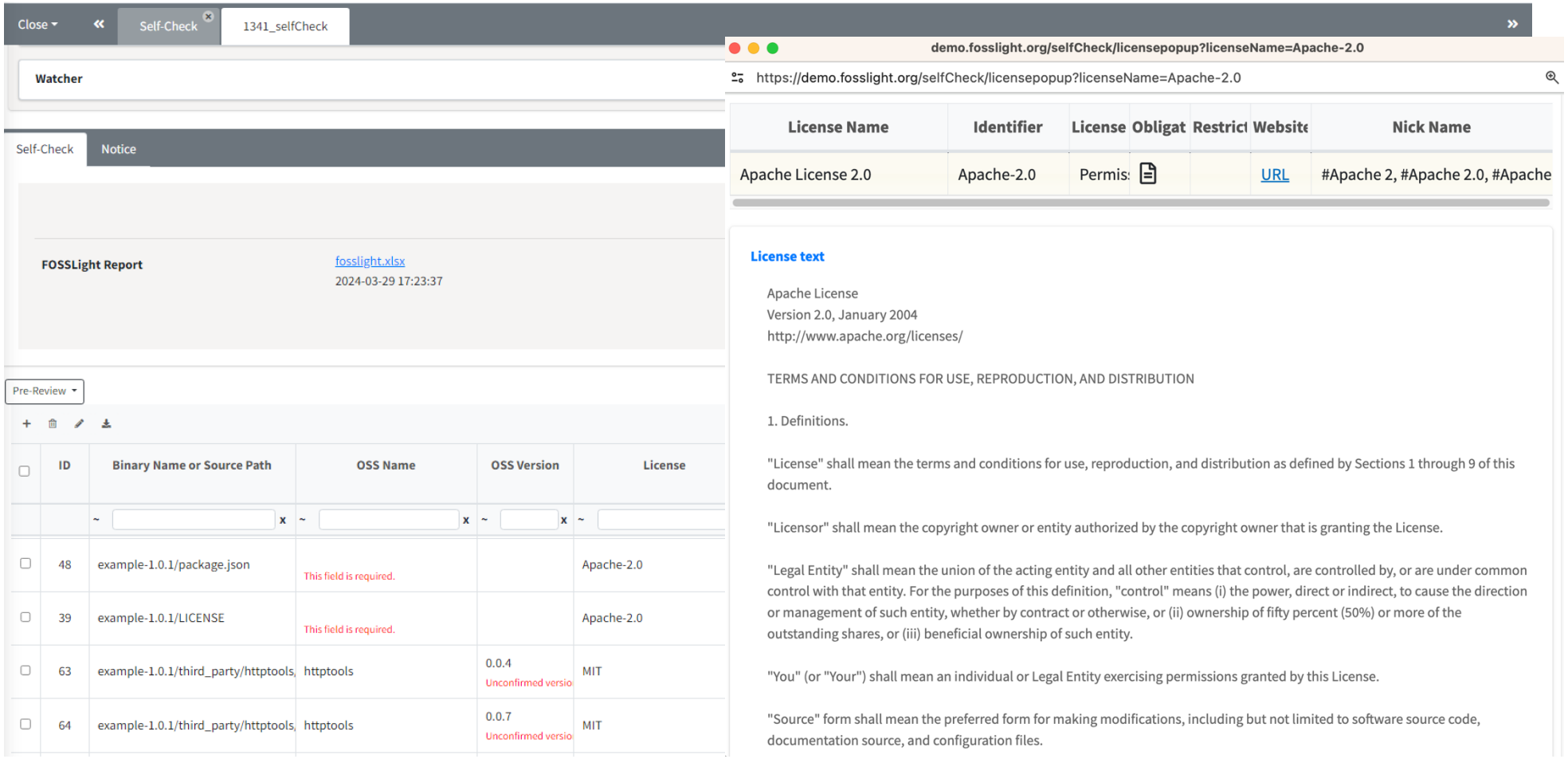
# 사전 점검 (Pre-Review)

- 오픈소스를 다운로드한 URL만 알아도 오픈소스 정보를 확인할 수 있음



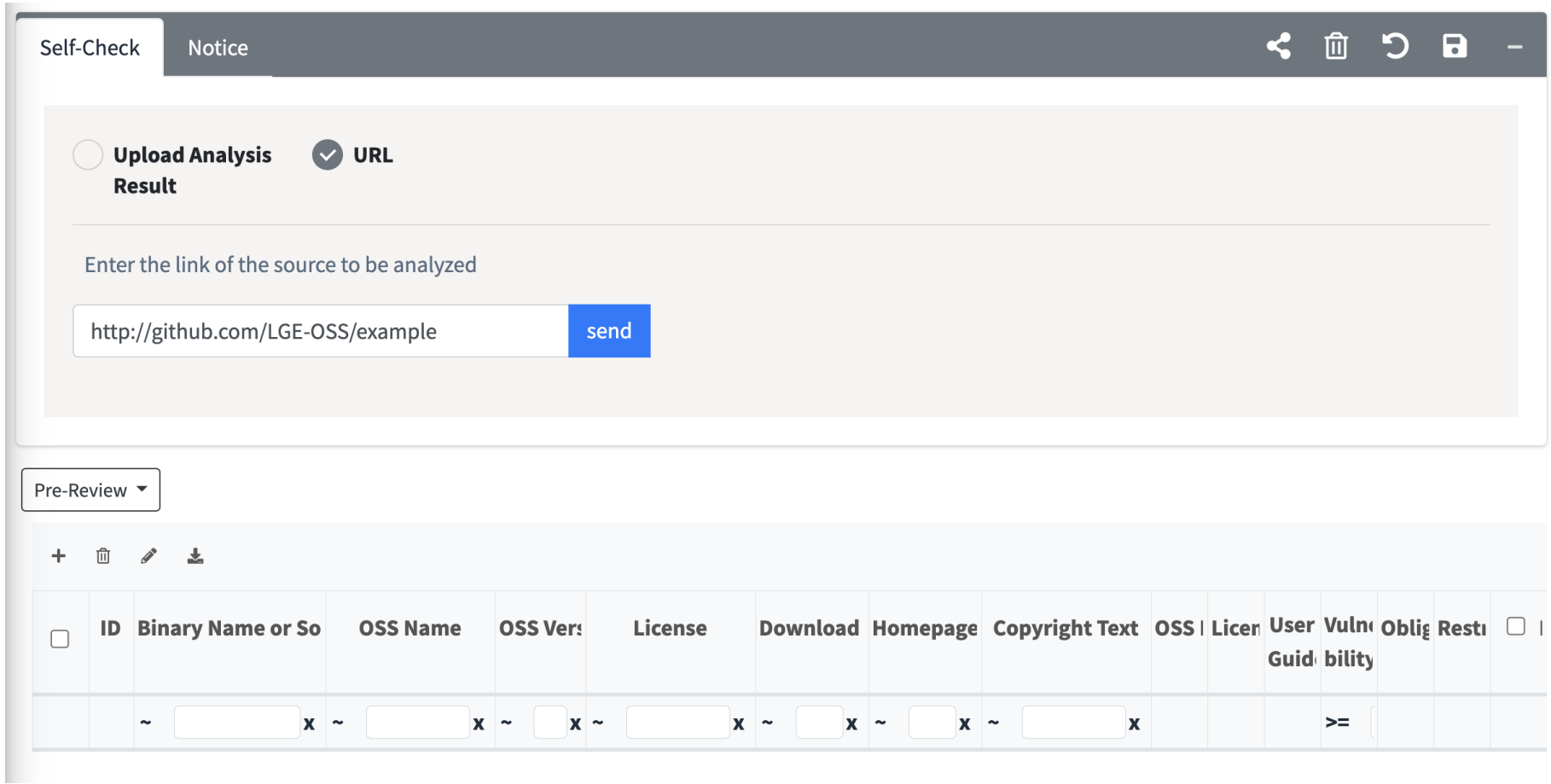
# 사전 점검 (Pre-Review)

- 오픈소스 라이선스 의무 사항 확인 가능함



# 사전 점검 (오픈소스 분석)

- **Self-Check에 스캐닝 도구를 연동하여 소스 레파지토리 주소를 입력으로 오픈소스 라이선스 의무 사항 확인 가능**





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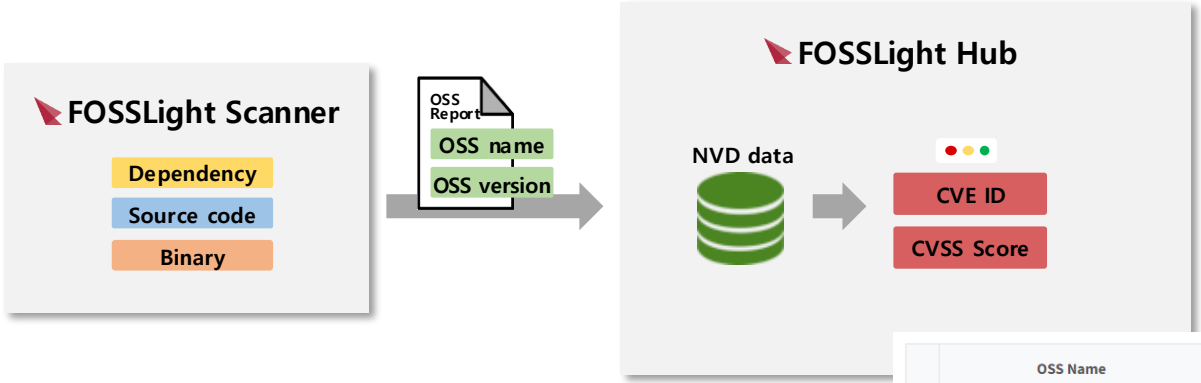
# 보안 취약점 관리

- 오픈소스 분석한 결과를 FOSSLight Hub 업로드하여 보안취약점 조회 및 관리 가능




| | OSS Name | Version | Score | CVE ID | Modified Date |
|---|---|---|---|---|---|
| 1 | tomcat_native | 1.1.23 | 7.4 | CVE-2018-8019 | 2023-11-07 |
| 2 | tomcat_native | 1.1.23 | 7.4 | CVE-2018-8020 | 2023-11-07 |
| 3 | tomcat_native | 1.1.23 | 5.9 | CVE-2017-15698 | 2023-11-07 |

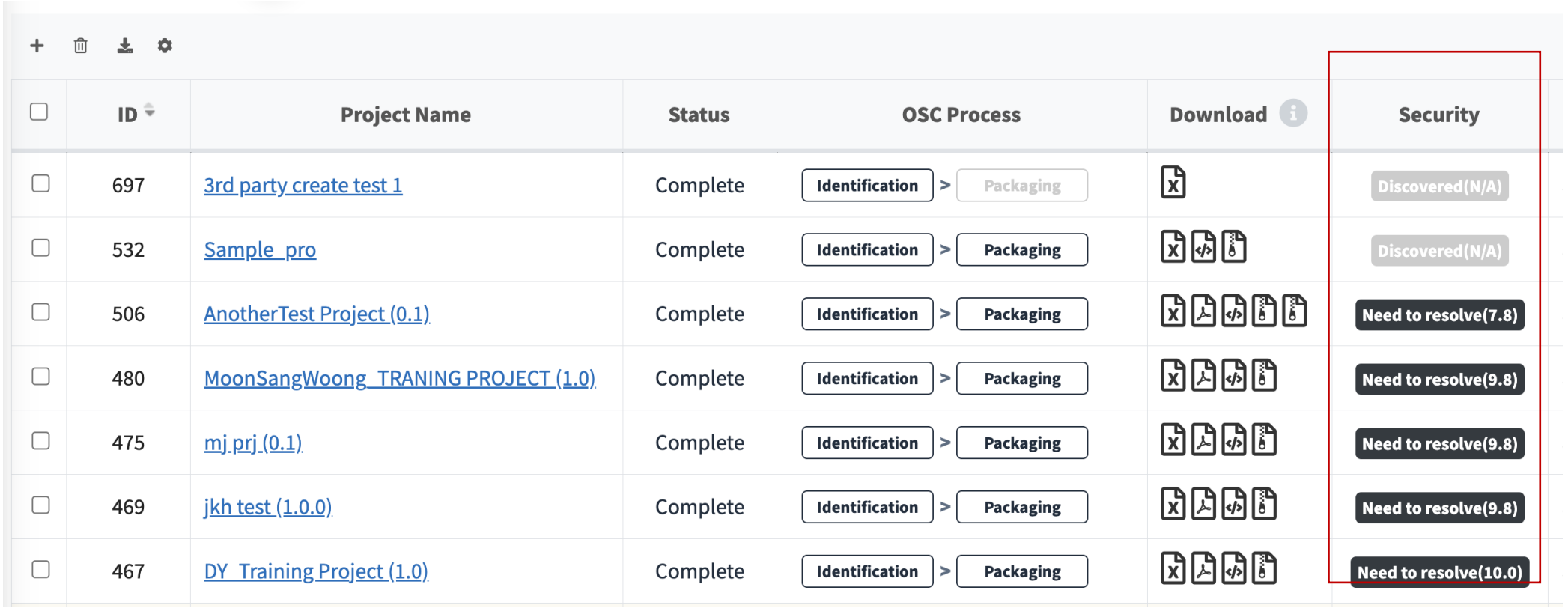
Page 1 of 1 200 Total : 3

Export

1. **CVE ID** : CVE-2018-8019
2. **Description** : When using an OCSP responder Apache Tomcat Native 1.2.0 to 1.2.16 and 1.1.23 to 1.1.34 did not correctly handle invalid responses. This allowed for revoked client certificates to be incorrectly identified. It was therefore possible for users to authenticate with revoked certificates when using mutual TLS. Users not using OCSP checks are not affected by this vulnerability. Al emplear un respondedor OCSP, Apache Tomcat Native desde la versión 1.2.0 hasta la 1.2.16 y desde la versión 1.1.23 hasta la 1.1.34 no gestionó correctamente las respuestas inválidas. Esto permitió que los certificados de cliente revocados se identificasen erróneamente. Por lo tanto, era posible que los usuarios se autenticasen con certificados revocados al emplear TLS mutuo. Los usuarios que no emplean comprobaciones OCSP no se han visto afectados por esta vulnerabilidad.

# 제품 보안 취약점 확인

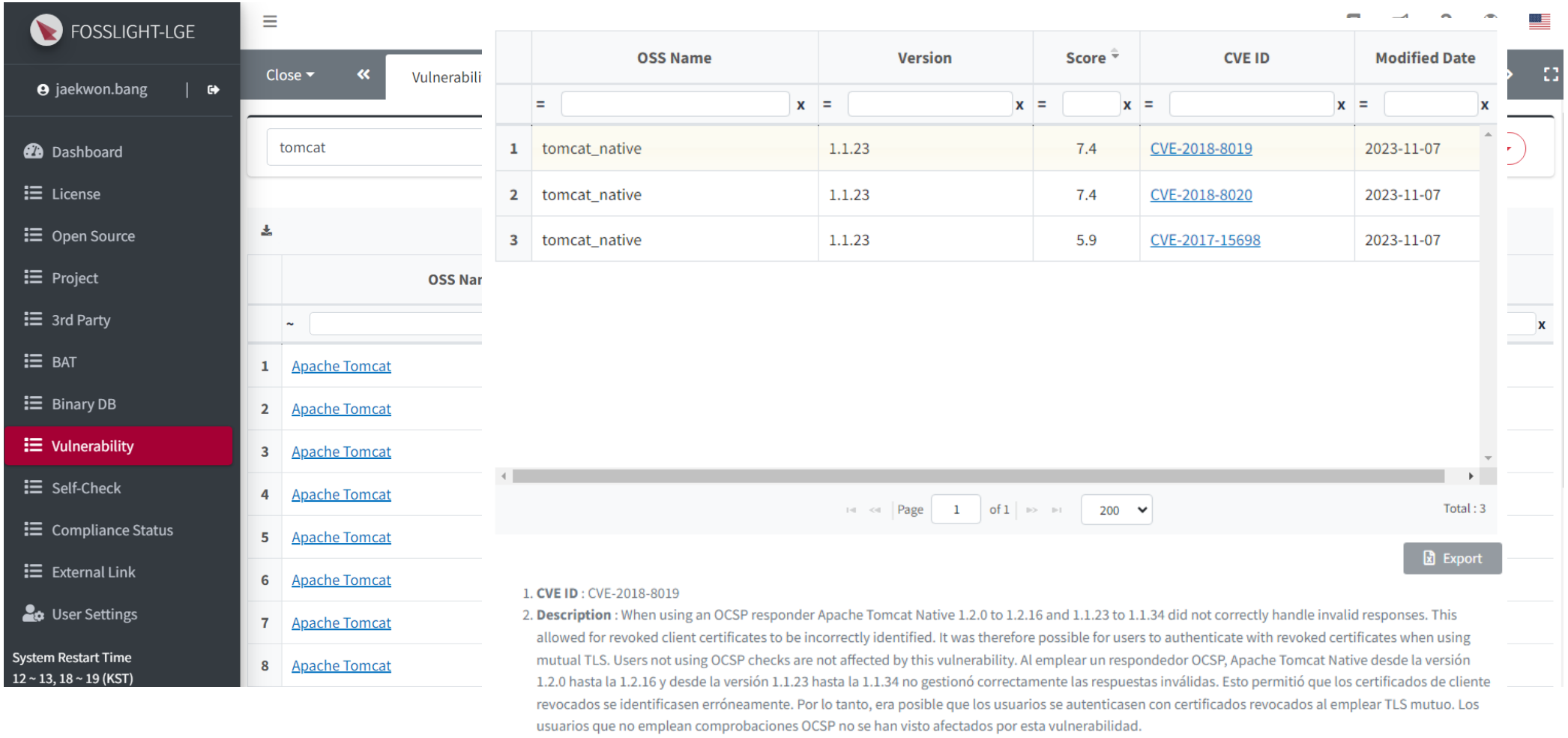
- 개발 제품별 프로젝트 등록하여 프로젝트별 보안 취약점 확인 가능



| ID | Project Name | Status | OSC Process | Download | Security |
|---|---|---|---|---|---|
| 697 | 3rd party create test 1 | Complete | Identification > Packaging | | Discovered(N/A) |
| 532 | Sample_pro | Complete | Identification > Packaging | | Discovered(N/A) |
| 506 | AnotherTest Project (0.1) | Complete | Identification > Packaging | | Need to resolve(7.8) |
| 480 | MoonSangWoong_TRANING PROJECT (1.0) | Complete | Identification > Packaging | | Need to resolve(9.8) |
| 475 | mj prj (0.1) | Complete | Identification > Packaging | | Need to resolve(9.8) |
| 469 | jkh test (1.0.0) | Complete | Identification > Packaging | | Need to resolve(9.8) |
| 467 | DY_Training Project (1.0) | Complete | Identification > Packaging | | Need to resolve(10.0) |

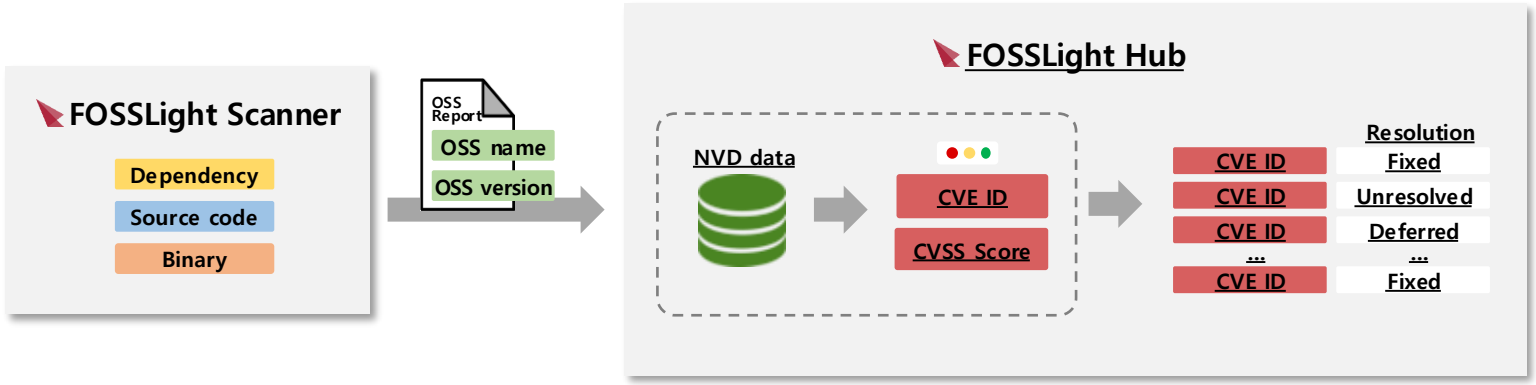
# 보안취약점 조회

- 오픈소스 버전에 따른 보안 취약점 점수 및 내용 확인 가능



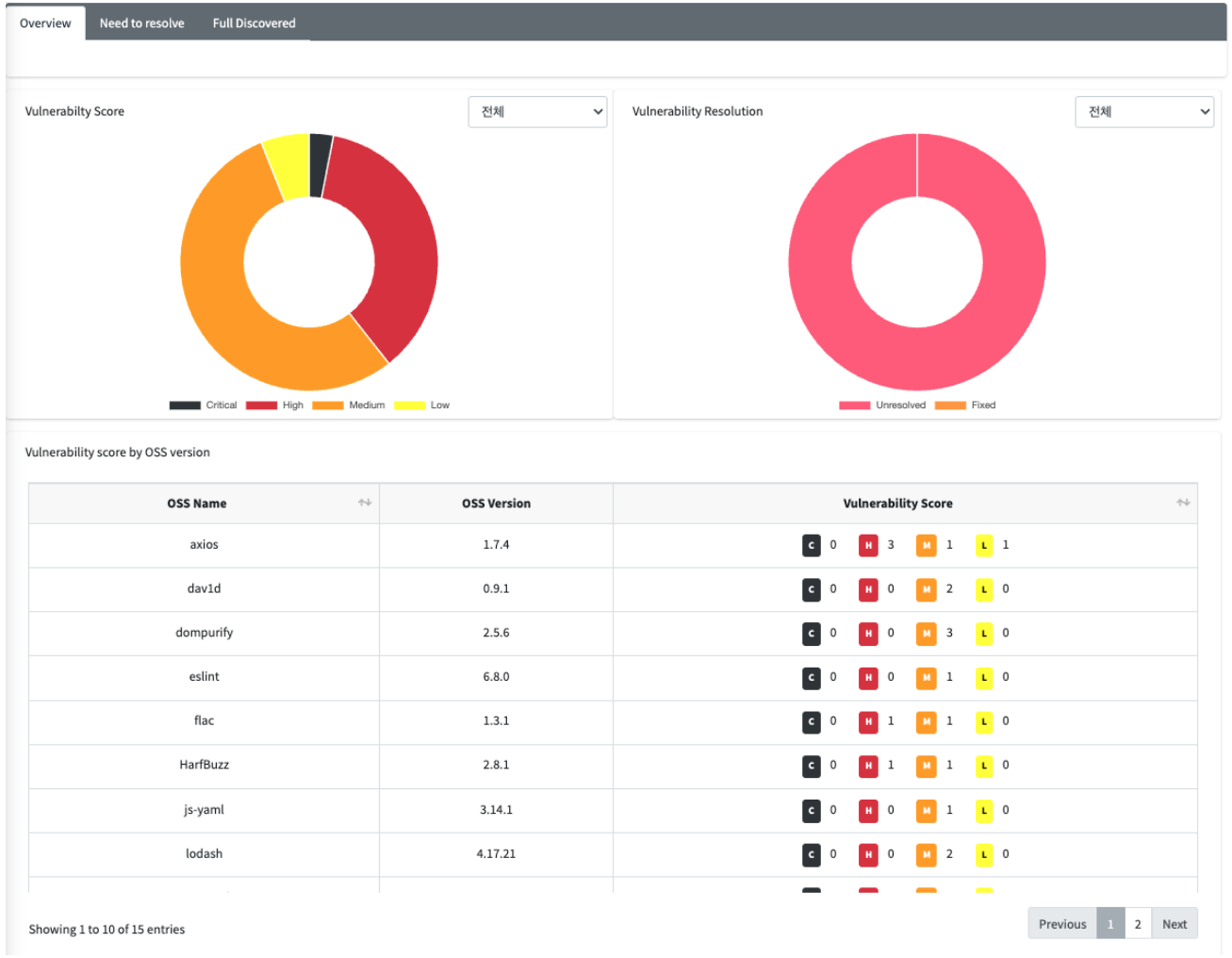
# 보안 프로세스 관리

- 프로젝트별로 발견된 보안취약점을 확인하고 해결 여부를 관리할 수 있음



# 보안 프로세스 관리

- 프로젝트별로 발견된 보안취약점을 확인하고 해결 여부를 관리할 수 있음



# 보안 프로세스 관리

- 프로젝트별로 발견된 보안취약점을 확인하고 해결 여부를 관리할 수 있음

| OSS Name | OSS Version | CVE ID | CVSS SCORE | Published Date | Vulnerability Resolution | Vulnerabilty Link | Affected SW Version Range | Security Comments |
|---|---|---|---|---|---|---|---|---|
| axios | 1.7.4 | CVE-2025-27... | 7.7 | 2025-03-07 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| axios | 1.7.4 | CVE-2025-58... | 7.5 | 2025-09-12 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| axios | 1.7.4 | CVE-2025-62... | 6.3 | 2026-04-09 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| axios | 1.7.4 | CVE-2026-25... | 7.5 | 2026-02-09 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| dav1d | 0.9.1 | CVE-2023-32... | 5.9 | 2023-05-10 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| dav1d | 0.9.1 | CVE-2024-1580 | 5.9 | 2024-02-19 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| dompurify | 2.5.6 | CVE-2025-15... | 5.1 | 2026-03-03 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| dompurify | 2.5.6 | CVE-2026-0540 | 5.3 | 2026-03-03 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| eslint | 6.8.0 | CVE-2025-50... | 5.5 | 2026-01-26 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| flac | 1.3.1 | CVE-2017-6888 | 5.5 | 2018-04-25 | Unresolved | https://nvd.nist.gov/vuln/deta | | |
| flac | 1.3.1 | CVE-2020-22... | 7.8 | 2023-08-22 | Unresolved | https://nvd.nist.gov/vuln/deta | | |

Page 1 of 1 200 Count : 28

# 보안취약점 실시간 알림

- 보안 취약점 변경 사항에 대해 관리자 및 프로젝트 담당자에게 메일 알림

**FOSSLight Hub Notification**

**[OSC] Vulnerability Discovered**

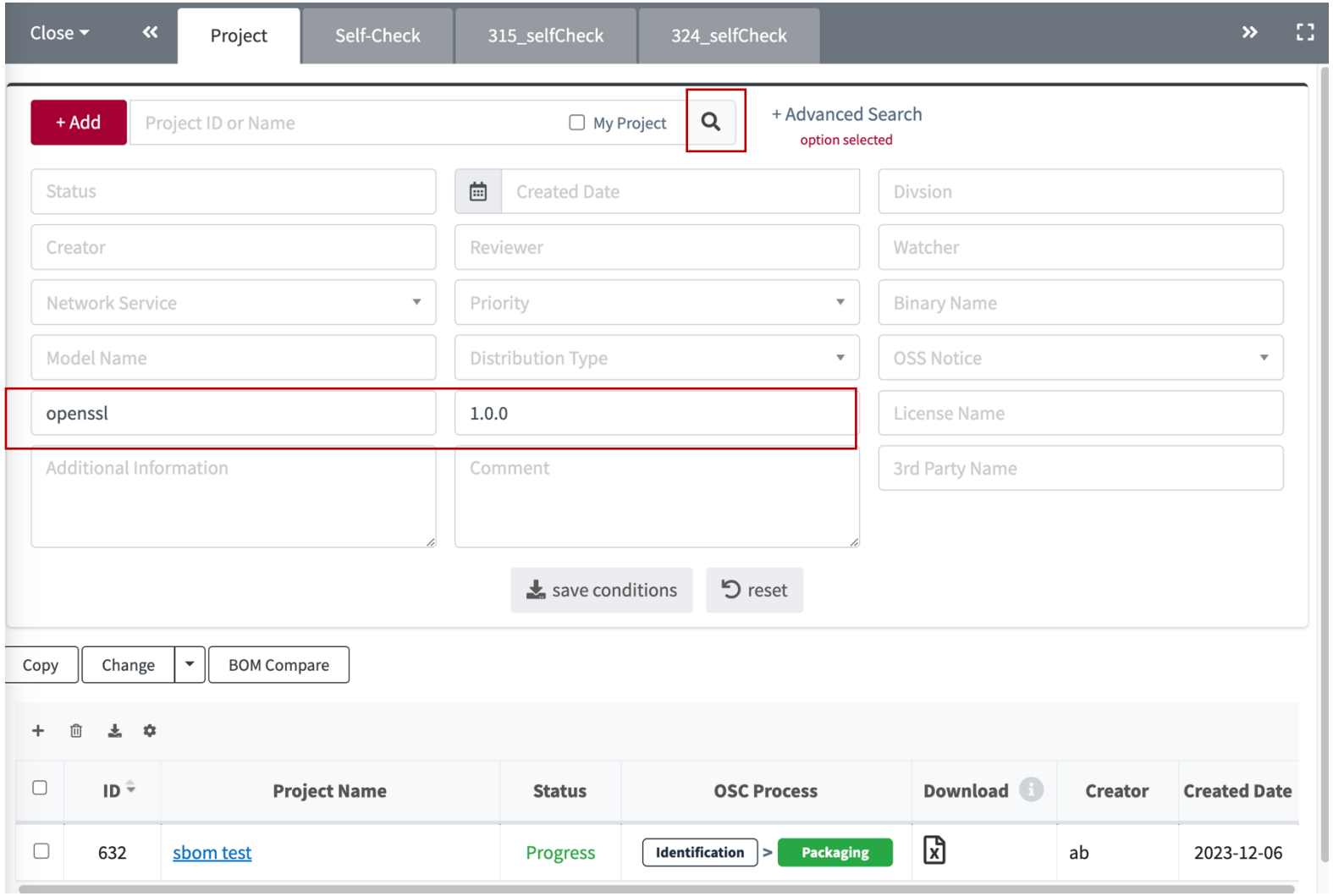
**« Vulnerability Information »**

| OSS ID | OSS Name | OSS Version | CVE ID | Score | Summary | Published Date | Modified Date |
|---|---|---|---|---|---|---|---|
| 22869 | json-smart-v2 | 2.2.1 | CVE-2021-27568 | 9.1 | An issue was discovered in netplex json-smart-v1 through 2015-10-23 and json-smart-v2 through 2.4. An exception is thrown from a function, but it is not caught, as demonstrated by NumberFormatException. When it is not caught, it may cause programs using the library to crash or expose sensitive information. | 2021-02-23 | 2022-05-12 |
| 15690 | json-smart-v2 | 2.3 | CVE-2021-27568 | 9.1 | An issue was discovered in netplex json-smart-v1 through 2015-10-23 and json-smart-v2 through 2.4. An exception is thrown from a function, but it is not caught, as demonstrated by NumberFormatException. When it is not caught, it may cause programs using the library to crash or expose sensitive information. | 2021-02-23 | 2022-05-12 |

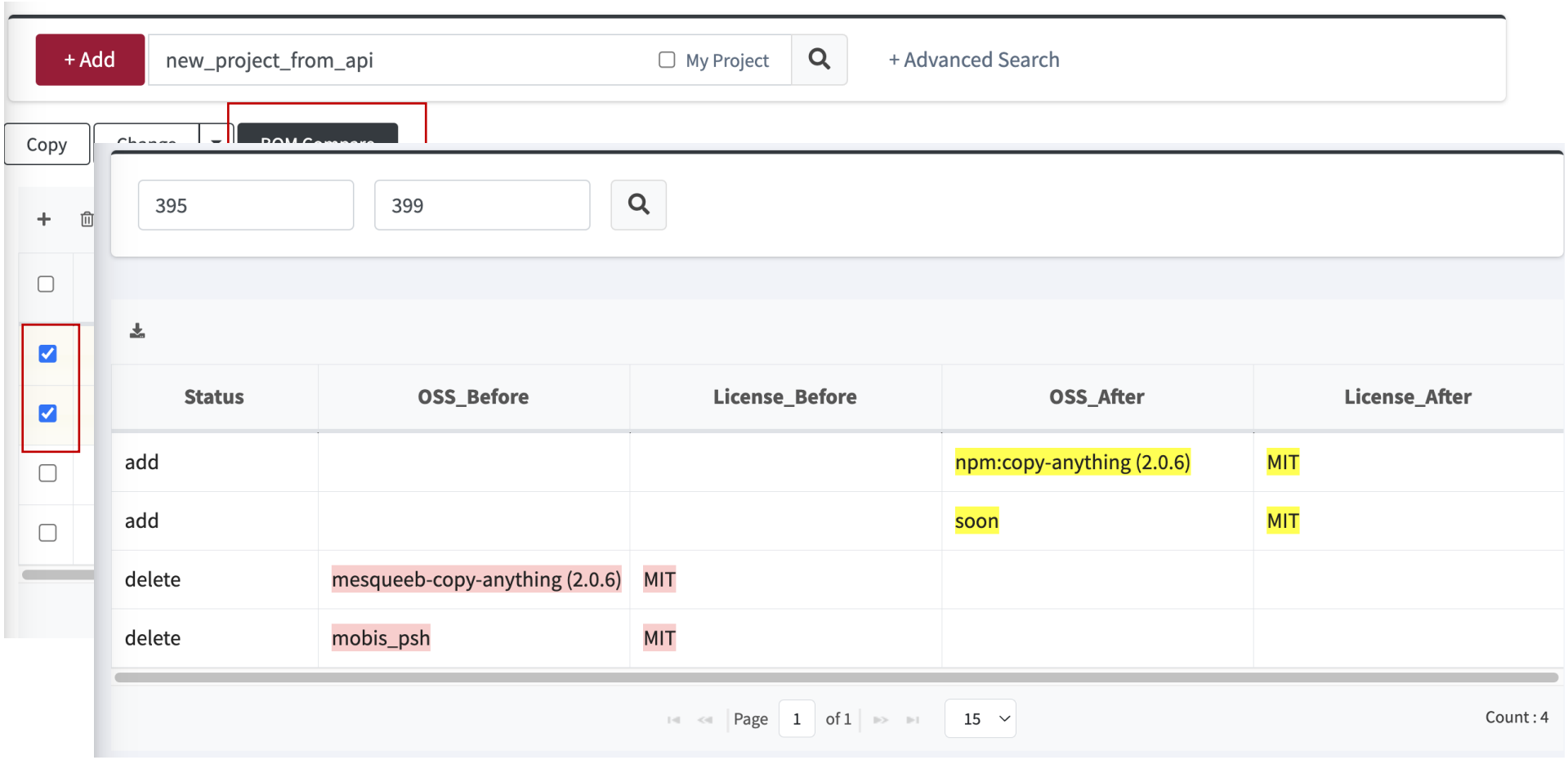
* This mail was sent by osc.lge.com

# SBOM 관리

- 특정 오픈소스 버전을 사용하는 프로젝트 조회 가능

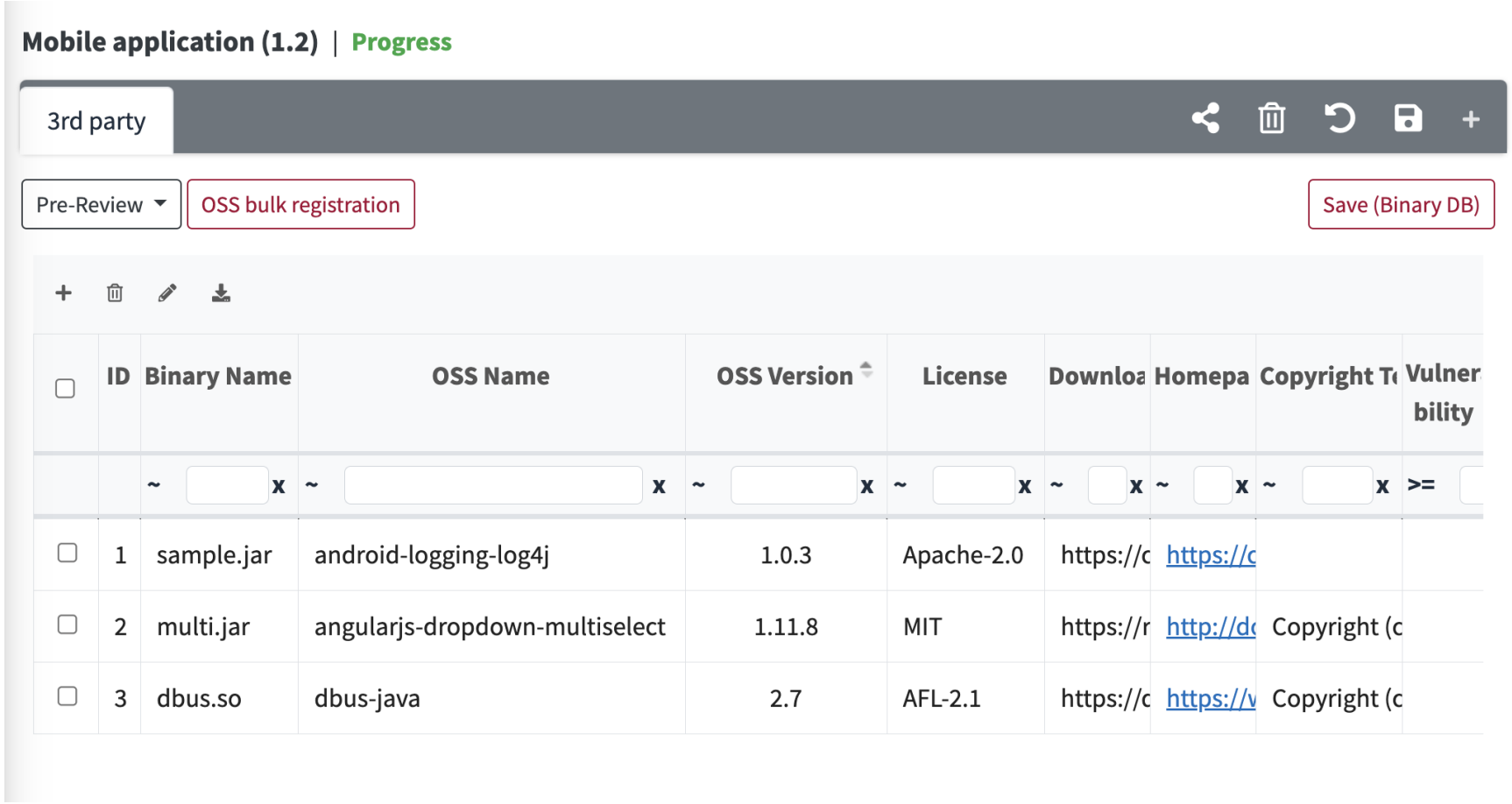


# SBOM 변경 추적


+ Add
new_project_from_api
My Project
+ Advanced Search
Copy
395
399
Status
OSS_Before
License_Before
OSS_After
License_After
add
npm:copy-anything (2.0.6)
MIT
add
soon
MIT
delete
mesqueeb-copy-anything (2.0.6)
MIT
delete
mobis_psh
MIT
Page 1 of 1
15
Count : 4

# 공급망 관리

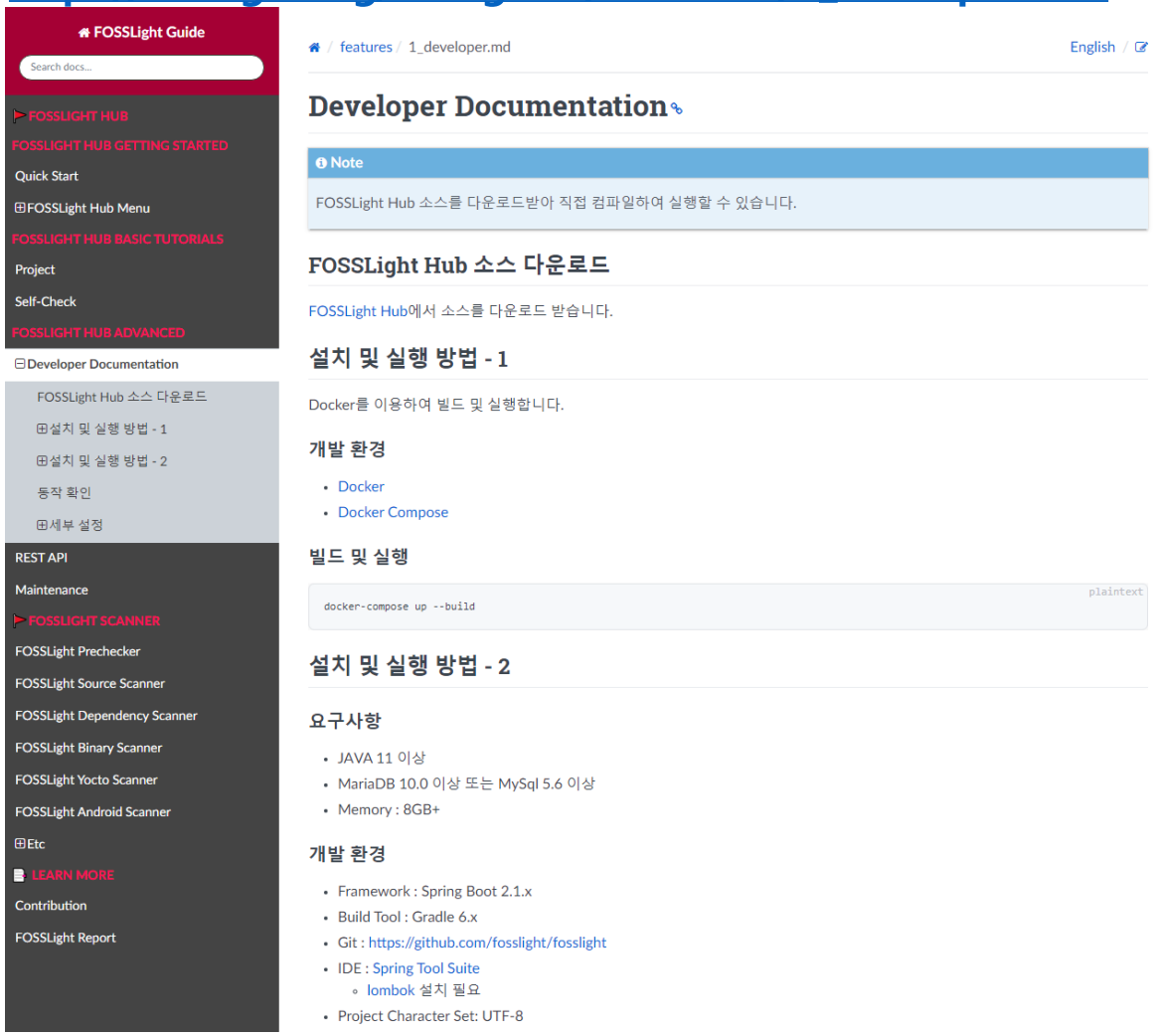
- 타사에서 전달받은 Software 별 SBOM 관리 가능



# FOSSLight 설치 및 관리

# 개발 환경 설정

- https://fosslight.org/hub-guide/advanced/1_developer.html



# 개발 환경 설정

- **소스 코드 빌드 & 실행**
  - Java, MariaDB 설치 필요

1. JAVA를 설치합니다.: https://openjdk.java.net
2. DDL : fosslight_create.sql
3. MariaDB 또는 Mysql 설치합니다. : https://mariadb.org/download
4. Database 생성 및 초기 Data 등록

```plaintext
mysql -u root -p < fosslight_create.sql
```

- **Docker로 빌드 & 실행**
  - 자동으로 DB, Java 세팅하여 쉽게 실행 가능

**개발 환경**

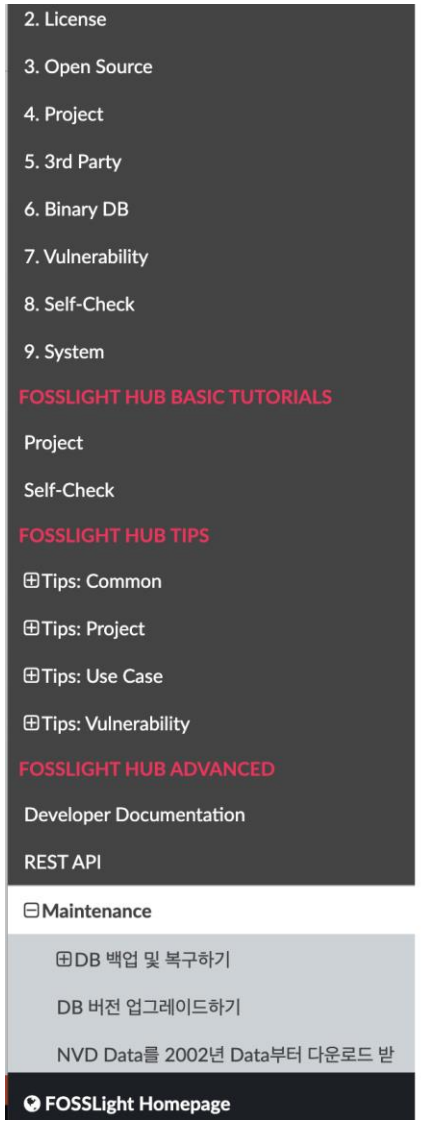
- Docker
- Docker Compose

**빌드 및 실행**

```plaintext
docker-compose up --build
```

초기 NVD Data Setting 필요

# DB 백업 및 복구




## Maintenance

**Note**

FOSSLight Hub를 운영하는 데 유용한 가이드입니다.

### DB 백업 및 복구하기

#### 1. 백업

**선택1. 전체 백업**

mysqldump -u[아이디] -p[패스워드] [데이터베이스명] > [백업파일명].sql

```plaintext
$ mysqldump -ufosslight -pfosslight fosslight > fosslight_backup.sql
```

**선택2. FOSSLight 최신 버전으로 업데이트를 위한 DB 백업 (Data만 추출)**

mysqldump -u[아이디] -p[패스워드] [데이터베이스명] -no-create-info > [백업파일명].sql

```plaintext
$ mysqldump -ufosslight -pfosslight fosslight --no-create-info > fosslight_backup.sql
```

#### 2. 복구

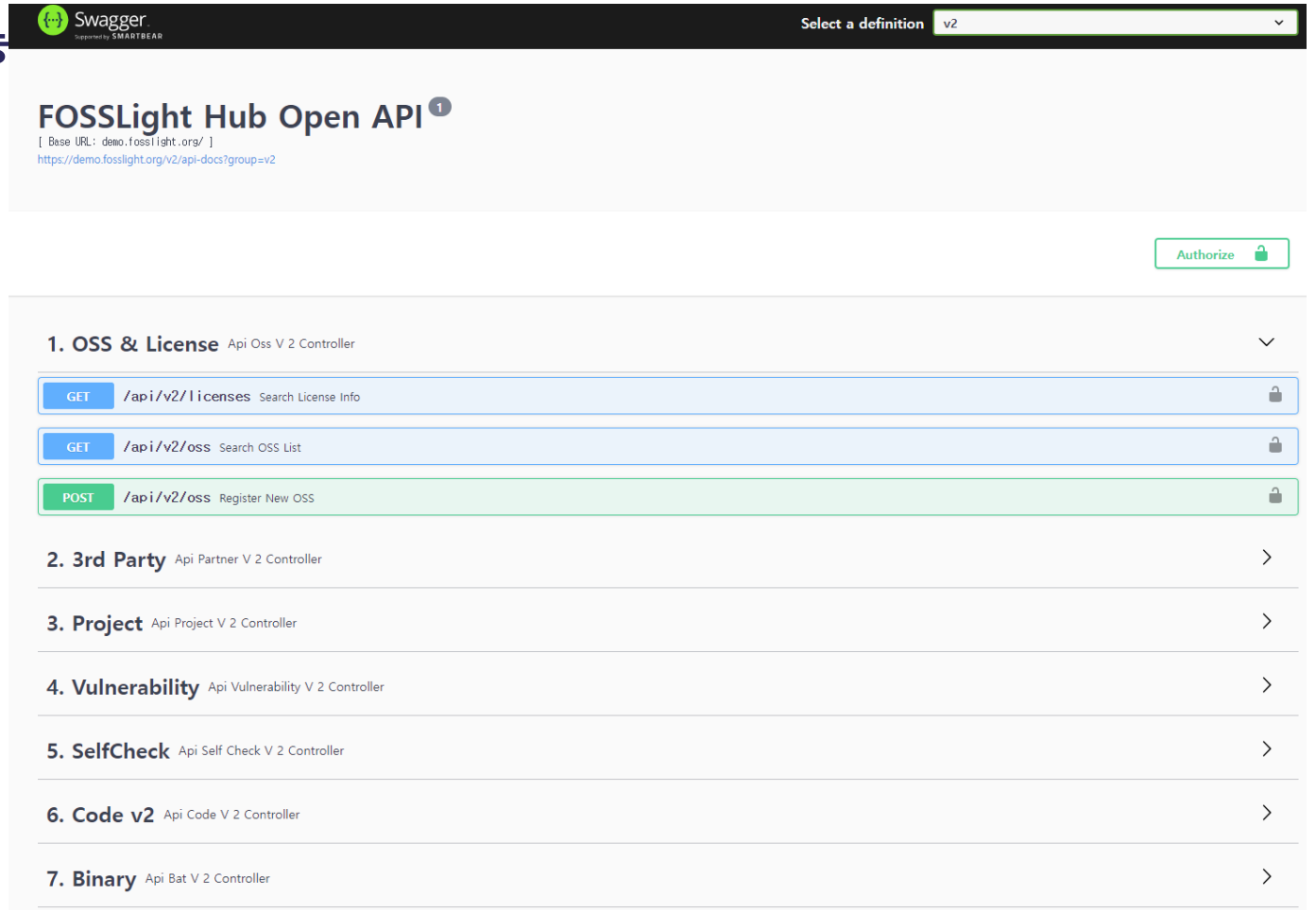
1. 버전에 따른 Table 구조를 반영하기 위해 빈 DB를 새로 만들고 기본 값을 설정합니다. Developer Documentation - 다운로드 & 설치 - 4. Database 생성 및 Data 초기 등록
2. 백업한 파일로 복구합니다. mysql -u[아이디] -p[패스워드] [데이터베이스명] < [백업파일명].sql

```
$ mysql -ufosslight -pfosslight fosslight < fosslight_backup.sql
```

DB migration Script 제공

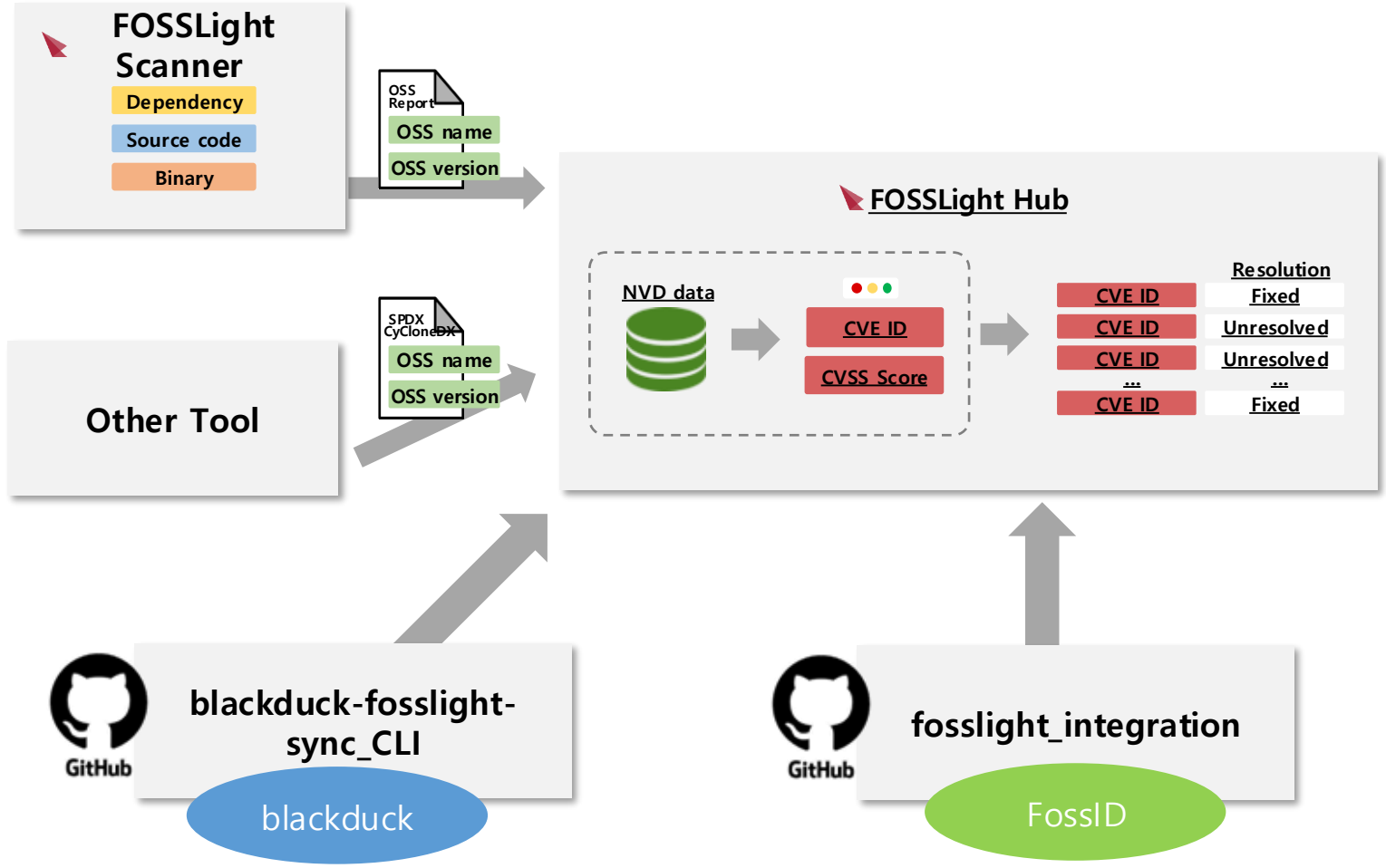
# FOSSLight Hub 호환성

- 다른 시스템과 연동할 수 있도록 REST API 제공
- TOKEN은 User Settings에서 발행 가능



# FOSSLight Hub 호환성

- FOSSLight Scanner 외 다른 툴의 SBOM 업로드 가능



# FOSSLight Scanner 사용시 주요 장점

- Transitive Dependency 구조를 tree 형태로 시각화하여 제공
- FOSSLight Binary Scanner DB의 자동 축적

```
===  [PRJ-5081] Project Dependency Tree Export ===
Generated at: Wed Apr 22 11:15:06 KST 2026

pkg:npm/%40fortawesome/react-fontawesome
    └ pkg:npm/%40fortawesome/fontawesome-svg-core
    └ pkg:npm/react
    └ pkg:npm/prop-types
        └ pkg:npm/react-is
        └ pkg:npm/object-assign
        └ pkg:npm/loose-envify
            └ pkg:npm/js-tokens
pkg:npm/amazon-kinesis-video-streams-webrtc
    └ pkg:npm/json-schema
    └ pkg:npm/xml2js
        └ pkg:npm/xmlbuilder
        └ pkg:npm/sax
    └ pkg:npm/tslib
    └ pkg:npm/ua-parser-js
    └ pkg:npm/isomorphic-webcrypto
        └ pkg:npm/react-native-securerandom
            └ pkg:npm/react-native
            └ pkg:npm/base64-js
        └ pkg:npm/str2buf
        └ pkg:npm/%40unimodules/core
            └ pkg:npm/compare-versions
        └ pkg:npm/expo-random
            └ pkg:npm/expo
                └ pkg:npm/react
                └ pkg:npm/%40expo/config
                    └ pkg:npm/slugify
                    └ pkg:npm/require-from-string
```

# THANK YOU !