WIND

The Ledger of Things: Using a Blockchain Ledger to Track Open Source Components Across the Supply Chain

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WHEN IT MATTERS,
IT RUNS ON WIND RIVER.

Projects

HYPERLEDGER

OPENCHAIN

Agenda

- **Problem**: Describe the open source supply chain challenge
- **Solution**: Present an open blockchain ledger solution
- **Q & A**

Part I: The Challenge

License Compliance

Tesla Inches Toward GPL Compliance in Low Gear

Security Vulnerabilities

Jeep Hacked: Taking Over a Moving Car by Remote Control

Safety Certification

Tesla Model X in Autopilot - Driver Killed in Crash

License Compliance

Artifacts

- List of Open Source
- Required Source Code
- Required Notices
- SPDX data

Security Vulnerabilities

Artifacts

- List of Open Source
- CVEs

Safety Certification

Artifacts

- List of Open Source
- Certification Evidence

ISO 26262 DO-178 Qualification SIL IEC 61508

License Compliance

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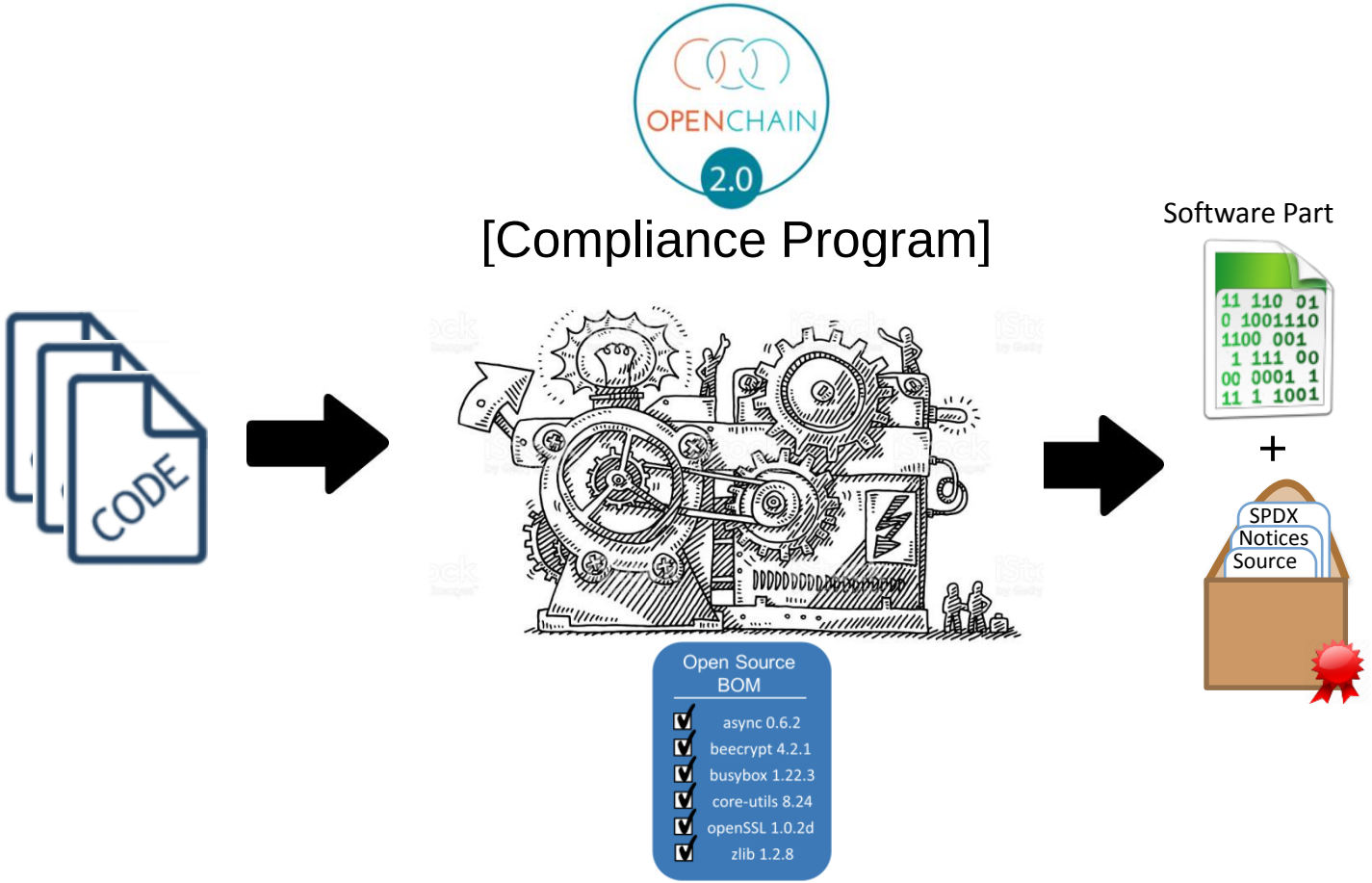
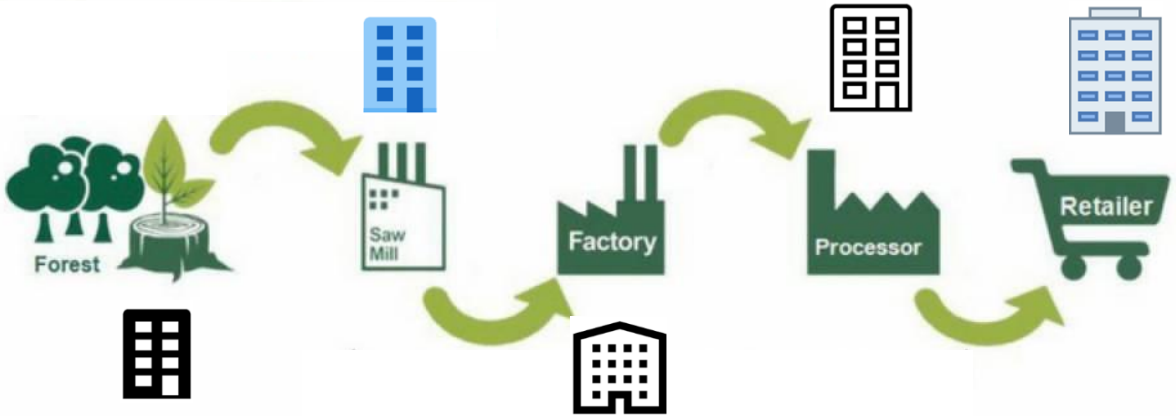
ISO 26262 · DO-178 Qualification · SIL IEC 61508


OPENCHAIN
2.0
[Compliance Program]
CODE
Open Source
BOM
async 0.6.2
beecrypt 4.2.1
busybox 1.22.3
core-utils 8.24
openSSL 1.0.2d
zlib 1.2.8
Software Part
11 110 01
0 1001110
1100 001
1 111 00
00 0001 1
11 1 1001
+
SPDX
Notices
Source

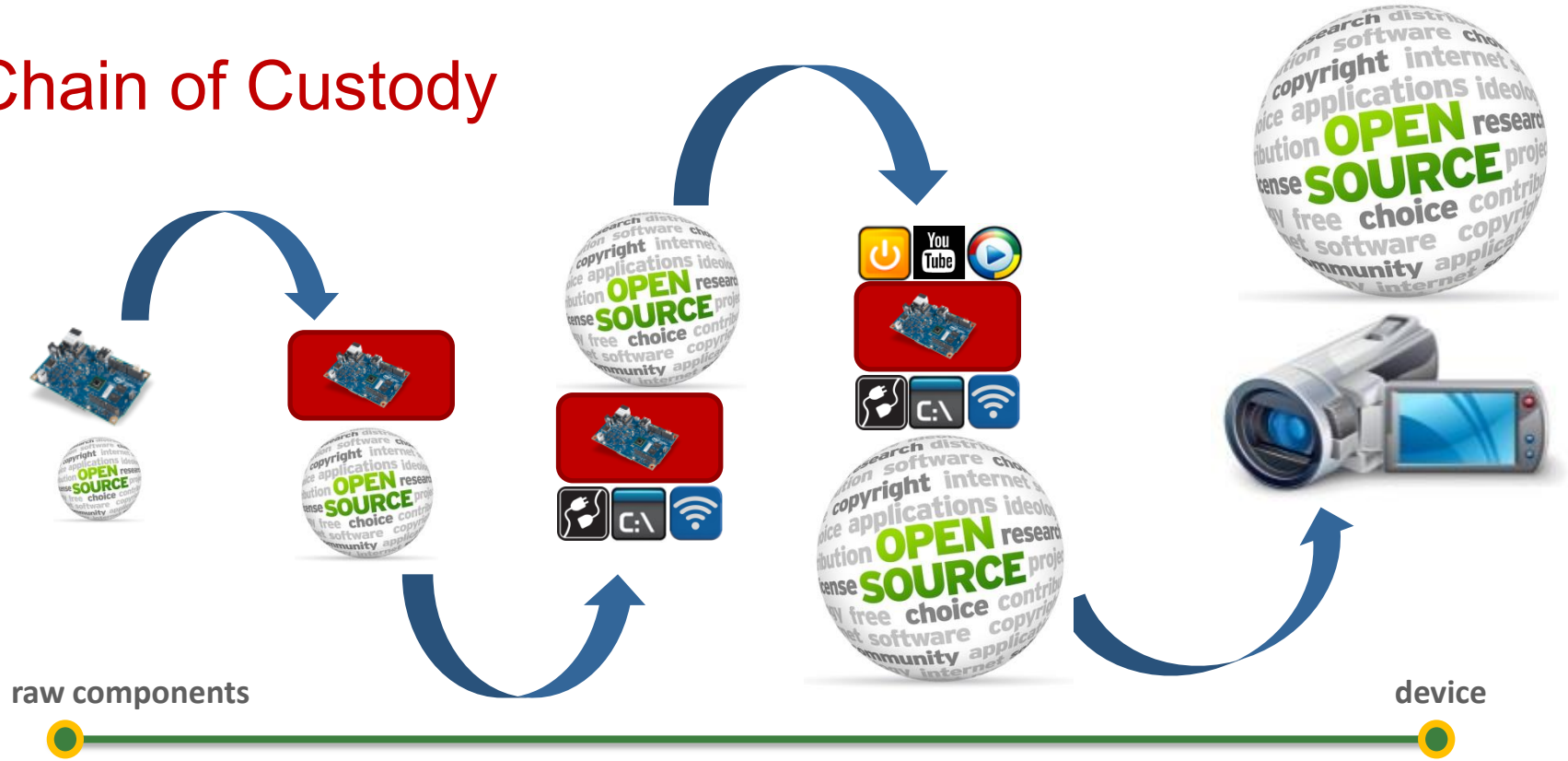
Chain of Custody



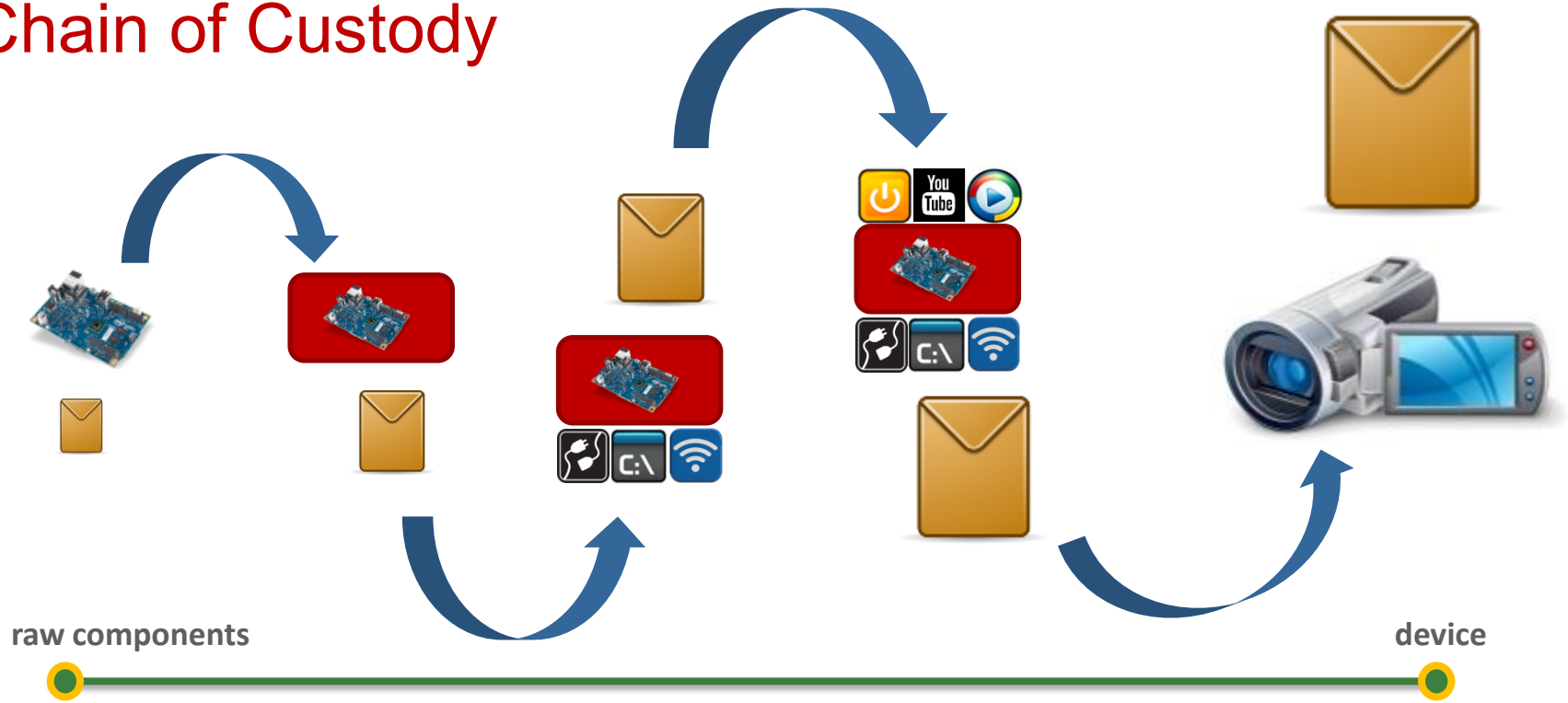
first stage — end customer

chain of custody - the unbroken path a product takes from the **first stage** in the supply chain to the **end customer** including - raw materials, their conversion, production and along distribution lines

Chain of Custody



Chain of Custody



The Challenge



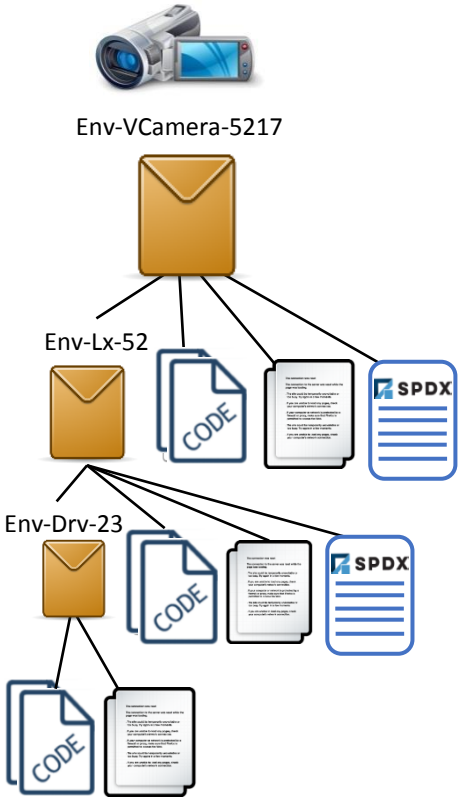




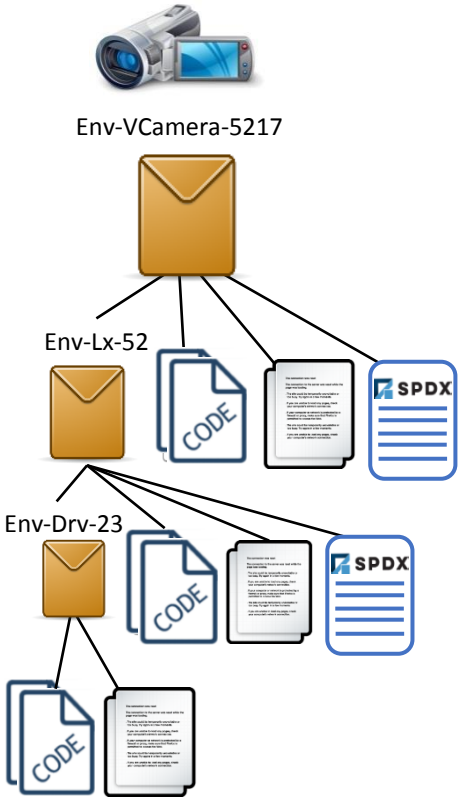




The Challenge



The Challenge



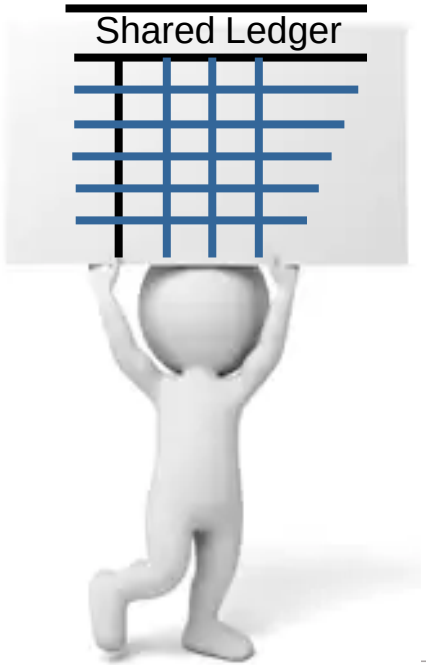
Mfg/Distributors

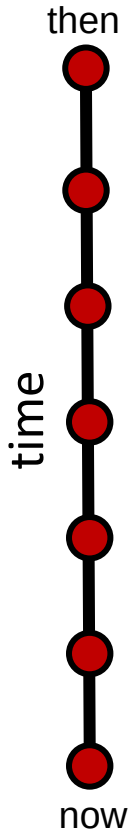
End Users

i) ***Accountability*** *- How can we trust each supplier has prepared the correct artifacts?*

ii) ***Access*** *- How can we facilitate the collection and delivery of all artifacts?*

Part II: Solution





my bitcoin

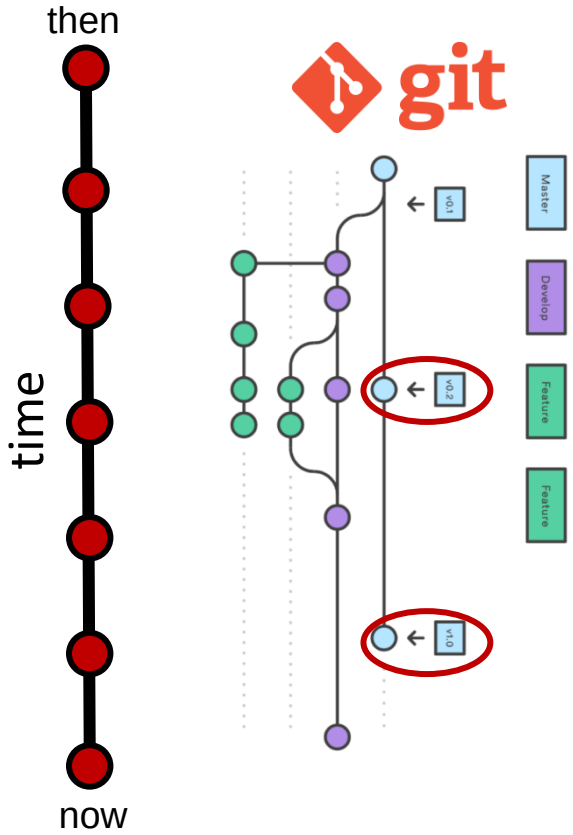
credit	debt	balance
$100		$100
	$25	$75
	$5	$70
	$10	$60
$120		$180
$20		$200
	$45	$155
	$15	$140
$40		$180
	$10	$170
$140		$310
		$310

12/31

Ledger Attributes

- Things
- Transactions
- Time
- Truth

= Trust



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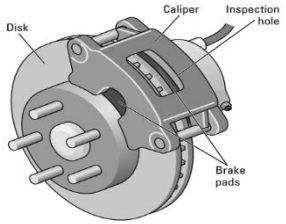
PARTS



Source file

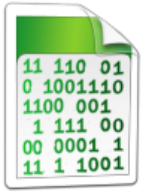
library

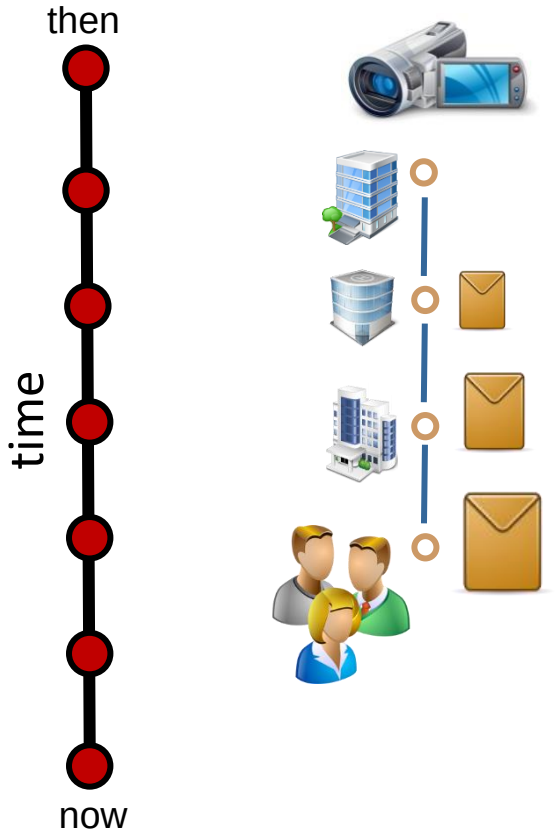
Application

Container

Linux Runtime

software part





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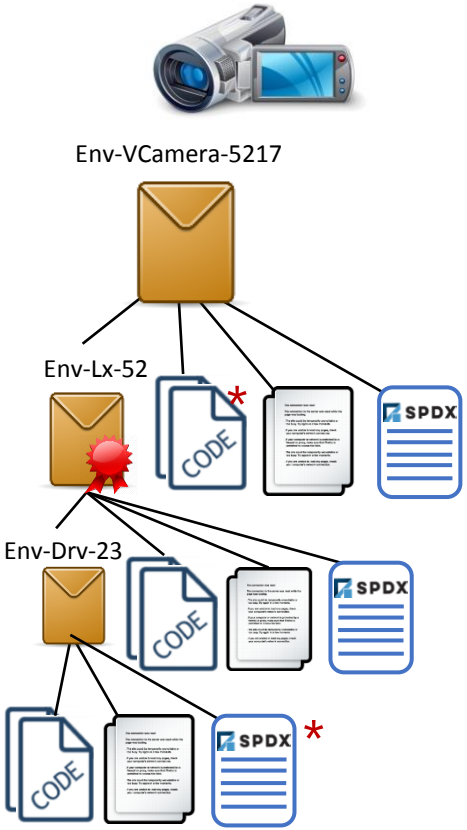


Secure Shared Ledger

Part/Env ID	Supplier	Action	Artifacts
Env-Drv-23	Intel-ID	create	CODE
Env-Lx-52	WR-ID	create	Env-Drv-23 CODE SPDX
Env-VCam-5217	AvTec-ID	create	Env-Lx-52 CODE SPDX
Env-Drv-23	WR-ID	add	SPDX *
Env-VCam-5217	AvTec-ID	update	CODE *

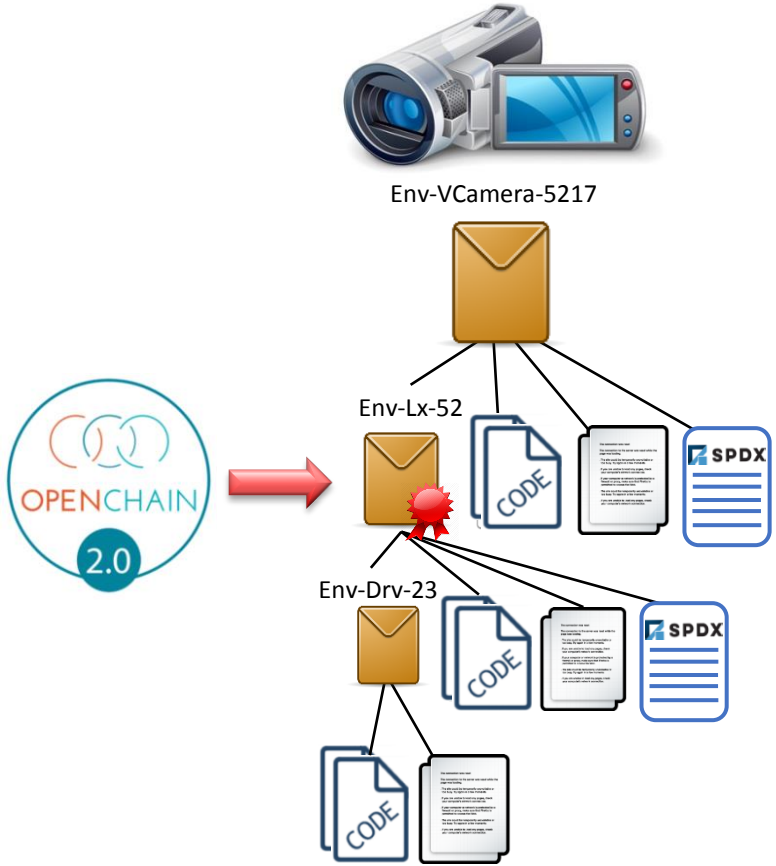
Summary

- SParts – Free and Open Ledger - track open source components and their meta data of IoT devices
- Code is available under the Apache-2.0

  https://github.com/hyperledger-labs/SParts
- Enabling across Supply Chain Open Source management
  - License compliance – which artifacts are OpenChain conforming
  - Security vulnerabilities
  - Safety certification
- Useful internally tracking open source artifacts across business units
- **Accountability**: establish trust among supply chain participants
- **Access**: query for current set of compliance artifacts

Video Camera Model 5217

Video Camera Model 5217



Contact

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