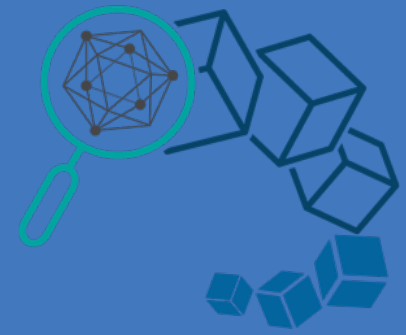




**HYPERLEDGER**  
BLOCKCHAIN TECHNOLOGIES FOR BUSINESS



# Hyperledger Projects

Baohua Yang  
Dec, 2017

# About Me

- **Interested Areas**

- Fintech, Cloud and Analytics

- **Technical Leader**

- Senior Researcher/Architect in IBM, Oracle

- **Open-Source Contributor**

- [Hyperledger](#), [OpenStack](#), [OpenDaylight](#), etc.

- **Hyperledger Developer**

- Core designer & committer of [Fabric](#), [Cello](#), [sdk](#) etc.

- [Hyperledger Technical Steering Committee \(TSC\)](#) Member

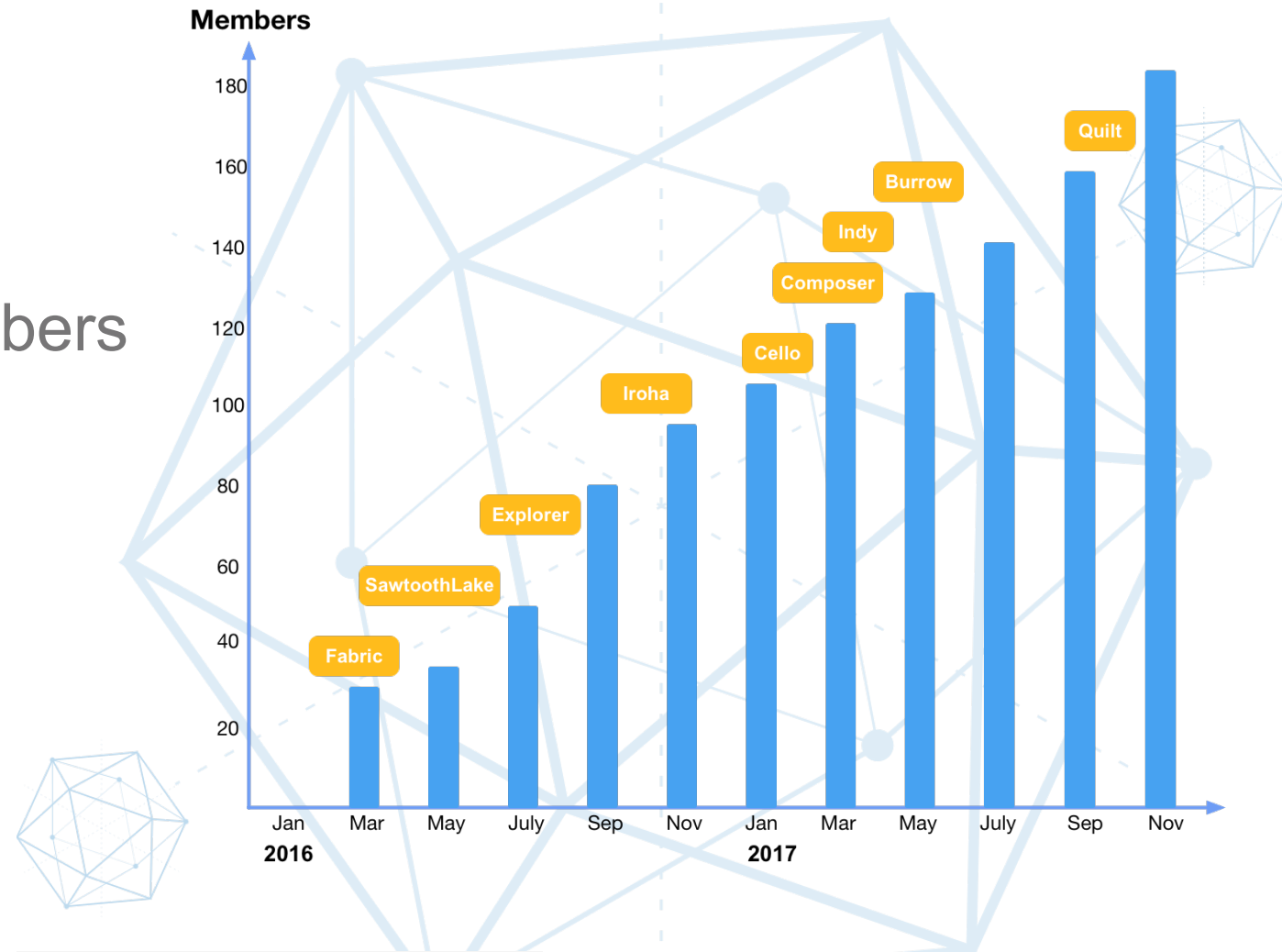
- [Hyperledger Technical Working Group China](#) Chair



# Hyperledger Projects

- Since Dec 17, 2015
- [Apache v2 License](#)
- 30 Founding Members
- 21/44/186 Premier/China/Members
- 9 Top Projects
- 500+ Contributors
- 20000+ Commits

Enterprise grade, open source  
distributed ledger framework!



# Introducing Hyperledger

**Open source**  
collaborative effort to  
advance cross-industry  
**blockchain**  
**technologies**

Hosted by  
**The Linux Foundation**,  
fastest-growing project in  
LF history

**Global collaboration**  
spanning finance,  
banking, IoT, supply  
chains, healthcare,  
manufacturing,  
technology and more.



Together with the global technology community, The Linux Foundation® is solving the world's hardest problems through open source and **creating the largest shared technology investment in history.**

With 16 years experience providing **governance structure, IT infrastructure and ecosystem development**, The Linux Foundation is the umbrella organization for **more than 60 open source projects** accelerating open technology development and commercial adoption.

Some of the game-changing initiatives hosted by The Linux Foundation include:



# Hyperledger Goals

Where open source teams build diverse approaches for business blockchain technology systems



**Create enterprise grade, open source, distributed ledger frameworks & code bases**

to support business transactions



**Provide neutral, open, & community-driven infrastructures**

supported by technical and business governance



**Build technical communities**

to develop blockchain and shared ledger POCs, use cases, field trials and deployments



**Educate the public**

about the market opportunity for blockchain technology



**Promote our community of communities**

taking a toolkit approach with many platforms and frameworks

# Hyperledger Technical Scope

## Out of Scope

## Custom Applications

## App Layer

## In Scope

API libraries and GUIs  
Specialized consensus algos  
Membership policies  
Gateway  
Operations dashboard

## Value Added Systems

## Core APIs

## Core APIs

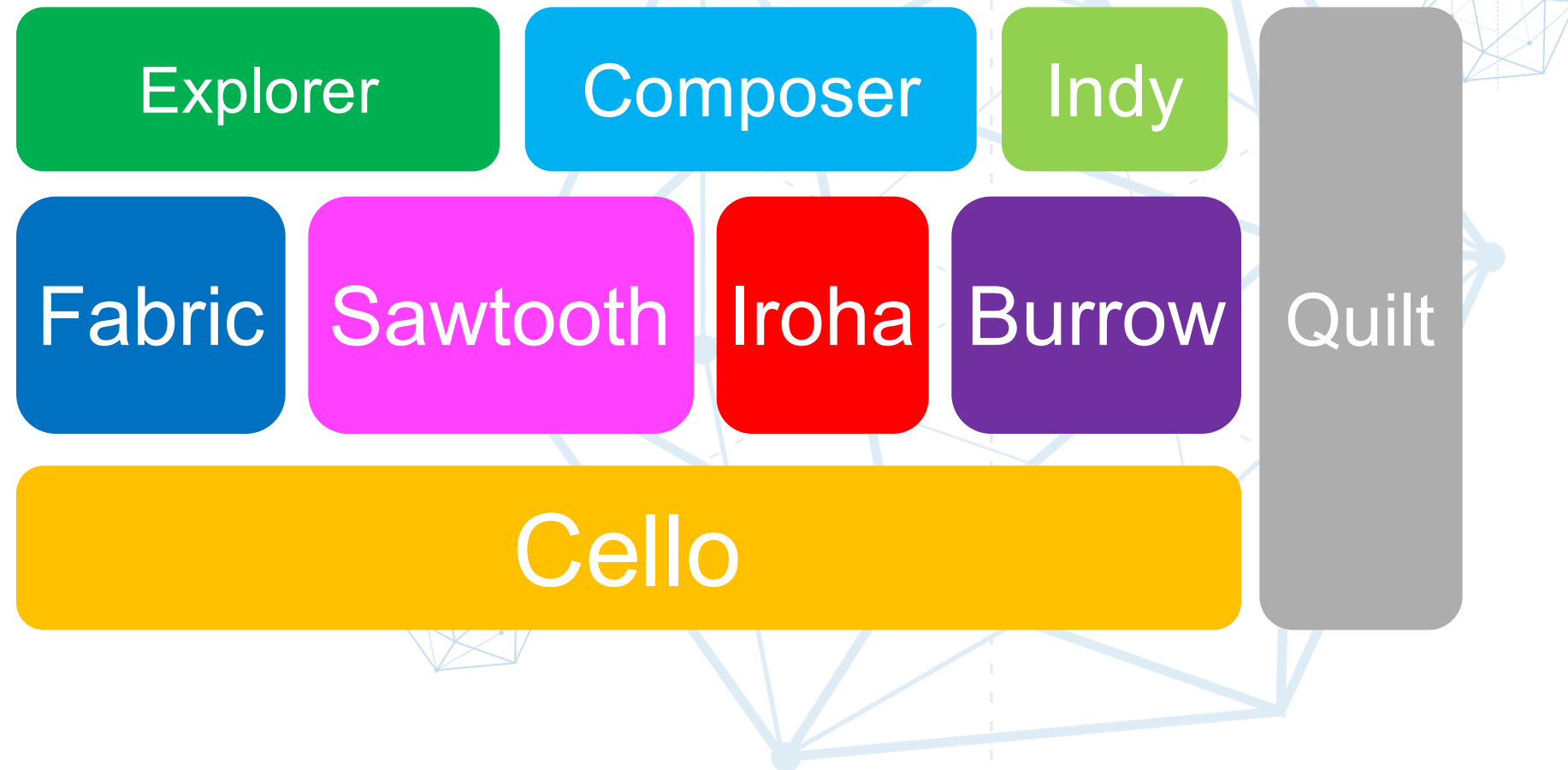
Code execution environment  
Ledger data structures  
Modular consensus framework  
Modular identity services  
Network peers

## Shared Ledger

# Hyperledger Projects

- 9 Top Projects

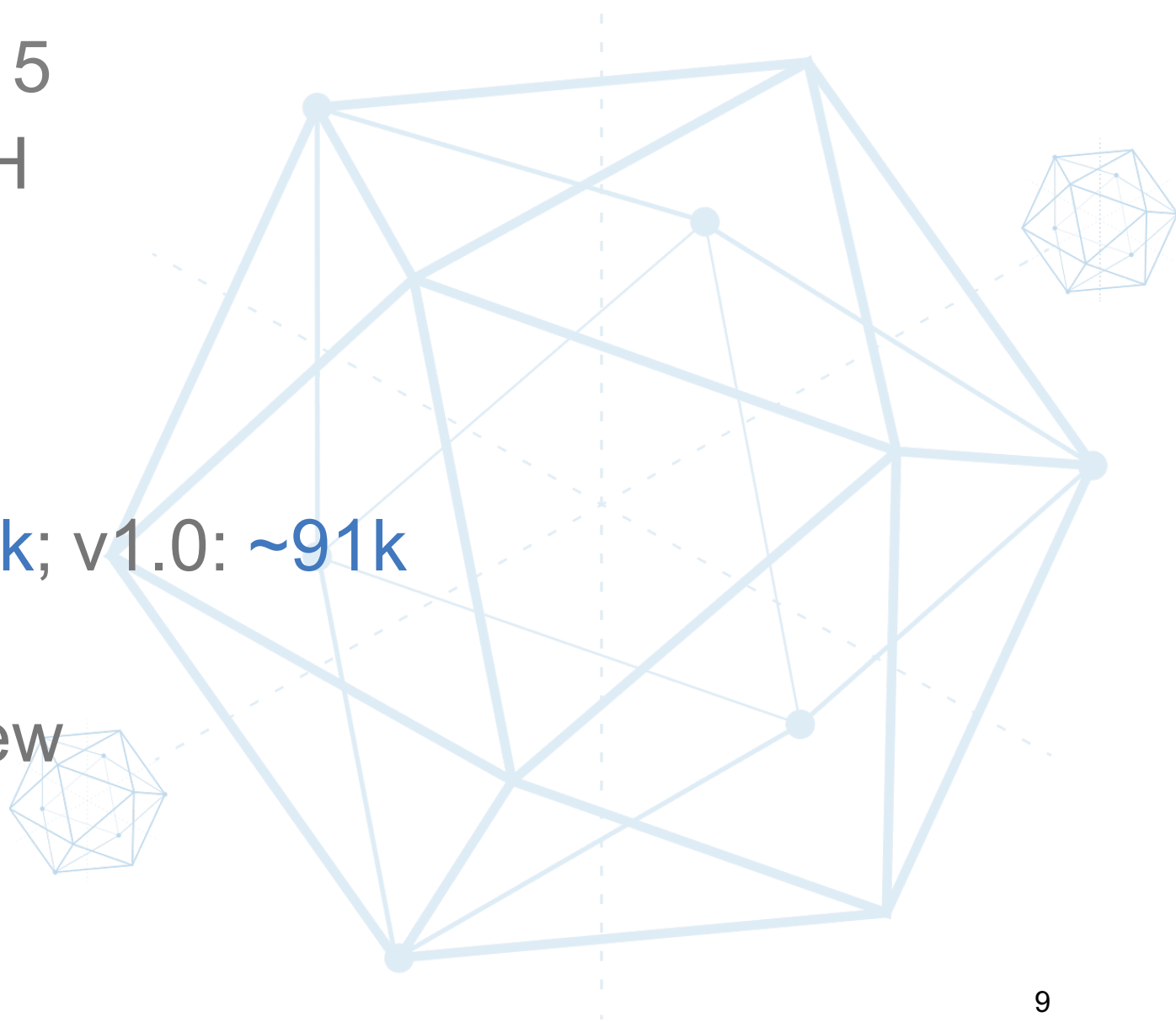
- Fabric
- Sawtooth
- Iroha
- Cello
- Explorer
- Composer
- Burrow
- Indy
- Quilt





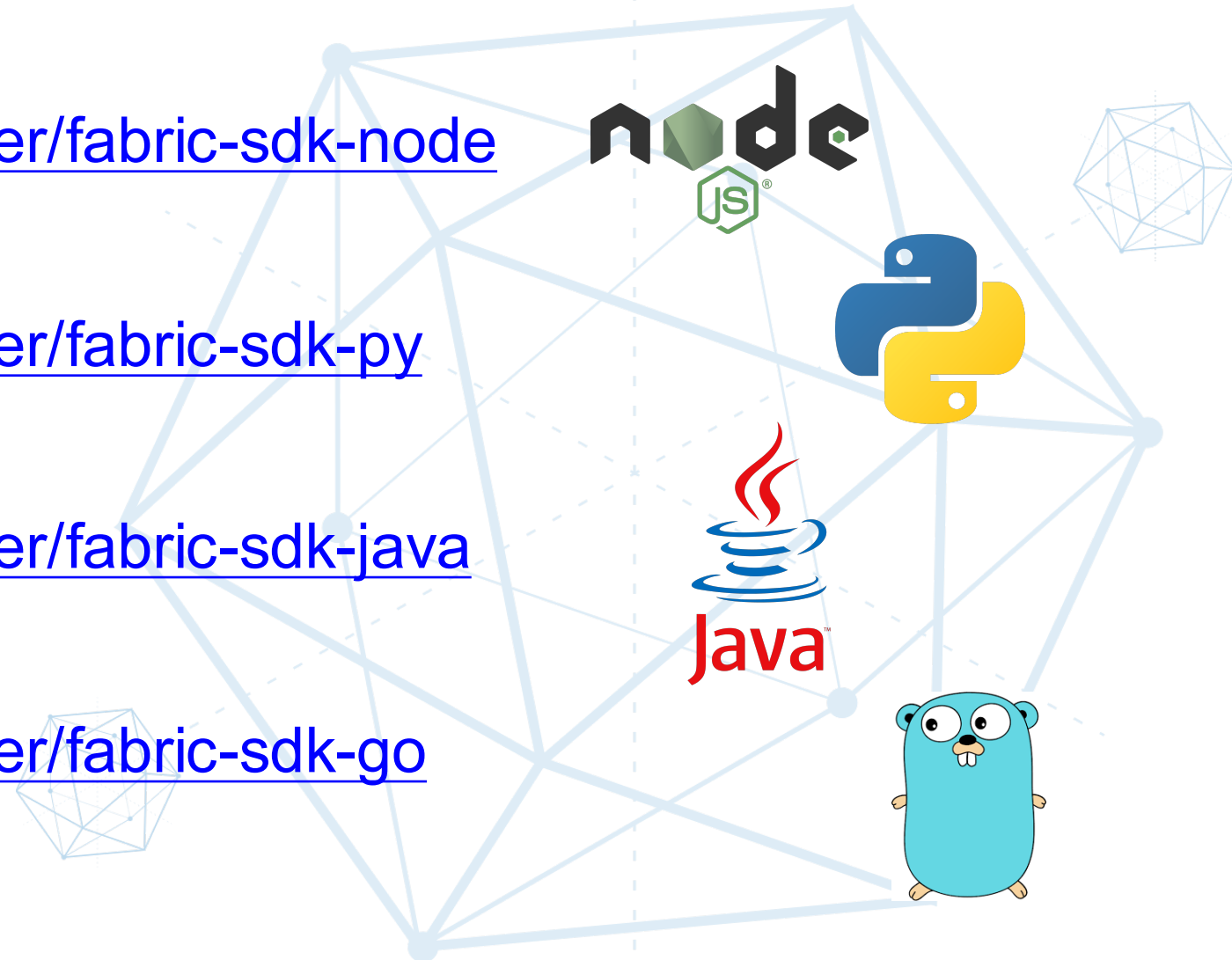
# Hyperledger Fabric

- Open-sourced at Dec, 2015
- Proposed by IBM and DASH
- Written in Golang
- 90+ contributors
- 7000+ commits
- Core code (loc): v0.6: ~49k; v1.0: ~91k
- Active now, in 1.1.0-preview



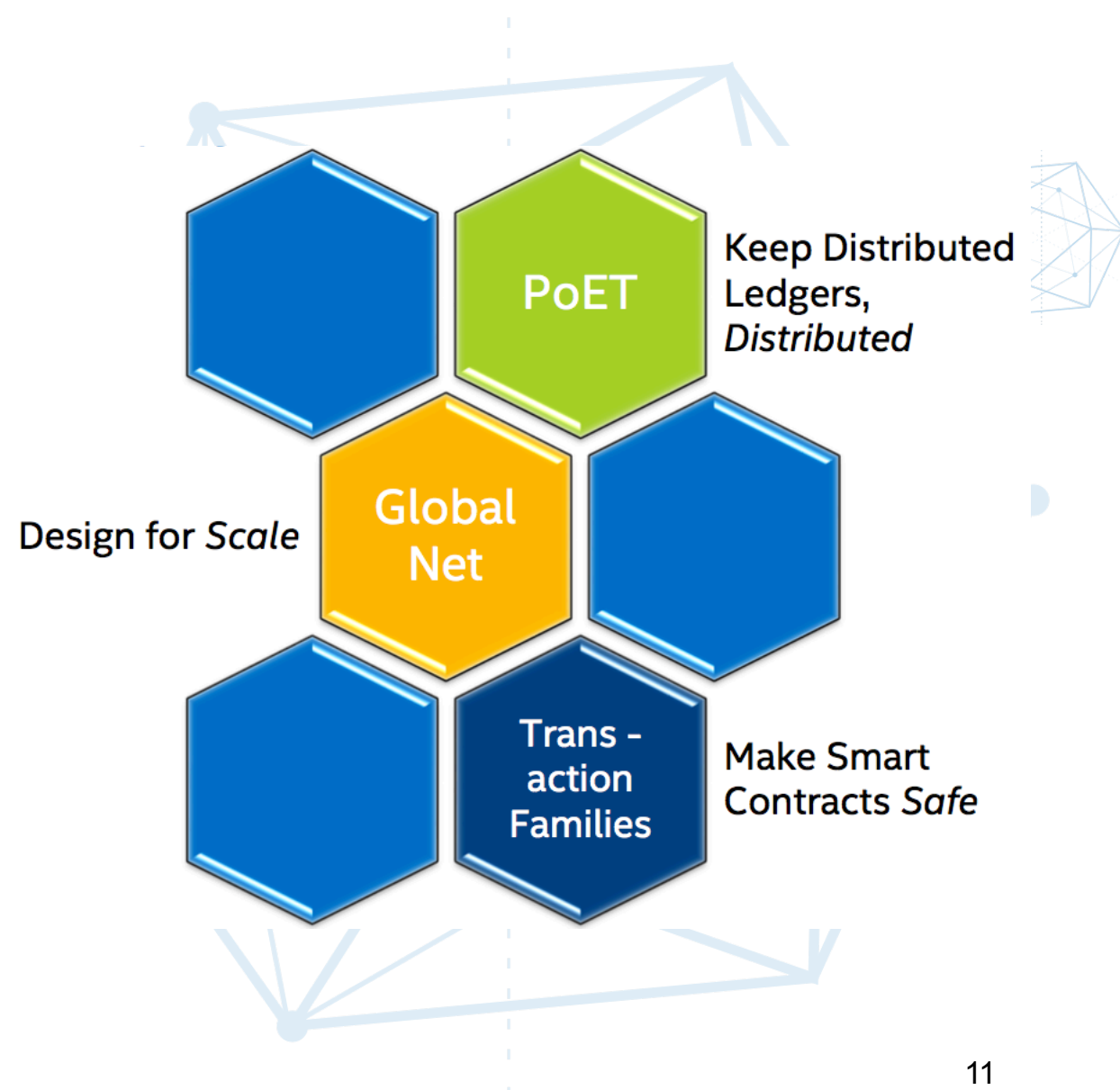
# Hyperledger Fabric SDK

- Node.Js
  - <https://github.com/hyperledger/fabric-sdk-node>
- Python
  - <https://github.com/hyperledger/fabric-sdk-py>
- Java
  - <https://github.com/hyperledger/fabric-sdk-java>
- Golang
  - <https://github.com/hyperledger/fabric-sdk-go>



# Hyperledger Sawtooth

- Open-sourced at April, 2016
- Proposed by Intel
- Python
- 40+ contributors
- 5000+ commits
- Key features
  - PoET consensus
  - Transaction Families
  - Scalability



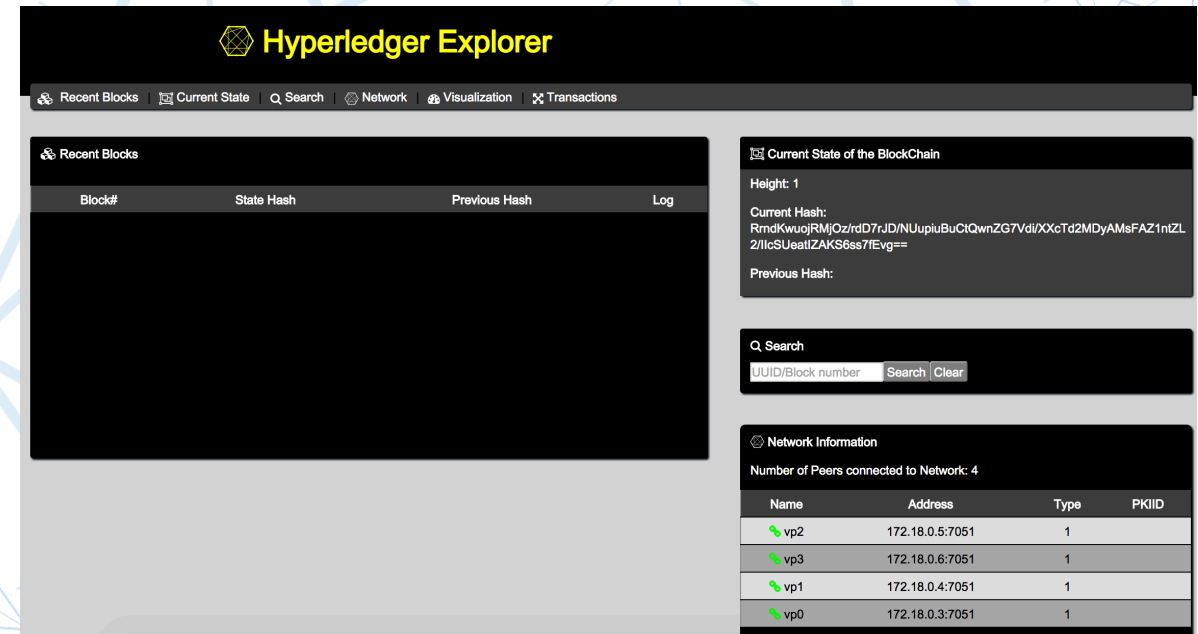
# Hyperledger Iroha

- [Open-sourced](#) at Oct, 2016
- Proposed by [Soramitsu](#)
- C++
- 20+ contributors
- 4000+ commits
- Key features
  - C++ environment
  - Mobile and Web application Support
  - Sumeragi consensus



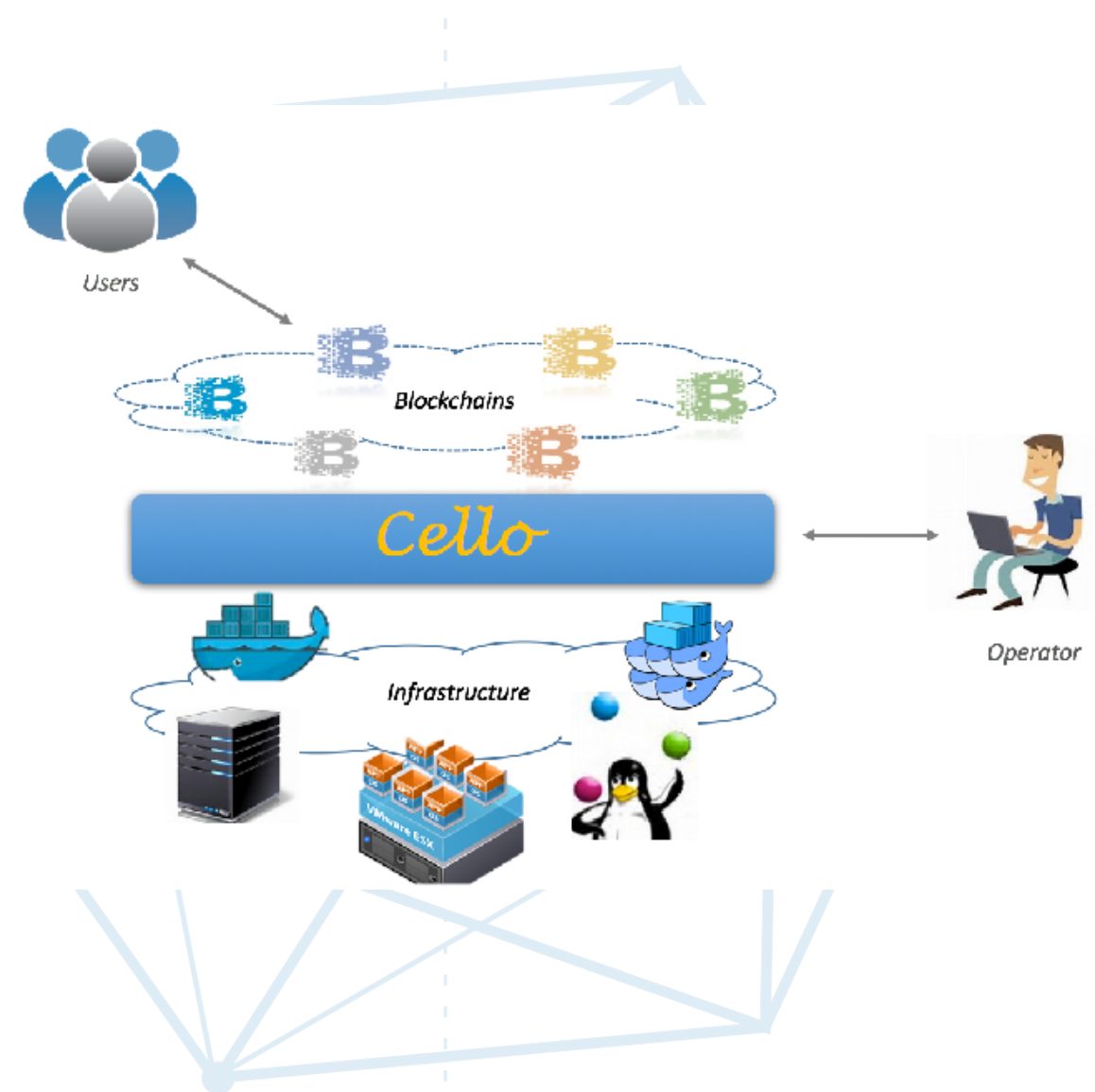
# Hyperledger Explorer

- Open-sourced at Aug, 2016
- Proposed by Intel, DTCC, IBM
- UI to interact with ledger
- Node.js
- Under-development
- Key features
  - Web UI to explorer a blockchain
  - Single-Page Application



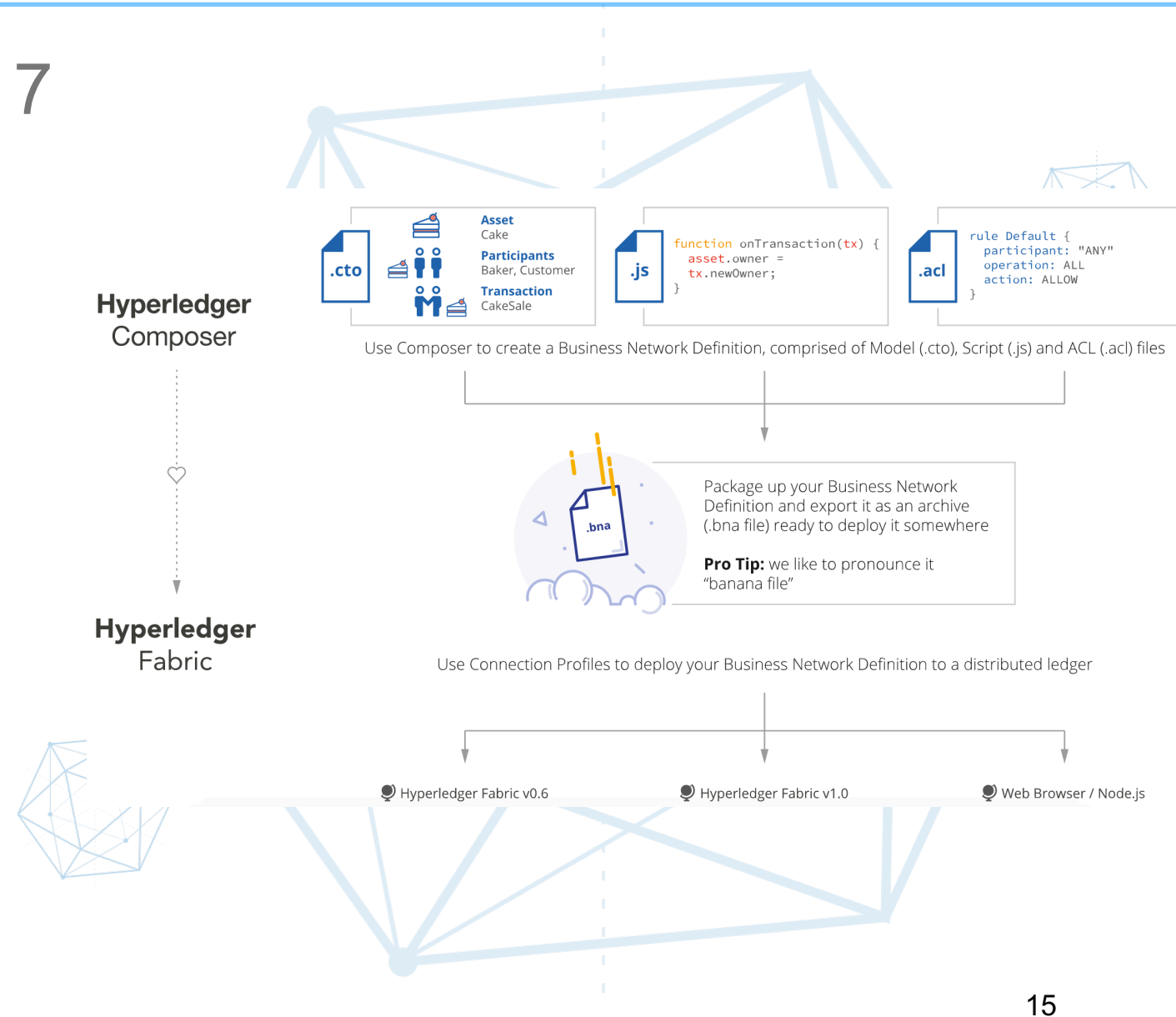
# Hyperledger Cello

- Open-sourced at Jan, 2017
- Proposed by IBM
- Python, JavaScript
- 600+ commits
- Key features
  - Blockchain Provision&Management
  - Support various infrastructures
  - High-performance
  - Scalability
  - Pluggability



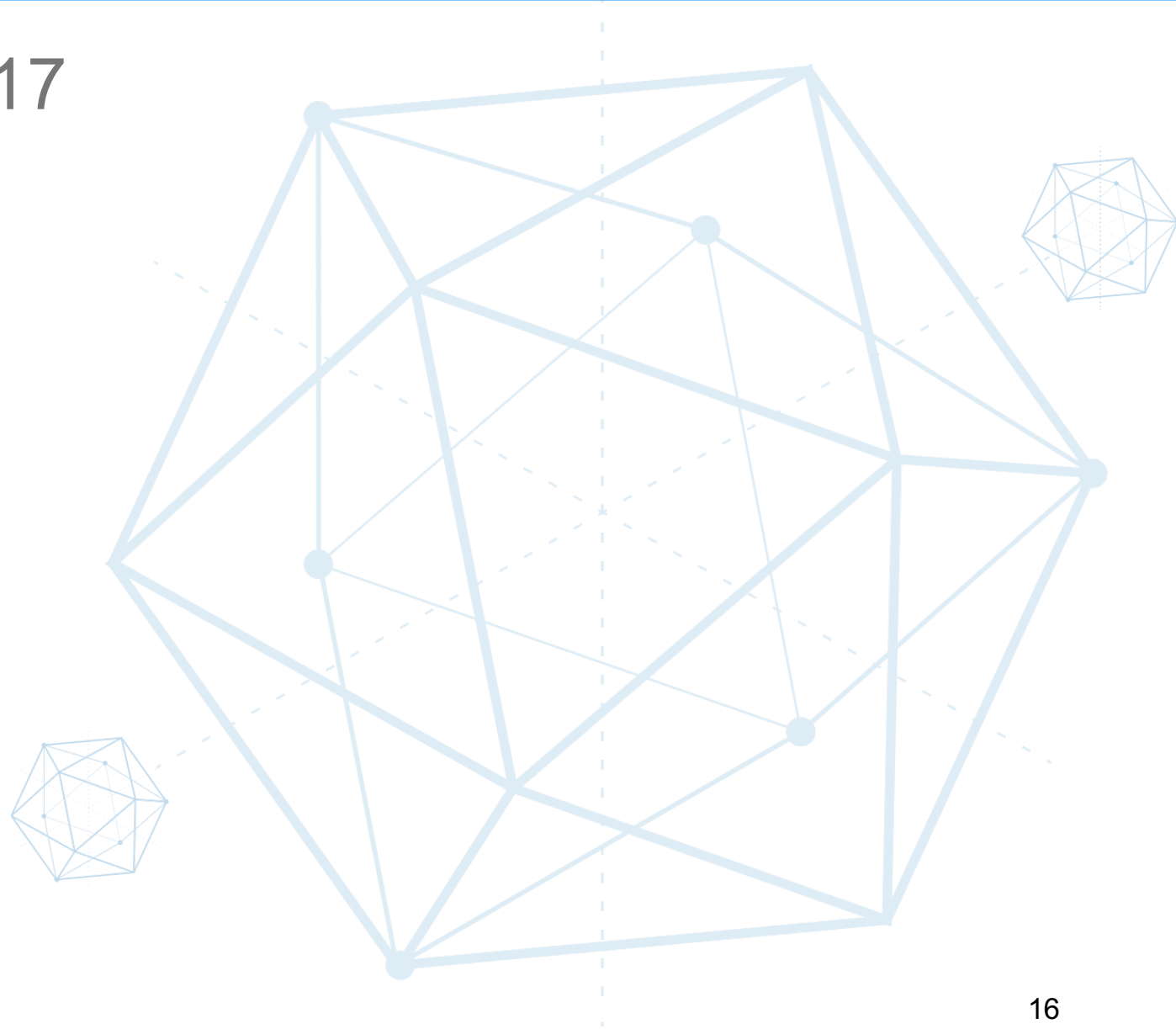
# Hyperledger Composer

- Open-sourced at Mar, 2017
- Proposed by IBM
- JavaScript
- 4000+ commits
- Key features
  - For fabric
  - Simplify application creation



# Hyperledger Burrow

- [Open-sourced](#) at April, 2017
- Proposed by Monax, Intel
- Written in Golang
- **1000+** commits
- Key features
  - From eris-db
  - Ethereum vm support
  - Proof-of-Stake





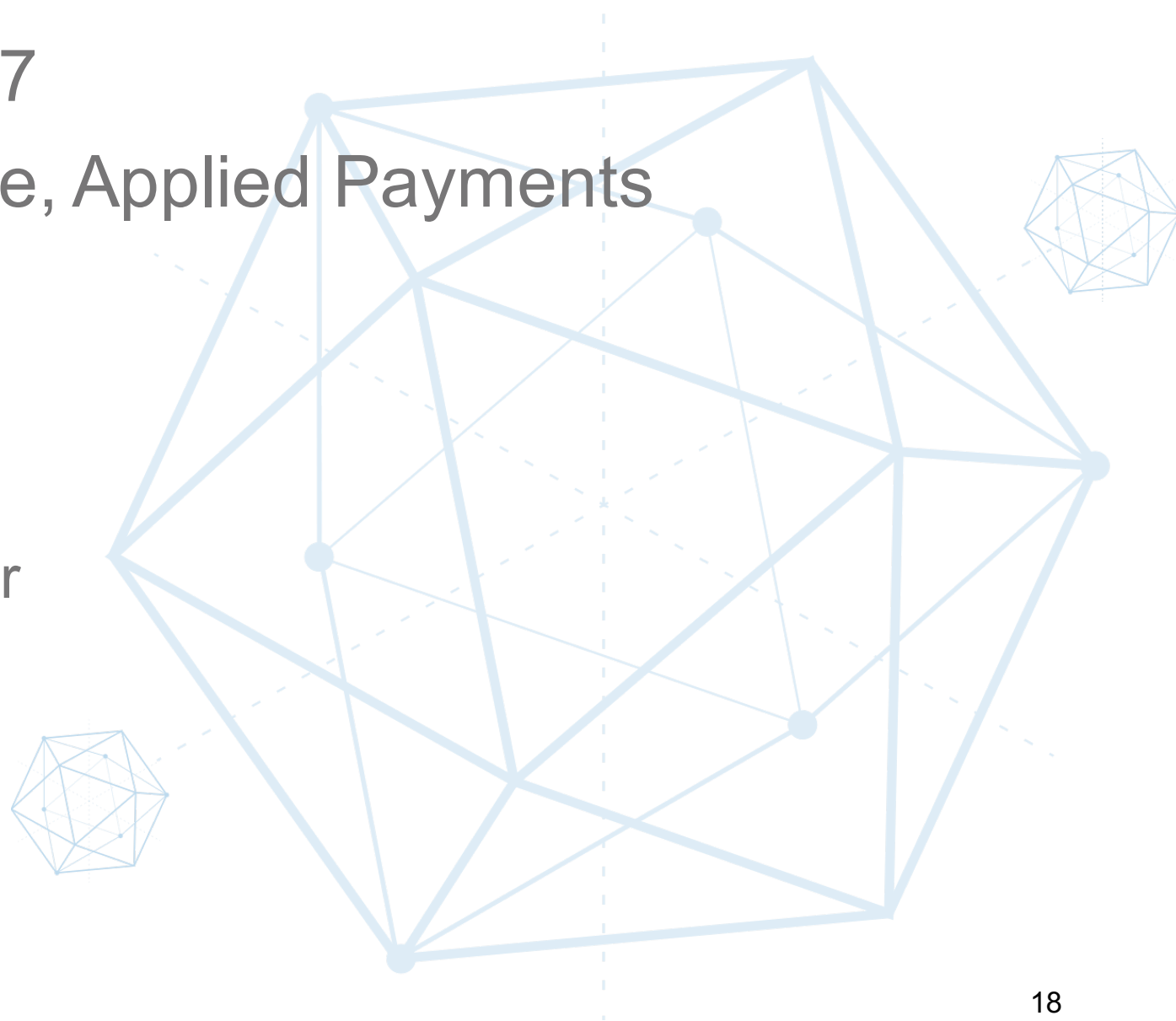
# Hyperledger Indy

- Open-sourced at April, 2017
- Proposed by Sovrin
- Written in Python
- 3000+ commits
- Key features
  - Digital ID management
  - Cross-chain, cross-application

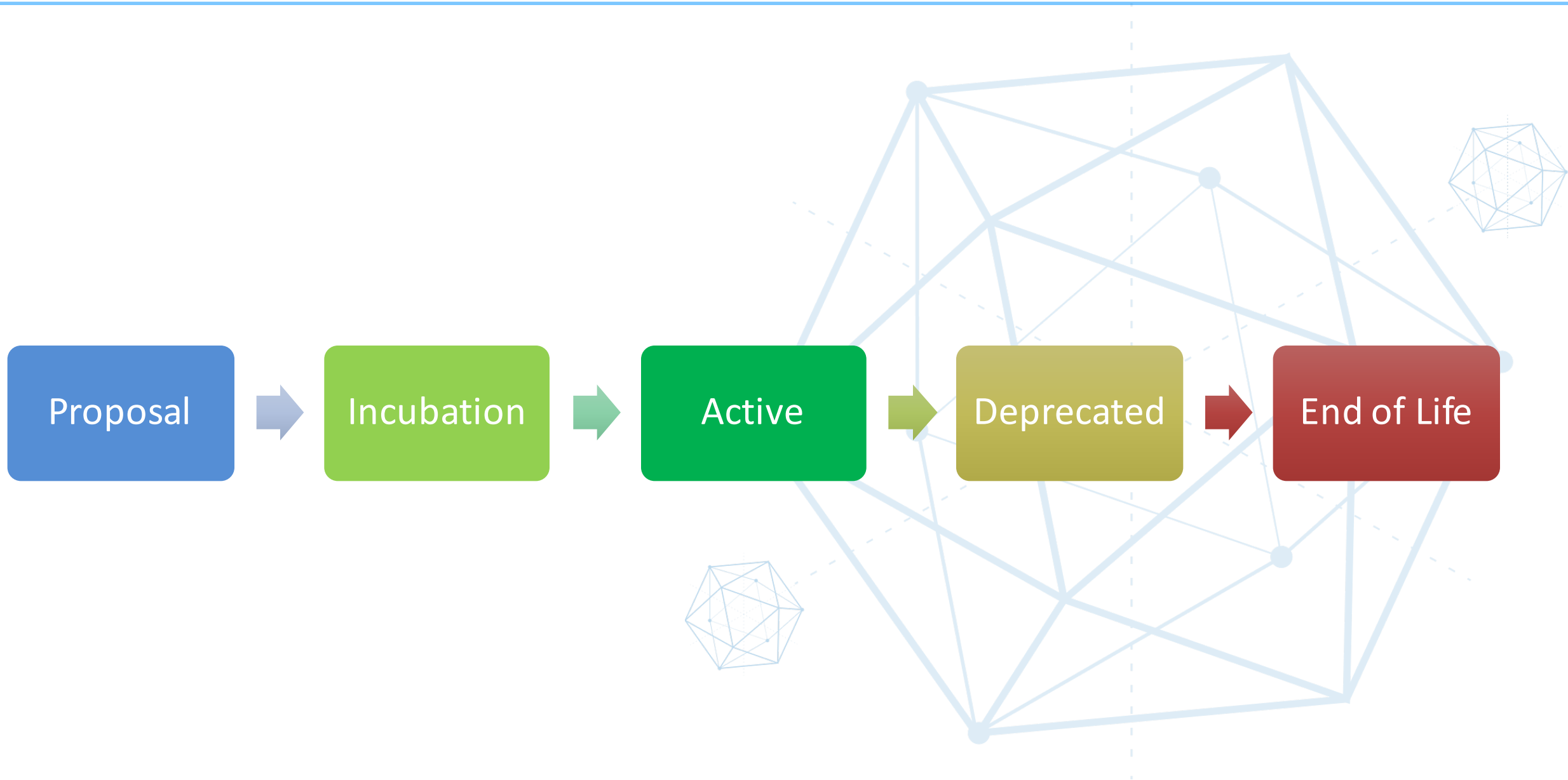


# Hyperledger Quilt

- Open-sourced at Oct, 2017
- Proposed by Everis, Ripple, Applied Payments
- Written in Java
- Key features
  - Interledger Protocol by w3c
  - Cross-chain payment transfer

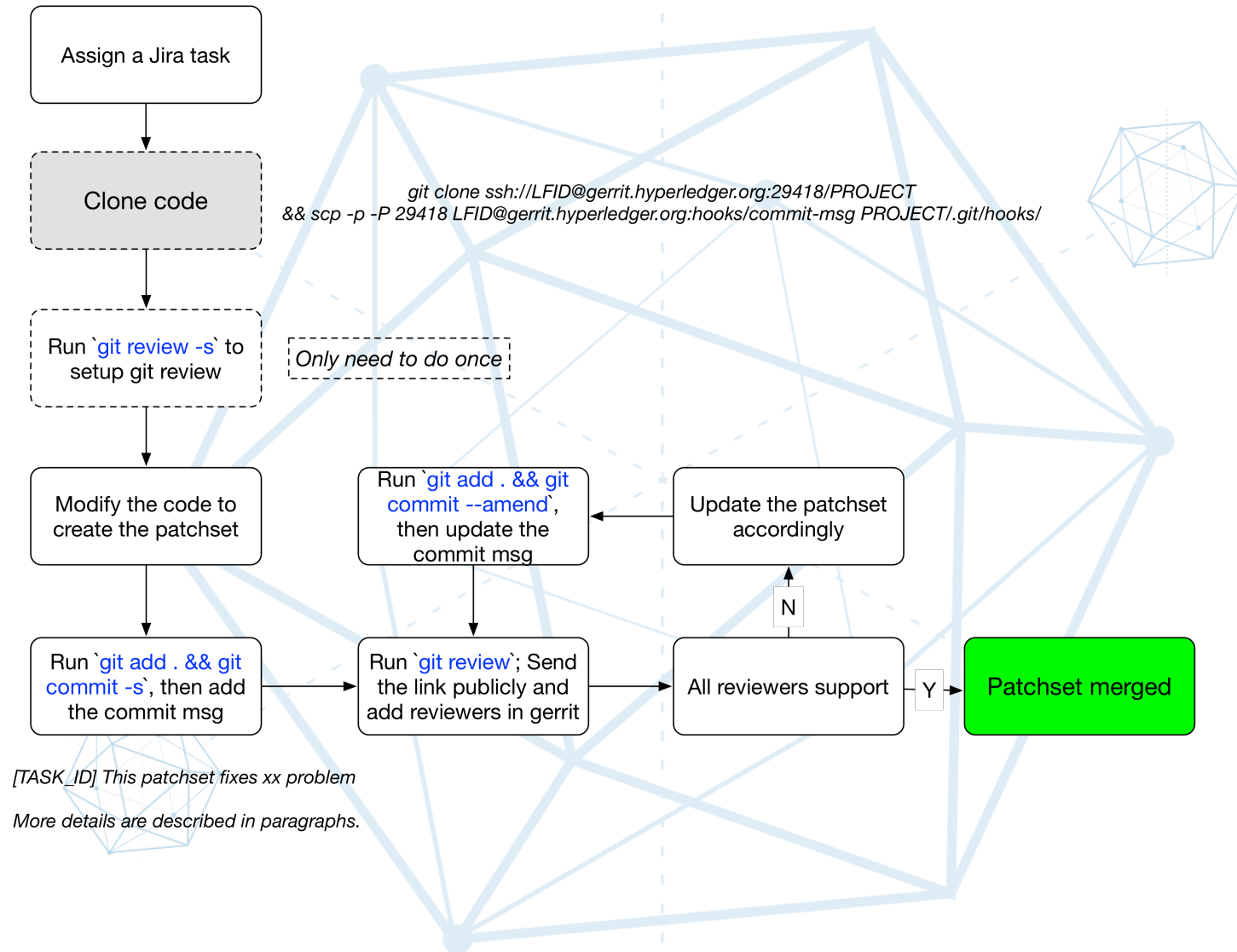


# Hyperledger Projects Lifecycle



# How to Contribute

- [Linux Foundation ID](#)
- [Jira](#) to manage tasks
- [Gerrit](#) to host code
- [RocketChat](#)



# Reference

- [Hyperledger Project](#)
- 《[区块链原理设计与应用](#)》
- 《[Docker 技术入门与实战](#)》
- [超级账本 Fabric 源码剖析](#)
- [github.com/yeasy/blockchain\\_guide](https://github.com/yeasy/blockchain_guide)





**HYPERLEDGER**  
BLOCKCHAIN TECHNOLOGIES FOR BUSINESS



# Questions?

**Thank You!**  
**@baohua**

*Slides available at [github.com/yeasy/seminar-talk#hyperledger](https://github.com/yeasy/seminar-talk#hyperledger)*