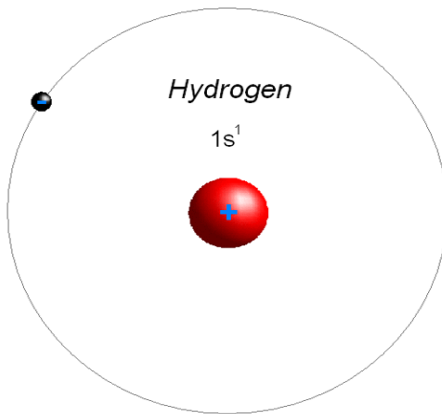# OpenDaylight
Introduction and Overview

David Meyer
SP CTO and Chief Scientist
Brocade
http://www.1-4-5.net/~dmm/talks/interop_nyc_2013.pdf

Agenda

Introduction

Architecture Overview

Project Life Cycle, Simultaneous Release Plan and Projects

How to Get Involved and A Bit on Governance

Q&A

What is OpenDaylight?

OpenDaylight is an open source project under the [Linux Foundation](#) with the mutual goal of furthering the adoption and innovation of Software Defined Networking (SDN) through the creation of a common industry supported framework.
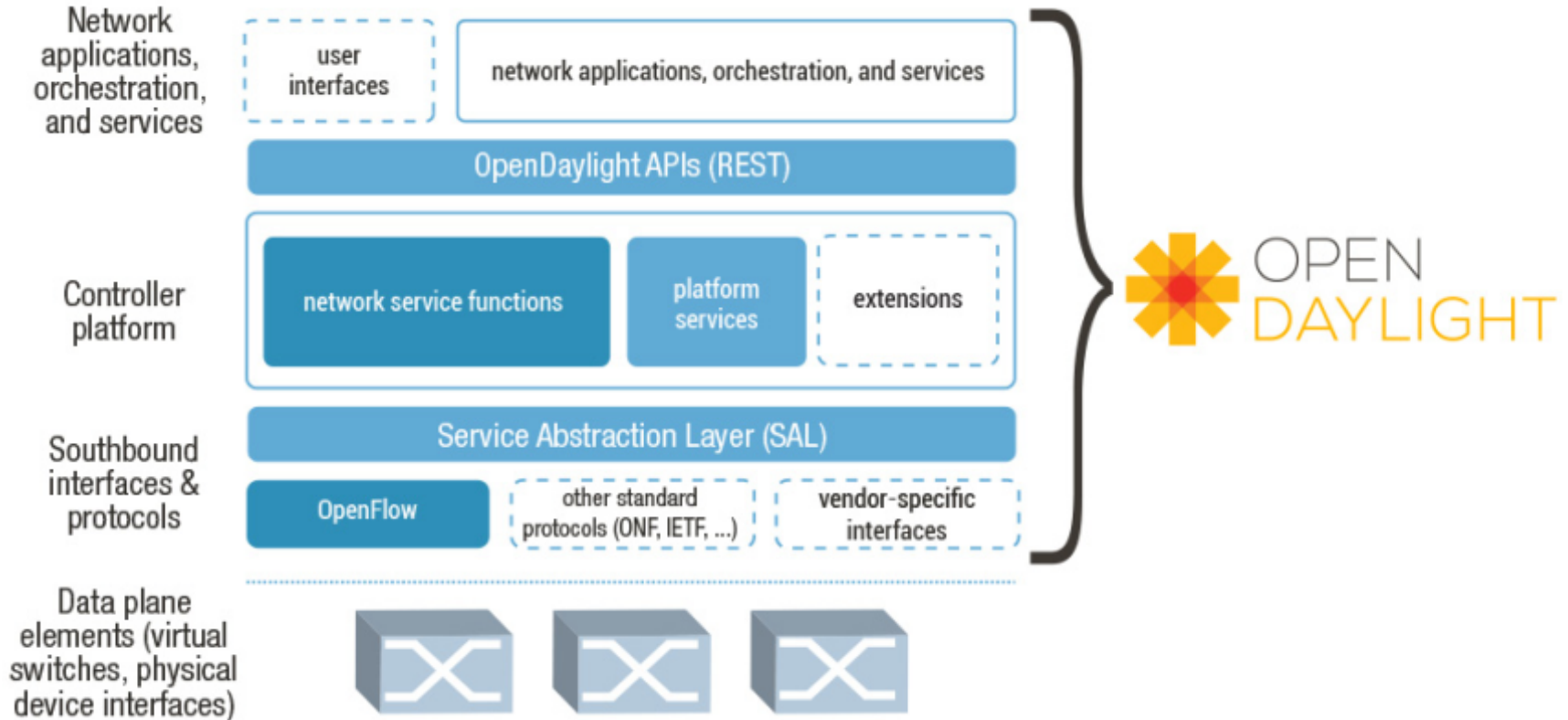
Goals

- Code: To create a robust, extensible, open source code base that covers the major common components required to build an SDN solution

- Acceptance: To get broad industry acceptance amongst vendors and users

- Community: To have a thriving and growing technical community contributing to the code base, using the code in commercial products, and adding value above, below and around

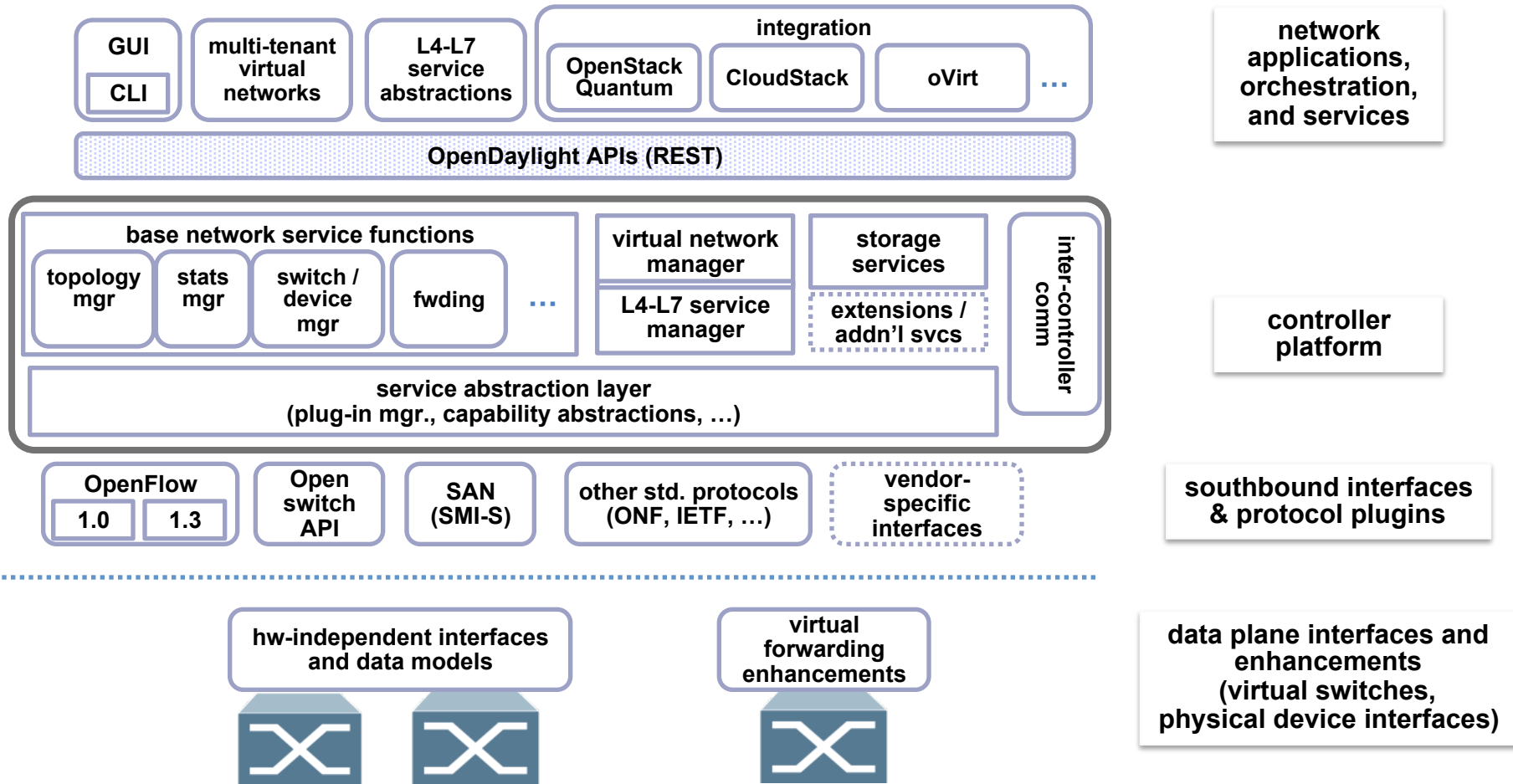- Key Principles: Open, transparent, fair

Code – The Coin of the Realm

- A wide array of technologies contributed by leading companies and developers

  - See "Current Projects" in a few slides

- Open Source: Any developer can contribute code as an individual

- Robust framework/platform for new apps and tools

- [Eclipse Public License](#) (EPL)
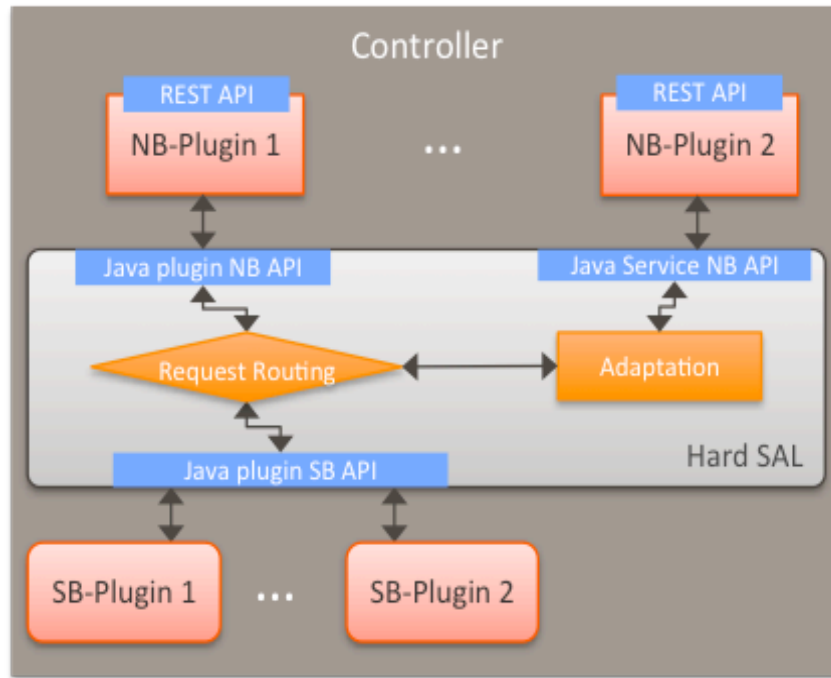
- So what is the ODP architecture?
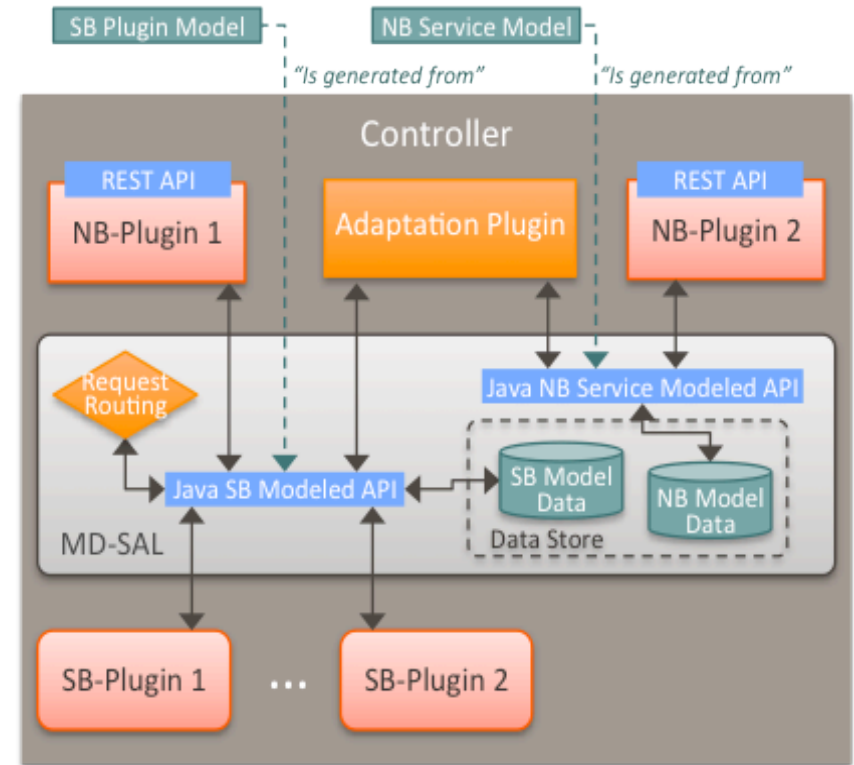
Project Framework

Architectural Framework

network applications, orchestration, and services

			integration			
GUI / CLI	multi-tenant virtual networks	L4-L7 service abstractions	OpenStack Quantum	CloudStack	oVirt	…

OpenDaylight APIs (REST)

controller platform

base network service functions

topology mgr	stats mgr	switch / device mgr	fwding	…

virtual network manager

L4-L7 service manager

storage services

extensions / addn'l svcs

inter-controller comm

service abstraction layer
(plug-in mgr., capability abstractions, …)

southbound interfaces & protocol plugins

OpenFlow		Open switch API	SAN (SMI-S)	other std. protocols (ONF, IETF, …)	vendor-specific interfaces
1.0	1.3				

hw-independent interfaces and data models

virtual forwarding enhancements

data plane interfaces and enhancements (virtual switches, physical device interfaces)

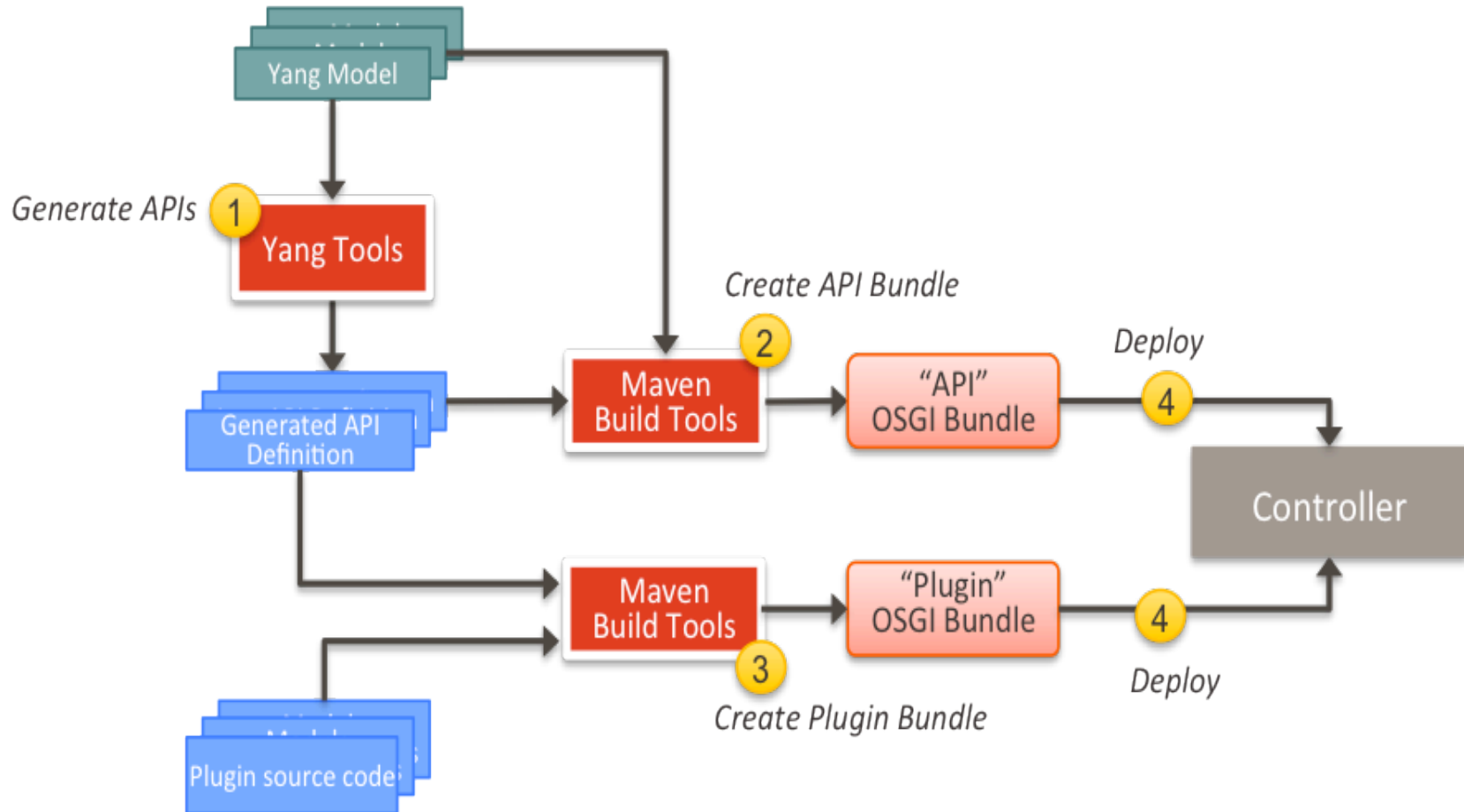# Major Architectural Feature:
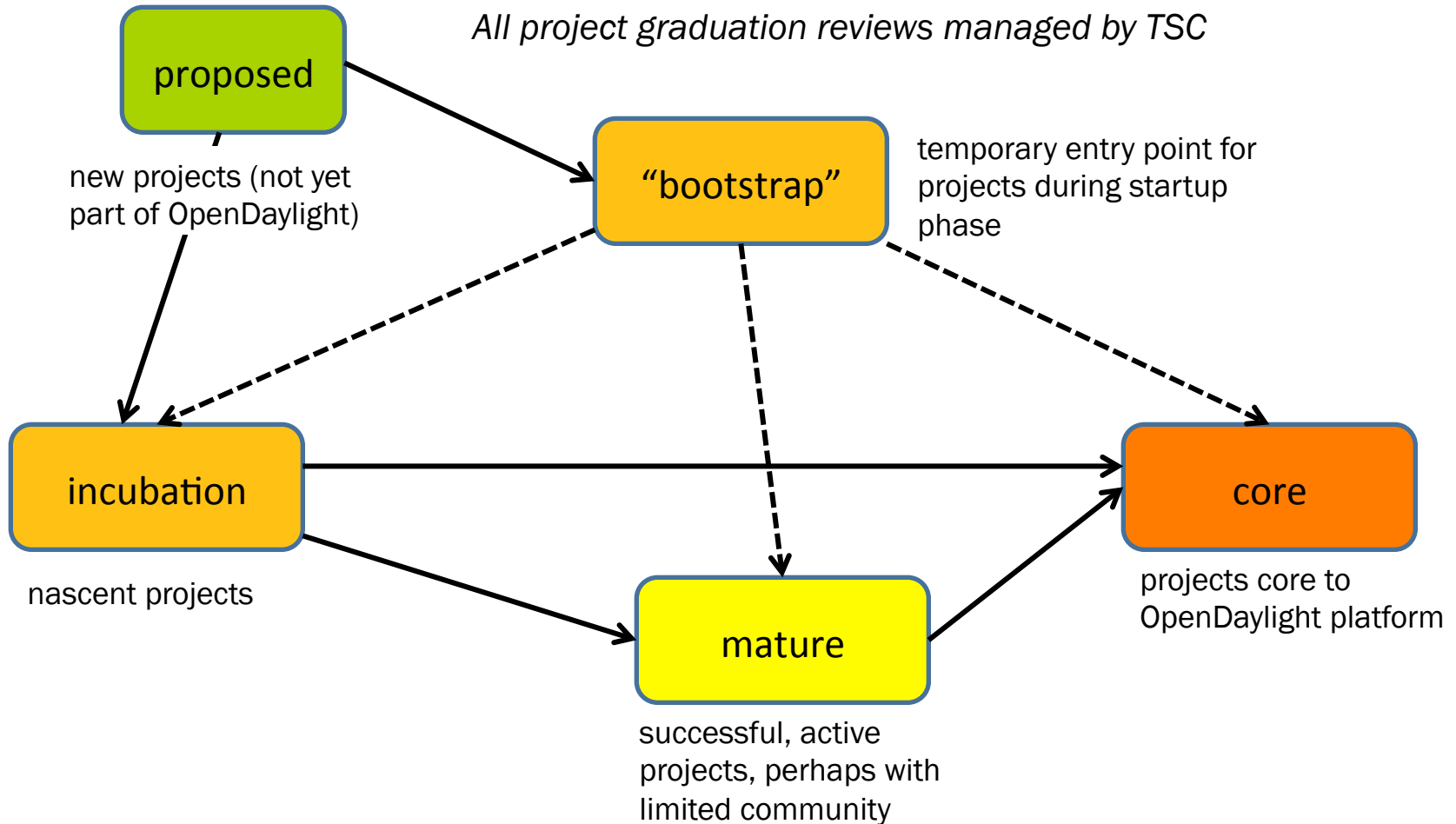# Service Abstraction Layer (SAL)

Hard SAL

MD SAL

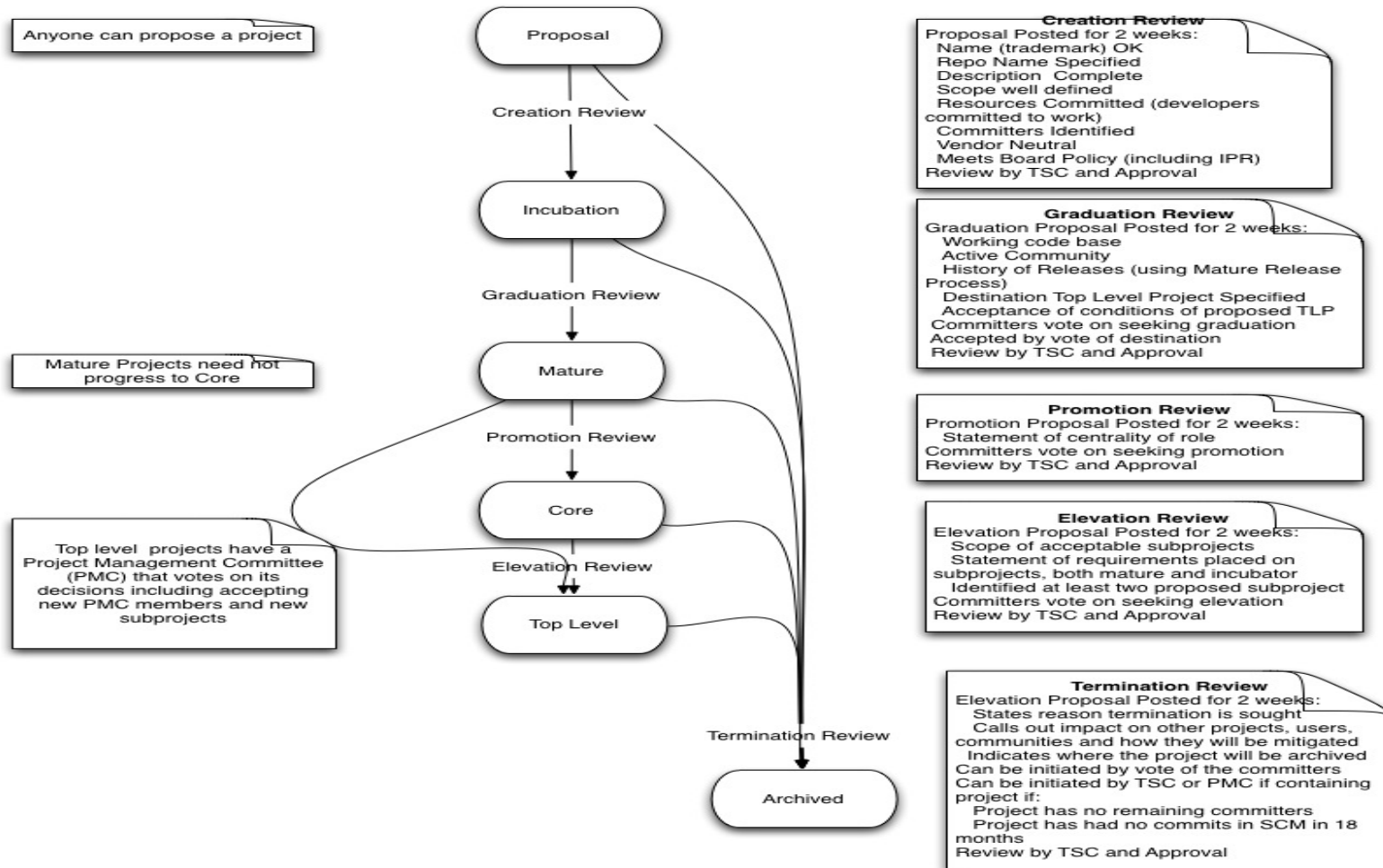https://wiki.opendaylight.org/view/OpenDaylight_Controller:MD-SAL:FAQ

SAL Plugin Design Process

Project Life Cycle Schematic

All project graduation reviews managed by TSC

proposed

new projects (not yet part of OpenDaylight)

"bootstrap"

temporary entry point for projects during startup phase

incubation

nascent projects

core

projects core to OpenDaylight platform

mature

successful, active projects, perhaps with limited community

Project Life Cycle Detail

Anyone can propose a project

Proposal

Creation Review

Incubation

Graduation Review

Mature Projects need not progress to Core

Mature

Promotion Review

Core

Top level projects have a Project Management Committee (PMC) that votes on its decisions including accepting new PMC members and new subprojects

Elevation Review

Top Level

Termination Review

Archived

Creation Review
Proposal Posted for 2 weeks:
  Name (trademark) OK
  Repo Name Specified
  Description Complete
  Scope well defined
  Resources Committed (developers committed to work)
  Committers Identified
  Vendor Neutral
  Meets Board Policy (including IPR)
Review by TSC and Approval

Graduation Review
Graduation Proposal Posted for 2 weeks:
  Working code base
  Active Community
  History of Releases (using Mature Release Process)
  Destination Top Level Project Specified
  Acceptance of conditions of proposed TLP
Committers vote on seeking graduation
Accepted by vote of destination
Review by TSC and Approval

Promotion Review
Promotion Proposal Posted for 2 weeks:
  Statement of centrality of role
Committers vote on seeking promotion
Review by TSC and Approval

Elevation Review
Elevation Proposal Posted for 2 weeks:
  Scope of acceptable subprojects
  Statement of requirements placed on subprojects, both mature and incubator
  Identified at least two proposed subproject
Committers vote on seeking elevation
Review by TSC and Approval

Termination Review
Elevation Proposal Posted for 2 weeks:
  States reason termination is sought
  Calls out impact on other projects, users, communities and how they will be mitigated
  Indicates where the project will be archived
Can be initiated by vote of the committers
Can be initiated by TSC or PMC if containing project if:
  Project has no remaining committers
  Project has had no commits in SCM in 18 months
Review by TSC and Approval

Hydrogen Projects

Projects in Bootstrap State

- Controller (Cisco)
- Network Virtualization Platform (BSN)
- Virtual Tenant Network (NEC)
- Open DOVE (IBM)
- OpenFlow Plugin (Ericsson/Cisco/Pantheon)
- Affinity Metadata Service (Plexxi)

Projects in Incubation State

- YANG Tools (Cisco)
- LISP Flow Mapping (ConteXtream)
- OVSDB Integration (UK/Cisco)
- Openflow Protocol Library (Pantheon/Cisco)
- BGP-LS/PCEP (Cisco)
- Defense4All (Radware)
- SNMP4SDN (ITRI)

See http://wiki.opendaylight.org

Hydrogen Simultaneous Release Plan 2013

Schedule

Milestone	Offset 0 Date	Offset 1 Date	Offset 2 Date	Events
M0	6/24/2013	6/26/2013	6/28/2013	Simultaneous Release Open
M1	7/22/2013	7/24/2013	7/26/2013	1. Projects must have declared intent to participate in Simultaneous Release 2. Participating Projects must have published a candidate Release Plan for public comment (Release Plan Template)
M2	8/19/2013	8/21/2013	8/23/2013	Participating Projects must have declared their final Release Plan
M3	9/16/2013	9/18/2013	9/20/2013	Latest possible Continuous Integration Test Start
M4	10/14//2013	10/16/2013	10/18/2013	1. API Freeze 2. Latest possible Continuous System Test Start
M5	11/11/2013	11/13/2013	11/15/2013	1. Code Freeze (bug fixes only from here) 2. String Freeze (all internationalizable strings frozen to allow for translation) 3. Latest possible date for commencing User Facing Documentation
RC0	11/18/2013	11/20/2013	11/22/2013	
RC1	11/25/2013	11/27/2013	11/29/2013	
RC2	12/2/2013	12/4/2013	12/6/2013	Participating Projects must hold their Release Reviews, including User Facing Documentation.
Formal Release	12/9/2013			

OPEN DAYLIGHT

First Code Release "Hydrogen"

VTN: Virtual Tenant Network
DOVE: Distributed Overlay Virtual Ethernet
DDoS: Distributed Denial Of Service
LISP: Locator/Identifier Separation Protocol
OVSDB: Open vSwitch DataBase protocol
BGP: Border Gateway Protocol
PCEP: Path Computation Element Communication Protocol
SNMP: Simple Network Management Protocol

Management GUI/CLI	VTN Coordinator	OpenStack Neutron	DDoS Protection	Network Applications Orchestrations & Services

OpenDaylight APIs (REST)

Base Network Service Functions

Topology Manager	Stats Manager	Switch Manager	Host Tracker	Shortest Path Forwarding

DOVE Manager	Affinity Service	Traffic Redirection
LISP Service	VTN Manager	

Controller Platform

Service Abstraction Layer (SAL)
(Plugin Manager, Capability Abstractions, Flow Programming, Inventory, etc.)

OpenFlow 1.0 1.3	OVSDB	NETCONF	LISP	BGP	PCEP	SNMP	Southbound Interfaces & Protocol Plugins

OpenFlow Enabled Devices	Open vSwitches	Additional Virtual & Physical Devices	Data Plane Elements (Virtual Switches, Physical Device Interfaces)

Proposed Hydrogen Release Vehicles

- Release Vehicles and their contents are still being finalized

- Current proposal:
  - Base Edition
  - Virtualization Edition
  - Service Provider Edition
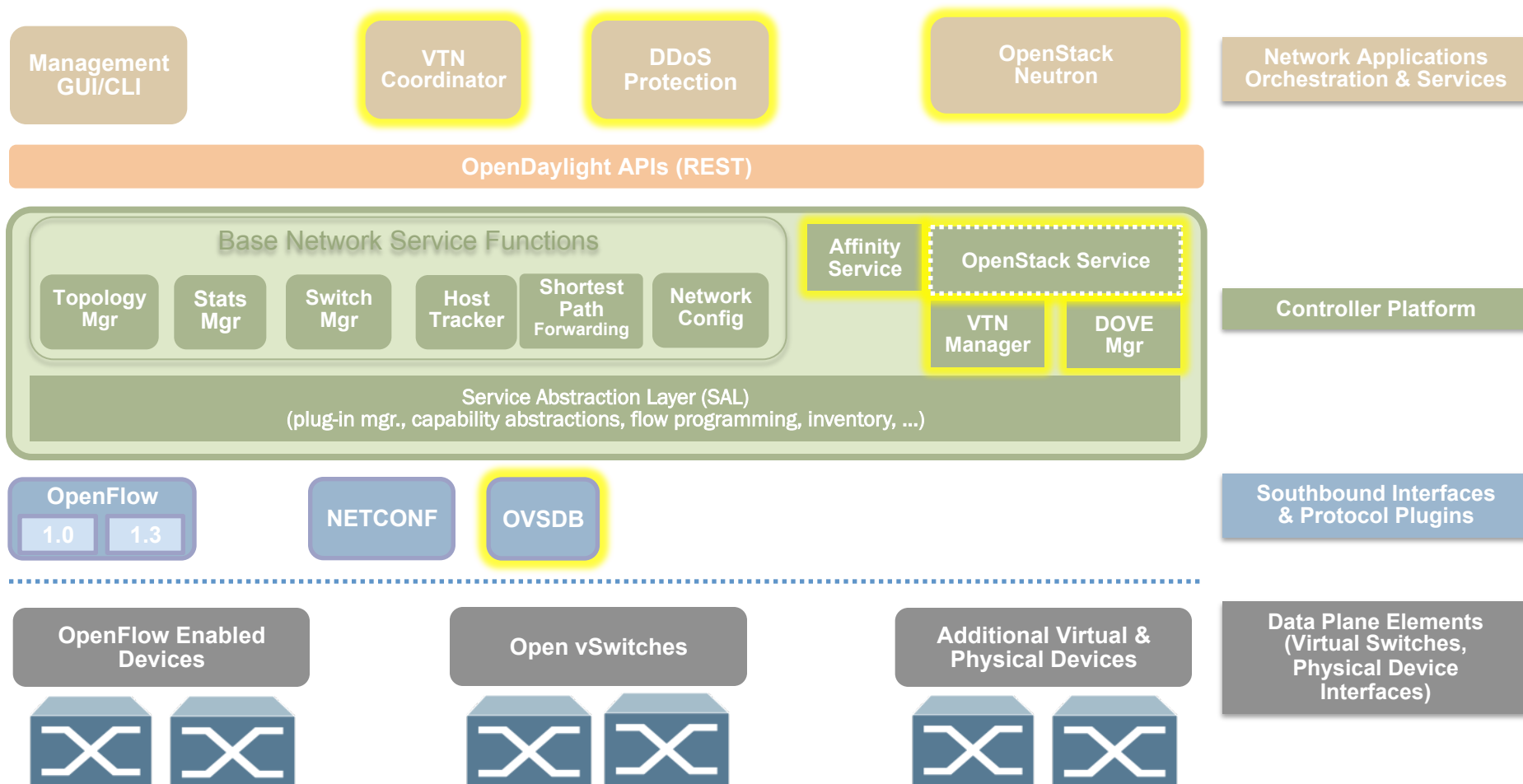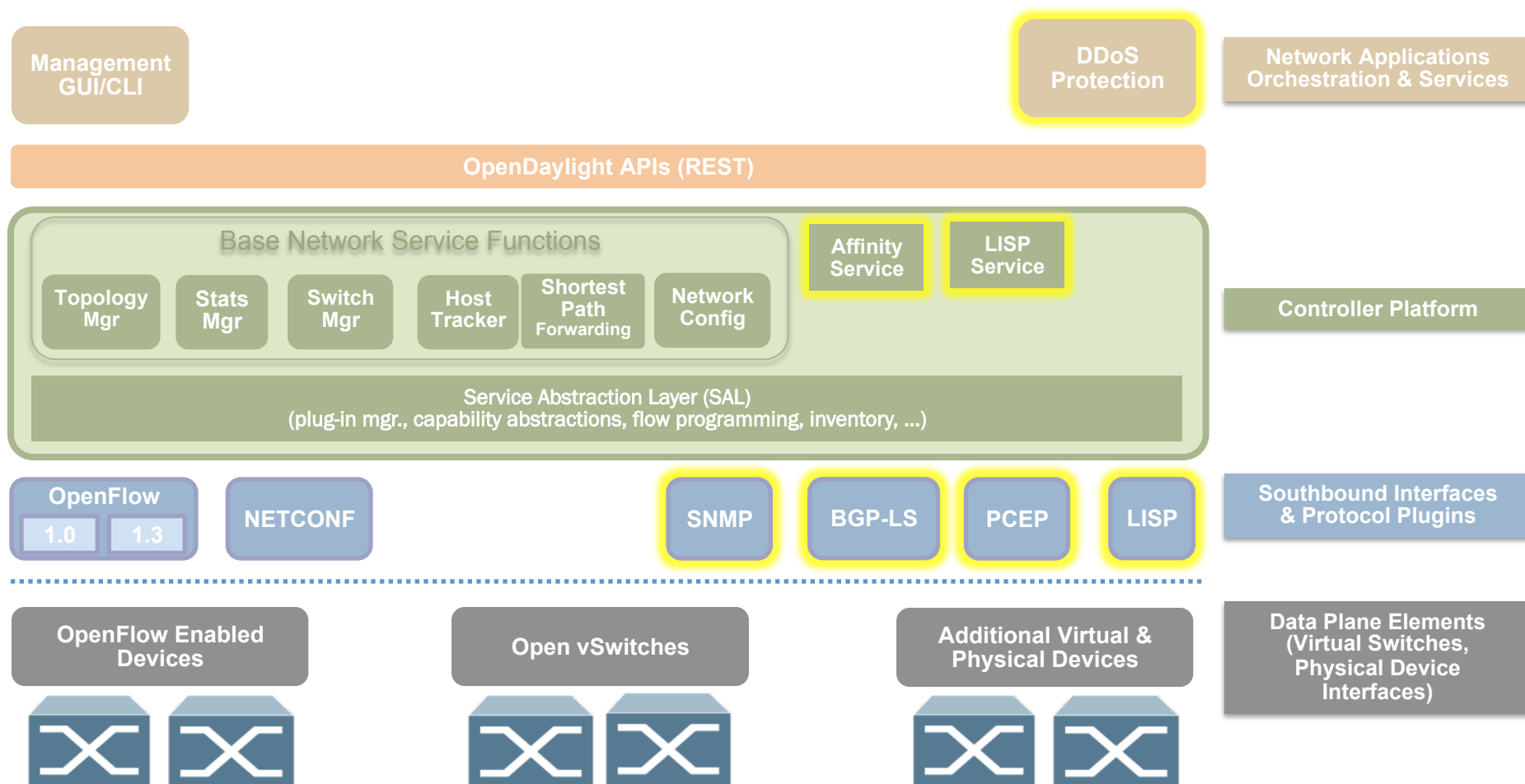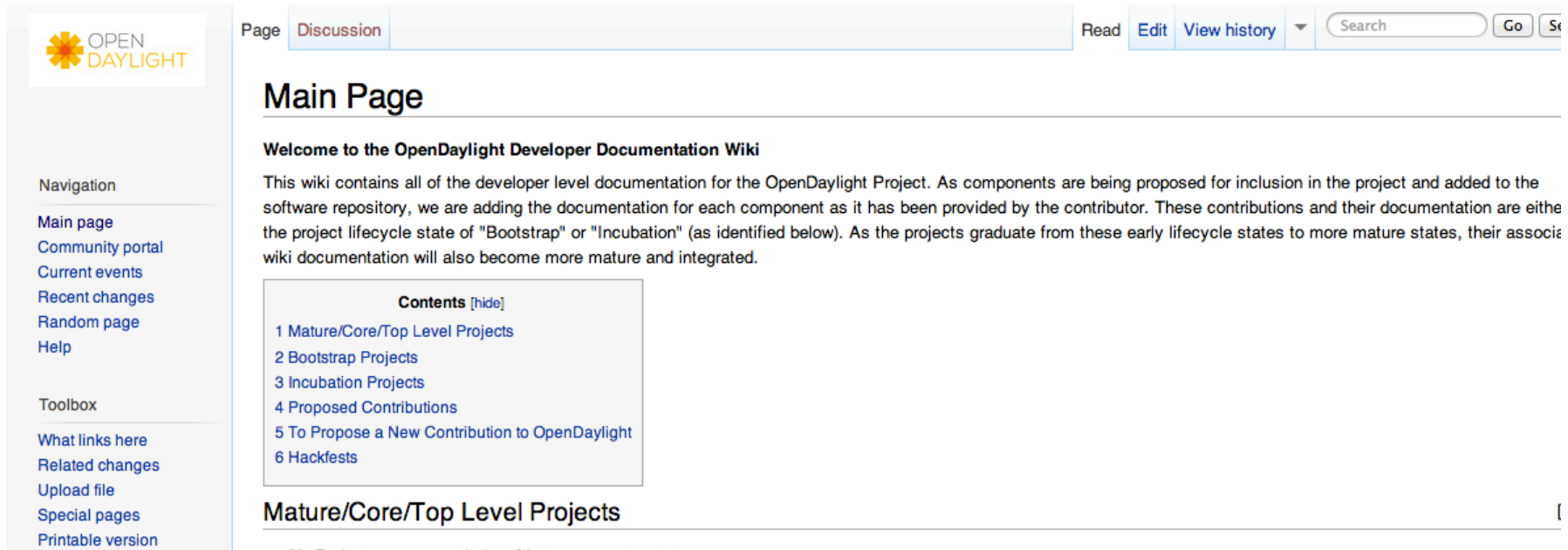
Getting Involved

Developer documentation: wiki.opendaylight.org

- list of current projects in various states
- links to documentation on current projects, e.g., how to get/build code, architecture, ...
- information on proposing new projects for OpenDaylight

Getting Involved, Cont

Open mailing lists: lists.opendaylight.org
- – discussion groups on specific projects
- – cross-project discussions
- – announcements

lists.opendaylight.org Mailing Lists

Welcome!

Below is a listing of all the public mailing lists on lists.opendaylight.org. Click on a list name to get more information about the list, or to subscribe, unsubscribe, and change the preferences on your subscription. To visit the general information page for an unadvertised list, open a URL similar to this one, but with a '/' and the list name appended.

List administrators, you can visit the list admin overview page to find the management interface for your list.

If you are having trouble using the lists, please contact mailman@lists.opendaylight.org.

List	Description
controller-announce	OpenDaylight Controller Announcements (low volume)
controller-bugs	Notifications from Bugzilla for the OpenDaylight Controller.
controller-dev	Developer discussions for the Open Daylight Controller.
controller-gerrit	Gerrit automated notices about the OpenDaylight Controller.
controller-jenkins	Jenkins CI notifications for the OpenDaylight Controller
controller-users	Community driven support alias for the OpenDaylight Controller.
Discuss	OpenDaylight cross project discussion
opendaylight-announce	OpenDaylight Announcements (low volume)
opendaylight-users	OpenDaylight community support
project-proposals	OpenDaylight project proposals to the TSC
TSC	OpenDaylight Technical Steering Committee

DELIVERED BY MAILMAN
version 2.1.12

PYTHON Powered

OpenDaylight governance – 10K view

Bylaws: http://www.opendaylight.org/project/bylaws

ODP *Board of Directors* will manage business leadership for OpenDaylight including governance, marketing and operational decisions
- Initial BOD populated by Platinum members + 1 gold + 1 silver

ODP *Technical Steering Committee* sets technical direction
- TSC provides technical leadership for OpenDaylight
- TSC members are elected and is comprised of developers and project leaders
  - Initially seeded with Platinum member representatives
- TSC chair ex-officio member of the Board
- TSC chair elected annually with no term limits

Importantly: *OpenDaylight is open to anyone*. In particular
- Anyone can develop and contribute code
- Anyone get elected to the Technical Steering Committee
- Anyone can get elected to the Board
- Anyone can help steer a project forward in any number of ways

A Little More on the TSC

Technical direction set by the Technical Steering Committee
- Responsible for maintaining platform codebase
- Sets release train scope and schedule

TSC membership
- Initialized with representatives from platinum member companies
- Will evolve to be comprised of core project leads and community representatives

TSC meetings and mailing list are open to the community
- See lists.opendaylight.org to subscribe to the TSC mailing list
- TSC calls are Thursday at 1000 PDT (open to all)
  - See https://wiki.opendaylight.org/view/TSC:Main
- TSC Meeting Minutes and Call recordings
  - See https://wiki.opendaylight.org/view/TSC:Main
- Technical Work Stream calls are Monday at 1300 PDT (open to all)
  - See https://wiki.opendaylight.org/view/Tech_Work_Stream:Main

Resources

- More information and to join:
  - wiki.opendaylight.org
- Keep informed and join the conversation
  - IRC: #opendaylight on Freenode
  - Open mailing lists: lists.opendaylight.org
  - @openDaylightSDN
  - #OpenDaylight

FIND US ON

Thanks!