



# Service Orchestrator Architecture Enhancement - Proposal

Seshu Kumar M

# So... Whats Next So...

- Dynamism
  - Customization
- Orchestration next steps
  - CNF support
  - TOSCA
- Plug and Play
  - Both Yellow and Green Field adoption

# Further Topics on this...

13<sup>th</sup> Jan

11:45		for VNF Hack Track participants (1hr)			ONAP Service Orchestrator Roadmap @ Seshu Kumar M
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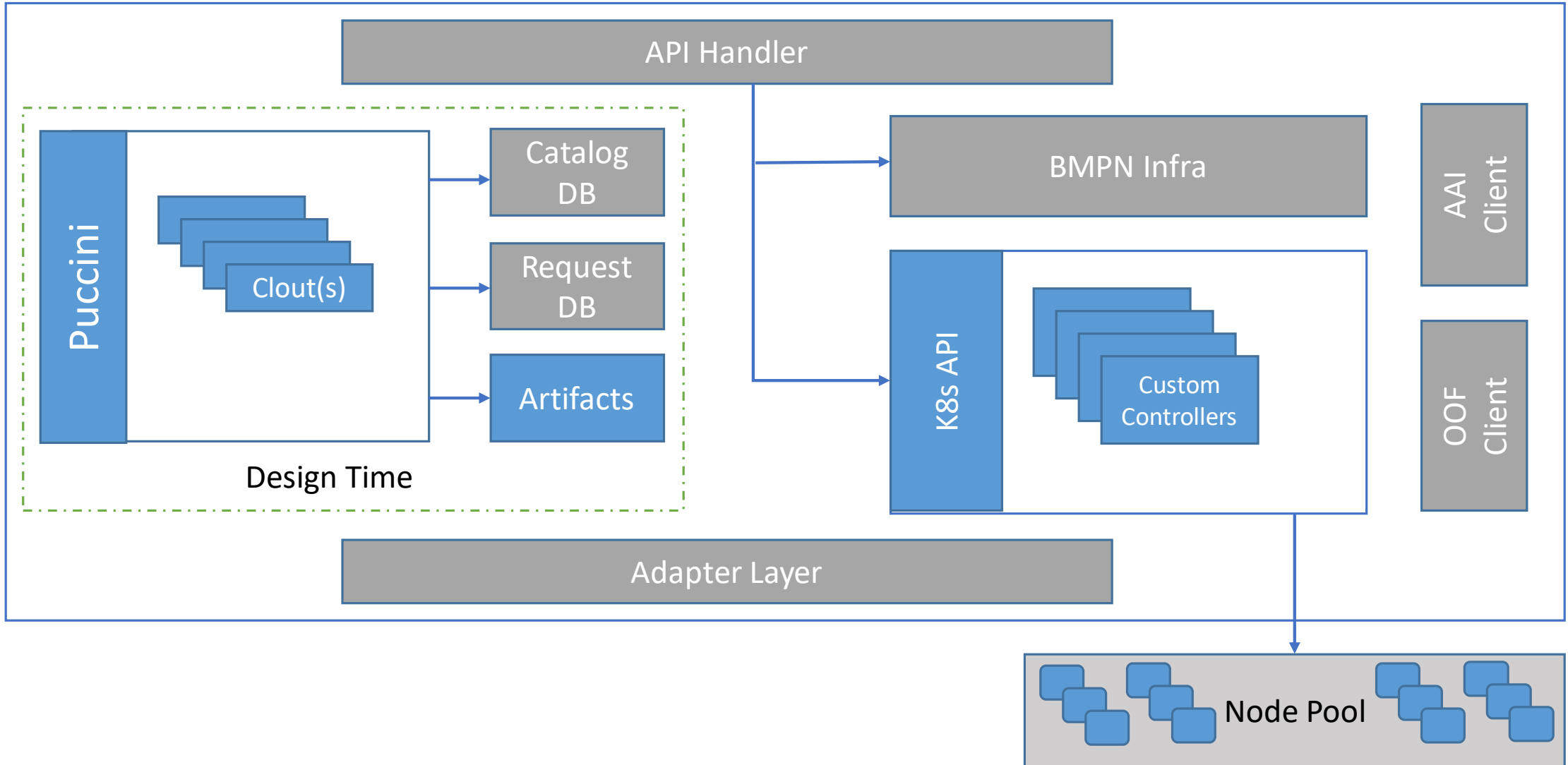
15<sup>th</sup> Jan

14:00	<b>Joint CNTT/OPNFV: OPNFV TSC 2.0</b> Discussion on the future directions of OPNFV with the CNTT @ Jim Baker	<b>Hack/Plugfest</b> <ul style="list-style-type: none"> <li>Plugfest Track Details</li> </ul>	Attend the Joint CNTT/OPNFV in South Hall 2	<b>ONAP/ETSI Alignment - Support Status and Plan</b> @ Byung-Woo Jun @ Fernando Oliveira @ Mirosław Medrek
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14<sup>th</sup> Jan

15:00	how to govern it, work with CNTT, CNCF, etc) <ul style="list-style-type: none"> <li><b>When</b> (what are the timelines, regular mtg cadence/time)</li> </ul> <b>Facilitators:</b> @ Lincoln Lavoie @ Marc Price @ Rabi Abdel @ William Diego	OPNFV TSC meeting placeholder - remote access @ Jim Baker @ Al Morton <b>Agenda</b> (starts at 1500hrs local time or 1400 UTC)	EUAG f2f meeting (starts at 1500hrs local time or 1400 UTC) Zoom Bridge	<b>Modeling subcommittee</b> @ Hui Deng @ Andy Mayer (starts at 1500hrs local time or 1400 UTC)	<b>Plug and Play in ONAP - Learnings of a developer</b> @ Seshu Kumar M @ Isaac Manuel Raj
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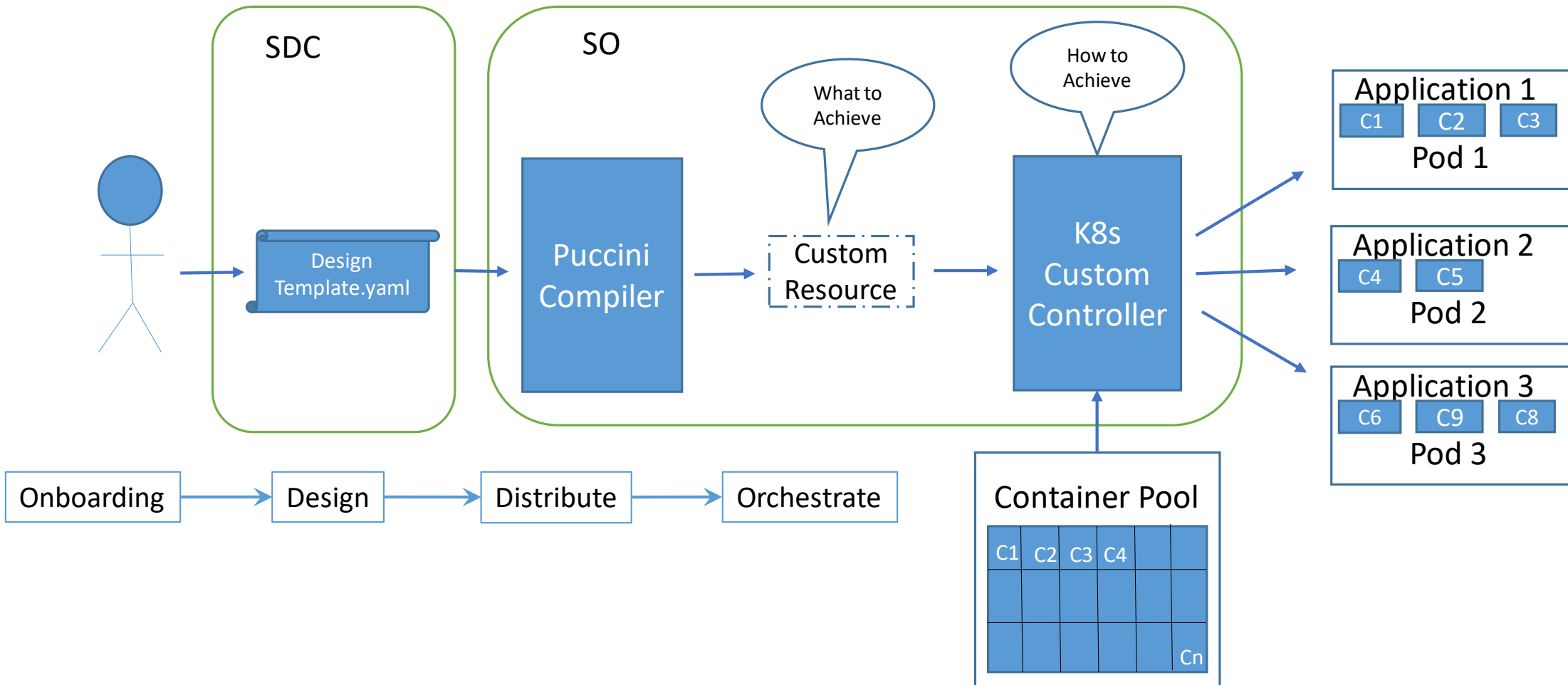
# SO Proposed Architecture



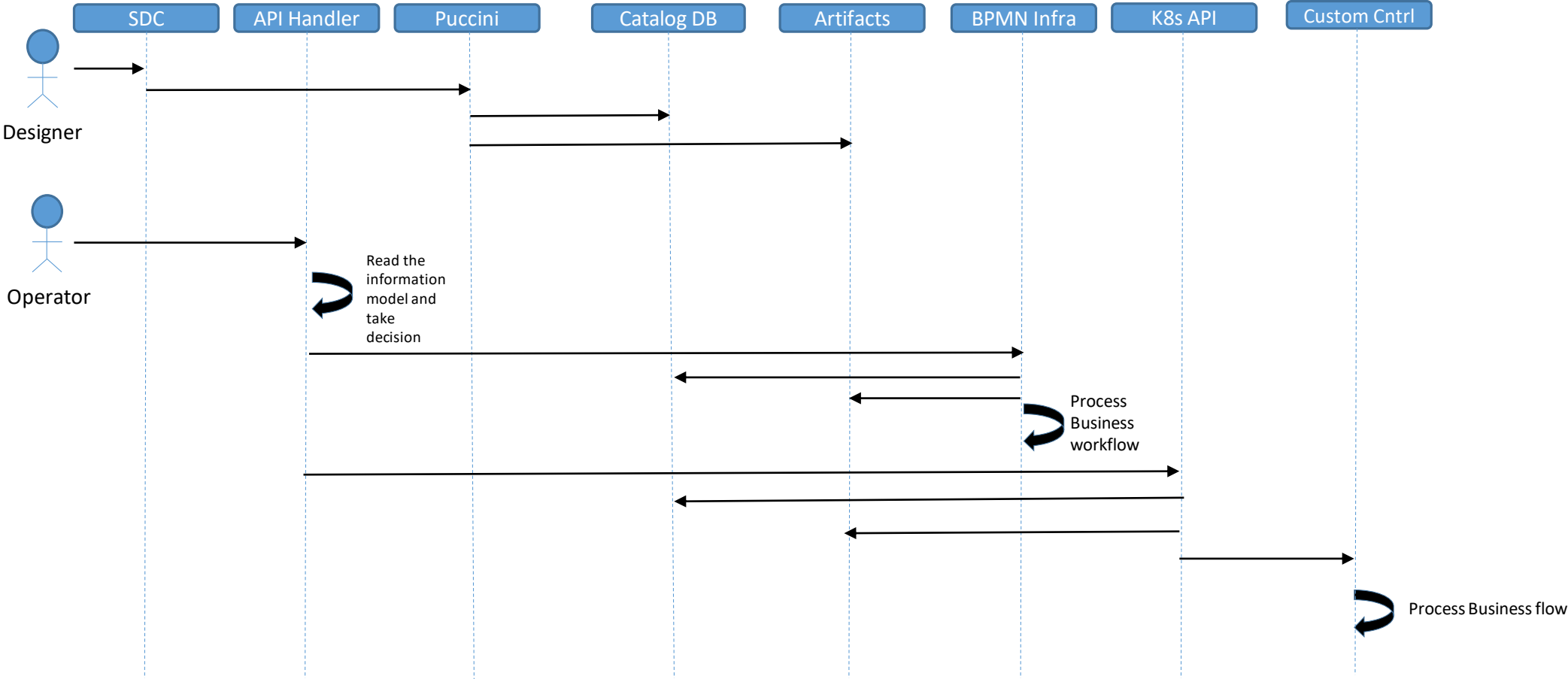
# Key additions to the Architecture

- Puccini
  - A TOSCA compiler that parses a given TOSCA service template and compiles it to Clout (Cloud Topology)
  - Puccini-tosca comes with TOSCA profiles for the Kubernetes and OpenStack cloud infrastructures, as well as BPMN processes.
  - Profiles include node, capability, relationship, policy, and other types that would work with any TOSCA-compliant product.
- Artifacts
  - Constitutes the design time entities that are onboarded to SDC and distributed to SO.
  - These could include the configurations, custom workflows designed, custom resource definitions, etc...
- K8s API
  - This constitutes of 2 key components Custom resources and Custom controllers.
- Custom resources
  - A *resource* is an endpoint in the K8s that stores a collection of API objects of a certain kind.
  - Custom resource is an extension of the Kubernetes API that is not necessarily available in a default Kubernetes installation.
  - It represents a customization of a particular Kubernetes installation and hence help in making Kubernetes more modular.
- Custom controllers
  - Custom resources let you store and retrieve structured data. When you combine a custom resource with a custom controller, custom resources provide a true declarative API.
  - Custom controllers interprets the structured data as a record of the user's desired state, and continually maintains this state.
  - CCs can work with any kind of resource, but they are especially effective when combined with custom resources.

# Typical Functional Flow



# Typical Functional Flow



# Advantages

- The new architecture would leverage the existing ONAP SO functionality to even orchestrate the CNFs
- It brings in the advantages of a customization of resources aka Network functions and provides the bundles of advantages of K8s included with it.