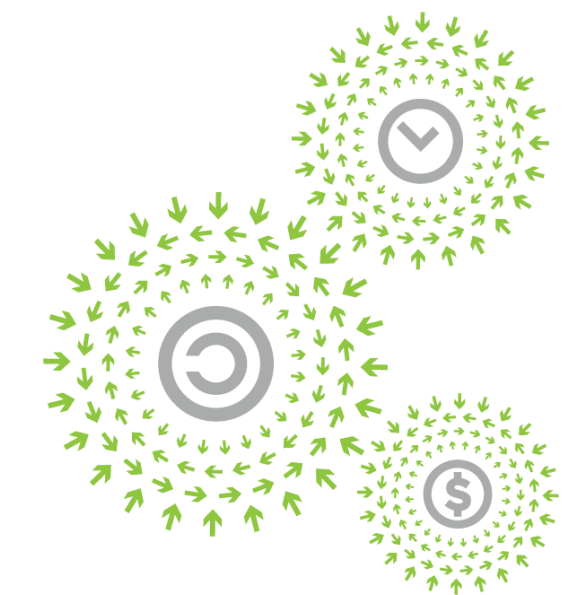# Excerpts from "OCP's Rack Manager Controller subproject (OpenRMC)"

John Leung, Principle Engineer
Intel Corporation

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Inspur

OPEN PLATINUM™

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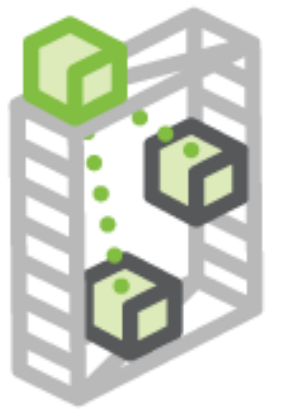
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OpenRMC Overview

OpenRMC

- Goals and Motivation

- Logistics and meetings

Status

- Reviewed of existing rack management implementations

- Specifying interface and requirements

- Received Code Contributions

RMC for OpenEdge Platform

OPENRMC

Specifications

Embedded Software

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The OpenRMC Goals

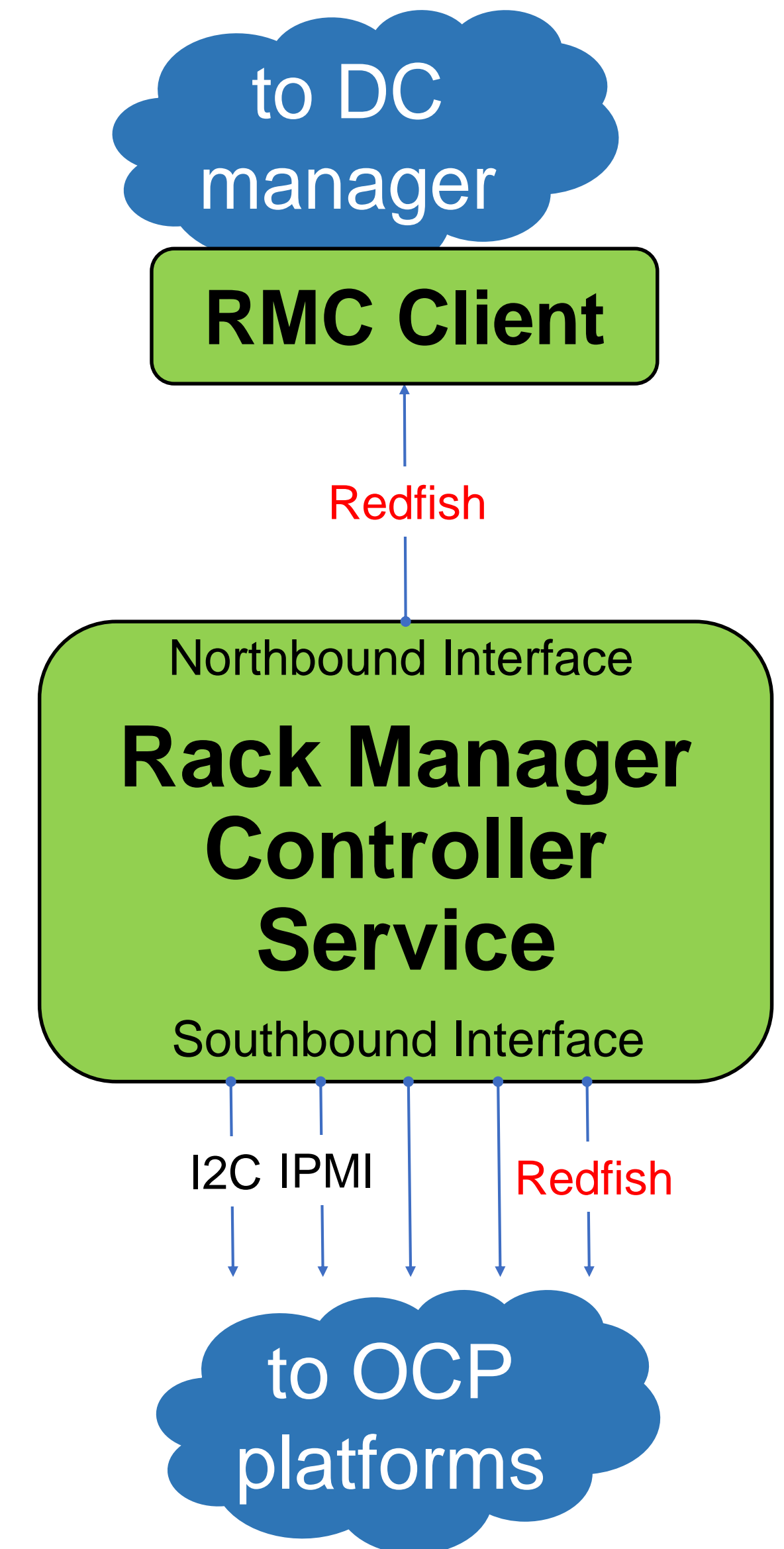**Specify the Rack Manager Controller service architecture**

- Northbound interface to datacenter manager (spec)
- Southbound interface requirements to OCP platforms in the rack

Deliver a Rack Manager implementation

- Available as open source

OCP compliant hardware designs

- Handled by other OCP projects

to DC manager

RMC Client

Redfish

Northbound Interface

Rack Manager Controller Service

Southbound Interface

I2C IPMI   Redfish

to OCP platforms

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OpenRMC project has since Nov 2018

Participation

- ARM, Microsoft, Facebook, Huawei, Inspur, Nokia, Intel, etc

Reviewed and compare

- Existing RMC interfaces and architectures from Facebook, Intel, Inspur and Microsoft (Comparison of interfaces)

Draft specifications and requirments

- Draft of Northbound API Specification

- Draft of Southbound interface requirements

RMC code contributions (reviewed)

- From Microsoft, Inspur, and Intel

Source Repository

On OCP Github (github.com/opencomputeproject/Rack-Manager)

Contrib-Microsoft, Contrib-Inspur, Contrib-Intel folders

./OpenRMC folder

	Language	Architecture	Processor	Memory
Microsoft	C++	OpenBMC	AST2500	
Inspur	C++	OpenBMC	AST2500	
Intel	C++		Intel NUC	

OpenRMC on OpenEdge at MWC 2020

Demo use cases

- Input from the OpenEdge project?

- Use Redfish Tacklebox use-cases[1]

  - Power/Reset - Performs a power/reset operation of a system

  - Boot Override - Performs an one-time boot override of a system

  - FW Update - Performs a firmware update of a system (pull model)

  - Sensor List - Reads the power and thermal sensors of the chassis
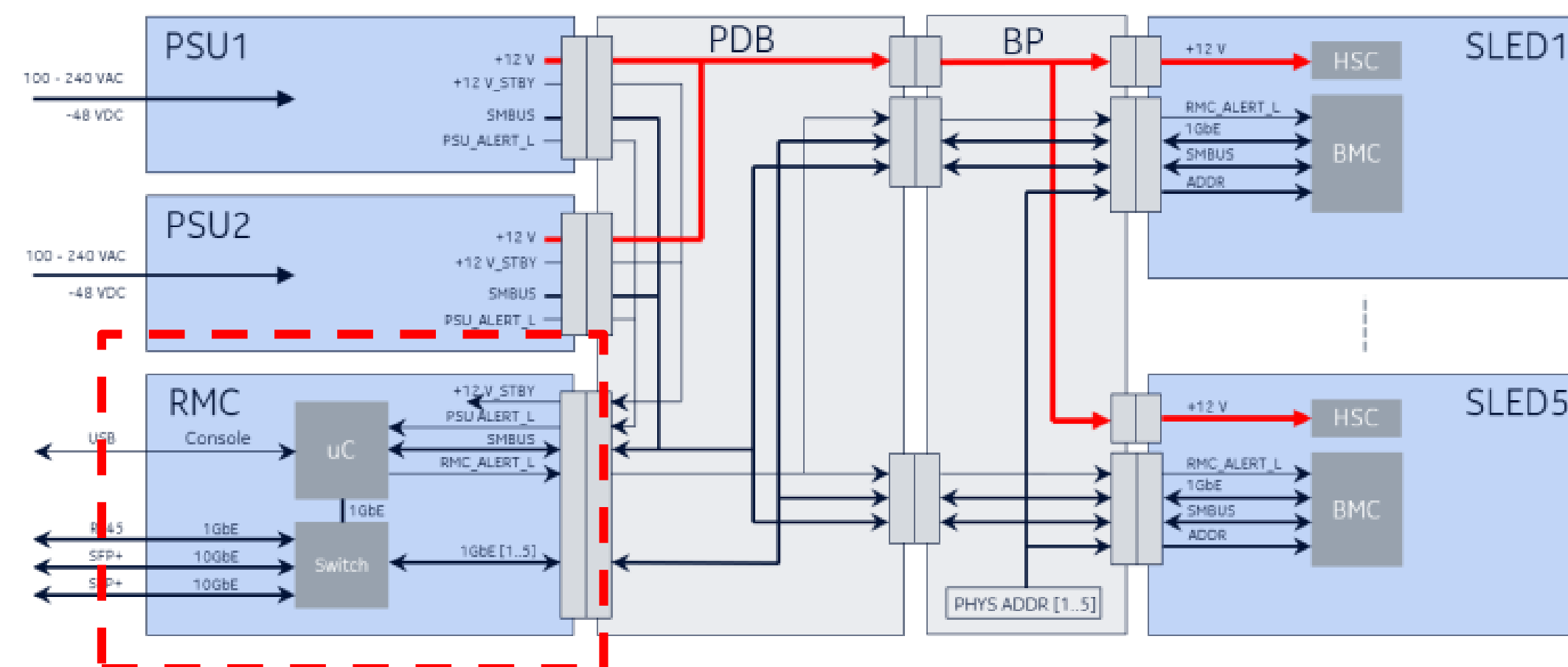
[1]github.com/DMTF/Redfish-Tacklebox

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Nokia Airframe openEdge Chassis

Nokia RMC Firmware Overview

RMC Controller:

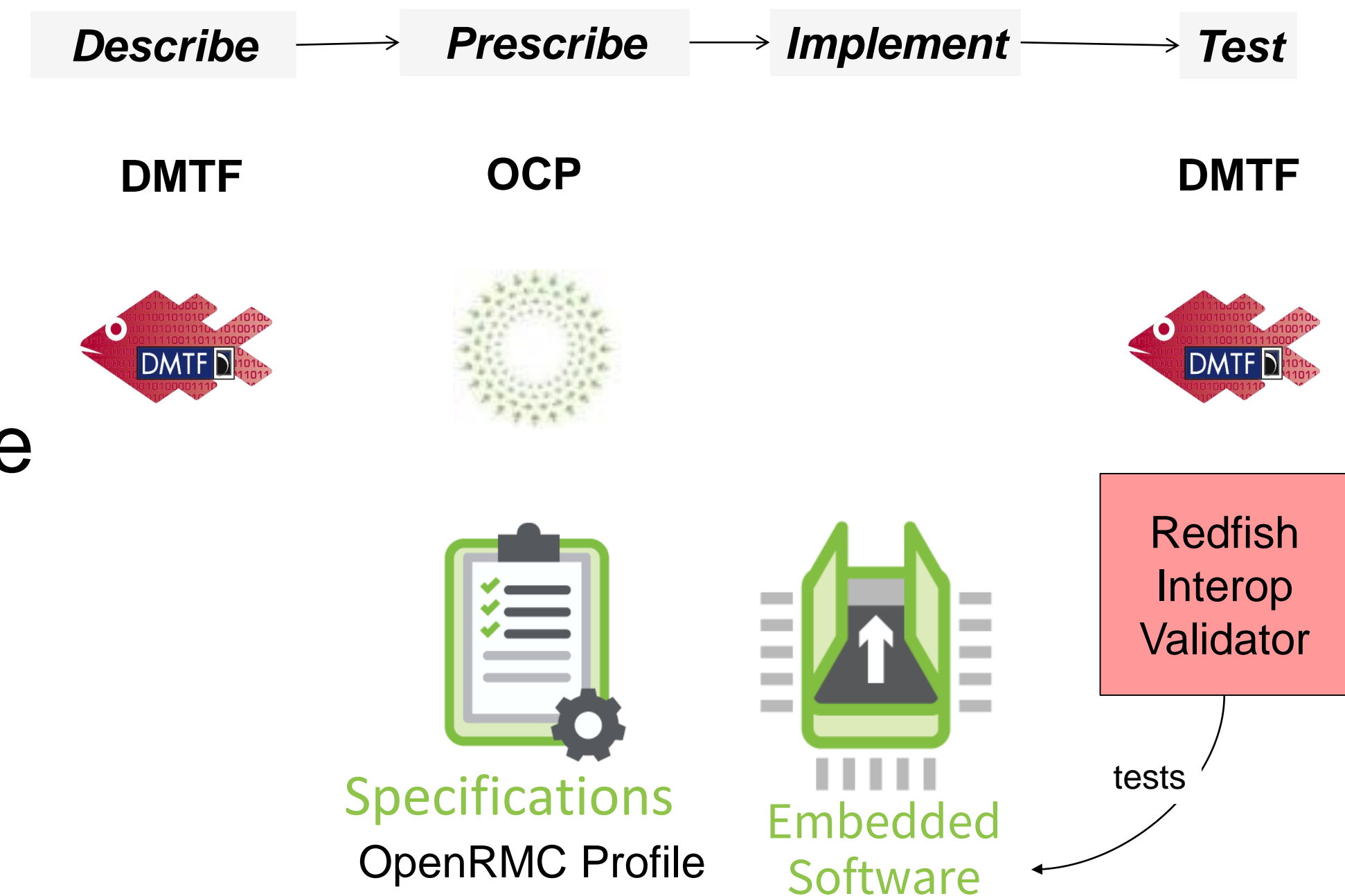- Processor=AST2500, Memory ? Image size?

Redfish resources (from Service Root)

- Chassis[1], Systems[2], Managers

  [1]Nokia Open Edge Chassis Spec v1.2 (OCP Accepted)
  [2]Nokia Open Edge Server Spec v0.1 (community review)

- **Services:** Account, Session, Task, Telemetry, Update

- **Schema formats:** json-schema, OData CSDL

Comparison to code contributions (link)

Testing OpenRMC conformance

- The **OpenRMC profile** file[1] specifies the Northbound interface requirements in a JSON format (Redfish resources & properties)

- The open-source Redfish Interop Validator: 1) reads the OpenRMC profile, 2) autogenerates the tests, and 3) runs them against an implementation

- The Interop Validator is a component of the Redfish conformance test suite, which also includes
  - Redfish Service Conformance Check
  - Redfish Service Validator
  - Redfish Usecase Checkers

Describe → *Prescribe* → *Implement* → *Test*

DMTF   **OCP**   **DMTF**

Redfish Interop Validator

Specifications
OpenRMC Profile

Embedded Software

tests

[1]github.com/opencomputeproject/OCP-Profiles/OCPRackManagerController.2019.1.json

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