

Implementation Proposals

When required any user story or spike can add a page here to document an implementation proposal, design options, decisions etc.

This is not intended to be formal end-product documentation just a way to share design details during the development phase.

- [CPS-####: Implementation Proposal Template](#)
- [CPS Exceptions and REST APIs HTTP Response Codes](#)
- [NEW DELHI](#)
 - [CPS-1796: Document Kafka Interfaces using AsyncAPI](#)
 - [CPS-2000 Schema object cache not distributed.](#)
 - [CPS-2020 DCM \(Distributed Configuration Management\) Overview Study](#)
 - [CPS-1963 Register alternate identifier \(alternative for CM Handle ID\)](#)
 - [CPS-2007 - Update NCMP Events to include Alternate ID](#)
 - [CPS-1964 - Support for Async datajobs](#)
 - [CPS-1964: Support Data jobs request](#)
 - [CPS-2142: Handle Datajob Request](#)
 - [CPS-2010 NCMP to support datajob results in S3](#)
 - [CPS-2154: Response schema for DMI dataJob response](#)
 - [CPS-2155 Java API: The Data Structure for DataJob Request](#)
 - [CPS-2008 - Update existing single sync cmhandle APIs to support alternative id \(containing FDNs\)](#)
 - [CPS-1992 NCMP to Support new 3GPP sync single FDN request](#)
 - [CPS-2009 Update remaining existing/legacy NCMP APIs to support alternate Id \(FDN\)](#)
 - [Investigate Delta event notification after configuration update](#)
 - [CPS-1953 Compare Active Subscriptions \(DB\) with the current request](#)
 - [Support for XML content type in CPS API's](#)
 - [CPS-2096: Create implementation proposal for NCMP to provide support for data producer identifier during registration.](#)
 - [CPS Query API should support more generic query in request](#)
 - [CPS-2146: Analysis of Out of Memory and related Errors in NCMP](#)
 - [CPS-2146 Using Java Streams to reduce memory consumption in CPS and NCMP](#)
 - [CPS-2161: Remove Hazelcast from NCMP Module Sync](#)
 - [CPS-989: Replace RestTemplate with WebClient Analysis](#)
 - [CPS-2166: Forwarding CM Data Notifications based on Subscription](#)
 - [CPS-2172 - OpenTelemetry tracing](#)
 - [CPS-2055: Improve WoWs around Bug tickets](#)
- [MONTREAL](#)
 - [Async Error Codes](#)
 - [CM Data Notification Subscription LCM \(incl. merge\)](#)
 - [CPS-1574: Remove 32K limit from DB operations](#)
 - [CPS-1586 Investigate implementation for persisting of top level list nodes](#)
 - [CPS-1613 Explore How to Integrate Kafka Tests in the CSITs](#)
 - [CPS-1613 Explore the Test Plan Scenarios for Kafka related use cases](#)
 - [CPS-1638: CM Handle Connectivity Freshness/Staleness \(Trustlevel\)](#)
 - [CPS-1646 CpsPath queries using path-component lookup](#)
 - [CPS-1677: Remove dataspace_id from Fragment table](#)
 - [CPS-1706 Test strategy of CM Handle LCM Notification flow in CSIT](#)
 - [CPS-1733: Upgrade YANG Schema-Set for CM Handle Using a Module Set Tag](#)
 - [CPS-1812: Merge CM data subscriptions in NCMP when forwarding it to DMI](#)
 - [CPS-1840 : Analysis of DMI Data AVC Event for SON use case](#)
 - [CPS-1857 Document watchdog job impl. with health check URL](#)
 - [CPS-1865: Common Error Reporting with Additional Details](#)
 - [CPS-1886 Spike Liquibase Steps Condensing](#)
 - [CPS-2061 Liquibase Steps Condensing](#)
 - [CPS core Get Data Node Inconsistencies](#)
 - [CPS Delta Feature](#)
 - [CPS Delta between 2 Anchors API design](#)
 - [Analysis of RFC 9144 and RFC6902 for Delta Report generation](#)
 - [CPS Delta between an anchor and JSON payload API proposal](#)
 - [Impl. Proposal CM Event Subscription LCM: Delete](#)
 - [Impl. Proposal for Merging of Subscriptions \(Positive Scenarios \)](#)
 - [CM Subscription](#)
 - [Mapping of Cm Subscription Event to Cache Map](#)
 - [CmSubscriptionService service layer methods](#)
 - [Tracking Subscriptions in memory](#)
 - [Use of Subscription model](#)
 - [Study on NCMPAsyncRequestResponse event schema](#)
- [LONDON](#)
 - [CPS-1171: Node API - GET Method Performance Issue Test Results](#)
 - [CPS-1172: Spike - Automated Registration Performance Test \(excluding Module Sync\)](#)
 - [CPS-1173 : Deletion Performance improvement proposal](#)
 - [CPS-1215 OR operator changes](#)
 - [CPS-1236: DMI audit support for NCMP: Filter on all properties of CM Handles](#)
 - [CPS-1257: Support for application/xml Content-Type](#)
 - [CPS-1272 Support for contains in cps-path](#)
 - [CPS-1273 Support for <,> Operators in cps-path](#)
 - [CPS-1298: Add new topics to OOM](#)

- CPS-1301: Insert Module Prefixes
 - Node Prefix Issue Analysis
 - CPS-1312: CPS(NCMP) Does not have version control
 - CPS-1361: CPS data updated events
 - CPS-1377: Investigate CPS Path search over multiple anchors under one dataspace
 - CPS-1379: Creating CpsPersistenceSpecBase2 for Persistence Test Improvements
 - CPS-1381: Query large outputs using descendants/limit/depth query parameter.
 - CPS-1383: PATCH operation executes partially when updating multiple list-nodes at once
 - CPS-1391: Impact analysis on CPS core API's due to changes of CPS-341
 - CPS-1401: Implement V2 of GET Data Node API
 - Support CPS Core Patch operation for multiple data nodes
 - CPS-1392 NCMP Consume Subscription Event
 - CPS-1393 Define and Onboard YANG model for Subscription Events
 - CPS-1394 : Persist the subscription using the newly created YANG model
 - CPS-1431: Forward Subscription Information to DMI Plugin(s)
 - CPS-1434: VES Message to update CPS DB
 - CPS-1489: Overview of Kafka Topics in CPS Components
 - CPS-1492: Subscription Create Response Handling
 - CPS-1515: Spike: Support Multiple CM-Handles for NCMP Get Operation (Data operations)
 - CPS-1567: Investigate Implementation of pagination for Query API
 - Impl. Proposal CM Event Subscription LCM: Create
 - Subscription Creation Events Handling
- KOHN
 - Bug: Node API - POST method not works for instance-identifier
 - CPS-341 Spike: Support multiple data tree instances under 1 anchor
 - CPS-438 Make DB Schema Updates & Data Population More Robust for Kubernetes Environments
 - CPS-870: Align CPS-Core output with SDN-C output
 - CPS-875 Cm Handle State: Java Enum State Machine
 - CPS-877: Exclude any CM-Handles from queries/operations that are not in state 'READY'
 - CPS-909 Separate NCMP endpoint for cm-handle properties and cm-handle state
 - CPS-986 : Asynchronous Communication Logging
 - CPS-1000 Data Synchronization Watchdog
 - CPS-1001 : Add CPS-E-05 endpoint for 'Read data, NCMP-Operational Datastore'
 - CPS-1005 Explore ways to create a resource(dataspace in this scenario)
 - CPS-1014 Yang module update with DataStoreSyncState
 - CPS-1015: Distributed datastore solution for Module Sync Watchdog
 - CPS-1016 Merge 2 'query' end points in NCMP
 - CPS-1017 Explore and Compare various caches
 - CPS-1026 Hazelcast Licensing
 - CPS-1031 - Application Properties for Configuration
 - CPS-1033 Hazelcast Features
 - CPS-1034 Publish LCM Events on Cmhandle State Change(NcmpEventsCmHandleStateHandler)
 - CPS-1064 Support retrieval of YANG module sources for CM handle on the NCMP interface
 - CPS-1067 NCMP returns 500 error on searches endpoint when No DMi Handles registered
 - CPS-1085 Performance degradation on ncmp/v1/ch/searches endpoint
 - CPS-1104 Agree LCM Event schemas
 - CPS-1119: Define the Initial Data Sync State on each cmhandle registration request
 - CPS-1126 : CmHandle creation performance degradation
 - CPS-1128 Make CPS Core API more restful
 - CPS-1152: Spike Conform JSON and dmi-registry Casing Conventions
 - CPS-1153 Publish a public dmi-registry to documentation
 - CPS-1169: OpenDaylight Yang Tools Upgrade
 - CPS-1177 Proposal for merging the endpoints of the datastore API
 - CPS-1197: Spike Investigate Implementation of API Versioning
 - CPS-1221 CPS Xpath search capability Enhancements
 - Workshop: CM-Handle States & Locking
- JAKARTA
 - Adding examples for Request and Response in openapi.yaml
 - CPS-313 Delete DataNode (xpath) for a given Anchor
 - CPS-314 Delete Dataspace
 - CPS-322: Implement additional validations for names used as identifiers
 - CPS-950: Refactor existing model sync code into separate package
 - CPS-461 Align DataNode for Get and Post/Put endpoints in CPS Core
 - CPS-470: Spike - Add support for data deletion events
 - CPS-491 Spike to Support list top-level data node
 - CPS-631 Spike: Which ObjectMapper to use and how best to use it for performance
 - CPS-644 Get all cm handles that support all modules in a given list of modules
 - CPS-677 Support 'public' Cm Handle Properties
 - CPS-678/CPS-679 Support resource identifier path param with slashes & multiples (unknown) properties
 - CPS-707 Create Detailed NCMP-DMI interfaces diagram
 - CPS-731 Query Based on Public CM Properties
 - CPS-735 Spike: Support for Yang Language Extension
 - CPS-736 Allow separate registration of DmiDataPlugin and DmiModelPugin
 - CPS-738 : How to handle the circular dependency between NotificationService and CpsDataServiceImpl
 - CPS-765 Post List Element to allow top level list element
 - CPS-766 Get Nodes Endpoint
 - CPS-786 Spike: scale CPS-NCMP horizontal using several instances of the service
 - CPS-788 Yang Resource formatting is incorrect (during model sync)
 - CPS-799 Spike: Define states and state handling for CM handle

- CPS-802 Upgrade SDN-C and verify root access
- CPS-817: Create Endpoint for Get Cm Handle Details
- CPS-821 Spike: Support Async read-write operations on CPS-NCMP interface
 - Async Response Events & Schemas
- CPS-837 Remove and Add Properties as part of CM-Handle registration update
- CPS-858 Define Notifications on CM Handle Add (Ready) & Delete
- CPS-872 CM Handle State: define and agree new dmi-registry yang model supporting States
- CPS-875 CM Handle State: Watchdog-process that syncs 'ADVISED' CM Handles
- CPS-887 Decreasing performance of cmHandle registration after large number of schema sets in DB
- CPS-892 Update HTTP Response Code for CM Handle Registration
- CPS-898 Create method to lock and unlock an anchor
- CPS-899 Start and stop sessions on Java API
- CPS-1065 Spike: CM data notifications from NCMP to applications including subscriptions
- Define the new CSIT test cases and the set up required
- Refactoring to move business logic to Service Layer
- WIP: CPS-896: CMHandle Registration Response structure
- ISTANBUL
 - CPS-178 Document CPS Architecture
 - CPS-191: Core and Temporal Integration Design
 - CPS-192: Design data store for Temporal Service
 - CPS-235: Overview of (early) CPS Update Scenarios
 - CPS-251 Define REST Query interface for Temporal service
 - CPS-277 Spike Analyse E2E API GET methods
 - CPS-278 Spike Analyse E2E API PUT methods
 - CPS-287 Spike: Yang Schema Mount Support
 - CPS-291 Spike: Consider moving cpsPath parsing from cps-ri to cps-service
 - CPS-309 Extends ends-with cps path query to allow for non-key attributes
 - CPS-320 - Remove Duplicate Application Configuration in OOM
 - CPS-333 Network Configuration Management (NCMP) scope for I release considerations
 - CPS-338 Spike: Add, Remove and Replace Operations on List Nodes
 - CPS-347: Spike for architecture quality tools
 - CPS-348 - Spike: Determine how to generate and share data updated events pojoes from the event schema
 - CPS-352 : Create yang-model for DMI-registry data
 - CPS-376 Spike: Investigate introducing ANTRL to resolve CpsPaths
 - CPS-378: Immutable Map/Set implementation Documentation
 - CPS-380: Implement Automatic Application Architecture Verification for CPS Core
 - CPS-390 Spike: Define and Agree DMI Plugin REST Interface
 - CPS-391Spike: Define and Agree NCMP REST Interface
 - CPS-392 Spike: A&AI Inventory List
 - CPS-393 Spike: DMaaP Event subscription and Filtering of A&AI
 - CPS-395 Spike: SDNC Interface for CRUD and Patch Operations
 - CPS-455 Spike: support options for 'fields' and 'depth' parameters
 - CPS-402: Configuration and usage of maven properties
 - CPS-419: Document Structure CPS Projects
 - CPS-423 - Create/Update CPS Component Diagrams ONAP Wiki
 - CPS-428 Adding Response and Examples for API in OpenApi specifications
 - CPS-433 DMaaP integration to produce CPS events from CPS core to CPS Temporal
 - CPS-435: Propose and clean up pom.xml to reuse properties defined in oparent settings.xml
 - CPS-459: Define evolution strategy and versioning of CPS Event schema
 - Complete solution using current event schema implementation
 - CPS-464: Document update node leaves limitations
 - CPS-474: Spike on data updated event notification filtering for dataspace
 - CPS-503 Spike: Investigate Liquibase self-build option
 - CPS-505: Initial Inventory, Get and Store SchemaSets of node(s)
 - CPS-506: List all known modules and revision
 - CPS-508: Create anchor/schemaset from new modules and existing modules
 - CPS-526 : Send Data-updated event asynchronously
 - CPS-NCMP - DMI - SDNC Request and Response Mapping
- HONOLULU
 - CCSDK-2752: DM: [Spike] Examine DPS SPI
 - CCSDK-2756 DM: [Spike] Propose C&PS Data Model
 - Decouple Anchor from Fragment proposal
 - CCSDK-2757 VSE: Create (store) a JSON Object
 - CCSDK-2791 VSE: Exception handling on REST interface - implementation proposal
 - CCSDK-2870 DP: CPS REST API Documentation - PROPOSAL
 - XPaths and Yang
 - CCSDK-2871 DP: Long-term Java API(s)
 - CCSDK-2872 DP: Agree and document proposed long-term Persistence SPI(s)
 - CCSDK-2897: VSE: Upload modules (a model file) to a (new) dataspace
 - CPS-10 Add ONAP compliant logging config
 - CPS-39 - High level design for CPS Temporal API and store
 - CPS-43 Operating with Module Sets (groups of modules)
 - ModuleSet cases analysis
 - ModuleSet content persistence proposal
 - CPS-72 Yang modules to XPath format adaptation
 - CPS-78: Deployment View
 - CPS-97 Spike: study use-case requirements for E2E Network Slicing
 - CPS-168 xNF Proxy Epic - MVP delivery clarification
 - CPS-171 CPS xNF-Proxy Deployment and module dependencies

- CPS-175 OOM Integration
- CPS-197 Spike on options for re building Data Object
- CPS-199: Custom Model E2E Network Slicing - Coverage Area-Tracking Area & TA-Cell mapping
- CPS-200: Custom Model E2E Network Slicing - RAN Inventory
- CPS-222: Spike: CPS data update options
- CPS-235: Overview of (early) CPS Query
- Implementation Proposal CCSDK-2766 YM: Store Yang Model (text version)