CLAMP R6 - M3 Architecture Review

1. **Project Overview**
   CLAMP is the place where you manage the runtime of the Control loop in ONAP:
   
   a. you can configure the parameters of the µS composing the Control Loop:
      i. this is achieved by creating/updating/deleting policies (configuration policies).
      ii. the above policies will be associated to the deployed µS
      iii. Associate a Control Loop to a Service
   
   b. you can configure the Operation to be taken by the Control Loop:
      i. this is achieved by creating/updating/deleting policies (operational policies).
   
   c. you can deploy/un-deploy Control Loop flow(blueprint) to DCAE.
   
   d. in separated/independent Docker containers, you have the "Control Loop Dashboard" which is an ELK stack dedicated to display DMAAP messages related to runtime control loop messages (from DCAE/Policy/APPC).

2. **New component capabilities for Frankfurt, i.e. the functional enhancements**
   
   a. enhancement of the model driven approach for Control Loops
      
      i. add policy-model for Operational Policy
      ii. Retrieval of policy-model (both Operational an Configuration) from Policy (Policy Rest API)
      iii. automatic rendering of Operational policy ui based on the retrieved policy-model
   
   b. Use of DCAE-MOD Control Loop flow retrieved from DCAE inventory
      
      i. associate Control Loop Flow to Service received from SDC distribution
   
   c. enhance internal model to better support model driven approach

3. **New or modified interfaces**
   
   a. User interface generation will stay the same even though its generation method will change.
   
   b. Some new internal interface will be created to support the new internal model, those new interface won't be backward compatible since they will be new and they are internal anyway (so it won't disturb any other project).

4. **Interface naming**
   
   CLAMP supports the following interfaces:
   
   a. **Control Loop Life Cycle Management** User interface (LCM UI) for, refer to CLAMPE1 in architecture description (ARC CLAMP Component Description - Frankfurt):
      
      i. selecting the Control Loop flow.
      ii. selecting the Service/VNF to be associated with the Flow
      iii. entering configuration policy parameter.
      iv. entering operational policy parameter.
      v. manage lifecycle of DCAE blueprint (Control Loop flow).

   b. **Control Loop dashboard** User Interface based on "Kibana" (ELK stack, completely independent from LCM UI), refer to CLAMPE2 in architecture description (ARC CLAMP Component Description - Frankfurt).

5. **Reference to the interfaces**
   
   a. for the UI see readthedocs(obviously still under development for Dublin) : CLAMP latest user guide
   
   b. internal interface are available via swagger : clamp swagger pdf

6. **What are the system limits**
   
   a. none so far, CLAMP is not a in the path of runtime call, so it is not heavily hit by massive amount of call. So auto scaling is not really required but could be added.
   
   b. DB redundancy/HA relies on kubernetes and persistent volume. mariaDB cluster can be a future improvement
   
   c. Application redundancy/HA relies on kubernetes.

7. **Involved use cases, architectural capabilities or functional requirements**
   
   a. scaling use cases
   
   b. Self Serve Control Loop: Self Serve Control Loops v2

8. **Listing of new or impacted models used by the project (for information only)**
   
   a. None.