Ericsson
Software
Technology

OSC NONRTRIC
rApp Manager

NONRTRIC Team

rApp Manager

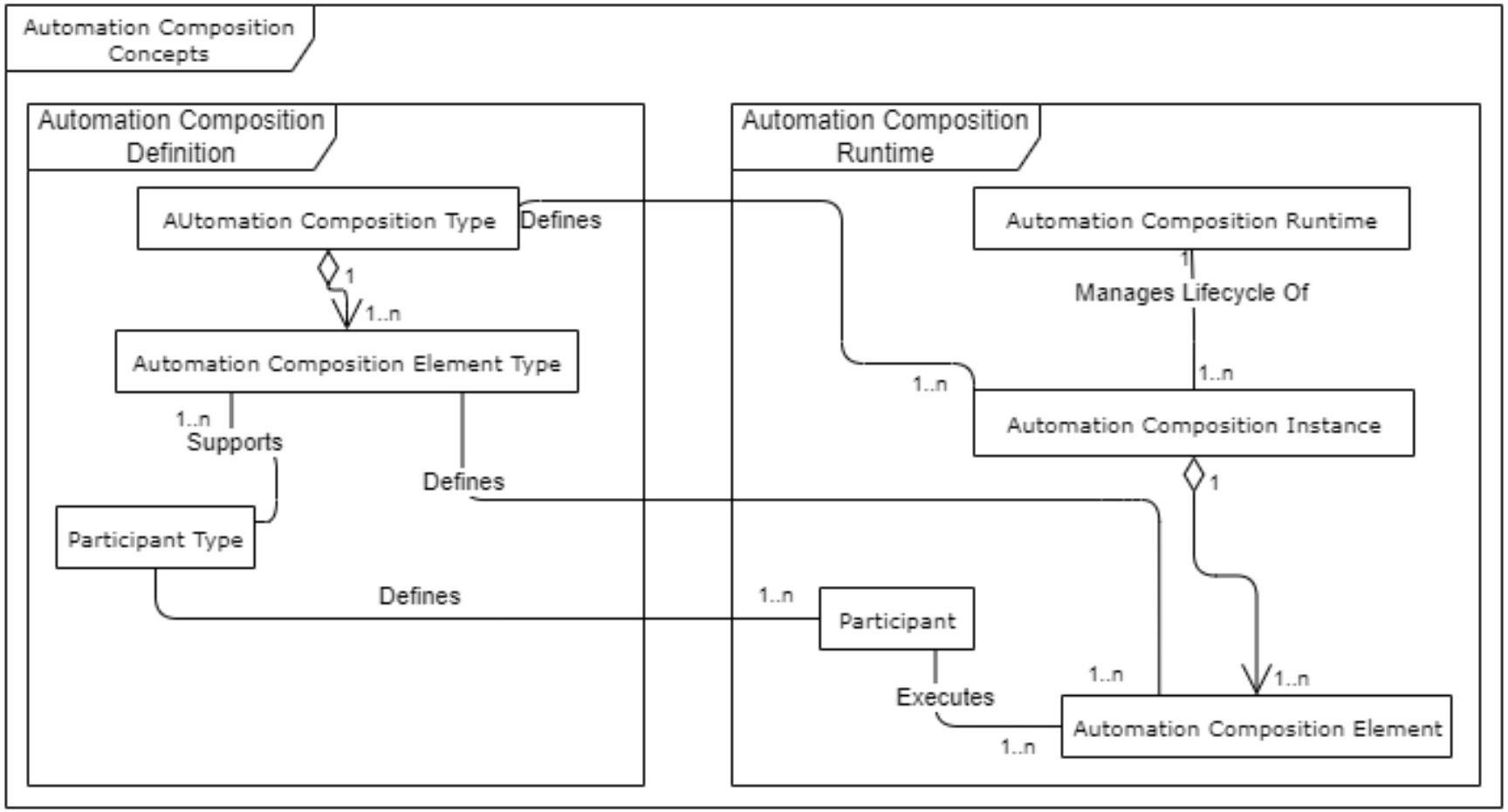
- It manages the lifecycle of rApp.
- rApp definition uses an ASD package as an example.
- ASD package contains the details required to create and integrate the required services/components.
- It is integrated with ACM(ONAP), SME(CAPIF from NONRTRIC).
- It is integrated with DME, A1-PMS, Kserve and Kubernetes via ACM Participants.

Assumptions

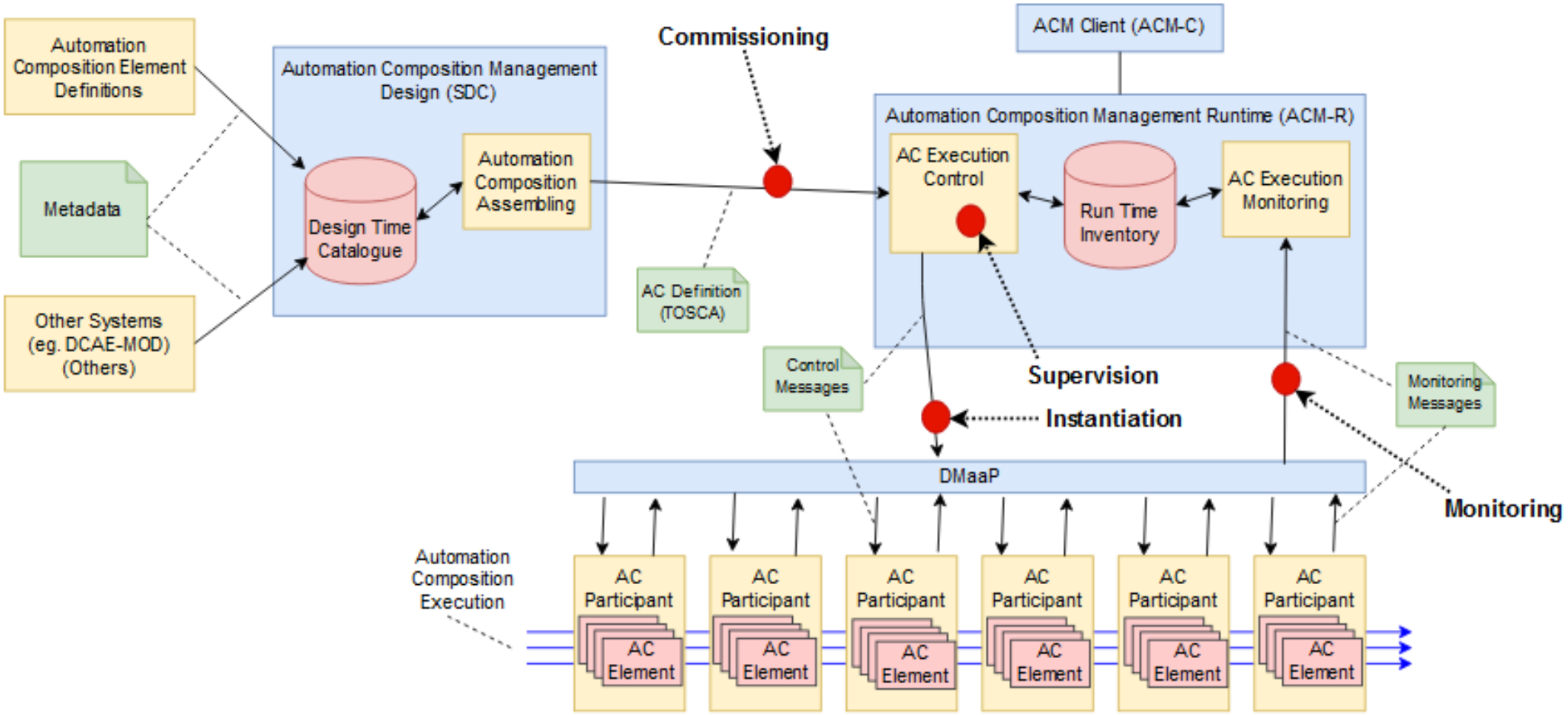
- Each ASD package contains only one rApp.
  - One rApp can have any number of rApp instances
- ASD package do not contain any kubeconfig file.
- ASD package contains the configuration required for ACM,SME and DME.
- ACM definition get lifecycle managed during priming/depriming of the rApp.
- rApp Manager gets registered as AMF and lifecycle managed as part of start/stop of the application.

rApps and ACM (Automation Composition Mgmt.)

- An ‘App’ is a ‘bundle of stuff’ composed together, not just a micro-service.
- ONAP ACM-R is a manager that life-cycle manages a bundle of other parts/stuff (a single 'Composition') together, rather than a user managing the parts individually.
- It takes a particular format of package to describe/package all the parts as a single 'Automation Composition’.
- Here 'parts' are called 'Automation Composition Elements' and can be microservices, workflows, helm charts (services, configurations, etc ...)
- Each 'Automation Composition Elements' *type* requires a plug-in (ACM 'Participant’) to handle parts of that type in each composition
- ACM Runtime delegates/orchestrates support for each 'Automation Composition Element' to appropriate participant.
- rApp == 'Automation Composition’
    - rApp may have 0...n microservice, and 0..n other 'AC Elements'

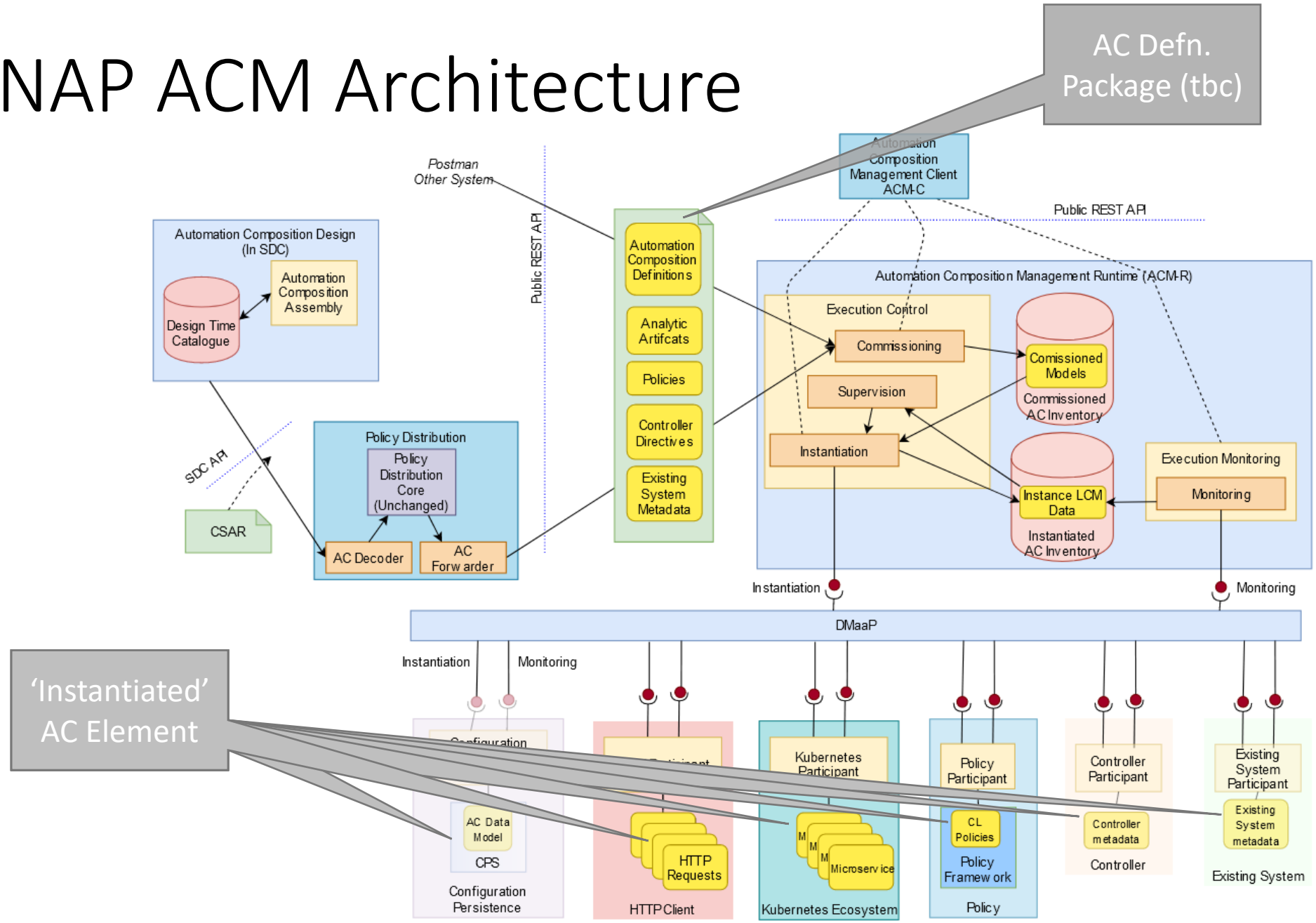


ONAP ACM Architecture



ONAP ACM: https://wiki.onap.org/display/DW/Automation+Composition+Management%3A+Architecture+and+Design

ONAP ACM Architecture



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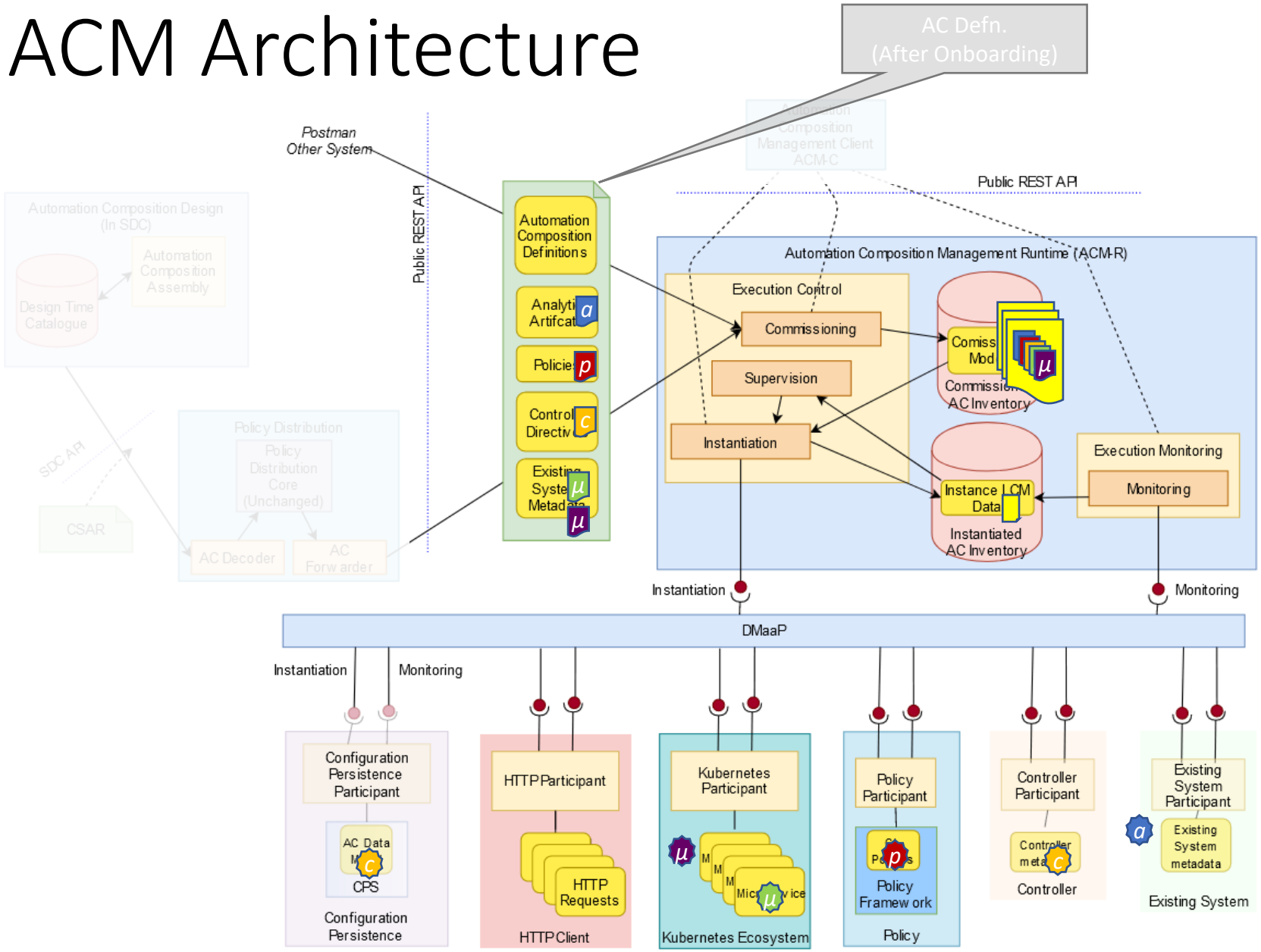
ONAP ACM Architecture



ONAP ACM: https://wiki.onap.org/display/DW/Automation+Composition+Management%3A+Architecture+and+Design

SME (Service Management and Exposure)

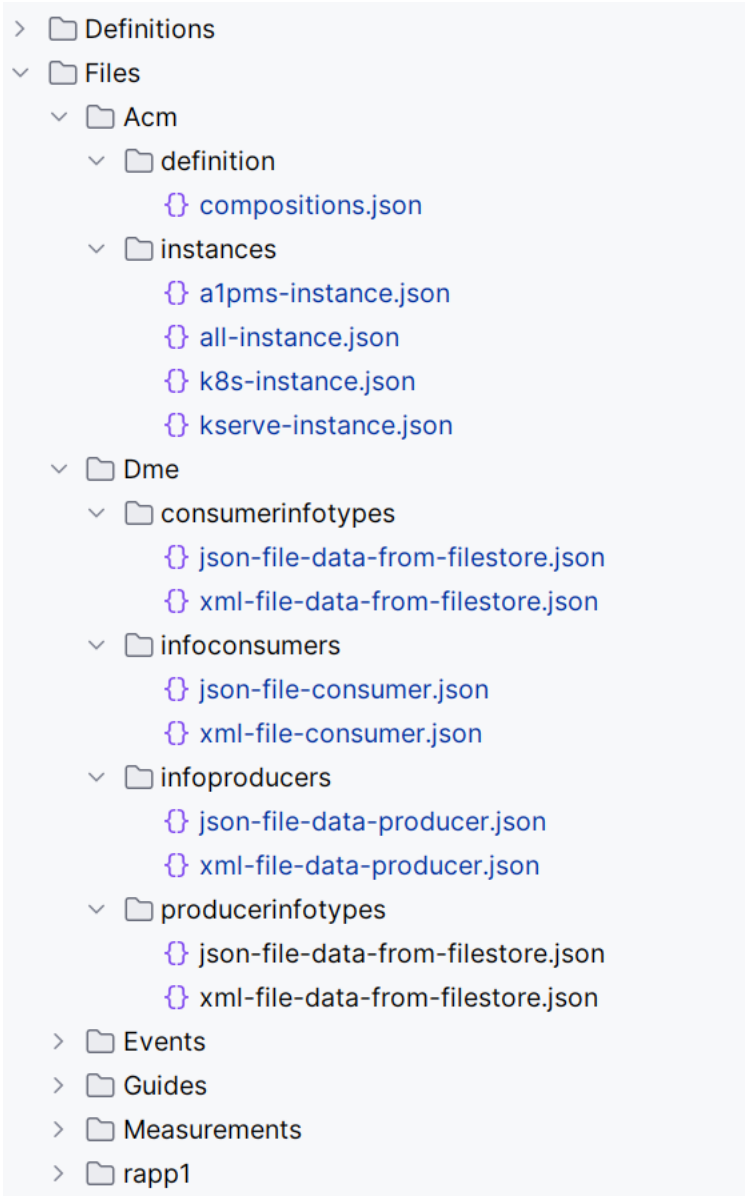
- It integrates with CAPIF in NONRTRIC.
- Provider
  - AEF
    - It is the provider of the service APIs and is also the service communication entry point of the service API to the API invokers. Provides access control, logging, charging, provides authentication and authorization support.
  - APF
    - It is responsible for the capability to publish the service API information of the API provider to the CAPIF core functions to enable the discovery of APIs by the API invoker.
  - AMF
    - It is the entity which registers and maintains registration information of the API provider domain functions.
- Service Api
  - It is the list of API’s exposed by the provider.
- Invoker
  - It is an entity which invokes the service API’s.

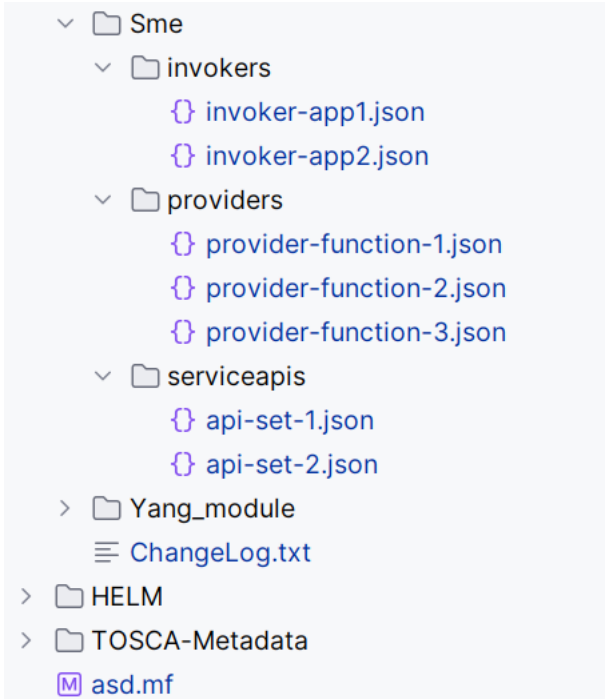
DME (Data Management and Exposure)

- It integrates with ICS(Information coordinator service) in NONRTRIC
- Information Type
  - It is a type of information. This defines an interface between consumers and producers. Each information type defines which parameters can be used for creating an information job.
- Data producer
  - It is a producer of data. A producer will get notified about all information jobs of its supported types. This also means that filtering is done at the producer (ideally at the source of the data).
- Data Consumer
  - It is a subscriber of data. Subscription is done by creating an “Information Job”

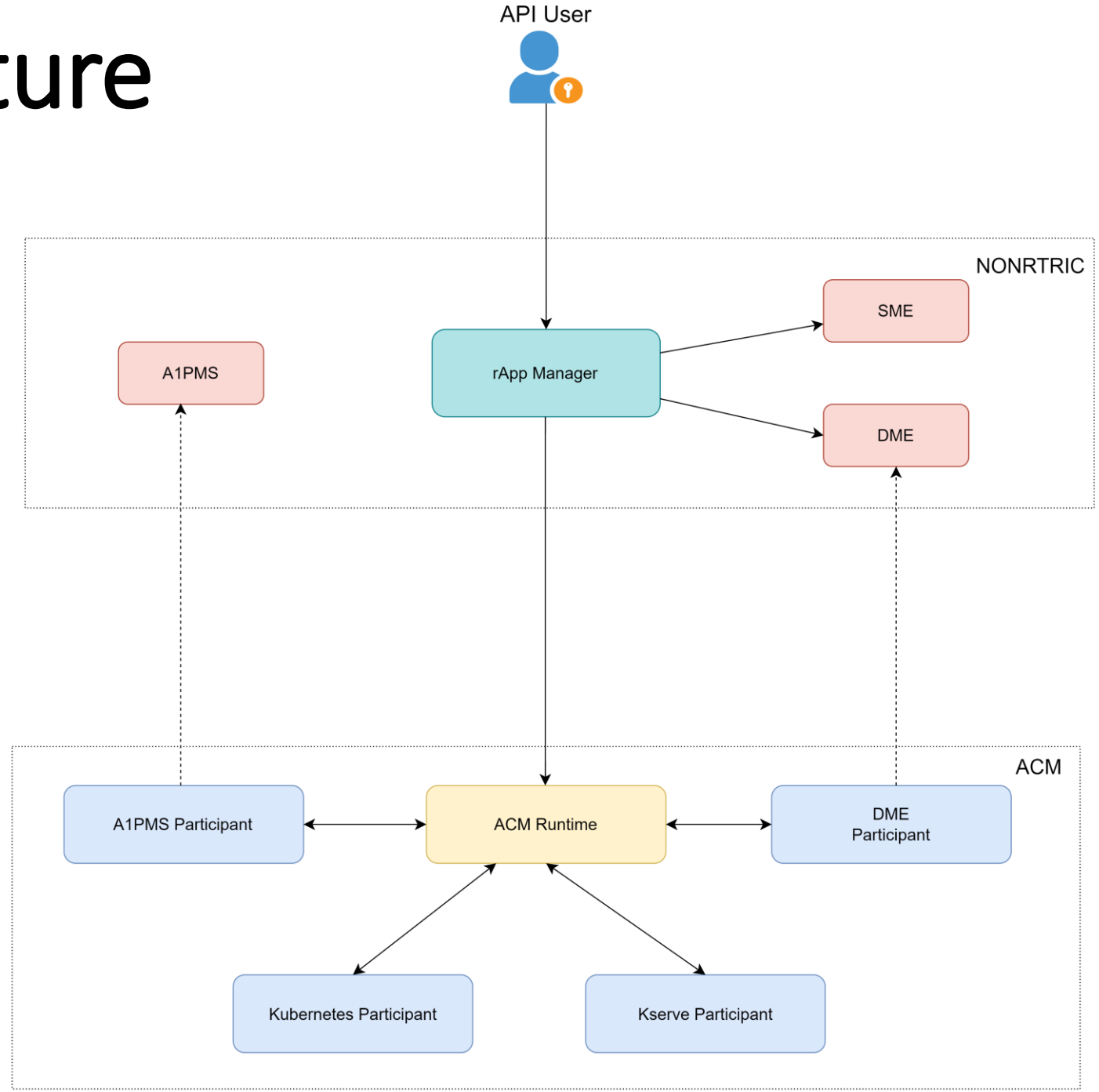
rApp Package Definition

(This serves as a prototype and is prone to changes)

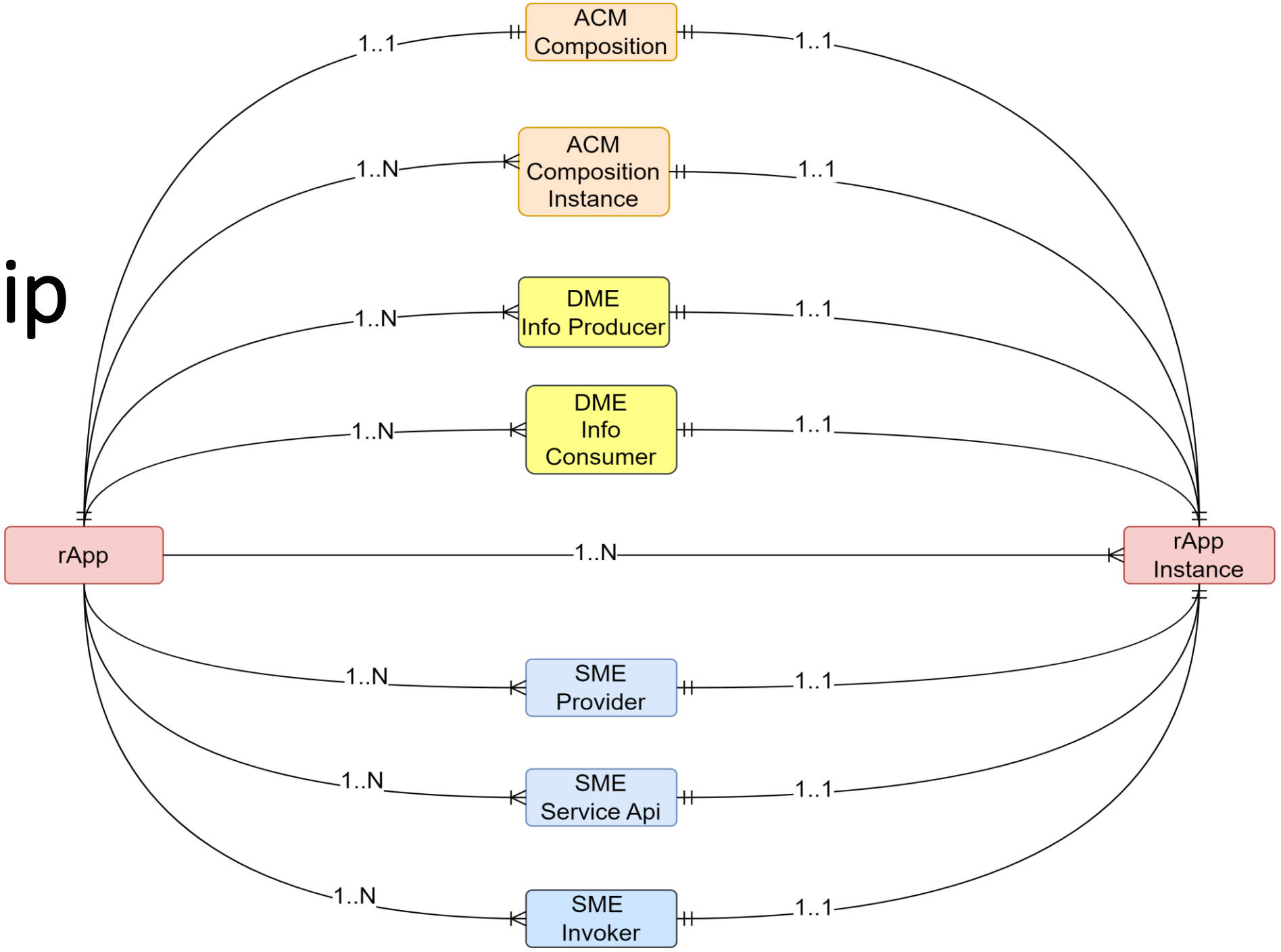




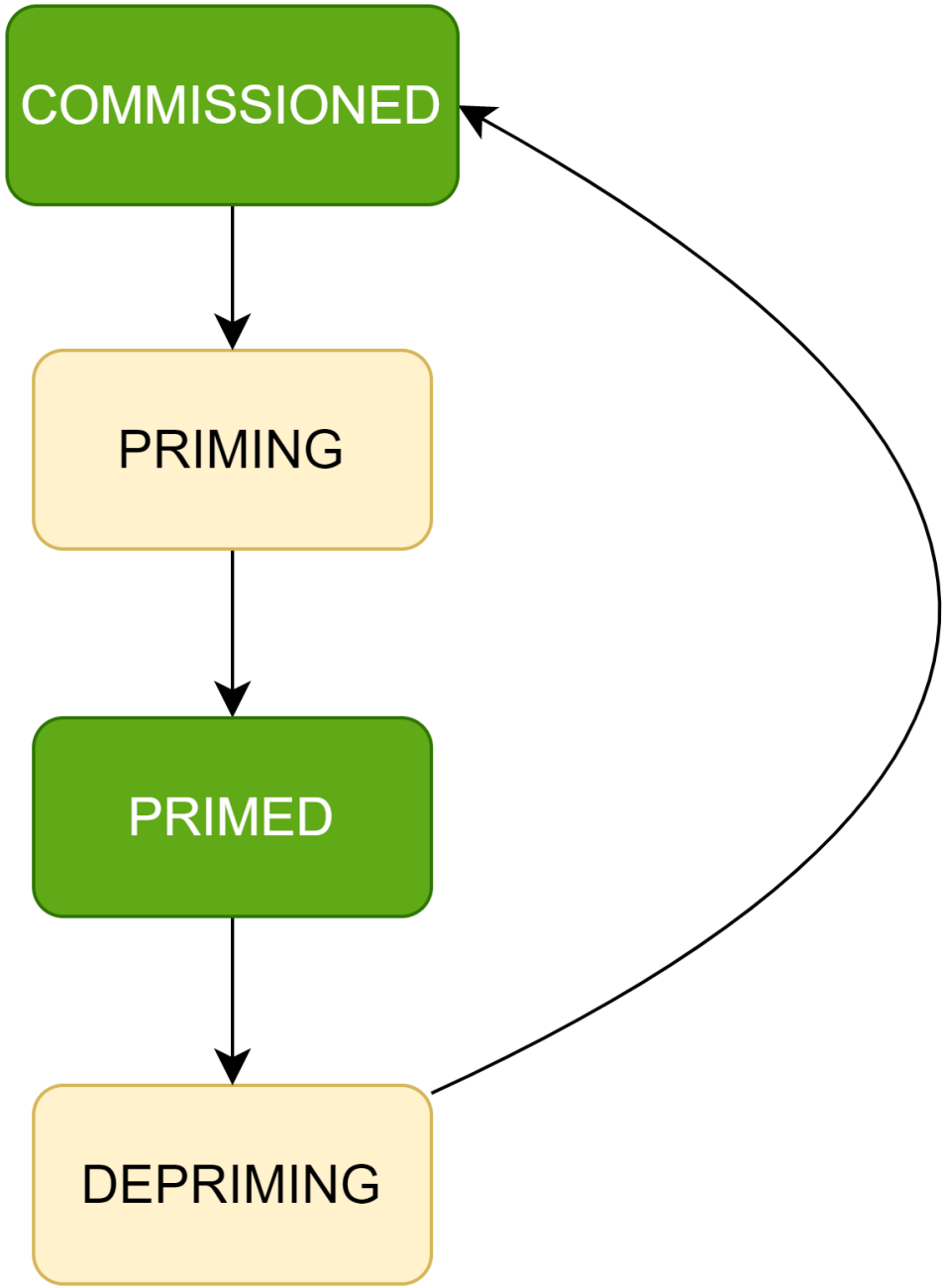
Architecture



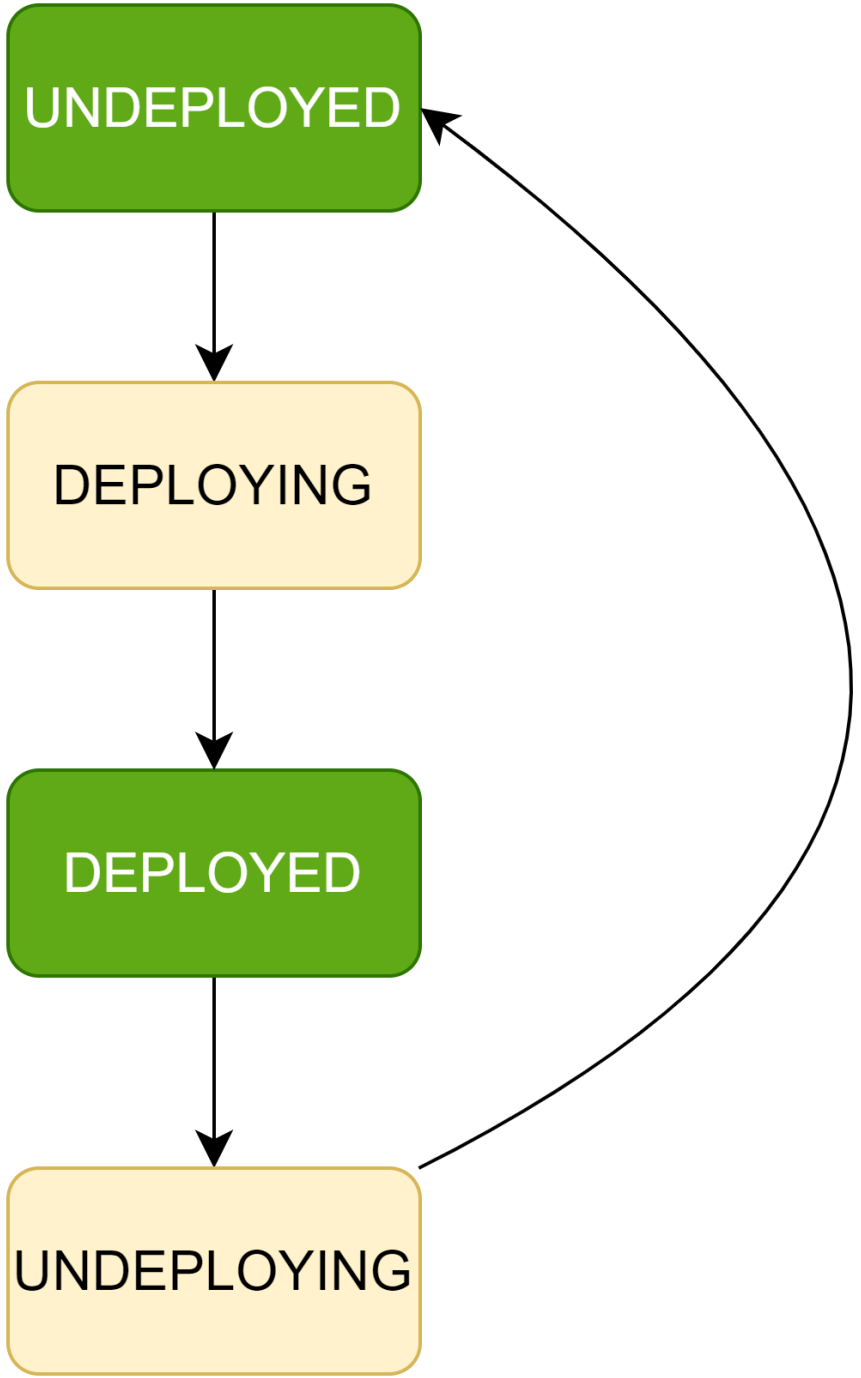
rApp Entity Relationship



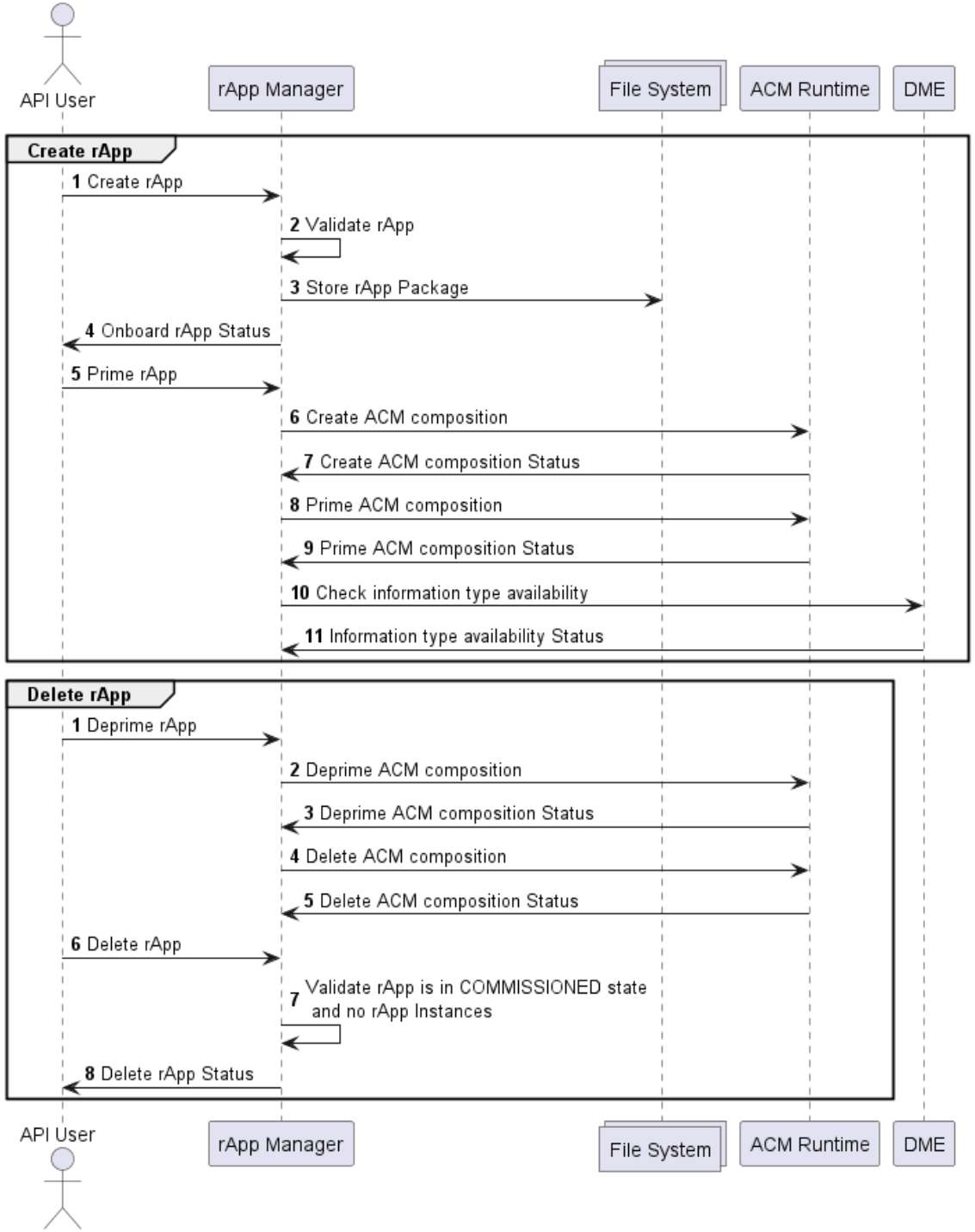
rApp States



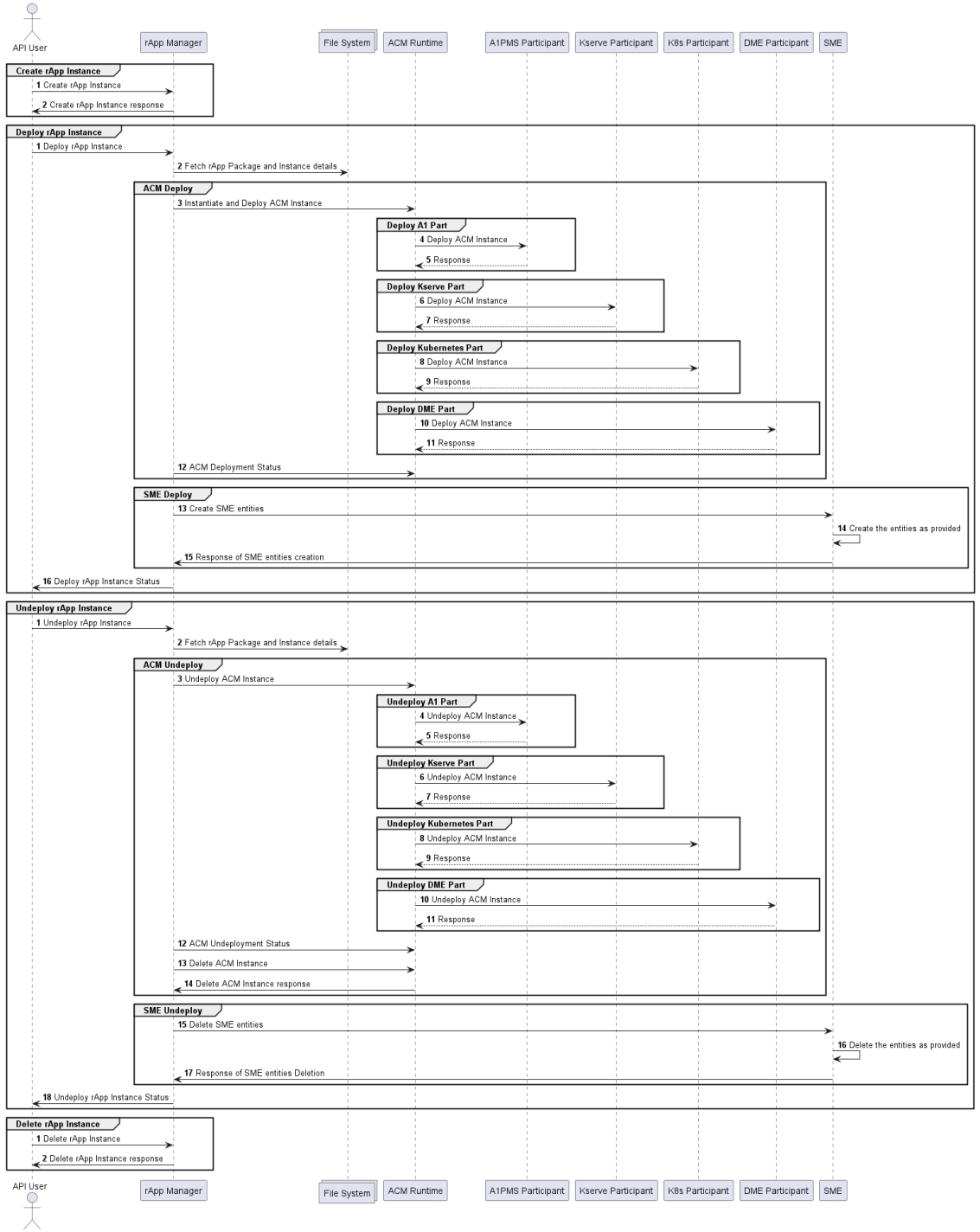
rApp Instance States



rApp flow


API User
rApp Manager
File System
ACM Runtime
DME
Create rApp
1 Create rApp
2 Validate rApp
3 Store rApp Package
4 Onboard rApp Status
5 Prime rApp
6 Create ACM composition
7 Create ACM composition Status
8 Prime ACM composition
9 Prime ACM composition Status
10 Check information type availability
11 Information type availability Status
Delete rApp
1 Deprime rApp
2 Deprime ACM composition
3 Deprime ACM composition Status
4 Delete ACM composition
5 Delete ACM composition Status
6 Delete rApp
7 Validate rApp is in COMMISSIONED state and no rApp Instances
8 Delete rApp Status
API User
rApp Manager
File System
ACM Runtime
DME

rApp Instance flow



Demo…

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