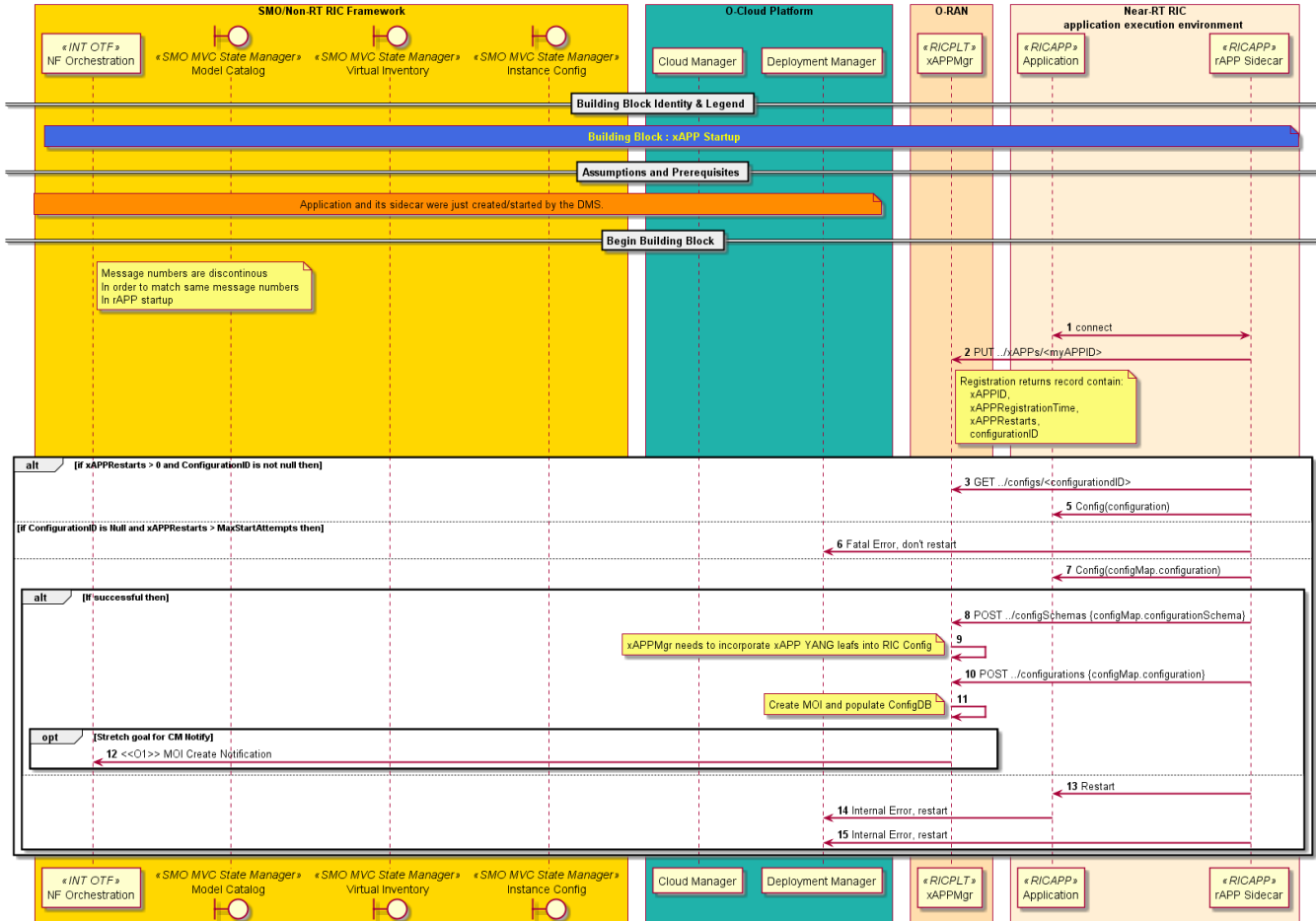


Cherry xAPP Startup

Sequence Diagram



@startuml

Autonumber

Skinparam sequenceArrowThickness 2

skinparam ParticipantPadding 5

skinparam BoxPadding 10

Box "SMO/Non-RT RIC Framework" #gold

participant NFO as "NF Orchestration" <<INT OTF>>

Boundary MC as "Model Catalog" <<SMO MVC State Manager>>

Boundary VI as "Virtual Inventory" <<SMO MVC State Manager>>

Boundary IC as "Instance Config" <<SMO MVC State Manager>>

end box

Box "O-Cloud Platform" #lightseagreen

participant IMS as "Cloud Manager"

participant DMS as "Deployment Manager"

End box

Box "O-RAN" #NavajoWhite

Participant AppMgr as "xAPPMgr" <<RICPLT>>

End box

Box "Near-RT RIC\napplication execution environment " #PapayaWhip

participant App as "Application" <<RICAPP>>

participant Sidecar as "rAPP Sidecar" <<RICAPP>>

end box

== Building Block Identity & Legend ==

note over NFO, Sidecar #royalblue

<color: yellow>Building Block : xAPP Startup </color>

end note

== Assumptions and Prerequisites ==

note over NFO, DMS #darkorange

Application and its sidecar were just created/started by the DMS.

end note

== Begin Building Block ==

Note Right of NFO

Message numbers are discontinuous

In order to match same message numbers

In rAPP startup

End note

Sidecar <-> App : connect

Sidecar -> AppMgr : PUT ../xAPPs/<myAPPID>

Note right of AppMgr

Registration returns record contain:

xAPPID,

xAPPRegistrationTime,

xAPPRestarts,

configurationID

end note

alt if xAPPRestarts > 0 and ConfigurationID is not null then

Sidecar -> AppMgr : GET ../configs/<configurationID>

Autonumber 5

Sidecar -> App : Config(configuration)

Else if ConfigurationID is Null and xAPPRestarts > MaxStartAttempts then

Sidecar -> DMS : Fatal Error, don't restart

Else

Sidecar -> App : Config(configMap.configuration)

Alt If successful then

Sidecar -> AppMgr : POST ../configSchemas {configMap.configurationSchema}

AppMgr -> AppMgr :

Note left: xAPPMgr needs to incorporate xAPP YANG leafs into RIC Config

Sidecar -> AppMgr : POST ../configurations {configMap.configuration}

AppMgr -> AppMgr :

Note Left : Create MOI and populate ConfigDB

Opt Stretch goal for CM Notify

AppMgr -> NFO : <<O1>> MOI Create Notification

End

Else

Sidecar -> App : Restart

App -> DMS : Internal Error, restart

Sidecar -> DMS : Internal Error, restart

End if

End if

@enduml