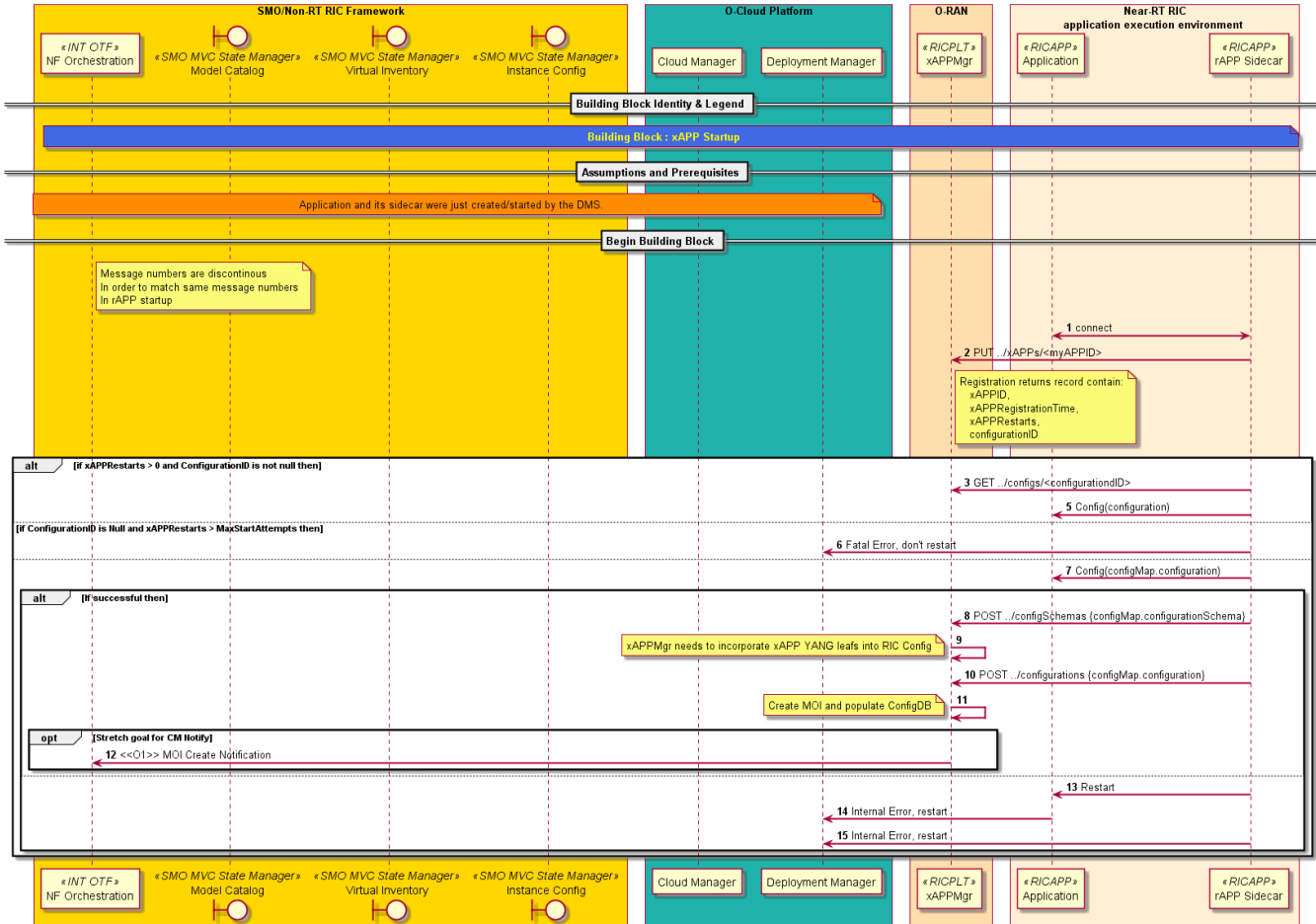


# Cherry xAPP Startup

## Sequence Diagram



@startuml

Autonumber

Skinparam sequenceArrowThickness 2

skinparam ParticipantPadding 5

skinparam BoxPadding 10

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

participant NFO as "NF Orchestrator" <<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 discontinous  
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