CSMF and NSMF portal design in 5g slicing use case

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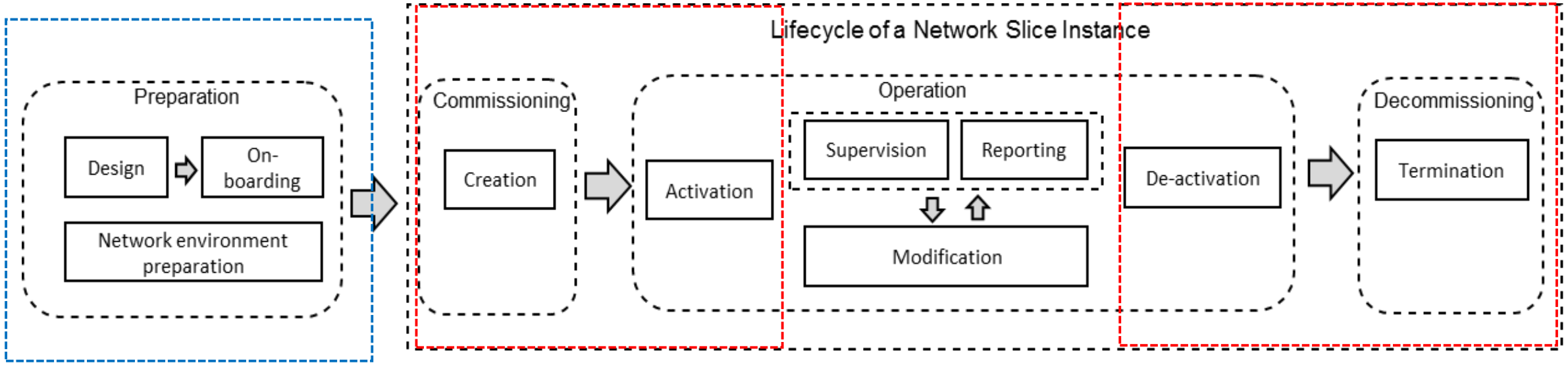
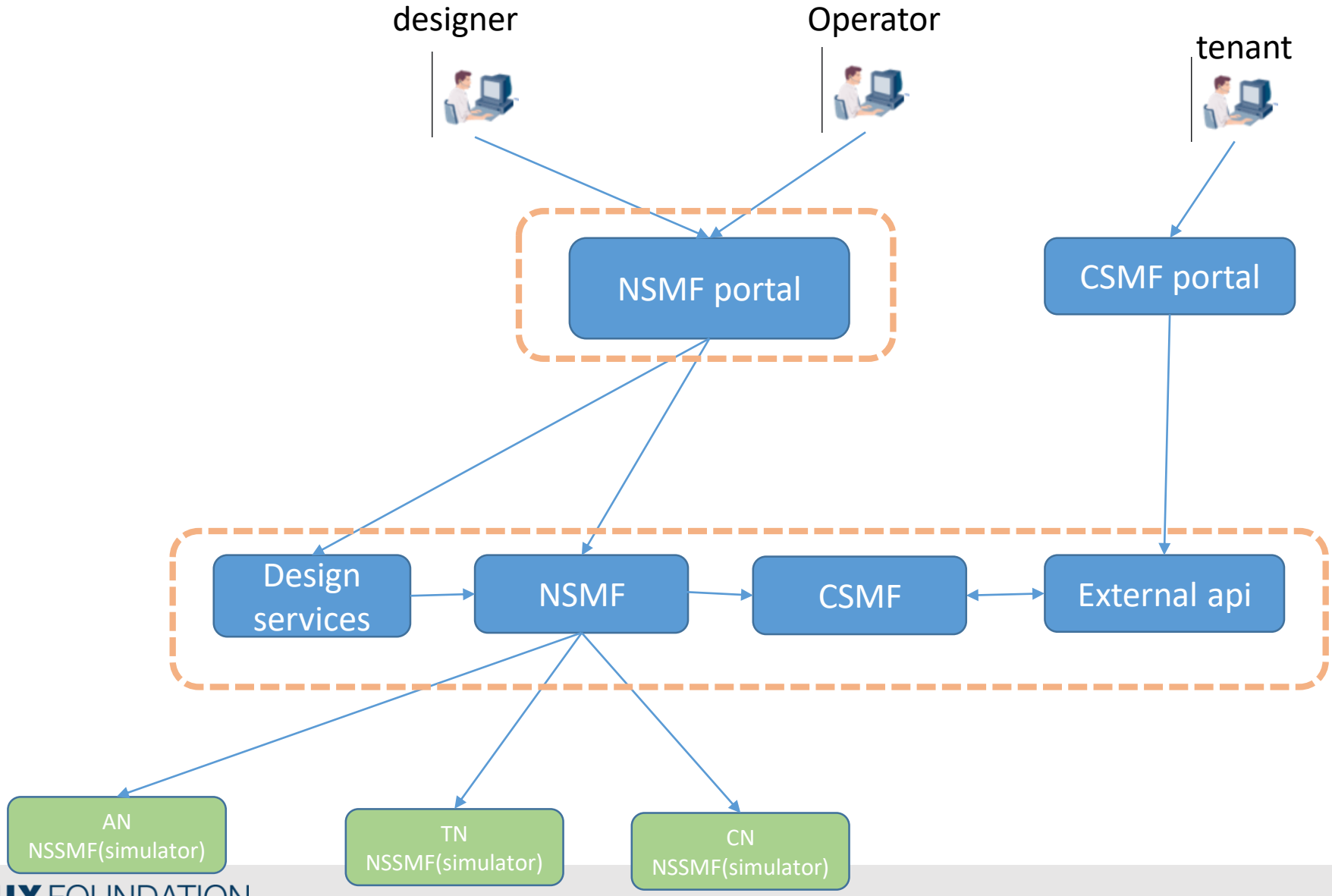
The 3GPP of the 5G slice lifecycle management



The red box was completed in this development
The blue box will complete next phase in portal development

The overview of slice service in onap



Home portal design

CSMF portal

slice Order

Order query

Subscriber management

slice information query

5G Slice design portal

Design guide flash（step by step）

SDC

DG

CDS

APPC CDT

Slice maintain portal

Slice management

1、Planning
2、survery
3、configuration check
4、slicing instantiation
5、slicing Terminate

Resource management（query slicing instantiation/S-NSSAI/）

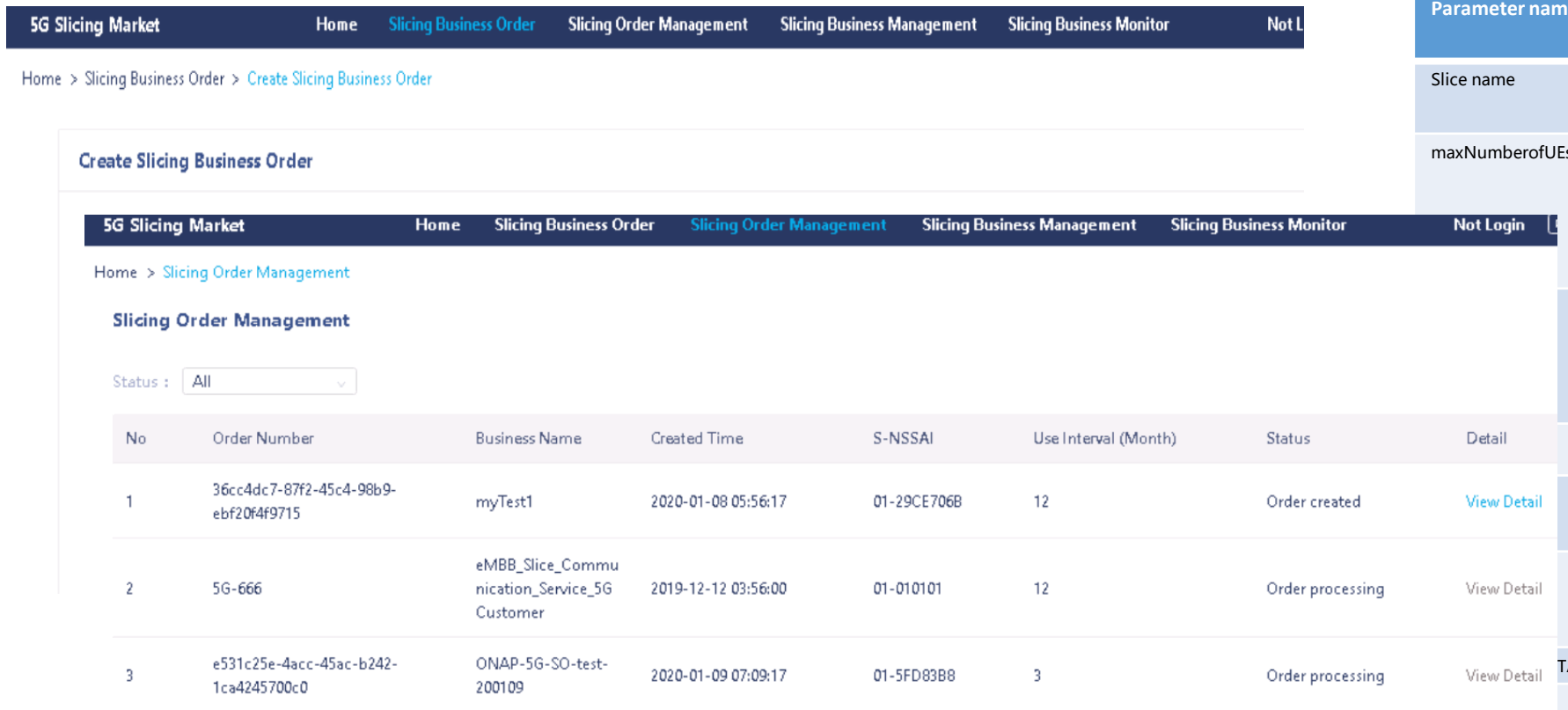
1、query slicing instantiation
2、S-NSSAI
3、slicing activate/deactivate
4、S-NSSAI attach/deattach

Performance monitor

1、slicing list

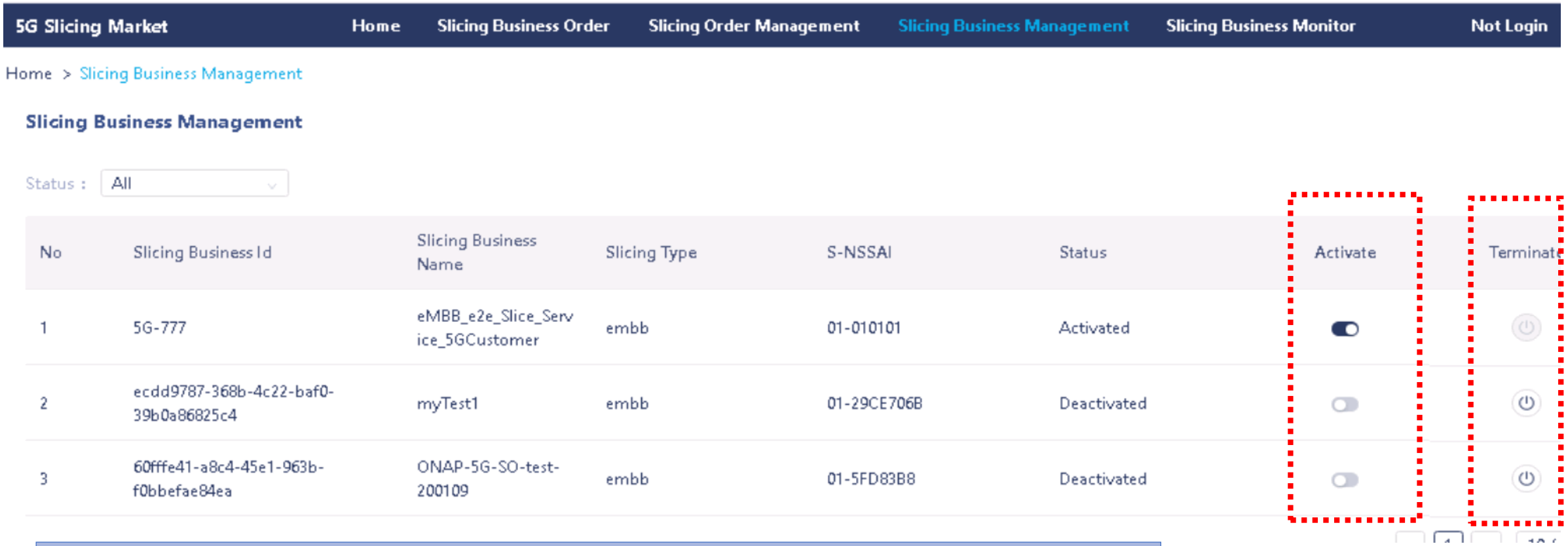
Slice order –CSMF portal

Fill Order → Order distribution → AN/TN/CN domain → Slice Instantiate



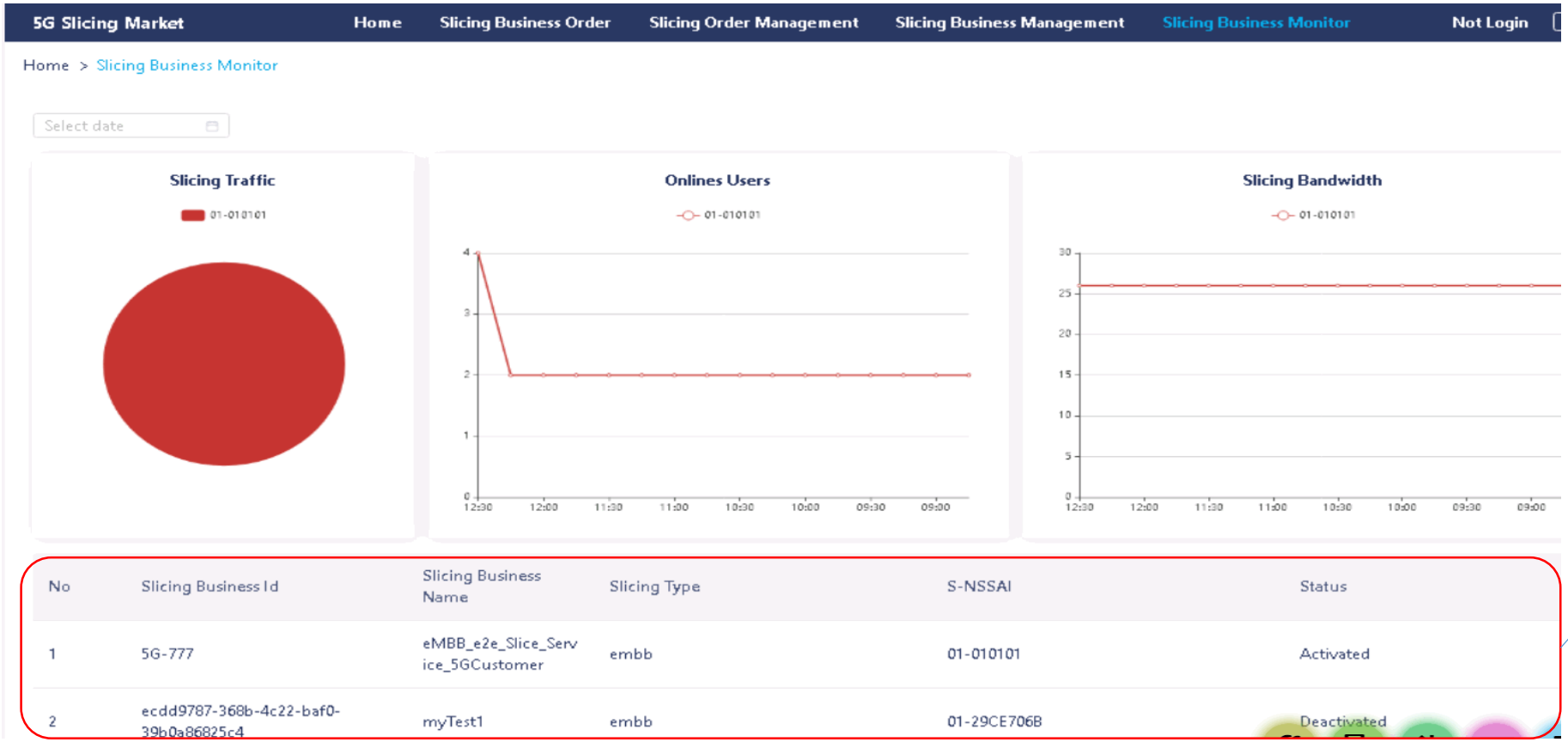
Parameter name	Csmf portal	input
Slice name	Slice name	Slice name
maxNumberofUEs	Number of connections	Option： 10000以下 10000-50000 50000-100000 100000-1000000 1000000以上
	expDataRateUL	option 5G 10G 50G 100G
	expDataRateDL	
	lantency	20ms 50ms 100ms
	nomadicity	stationary, nomadic, restricted mobility, fully mobility.
TAList	area	Province/city/region
	duration	months
sharable	sharable	share, Exclusive

Slice Management –CSMF portal



Management:
1. Activate/deactivate/Terminate slice

Slicing Monitor –CSMF portal



No	Slicing Business Id	Slicing Business Name	Slicing Type	S-NSSAI	Status
1	5G-777	eMBB_e2e_Slice_Service_5GCustomer	embb	01-010101	Activated
2	ecdd9787-368b-4c22-baf0-39b0a86825c4	myTest1	embb	01-29CE706B	Deactivated

1. KPI :
2. slice traffic
3. Online subscriber;
4. Slice bandwidth

1. List the slice info to query the detail KPI

NSMF home portal design

5G Slice design portal

Design guide flash（step by step）

SDC

DG

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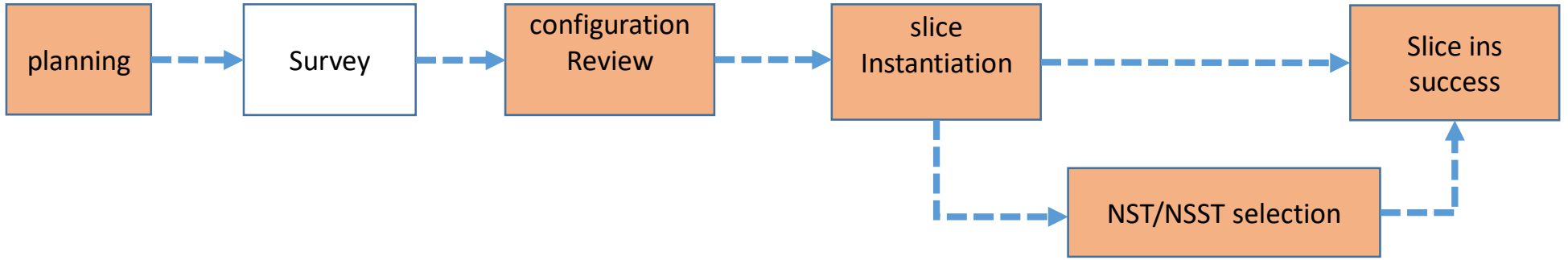
Slice maintenance portal

Slice Task management	Slice management	Performance monitor
1、planning 2、suvery 3、configuration check 4、slicing instantiation	1、Slice management 2、Slice instance management 3、sub network slice management	1、Slice list

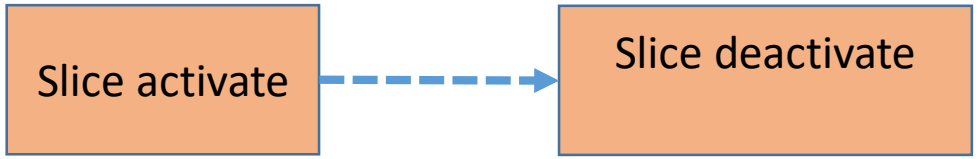
Will develop in Next phase

Slice service maintenance Process in portal

Slice instantiation



Slice instance activation



Slice instantiation—configuration review

Slice task info----*from csmf portal*

Slice requirement info—just review

Parameter name	Csmf portal
Slice name	Slice name
maxNumberofUEs	Number of connections
expDataRateUL	expDataRateUL
expDataRateDL	expDataRateDL
lantency	lantency
Mobility	nomadicity
nsCoverageAreaTAList	area
duration	duration
sharable	sharable

1. If Shared slice, NSMF will get one existing slice to use, and also can create new one
2. If NO shared slice, will create new slice, but the domain slice also can use the existing domain slice

Matched NST NST ID NST name

Matched NSI NSI ID NSI name modify

1. Wireless/core network/transmission parameter adjust

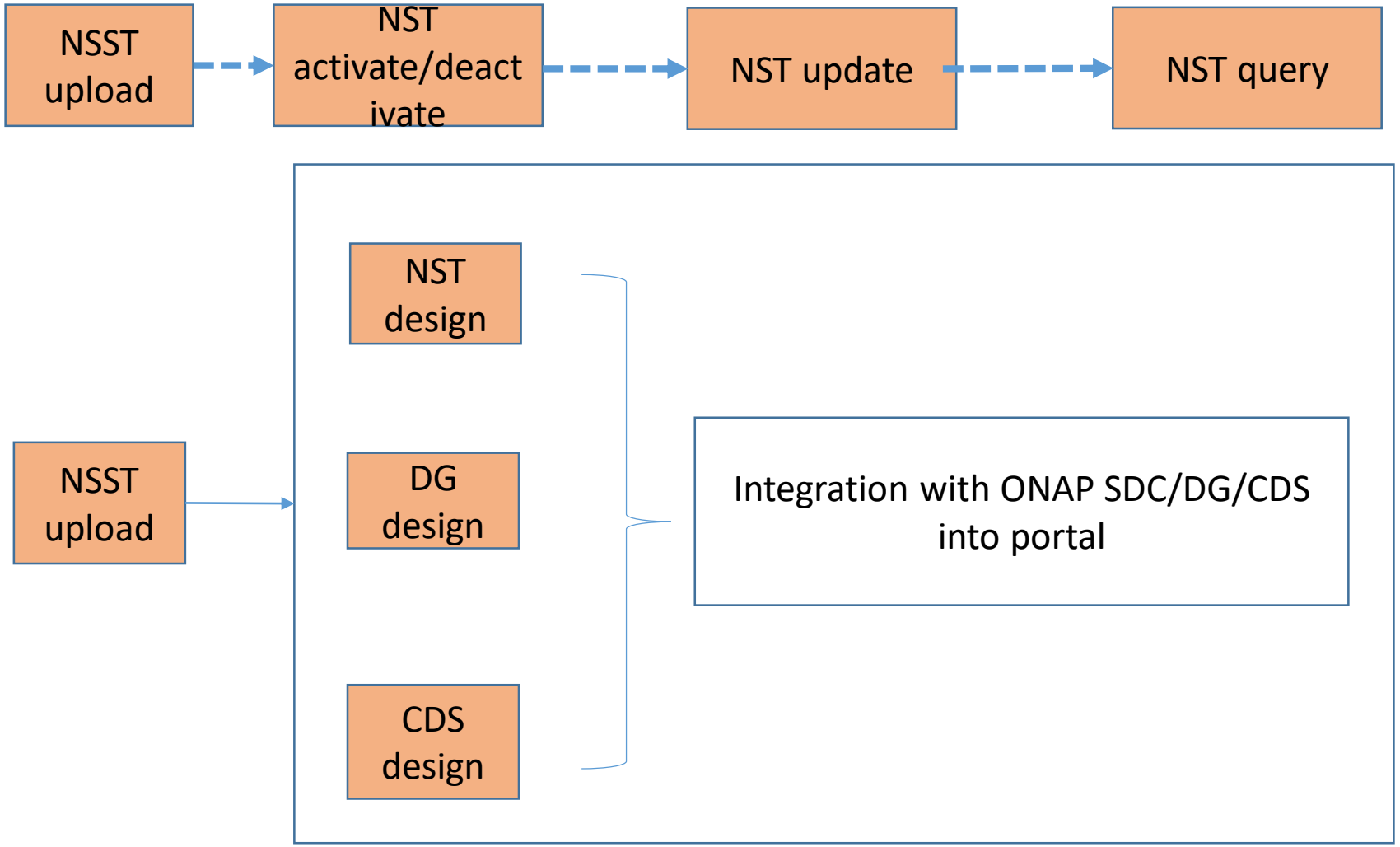
Wireless domain Wireless slice instance ID:xxxxxxx, slice name:xxxxx modify parameter

Core network domain Core network slice instance ID:xxxxxxx, slice name:xxxxx modify parameter

Transmission domain Transmission slice instance ID:xxxxxxx, slice name:xxxxx modify parameter

Submit

Design-time portal（next planning）



The propose is to integrate with all related all-in-one portal, and improve the design usability

Next Planning

- Integration with the SDC/CDS/DG portal in 5G slice project, make sure one-step to achieve design to run-time;
- Continue to optimize the operating experience of ONAP, including Service design, closed-loop design, and Service instantiation process;
- Based on the 3GPP protocol, continue to develop slice business updates. Integrated AN / TN / CN domain slice lifecycle management

Thank You!