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

Design services -> NSMF -> CSMF -> External api

designer

Operator

tenant

NSMF portal

CSMF portal

AN NSSMF(simulator)

TN NSSMF(simulator)

CN NSSMF(simulator)
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. Survey
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

<table>
<thead>
<tr>
<th>Csmf portal</th>
<th>Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slice name</td>
<td>Slice name</td>
</tr>
<tr>
<td>maxNumberOfUEs</td>
<td>Number of connections</td>
</tr>
<tr>
<td>expDataRateUL</td>
<td>option</td>
</tr>
<tr>
<td>expDataRateDL</td>
<td></td>
</tr>
<tr>
<td>latency</td>
<td>20ms, 50ms, 100ms</td>
</tr>
<tr>
<td>nomadicty</td>
<td>stationary, nomadic, restricted mobility, fully mobility</td>
</tr>
<tr>
<td>TList</td>
<td>area</td>
</tr>
<tr>
<td>duration</td>
<td>months</td>
</tr>
<tr>
<td>sharable</td>
<td>sharable</td>
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</tbody>
</table>
# Slice Management – CSMF portal

## Slicing Business Management

<table>
<thead>
<tr>
<th>No</th>
<th>Slicing Business Id</th>
<th>Slicing Business Name</th>
<th>Slicing Type</th>
<th>S-NSSAI</th>
<th>Status</th>
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<tbody>
<tr>
<td>1</td>
<td>5G-777</td>
<td>eMBB_e2e_Slice_Service_5GCustomer</td>
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<td>01-010101</td>
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<td>embb</td>
<td>01-5FD0388</td>
<td>Deactivated</td>
</tr>
</tbody>
</table>

**Management:**
1. Activate/deactivate/Terminate slice
Slicing Monitor – CSMF portal

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

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  CDS  APPC  CDT

Will develop in Next phase

Slice maintenance portal

Slice Task management
1、planning
2、suvery
3、configuration check
4、slicing instantiation

Slice management
1、Slice management
2、Slice instance management
3、sub network slice management

Performance monitor
1、Slice list
Slice service maintenance Process in portal

Slice instantiation

1. planning
2. Survey
3. configuration Review
4. slice Instantiation
5. Slice ins success
6. NST/NSST selection

Slice instance activation

1. Slice activate
2. Slice deactivate
Slice instantiation—configuration review

Slice task info—*from csmf portal*

**Slice requirement info—just review**

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<td>duration</td>
<td>duration</td>
</tr>
<tr>
<td>sharable</td>
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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:xxxxxx

**Core network domain**
- Core network slice instance ID:xxxxxxx, slice name:xxxxxx

**Transmission domain**
- Transmission slice instance ID:xxxxxxx, slice name:xxxxxx

- **modify**
- **parameter**

Submit
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!