Registration Interface Information Model for Interface to Network Security Functions
(draft-hyun-i2nsf-registration-interface-im-01)

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Introduction
Introduction (1/2)

- Dynamic Life Cycle Management of NSFs is important for efficient network resource utilization.

- Information Model & Data Model for Registration Interface is required for the following purposes:
  - To Request Developer's Management System (DMS) to create a new NSF, and
  - To Register new NSF instances by DMS

- Secure Registration of distributed NSFs via Registration Interface can be performed in a centralized manner.
Registration Interface in I2NSF Framework

Registration Interface for NSF Operation Manager and Developer’s Mgmt System

- Registration of NSFs in NSF Catalog of NSF Operation Manager
  - NSF Profile (e.g., Capability and Capacity)
- Dynamic Life Cycle Management of NSF instances.
  - NSF instantiation
  - NSF Load status
  - NSF elimination
As an Information Model for registration interface, draft-hyun-i2nsf-registration-interface-im-01 has been updated from draft-hyun-i2nsf-registration-interface-im-00.

As a Data Model for registration interface, draft-hyun-i2nsf-registration-interface-dm-00 has been proposed newly.
Update of Version
The changes from draft-hyun-i2nsf-registration-interface-im-00:

- Miscellaneous expressions in the whole descriptions are corrected.
- The description of NSF Access Information and Performance Capability is specified in more detail than the previous version.

draft-hyun-i2nsf-registration-interface-dm-00 defines a YANG data model based on the information model in draft-hyun-i2nsf-registration-interface-interface-im-00.
Data Model of Registration Interface

- draft-hyun-i2nsf-registration-interface-dm-00
  - The capability data model has been referenced from draft-hares-i2nsf-capability-data-model-01.

```
module: ietf-i2nsf-regs-interface
  +--rw regs-req
      |  uses i2nsf-regs-req
      +--rw life-cycle-mgmt-req
          |  uses i2nsf-life-cycle-mgmt-req

NSF Profile
  +--rw i2nsf-nsf-profile
      |  uses ietf-i2nsf-capability
      |  uses i2nsf-nsf-performance-caps
      +--rw i2nsf-capability
          |  uses ietf-i2nsf-capability
      +--rw performance-capability
          |  uses i2nsf-nsf-performance-caps

NSF Performance Capability
  +--rw i2nsf-nsf-performance-caps
      |  uses i2nsf-nsf-profile
      |  uses i2nsf-nsf-access-info
      +--rw cpu-num uint16
      +--rw disk-size uint16
      +--rw ram-size uint16

NSF Access Information
  +--rw i2nsf-nsf-access-info
      |  uses i2nsf-nsf-profile
      |  uses i2nsf-nsf-access-info
      +--rw nsf-address inet:ipv4-address
      +--rw nsf-port-address inet:port-address

Life-Cycle Management Request
  +--rw i2nsf-life-cycle-mgmt-req
      |  uses i2nsf-nsf-profile
      |  uses i2nsf-nsf-access-info
      +--rw req-level uint16
      +--rw req-id uint64
      +--rw (req-type)?
          |  uses i2nsf-nsf-profile
          |  uses i2nsf-nsf-access-info
          +--rw (req-creation-type)
              |  uses i2nsf-nsf-profile
              |  uses i2nsf-nsf-access-info
              +--rw nsf-profile
              +--rw nsf-access-info

Registration Request
  +--rw i2nsf-regs-req
      |  uses i2nsf-nsf-profile
      |  uses i2nsf-nsf-access-info
      +--rw nsf-profile
```
Next Steps

- We will design the functionalities to create and register new NSF instance(s) via I2NSF Registration Interface.

- We will implement the following two roles of Registration Interface in OpenStack Platform:
  - Registration of NSF in the NSF Catalog of Security Controller
  - Dynamic Life Cycle Management of NSF Instances through Developer's Management System