

NRP YANG Modules

[draft-wdbsp-teas-nrp-yang](#)

TEAS WG

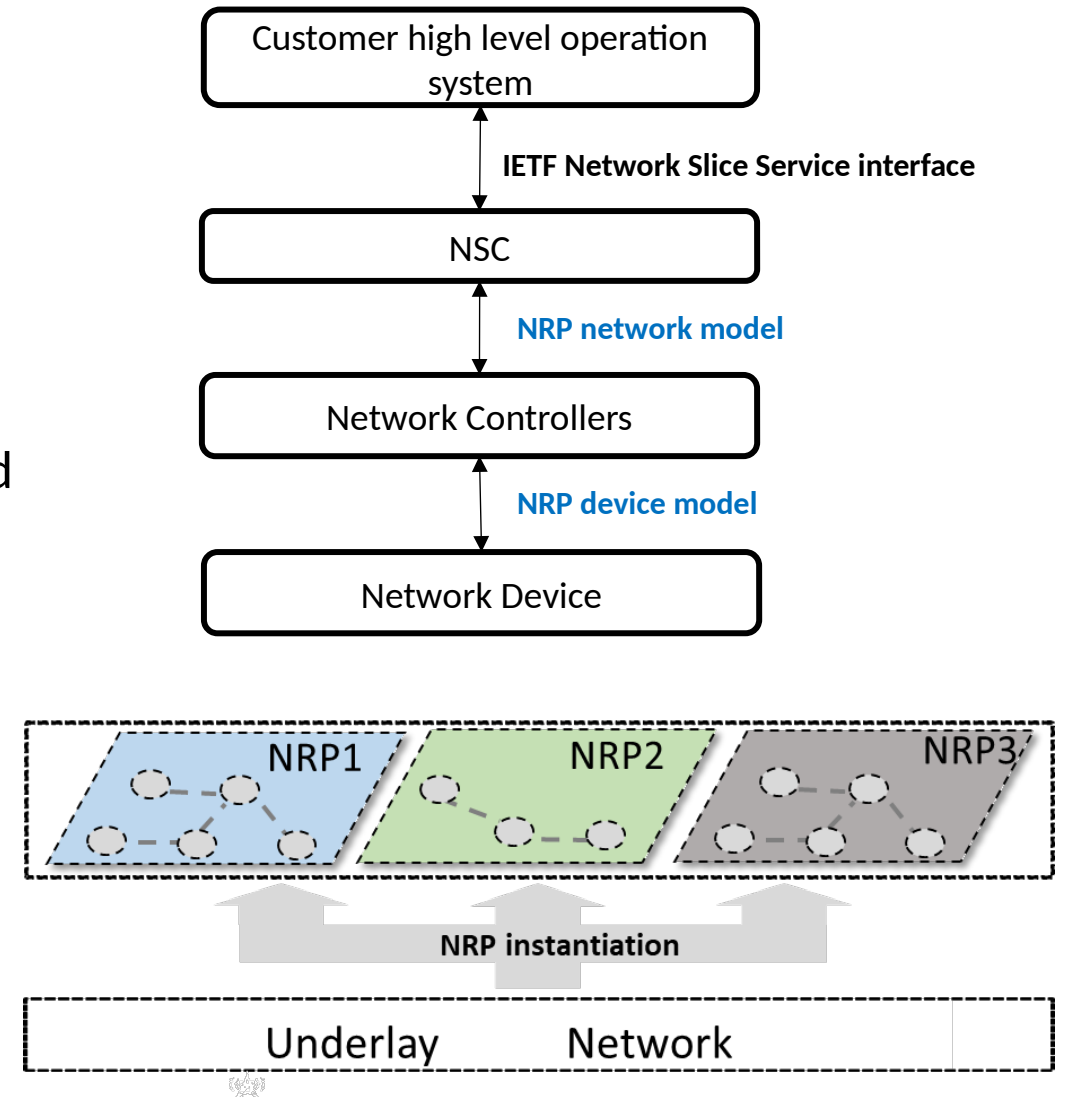
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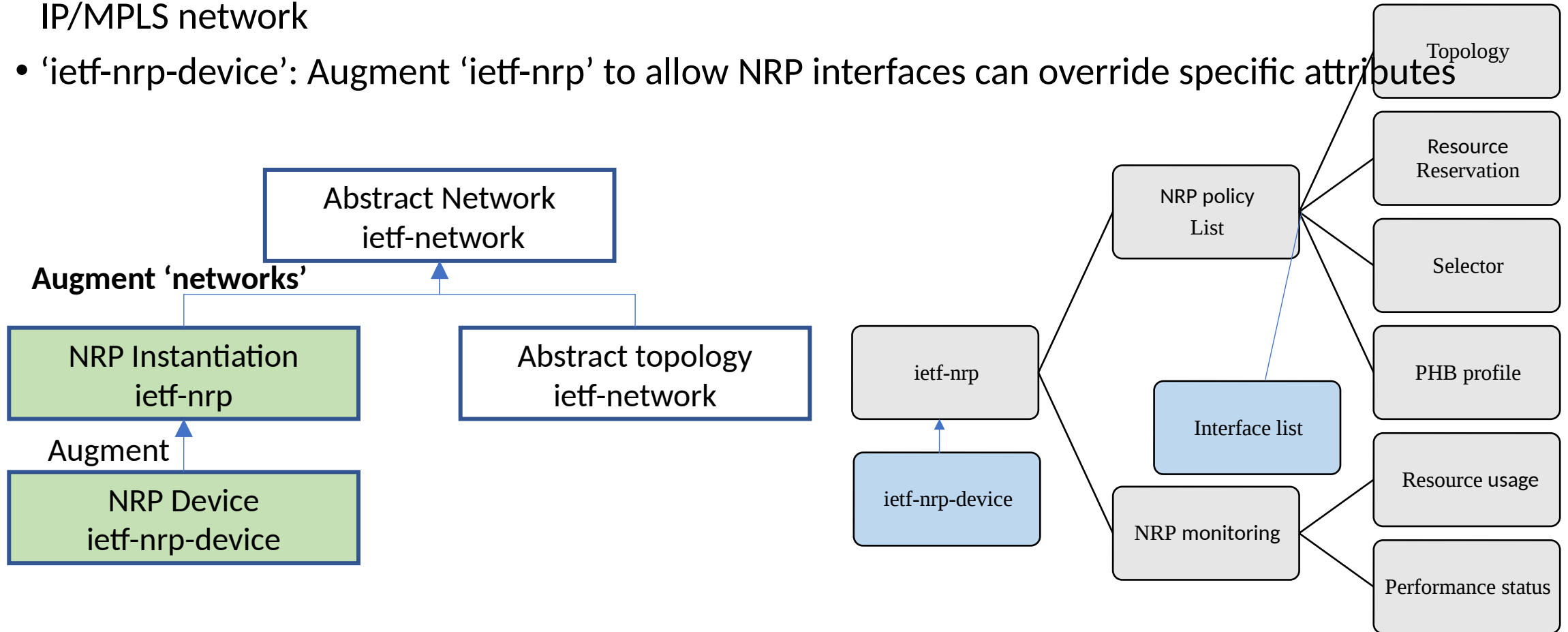
Background

- The authors of two drafts have produced a **new merged draft (after meeting IETF 116)** from **draft-bestbar-teas-yang-nrp-policy** and **draft-wd-teas-nrp-yang**
 - [draft-wdbsp-teas-nrp-yang](#)
- An NRP is a subset of the **resources** and associated **policies** on each of a **connected set of links** in the **underlay network**.
- This draft covers both **NRP network model** and **device model**
 - NRP instantiation and monitoring



Model Design Consideration

- 'ietf-nrp': Defines 'nrp-policy' to specify the **topology** associated with the NRP, **resource partitioning** and **SLO mechanisms**, control plane and/or data plane, can be realized in IP/MPLS network
- 'ietf-nrp-device': Augment 'ietf-nrp' to allow NRP interfaces can override specific attributes



NRP Device Model Components

- The NRP device model augments the NRP YANG data model and covers attributes of NRP interfaces.

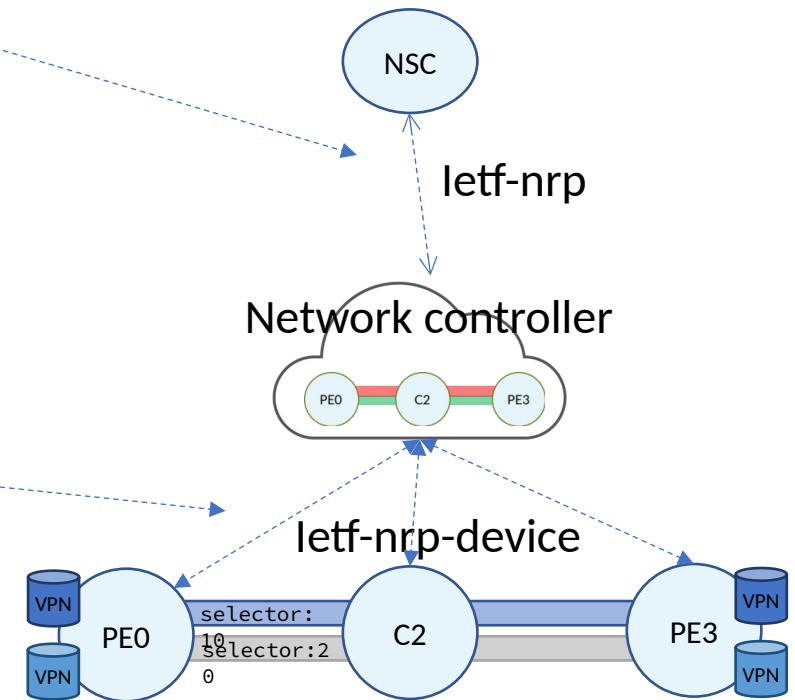
```

module: ietf-nrp
augment /nw:networks:
  +--rw nrp-policies
    +--rw nrp-policy* [name]
      +--rw name                string
      +--rw nrp-id?             uint32
      +--rw mode?               identityref
      +--rw resource-reservation
      |   ...
      +--rw selector
      |   ...
      +--rw phb-profile?        string
      +--rw topology
      ...
  
```

```

module: ietf-nrp-device
augment /nw:networks/nrp:nrp-policies/nrp:nrp-policy:
  +--rw interfaces
    +--rw interface* [interface]
      +--rw interface            if:interface-ref
      +--rw resource-reservation
      |   +--rw (max-bw-type)?
      |   |   ...
      +--rw selector
      |   +--rw ipv4
      |   |   ...
      |   +--rw ipv6
      |   |   ...
      |   +--rw mpls
      |   |   ...
      |   +--rw acl-ref*         nrp-acl-ref
      |   |   ...
      +--rw phb-profile?         string
  
```

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Next Step

- Solicit WG adoption
- Continue working on unresolved items
- Reviews and comments are welcome

NRP YANG Tree

```
module: ietf-nrp
  augment /nw:networks:
    +--rw nrp-policies
      +--rw nrp-policy* [name]
        +--rw name                string
        +--rw nrp-id?             uint32
        +--rw mode?               identityref
        +--rw resource-reservation
          | +--rw (max-bw-type)?
          | | +--:(bw-value)
          | | | +--rw maximum-bandwidth?      uint64
          | | | +--:(bw-percentage)
          | | | +--rw maximum-bandwidth-percent?  rt-types:percentage
          | +--rw selector
          | | +--rw ipv4
          | | | +--rw destination-prefix*  inet:ipv4-prefix
          | | +--rw ipv6
          | | | +--rw (selector-type)?
          | | | | +--:(dedicated)
          | | | | | ...
          | | | | +--:(srv6-sid-derived)
          | | | | | ...
          | | | | +--:(ipv6-destination-derived)
          | | | | | ...
          | | +--rw mpls
          | | | +--rw (selector-type)?
          | | | | +--:(dedicated)
          | | | | | ...
          | | | | +--:(derived)
          | | | | | ...
          | | +--rw acl-ref*  nrp-acl-ref
          +--rw phb-profile?  string
          +--rw topology
            +--rw igp-congruent!
            | +--rw multi-topology-id?  uint32
            | +--rw algo-id?            uint32
            | +--rw sharing?            boolean
            +--rw (topology-type)?
            +--:(selection)
            | +--rw select
            | | ...
            +--:(filter)
            +--rw filters
              ...
```

NRP instantiation

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```
augment /nw:networks/nw:network/nw:network-types:
  +--rw nrp!
  augment /nw:networks/nw:network/nw:node:
    +--ro nrp
      +--ro selector
        +--ro srv6?      srv6-types:srv6-sid
        +--ro sr-mpls?   rt-types:mpls-label
  augment /nw:networks/nw:network/nt:link:
    +--ro nrp
      +--ro link-partition-type?  identityref
      +--ro bandwidth-value?      uint64
      +--ro selector
        | +--ro srv6?      srv6-types:srv6-sid
        | +--ro sr-mpls?   rt-types:mpls-label
      +--ro statistics
        +--ro admin-status?
        |   te-types:te-admin-status
        +--ro oper-status?
        |   te-types:te-oper-status
        +--ro one-way-available-bandwidth?
        |   rt-types:bandwidth-ieee-float32
        +--ro one-way-utilized-bandwidth?
        |   rt-types:bandwidth-ieee-float32
        +--ro one-way-min-delay?      uint32
        +--ro one-way-max-delay?      uint32
        +--ro one-way-delay-variation?  uint32
        +--ro one-way-packet-loss?    decimal64
  augment /nw:networks/nw:network/nw:node:
    +--ro nrps* [nrp-id]
      +--ro nrp-id  uint32
      +--ro nrp
        +--ro selector
          +--ro srv6?      srv6-types:srv6-sid
          +--ro sr-mpls?   rt-types:mpls-label
  augment /nw:networks/nw:network/nt:link:
    +--ro nrps* [nrp-id]
      +--ro nrp-id  uint32
      +--ro link-partition-type?  identityref
      +--ro bandwidth-value?      uint64
      +--ro selector
        +--ro srv6?      srv6-types:srv6-sid
        +--ro sr-mpls?   rt-types:mpls-label
```

NRP monitoring

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