

A YANG Network Data Model of Network Inventory Allowance

[draft-wzwb-ivy-network-inventory-entitlement](#)

IVY WG, IETF#118

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Bo Wu (Presenting), Qin Wu (Huawei)

Chen Zhou (China Mobile)

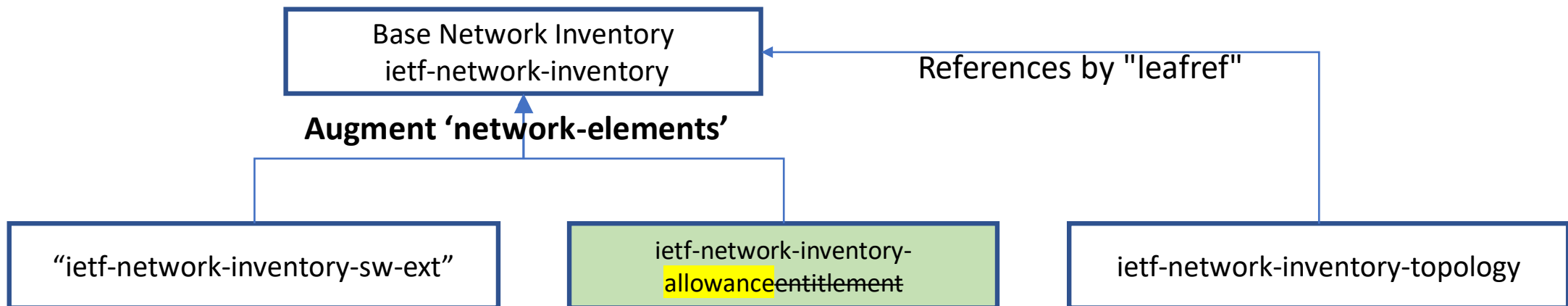
Mohamed Boucadair (Orange)



IETF118

~~Entitlement/license~~ Allowance Inventory

- This is an extended model for **Allowance Inventory**
- The current allowance data is for Network Element (NE) and SW/HW components



Modeling

- **Goal:** A list of global allowance data in the management scope for monitoring, for example, devices and controllers
- **Observation:** `draft-palmero-ivy-dmalmo` has definitions of entitlement, and supports high-level abstraction of entitlements to **assets** including hardware, software, applications, or services.

```
module: ietf-network-inventory-allowance
  +--ro allowances
    +--ro allowance* [allowance-id]
      +--ro allowance-id      string
      +--ro allowance-type?   string
      +--ro mfg-name?         string
      +--ro serial-number?    string
      +--ro allowance-data?   union
      +--ro active?           boolean
      +--ro issue-date?       uint64
      +--ro expiration-date?  uint64
      +--ro in-use?           boolean
      +--ro expired?          boolean
      +--ro valid?            boolean
      +--ro network-elements-ref* string
      +--ro ne-components-ref*  string

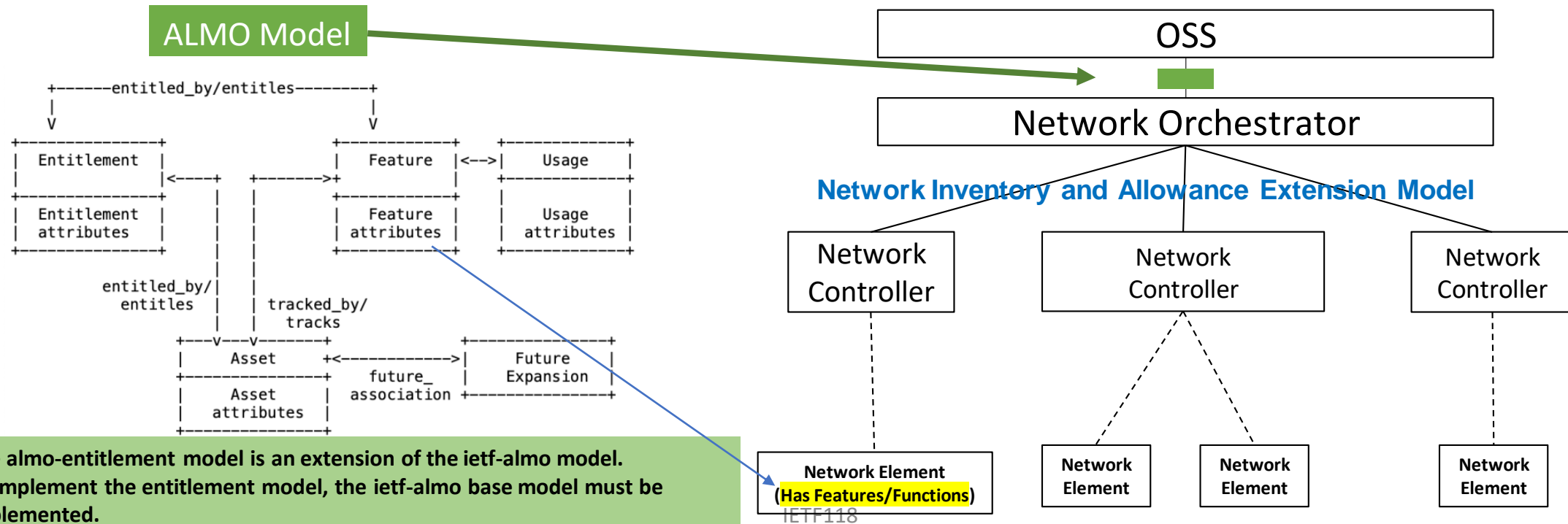
augment /ni:network-elements/ni:network-element:
  +--ro allowance-ref* -> /allowances/allowance/allowance-id
augment /ni:network-elements/ni:network-element/ni:components/ni:component:
  +--ro allowance-ref* -> /allowances/allowance/allowance-id
```

Relationship Between NEs and components

The allowances of NEs and components

ALMO Entitlement Model Overview Comparison

- **ALMO**: A high-level lifecycle management and operations model that aggregates asset data from different data sources (e.g. reports on critical issues or **errata**, **security advisory**, **End of Life**, etc) and not limited to the data from devices deployed on the network.
- **Network inventory allowance**: The allowance information of NEs managed by the controller on the network domain.
- **Observation**: Collaboration and consistency between the **high level model** and the **network realization model** is necessary.



“ietf-almo-entitlements” Tree Comparison

```
module: ietf-almo-entitlements
```

“ietf-almo” is missing

```
augment /ietf-almo:almos/ietf-almo:almo/ietf-almo:inst:
```

```
  +---rw uid?                string
  +---rw (all-1-asset)?
  |   +---:(all-assets)
  |   |   +---rw all-assets?  boolean
  |   +---:(assets)
  |       +---rw assets
  |           +---rw asset* [almo-class id]
  |               +---rw almo-class -> /ietf-almo:almos/almo/almo-class
  |               +---rw id        -> /ietf-almo:almos/almo[ietf-almo:
```

```
+---rw resource* [id]
```

```
  | +---rw id                string
  | +---rw name?             string
  | +---rw summary?         string
  | +---rw characteristic* [id]
  |   +---rw id              string
  |   +---rw name?           string
  |   +---rw description?    string
  |   +---rw unit?           string
  |   +---rw value?          yang:counter64
  |   +---rw value-max?      yang:counter64
```

```
+---rw features
```

```
  | +---rw feature* [almo-class id]
  |   +---rw almo-class     -> /ietf-almo:almos/almo/almo-class
  |   +---rw id             -> /ietf-almo:almos/almo[ietf-almo:almo-class = current()/../almo-class]/inst/id
```

```
+---rw state?                ietf-almo-common:entitlement-state-t
```

```
+---rw renewal-profile
```

```
  +---rw activation-date?    yang:date-and-time
  +---rw expiration-date?    yang:date-and-time
```

```
augment /ietf-almo:almos/ietf-almo:almo/ietf-almo:inst:
```

```
+---rw entitlements
```

```
  +---rw almo-class?        -> /ietf-almo:almos/almo/almo-class
  +---rw id?                 -> /ietf-almo:almos/almo[ietf-almo:almo-class = current()/../almo-class]/inst/id
```

Resource and feature data of an entitlement

```
module: ietf-network-inventory-allowanceentitlement
```

```
+---ro allowances
```

```
  +---ro allowance* [allowance-id]
```

```
    +---ro allowance-id      string
    +---ro allowance-type?   string
    +---ro mfg-name?         string
    +---ro serial-number?    string
    +---ro allowance-data?   union
    +---ro active?           boolean
    +---ro issue-date?       uint64
    +---ro expiration-date?  uint64
    +---ro in-use?           boolean
    +---ro expired?          boolean
    +---ro valid?            boolean
    +---ro network-elements-ref* string
    +---ro ne-components-ref* string
```

```
augment /ni:network-elements/ni:network-element:
```

```
  +---ro allownace-ref*      -> /allowances/allowance/allowance-id
```

```
augment /ni:network-elements/ni:network-element/ni:components/ni:
```

```
  +---ro entitle-ref*       -> /allowances/allowance/allowance-id
```

Next Step

- Solicit WG adoption
- Will work on the consistency with draft draft-palmero-ivy-dmalmo
- Welcome reviews and comments