

NMDA Plan Discussion

Yan Zhuang
Huawei Technologies

2017 September 11th

NMDA changes&progress in IETF

- A New datastore architecture
 - <https://tools.ietf.org/html/draft-ietf-netmod-revised-datastores>
 - WG Last Call
- Changes to Netconf/restconf
 - Transport protocols should access proper datastores to configure/get data
 - <https://tools.ietf.org/html/draft-dsdt-netconf-restconf-nmda>
- Changes to YANG modules: Combine configuration/operational state tree into a single tree
 - Guidelines to design YANG modules following NMDA(<https://tools.ietf.org/html/draft-dsdt-nmda-guidelines>)
 - WG document
 - rfc6087bis: Guidelines for Authors and Reviewers of YANG Data Model Documents
 - WG document
- Revised interface module (rfc7223bis)
 - Submitted as individual document, will be adopted by WG soon
- Normally, a WG document takes at least 1 year to be published as a RFC in IETF

NMDA module Example

A new NMDA module:

Example: Create a New Module

Create an NMDA-compliant module, using combined configuration and state subtrees, whenever possible.

```
module example-foo {
  namespace "urn:example.com:params:xml:ns:yang:example-foo";
  prefix "foo-";

  container foo {
    // configuration data child nodes
    // operational value in operational datastore only
    // may contain config=false nodes as needed
  }
}
```

Combine configuration/operational state tree
into a single tree

Example: Convert an old Non-NMDA Module

Old Module:

```
module example-foo {
  namespace "urn:example.com:params:xml:ns:yang:example-foo";
  prefix "foo";

  container foo {
    // configuration data child nodes
  }

  container foo-state {
    config false;
    // operational state child nodes
  }
}
```

Converted NMDA Module:

```
module example-foo {
  namespace "urn:example.com:params:xml:ns:yang:example-foo";
  prefix "foo-";

  container foo {
    // configuration data child nodes
    // operational value in operational datastore only
    // may contain config=false nodes as needed
    // will contain any data nodes from old foo-state
  }

  // keep original foo-state but change status to deprecated
  container foo-state {
    config false;
    status deprecated;
    // operational state child nodes
  }
}
```

Progress of other groups

- BBF has started a team to deal with NMDA for their models
- For IEEE 802, a yangsters group is proposed and set by Glenn
 - Webpage: <http://ieee802dot1.wpengine.com/yangsters/>
 - Mailing list: STDS-802-YANG@listserv.ieee.org
 - Regular call: the last Wednesday of each month
 - One role of the group will be to discuss guidelines for developing YANG models in 802, including create a document that contains the high-level categories where guidelines are needed. Initial thoughts for guidelines includes “use of IETF NMDA”
- For 802.1, given the ietf-interface module move in IETF, they are starting to consider adoption/change of the 802.1 modules.

Our thoughts

- Head to NMDA to keep pace with other SDOs .
- Then when? Two options...

Option 1

- Change modules to NMDA-style in D1.x.
- Update it if any changes during D2.x/D3.x.

- Advantage:
 - Less work for future maintenance.
- Disadvantage
 - Delay TF work progress and postpone draft move to WG ballot.
 - Changes due to the changes of IETF drafts.

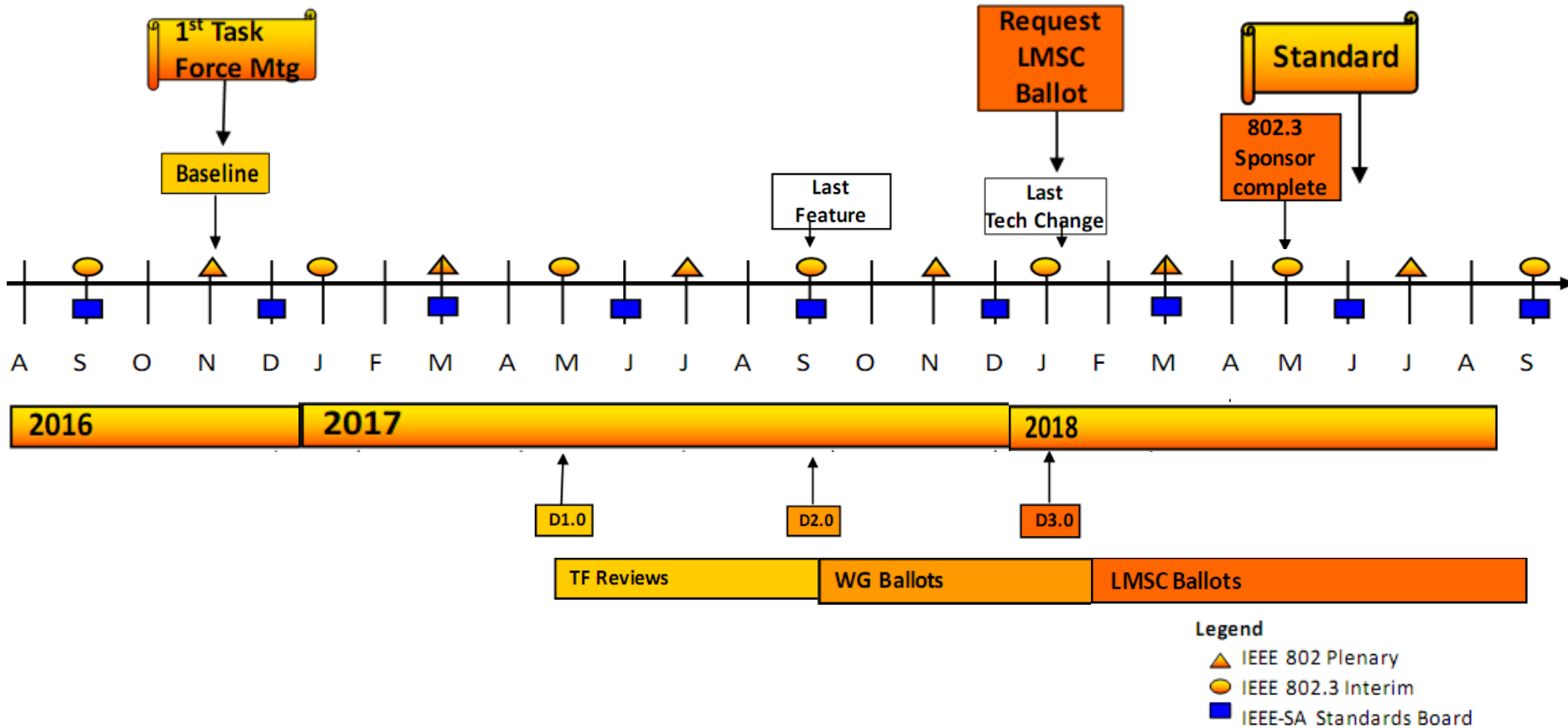
Option 2

- Keep the existing module style and move forward during Task force review.
- Review the NMDA work during WG ballot.
- Advantage:
 - Move our work forward.
 - Wait IETF work to be stable a bit.
- Disadvantage
 - Need model structure change if we decide to follow NMDA during WG review.

Plan on Option 1

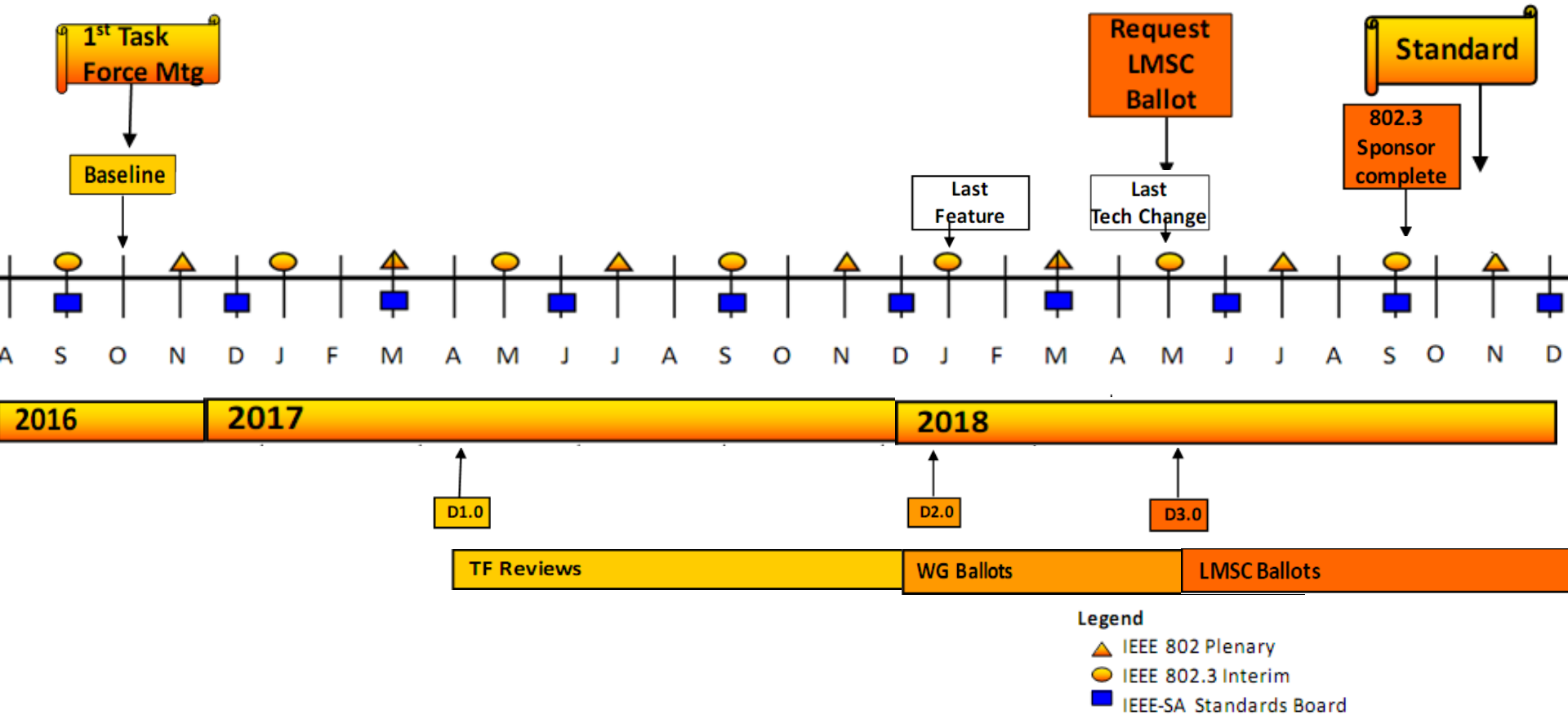
- Adopt/revise modules in non-NMDA in this meeting and generate D1.2.
- Move to NMDA style in November meeting.
 - Next IETF is a week behind the IEEE plenary meeting week...
- Move to WG review in 2018 January meeting.
- Update our project PAR...

Previous Draft Timeline



Draft proposal

Revised Draft Timeline



Draft proposal

Thank you!

NMDA Guidelines

- The specific approach to be taken for models being developed now and during the NMDA transition period should be based on both the expected usage and the maturity of the data model.
 - New models and models that are not concerned with the operational state of configuration information SHOULD immediately be structured to be NMDA-compatible.
 - Models that require immediate support for "in use" and "system created" information SHOULD be structured for NMDA. A non-NMDA version of these models SHOULD also be published, using either an existing model or a model created either by hand or with suitable tools that support current modeling strategies. Both the NMDA and the non-NMDA modules SHOULD be published in the same document, with NMDA modules in the document main body and the non-NMDA modules in a non-normative appendix. The use of the non-NMDA model will allow temporary bridging of the time period until NMDA implementations are available.