IEEE YANG Lifecycle and Developer Tools

Discussion slides for

2020-12-21 YANGsters meeting

Overview

- YANG Repository Structure

- Naming

- Module Naming

- Draft Lifecycle

- Published Lifecycle

YANG Repository Structure

- https://1.ieee802.org/yangsters/yangsters-guidelines/yangsters-repository-guidelines/
- Start here -> https://github.com/YangModels/yang
- Directories
  - experimental/ieee
    - IEEE work without an approved PAR
    - No required structure (but there is a directory for IEEE working groups using the repository)
  - standard/ieee/draft
    - IEEE with an approved PAR
    - Each working group has a directory
    - No required structure in the working group directories (802.1 creates sub-directories for each active YANG project)
    - IEEE Copyright
  - standard/ieee/published
    - IEEE standard has been published
    - Each working group has a directory
    - Flat structure in the working group directory
    - IEEE Copyright

Structure Details

- yang/standard/ieee/draft
  - 802.1
    - ABcu
    - AEdk
    - CBcv
    - CBdb
    - Qcr
    - Qcw
    - Qcx
    - Qxz
    - x

- Yang/standard/ieee/published
  - 1906.1
  - 802
  - 802.1
  - 802.3

Published 802.1 Files

- 802.1
  - ieee802-dot1q-ats.yang
  - ieee802-dot1q-bridge.yang
  - ieee802-dot1q-cfm-alarm.yang
  - ieee802-dot1q-cfm-bridge.yang
  - ieee802-dot1q-cfm-types.yang
  - ieee802-dot1q-cfm.yang
  - ieee802-dot1q-pb.yang
  - ieee802-dot1q-stream-filters-gates.yang
  - ieee802-dot1q-tpmr.yang
  - ieee802-dot1q-tsn-types.yang
  - ieee802-dot1q-types.yang
  - ieee802-dot1q-vlan-bridge.yang
  - ieee802-dot1x-types.yang
  - ieee802-dot1x.yang
- 802
  - Ieee802-types.yang

- Files in this directory are the latest published versions
- If an active project is modifying one of the published files, that draft project needs to create a copy of the published file and update the revision date in the copied file to be newer than the published date (so the check script will pull in the latest version when validating.
- When a draft project completes, if that project modifies one of the current published files, any other draft project that is modifying that same file, needs to rebase and update the draft revision date.

Current 802.1 Project Linkage

- CBdb depends on CBcv
  - ieee802-dot1cb-stream-identification
  - ieee802-dot1cb-stream-identification-types
- Qcw is modifying
  - ieee802-dot1q-bridge.yang
  - ieee802-dot1q-pb.yang
  - ieee802-dot1q-types.yang
  - ieee802-types.yang
  - ieee802-dot1q-stream-filters-gates.yang
- Qcz depends on ABcu
  - ieee802-dot1ab-lldp
- Qcz is modifying
  - Ieee802-dot1q-types

Cleanup Needed

- Once a standard is published and the YANG has been moved to published
  - The draft directory is deleted
- Draft directories that need to be deleted
  - Qcx
  - Qcr
  - x
- When a draft directory is deleted any other drafts that are pointing at that at directory, should be updated
  - check_pyang_extra_flags updated or removed

URN Naming

- https://standards.ieee.org/content/dam/ieee-standards/standards/web/documents/tutorials/ieeeurn.pdf

- Format example
  - urn:ieee:std:802.1Q:yang:ieee802-dot1q-bridge

Module Naming

- https://1.ieee802.org/yangsters/yangsters-guidelines/yang-module-naming-guidelines/

- Examples
  - ieee802-dot1q-bridge.yang
  - ieee802-eithernet-interface.yang
  - ieee1906-dot1-si-units.yang

```
<module-name> ::= <ieee-committee> <dash> <ieee-working-group> <dash> <unique-name>

<dash> ::= –
<letter> ::= [a-z A-Z 0-9 -]

<ieee-committee> ::= ieee [802 | 1588 | 1914]
<ieee-working-group> ::= <ieee802-working-group> | <ieee1588-working-group>| <ieee1914-working-group>
<ieee802-working-group> ::= <no-working-group> | <dot1-specific> | <dot3-specific> | <dot11-specific>

<no-working-group> ::= NULL

<dot1-specific> ::= dot1 <dot1-baseSpec>
<dot1-baseSpec> ::= NULL | <letter> {<letter>}

<dot3-specific> ::= ethernet | dot3

<dot11-specific> ::= dot11

<unique-name> ::= <letter> {<letter>}
```

Draft Lifecycle

```
┌─────────────────────┐
│     TG Ballot       │
│  Entire Document    │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│     WG Ballot       │
│  Entire Document    │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ WG Ballot recirculation │
│  Document Changes   │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│     SA Ballot       │
│  Entire Document    │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ SA Ballot recirculation │
│  Document Changes   │
└─────────────────────┘
```

Draft Document

Text/Figures/Tables

YANG and MIBs

Draft PDF

Save Draft YANG to GitHub
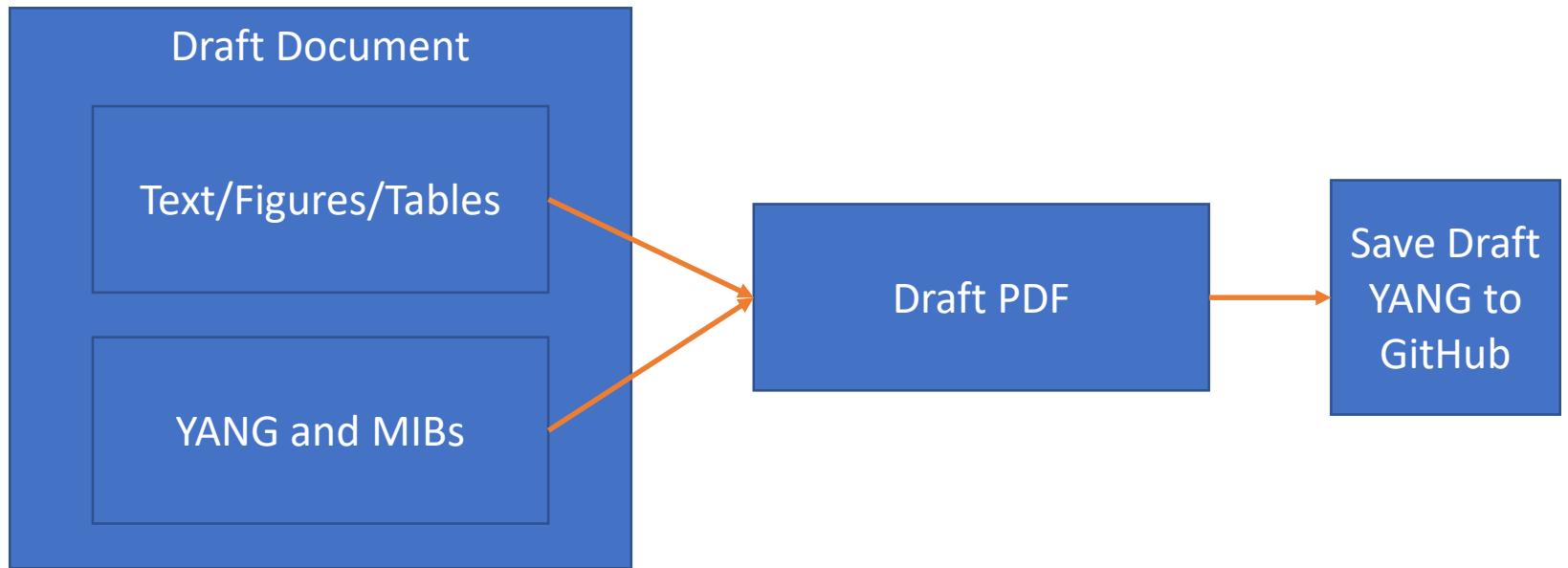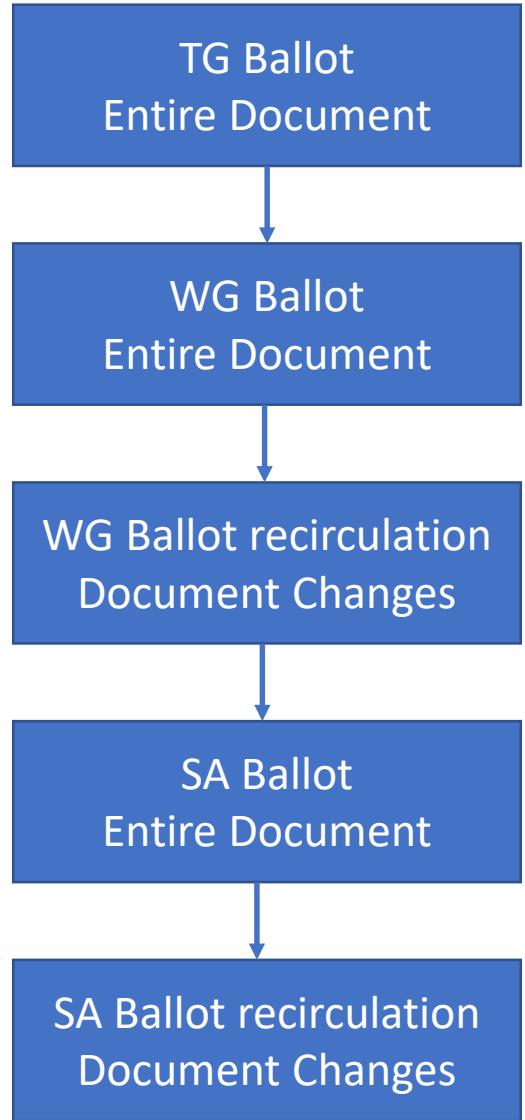
# Save Draft YANG to GitHub

- At project startup
  - Create Project Directory
    - standard/ieee/draft/<<working group>>/<<project short name>>
  - Copy in any published files that will modified by the project
    - Update the revision date to current date
  - Add check_pyang_extra_flags file if needed (if the new project is using any other draft projects)
  - Modify yang/standard/ieee/check.sh and add the new project to the to_check directive
- Add or modify project's YANG files
  - Validate with check.sh script
- When ready to submit a "pull request" follow steps
  - https://1.ieee802.org/yangsters/tools-for-yang/git-examples/

Published Lifecycle

- Once the IEEE SA Standards Board approves the standard, the post-approval and publication lifecycle is entered
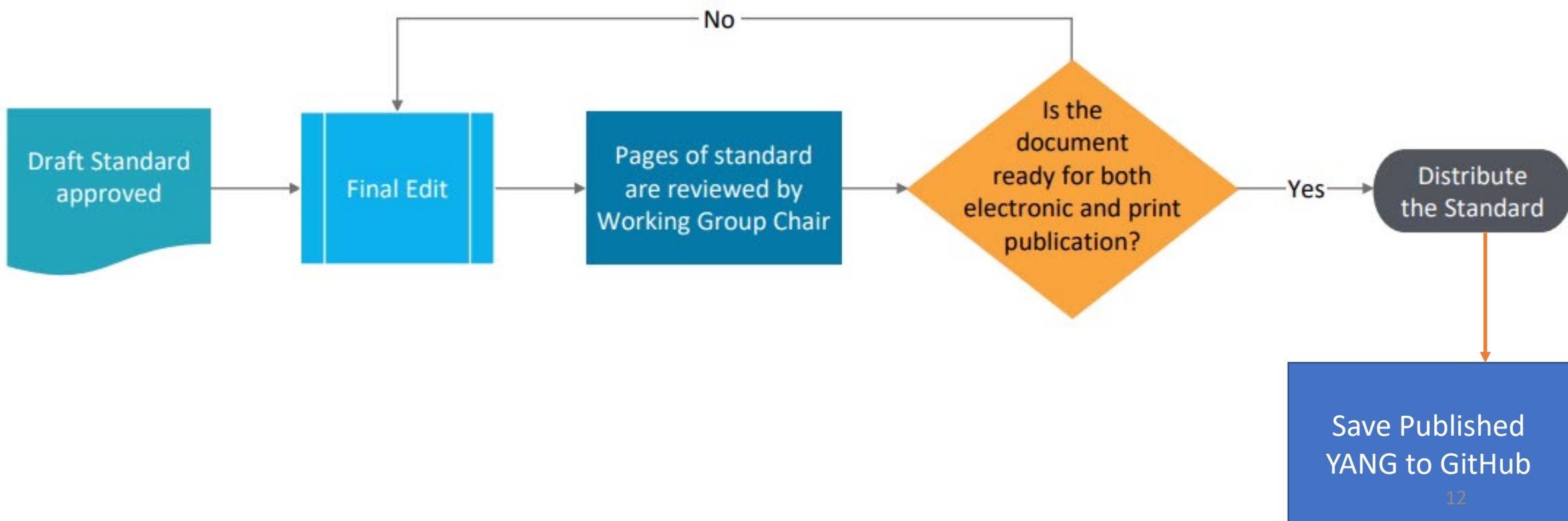
Save Published YANG to GitHub

- If the project modified an already published file
  - Determine if there are any draft projects that are modifying the same file(s)
    - If there are, modify the revision statement for any file in the remaining draft projects
    - In addition to the revision date, it is preferred to work with the editors of the remaining draft projects to "rebase" their files to using the newly published YANG files.
- Stage all changes (published files (YANG from published PDF), modified drafts (if any))
- Delete draft project folder
- Follow https://1.ieee802.org/yangsters/tools-for-yang/git-examples/