Mapping of YANG to DSDL draft-lhotka-yang-dsdl-map

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Points of consensus

- *(strong consensus)*

  The DSDL mapping should be able to generate schemas for *both* the full datastore and particular PDUs.

- *(rough consensus)*

  The mapping procedure will be divided into two steps:

  1. Map one or more YANG modules to a schema of the *conceptual tree* which includes full datastore, RPC signatures and notifications. This schema is not intended for validation.

  2. From the conceptual tree schema, generate full schema(s) for NETCONF validation in specific contexts – full datastore and PDUs (e.g., one schema for manager requests, another for agent replies and yet another for asynchronous notifications).
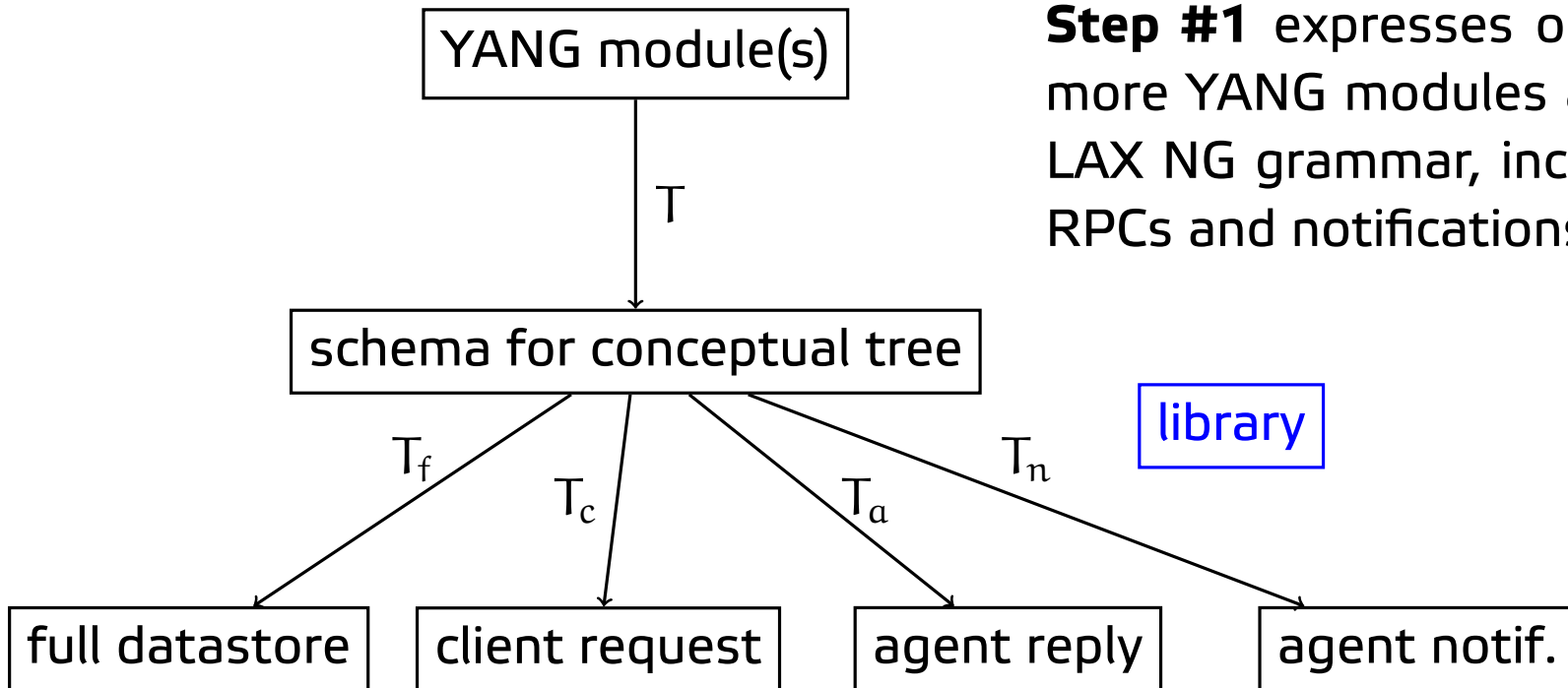
Example conceptual tree instance

```
<nmt:netmod-tree yang-module="dhcp"
    xmlns:nmt="urn:ietf:params:xml:ns:netmod:tree:1"
    xmlns="http://example.com/ns/dhcp">
  <nmt:main>
    <dhcp>
      <max-lease-time>7200</max-lease-time>
      ...
    </dhcp>
  </nmt:main>
```

(continued)

```
<nmt:rpc-methods>
  <nmt:rpc-method name="...">
    <nmt:input>

      ...

    </nmt:input>
    <nmt:output>

      ...

    </nmt:output>
  </nmt:rpc-method>

  ...

</nmt:rpc-methods>
<nmt:notifications>
  <nmt:notification name="...">

    ...

  </nmt:notification>

  ...

</nmt:notifications>
</nmt:netmod-tree>
```

DSDL mapping in two steps

Step #1 expresses one or more YANG modules as RELAX NG grammar, including RPCs and notifications.

Step #2 extracts, e.g., via XSLT, validation schemas for particular entities and contexts. This step will use a *schema-independent library* of common definitions and patterns.

Positioning issues

- DSDL is to be used as (A) data modeling language, or (B) ad hoc DSDL schemas for specific, mostly short-term, purposes such as PDU validation.

- DSDL mapping will be developed as (A) mere convenience for those who don't (yet) understand YANG, or (B) interim validation method before native YANG tools are written, or (C) substantial component of the NETMOD toolbox.

Technical issues

- Given the structure of the mapping (step #1, multiple branches of step #2 and the schema-independent library), identify the parts that can be done quickly.

- Start WG discussion on the remaining parts.

- Pending changes to YANG syntax and semantics (augments, when, . . .) may affect some aspects of the mapping significantly.

- RELAX NG syntax: XML versus compact

- Annotated RELAX NG (everything in one schema document) versus several stand-alone DSDL schemas.

- Should all YANG module metadata (especially contact info) be simply copied to the DSDL schemas?