Discrepancy detection between NMDA datastores

draft-clemm-netconf-nmda-diff-01

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Purpose

- NMDA involves different aspects and viewpoints of the same data being represented in different datastore
  - For example, data propagates from <intended> to <operational>
  - In practice, time lags may occur during propagation, or unexpected interferences take place (e.g. <operational> may "learn" something other than what was "intended")
- Unexpected discrepancies that persist between object values in <operational> and <intended> may be problematic
  - Application may make different assumptions about actual state
  - Service-impacting conditions or resource misallocations may result
  - Those discrepancies may be hard to spot and troubleshoot
- This draft defines an RPC that allows to compare NMDA datastores
  - Report only discrepancies without needing to upload entire datastores

Module ietf-nmda-compare

```
module: ietf-nmda-compare

  rpcs:
   +---x compare
      +---w input
      |  +---w source        identityref
      |  +---w target        identityref
      |  +---w (filter-spec)?
      |  |  +--:(subtree-filter)
      |  |  |  +---w subtree-filter?  <anydata>
      |  |  +--:(xpath-filter)
      |  |     +---w xpath-filter?    yang:xpath1.0 {nc:xpath}?
      |  +---w dampening?     yang:timeticks {cmp-dampening}?
      +--ro output
         +--ro differences
```

Optional. Allows to specify for how long a discrepancy must persist for it to be reported. Output response is deferred accordingly.

Selected discussion items and next steps

- Next steps
  - Add examples
  - Add clarification re: reporting of origin discrepancy
    (e.g. object in <intended> but <operational> indicates something else)
- We believe this is a straightforward and useful addition to NMDA that will facilitate fault management and troubleshooting
- Request WG feedback
- Seeking WG adoption

Thank you!