



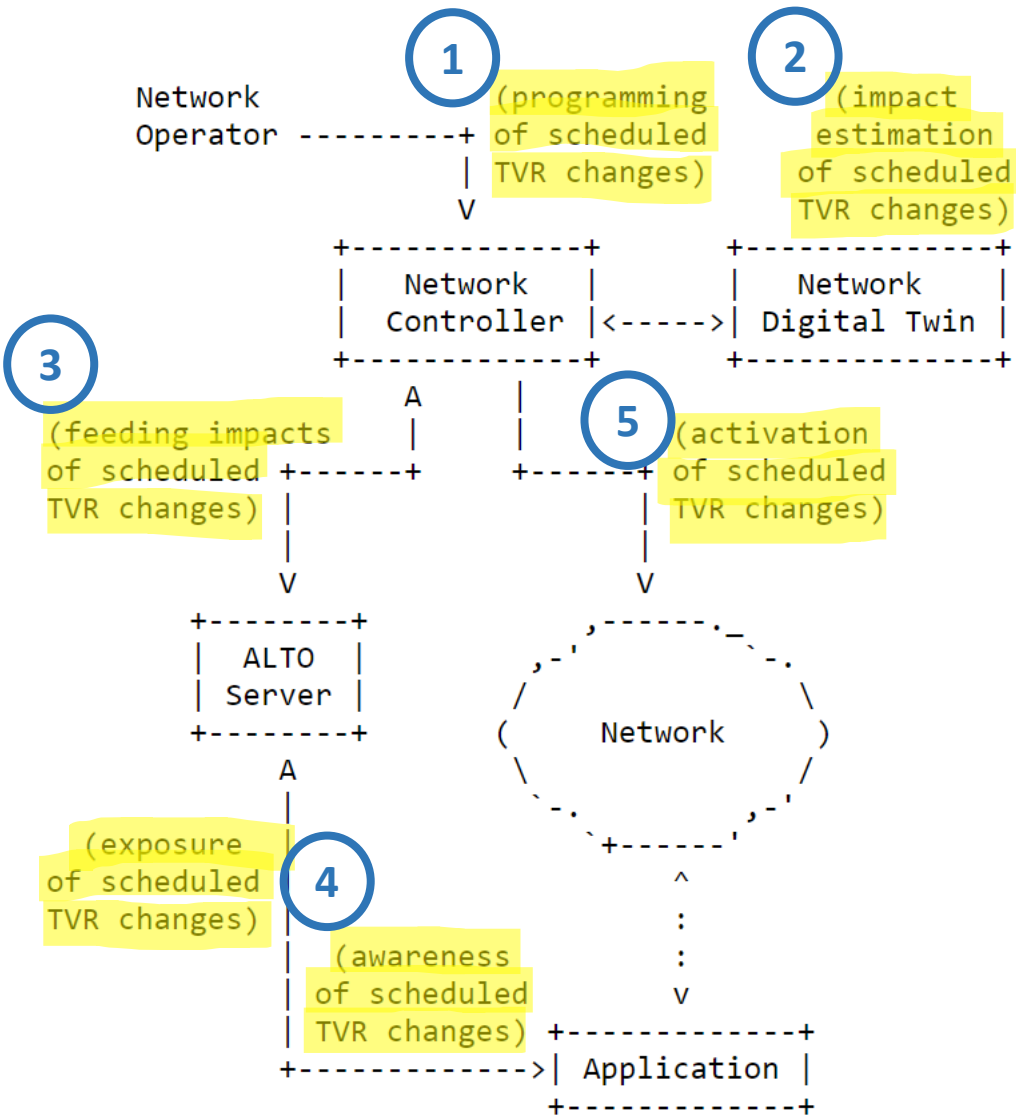
Using ALTO for exposing Time-Variant Routing information

draft-contreras-tvr-alto-exposure-04

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IETF 120, TVR WG, Vancouver, July 2024

Recap



- Presented at IETF 116, 117, 118 & 119
- It enables an off-path mechanism for exposing scheduled topological changes
 - It can co-exist with on-path solution
 - It offload the processing of changes from the network elements (centralized solution as describe in Requirements draft)
- It serves the purpose of exposing scheduled topological changes to Applications/Services so those can become aware of routing variations impacting them
- ALTO allows to expose anticipated and predictable topological changes by leveraging on the standard cost calendar feature, defined in [RFC8896]

Changes from -03 (1/2)

- Added and applicability statement exemplifying the action of a human at NOC according to [I-D.ietf-tvr-schedule-yang]

```
module: ietf-tvr-node
  +--rw node-schedule
  +--rw node-id? "192.168.10.17"
  ...
  +--rw interface-schedule
    +--rw interfaces*
      +--rw name "GigabitEthernet0"
      ...
      +--rw attribute-schedule
        +--rw schedules*
          +--rw schedule-id "0123456789"
          +--rw (schedule-type)?
            +--:(period)
              ...
              +--rw period-start "2024-07-08T10:30:00"
              +--rw time-zone-identifier? "Africa/Dakar"
              +--rw (period-type)?
                ...
                +--:(duration)
                  +--rw duration? "3600"
                  ...
                  +--rw attr-value
+--rw available? "false"
```

Changes from -03 (2/2)

- Gaps identified (so far)
 - [I-D.ietf-tvr-schedule-yang] can require further granularity, as cards (by now, only schedule changes at node and link level).
 - While conflicts are easy to handle by centralized (i.e., off-path) solutions, it can require the definition of arbitration mechanisms for distributed ones.
 - Distributed scheduled changes can require ways of easily reverting proposed changes
 - When using distributed advertisement, the exposure of planned changes to external parties or applications can be a security problem, because the potential accessibility to information beyond the topological changes.
- Implementation status section added
 - Implementation is under development
- Refinement of the compliance of requirements

Next steps

- Collect further feedback from the WG
 - Previously received comments already addressed
- Keep working on the implementation and reporting new gaps, if any
 - For IETF 121 an initial version of the SW should be ready, with the intention of releasing it as open-source
- Ask for WG adoption as off-path solution for TVR
 - Adoption could trigger some work on ALTO for fulfilling all the requirements (e.g., time overlap)
 - An off-path solution could refer to ALTO as example, but being possible to generalize the concept, if convenient