Extensions on the TSN UNI traffic specification

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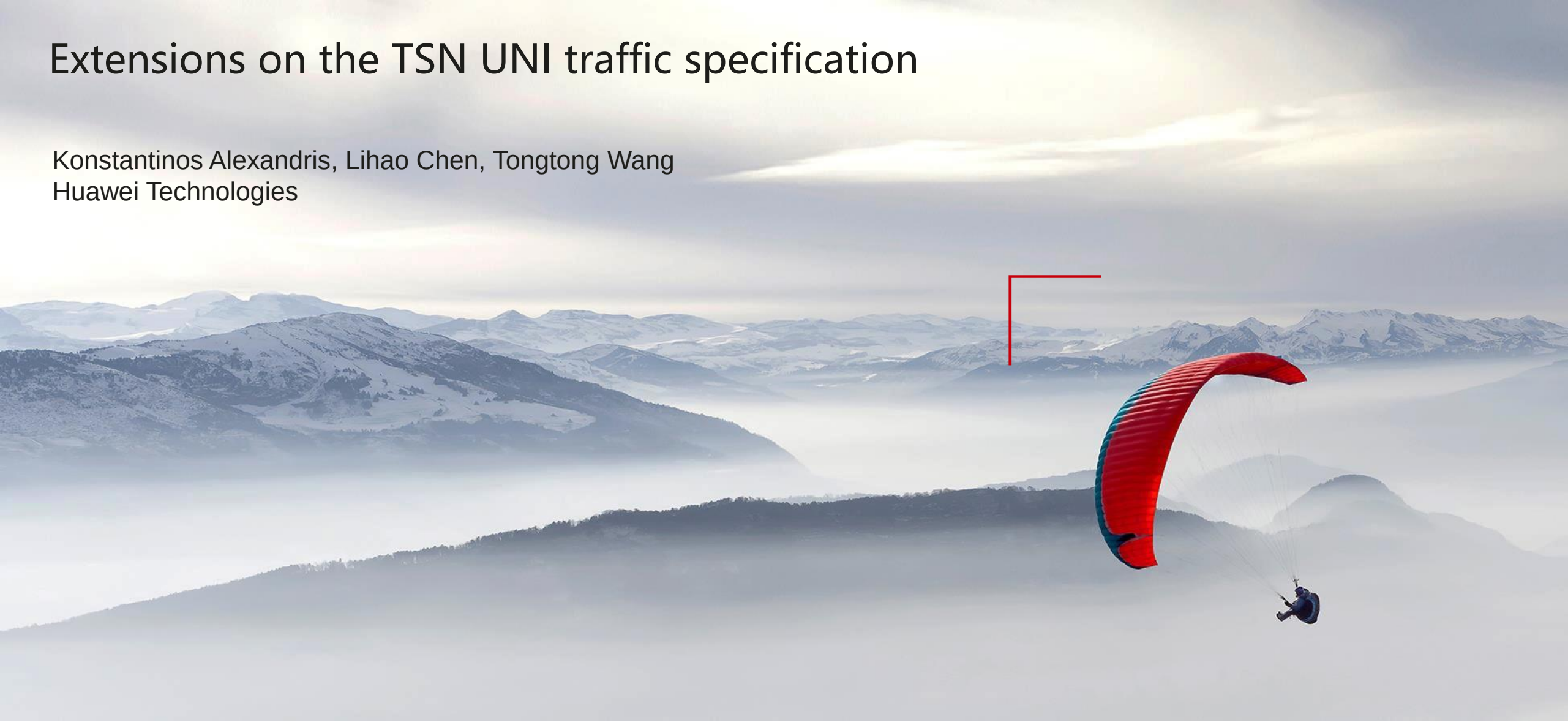

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Objective

- TSN UNI TSpec to handle TokenBucket traffic model [1,2]
  - Need for a standard way to receive stream requirements
  - Only basic and TimeAware Tspec elements are included in 802.1Q-2022
- Enable TSN UNI to support the TokenBucket traffic model in conjunction with centralized configuration [*]
  - End-station/CUC needs to send the TokenBucket Tspec via TSN UNI
  - Current projects and standards do not define specific YANG models
  - Centralized configuration involves CNC assistance support
  - To be complementary to RAP (P802.1Qdd) that uses distributed configuration

[*] Both fully centralized and centralized network/distributed user configuration models

[1] https://standards.ieee.org/ieee/802.1Q/10323/
[2] https://www.ieee802.org/1/files/public/docs2021/new-specht-onats-0921-v01.pdf

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Proposal (1/2)

- **Tspec** definition is not **complete**: Addition of parameters for the TokenBucket model

Sub-clauses to be extended:

- **46.2.3.5:** Extension of the existing Tspec incorporating the relevant parameters (currently missing)

Table 46-10−TspecTokenBucket elements

Name	Data type	Reference
MaximumFrameLength	uint16	46.2.3.5.8
MinimumFrameLength	uint16	46.2.3.5.9
CommittedInformationRate	uint64	46.2.3.5.10
CommittedBurstSize	uint32	46.2.3.5.11

The presence of Tspec TokenBucket is mutually exclusive to the TrafficSpecification elements (Table 46-8).

Proposal (2/2)

- Existing YANG models do not support centralized configuration including the TokenBucket Tspec

Sub-clauses to be extended:

- **48.5.13:** Extension of the respective YANG schema tree (currently missing)
  - `traffic-specification` [3]: To include TockenBucket TLV parameters **[TokenBucket Tspec]**
- **48.6.3:** Extension of the YANG module related to the respective YANG schema tree (currently missing)
  - `container token-bucket:` To be added under `container traffic-specification` including the relevant parameters as `leaf` statement:

`max-frame-length, min-frame-length, committed-information-rate, committed-burst-size`

[3] https://1.ieee802.org/tsn/802-1qdj/

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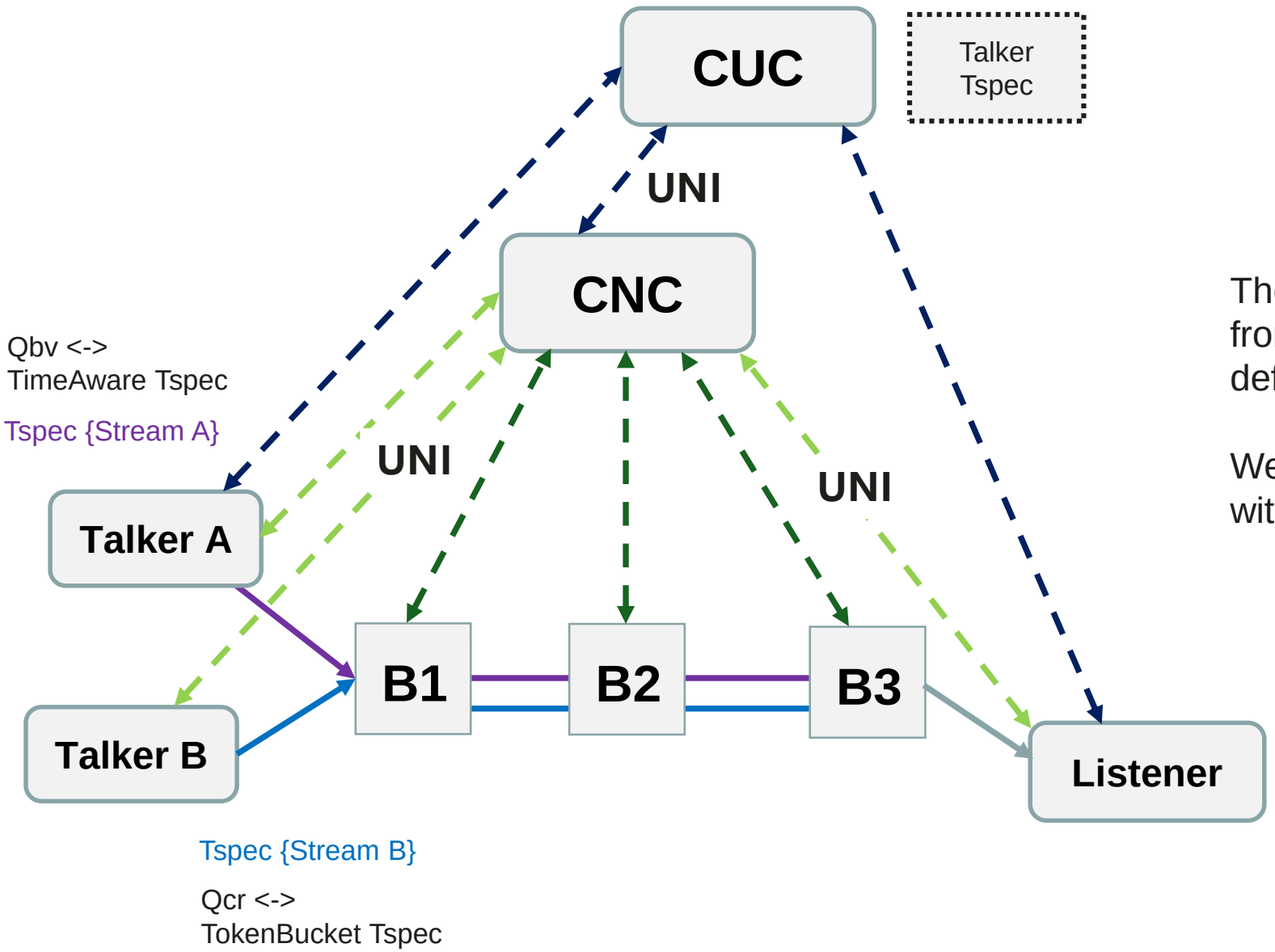
Configuration Model & Tspec



The way TimeAware Tspec is conveyed from user to CNC has already been defined.

We should follow the same methodology with TokenBucket Tspec.

Conclusion

Need to develop the TSN UNI extension

1. A new PAR for this extension
2. Other alternatives ?

Thank you.