

# Use Cases and Requirements for SCONE in Massive Data Transmission

draft-ruan-scone-use-cases-and-requirements-00

Tao He  
China Unicom

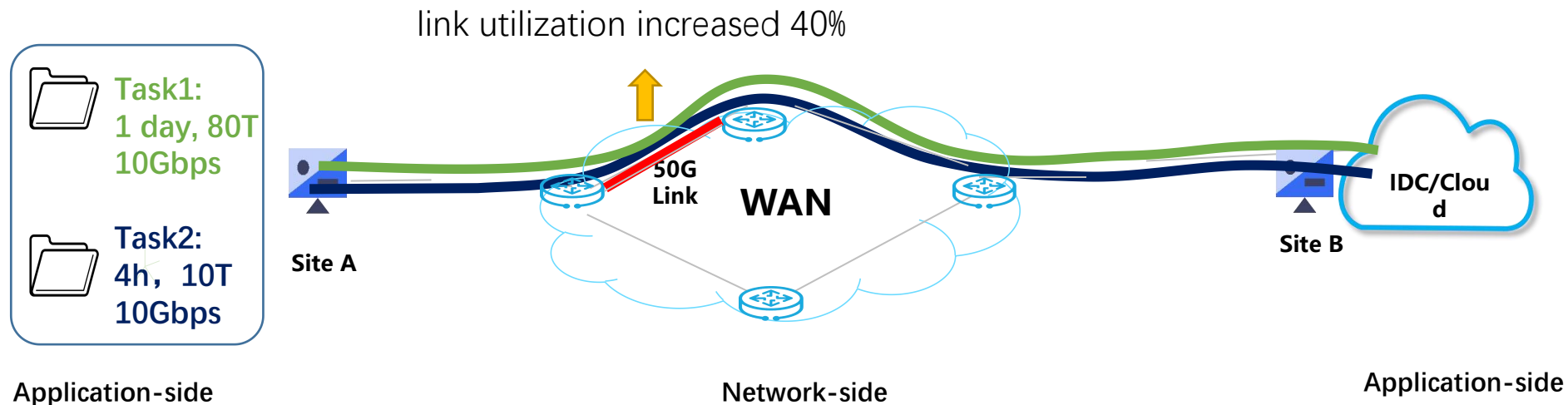
# Massive Data Transmission

➤ **Definition:** Massive data from AI, intelligent computing, scientific computing, etc. are superimposed on the existing WAN network of operators. The size of the data is generally from 10TB to 1PB

➤ **Typical Characteristics:**

**Task-oriented:** The data needs to be transmitted within the expected time, such as within a few hours or less than a week.

**High-bandwidth:** The typical bandwidth values of the operator's network range from 50Gbps to 100Gbps. Usually, a MDT task requires a bandwidth of 10Gbps to 30Gbps, which has a relatively large impact on the link utilization.



- When multiple tasks are transmitted simultaneously, the instantaneous load on the network can be significant

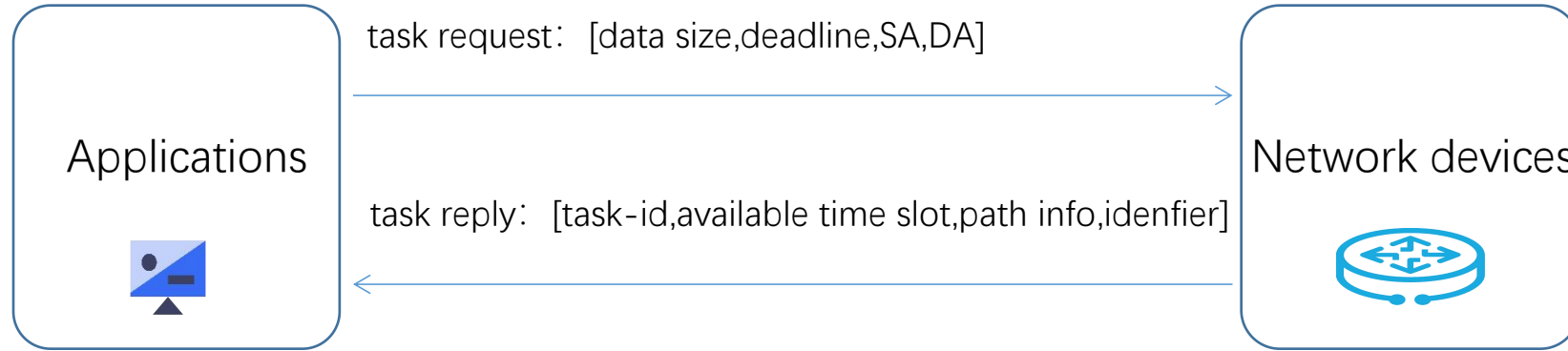
# Requirments

- Considering the “tidal effect” of the operator’s network, MDT transmission tasks should utilize the off-pick times of the network as much as possible, and different transmission tasks should be staggered in terms of time.
- A new signaling mechanisms is required to exchange information between the application side and network side. With this information, applications can schedule data transmissions during optimal time periods and distribute the streams on muti-paths for UCMP.

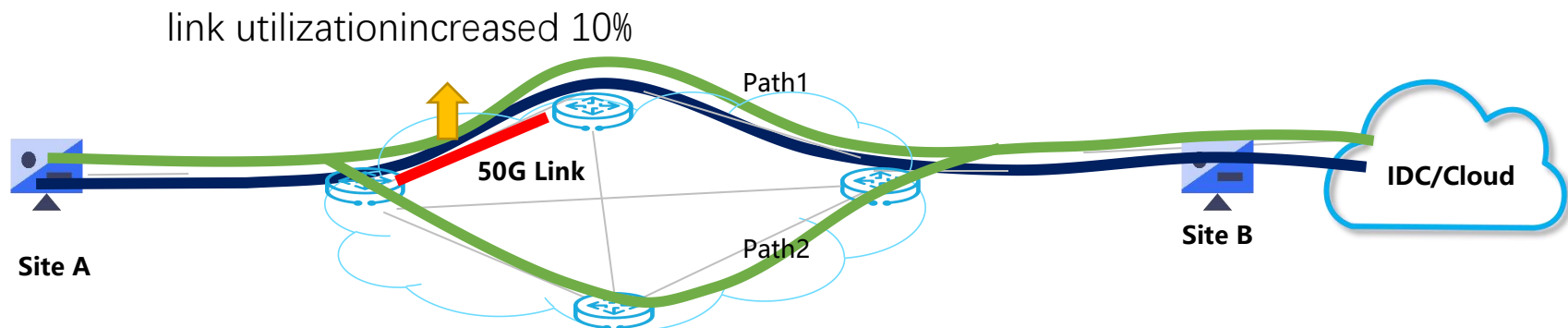
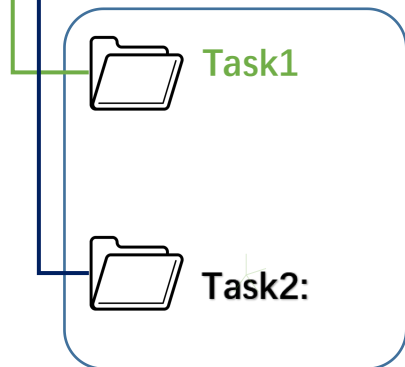
Essential information needs to be conveyed:

- a) Available time slots:** Information about when the network can accommodate MDT tasks, guiding the application's scheduling.
- b) Path information:** Details about available network paths, including throughput recommendations, latency, packet loss rate, maximum transmission unit (MTU), and other relevant metrics.
- c) Path identifier:** A mechanism to assign a unique identifier to each transmission path, allowing the application to direct traffic appropriately

# Work Flow



task name	available time	path info	identifier
task1	2024-11-23 01:00 to 2024-11-23 04:00	path1:5Gbps path2:5Gbps	path1:10001 path2:10002
task2	2024-11-23 04:00 to 2024-11-24 07:00	path1:10Gbps	path1:20001



## Related Drafts links for your reference

- Please refer to the [draft-ruan-scone-use-cases-and-requirements-00] for detailed information.
- Any comments and suggestions are welcome.