Yuki Nomura, Haruka Yonezu, Daisuke Ishii, Satoru Okamoto, and Naoaki Yamanaka
Yamanaka Lab., Keio University, Japan

**Introduction: What’s “MiDORi”?**

MiDORi: Multi-(layer, path, and resources) Dynamically Optimized Routed

- Innovative network-sided approach for realizing green transport and data-center networks
- “midori” is a Japanese word which means “grass”, “forest” and “green”.

**Target:** Reduce at least 10-30% of energy consumption of router/switch networks by Traffic Engineering (TE)

⇒ The physical network is optimized according to the amount of traffic transferred in the network.

---

**MiDORi Network Architecture**

1. **Collect Traffic Demand**
2. **Send NW topology and traffic data**
3. **Energy-optimal topology calculation**
4. **Path setup/tear down / Path reconfiguration**
5. **Link ON/OFF control**

---

**Result: Power Consumption**

![Graph showing energy consumption versus the amount of traffic flow.]

**Conclusion**

Experiment of “MiDORi” network technology with four-node network

⇒ Reduce power consumption by up to 23.8%

**Acknowledgements**

This work is supported by PREDICT program of the Ministry of Internal Affairs and Communications (MIC) of Japan, and the Japan Society for the Promotion of Science’s (JSPS) Grant-in-aid for Scientific Research(A) 22240004.

---