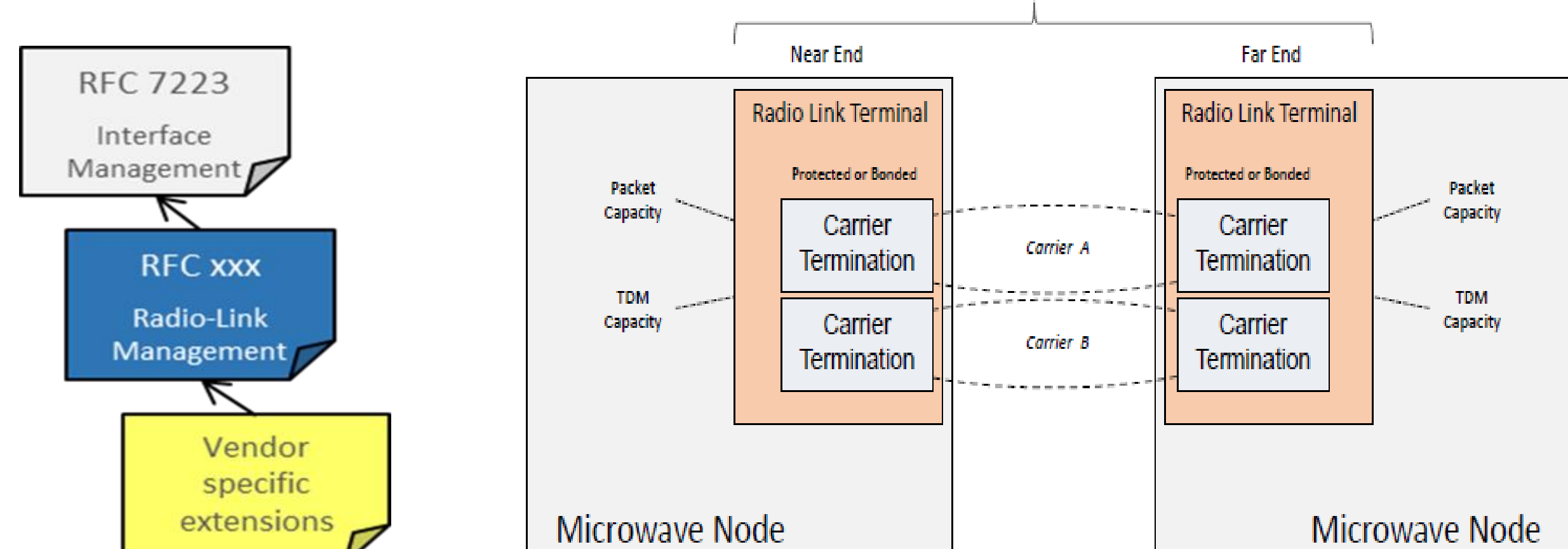


A YANG Data Model for Microwave Radio Link

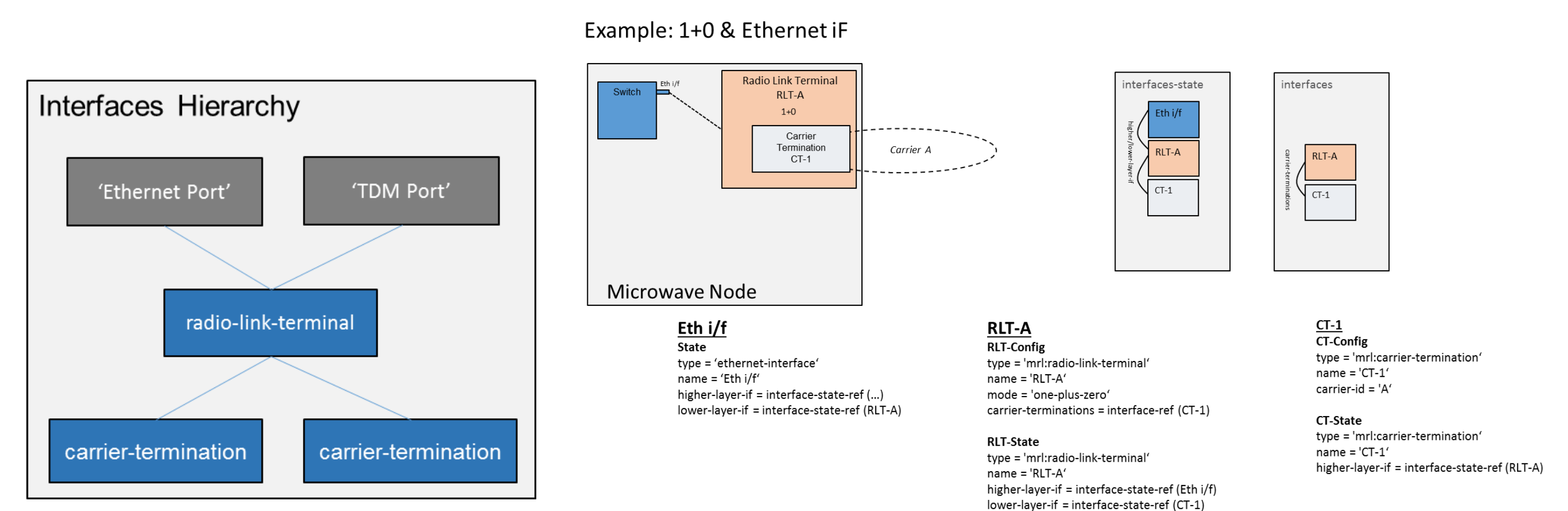
Introduction

- Designed a YANG data model to control and manage the radio link interfaces and the connectivity to packet and/or TDM interfaces in a microwave/millimeter wave node.
- It augments RFC 7223 to align with the same structure for management of the packet interfaces.

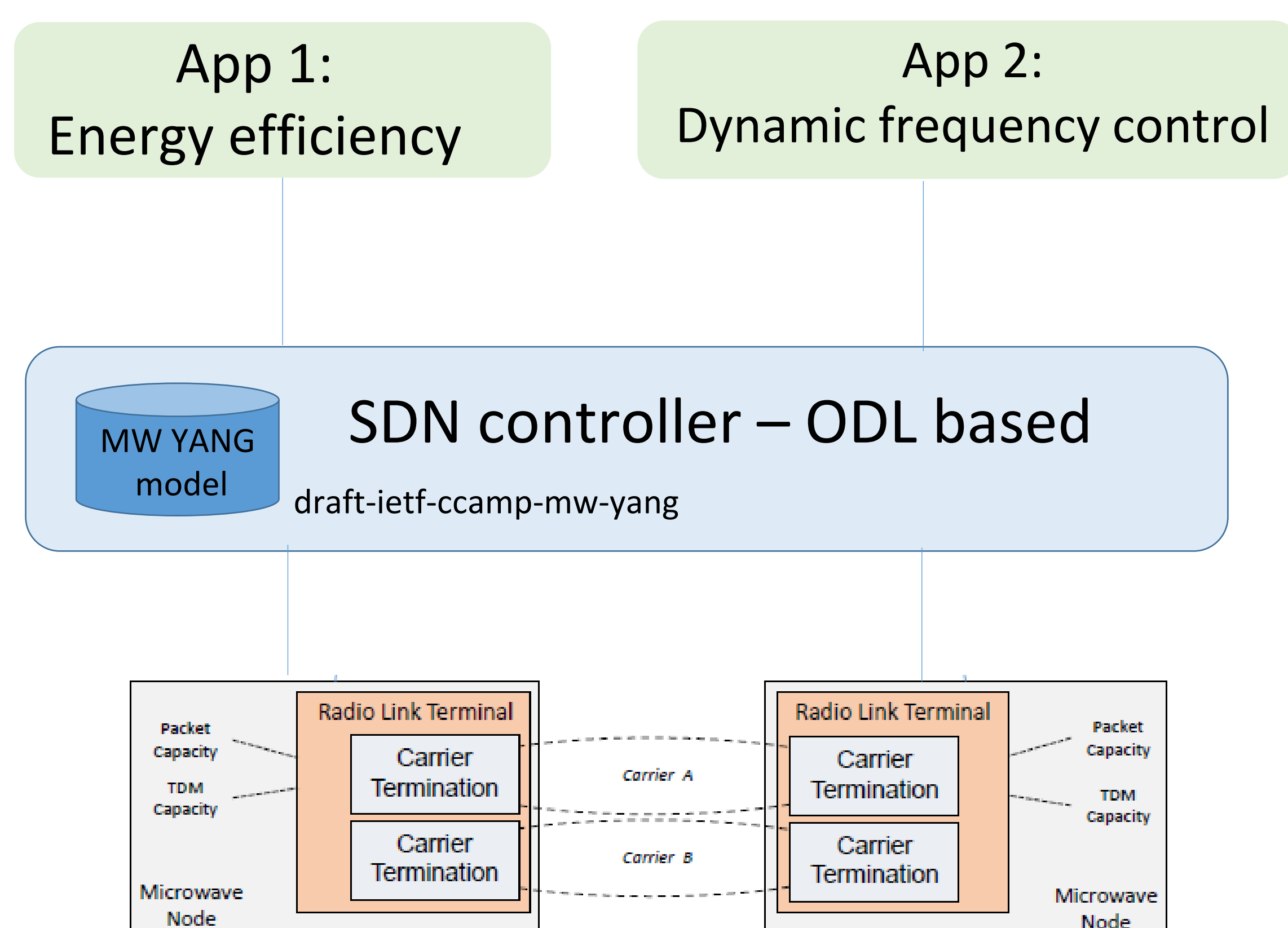


YANG Data Model

- RLT (Radio link termination)- config/state
- CT (Carrier termination) - config/state
- Protection - config/state
- XPIC(Cross Polarization Interference Cancellation) – config
- MIMO (Multiple-Input Multiple-Output)- config



Hackathon Setup

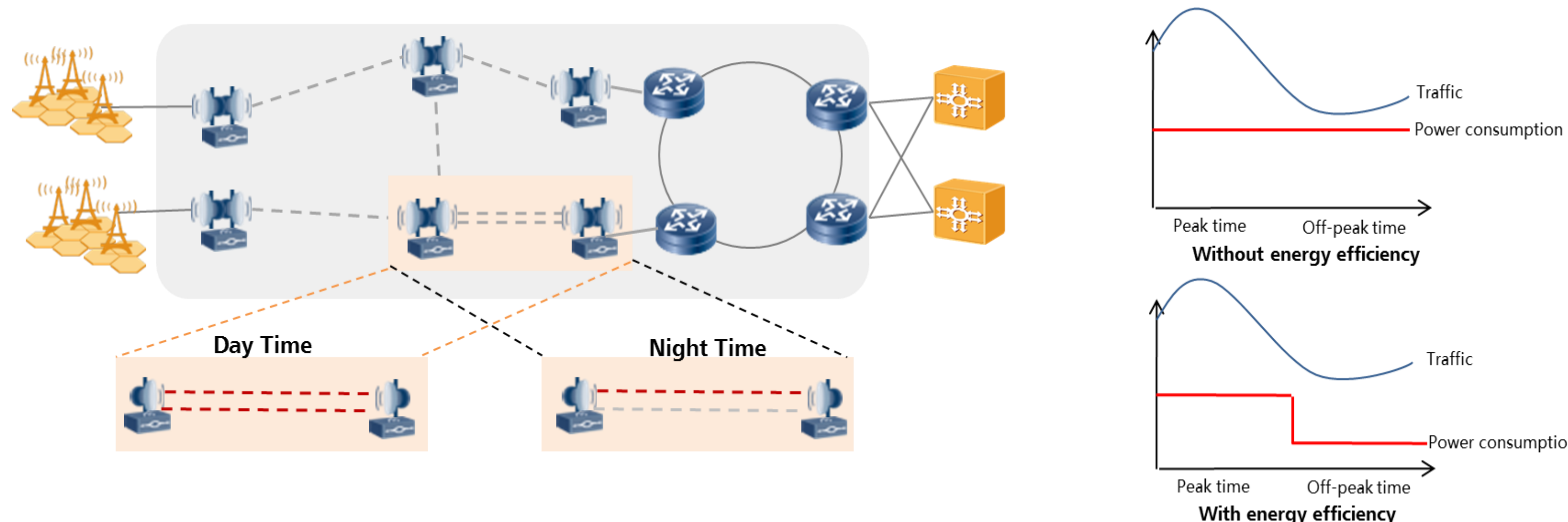


- Two applications to be developed in Hackathon:
 - App 1: Energy Efficiency
 - App 2: Dynamic frequency control

- Controller: ODL Boron-sr3
 - Implementation of MW YANG model in ODL controller in advance

- Radio link: simulating one hop with “2+0” configuration

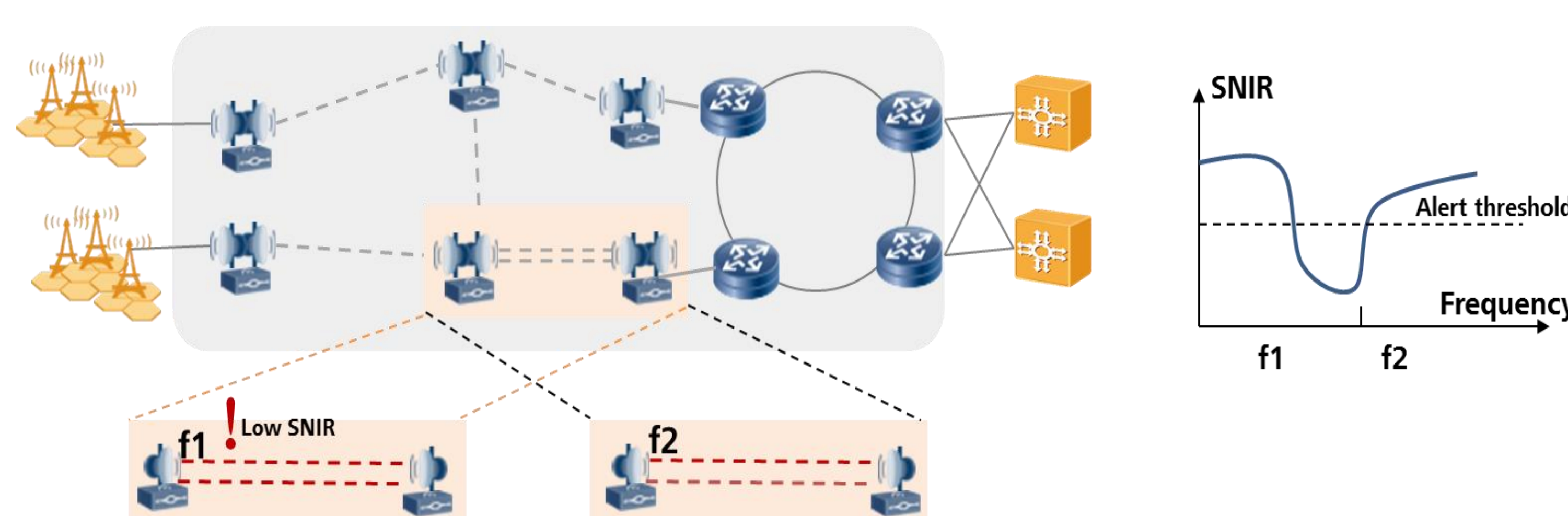
Use Case 1: Energy Efficiency



Goal: to save power when traffic is low

- Manually setting: in day time, set tx-enable of carrier B to TRUE; in the night set tx-enable of carrier B to FALSE
- Time period may also be set: 8:00 – 24:00, tx-enable = TURE; 0:00 – 8:00, tx-enable = False

Use Case 2: Dynamic frequency control



Goal: to control the interference

- Poll the SNIR from the node
- The controller compares the value with a predefined threshold
- If the value is lower than threshold, the controller will
 - Decide a new frequency for the link
 - Disable the tx/rx
 - Set the new tx-frequency/rx-frequency
 - Enable the tx/rx