Flexible OTN (FlexO) Short-Reach Interfaces
G.709.5

Recommendation G.709.5 *Flexible OTN short-reach interfaces*

- Uses the common FlexO elements from G.709.1 to define a set of multi-vendor interoperable short-reach interfaces carrying OTN signals at rates of 100G, 200G, 400G and 800G.
- Uses high-volume Ethernet optical modules with OTN rate support and the Ethernet RS FEC to provide a reach of up to 40km.
- Bonding is supported, allowing a higher rate client to be transported over multiple, homogenous, lower rate optical interfaces. For example, a 400G client can be carried over a FlexO-1-RS-4 interface group using four dual-rate 100GBASE-LR4 optical modules.

- G.709.5 FlexO short-reach interfaces provide handoffs:
  - Between the transport networks of different operators (ENNI).
  - Within one network operator (INNI) for example, between:
    - Metro and Core networks.
    - Islands of equipment from different transport vendors.
    - Internal operations groups (e.g., routing and transport).

Figure 1 illustrates an example of the ENNI case and the first two INNI cases, where a group of m short-reach interfaces, each at rate x, carries an ODUCn signal.
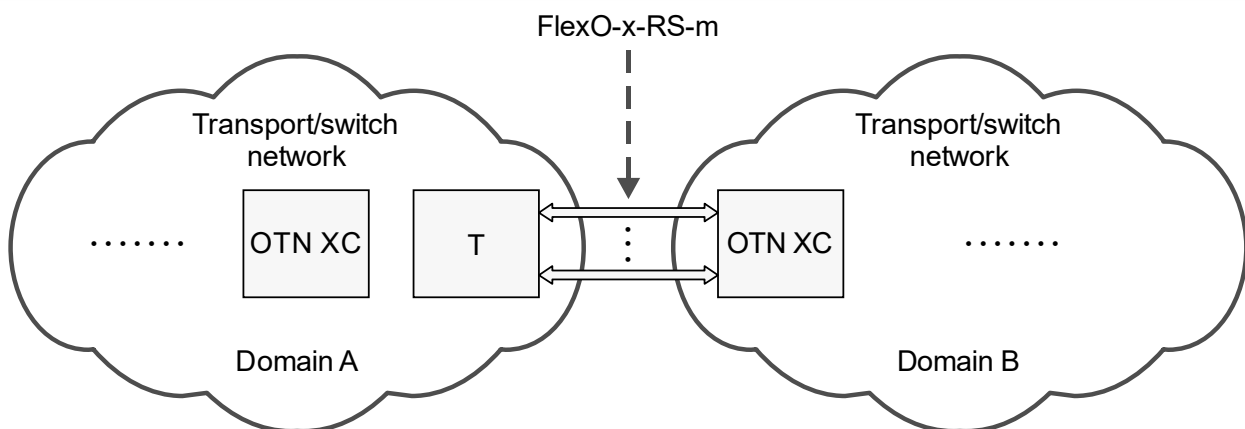

Figure 1 – Example of a FlexO-x-RS-m handoff

Figure 2 illustrates an example of the third INNI case used for router interconnect.
- Ethernet traffic is mapped into an ODUflex which is switched through the transport network at L1/L0.

- The handoffs at each end may use different optical modules. For example, the left handoff could use four 100G modules while the right handoff could use two 200G modules.
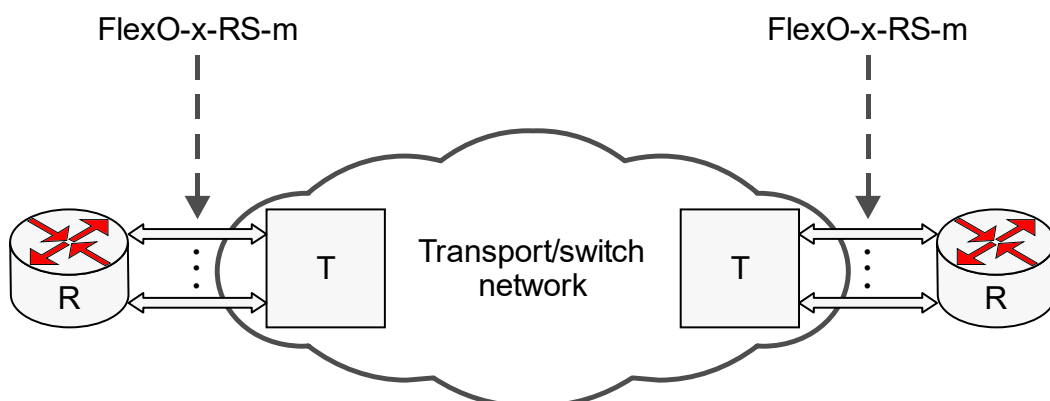

Figure 2 – Example of FlexO-x-RS-m router-to-transport handoffs