

# Relay Tunnel Connection for 802.16j

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Purpose:

*Propose to adopt the relay tunnel connection concept and mechanism described herein into IEEE 802.16j.*

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# Relay Tunneling Connection for 802.16j

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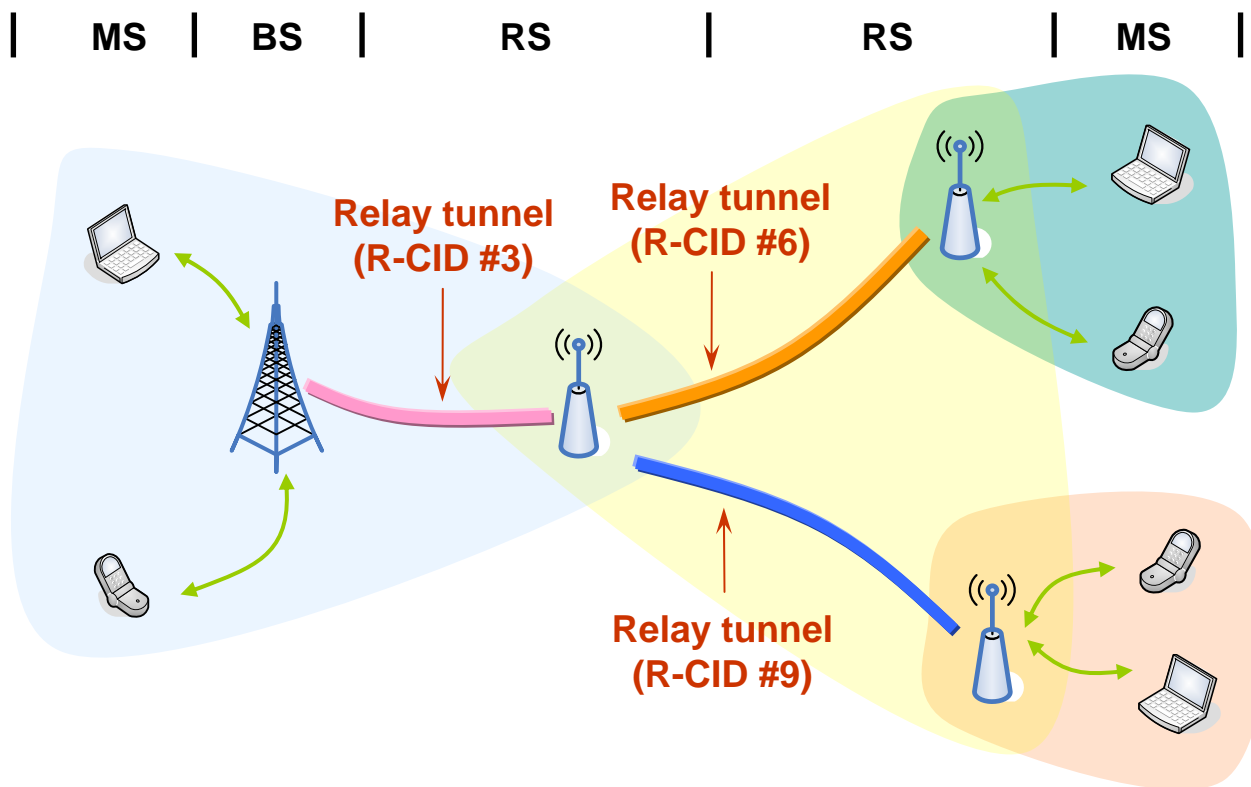
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# Relay Tunnel Connection



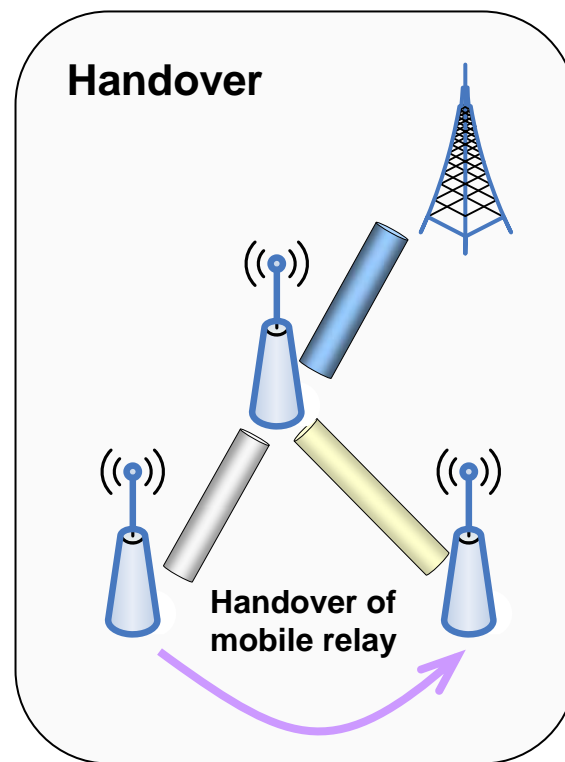
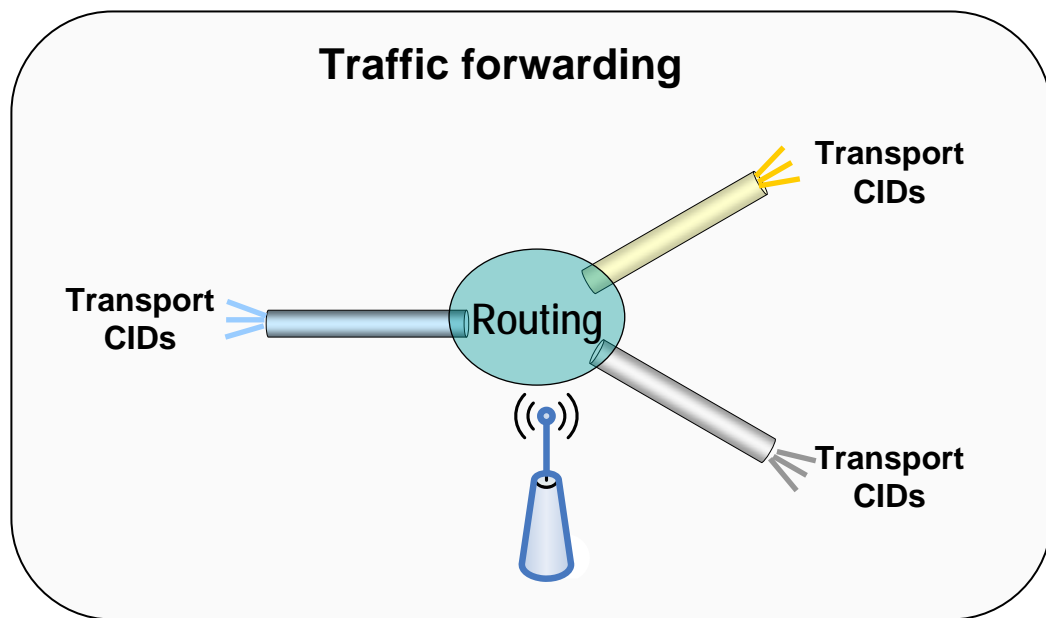
## Key proposals

- Relay tunnel connection
- Use relay tunnel connection CID (R-CID) in HARQ operation
- Use relay tunnel MAC header and PDU SN extended subheader to address the out-of-order delivery problem in HARQ.



# Relay Tunnel Connection

This contribution proposes to establish a **relay tunnel** connection as an alternative to the E2E tunnel on a **relay link**. The **two end points** of relay tunnel have the **full information** with regard to **the mapping** between **individual MAC connection** (e.g., transport CIDs) and **relay tunnel connection**.



- Support flexible traffic forwarding/routing.
- Provide adaptive and quick response to route change.
- Accommodate fast handover of mobile relay stations (MRS).

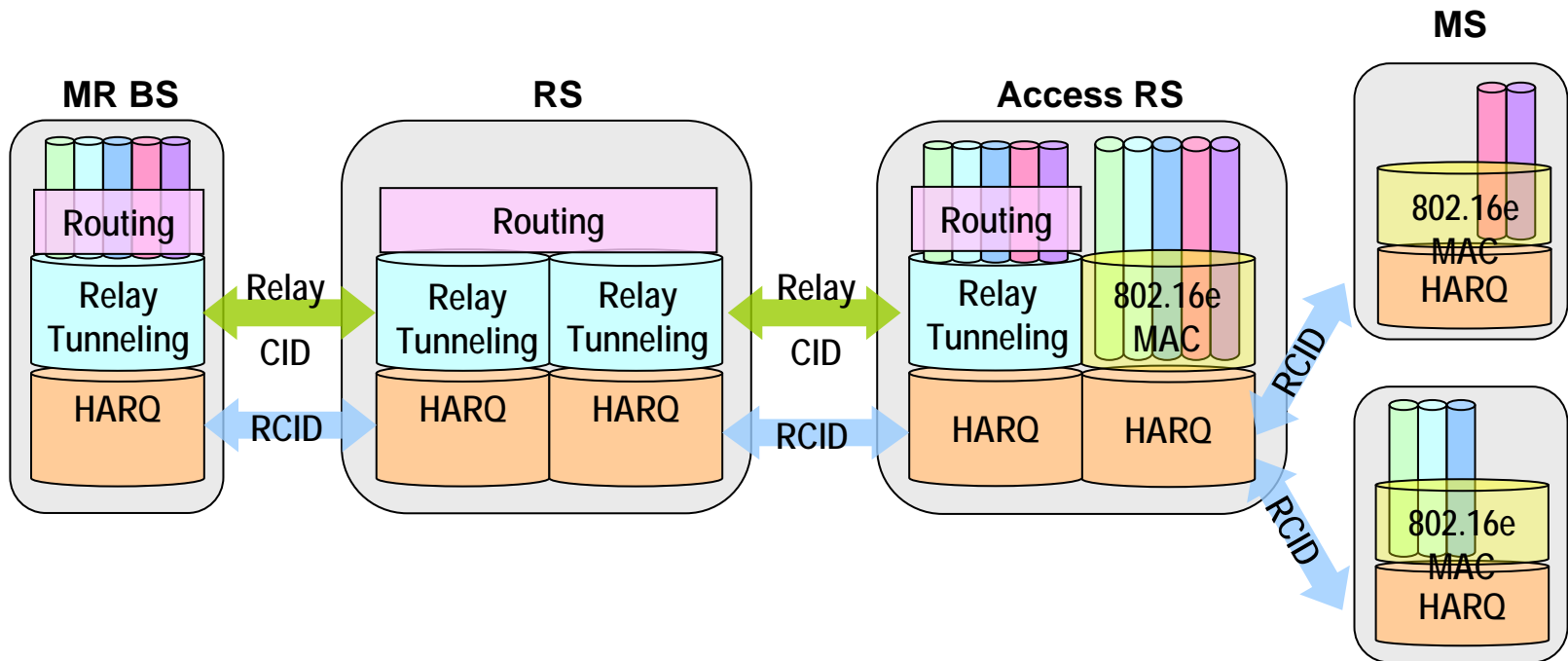
\* A relay link is the wireless link between an **MR BS** and a **RS**, between a pair of **adjacent RSs**, or between a **RS** and an **access RS**

# Relay-CID (R-CID)

- Link by Link Relay Tunnel Connection is uniquely identified by a **R-CID (Relay CID)**

CID	Value	Description
<b>Relay CID</b>	<b><math>n+1-k</math></b>	<b>Used by MMR-BS or RS for relay packets</b>
Transport CIDs, Secondary Mgt CIDs,		For the secondary management connection, the same value is assigned to both the DL and UL connection.

- When handled by HARQ, R-CID should be placed in the RCID\_IE field for the corresponding HARQ sub-burst.



# Relay Tunnel Connection over HARQ

- *Append tunnel MAC header and insert PDU Sequence Number (SN) extended subheader for HARQ MAC PDU to address the out-of-order delivery.*

