

Definition of terminology used in Mobile Multihop Relay

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Proposal of a new study group for mobile multi-hop relay networking in IEEE 802.16 systems

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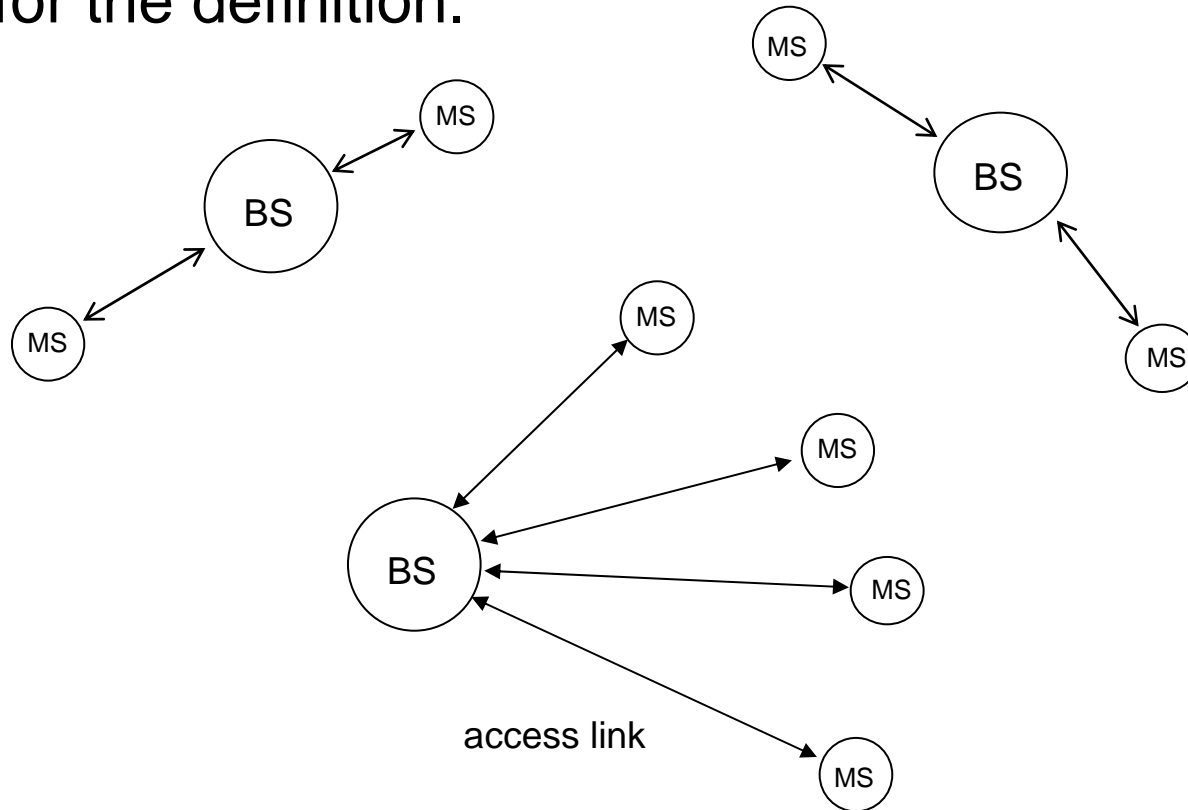
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Terms and Definitions for Mobile Multihop Relay

May 2006

base station (BS): An IEEE 802.16-2004 compliant station that provides connectivity, management, and control of nearby mobile stations utilizing only one-hop radio links.

mobile station (MS): Refer to 802.16e-2005 section 3.83 for the definition.



From IEEE 802.16-2004

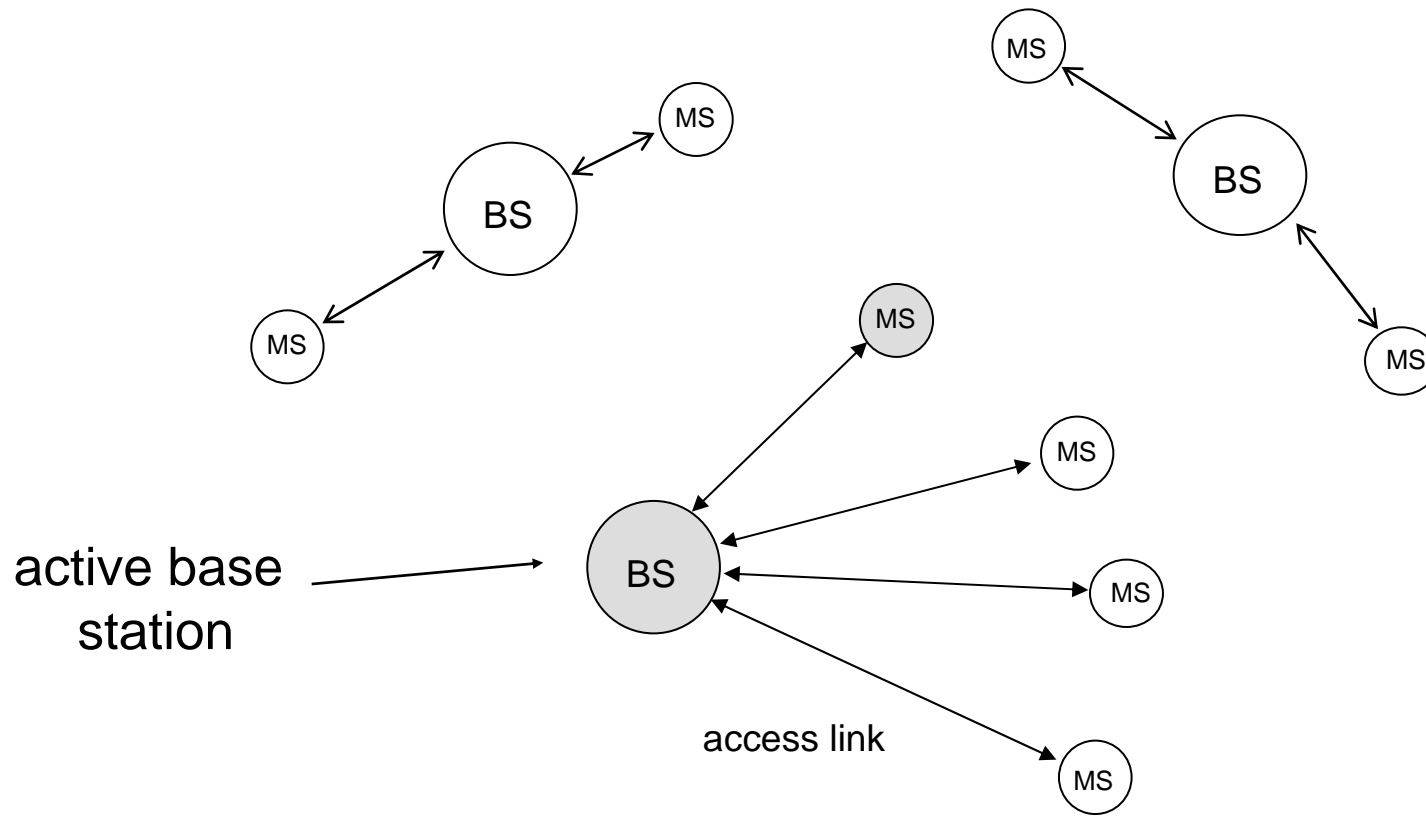
3.5 **base station (BS)**: A generalized equipment set providing connectivity, management, and control of the subscriber station (SS)

3.56 **subscriber station (SS)**: A generalized equipment set providing connectivity between subscriber equipment and a base station (BS)

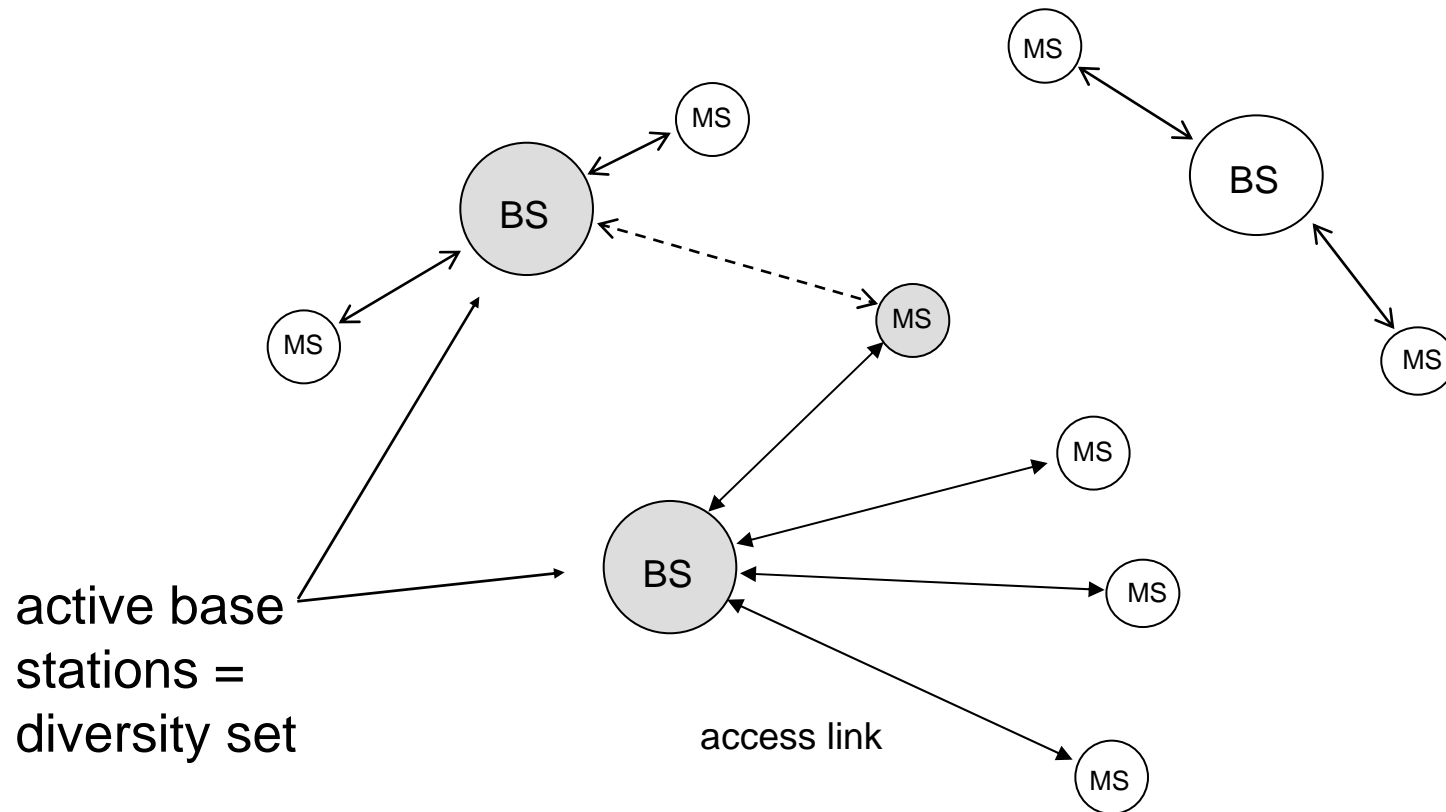
From IEEE 802.16e-2005

3.83 **mobile station (MS)**: A station in the mobile service intended to be used while in motion or during halts at unspecified points. An MS is always a subscriber station (SS) unless specifically excepted otherwise in the standard.

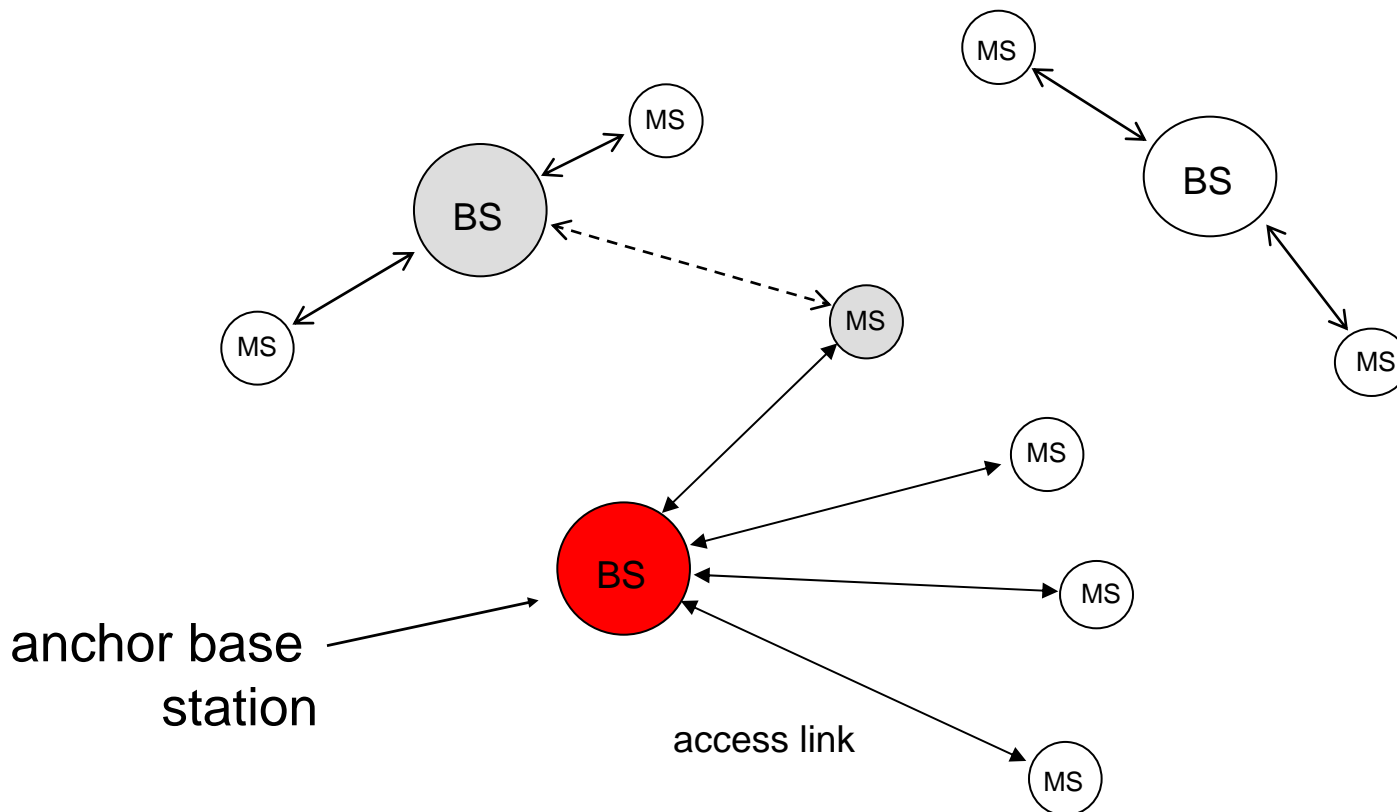
active BS: A station that is accessible to an MS via a one-hop radio link and informed of some/all of the MS's capabilities and MAC context information. An active station is a member of a diversity set.



diversity set: List of active **RSs, BSs, and/or MMR-BSs** to an MS. The diversity set is applicable to macro diversity handover, **cooperative relay**, and fast serving station switching.



anchor BS: MS is registered and synchronized to anchor. The MS performs ranging with anchor and monitors the downlink for control information from anchor. For FSSS supporting an MS, this is the serving station that is designated to transmit/receive data to/from the MS at a given frame. For **cooperative relay** or MDHO, one of active stations in a diversity set is selected as an anchor station.



From IEEE 802.16e-2005

3.5.2 serving BS: For any mobile station (MS), the serving BS is the base station (BS) with which the mobile station (MS) has most recently completed registration at initial network entry or during a handover (HO)

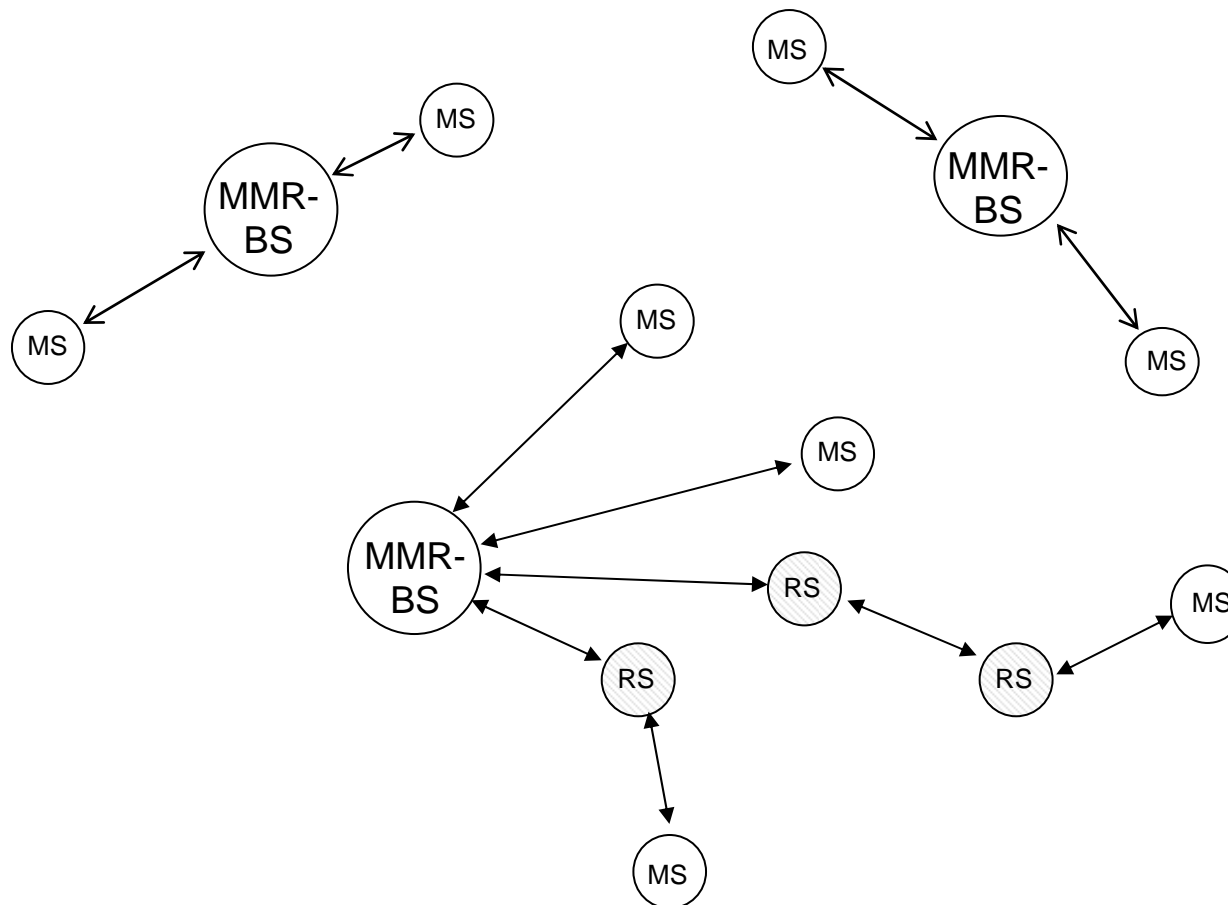
3.5.4 active BS: An active BS is informed of the mobile station (MS) capabilities, security parameters, service flows and full MAC context information. For macro diversity handover (MDHO), the mobile station (MS) transmits/receives data to/from all active BSs in the diversity set.

3.72 anchor BS: For macro diversity handover (MDHO) or fast BS switching (FBSS) supporting mobile stations (MSs), this is a base station (BS) where the mobile station (MS) is registered, synchronized, performs ranging and monitors the downlink (DL) for control information. For fast BS switching (FBSS) supporting mobile stations (MSs), this is the serving BS that is designated to transmit/receive data to/from the mobile station (MS) at a given frame.

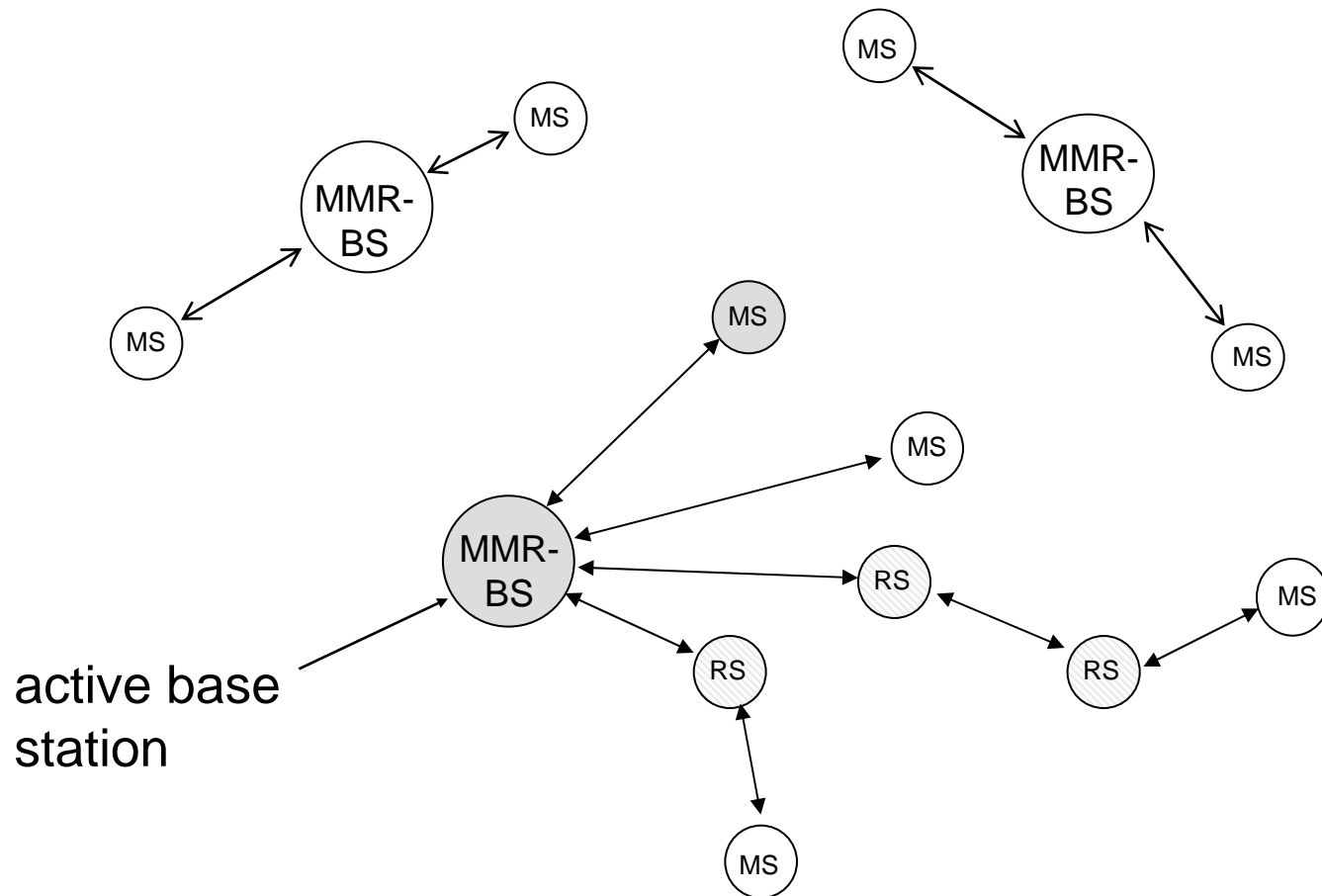
3.75 diversity set: The diversity set contains a list of active BSs to the mobile station (MS). The diversity set is managed by the mobile station and the base station. The diversity set is applicable to macro diversity handover (MDHO) and fast BS switching (FBSS).

MMR base station (MMR-BS): A base station that is compliant with amendment IEEE 802.16j to IEEE Standard 802.16e-2005 .

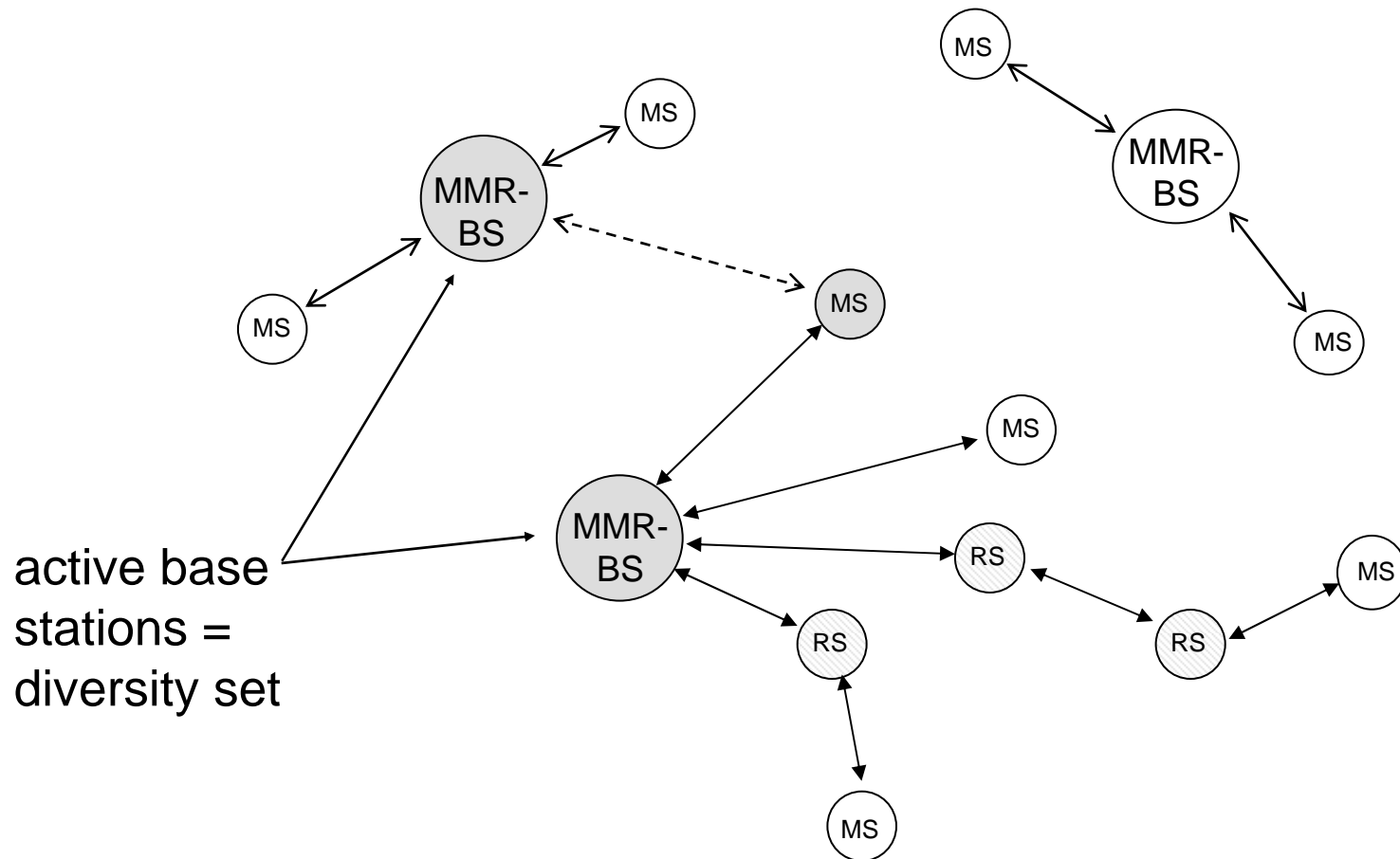
relay station (RS): A station that has been enhanced to be conformant with IEEE 802.16j and whose functions are 1) to relay either user data or user data and control information between other stations, and 2) to execute process that indirectly support MMR.



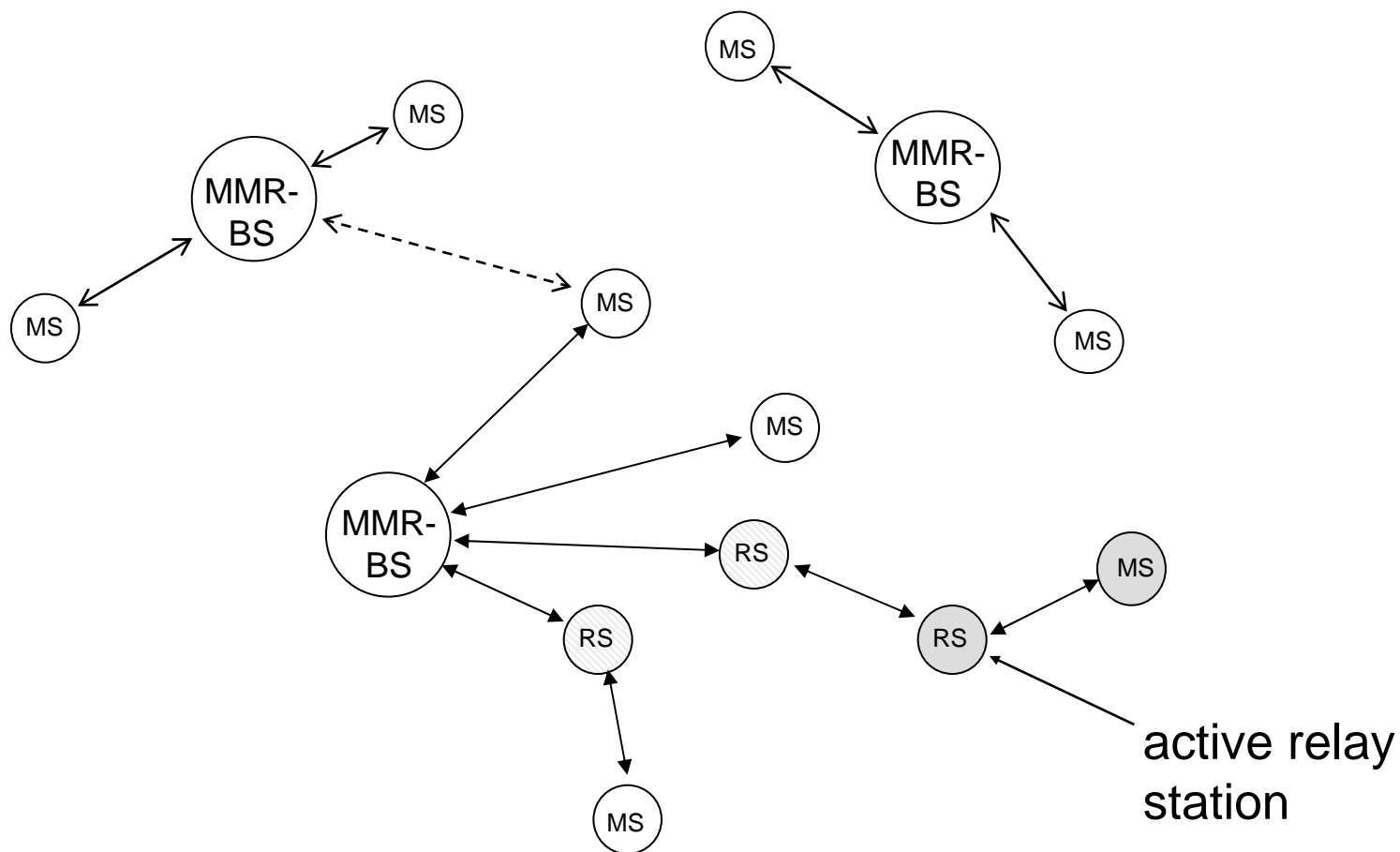
active MMR BS or RS: A station that is accessible to an MS via a one-hop radio link and informed of some/all of the MS's capabilities and MAC context information. An active station is a member of a diversity set.



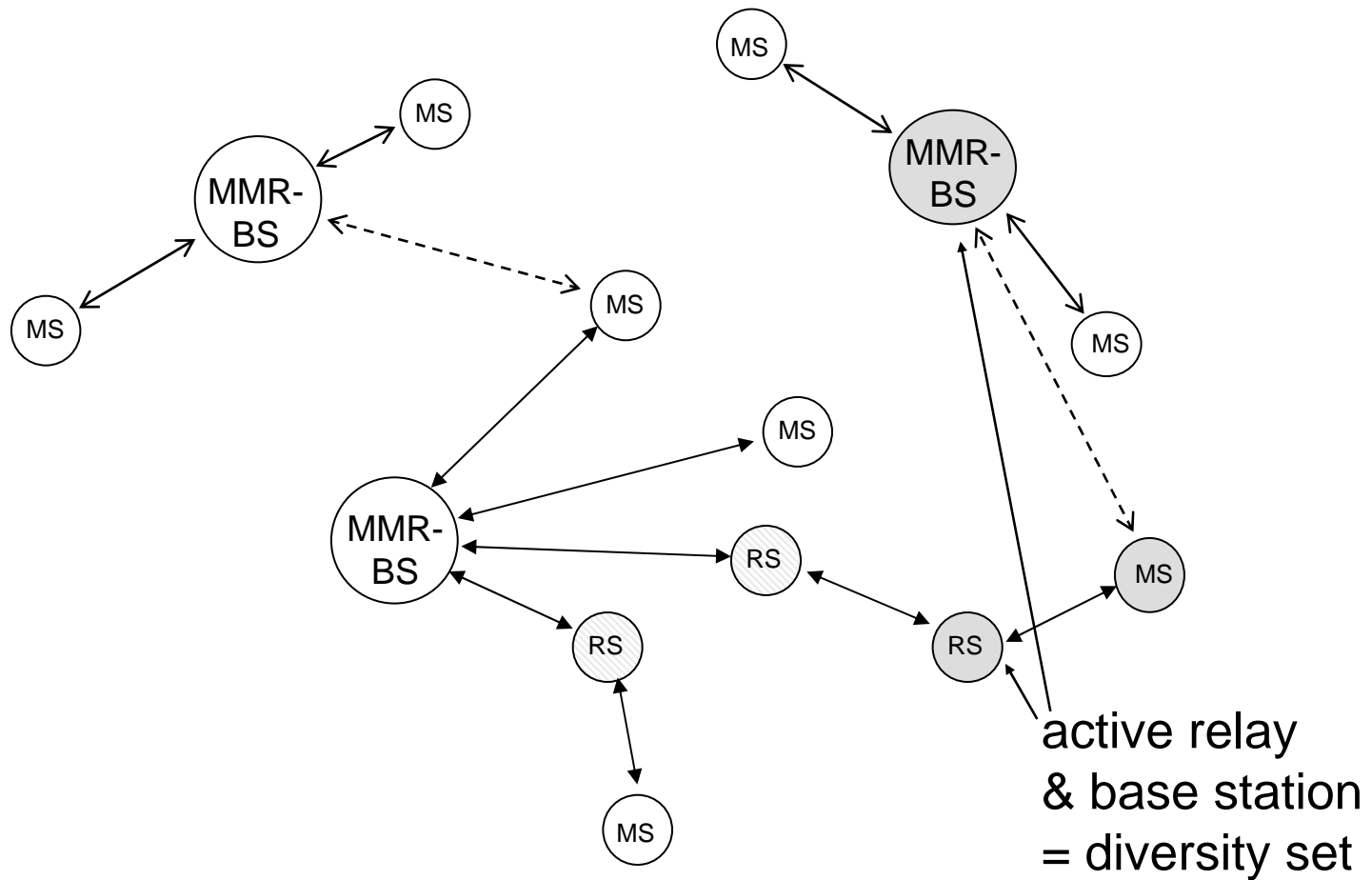
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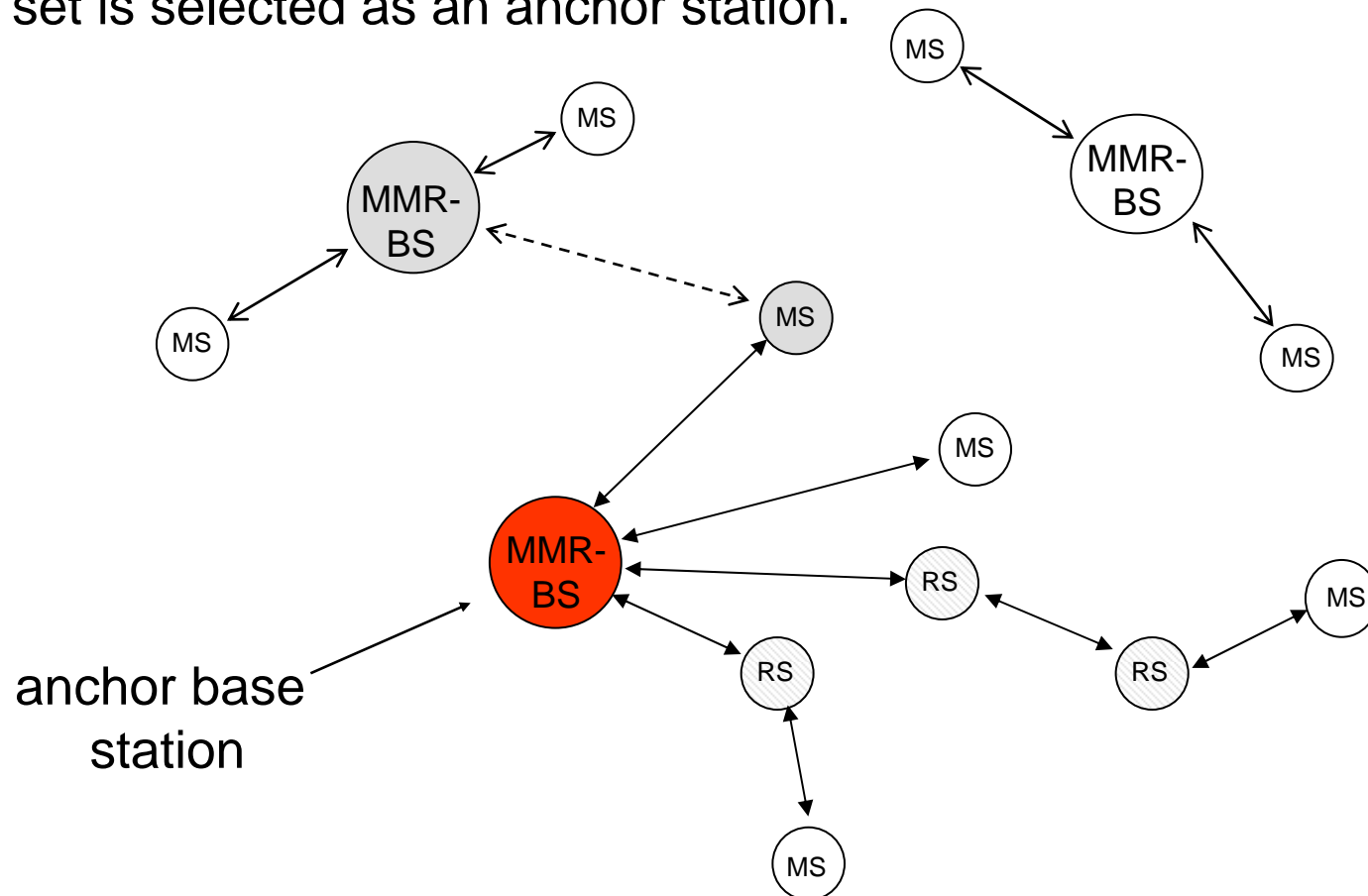
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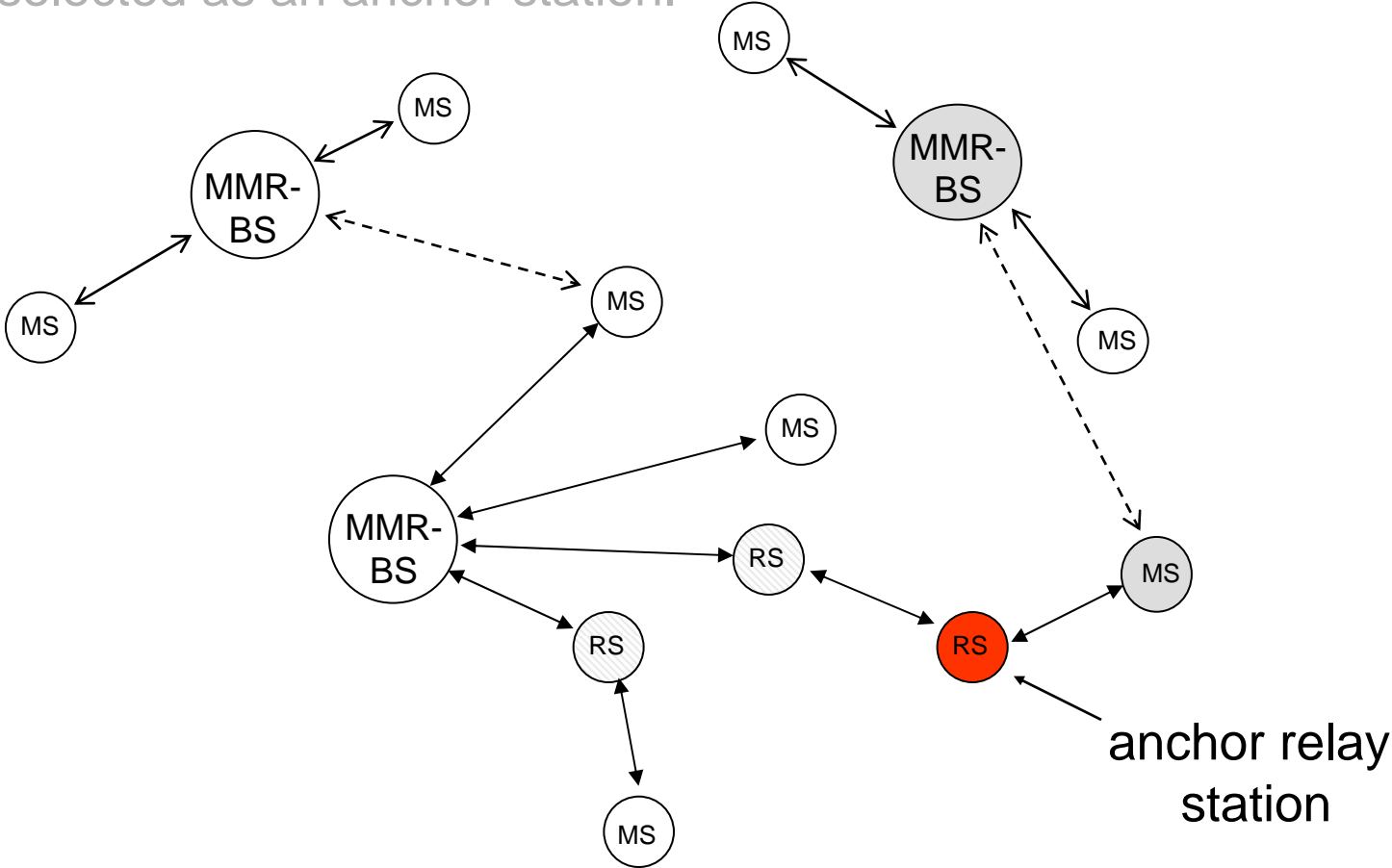
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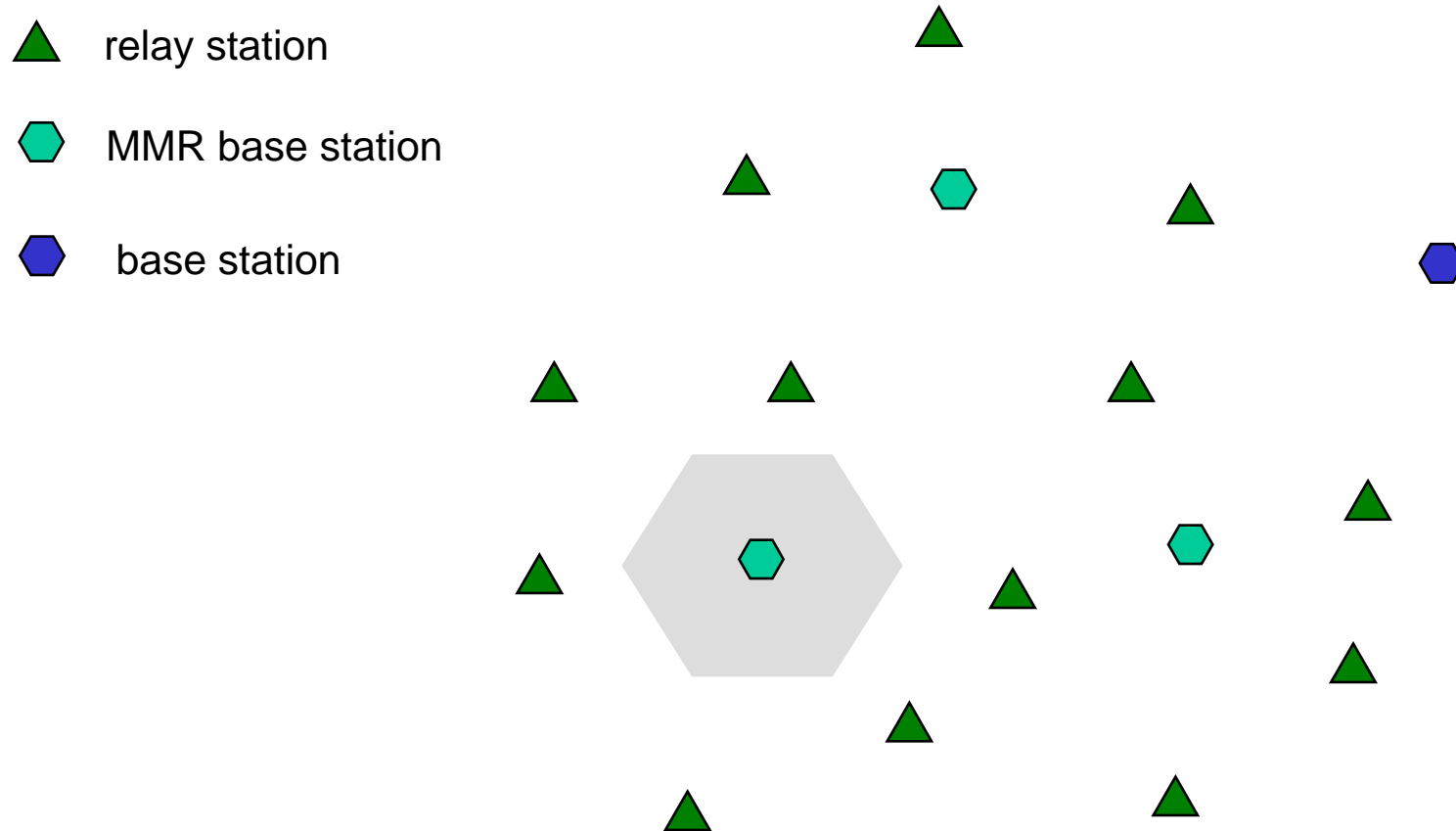
anchor MMR BS or RS: MS is registered and synchronized to anchor. The MS performs ranging with anchor and monitors the downlink for control information from anchor. For FSSS supporting an MS, this is the serving station that is designated to transmit/receive data to/from the MS at a given frame. For cooperative relay or MDHO, one of active stations in a diversity set is selected as an anchor station.



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cell: The geographic area containing all locations served by a particular station (e.g. RS, BS or MMR-BS) using a one-hop radio link with that RS, BS or MMR-BS. .

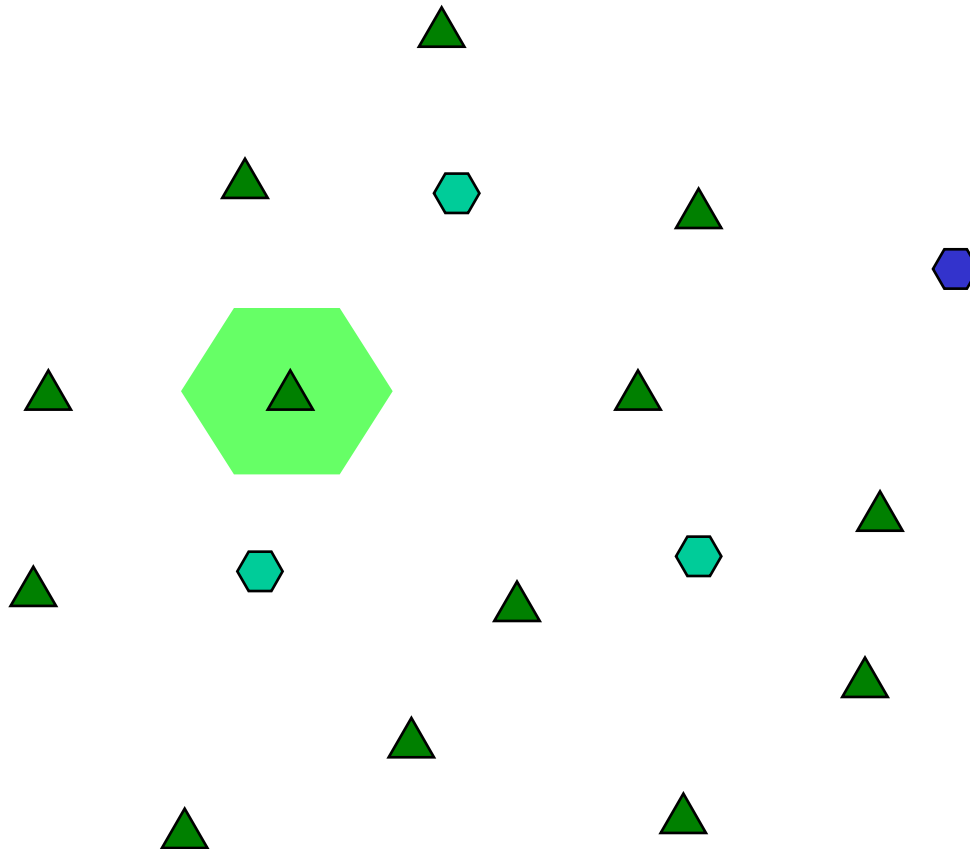


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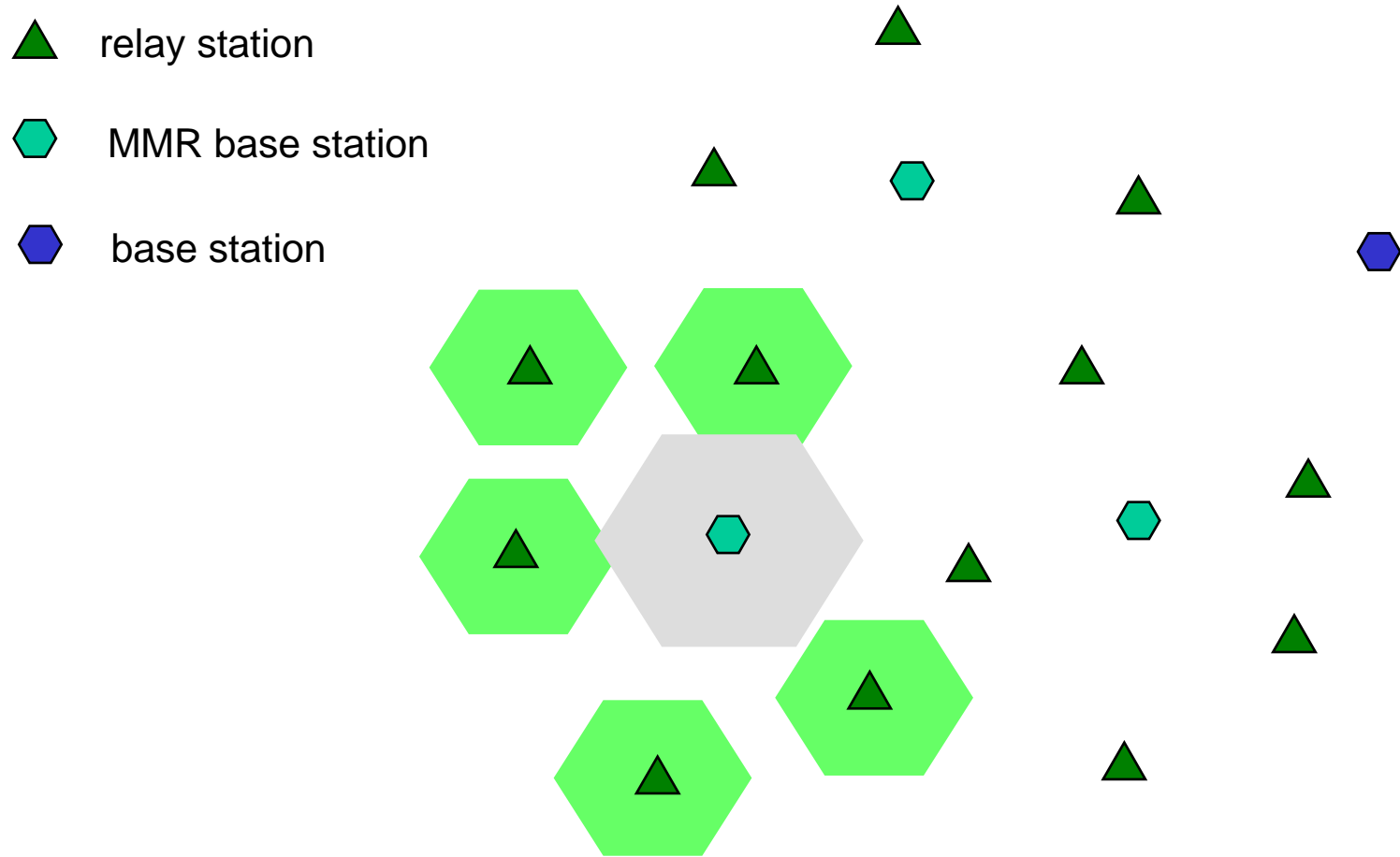
 relay station

 MMR base station

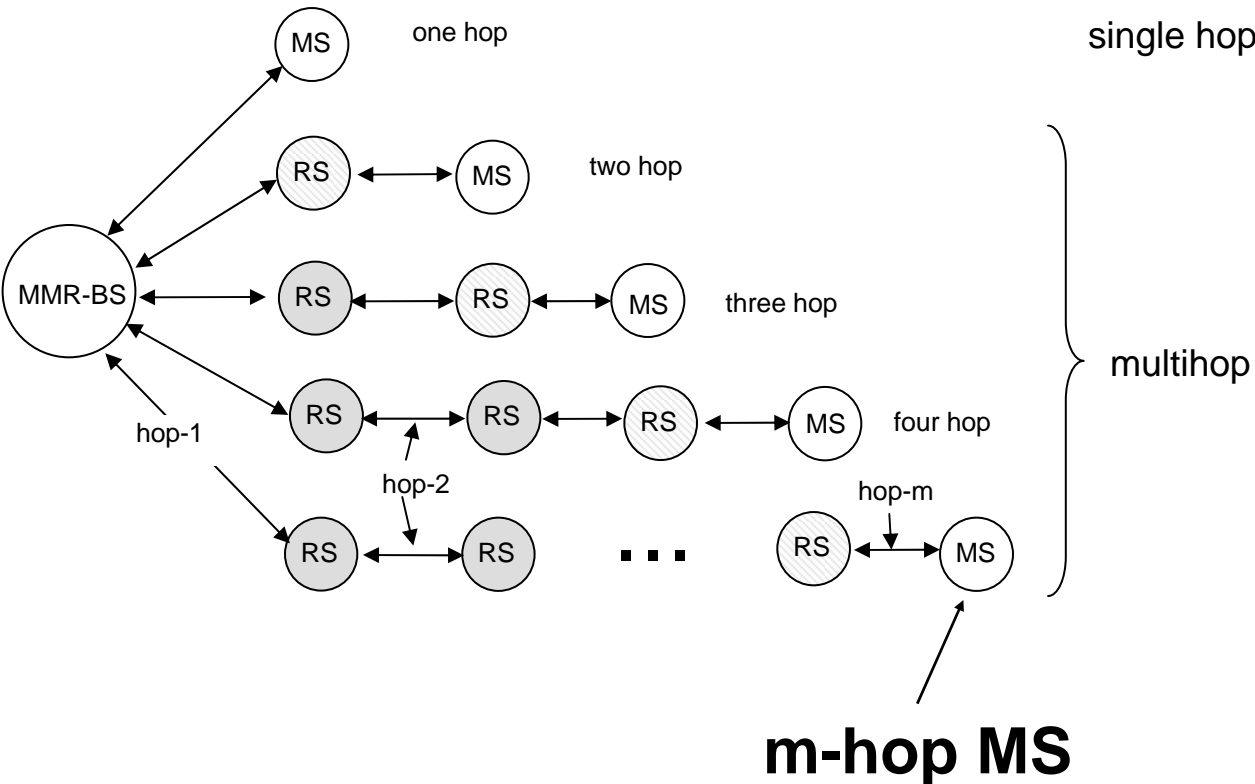
 base station



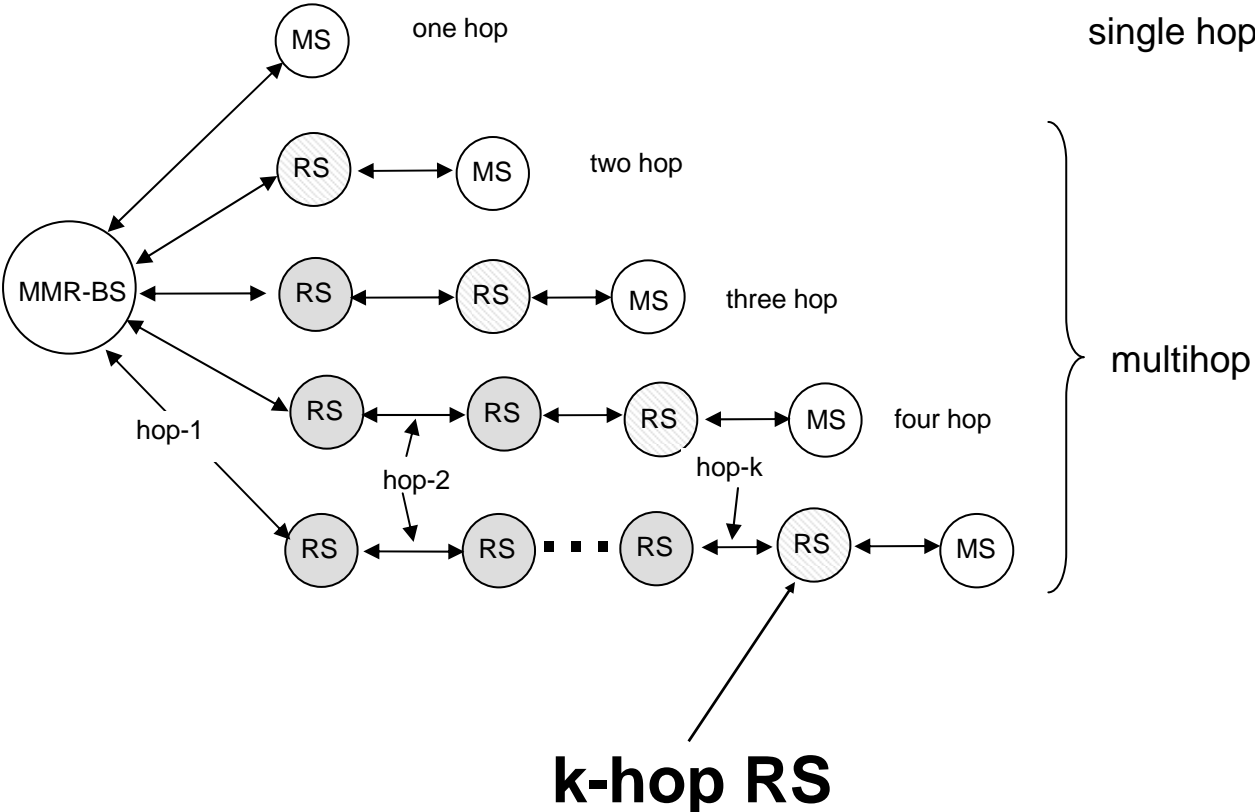
MMR-cell: The geographic area covering all locations where an MS may communicate through a particular MMR-BS using either one-hop communications links with that MMR-BS or using relayed communications links.



m-hop MS: An MS that is using a m-hop path to communicate with an MMR-BS.



k-hop RS: An RS that is using a k-hop path to communicate with an MMR-BS.



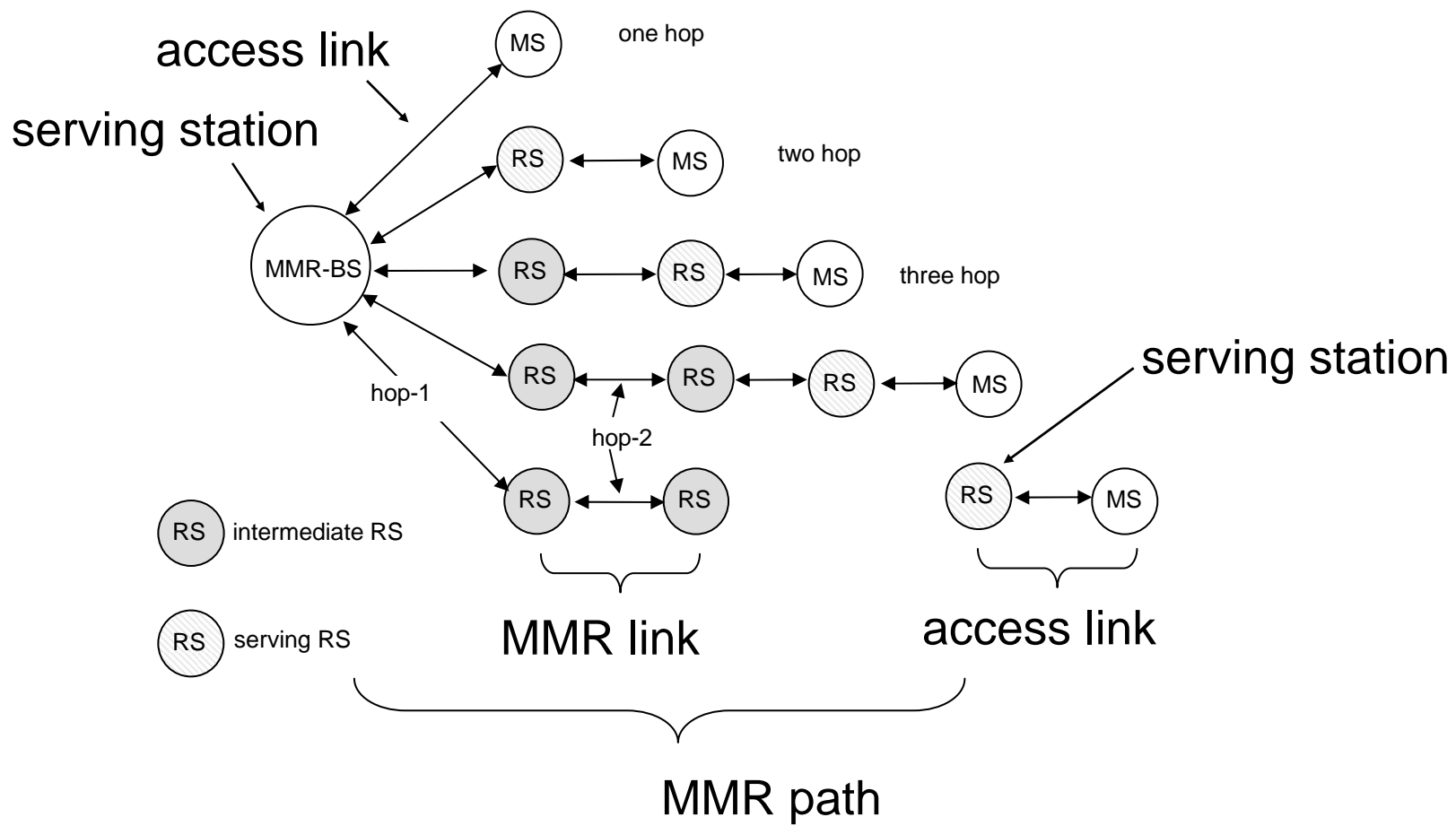
serving station: A station that provides access to MSs via a single radio link.

access link: An 802.16 radio link between an MS and a serving station (i.e. a BS, MMR-BS or RS).

MMR link: An 802.16j radio link between an MMR-BS and an RS or between a pair of RSs.

intermediate RS: Any k -hop RS along an m -hop MMR path where k is less than m and m is the number of hops between two end points of the MMR path (i.e., the MMR-BS and the RS that has direct access to the MS)

MMR path: A concatenated set of MMR links between the MMR-BS and the MS or vice versa (depending on direction of traffic flow).



neighbor station (NS): A station that is within one-hop communication range of the station of interest

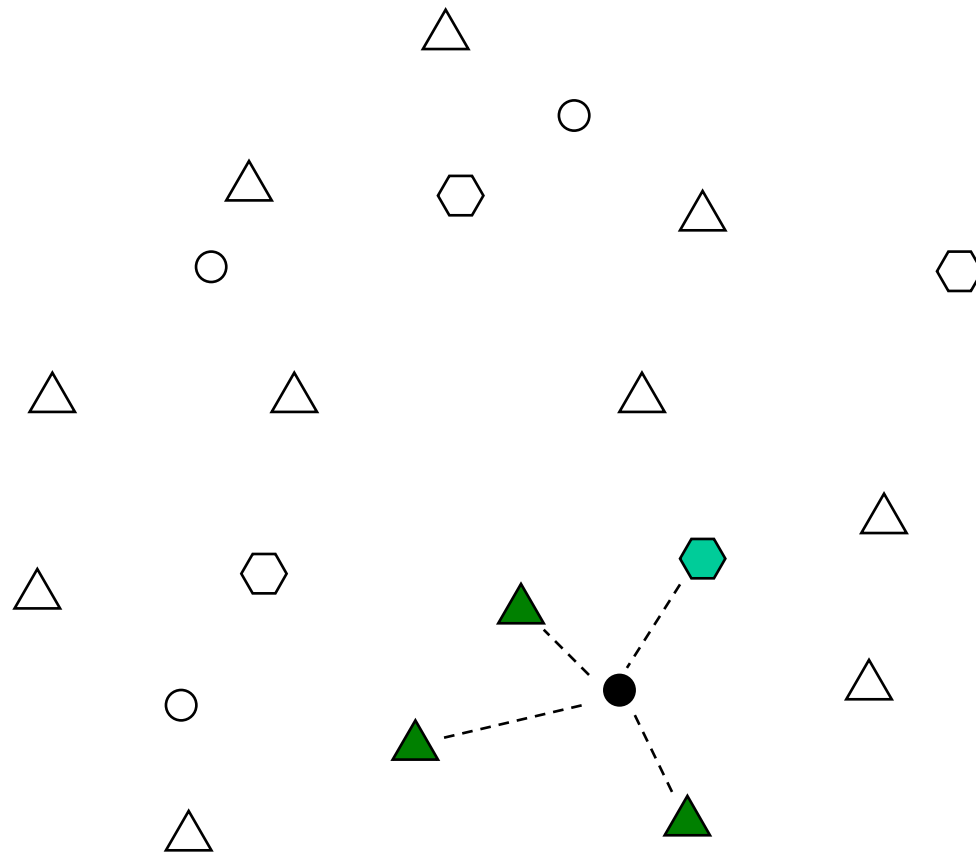
neighborhood: A set of stations consisting of a station and all of its neighbor stations.

▲ relay station

⬡ MMR base station

⬢ base station

● mobile station



From IEEE 802.16e-2005

3.5.1 neighbor BS: For any mobile station (MS), a neighbor BS is a base station (BS) (other than the serving BS) whose downlink transmission can be received by the mobile station (MS)