The 1041 Ray Choice Controller can select a beam from a variety of beams used to transmit the plurality of BF SSs. The UL 1043 signal generator can generate feedback information, including the beam ID(s) and channel, controlling the BS state, and managing radio resources. FIG. 11 represents a block diagram illustrating the operation of the UL 1043 signal generator. The DL 2041 signal generator, the DL 2042 signal generator, the DL 2043 transmission controller, the UL 2044 reception controller, the definition controller, and the UL 2045 feedback controller are illustrated in FIG. 11. The transmission diversity scheme can be a cyclic variation of delays (CDD), a space-time block code (STBC) or a space-time block code with code shifting (STBC-CD). The feedback information can be transmitted in a variety of manners, including the quality of the received symbols, the quality of the channel, the quality of the beam ID, and the quality of the radio resource block. The BS 20 can notify UE 10 of the number of rays selected by UE 10 in selecting the beam. The number of antenna ports (APs) BS 20 can provide for the rays can be configured. For example, UE 10 can transmit feedback information in a fixed manner, such as a periodic manner or a semi-periodic manner, or in a flexible manner, such as an event-based manner. The feedback information can include the quality of the receiver, RSSI, or Channel Quality Indicator (CQI). UE 10 can transmit the feedback information in a variety of manners, including the quality of the receiver, RSSI, or CQI. UE 10 can transmit at least a portion of the feedback information in a fixed manner, such as a periodic manner, a semi-periodic manner, or an event-based manner. The feedback information can include the quality of the receiver, RSSI, or CQI. UE 10 can transmit the feedback information in a variety of manners, including the quality of the receiver, RSSI, or CQI.