control module **488** for the beginning of the past time slot are used as the baseline values for the gain of each beam receiver **112**.

[**0193**] To determine gain settings **490**, gain control module **488** may first determine whether fast decision beam selection module **408** selected a fast decision beam selection **440** (in other words, whether the strongest uplink beam **130** was greater than minimum threshold **432**) during the past time slot. If fast decision beam selection module **408** did select a fast decision beam selection **440** during the past time slot, gain control module **488** may determine from relevant signaling information **754** whether a burst from a mobile station **15** was received in that time slot, or whether the selected uplink beam **130** was receiving noise from some other source. In one embodiment, if relevant signaling information **754** indicates that there was a mobile station **15** communicating in that the slot, gain control module **488** sets gain settings **490** equal to the baseline values for each beam receiver **112**. On the other hand, if relevant signaling information **754** indicates that there was not a mobile station **15** communicating in that time slot, then the selected uplink beam **130** was selected erroneously, and gain control module **488** may set gain settings **490** equal to the baseline values for each beam receiver **112** except, but decrease the gain setting **490** for the beam receiver **112** that received the selected uplink beam **130**.

[**0194**] If fast decision beam selection module **408** does not select a fast decision beam selection **440** for a particular period of time, such as over a span of a particular number of time slots, gain control module **488** may increase the gain setting **490** of each beam receiver **112** by a particular amount above the baseline values to increase the sensitivity of beam receivers **112**.

[**0195**] FIG. **15** illustrates a method for determining gain settings **490** in accordance with an embodiment of the present invention. In particular, FIG. **15** may illustrate gain control algorithm **752** operable to be executed by gain control module **488**. At step **800**, the method starts. In one embodiment, the method may start after a particular time slot. At step **802**, it is determined whether an uplink beam **130** was selected as fast decision beam selection **440** during the particular time slot. In other words, it is determined whether any uplink beam **130** was determined to be greater than minimum threshold **432** during the particular time slot. If it is determined at step **802** that an uplink beam **130** was selected during the particular time slot, the method proceeds to step **810**. However, if it is determined at step **802** that an uplink beam **130** was not selected during the particular time slot, the method proceeds to step **804**. At step **804**, it is determined whether a particular time period or a particular number of time slots have passed since any uplink beam **130** was last selected. If it is determined at step **804** that the particular time period or number of time slots have not passed since any uplink beam **130** was last selected, gain control module **488** may set the gain settings **490** equal to the baseline level for each beam receiver **112** at step **806**. On the other hand, if it is determined at step **804** that the particular time period or number of time slots have passed since any uplink beam **130** was last selected, gain control module **488** may increase the baseline level for each beam receiver **112** at step **808** and set these increased gains as gain settings **490**.

[**0196**] At step **810**, it is determined whether the selected uplink beam **130** received a burst from a mobile station **15** or noise from some other source. In particular, gain control module **488** may analyze relevant signaling information **754** that includes information about the signals received during the particular time slot to determine whether a burst from a mobile station **15** was identified in that time slot. If it is determined at step **810** that the selected uplink beam **130** received a burst from a mobile station **15**, gain control module **488** may set the gain settings **490** equal to the baseline level for each beam receiver **112** at step **812**. On the other hand, if it is determined at step **810** that the selected uplink beam **130** did not receive a burst from a mobile station **15** (rather, that selected uplink beam **130** received a burst of noise from some other source), gain control module **488** may set the gain settings **490** equal to the baseline level for each beam receiver **112**, except reducing the gain of the beam-receiver **112** that received the selected uplink beam **130**, at step **814**.

[**0197**] At step **816**, the gain settings **490** determined at step **806**, **808**, **812** or **814** are communicated from host processor **118** to receiving unit **108**. These gain settings **490** are then used to set the gain of each beam receiver **112** before or at the beginning of the next time slot. This process may be repeated to determine or update the gain settings **490** of each beam receiver **112** for determining fast decision beam selections **440**.

[**0198**] FIGS. **16** through **18** illustrate a smart decision beam selection system and method in accordance with an embodiment of the present invention. As shown in the embodiment of FIG. **16**, a smart decision beam selection module **410** comprises one or more smart decision algorithms **500**, a buffer **502**, and a beam selection verification module **514**. In one embodiment, smart decision algorithms **500** include a quality factor algorithm **504** operable to determine a quality factor for one or more beams based on one or more inputs or parameters, including information from correlation module **400**, signal strength module **402**, storage module **406** and/or any other suitable source of information. Buffer **502** is generally operable to receive and store quality factor selections made by quality factor algorithm **504**, and to determine a provisional beam selection **512** based on the received and stored quality factor selections. Beam selection verification module **514** is generally operable to determine whether to verify provisional beam selection **512** based on relevant signaling information **180** received from signaling information monitoring system **106**. If provisional beam selection **512** is verified by beam selection verification module **514**, the provisional beam selection **512** is selected as the smart decision beam selection **506**.

[**0199**] As discussed above with reference to FIG. **11**, correlation module **400** may be operable to correlate signal sequences received via one or more uplink beams **130** with one or more known training sequences in order to determine a correlation quality **508** for each of the beams. As discussed above with reference to FIG. **12**, signal strength module **402** may be operable to determine a signal strength **438** associated with each uplink beam **130**. In one embodiment, signal strength module **402** is operable to determine the RSSI for each uplink beam **130**.

[**0200**] Correlation qualities **508** and signal strengths **438** of each uplink beam **130** may be communicated to smart