tion **15**. Processing module **62** comprises fast decision beam selection module **408**, smart decision beam selection module **410**, and fast/smart selection module **416**. As discussed above with reference to FIG. **12**, fast decision beam selection module **408** is operable to determine fast decision beam selections **440** substantially in real time based on the current frame of signals received via one or more beams. And as discussed above with reference to FIGS. **16** and **17**, smart decision beam selection module **410** is operable to determine smart decision beam selections **620**, such as uplink and downlink smart decision beam selections **506** and **507**, based on both current and previous frames of such signals. In some embodiments, smart antenna apparatus **16** switches to the smart decision beam selections **620** determined by smart decision beam selection module **410** in the frame following the current frame. Thus, in some embodiments, there may be a delay of one or more frames between the frame at which uplink signals are received by smart antenna apparatus **16** and the frame at which smart antenna apparatus **16** switches to the appropriate smart decision beam selections **620**. In addition, in some embodiments, since smart decision beam selection module **410** determines smart decision beam selections based on both current and previous frames of signal data, smart decision beam selections **620** are only determined when smart decision beam selection module **410** has information regarding previous frames of the signals being analyzed.

Fast/smart selection module **416** is generally operable to determine whether to select beam selection determinations made by fast decision beam selection module **408**, smart decision beam selection module **410**, or neither for one or more time slots or frames. Generally, fast decision beam selections **440** are used during the initiation of a call or other communication to or from a mobile station **15** since smart antenna apparatus **16** has little or no prior data regarding the mobile link connection with mobile station **15**, and smart decision beam selections **620** are used after the call has been established and smart antenna apparatus **16** has data regarding the location of mobile station **15** from signals received in prior frames. In some embodiments, fast decision beam selections **440** are used for signals received from mobile stations **15** in a random access channel (RACH), such as access request signals. In addition, fast decision beam selections **440** may be used for one or more of initial frames after mobile station **15** has switched to the traffic channel which is used during at least a first portion of the call. In one embodiment, fast decision beam selections **440** are used for RACH signals and for the first time slot after mobile station **15** switches to a traffic channel to support a call, and smart decision beam selections **620** are used for subsequent time slots during the call.

Fast/smart selection module **416** may be a discrete module operable to perform the determine whether to use fast decision beam selections **440** or smart decision beam selections **620** as discussed above, or it may be a distributed system distributed among any number of components of smart antenna apparatus **16**, such as fast decision beam selection module **408**, smart decision beam selection module **410**. For. example, in one embodiment, smart decision beam selection module **410** is operable to determine whether to use the smart decision beam selection **620** or the fast decision beam selection **440** for a particular time slot.

The beam selected by fast/smart selection module **416**, which is generally a fast decision beam selection **440** or a smart decision beam selection **620**, may be referred to as a fast/smart beam selection **622**. In some embodiments, fast/smart beam selection **622** is the beam selected for one of the frequencies used by base station transceiver **24**. Thus, smart antenna apparatus **16** may determine a fast/smart beam selection **622** for each frequency used by base station transceiver **24**. In some embodiments, fast/smart beam selections **622** are further processed by central processing unit **118** before being selected as transmitting beam selection **124** or receiving beam selection **126**.

FIG. **23** illustrates a method using fast decision beam selections **440** and smart decision beam selections **620** in smart antenna system **14**. At step **630**, a random access (RACH) burst is communicated by a mobile station **15** and received by receiving system **100** in a particular time slot of a current frame. The burst is communicated to processing module **62** at step **632**. At step **634**, fast decision beam selection module **408** determines a fast decision beam selection **440** substantially in real time based on the burst received in the particular time slot of the current frame. At step **636**, the burst is communicated to base station transceiver **24** via the beam selected as fast decision beam selection **440**.

At step **638**, mobile station **15** switches to a traffic channel for communicating voice or other data signals during the call. In particular, mobile station **15** may switch to a particular traffic channel assigned by base station system **12**. At step **640**, mobile station **15** transmits traffic signals in a first frame of the assigned traffic channel, which are received by receiving system **100** and communicated to processing module **62**. At step **642**, fast decision beam selection module **408** determines a fast decision beam selection **440** based on the traffic signals (which may include a training sequence) received in the first frame. In particular, fast decision beam selection module **408** may determines fast decision beam selection **440** substantially in real time. At step **644**, smart decision beam selection module **410** determines a smart decision beam selection **620** based on the traffic signals received in the first frame. At step **646**, the traffic signals received in the first frame are communicated to base station transceiver **24** via the beam selected as fast decision beam selection **440**. The determination of smart decision beam selection **620** at step **644** may not be completed until after the traffic signals are communicated to base station transceiver **24** at step **646**.

At step **648**, mobile station **15** transmits additional traffic signals in a second frame of the assigned traffic channel, which are received by receiving system **100** and communicated to processing module **62**. At step **650**, fast decision beam selection module **408** determines a fast decision beam selection **440** based on the traffic signals received in the second frame. At step **652**, smart decision beam selection module **410** determines a smart decision beam selections **620** based on the traffic signals received in the second frame along with signals received in one or more frames prior to the second frame (which may or may not include the first frame). At step **654**, it is determined whether the smart decision beam selection **620** determined at step **644** meets a particular criteria. For example, in one embodiment it is determined whether the quality of smart decision beam selection **620** determined at step **644** meets a particular threshold. If it is determined that the smart decision beam selection **620**. determined at step **644** does meet the particular criteria, at step **656** the traffic signals received in the second frame are communicated to base station transceiver **24** via the beam selected as smart decision beam selection **620** at step **644**. If it is determined that the smart decision beam selection **620** determined at step **644** does not meet the particular criteria, at step **658** the traffic signals received in the second frame are communicated to base station transceiver **24** via the beam selected as fast decision beam selection **440** at step **650**.

Steps **648** through **658** may be repeated one or more times. In particular, steps **648** through **658** may be repeated in order