

**REMARKS/ARGUMENTS**

After the foregoing Amendment, claims 13-15 are currently pending in this application. Claims 1-12 were previously canceled. Claims 13-15 are amended.

**Request for Withdrawal of the Finality of the Office Action**

The Applicant respectfully requests that the Examiner withdraw the finality of the Office Action mailed on May 4, 2015 because the amended claims are believed overcome the rejections raised in the Office Action.

**Claim Rejections - 35 U.S.C. § 102**

Claim 15 is rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,778,507 to *Jalali* (hereinafter "*Jalali*"). Applicant respectfully disagrees and submits that *Jalali* does not disclose all of the elements of claim 15 as amended.

Amended claim 15 contains the element of circuitry configured to "combine the data for the single user with different sequences to produce a plurality of combined data sequences." As stated in the Office Action, *Jalali* discloses a "spreader 302 and spreading generator 304 for generating a respective different I and Q spreading codes." However, unlike amended claim 15, the data to be transmitted in *Jalali* is merely "streams of in-band (I) and quadrature (Q) samples that are provided to a complex pseudonoise (PN) spreader 302. Complex PN

spreader 302 mixes the I and Q samples with short PN code samples generated by short PN code generator 304.” *Jalali*, col. 11, lines 20-25.

*Jalali* also discloses that the transmissions of each base station are mixed with a PN sequence having PN offsets that allow subscriber stations to distinguish each base state from another. Also, *Jalali* clearly states that from each base station the same signal is transmitted from each antenna, but with each having different relative phase shifts and power levels.

*Jalali* does not disclose the combination of data for a single user with different sequences from a plurality of antennas to produce a plurality of combined data sequences.

In addition, amended claim 15 includes the element “antenna-specific weights for the plurality of antennas are applied to each of the combined data sequences.” In contrast, *Jalali* discloses “pilot bits, spread with respective orthogonal Walsh codes for use in beamforming of the transmitter.” *Jalali*, col. 9, line 65 through col. 10, line 3). *Jalali* discloses a reference signal burst that is sent from each antenna of the base station which allows the subscriber station to estimate the channel impulse response corresponding to each of the transmit antennas separately. The reference signal bursts may be separated either by transmitting the bursts through one antenna at a time, or by using a different code space for each antenna, such as a different Walsh code for each antenna. Also, the

reference signal may be transmitted simultaneously, but separated by orthogonal coding, for example using a different Walsh code for each antenna.

However, a reference signal is not “data for a single user” as presently claimed. In addition, while *Jalali* may disclose the transmission of a combination of reference signals using orthogonal coding in order to avoid interference, this falls short of disclosing the application of antenna-specific weights to each of the combined data sequences.

Accordingly, Applicant submits that, for at least the reasons provided above, *Jalali* does not disclose all of the elements of amended claim 15.

In view of above remarks, Applicant respectfully requests the reconsideration and withdrawal of the rejection of claim 15.

**Claim Rejections – 35 U.S.C. § 103**

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jalali* in view of US Patent No. 5,982,327 to *Vook et al.* (hereinafter “*Vook*”). Applicant respectfully disagrees and submits that *Jalali* in view of *Vook* does not teach, disclose, or suggest all of the elements of claims 13 and 14 as amended.

Amended claims 13 and 14 contain the element a “received signal [that] includes data for a single user that was combined with different sequences producing a plurality of combined data sequences.” The Office Action states that *Jalili* teaches a “received signal [that] includes a single user data that was

combined with a different for each antenna (see inputs I and Q to the spreader 302 and disclosed same signal transmitted by the base station disclosed in col. 3, lines 48-59 and equations 1 and 2 in col. 11, lines 34-36).” As described above, unlike amended claims 13 and 14, the data to be transmitted in *Jalali* is merely “streams of in-band (I) and quadrature (Q) samples that are provided to a complex pseudonoise (PN) spreader 302. Complex PN spreader 302 mixes the I and Q samples with short PN code samples generated by short PN code generator 304.” *Jalali*, col. 11, lines 20-25.

*Jalali* also teaches that the transmissions of each base station are mixed with a PN sequence having PN offsets that allow subscriber stations to distinguish each base state from another. Also, *Jalali* clearly states that from each base station the same signal is transmitted from each antenna, but with each having different relative phase shifts and power levels.

*Jalali* does not teach the combination of data for a single user with different sequences from a plurality of antennas to produce a plurality of combined data sequences.

In addition, amended claims 13 and 14 include the element “antenna-specific weights for the plurality of antennas are applied to each of the combined data sequences.” In contrast, *Jalali* teaches “pilot bits, spread with respective orthogonal Walsh codes for use in beamforming of the transmitter.” *Jalali*, col. 9, line 65 through col. 10, line 3). *Jalali* teaches a reference signal burst that is sent from each

antenna of the base station which allows the subscriber station to estimate the channel impulse response corresponding to each of the transmit antennas separately. The reference signal bursts may be separated either by transmitting the bursts through one antenna at a time, or by using a different code space for each antenna, such as a different Walsh code for each antenna. Also, the reference signal may be transmitted simultaneously, but separated by orthogonal coding, for example using a different Walsh code for each antenna.

However, a reference signal is not “data for a single user” as presently claimed. In addition, while *Jalali* may teach the transmission of a combination of reference signals using orthogonal coding in order to avoid interference, this falls short of disclosing the application of antenna-specific weights to each of the combined data sequences.

The Office Action states that *Vook* does teach the element “a pilot assisted weighted antenna diversity receiver for communicating a diversity signal between the base station and mobile station, wherein the mobile station shown combines the weighted received signals from the plurality of antenna together to further detect the user data.”

However, amended claims 13 and 14 also include the element “recover[ing] data for the single user from each of the combined data sequences.” In contrast, *Vook* teaches a method of a subscriber unit receiving the same data signal over several antennas based on a process using at least two covariance matrices and at

least two steering vectors determined from the pilot symbols. *Vook* also teaches that if more than one transmitter is assigned to transmit to the receiver in a time-frequency slot, then an access technique called spatial division multiple access (SDMA) is used by the receiver. *Vook* teaches the communication receiver to receive, separately, the signals transmitted by the multiple transmitters sharing the same time-frequency slot. However, *Vook* does not teach the recovering of a single user data signal from each of the different sequences and combining of the recovered single user data signal from each of the different sequences. Covariance matrices and steering vectors are not sequences.

Accordingly, Applicant submits that, for at least the reasons provided above, *Jalali* in view of *Vook* does not teach, disclose, or suggest, all of the elements of amended claims 13 and 14.

In view of above remarks, Applicant respectfully requests the reconsideration and withdrawal of the rejection of claims 13 and 14.

**Conclusion**

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephonic interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

In view of the foregoing, Applicant respectfully submits that the present application, including claims 13-15, is in condition for allowance and a notice to that effect is respectfully requested.

Respectfully submitted,

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