

U.S. Patent No. 8,565,331		
Element 1[pre]: A method of decoding a signal transmitted over a communications channel, the method comprising:		
	Element 6[pre]: A communication device comprising:	
Element 1[a]: receiving a pilot symbol over the communications channel;		Element 8[a]: The communication device of claim 6 wherein the first and second data streams each further include at least one pilot symbol, and
Element 1[b]: estimating a channel matrix of the communications channel based, at least in part, on the pilot symbol;		Element 8[b]: wherein the channel estimator is configured to receive the at least one pilot symbol and generate an initial estimate of the channel matrix based, at least in part on the at least one pilot symbol.
Element 1[c]: receiving replicated data from multiple data streams transmitted over the communications channel;	Element 6[a]: a receiver configured to receive signals over a communications channel,	
	Element 6[a][i]: wherein the signals are based at least in part on first and second data streams transmitted over a communications channel,	
	Element 6[a][ii]: wherein the second data stream includes at least one	

	data symbol replicated from the first data stream;	
Element 1[d]: decoding the replicated data using the estimated channel matrix;	Element 6[b]: a decoder coupled to the receiver and the channel estimator, wherein the decoder is configured to receive the received signals and decode the at least one data symbol replicated from the first data stream;	
Element 1[e]: generating an updated estimate of the channel matrix based, at least in part, on the replicated data; and	Element 6[c]: a channel estimator coupled to the decoder and the receiver,	
	Element 6[c][i]: wherein the channel estimator is configured to receive the received signals and the decoded at least one data symbol,	
	Element 6[c][ii]: wherein the channel estimator is configured to estimate a channel matrix of the communications channel based, at least in part, on the decoded at least one data symbol; and	
Element 1[f]: decoding subsequently received signals over the communications channel using the updated estimate of the channel matrix.	Element 6[d]: wherein the decoder is further configured to decode subsequently received signals based, at least in part, on the estimate of the channel matrix.	

2: The method of claim 1 wherein said decoding the replicated data comprises using a joint detection technique.	7: The communication device of claim 6 wherein the decoder is configured to decode the at least one data symbol using a joint detection technique.	
3: The method of claim 1, wherein said decoding the replicated data comprises using a space-time block decoding technique.		
4: The method of claim 1, wherein said decoding the replicated data comprises using a space-frequency block decoding technique.		
5: The method of claim 1, wherein the replicated data includes same data symbols in multiple data streams.		