

SUMMARY

According to a first aspect of the present invention, there is provided a method, comprising:
transmitting command data from a transmission station via a first communication
link, wherein the command data defines one or more commands;
5 transmitting triggering data from the transmission station via a second communication
link that has smaller bandwidth than the first communication link;
decoding the triggering data using at least a decoder configured to parse the triggering
data from a stream of data that includes the triggering data, wherein the triggering
data includes an identifier identifying at least one of the one or more commands;
10 wherein the second communication link transmits the triggering data using
electromagnetic waves transmitted via skywave propagation;
wherein the first communication link has greater latency than the second
communication link;
wherein the stream of data includes a first frame containing the triggering data, and at
15 least one other frame containing the triggering data; and
wherein the first frame and the second frame are different lengths.

According to a second aspect of the present invention, there is provided a method,
comprising:
transmitting command data from a transmission station via a first communication
20 link, wherein the command data defines one or more commands;
encoding trigger data using multiple different encoding schemes to generate multiple
different data frames, each data frame containing the triggering data and
having a different size;
transmitting triggering data as a data stream that includes the multiple different data
25 frames from the transmission station via a second communication link that has
smaller bandwidth than the first communication link;
decoding the data stream using multiple different decoding schemes corresponding to
the multiple different encoding schemes using multiple decoders configured to
parse the data frames with the triggering data from the data stream, wherein
30 the triggering data includes an identifier identifying at least one of the one or
more commands;
wherein the second communication link transmits the triggering data using
electromagnetic waves transmitted via skywave propagation; and
wherein the first communication link has greater latency than the second
35 communication link.

A unique communication system and method has been developed to address the above-mentioned latency issues as well as other issues. In the communication system, command data is transmitted so as to be received at a receiving station before (or at the same time) triggering data is received. The command data includes one or more directives,
5 instructions, algorithms, and/or rules for controlling a machine, such as a computer and/or mechanical device, to take one or more actions. For example, the command data in one form includes a program for buying and/or selling particular options or stocks at certain price levels, ranges, and/or based on other conditions. Command data is typically (but not in all circumstances) larger in size than the triggering data such that the command data takes longer
10 than the triggering data to transmit over communication links having the same data bandwidth. The triggering data includes information identifying one or more commands in the command data to execute. For example, the triggering data can identify one or more particular options in the command data that identifies the particular stock (or multiple stocks) to purchase at a particular price (or prices). In one example, the command data is transmitted
15 over a communication link that has high bandwidth and high latency, such as over a fiber optic cable, and the triggering data is transmitted over a communication link that has low bandwidth and low latency, such as through sky-wave propagation by refracting and/or scattering radio waves from the ionosphere. The relatively small-sized triggering data is then able to be more quickly received at a receiving station than if the triggering data was
20 transmitted over the high bandwidth and high latency communication link provided by fiber optic cable. This communication system and method dramatically reduces the time to execute complex time-sensitive actions, such as financial transactions, over large distances at remote locations. In one form, this technique is used to remotely perform actions past the radio horizon, such as for transatlantic communications. This technique can be adapted for one-
25 way type communications or even two-way type communications.

This unique communication system and method in one example uses multiple communications links. In one form, the communication links use different communications media. Such a system might be used, for example, to transmit a large collection of preprogrammed commands or rules over a high latency/high bandwidth link in advance of a
30 triggering event which may be a market event, news report, a predetermined date and time,