

Procurement Specification

1. The wireless connectivity system (the "system") supplied shall provide for wireless connections over GSM/GPRS or CDMA/1XRTT cellular data networks. Frequency bands supported by the system shall include, at a minimum, 850Mhz, 900Mhz, 1800Mhz and 1900Mhz. Connections shall be made from [**description of end users equipment/function**] (the "end device") to the associated [**description of end users control/communication software which supports the end users equipment**] (the "application") resident on personal computers (PC) running Windows NT or later software operating systems. Such PCs shall require connection only to a wired and/or wireless TCP/IP network(s). GPRS or 1XRTT hardware modems physically connected to the PC shall not be required, except that for mobile PC users one GPRS or 1XRTT hardware modem will be used for wireless connection to the TCP/IP network carrier. No modification of the end device or application shall be made or needed to implement the wireless connectivity system.

2. Wireless connections shall be made by the system in an end-to-end fashion, using a GPRS or 1XRTT wireless hardware modem (the "Client") installed in the end device, and server software (the "Server") running on the PC hosting the application. To maintain the security of the end device, the hardware modem shall operate in client mode only, i.e. the Client shall not listen on an open TCP/IP socket for incoming connection requests. The Client shall provide an asynchronous RS232 port interface for the end device. A standard option shall be available to add a second RS232 port to the Client, such second port to support ancillary devices which may be co-located with the end device, e.g. a GPS (Global Positioning System) transceiver.

3. The Client hardware modem shall include at least 5 digital inputs for event detection. Events detected by such inputs shall be reported to the Server and, at the option of the user, selectively forwarded by the Server via SMS (text) messaging or standard SMTP email. Additionally, the Client shall offer at least two (2) digital outputs for control of end devices. Such digital outputs shall be under the control of the Server. The Server shall offer on-line feedback of the transition of such outputs.

4. The Client hardware modem shall be housed in a weather resistant enclosure meeting the requirements of [Ingress Protection Standard] IP65. The Client antenna system shall be internal to such enclosure.

5. The Client shall be an autonomous device which registers itself with the Server using a unique identification number.

6. The Server software shall provide an asynchronous serial COM port interface for the application. The server software shall be responsive to standard "AT" commands issued by the application and shall be capable of remotely signaling the Client in such a manner as to cause the Client to initiate a connection to the Server over the GPRS or 1XRTT network. Once connected, the Client and Server shall notify the end device and the application respectively, using standard "AT" result codes indicating connection, after which the Client and Server shall maintain a "transparent" connection between the end device and the application until a disconnect signal is received from either the end device or the application.

7. In addition to the aforementioned remote signaling of the Client to initiate a connection to the Server, the Client shall be remotely or locally programmable to initiate a connection to the server on either of a time interval schedule, a hardware event detected at a Client input, or receipt of a "ATD" command from an end device connected to the Client's RS232 port.

8. The Server shall be capable of scanning data passing from the end device to the application and detecting data pre-programmed as indicative of alarm conditions. At the option of the user, the Server shall detect such alarm data and selectively forward these or other user defined alarm representation data via SMS (text) messaging or standard SMTP email.

9. The Server shall, at the option of the user, update the Client(s) with real-time date and time information. The period of update shall be programmable. The Client shall maintain this date time information and make it available to the end device by being responsive to an AT+ICLK?<cr> command issued by the end device.

10. The Server software shall provide sorting, auto-registration, automatic data field population and description facilities for the easy management of large numbers of Clients.

11. The Server software shall provide DES (digital encryption standard) access control and shall be responsive only to the Client hardware modem.

12. The Server software shall provide, at user option, complete functionality in support of multiple, simultaneous applications each supporting a user specified number of simultaneous connections to respective end devices. Applications may be different in nature or may be multiple instances of an identical application.

13. The Server shall be configurable, at user option, to simultaneously run on multiple PCs in support of multiple simultaneous users.

14. The Server shall continuously record and store all data traffic to and from the application(s) and associated end device(s), as well as between itself and the client(s). The amount of such recording and storage shall be configurable by the user.

15. The Server shall be able to remotely re-program the Client operating configuration "over the air" such that on-site visits are not required for common modifications to the operating environment.

16. The wireless connectivity system shall operate as defined in this specification without the need for DNS (domain name system) methods or static or persistent IP (Internet Protocol) addresses assigned to the Client hardware modem.