INTIME CONNECTION™
V2.0

Would you like the highest accuracy from your autosteer equipment? Would you like to connect to the CORS (Continuously Operating Reference Stations) network for your correction signal? Do you feel limited by your current RTK system? Do you feel you need more freedom to move around from field-to-field without losing signal? Do you want to log positional data, but don't have the time to process the data? If you answered yes to one or more of these questions, you need InTime Connection™!

Features

InTime Connection™'s (ITC™) capabilities include streaming RTK-correction from the CORS network, a grower's own base station, or any base station freely available through a cell phone[1]connection[2], logging positional data, logging serial data, and sending collected data from the field straight to InTime for processing, access user defined links on the internet such as weather data, stock updates, commodity markets, etc. Bonus features are farm and GPS oriented applications.

Why connectivity through a cell phone?

Cell phones are small, multi-functional and take up little space. Using personal cell phones guarantees the best coverage for your area by using your cell phone provider's existing network. Furthermore, cell phones allow more functionality besides streaming. Access to E-mail, commodity prices, stock quotes, weather, etc will make this device a valuable addition in the cab.

While many growers are dedicating the cell phone to their autosteer unit, others are using the cell phone also as their personal organizer and use the phone year round for contacts, E-mail, and accessing the World Wide Web (WWW). A third group is also using the phone as their personal cell phone forwarding their phone calls to the office while using it for autosteer or logging data.

Streaming

InTime Connection™ streams correction data directly from a base, from a server such as the CORS network, or by using the InTime Base™ (ITB™) server software.

The CORS network consists of government sponsored base stations primarily used to monitor subsidence nationwide. Each state has or is working on its own network. In California for example, these stations play an important role in monitoring tectonic plate movement. In some cases access is free, in other cases there is a small subscription fee.

The CORS network supplies users with access to survey grade correction signals, single base and/or multiple base correction signals (VRS or iMAX) , daily accuracy checks, and more….

Alternatively, the InTime Base™ server software allows base station owners to access the correction signal of their own base station using a cell phone where a CORS network currently does not exist. The ITB™ server software can be connected to the user's own base station and allows the ITC™ program to access the base station. In addition, as a grower or dealer you can use this software to sell subscriptions for accessing your base station.

In all cases, wireless access of RTK correction signals over a cell phone allow more freedom for the end-user, less signal loss, increased productivity, and lower operating cost. Operating 15-20 miles from the base station is no problem with this system[3].

One of the advantages of this system is the ease-of-use. One button will turn on the phone, start the program, and start the streaming of the correction data. The second advantage of the software is the simplicity and flexibility you have when setting up base stations. This can be a direct connection with just an IP-address and port, an InTime Base server connection, a CORS network with no preset location, or a CORS network with preset location using either a manual or current location. This easy setup of the base station is especially handy when you work across state lines and would like to take advantage of the CORS networks in both states. Once the base stations have been setup, the user only has to pick the CORS network of choice and off you go!

For example, the user is able to setup virtual base stations to ensure the appropriate correction signal for the location the system will be operating in. Not using this feature can potentially give you a greater than 6 miles difference in VRS/iMAX setup from one to the next. In addition, a VRS/iMAX reset initiated from the server might occur in the middle of the field. Depending on your settings, this could have an appreciable shift in the current A-B line. For the most accurate signal from a CORS network the user should setup a virtual base station in the middle of each field. ITC™ allows the user to do just that. This feature is especially important to anybody that wants to use the system for elevation data such as leveling or tiling. Setting up a virtual base station in the middle of the field will guarantee the highest accuracy from the CORS network.

Conversely, some users might want to setup an automatic session with the CORS network server. In this case the program will send continuously current positional data to the network. A reset of the VRS/iMAX will occur at a pre-defined distance from the sign-on location, usually, at approximately 5 km or 3.1 miles.

In the base station setup screen, little 'Help'-files will assist you in setting up the base station. If questions remain, remote support is available.

Logging
The logging function in the ITC™ program gives you the ability to log GPS positional data while streaming RTK correction data or from any other GPS receiver that is capable of a NMEA 0183 signal output. The user can select specific NMEA-messages to be logged. Additionally, raw serial data, such as VERIS data, can be logged with the program. Any of this information can then be stored on a data card in the phone and/or sent straight from the field to InTime for processing.

Weather
The ITC™ program automatically loads a pre-defined radar map of your area. It will be available as soon as the program is loaded. This radar image can be monitored while streaming and/or logging. The image can be refreshed with the push of a button allowing you to stay apprised of incoming weather and work up to the last minute! Alternatively, the user can customize a link to weather data for their local area.

Links
Six customizable buttons in version 2.0 allow easy access to various websites such as stock market information, commodity prices, news, etc. These buttons can be programmed with the provided defaults or with the user's own links. These links can also be setup to start a program on the cell phone such as Outlook for accessing E-mail.

Applications
Within the ITC™ program applications are being built that can be used while streaming or logging data such as a simple calculator, a range finder, GPS-coordinate converter, etc… This list will grow over time making ITC™ more versatile.

Remote support
ITC™ comes with one year of free remote support. InTime has strived to make the program as user-friendly as possible, but if you need help for any reason configuring the ITC™ program, the InTime staff can remotely see and change the program configuration on your phone. This will ensure no waiting time for a representative to come to the field, and instant help in the field, in turn reducing down time.

Updates
Version 2.0 supports automatic updates of the ITC™ program. New features such as the 'Applications' within the ITC™ software will be updated regularly. At startup the program will check for an update and prompt the user if the program should be updated.

Packages available
InTime sells software as a package that includes everything necessary to setup the connection with your specific receiver. Currently, most Ag receivers from AgLeader, AutoFarm, Leica, TopCon, and Trimble to run off the CORS network are supported. Packages include cables necessary for the specific receiver.

In case you do not have a CORS network available, but would like to take advantage of the cell phone connection, InTime Base Server™ (ITBS™) is available. ITBS™ connects to a base station and can communicate with the cell phone. This will virtually eliminate any lightning strikes to the system by eliminating the radio antenna, eliminating repeaters, and increasing the operating distance from the base station.

Note: Cell phone coverage is required for this system to work. By default an external antenna is included with all packages. In the majority of the cases this will suffice. However, in areas with poor cell phone coverage it can still work. Wireless data connections are not as sensitive to diminished signal strength compared to voice connections and a booster can help greatly to alleviate connectivity problems. Please see your dealer to ensure your area is suitable for this system.

For more information regarding this or other InTime products please contact us at:

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[1] = Requires Windows Mobile 6 or later; [2] = When openly available by IP-address and port; [3] = Accuracy is a function of the operating distance to the base;