

Finally, GPS in Construction Project Management: Why Geolocation is a Practical Resource for Construction Firms

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One of the most visible and revolutionary trends in construction is the increasingly ubiquitous adoption of GPS technology to provide accurate, real-time, 'geolocated' (located on a global coordinate system related to latitude and longitude) position for a variety of practical purposes. Construction project management software (CPMS), if it is to be truly useful for modern infrastructure firms, should account for this and be able to incorporate position information into daily tasks like field inspections, progress reports, and survey reports.

Three main trends explain why the use of GPS technology has become mandatory for all businesses involved in capital improvement programs:

- **Better GPS Equipment:** In the 1980s, GPS equipment was expensive, complicated to operate, and not totally reliable—satellite coverage was spotty, and users could only work during certain 'windows' of the day. That's all changed. GPS equipment now exists at a range of price points, and has even been incorporated into smart phones, handheld PDAs, and laptops. The technology is transparent for users, with simple graphic user interfaces that require very little training to operate. And end users never have to worry about satellite coverage—they can just turn on their receivers and go to

work. These technological advances have made position a new 'utility'—a useful resource that is expected to be available at almost no cost.

- **Network RTK:** Most large metro areas in the United States and Europe are now blanketed by network RTK (Realtime Kinematic) systems. These are networks of 'always on' GPS receivers that rebroadcast accurate position. When they are in place, network subscribers don't have to set up their own base stations or use survey grade equipment to attain centimeter level accuracy; they simply connect to the network via cellular modems and are instantly able to work at very high precision.

- **Rapid Spread of GPS-enabled Technologies:** The above two trends have spurred massive innovation in construction technology. Realtime geolocation is now used to guide earthmoving equipment, track vehicles, stakeout survey points, and update GISs. More innovation is expected.

How Should GPS and CPMS Work Together?

Since construction management software is used to organize construction projects and other capital improvement programs, and since geolocation has become an important part of capital project lifecycle management, it makes sense that CPMS be able to incorporate accurate, geolocated coordinates into

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most activities and that these coordinates should be easy to access and use. Here are some ways GPS and CPMS should work together:

- **Reports Assigned to Coordinates:** As I have talked about in other articles, good CPMS will have easy ways to digitally capture field data, such as inspections, progress reports, digital images, and quantity tracking. And all such data should be searchable by location so that, for example, all inspections performed on a particular bridge abutment can be recalled by searching within a defined geographic area. When GPS is part of field inspection software, there are several advantages for owners and managers of capital improvement firms. For instance, they can verify that field work was performed in the right location, thus holding staff accountable for their work. They can track progress more effectively, and they can see where equipment was used.
- **Automatic Coordinate Capture:** Where information is being entered on GPS-enabled digital devices, such as tablets or PDAs, coordinate and time information should be captured automatically, without extra effort by end users.
- **Useful Reports:** Geolocated digital information and images are not useful unless it can be conveniently accessed. In addition to searching by location, reports that show the location of personnel, tasks performed, equipment, and vehicles should be easy to generate.
- **Leverage Existing Investments:** Many firms already have survey divisions, which represent major investments in equipment and skilled personnel. This resource becomes more valuable as geolocation is used more widely within an enterprise. Likewise, large infrastructure firms are likely to have invested quite a bit in a GIS, or are about to invest in a GIS. Construction project management software that geolocates makes GISs more useful and valuable. Having a comprehensive CPMS solution that incorporates coordinate information can

significantly enhance the investment in GIS software such as ArcGIS and other standard GIS software.

Simply put, geolocation is like a free resource that can be exploited to create efficiencies for firms involved in capital improvement projects. CPMS that takes advantage of geolocation help firms to improve their bottom line and leverage existing investments.

At Aurigo, we've built our CPMS, from the ground up with the above requirements in mind. In fact, the GPS integration in BRIX is the best available, and BRIX offers easy ways to customize reports to take advantage of that integration.

Simply put, Aurigo CPMS is the most powerful capital project management software on the market. It is widely used and substantial data exists to verify cost savings and shortened project timelines. In fact, Tim Pratt, the CEIS manager of Lincoln, Nebraska, says that, "Aurigo CPMS has helped Lincoln to automate and streamline all of our estimation, bidding, contract management, and field inspection processes, and has increased productivity and information retrieval speed by almost 70%."

We hear that from owners and project managers all over the world, and we're confident that Aurigo CPMS can help you achieve similar results on your projects. Call us today for a free demonstration.