



# Real-time construction progress tracking system enables effective monitoring and control

## Client

Our client is an award winning full service consulting engineering firm offering public and private clients multi-disciplinary expertise and comprehensive capabilities in planning, project development, studies and analysis, design, procurement, construction engineering and inspection, project, program and construction management, and facility maintenance and operations.

## Challenge

The client's current methods for tracking the progress of construction was not be sufficient to review project progress accurately and swiftly. Project managers needed to detect any setbacks in advance, as it gives them the chance to take prompt actions to minimize their impact. The client wanted to implement a near real-time construction progress tracking system that would enable effective monitoring and control.

## Marlabs Solution

Marlabs was chosen to develop a solution that could provide real time construction tracking solutions. We proposed and developed a solution for Tunnel Information Management that visually represents tunnel build progress by monitoring status using set templates. Construction data is captured at the site using handheld devices.

The solution included a mapper application that helps migrate handheld data into an Oracle database. Data obtained is compared with baseline data created from engineering drawings at the time of initial design, as well as with rock sampling data. Acquired data is fed into a real-time 2D and 3D modeler that graphically depicts drilling advancement as well as on-the-ground rock strata conditions in the tunnel to enable robust construction management. We also proposed and built an interface with Google Maps to plot geospatial coordinates for the tunnel.

## Benefits

- Enhanced construction progress monitoring
- Achieved added costs control
- Streamlined contractor management
- Improved construction planning and scheduling
- Helped reduce project time lines
- Contributed to increased tunnel safety

## Technologies

- JDK 1.6, EJB 3.0 (MBD), Hibernate, Spring (MVC, IOC, AOP, Batch)
- Flex 3.0, DOJO 1.0, JSP, Blaze-DS, Custom Tags, Spring-Flex
- Jasper Reports, Quartz Scheduling, DROOLS
- ANT, CSS, Log4J
- Eclipse, Flex Builder, I-reports, GIT, SVN, ANT, Hudson, Jenkins, Neo Load, QTP, JIRA
- Jboss EAP, Apache Server 2.0, Oracle 10g/11g

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