



Track Alignment Design

Balfour Beatty is the UK's largest rail engineering and services provider and is an international leader in rail engineering projects. Balfour Beatty Rail is responsible for maintaining and renewing a significant proportion of the railway network in the UK. As part of the process of track renewal, a track alignment must be produced. This type of design can be difficult and time-consuming to carry out by hand because the track often goes through constraints such as bridges, points, stations and tunnels – all the while still satisfying certain design standards.

Business Problem

Balfour Beatty Rail had already developed a number of algorithms for designing the track layout and had prototyped the system using Microsoft Excel. Balfour Beatty asked Tessella to verify the operation of the algorithms and to implement the system as a stand-alone application, to be called Vers0vieW.

Tessella Solution

After verifying the operation of the design algorithms, Tessella worked with Balfour Beatty design engineers to specify the requirements for the system. This involved an analysis of the track renewal design process and led to an improved workflow for track design.

Tessella re-wrote Vers0vieW as a robust, computationally efficient and easy to use program that Balfour Beatty Rail could, if they wished, sell to customers with confidence. Written in Visual C++, Vers0vieW performs all the line alignment calculations in seconds and allows the engineer to compare several possible designs before selecting the best one.

Once the first version of Vers0vieW had been completed, Balfour Beatty Rail and Tessella developed a second version of the system. This has been designed to handle a wider range of track design scenarios than the first version and will greatly simplify the process of designing.

Results and Benefits

Vers0vieW enables a designer to design alignment to run through the 'corridor' of constraints, producing designs in a fraction of the time it takes using manual methods, and to a much higher quality.

Railtrack has granted product approval for the first version of the program, which was nominated for the 2001 Rail Industry Innovation Awards. This is the body text. This is the body text. This is the body text. This is the body text.



Tessella plc 26 The Quadrant, Abingdon Science Park, Abingdon, Oxfordshire OX14 3YS, UK
T: +44 (0)1235 555511 | F: +44 (0)1235 553301 | E: info@tessella.com

Tessella Inc 233 Needham Street, Suite 300, Newton, MA 02464, USA
T: 1 617 454 1220 | F: 1 617 454 1001 | E: info@tessella.com

Tessella – successfully delivering IT and consulting services to world leaders in R&D, science and engineering.

For decades, Tessella has been successfully delivering IT and consulting services to world leaders in R&D, science, and engineering. Through the application of scientific methods and rigorous quality procedures, we enable clients in life sciences, energy, the public sector, and consumer industries to achieve a wide range of objectives, including, forecasting floods, developing fusion power, enhancing military sensor capability, increasing drug discovery and development efficiency, and reducing risk to health and the environment in the extraction and production of oil and gas. With offices in Europe and North America, global companies rely on Tessella for business critical assignments.

Copyright © Tessella plc 2009, all trademarks acknowledged.

