Case History: Availability Payment PPP Delivers High Speed Line

By Bob Prieto, Fluor

The HSL-Zuid High Speed Line (HSL) Rail Project is the largest Public-Private Partnership (PPP) awarded by the Dutch Government.

Awarded in 2001 this lump sum-turnkey, date-certain contract for the superstructure of the HSL consisted of a five-year design, construction (build), and financing phase of the superstructure, followed by a 25-year maintenance phase of the HSL.

Infraspeed, a special purpose vehicle (SPV), will have to ensure an infrastructure availability of at least 99 percent during operational hours of the 25-year maintenance period. EPC funding of $1.5 billion will be repaid from performance-based availability payments of $3.75 billion to cover the initial investment cost, maintenance cost, amortization, taxes, insurances, cost of capital, profit, and overhead.

The facility consists of 100 kilometers (62 miles) of rail infrastructure that includes rail construction through four tunnels (including the 7-km Green Heart Tunnel [Groen Hart Tunnel]) and across an aqueduct and a 3-km (1.9-mile) bridge, with connections at five major interchanges. Infrastructure construction included the track system, the power supply system, noise barriers, the signaling system, communication systems, and ancillary equipment such as lighting and control systems. Simultaneous to the construction of the HSL, civil works projects (tunnels and viaduct structures) were being constructed by other contractors for the line, which required multi-contractor coordination to maintain the work schedule.

The new route runs from Amsterdam to the Belgium border. Reaching a top speed of 185 miles per hour, the high-speed rail is a key part of the Trans-European Rail Network. The HSL-Zuid line opened on the Rotterdam-Antwerp route in mid-2006. The Amsterdam-Schiphol-Rotterdam route was completed in December 2006.

Program Management - Responsible for day-to-day Program Management and coordination of the design-build work for the superstructure along the HSL alignment, which included the following:

- Coordinating civil design reviews
- Reviewing and addressing design changes submitted by the contractors
- Developing and implementing quality and safety requirements for those changes that were approved
- Checking more than 30,000 civil and structural drawings
- Continuously evaluating work schedules to verify that the project remained consistent with contract milestones

The interface management effort was one of the most demanding and challenging efforts of the project. Joint agreements were developed with state agencies, local municipalities, and commercial power suppliers, and direct interface was established. The main agencies that Infraspeed interfaced with were ProRail; the Ministry of Transport, Public Works, and Water Management; traffic regulators, independent safety assessors, and Belgian Rail authorities. In addition Infraspeed was responsible for obtaining consents from 26 municipalities along the line.
Activities included establishing site-specific agreements with each group and organization that was involved in permitting the design and construction. Interface efforts included establishing communication with local municipal and state agencies, as well as the banks involved with the project, extending to the banks’ technical and legal advisors. The project team also interfaced with the Dutch national architectural committee (the Welstand) and the Dutch National Railway. Approvals were obtained from all these groups without any delay of the design and construction schedule.

**Quality Management** - The quality program was used to oversee 15 design-build organizations. The quality team comprised dozens of quality control experts, supervised by a Quality Assurance and Acceptance management team. The Quality Program was responsible for:

- Establishing a Quality Management System in accordance with ISO 9000:2000 standards
- Certifying team procedures and standards
- Conducting quality inspections
- Indicating acceptance of construction work

The HSL-Zuid project attained ISO 9001:2000 Certification. Quality management followed CENELEC (Comité Européen de Normalisation Electrotechnique) 50126 requirements. ISO certification required that 588 pass-fail criteria be met and that physical evidence demonstrate compliance.

**Financing** - The financing for this project was based on a typical Public Finance Initiative (PFI)/PPP structure—that is, it was initiated with a small amount of base equity, and the majority of the sponsors' contributions were injected via subordinated debt, together with the use of an equity bridge facility. The commercial loan facility has a maturity of 27 years with a grace period of 6 months. The loan carried a fixed interest rate during construction only, and thereafter, the interest rate risk exposure on this facility will lie with the state (Euribor plus margin). Margins were 90 basis points during construction, reducing to 80 basis points for the remainder of the term. The repayment profile is cover-ratio–driven.