



Project Report Tunnel Lighting Control Systems Al Ittihad Road Interchange Dubai UAE

Project: Al Ittihad Road Interchange
Client: RTA Dubai
Consultant: AECOM

System Supplier: EE-Consulting AG, Switz.
Lighting: Schröder Gulf LLC
Local Partner: Bahri & Mazroei Trad. Co.

Al Ittihad Road corridor is a major highway linking Dubai and Sharjah crossing Al Garhoud Bridge. As one of the busiest and most important road corridors in Dubai the underpass will improve Al Ittihad's capacity and reduce delays around Dubai Airport and the centre of Dubai. The Tunnel was opened for traffic in May 2010.



The Lighting control system provides automatic operation of the lighting in 4 day-time stages and one night time stage. The control is based on the



L₂₀ measurement in the approach zone of the tunnel. The L₂₀ luminance meter is backed up by a photocell measuring the illuminance near the entrance. Should L₂₀ and the photocell fails the PLC calculates the L₂₀ based on operational history and the astrological time clock for the approach luminance level. Triple redundancy! All parameters are monitored by a local PLC capable of communicating to the RTA control centre. These parameters and historical data can be accessed by a local industrial PC touch screen.

The voltage of each lighting distribution panel is stabilised and if required dimmed with 5 Reverberi STB 8/36/45kVA Precision Power Controllers. Stabilisation accuracy is +/- 1% phase independent. The Efficiency of the system is >98%. No harmonics are introduced with this transformer based technology. The system has no moving parts which require maintenance. The controllers are equipped with automatic by-pass and performance monitoring systems.



The control system will save approximately 25% of energy and will increase the lamp life including the life of all other luminaire components. This will reduce the operational cost substantially and reduce Dubai's CO₂ footprint.

EE-Consulting AG and its partners have executed more than 30 installations in the Middle East and are the leading Suppliers for Tunnel Lighting Control Systems and Public Lighting Management Systems in the region.