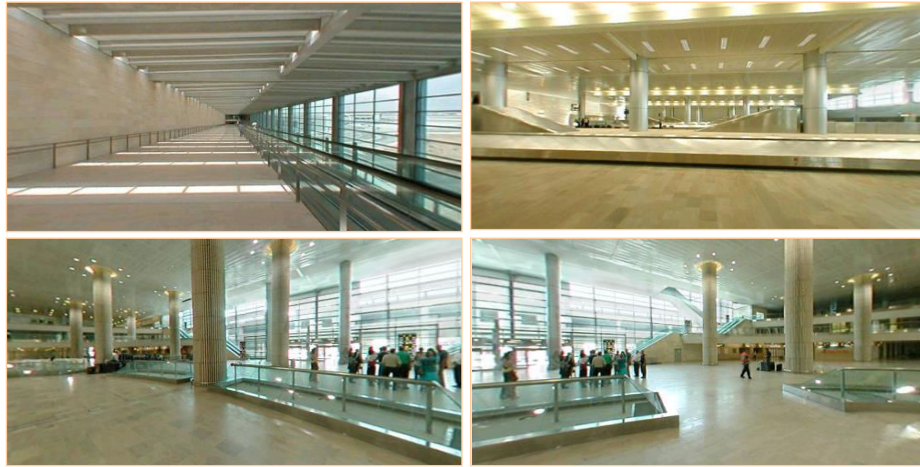


Pulse - Case Study

Ben Gurion International Airport, Israel

Terminal 3 – Open and Running using Pulse



The newest terminal at Ben-Gurion International Airport. Terminal 3 has been operational for over a decade. Extending Israel's major international airport, Terminal 3 solves passenger overload, and at the same time changes the whole area both commercially and financially.

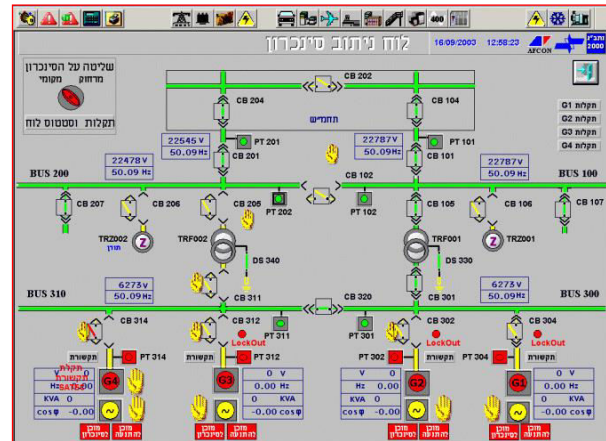
Planned as a SCADA project, Terminal 3 uses Pulse SCADA Solution by AFCON SOFTWARE AND ELECTRONICS as the interface between most of the terminal's systems.

Pulse performs the following:

- ▣ Controls/monitors/maintains 161KV high voltage power line at the Terminal 3 sub-station.
- ▣ Controls/monitors air conditioning throughout Terminal 3 and auxiliary areas.
- ▣ Controls 22KV high voltage power distribution.
- ▣ Controls/monitors 25 Computerized Air Conditioning units that cool Communications rooms.
- ▣ Treats/softens industrial water for cooling/heating processes.
- ▣ Controls/monitors lighting system using time scheduling and timetables.
- ▣ High voltage energy calculations and distribution after analyzing requirements at Load Shedding process.
- ▣ Controls petrol resources and leakage from containers at fuel farm.
- ▣ Reads/displays power levels from 300 Satec meters.
- ▣ Controls/monitors power station built from 4 diesel generators producing up to 13.1Mw.
- ▣ Controls water pumping and drainage systems.
- ▣ Controls/monitors hot/cold water processing at Energy Center.
- ▣ Controls/monitors Load Shedding process after main electricity supply shuts down.
- ▣ Monitors Reverse Osmosis systems controlled by Omron PLCs.
- ▣ Collects events and displays them in the Pulse Alarm Explorer.

Architecture

- ▣ Hot backup through Pulse Redundancy servers (licenses for 30 stations) backed up by 2 Ethernet ports from 2 different multi-line switches. Between servers an Ethernet connection is the replication line for data synchronization.
- ▣ Thirty workstations attached to multi-lined Ethernet through link protectors. During failure systems automatically move to secondary switch, which works without interruption.
- ▣ Three pairs of Quantum drivers in hot standby network managing all systems electricity and electro-mechanics from the power station and secondary high voltage power station.
- ▣ Application is divided into five sub-projects enabling dynamic jumps between workstations.
- ▣ Two workstations in Engineers' room where SNMP networking project was developed and is monitored.
- ▣ All links to master PLCs are through optic fiber network cells between Main Power Station to master PLC communications cupboard.
- ▣ On Alarms/Events server workstation the Alarm Explorer displays system-wide events/alarms.
- ▣ Each RTU has master PLC drivers that compare instructions for running/collecting information from the Pulse interface and the connection, enabling efficient transfer of many values.



Systems and Links to Pulse

- ▣ Eight medium voltage chillers, each producing 200 tons of cooled air and controlled by an independent PLC. Data collection/transfer is through a YORKTALK controller.
- ▣ Three heated water tanks controlling humidity temperature. Tank values are read through communication from Pulse to the tank's CB HAWK PLC.
- ▣ Water treatment/softener systems values read by GE PLC and displayed on Pulse interface.
- ▣ Values are read from the Diesel Generation Power Station by 4 Modicon Premium PLCs.
- ▣ Pulse remotely controls/monitors 21 main links using CSI drivers for temperature control throughout. Each station has many drivers, totaling over 300 CSI drivers and 18,000 I/Os.
- ▣ Pulse remotely controls/monitors 31 master PLCs collecting values from Pulse to areas with up to 10 Remote Terminal Units (RTUs) for each master PLC.
- ▣ Each RTU manages a module of I/O numbers totaling 20,000 I/Os.
- ▣ Each RTU controls low/high voltage circuit breaker systems, such as; elevators, UPS, passenger loading bridges, escalators, and speed walks.

Contact Info

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