

## Providence Solutions, Marathon and Tridium Bring Highly Reliable Supervisory Building Control to Singapore's Changi Airport

### PROFILE

Civil Aviation Authority of Singapore  
- Overseer of Airport Operations at  
Singapore's Changi Airport

### ENVIRONMENT

Marathon everRun FT™ Software

### WINDOWS APPLICATION

Tridium's NIAGRA Framework®

### THE COMPANY

The Civil Aviation Authority of Singapore (CAAS) needed a supervisory system for the many different controls and environmental monitoring sub-systems for the new Terminal 3 building at Changi Airport. Changi Airport's complex array of multi-vendor control sub-systems, featuring devices from Cylon, Tour Andover Controls, Singapore Technologies, Invensys and Barber Colman, comprise, in total over 50,000 control points on the new Terminal 3 and a further 60,000 control points across existing Terminals 1 and 2.

### THE SITUATION

The CAAS was looking for a single supervisory system for the new Terminal 3 which will also be applied to cover the existing Terminal 1 and Terminal 2 facilities at the Airport, achieving vastly improved and integrated site-wide building management. The new Terminal 3 at Changi Airport is a \$1.5 billion project scheduled for completion in early 2008. It will add a capacity of 20 million passengers a year,

bringing the total annual capacity to 64 million and adding another 28 aerobridge gates to the Airport. The new system needed to include data collection, trend logging, archiving, and data viewing, centralized operation and adjustment of sub-systems, equipment maintenance, management, fault-identification, alarm handling and time scheduling.

Reliability and the high levels of availability, were absolutely required due to the costs of airport disruptions that can come from failing controls and environmental monitoring sub-systems.

### THE SOLUTION

Based on Providence Solutions' recommendation CAAS selected Tridium's NIAGARA Framework® running on Marathon's everRun FT™ software to ensure rapid, comprehensive and successful integration of the Terminal's wide range of building services equipment, including chillers, pumps, access control, fire alarm and other systems, without the need for any special gateways, expensive programming or BMS supervisors. Each Air Terminal at Changi features a dedicated NIAGARA System, which is equipped with Marathon everRun FT software to ensure that in the event of any failure, the NIAGARA application keeps running without loss of data.

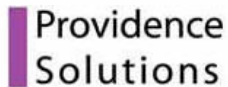
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## THE RESULTS

Providence Solutions, Tridium and Marathon have partnered to fully qualify and assure the compatibility and performance of the Niagara system running on everRun FT. The companies formed this alliance in order to deliver the full support and highest level of availability of this integrated solution, in order to meet the most stringent demands for reliability for supervisory building control systems.

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