GFS Crane Smart City Manager: Integrated Command Center Application

WHITE PAPER

from

GreenField Software Private Limited

December 2017

What is a 'smart city'?

For the first time in history, more than half the world's population lives in cities. Demand for services in urban areas is increasing exponentially, and capacity of local governments to manage this demand is being seriously challenged. The situation in India is no different. According to a 2007 United Nations Report on State of the World Population, India's urban population will be 40.76% compared to 28.53% in 2001.

There is a growing need for governments to be able to deliver services in a more effective way with limited resources. In the drive towards innovation for creating new tools and approaches, city governments are looking to leverage technology to improve service delivery and efficiency. The underlying foundation of Smart City therefore is technology. What technologies and how these technologies are deployed, would depend on the goals and aspirations of each city. Some definitional boundaries are however required to guide cities in their quest to becoming a Smart City.

India Smart City Mission

In the approach of Government of India's Smart Cities Mission, the objective is to provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment via application of 'Smart' Solutions. The focus is on sustainable and inclusive development. With an eye towards fast implementation and quick ROI, cities are looking at compact area-based development, create replicable models which can be implemented in other areas and be a model to other aspiring cities.

An illustration of the Smart City Solutions framework is given below.

Source: smartcities.gov.in

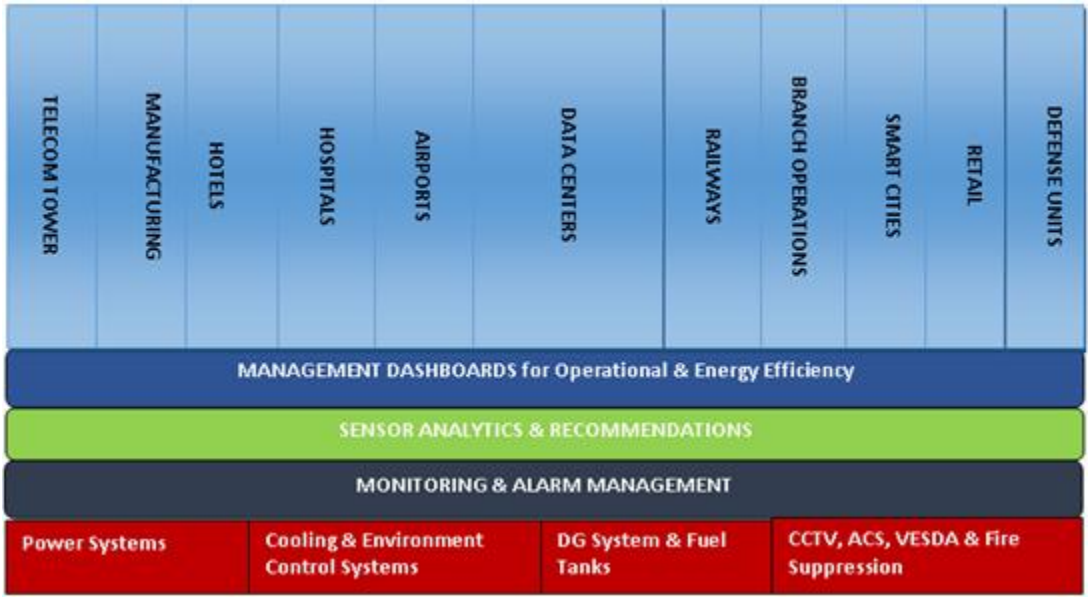
Role of Technology in Smart Cities

This framework predicates that a Smart City will be technology-intensive, with sensors and CCTV in appropriate locations. Public services will be highly efficient, thanks to information captured real time from thousands of interconnected devices. Trash cans, for example, will have sensors that would indicate when they are full, and collectors would follow a specific route based on this information. Buildings would be "intelligent", with smart meters and energy saving systems.

As can be seen from the Smart City Solutions framework, there will be plethora of different applications. Each application will have different devices and sensors, not necessarily with same connectivity protocols. There will be different vendors providing different assets, and each would come with their own monitoring and management software. An integrated approach would therefore be critical for smartly managing the Smart City: an overarching system that would interface with individual applications providing a dashboard of dashboards at the City's Integrated Command Center.

GFS Crane for Smart Cities

GFS Crane is an Industrial IoT platform that comes with advanced monitoring, analytics and management capabilities for mission critical infrastructure systems prevalent in most facilities we use in our daily lives: hospitals, airports and bank branches, as shown in figure below.



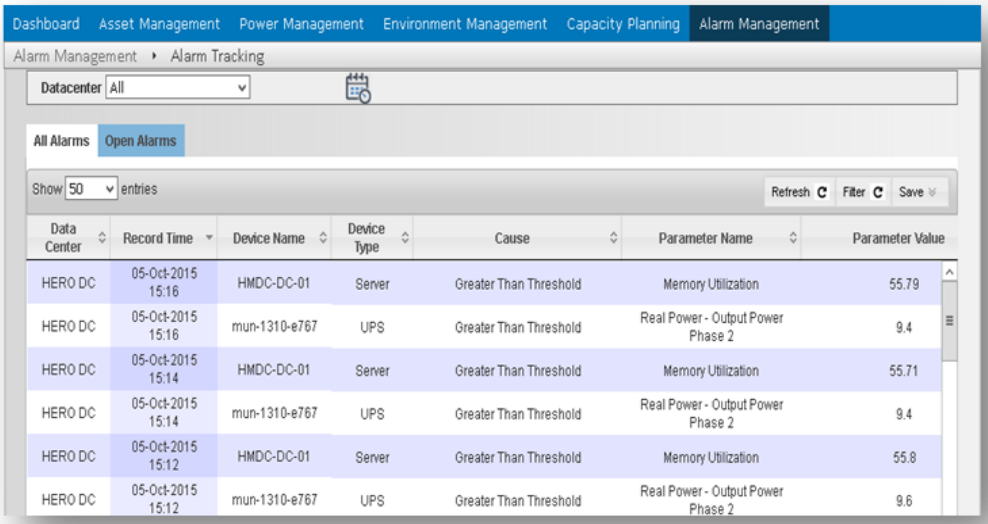
GFS Crane Smart City Manager (SCM) belongs to this family of Industrial IoT application portfolio. GFS Crane SCM provides integrated view of distributed facilities - parking locations, waste handling areas, convention and health care centers.

Enabled with multiple protocol support to connect heterogeneous devices & sensors, GFS Crane SCM provides centralized automated monitoring andasset lifecycle management of distributed facilities in a Smart City, besides a centralized dashboard with KPIs and analytic reports for city administrators.

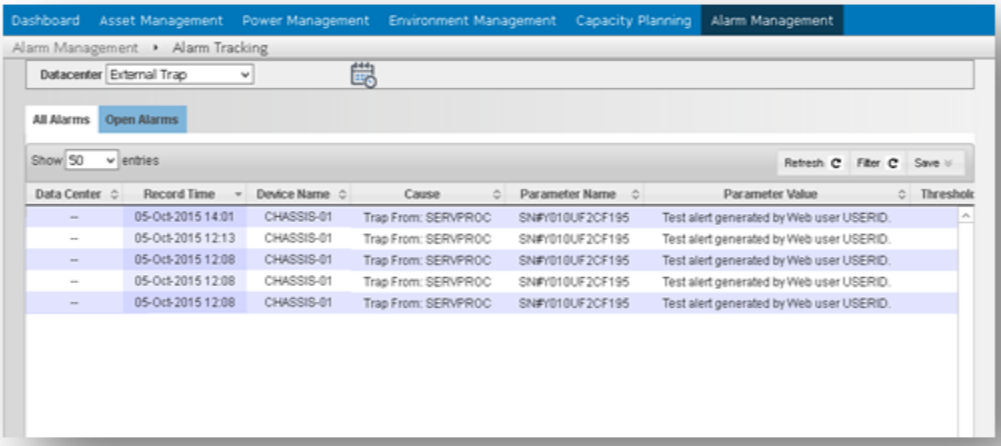
Monitoring

GFS Crane SCM comes with Open interfaces to integrate with individual smart city applications provided by different vendors.

Policy-driven, GFS Crane SCM provides for rules based on which threshold levels for different parameters can be set for multi-level alerts with escalation matrix.



Supporting multiple protocols (SNMP, WMI, Modbus/TCP and BACnet/IP), GFS Crane SCM independently monitors and sends alerts from devices, sensors and Building Management Systems and sends SNMP Traps to a Ticketing system as shown below.

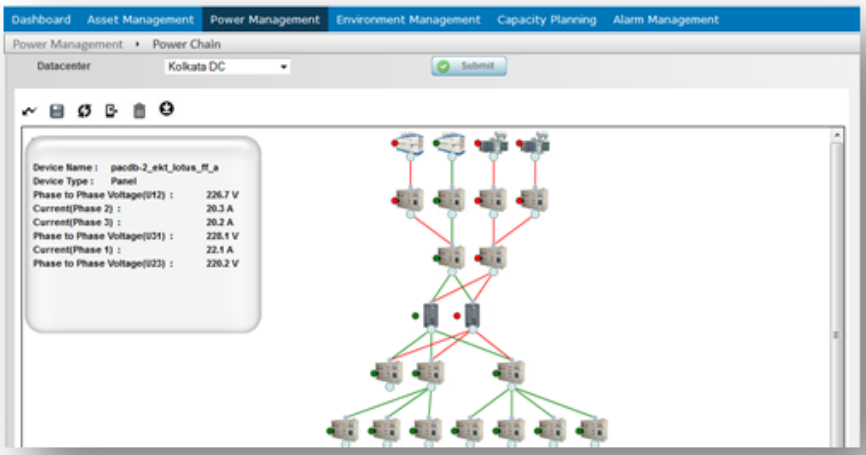


Asset Lifecycle Management

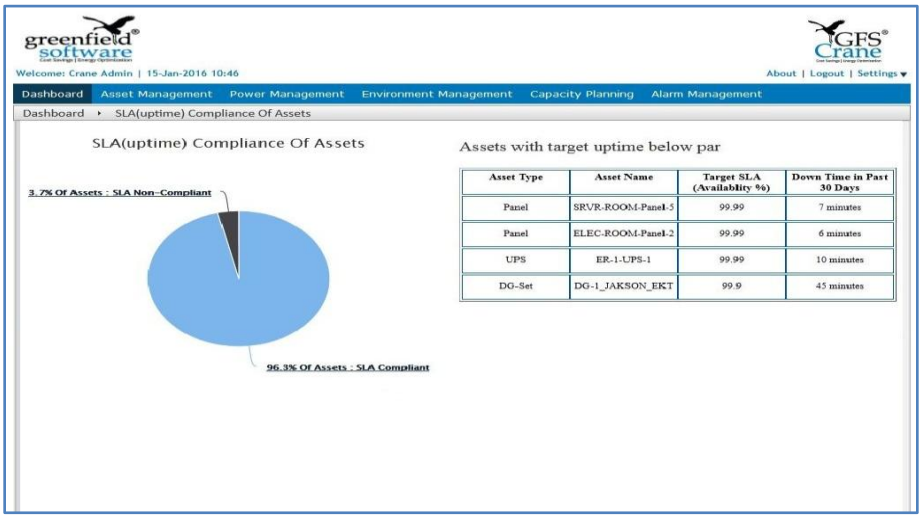
GFS Crane SCM provides comprehensive database of all assets – devices and sensors – deployed across different applications in the smart city.

Discovery of SNMP-enabled assets, provision of bulk upload and enterprise search capabilities improves productivity.

Asset Relationship Mapping helps to understand impact of a device failure on any downstream device connected to it.



Asset Ownership, Movements & Tracking, Preventive Maintenance schedules, Uptime reports till decommissioning and disposal per e-waste standards ensures adherence to Standard Operating Procedures.



Movements, additions and ownership changes of devices and sensors can be undertaken only via Workflow-based approval system with built-in audit trail.

Centralized Dashboard

With integration to individual applications, GFS Crane SCM can be the overarching Smart City Enterprise Management System providing centralized dashboard at the Central Command Centre. Besides near real-time alerts, City Administrators will have at their fingertips answers to questions like:

- How many sensors are installed and working for measuring pollution levels?
- What is the average occupancy rate of parking spots in Area X on Saturdays between 4:00pm – 10:00pm?
- Compare crime rates between two areas having different street lighting and surveillance camera densities or between twotime frames before & after installation of more lighting and surveillance systems.

Summary

In a world of always-on service delivery model, city administrators are looking to provide smart and connected infrastructure systems that interoperate with each other to provide a fundamentally improved citizen experience. GFS Crane Smart City Manager, built on Industrial IoT principles, is well qualified to be the overarching Integrated Command Center Application that connects to individual smart city applications to provide a dashboard of dashboards and analytic reports besides addressing operational issues such as monitoring and sending alerts.

GreenField Software is an Indian venture pioneering smart infrastructure management solutions with its Industrial IoT platform GFS Crane. With installations in Financial Services, Government, Telecom, Power Utilities, Media, Oil & Gas, Discrete Manufacturing and Higher Education, GFS Crane is well poised to target new segments such as Smart Cities, Retail and Transportation. GFS Crane is a registered trade mark of GreenField Software Private Limited.

For more details, contact:

GreenField Software Private Limited

P-25 Transport Depot Road,
Kolkata – 700088, India
sales@greenfieldsoft.com
www.greenfieldsoft.com
Tel: +91-33-2448-0307 | Fax: +91-33-2440-6073