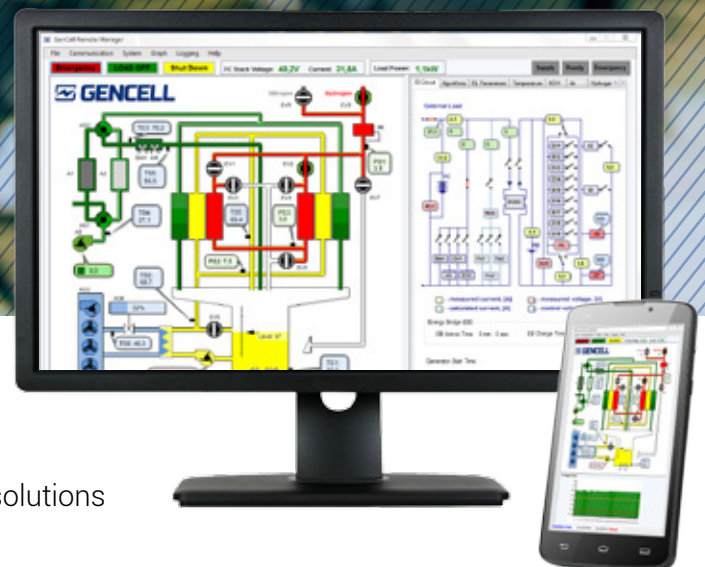# GENCELL
REMOTE MANAGER

- Remote management, monitoring and analysis
- Maximizes uptime of GenCell fuel cell backup power solutions
- Alleviates most remote site visits and maintenance
- Reduces the total cost of ownership
- Seamless integration with third-party SCADA systems

THE MANAGEMENT CHALLENGE

With backup power solutions, failure is not an option. Whether they are used to support mission-critical equipment in utilities, telecom, homeland security, healthcare or niche industrial applications, they must be ready to supply power at a moment's notice.

GENCELL REMOTE MANAGER

The GenCell Remote Manager keeps your GenCell power solutions ready to instantly provide backup energy when you need it. Using the latest M2M and communications technology, the GenCell Remote Manager enables you to:

- Easily monitor the running hours, online load profile, hydrogen consumption, hydrogen fuel levels, and performance of your GenCell systems.

- Instantly receive alerts for preventive maintenance or about abnormal performance, automatically generate reports, remotely complete maintenance tasks and perform over-the-air (OTA) software upgrades.

- Create custom reports and dashboards as well as connect to third-party management systems via APIs.

The GenCell Remote Manager supports two types of remote edge smart controllers:

- **Professional** for managing GenCell fuel cell solutions

- **Enterprise** for managing GenCell fuel cell solutions as well as third-party solutions at utility and telecom substations.

HOW IT WORKS

GenCell remote management comprises three parts: a remote edge layer, a central server and a user application.
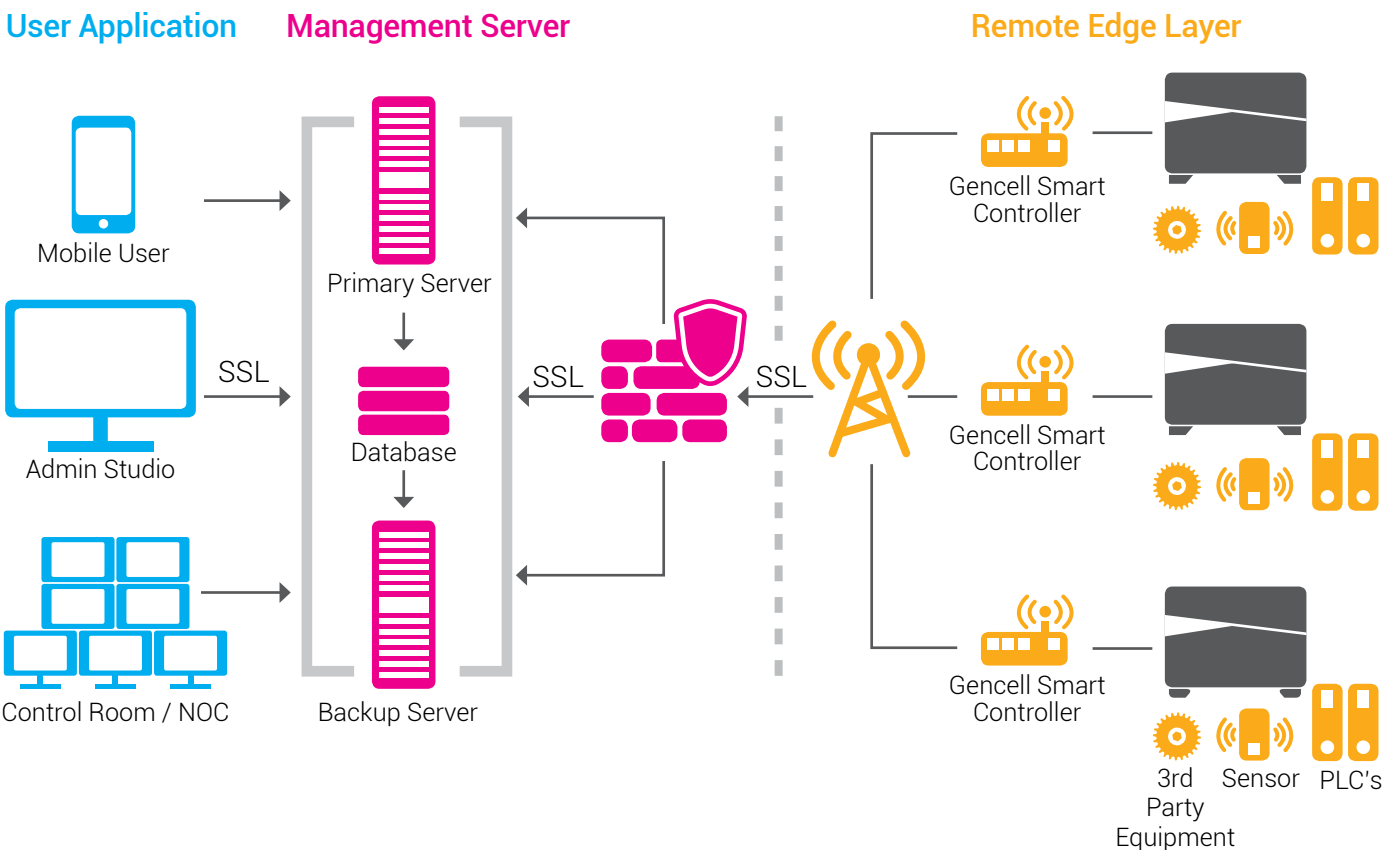
Remote Edge Layer

The remote edge layer is comprised of smart controllers that are connected to remote GenCell fuel cell power solutions and industry-standard PLCs and sensors. The controllers offer continuous bidirectional transmission of data between the remote GenCell systems and the management server using encrypted communications.

Management Server

Based on a secure cloud or private network, fully-redundant management servers communicate with the smart controllers and securely store all data in an industry-standard, encrypted database. The management server offers powerful, event-driven business logic, robust network and device management and can be easily integrated with Web APIs and third-party SCADA systems.

User Application

The user application is an intuitive management console that is used to setup and manage remote GenCell systems. Continuous data collection, remote device management, analysis of key performance indicators and real-time alerts ensure the readiness of your GenCell power solution and greatly reduce maintenance costs.

User Application   **Management Server**   **Remote Edge Layer**

Mobile User

Admin Studio

SSL

Control Room / NOC

Primary Server

Database

Backup Server

SSL

SSL

SSL

Gencell Smart Controller

Gencell Smart Controller

Gencell Smart Controller

3rd Party Equipment   Sensor   PLC's

SPECIFICATIONS

REMOTE EDGE CONTROLLER

TYPE	PROFESSIONAL	ENTERPRISE
Name	Advantech UNO-2174A	Advantech ECU 4784
CPU	Intel Atom N450 1.6 GHz /D510 1.66 GHz processor	Intel Haswell Core i7 4650U 1.7 GHz dual-core processor
Memory (min.)	2 GB	8 GB
LAN Interfaces	2	8
Serial Interfaces	2	10
Power Supplies	Single	Dual
Dimensions (W x D x H)	255 x 152 x 50 mm (10 x 6.0 x 2.0 in.)	440 x 280 x 88 mm (17.3 x 11.0 x 3.5 in.)
Weight	2.5 kg (5.5 lb.)	6.0 kg (13.2 lb)
Mounting	DIN-rail, wall mount, VESA	2U rack-mount
Communication	Cellular or Private APN	Cellular or Private APN
Certifications	Energy Star, CE, FCC	TUV IEC 61850-3, IEEE 1613, CE, FCC

MANAGEMENT SERVER

HARDWARE REQUIREMENTS

- One physical or VM server
- Server-grade CPU (8-core and up)
- 16 GB RAM (minimum)
- 1 TB hard drive (RAID)
- Public Static IP Address (DNS name recommended)
- Redundant power supply (recommended)

SOFTWARE REQUIREMENTS

- Windows Server 2012 + IIS
- Microsoft SQL Server 2012

USER APPLICATION

SPECIFIC DISPLAYS

- Network map
- Network schematic
- Site map
- Device status
- Fuel cell status

CUSTOMIZABLE PERIODIC REPORTS

- Grid outages
- Power generation
- Fuel cell performance
- Hydrogen consumption
- Maintenance schedules

ALERTS

- Fuel cell status & performance
- Grid status
- Low fuel
- Unauthorized access
- Excessive temperature

SUPPORTED PLATFORMS

- Windows PC
- Android/iOS tablets
- Android/iOS/Windows phones

SECURITY

- System administrator
- 4 user levels

DEVICE DIAGNOSTICS

- Fault description & corrective actions
- Event log
- History & history

KEEP RUNNING. NO MATTER WHAT.™

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