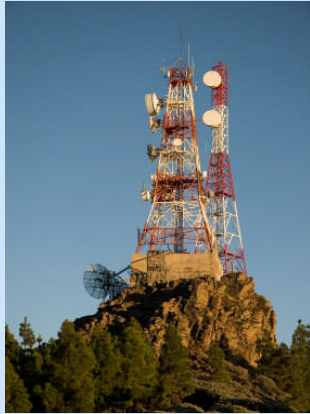


## Case Study 30668 – Telecoms, Mobile



**Customer:** China Unicom, China

**Background:** China United Network Communications Group Co.,Ltd ("China Unicom") was officially established on 6 January 2009 on the basis of the merger of former China Netcom and former China Unicom. It has subsidiaries in 31 provinces (autonomous regions and municipalities) across China and many countries and regions around the world. It is the only Chinese telecom operator listed on the stock exchanges in New York, Hong Kong and Shanghai. As of the end of 2008, the total assets of the Company reached 500.09 Billion Yuan and the number of employees stood at 463,000.

By the end of 2008, China Unicom had 273 million subscribers, among which the broadband subscribers totalled 30.16 million, GSM subscribers 133 million and fixed-line (including PHS) subscribers 109 million. China Unicom was among the Top 500 in the world in terms of its revenue, and ranked in the top of the world leading telecom operators in terms of its customer base and market capitalization of its listed company.

**Problem:** GSM mobile communication base stations located in remote mountain areas where grid voltage is unstable and lightning strikes are common. Logged recordings of the power quality over 14 days in 2003 showed 3 Phase voltage dipping below 300V. This unreliable voltage supply coupled with frequent lightning strikes created repeated equipment failure and call disconnections. This resulted in poor service to subscribers and high repair and maintenance costs. The problem was exacerbated by the remoteness of the locations and repairs were delayed for several days and sometimes weeks due to bad weather conditions. The failure of the base stations and the resultant loss of service to the subscribers had a devastating effect of the local area as many totally relied on mobile phones as their only means of communication to the outside world.

**Solution:** **IP22 20KVA PropSava 3 Phase Power Optimisation SCR System** – Input Voltage 380V  $\pm$  30%, with output regulated at 380V  $\pm$  5%; C-level anti-surge lightning suppressors; EMC anti-high-frequency interference filters; automatic power-on; over and under-voltage protection; phase sequence protection; over current protection with automatic by-pass system. 400 **PropSava** units have been installed to date with another 500 planned over the next 18 months.

**Effect of installation:** Where the PropSava Systems have been installed, equipment failure due to low voltage and lightning strikes, with resultant loss of service, has virtually been eliminated. Continuity of service is highest in 4 years; and maintenance costs for the 400 installed **PropSava's** is 21% less than the other mountain base stations.

## Case Study 30668 – Mobile Telecoms

**Customer:** China Unicom, China

### **Power Optimisation - Reduced Maintenance and Longer Life for all your Equipment:**

By allowing electrical equipment to operate at a higher than manufacturer specification of voltage leads to significantly higher energy consumption, increased heat losses and a reduced life span.

Whatever the value of the incoming voltage into your site, whether it is **over** or **under** voltage, the **PropSava Power Optimisation System** will always tightly control the output voltage. It is this powerful and rapid regulation of voltage, coupled with high quality components and build that delivers the significant protection to site equipment; with power and cost savings; and reduction in CO2 emissions.

### **The Reason for Ever Increasing Changes in Voltage Levels:**

Over and under voltage is generally a chronic problem aggravated by a number of factors beyond the end user's control. Electric utilities try to maintain voltage levels delivered to customers at  $\pm 5\%$ . However, factors like weather, high demand and others can cause the utility voltage to fall within a  $\pm 10\%$  range. Even under ideal conditions, most customers will see a drop in utility voltage levels over the course of the day.

Distribution system characteristics can also contribute to chronically low voltage situations. For example, customers at the end of a long distribution line may be subject to a permanent voltage drop due to line losses on top of the utility voltage variations.

### **Protection**

All **PropSava single and 3 Phase Power Optimisation Systems** have a surge arrestor fitted as standard. Surges are short-duration peak voltages – i.e. transient voltages – existing for only milliseconds; but can measure thousands of volts.

In the commercial sector, lightning or power surges cause 45% of electrical equipment damage. Overall, 28 out of 100 cases of damage to electronic equipment are caused by surges. Surges are by far the most frequent cause of damage.

### **Lifecycle and Warranty**

All **PropSava Power Optimisation Systems** are built for 20 – 40 year lifecycle, and warranted against failure for up to 10 years.

**Find Out More – <http://www.vanguardspower.com>**

If your company wants to:

- Reduce your power and electricity costs;
- Increase the life cycle of your electrical equipment;
- Reduce the cost of equipment maintenance and repairs;
- Reduce you CO2 footprint

**Call us today for a quotation or the name of your nearest Distributor**