

iSCADA applications - FAQ

Q1. What are the possible applications of iSCADA

- A. Based on an industrial SCADA design concept, iSCADA is capable of monitoring and controlling virtually any mechanical and electrical system that is SCADA-ready (availability of a volt-free or "dry" contact). iSCADA is also capable of reading analogue and pulse inputs directly from most industrial sensors giving a 4-20mA or 0-5VDC output. Typical applications are monitoring of building services including security, fire safety, lifts, centralized air-conditioning systems, etc. Other applications include management of flood control systems, traffic lights, telecommunication facilities, public utilities, campuses, data centers, power fences, and even homes.

Q2. How does iSCADA differ from other monitoring solutions?

- A. Most traditional monitoring solutions are point-to-point. iSCADA is a 100% end-to-end Internet based solution. This is the fundamental difference, and the architecture upon which iSCADA is built is protected by a US patent pending application.

Q3. How does this fundamental difference translate into benefits for the customers?

- A. The iSCADA architecture has many advantages: -

(1) Cost of data transmission.

Since all communications between devices, server and users are Internet based, this translates into the lowest cost compared to all other systems. Devices can be placed anywhere in the world, and users can seamlessly communicate with their devices from any Internet connection.

(2) Consolidated information

Since all data is stored in a central database in the Internet, users have global access to consolidated data from many systems or locations. In point-to-point systems, data resides in a particular physical location (typically a control room), and access is restricted.

(3) Universally accepted User Interface

Web-based solutions like iSCADA have a universally accepted, familiar and user-friendly Graphical User Interface (GUI). This takes the complexities out of sophisticated engineering solutions, and places information in the hands of managers and other decision makers. It also flattens the learning curve for engineers.

Due to its low cost and ease of use, iSCADA is considered as the "SCADA solution for the masses".

Q4. Do I need iSCADA if my building already has a Building Automation System (BAS)?

- A. The BAS is designed to provide local control and monitoring at that particular building. If you are managing only one building, then the BAS may be sufficient, provided that BAS has the capability of Internet access and mobile delivery of alerts. However, when remotely or centrally managing multiple buildings with BAS, iSCADA plays the crucial role of consolidating data from all buildings into a common interface. Users can access consolidated information from a single login to the iSCADA server instead of making separate connections to each BAS in each building in turn.

Q5. How does the BAS and iSCADA communicate?

- A. The BAS is designed to handle large amounts of data at very low level, mainly for the purpose of closed loop control, like turning off lights when no occupants are using a particular space. The iSCADA system does not interfere with these low level local control functions. What the building owners and maintenance managers require are high level alerts and notifications. These are usually provided by the BAS through volt-free contacts, which can be picked up very easily by the iSCADA system.

Q6. What about GSM based monitoring solutions that are able to send an SMS to the user when there is an alarm at the appliances being monitored? Aren't these systems more cost effective and efficient?

- A. SMS is a connectionless communication means. The sender of the SMS has no way of knowing that the recipients has received the message. To depend on SMS as the primary means of data transmission reduces the overall reliability of the system. iSCADA uses a SMS only as one of the secondary means of data transmission, mainly for mobile alerts. The primary data transmission is achieved by an online connection with handshaking protocols built-in to ensure the data is successfully transmitted.

Most SMS-based solutions send out SMS alerts directly from the field equipment. When there is a power failure, communication network failure or device hardware failure, the user will not be able to receive any SMS, even when the monitored assets have a failure event.

Q7. But GSM or PSTN based system can also make online connections instead of relying on SMS for data transmission. Wouldn't that solve the problem?

- A. For point-to-point GSM systems to make an online data connection to a central receiver or control station would incur higher call charges, especially if the distance between the device and control center is large. iSCADA is not limited by geographical barriers.

Even if long distance communication costs are not factored in, point-to-point systems like this is not easily scalable. For example, for a control station or receiving station to handle 10 simultaneous online connections from the field devices, it requires 10 receiving circuits or modems. Otherwise, there'll be many busy signals when devices attempt to connect. iSCADA is highly scalable and not limited by simultaneous connections. It has been designed and tested to thousands of concurrent connections.

Q8. What then are the limitations of iSCADA?

- A. The primary limitation of iSCADA is the average system response time. Since it relies on the Internet as the primary means of communication, it is not able to achieve the fast response times required by some applications. For example, traditional SCADA systems can guarantee response times to several milliseconds, especially when dedicated communication infrastructure like fiber optics are available. iSCADA's response time is about a minute when offline while using a dial-up connection and between 2-4 seconds when online or using an always on-connection like broadband or GPRS.

However, in most applications, these response times are adequate, and to use a system with a better response times would be an "over-kill".