



Frequently Asked Questions

What is EXTEND7000?

EXTEND7000 is a mobile middleware application that allows any SCADA and maintenance system to be extended onto any mobile device. It consolidates work orders from different fixed systems into a single mobile User Interface, which allows a user to monitor and access multiple sources of information from multiple SCADA and maintenance systems, remotely, in real-time.

Once installed, technical staff and engineers can proactively manage multiple automated systems from any location using existing WiFi or GPRS connectivity and a mobile device. System failures are quickly detected and resolved, long distances travelled by staff in large industrial complexes are reduced, unplanned system downtimes are eliminated and resources can be used in the most efficient, productive way possible.

How does EXTEND7000 work?

It routes information between Programmable Logic Controllers (PLCs) and mobile devices, applying additional logic to users, user groups, user rights, message filters, escalation schemes, and team workflows.

EXTEND7000 alerts and notifications differ from ordinary SCADA system alerts, which appear in a random way on control room monitors. Instead EXTEND7000 alerts, prioritised by severity and urgency, are allocated to the right engineers according to their existing workloads and availability. All this happens in real time from a mobile device on the shop floor. Information to fix a fault is instantly available and time-consuming allocation of on-site personnel by the control room via phone or text message is eliminated.

What are the primary benefits?

Increased efficiency and productivity, better resource utilisation, workflow management and service levels. Decreased unplanned downtime, lower costs and fast return on investment.

What mobile devices does it work with?

Any standard smartphone, tablet or Windows mobile device.

Who could benefit from using EXTEND7000?

Any organisation using SCADA to control automated processes operated by Programmable Logic Controllers (PLCs) or as part of a maintenance system.

What performance improvements can I expect to see?

It varies with each installation but we suggest the following as a starting point:

- 38 - 60% reduction in unscheduled downtime of systems and machinery
- 10 - 25% improvement in service levels and staff productivity
- 50% improvement to resource utilisation levels and workflow management
- No further need for a control room with fixed monitors/visualisations.

How long does it take to implement?

It depends on functionality, complexity, scale and the number of SCADA processes being monitored. Elapsed implementation time to be fully operational including training can range from a few days to weeks.

Is there a risk of additional downtime when integrating/commissioning EXTEND7000?

No. When integrating EXTEND7000 none of the existing systems need to be touched, shut down or changed. The system connects to the Network as an additional client without the need to install software on PLC or SCADA servers.

In addition to full SCADA functionality, what remote functionality does it offer?

- Notification escalation, team workflows
- CCTV access for visual monitoring
- Monitoring and control
- Access to documentation and information
- Trending, logging and reporting
- Creating work orders on the go
- Access to technical data and resources
- Editing work orders

Can EXTEND7000 monitor systems other than SCADA? What about IT Systems?

Yes. Many existing customers connect EXTEND7000 to existing monitoring software. E.g. Volkswagen's IT department monitors hard drive capacities, processor usage and firewalls. The open architecture of EXTEND7000 means it can interface with almost any system easily, bringing the advantages of creating a general gateway between fixed and mobile workspaces.

Why would I use EXTEND7000 when our SCADA system has a mobile solution too?

There are two good reasons. Firstly, most 'mobile' SCADA solutions are browser based and cannot deliver the reliability, security and quality of service of a proprietary mobile client/server application like EXTEND7000. Secondly, as automated systems become more widespread there is a need for additional redundancy. Since EXTEND7000 is also a stand alone, fully functional SCADA system, it will continue monitoring and controlling even if the primary SCADA system has a failure.

We work with all the SCADA software specialists who are experts at what they do. However mobility is not their core business whereas SCHAD is a company 100% focused on mobile solutions. This is why SCADA providers regard us as SCADA mobility experts.



We run automated systems in different geographical locations. Can EXTEND7000 consolidate multiple SCADA systems?

Yes. This functionality is important for optimising human resources. SCADA engineers are highly trained professionals with specific knowledge not widely available. EXTEND7000 ensures these specialists are fully utilised and receive notifications regardless of location.

How scalable is EXTEND7000? We had scalability issues with existing SCADA solutions?

EXTEND7000's architecture allows for unlimited scalability. The system can be installed on multiple servers to distribute the workload and since virtual server systems are also supported, handling efforts are minimised. State of the art user interfaces and automated 'systems import' routines ensure EXTEND7000 can adapt to rapidly changing or growing systems.

How do you tackle the issue of redundancy?

There are two sides to this question. Firstly EXTEND7000 provides valuable redundancy to existing SCADA systems. In the event of failure, EXTEND7000 will continue running and takes over as the SCADA lead. Secondly EXTEND7000 itself can provide high availability. In this case it is configured in redundant mode on high availability standards. This means if EXTEND7000 should fail, a backup system will take over management of the monitoring control and maintenance operations.

I can't see how my existing operations can be improved with EXTEND7000 - control room engineers talk to one another on mobiles anyway. What would be different?

A lot, because the system obviates the need for static control rooms and significantly improves resource utilisation. Consider the following example of what one customer experienced.

Customer Example

Before EXTEND7000: Life in the dark with ordinary SCADA

The Programmable Logic Controller (PLC) generates a timeout notification for a specific photo sensor. The on-site engineer notes the photo sensor needs replacing and leaves the control room unmanned to search for a part in the warehouse.

In the meantime, a new notification goes to the now empty control room but the engineer is not aware of it. After installing the new photo sensor, the engineer gets no positive feedback that the photo sensor fault had been effectively resolved, so he returns to the control room to check the monitors. Once in the control room, he finally spots the next notification, which requires his attention in a completely different location. Off he goes again, leaving the control room empty and the alerts continue unnoticed.

With EXTEND7000: Real time information with mobile SCADA

After implementing EXTEND7000 alerts are sent directly to the appropriate engineer working on the shop floor. The faulty photo sensor notification is immediately sent to the responsible engineer's BlackBerry, allowing him to go straight to the spare parts warehouse without visiting the control room. Whilst carrying out the repair, he receives the second notification. Critically though, after a few seconds, he also sees an alert on his BlackBerry confirming another engineer nearby is fixing the problem. The fault gets resolved much more quickly. After completing the repair, the engineer immediately checks whether it was successful using his BlackBerry to test communication lines between the photo sensor, PLC and SCADA system. He can also delete/reset corresponding control instructions on the spot.



SCHAD GmbH was founded in 2007 by Christian Schad, with the aim of developing a global standard for the mobile operation, control and maintenance of automated systems using an ordinary mobile device.

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Vodafone Application
Award Winner 2010

Best machine to machine solution

BlackBerry Innovation
Award Winner 2010 and 2009

Transforming enterprise business performance

RIM Finalist
Wireless Leadership Awards 2008