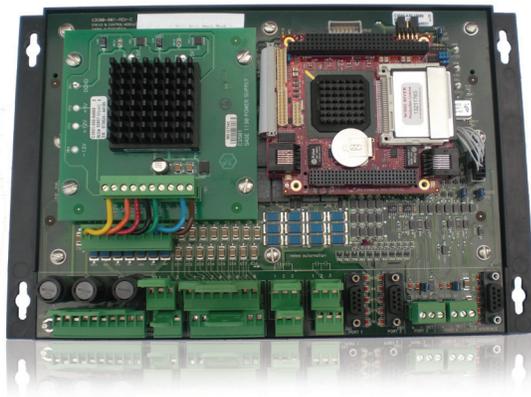


Sage Cost of Ownership

Designed to provide maximum value and return on investment



Make the most of your energySM

Schneider
Electric

Sage Cost of Ownership

It is important to make sure your investment is protected and it only makes sense that the total Cost of Ownership be part of any decision making process.

There are many variables that go into the cost of ownership and some of them can be difficult to quantify with specific numbers, however, when it comes to SAGE, we designed it from the ground up with features that maximize its total Cost of Ownership. The SAGE Substation Automation Platform takes into account eight important factors: ease of use, reliability, flexibility, upgradeability, design suitable for the application, minimizing maintenance and training requirements, and reduced spare parts.

The SAGE Smart RTU (SRTU) is the fifth generation of product designed by Schneider Electric. The current design leverages all the things we have learned and all the experience we have gained from building devices for the Electric Utility industry for nearly 40 years. The electric substation is not the most benign environment in the world. In fact, for electronic equipment is it likely the worst. Equipment intended to survive in the electric substation needs to be designed specifically for this harsh environment. The first Schneider Electric RTUs were installed in the early '70s and we have more than 16,000 units operational in the field today. So Schneider Electric has extensive experience with units that "live" in the electrical substation environment. All our equipment is designed to meet the IEEE surge and fast transient specifications and they have a long track record of excellent "survivability." This is important because the most noticeable Cost of Ownership is the money spent on units that fail. Units that don't fail as often are cheaper to own. Units that keep working in the substation when an electrical storm is passing through and switching operations are commanded are units that are available when they are most in need. What is the cost of having a unit fail at this most critical time and not being able to perform those desired functions through SCADA? How much does it cost to repair or replace the unit? How difficult is it to get the spare installed and running?

The SAGE SRTU is designed specifically to be easy to use. One of the biggest costs aside from the actual cost of the hardware is the time personnel spend programming and configuring the unit. Whether it is the initial configuration or replacement of a unit that has failed for whatever reason, this time is certainly a big factor in the Cost of Ownership equation. There is no more intuitive and easy to use interface in the market today than that of the SAGE SRTU. Schneider Electric has focused on making the user interface of the SAGE SRTU the most user friendly and intuitive interface available. Everyone who has seen our interface readily concedes that it is very easy to use. Ease of use translates to less time spent on configuration and programming. Less time translates to lower Cost to Own.



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Tightly related to ease of use is the issue of training. Complicated and difficult to use equipment requires more frequent and intense training to make the equipment operational and maintainable. Equipment that has a high degree of functionality but is difficult and time consuming to implement doesn't get utilized fully and wastes valuable man hours. Because the Schneider Electric user interface is so user friendly and intuitive there is a limited need for training. Less training not only translates to lower Cost of Ownership but also allows maximum use of personnel. If a device is easy to use, more personnel can actually be expected to use it and therefore the need for "Experts" to get the job done is reduced or eliminated. Many Schneider Electric users have received no formal "Training" and can program and configure the equipment with a high degree of confidence even after extended periods of not having used the equipment. This is especially important for devices like the SAGE SRTU's that are typically installed and commissioned and then in operation for many years without users interaction.

Maintenance on the SAGE SRTU is virtually non-existent. There are no moving parts and no calibrations required. There are no annual maintenance requirements which certainly factor into a reduced Cost of Ownership. Additionally, all the software functions are evergreen. As new features and functions are added to the SAGE SRTU's, they are available to the entire user community free of charge. As new applications that provide enhanced functionality or that solve user problems are added to the product, these upgrades are free and easily obtained off the Schneider Electric user extranet.

The SAGE SRTU's are more than communication processors. While they have all the functionality expected from devices in this class, they also have all the functionality of traditional Remote Terminal Unit. Physical I/O is available on SAGE SRTU's that allow them to take over the I/O of obsolete RTU's or RTU's that are becoming difficult to maintain. It is not uncommon for new circuits to be added to existing

substations where the existing circuits are not slated for upgrade to state of the art IED's. In these scenarios, the SAGE SRTU's can easily absorb the legacy I/O of the obsolete RTU while also performing the Comm Processor or gateway role. A reduced number and type of units required to perform all needed functions translates to reduced Cost of Ownership.

The SAGE SRTU's may allow for reduction of traditional spare parts. The proven reliability of SAGE product design translates to fewer failures which means fewer boxes are needed to maintain an adequate spares pool. While hardware is somewhat of a commodity, having a unit that has maximum flexibility in capability and in the roles it can fulfill, certainly impacts the total Cost of Ownership. The SAGE SRTU not only can fill the role of communications processor or gateway but also the role of a traditional RTU all in one easy to use package. When used in this way, the number of parts needed to maintain overall spares pools in the system may be reduced. Also reduced is the knowledge required by personnel to install, commission, and maintain the equipment when it operates, looks, and feels the same and is easy to use.

Finally, the SAGE SRTU's are designed for future growth. They are designed with an easy to upgrade CPU module that allows for a cost effective upgrade of the units overall capabilities. Nobody knows exactly what the future holds but the best guess is that the kinds of changes one might anticipate will involve faster communications, more IED data and the need to perform more processing at the substation level. All these things are processor related and can easily be handled with upgraded CPU speed and expanded memory. The SAGE design has already proven the viability of CPU upgrades with minimal impact on the cost and time involved to perform such an upgrade. By providing an easy upgrade path into the future, the SAGE SRTU's certainly provide optimal product life and Cost of Ownership value.

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