

## Webinar “Asset Optimisation for Offgrid Projects using advanced performance analytics”

### Q&A

#### Answers by Reuniwatt and Studer-Innotec

### PRODUCT DETAILS

**Q. Do satellites nowadays have a better grid resolution than the old NASA satellites? And how well are they maintained - can we be sure to get good data?**

**A. Reuniwatt:** The different space agencies across the world launch and operate generations of meteorological satellites. With each new generation of satellites come new features, such as improved grid resolution (from several km down to 500m) and more frequent data acquisition (from one image every hour or so to one every 10 minutes). So yes, satellite nowadays clearly have a better resolution compared to the old ones. In any case, Reuniwatt works with the most reliable satellite image sources from renowned agencies (the European Organisation for the Exploitation of Meteorological Satellites – EUMETSAT –, the Japan Meteorological Agency – JMA – and the National Oceanic and Atmospheric Administration – NOAA). Each one of the satellites we use has another satellite as a backup in case the former malfunctions or suffers a failure. At Reuniwatt, we use the most recent generation of satellites available on the market. The next one that will be available will be EUMETSAT’s Meteosat Third Generation (MTG), at the end of 2022. It will be the most complex and innovative geostationary meteorological system ever built, delivering at least 50 times more data than Meteosat Second Generation (MSG). With MTG, the images of Europe will be delivered every 2.5 minutes, vs every 5 minutes for MSG, while the images of the full disc (Europe and Africa) will be delivered every 10 minutes vs every 15 minutes currently. The spatial resolution will go down from 1-3km to 0.5-2km, depending on the location.

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**Q. What about shadows of trees, houses, mountains etc. on a specific GPS point – Does SunSat™ take this into account?**

**A. Reuniwatt:** Reuniwatt’s proprietary algorithm SunSat™ generates estimations of solar irradiance received on the ground using cloud cover information and meteorological data; it does not take into account topographic characteristics and the elements surrounding the plant.

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**Q. Is raw data sufficient data? Where are its shortcomings?**

**A. Studer:** In our Studer monitoring data we use a 1-minute resolution for the logfiles. For carrying out an energy assessment as the one showcased in the mountain hut it was more than sufficient. The minute power profile is good to understand the load’s behaviour and switching. The quarter and day means are good for load overview. The monthly/yearly data is used for long term energy comparisons and trends and the min and max values are used for transitions and troubleshooting. A higher resolution in seconds will allow advanced troubleshooting and demand analysis,

especially with peak power, starting peak power for big machinery and other advance power management. But it would require enormous amounts of data/memory. Record the max/min of the minute can already help and stay reasonable in terms of size of log file. For future developments a higher resolution could be interesting for services like NILM, automatic identification of loads.

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## **COSTS & BENEFITS**

### **Q. Who is the typical customer for your services?**

**A. Reuniwatt:** Reuniwatt supports PV projects at each step of the power plant's lifecycle, from the site identification to the sale of a solar power plant. Our customers range from hybrid project managers to EPCs, IPPs, PV plant operators...

**A. Studer:** We supply high end power electronics for battery-based systems worldwide, for several applications including offgrid, backup, minigrd/rural electrification, self-consumption with battery, mobile applications, and more. Our typical customers are distributors, system integrators and professional installers. Our monitoring portal is used by our professional customers to provide further services to their end-customers. Our Phone App is used by end-customers to follow up their systems.

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### **Q. What are the limitations of your service? Is it affordable for rooftop sites?**

**A. Reuniwatt:** The greatest advantage compared to in-situ instruments is that there is no need to install anything on site: the estimation is hardware-free. The limitation of our service would be the fact that data acquisition depends on the satellite data's availability (every 5-15 minutes) rather than every minute or less with a ground instrument. However, our service provides irradiance estimations with an accuracy similar to that of pyranometers at the month scale.

**A. Studer:** For advanced monitoring of your system especially integrating other components and external elements, you will need an additional energy management system like, for example, the one provided by Odyssey. You could then add some forecasting elements as well from Reuniwatt using Odyssey EMS to centralize all the information. The cost of such advanced systems is negligible compared to the savings obtained in terms of O&M.

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### **Q. When is your system most beneficial to the client? For portfolio managers? When there is a specific issue?**

**A. Reuniwatt:** Our solution adapts to different scenarios: from micro- and off-grid projects to assets portfolios. It aims at monitoring the performance of PV plants, so whether you heavily rely on PV production (for off-grid sites for example), or fear that you are not producing what you had expected (large PV power plants or a portfolio of assets), this solution will provide irradiance estimations which will let you understand if your plant is behaving as it should. Noticing that it is not producing as much as expected is valuable information, but also making sure it is working correctly is in itself a useful and important check.

**A. Studer:** For operators or owners looking to have an overview of the system during its lifetime. Portfolio managers managing different systems will benefit from advanced monitoring systems. Mountain huts with several energy elements, rural electrification projects, industrial energy systems, are some of the applications.

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**Q. Do you provide your solutions worldwide?**

**A. Reuniwatt:** Yes, SunSat™ live is available worldwide. We currently have projects on all continents.

**A. Studer:** Our products are sold worldwide through a vast network of partners. You can find the list here: <https://www.studer-innotec.com/en/partners/>

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**Q. What is the cost of SunSat™ live? Is it available for a specific location?**

**A. Reuniwatt:** The cost of SunSat™ live is in the EUR 100 range per year per site. The price depends on the number of sites in the perimeter, but also on the expected variables (GHI, GTI, DNI, DHI, Temperature, Wind Speed, Albedo...)

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**Q. What is the percentage of additional fuel saving achieved with your system?**

**A. Studer:** Around 33% reduction in the working hours of the generator for the showcase in the mountain hut. The quantity bought each year has decreased from 645 litres to 400 litres.

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## OTHER QUESTIONS

**Q. Is the Tracuit mountain hut one of your projects? If not, where do you supply similar offgrid systems?**

**A. Reuniwatt:** Reuniwatt has worked on several off-grid projects in Latin America, Africa, Australasia.

**A. Studer:** Tracuit mountain hut was installed by one of Studer's clients. Offgrid.ch was the company in charge of the energy assessment and improvement after a few years of operation. In Switzerland we supply similar offgrid systems with various partners, around the world we also have some other partners that supply such offgrid systems in high altitude (Nepal, Peru, Chile, Argentina, France, Italy)

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**Q. I am looking for the Reuniwatt/Studer responsible in my region. Who shall I contact?**

**A. Reuniwatt :** [Sarah Vadillo-Quesada, Business Developer](#)

**A. Studer:** [Pierre-Olivier Moix, CTO](#)

If you have questions concerning the content of this webinar you can contact our speakers [Joan Tarragó](#), [Sarah Vadillo-Quesada](#) and [Pierre-Olivier Moix](#) directly– we are happy to answer your questions !



For any other questions, be sure you will be forwarded to the right counterpart when contacting us here:

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