



SunSniffer[®]

Webinar pv magazine:

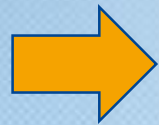
**Erträge zu niedrig? Zwei sichere Wege,
leistungsschwache Module zu identifizieren**

30. März 2017

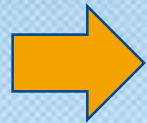
Interesse von Investoren:

- ➔ Gute Erträge
- ➔ Operative Kosten niedrig halten
- ➔ O&M Effizienz verbessern
- ➔ Ertragssicherheit der Anlage erhöhen
- ➔ Rechtzeitiges Erkennen von Fehlern

Wie reduziert man Schwachstellen?

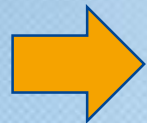


Ertragsminderung erkennen

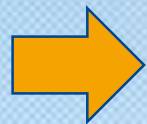


Dann: Schwachstellen finden

Anwendung zweier Methoden



Anlage: Cadolzburg, 100kWp, 510 Module

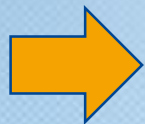


Methoden: IR-Drohnenüberflug vs. SunSniffer

ZAE

Was ist SunSniffer eigentlich?

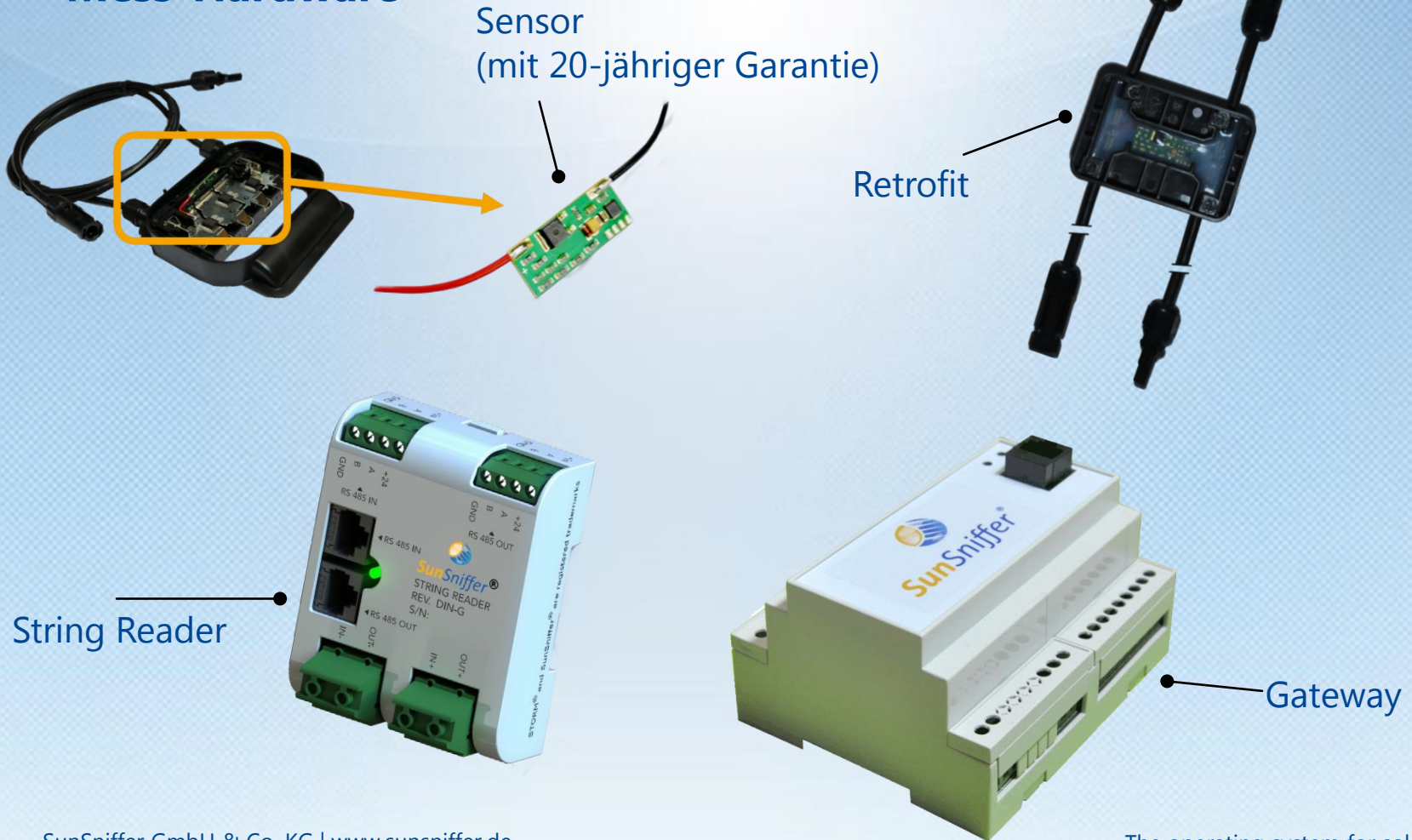
Was ist SunSniffer eigentlich?



Präzise Mess-Hardware
Modul, String und WR
in Verbindung mit
leistungsstarker Analyse-Software

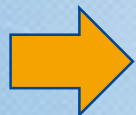
Was ist SunSniffer eigentlich?

Mess-Hardware

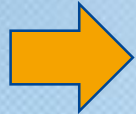


Was ist SunSniffer eigentlich?

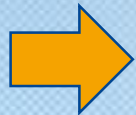
Software: Modulgenaue Anlagen-Analyse und -Management



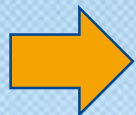
Erkennung aller Schwachstellen



Präzise Messungen in jedem Modul



Auswertungen mit **maschinellern Lernen**



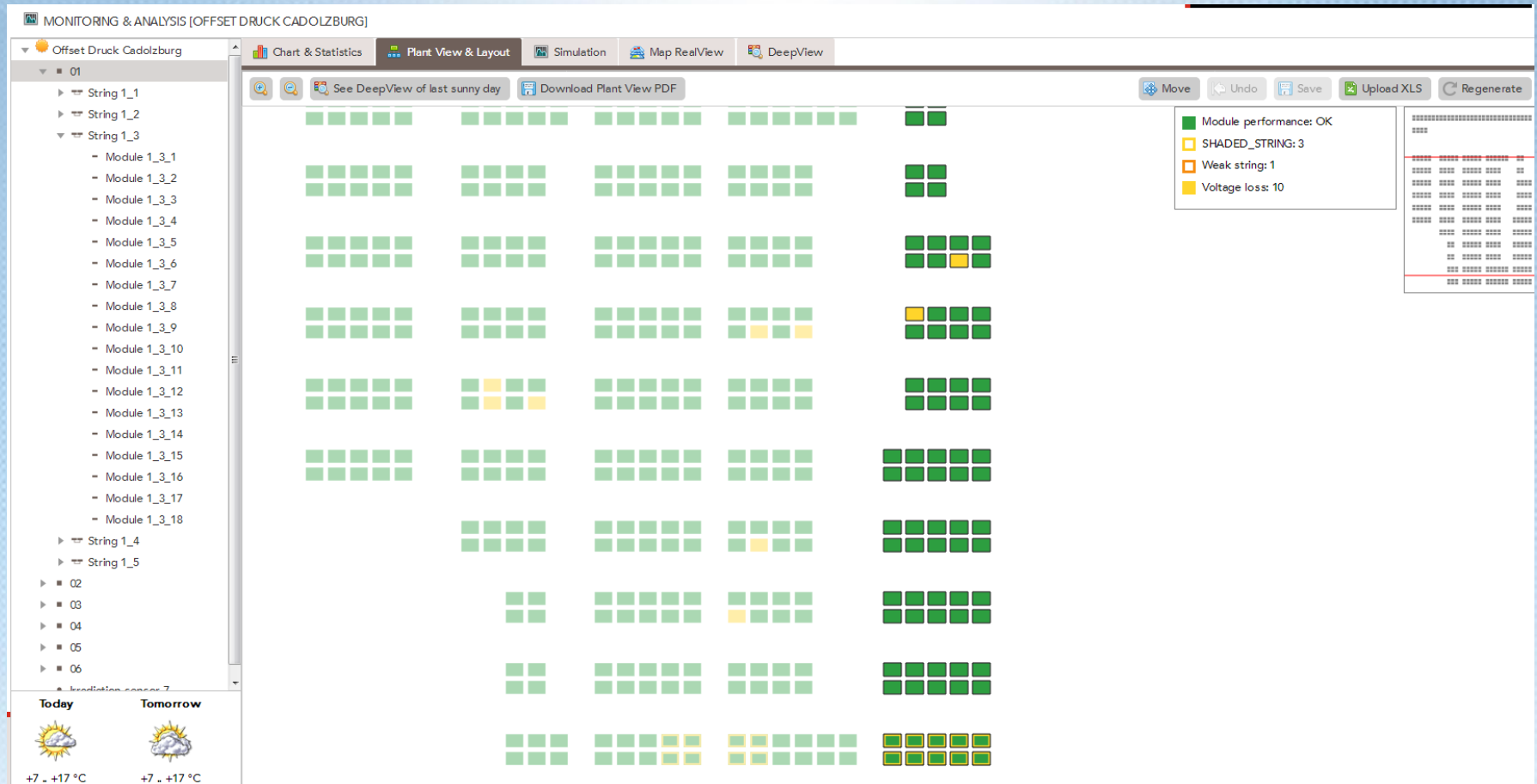
Klare **Handlungsvorschläge**

Das SunSniffer Webportal

SunSniffer: Automatisierte Analyse



Alles im Blick: der Plant View



Fehlermanagement

SunSniffer: Automatisierte Analyse

In der Übersicht erhält man Fehler und Warnungen aufgelistet:

<input type="checkbox"/>	Date	Plant	Item	Issue	Severity
- NEW					
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	String 5_2	Weak string	Error
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	3 strings(s) View	SHADED_STRING	Error
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	10 module(s) View	Voltage loss	Warning

SunSniffer: Automatisierte Analyse


Fehler-Detailanzeige; hier: Module mit Leistungsverlusten >10%

<input type="checkbox"/>	Date	Plant	Item	Issue	Severity
- NEW					
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 2_4_3	Voltage loss 43%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 4_3_2	Voltage loss 22%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 2_5_16	Voltage loss 13%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 4_5_9	Voltage loss 13%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 2_2_8	Voltage loss 13%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 4_4_1	Voltage loss 11%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 1_1_9	Voltage loss 13%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 4_5_8	Voltage loss 12%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 1_2_9	Voltage loss 41%	Warning
<input type="checkbox"/>	29.03.2017	Offset Druck Cadolzburg	Module 2_3_11	Voltage loss 11%	Warning

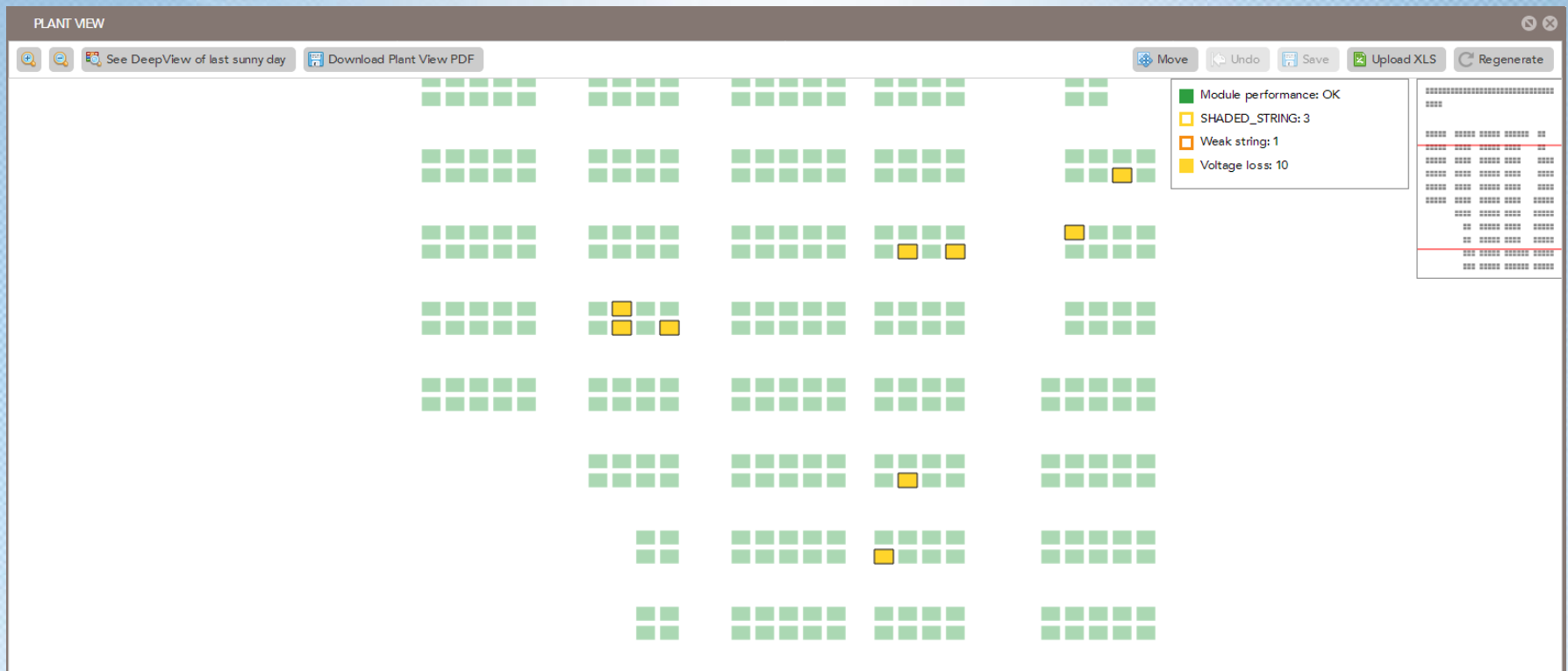
SunSniffer: Automatisierte Analyse

Anzeige der gewählten Fehler im Plant View

SEE ISSUES IN PLANT VIEW



SEE



Ein aktueller Spezialfall...

Anlage Cadolzburg

Im Plant View klar zu sehen

SEE ISSUES IN PLANT VIEW

SEE



The screenshot displays the 'PLANT VIEW' interface. At the top, there are navigation buttons: 'See DeepView of last sunny day', 'Download Plant View PDF', 'Move', 'Undo', 'Save', 'Upload XLS', and 'Regenerate'. The main area shows a grid of solar panels, some green and some yellow. A red circle highlights a specific area of the panel layout. A tooltip is visible over the highlighted area, containing the following information:

- Module performance: OK
- SHADED_STRING: 3
- Weak string: 1
- Voltage loss: 10

On the right side, there is a data table with a grid of characters representing the plant's performance data.

Anlage Cadolzburg

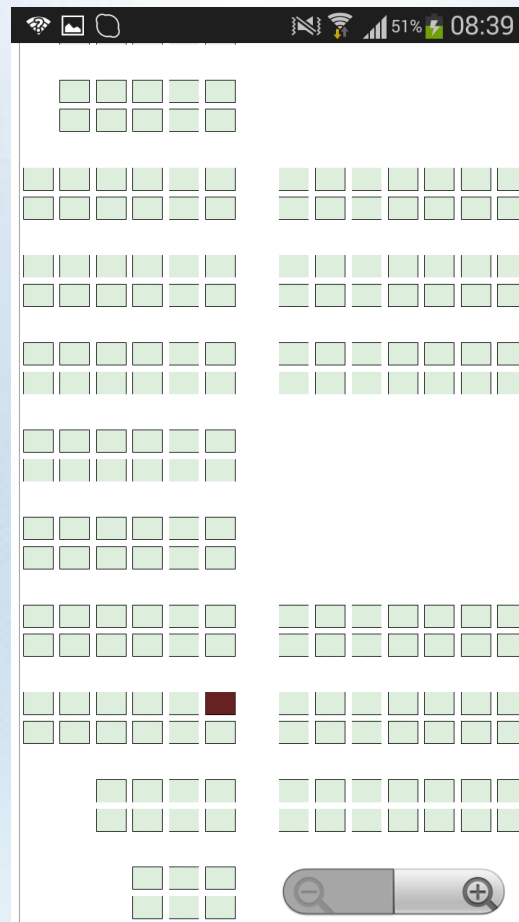
Seit kurzem eine besondere Situation:



Aktives Fehlermanagement im Portal

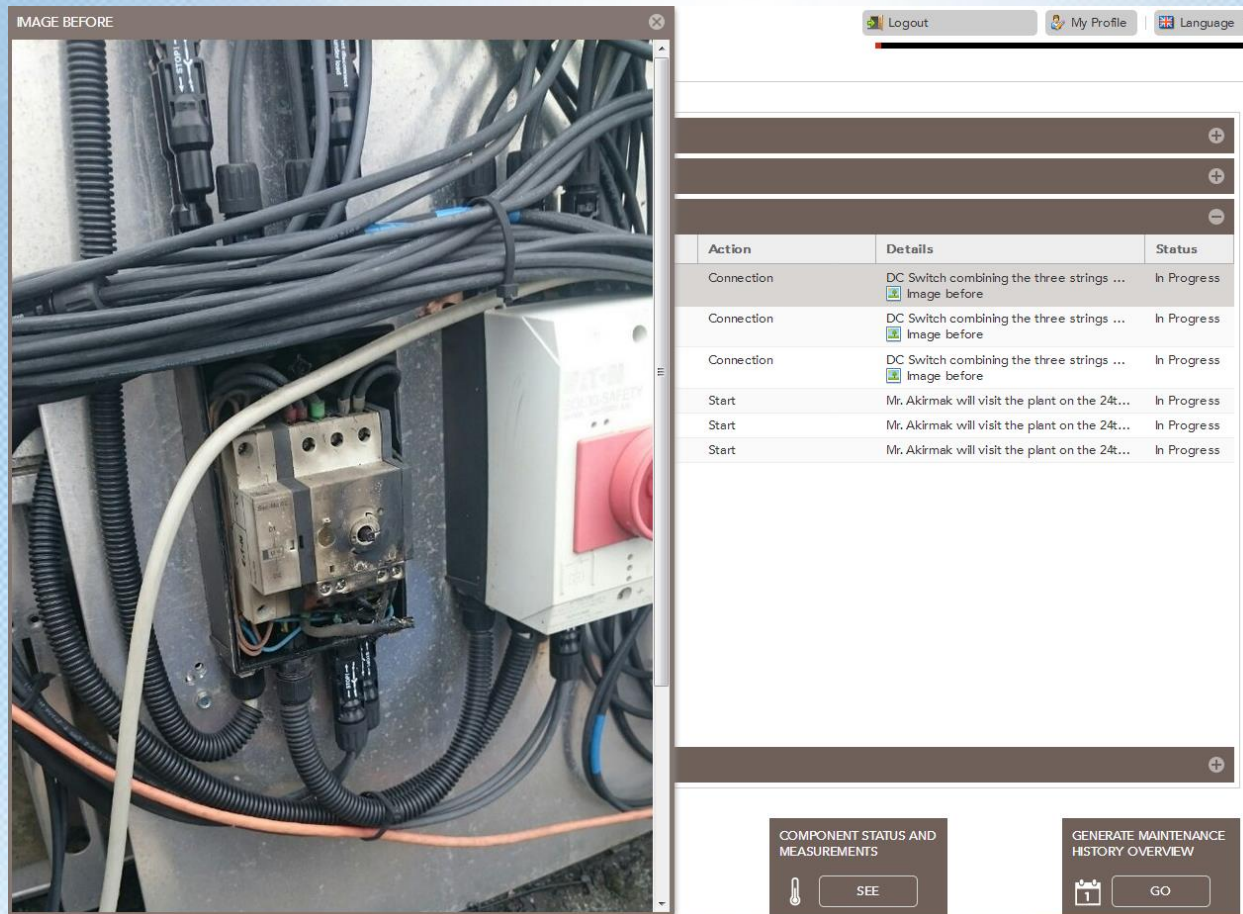
SunSniffer: Automatisierte Analyse

Die App für den Einsatz vor Ort



SunSniffer: Automatisierte Analyse

Bspw. hier: das Foto des Schadens



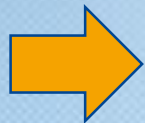
The screenshot displays the SunSniffer web interface. On the left, a window titled 'IMAGE BEFORE' shows a photograph of a DC switch with a red emergency stop button, surrounded by a dense bundle of black cables. On the right, the main interface includes a navigation bar with 'Logout', 'My Profile', and 'Language' options. Below this is a table with three columns: 'Action', 'Details', and 'Status'. The table contains several entries, including 'Connection' and 'Start' actions, with details like 'DC Switch combining the three strings ...' and 'Mr. Akirmak will visit the plant on the 24t...'. At the bottom, there are two buttons: 'COMPONENT STATUS AND MEASUREMENTS' with a 'SEE' button, and 'GENERATE MAINTENANCE HISTORY OVERVIEW' with a 'GO' button.

Action	Details	Status
Connection	DC Switch combining the three strings ... Image before	In Progress
Connection	DC Switch combining the three strings ... Image before	In Progress
Connection	DC Switch combining the three strings ... Image before	In Progress
Start	Mr. Akirmak will visit the plant on the 24t...	In Progress
Start	Mr. Akirmak will visit the plant on the 24t...	In Progress
Start	Mr. Akirmak will visit the plant on the 24t...	In Progress

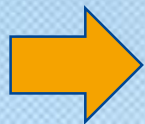
Nutzung und Bezug von SunSniffer

Wie kann man SunSniffer nutzen?

Zwei Möglichkeiten:



Nachrüstung



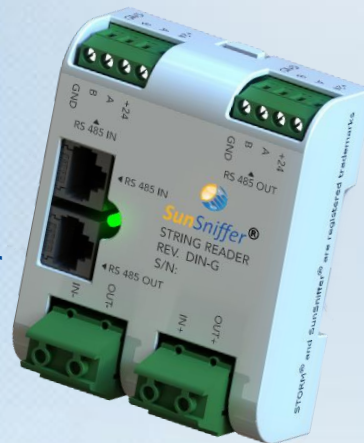
Neuinstallation

Wie kann man SunSniffer nutzen?

Nachrüstung:

1. Alle Strings mit SunSniffer String-Überwachung nachrüsten;
2. Alle Module oder nur Referenzstrings.

String Reader



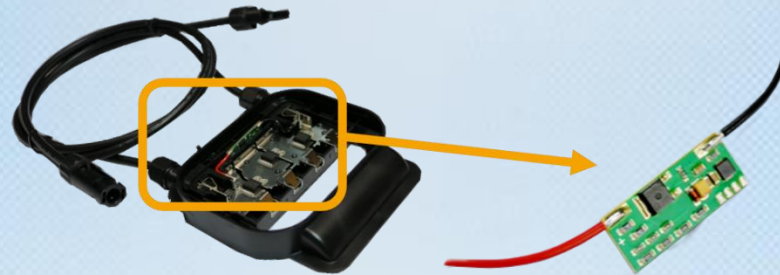
Retrofit



Wie kann man SunSniffer nutzen?

Neuinstallation:


- 🌀 Module werden mit integriertem Sensor geliefert
- 🌀 Spezifizierung der Anschlussdose bei Modulbestellung
 - ➔ Flasher-Daten werden vorab ins Portal geladen




Neu: Das Portal für Investoren


Neu: spezielles Investoren-Portal

PV PREDICTIFY


 Vince Dieter


Locher solar

 Locher Straße 61
90547 Stein
Germany

 20.000 modules / 5 mW
Sundragon i300-72P

[Panel map](#)

 Initial investment
€4.000.000



Last 30 days

Performance **75%** ▼
Avg. last 30 days

IRR **7.5%** ▼
last 30 days

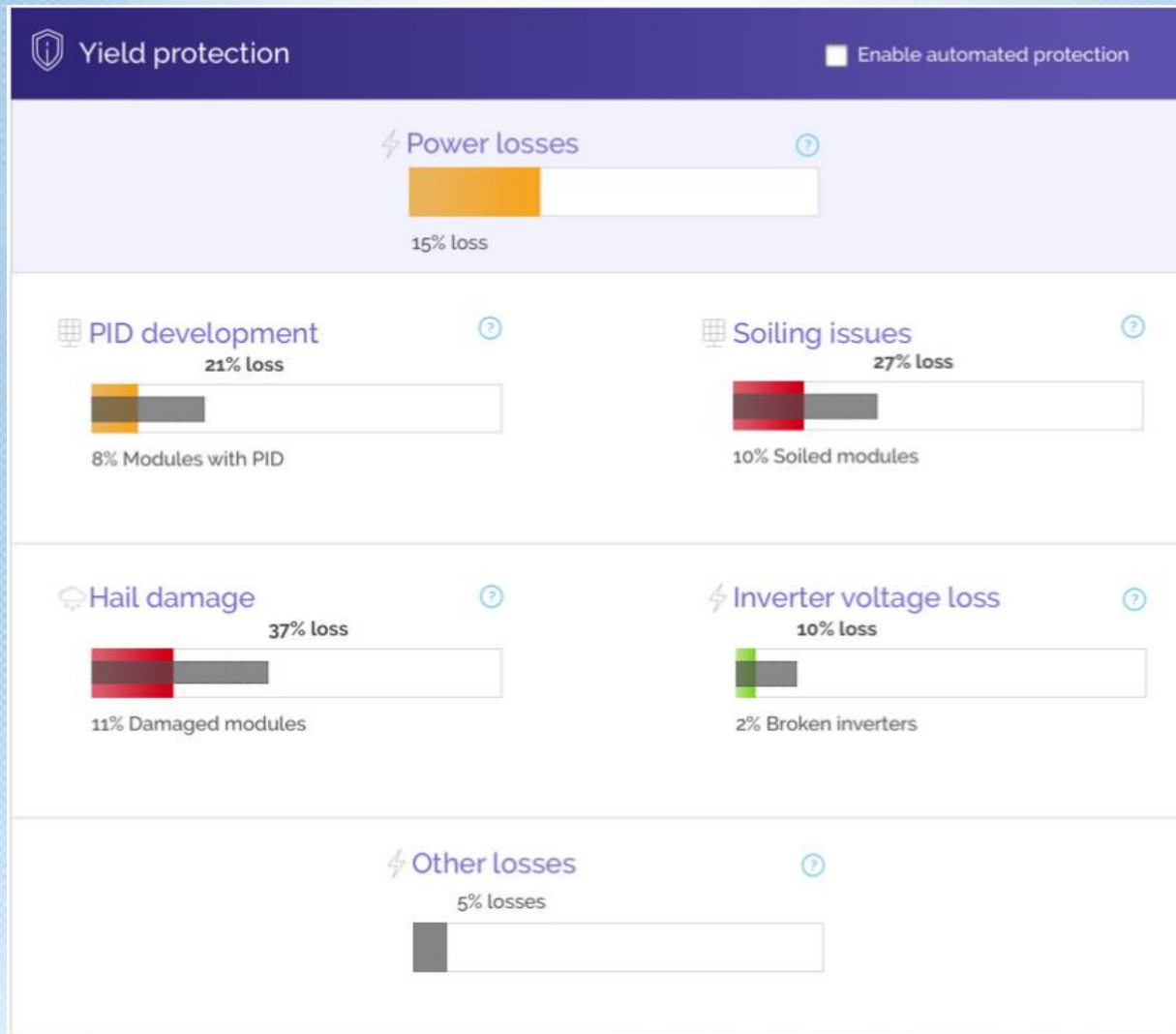
Earnings **€750k** ▲
last 30 days

Upcoming 30 days

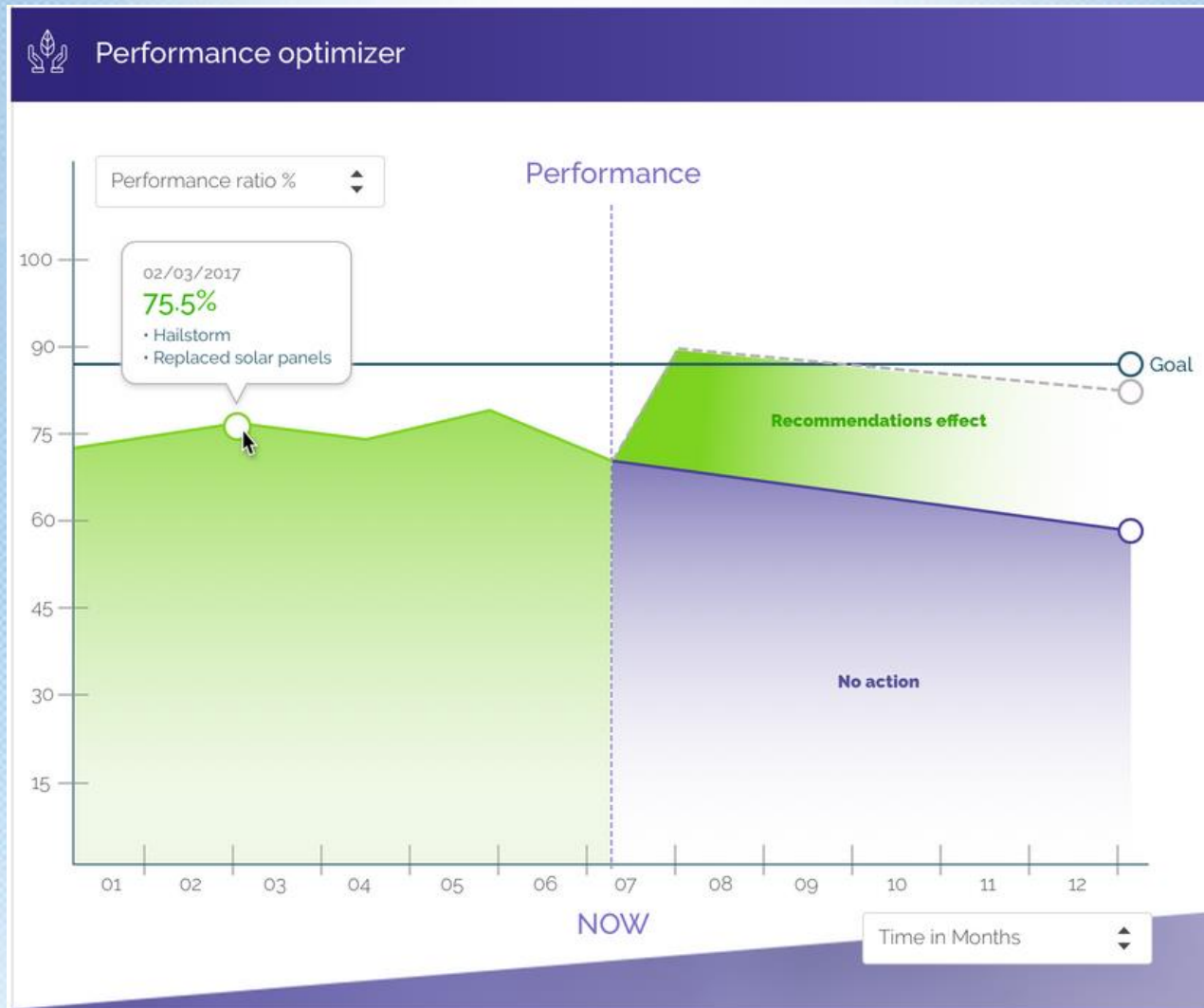
Potential revenue gain
€100k
Coming 30 days

[How to achieve this](#)

Neu: spezielles Investoren-Portal



Neu: spezielles Investoren-Portal



Neu: spezielles Investoren-Portal

Suggestions to improve your plant

Recommendation	Energy increase	Annual revenue effect	Investment costs	
<input checked="" type="checkbox"/> Cleaning total plant	5%	€37.500	€15.000	4 offers
<input checked="" type="checkbox"/> Cut grass total plant	4%	€30.000	€400	6 offers
<input checked="" type="checkbox"/> Apply AR coating	4%	€30.000	€75.000	2 offers

Previous improvements

Improvement	Energy increase	Revenue till now	Pay back period
Replace solar panels	5%	€5.000	6 months
Cleaning panels	2%	€20.000	1 year



Vielen Dank für Ihre Aufmerksamkeit!

Bei Fragen stehe ich Ihnen sehr gerne zur Verfügung:

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