SOLAR-CT
SOLAR CLEANING TECH

The future in solar cleaning

SolarPanelCleaning Robot SPWF06-V02-01

Technical Specification

SPWF06_TechSpec01
10.08.2023 * K/is

Product Brief

✓ **LABOURFREE CLEANING**

✓ **FULLY AUTOMATIC**

Fully automatic according to a set schedule or based on a Clean-On-Demand program

✓ **REGARDLESS OF ITS HEIGHT & WIDTH**

One robot can clean several hundred square meters of PV-Module area, regardless of its height and width within the limits

✓ **CENTRAL CONTROL ONLINE**

Central control Online, via GSM and BLE mesh network communication

✓ **COMPATIBLE TO ALL PV-MODULES**

Can be installed to all known PV-Modules mounting systems

✓ **HORIZONTAL & VERTICAL DIRECTION**

Fully enclosed Cables and Hoses in horizontal and vertical direction

Installation Systemcomponents

Supply Substation [SSS]

Slider horizontal upper [SHU] + Electronics

Rail upper + Endboxes

Washing Roboter Unit [WRU] in Parking position

Solarfield

Vertical Guide Mechanism [VGM]

Slider horizontal lower [SHL]

Rail lower
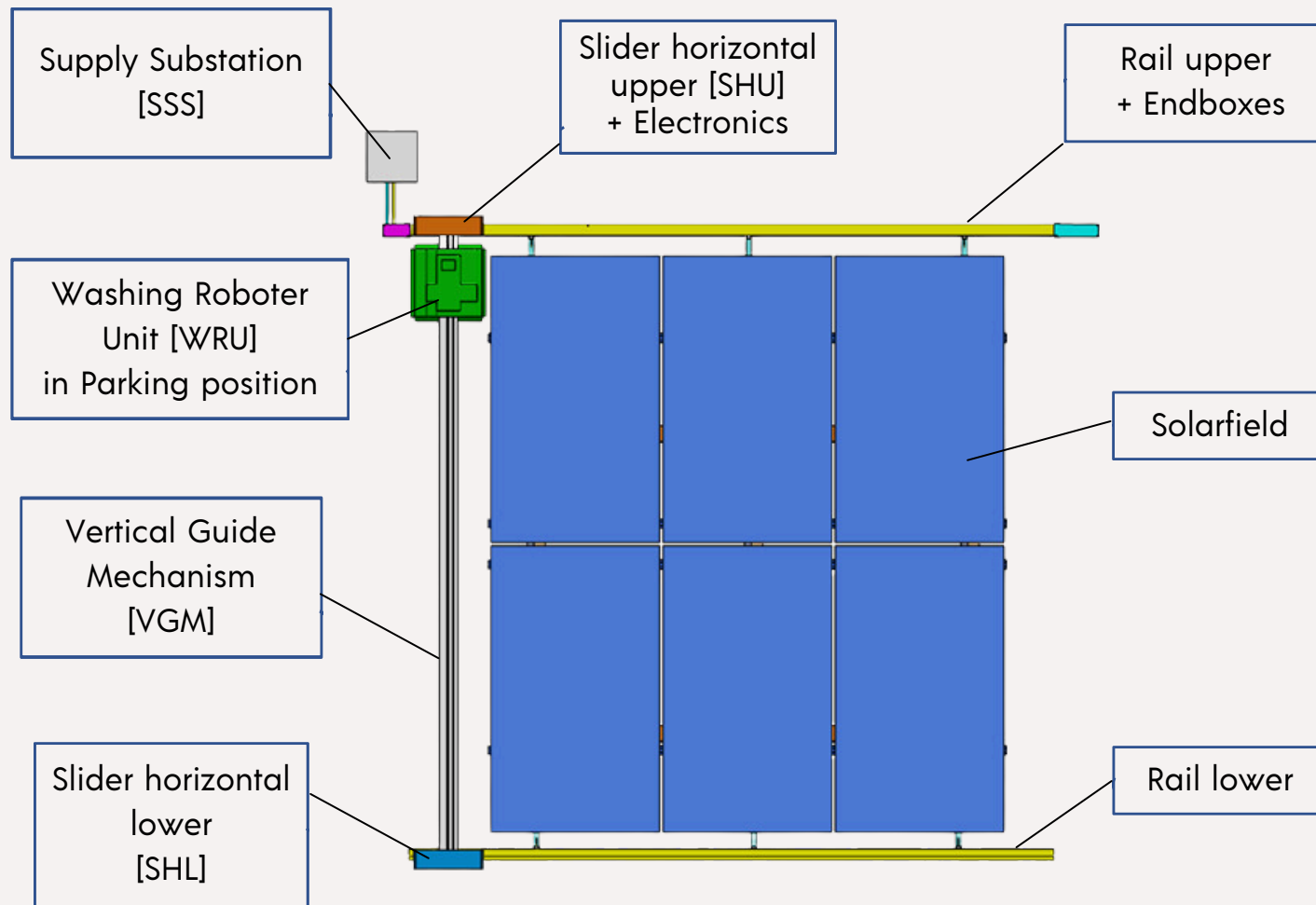
Installation Systemcomponents

- Cleaning robot unit
- Fixing brackets, upper and lower
- Rail profiles, upper and lower
- Protection profile, horizontal
- Slider horizontal, upper and lower, including Electronics
- Endbox parkside, left or right
- Endbox returnside, left or right
- Returnslider, horizontal

- Guide profile vertical
- Returnslider, vertical
- Synchronisation tube
- Cables
- Hoses
- Wires
- Brushes
- Fittings and Fasteners
- Installation tools and gauges
- Maintenance sets

Definitions

SOLARPARK

Complete Solar-Powerstation, including basic installations and any number of Solarfields

SOLARFIELD

Self-contained mechanical unit of PV-Modules, fix installed or combined in a Tracking unit

SOLARCLEANING ROBOT

Fully installed PV-Modules cleaning system on a particular Solarfield

CLEANING ROBOT UNIT

Machine which drives over the Solarfields and cleans them

Unit Technical Data's

Dimensions

[LxWxH]:	452 x 442 x 237 mm
Weight:	7.5 kgs

PV-Module

Surface load:	max. 120 gr/cm2
Water consumption:	Depends on application
Water distribution hose:	Included
Brush–Bristle Material:	Depends on application
Brush diameter:	378 mm
Brush speed:	38 rpm

Horizontal

Moving speed:	7.6 m/min

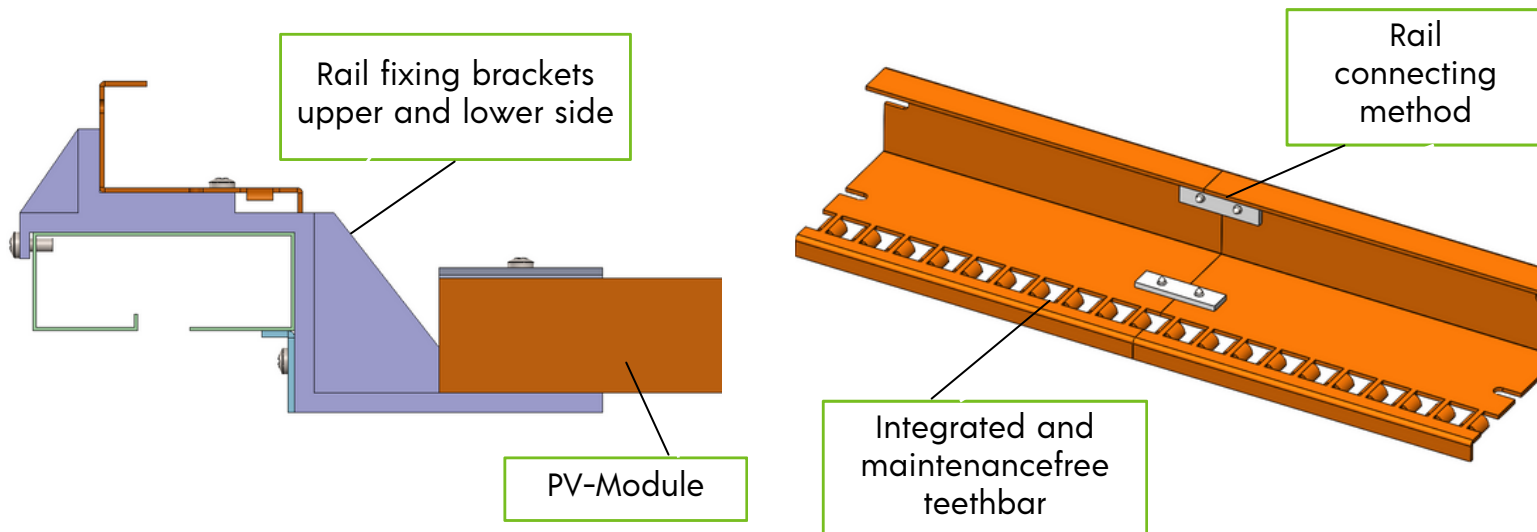Vertical

Moving speed:	10.0 m/min
Obstacle overcome:	4 Two-direction caterpillars
	2 Bars, horizontal
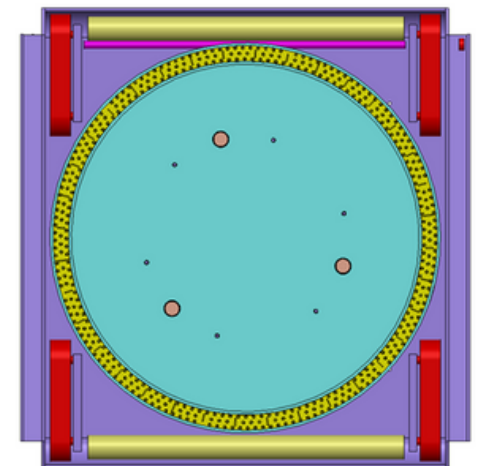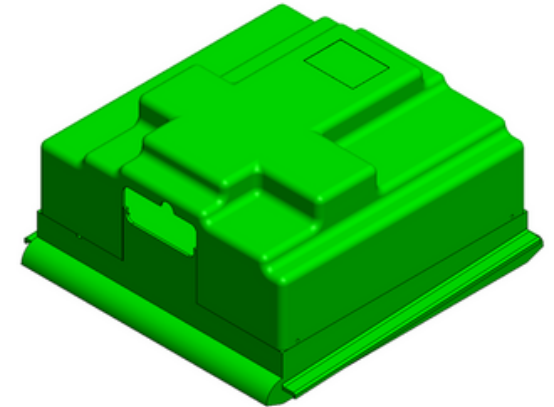
Rail fixing

Customized Fixing brackets with any fixing method
to the PV-Module Mounting system.
Quantity depends on PV-Module Mounting system.

Reduced mechanical load on
the PV Module frames due to
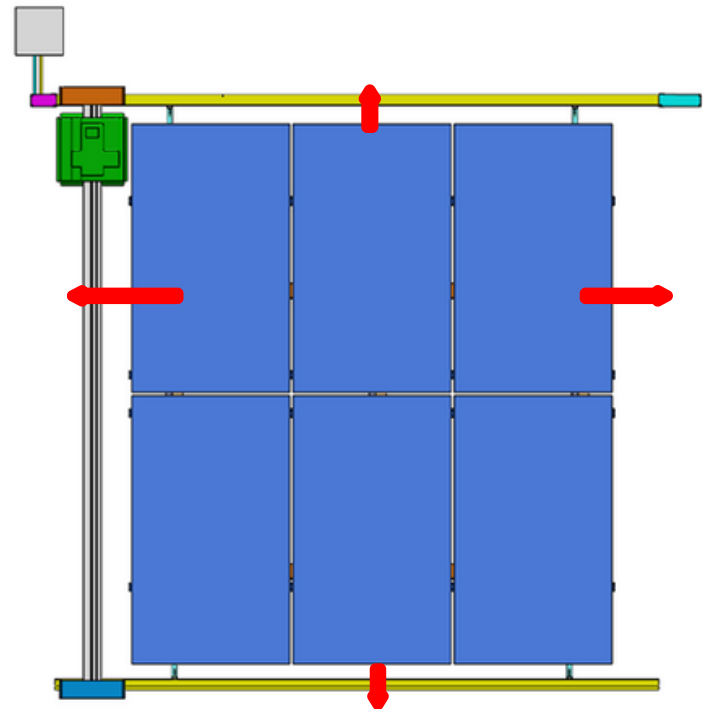additional Fixing brackets to
the Mounting-System.

Rail fixing brackets
upper and lower side

PV-Module

Rail
connecting
method

Integrated and
maintenancefree
teethbar

Additional area requirements

Horizontal

Parking side,
left or right: 700 mm

Opposite
parking side: 360 mm

Vertical

Upper side: 175 mm
Lower side: 175 mm

Robot Parking position

- Robot Parking possible outside of the upper left or right Solarfield corners.
- During Parking periode, the robot is resting onto a parking plate.
- Provides easy access for Brush replacement.
- Optional:
  Parkdeck roof, to protect the robot against UV-Irradiation and Pollution.
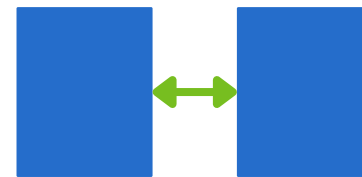- SSS = Sub supply station

SSS

Cleaning robot unit

Solarfield
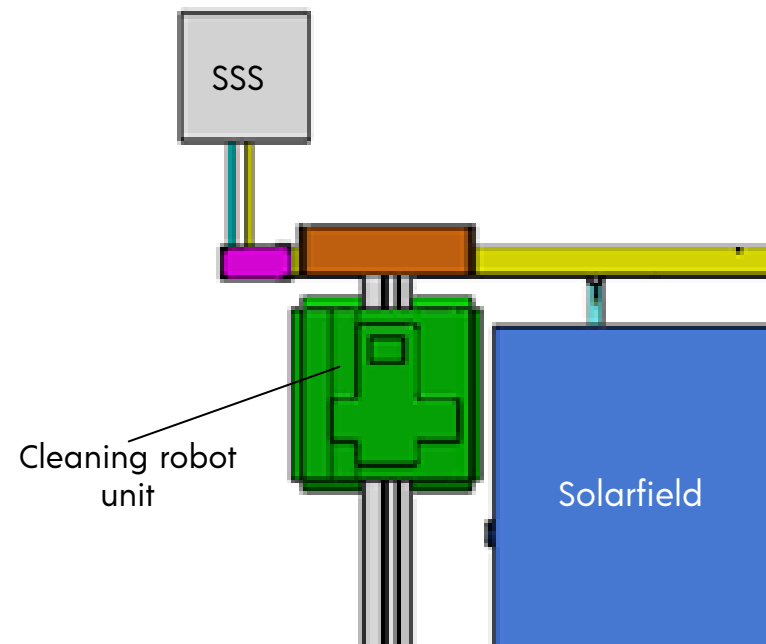
Obstacle and gap crossing

Height oriented obstacles, like PV-Module fixingclamps:
15 mm max.
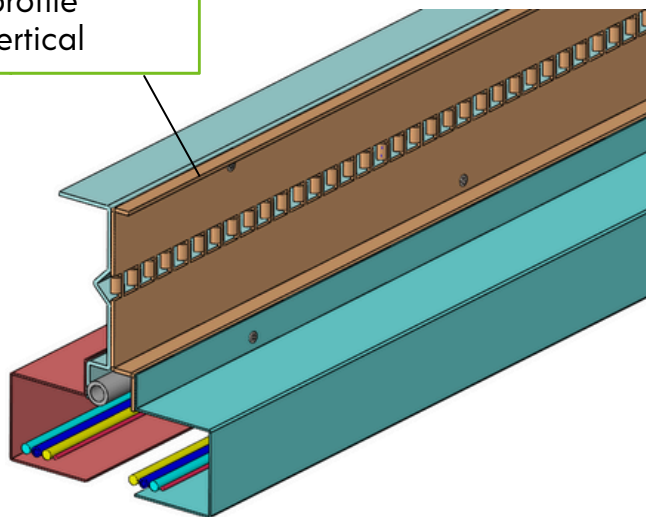
Horizontal gaps between PV-Modules: 50 mm max.

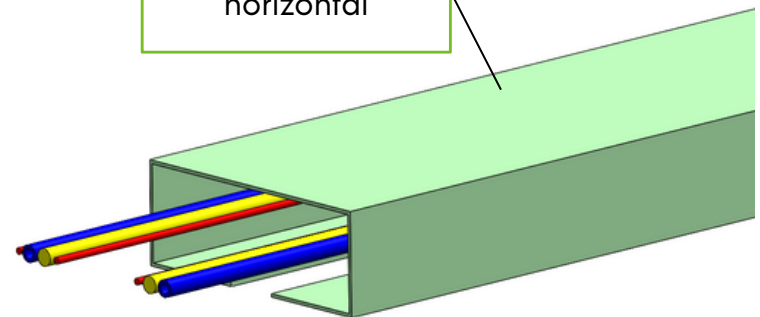Vertical gaps between PV-Modules: Unlimited with lane strips in between

Cable and Hose protection

All Cables, Hoses
and Wires are fully
protected...

Protection profile,
horizontal

Guide and protection
profile
vertical

...against UV-Irradiation
and any kind of Pollution.

Solarfield
Technical data's

- Matching PV-Module Mounting system   Any
- Lenght max.   200 m
- Height max.   12 m
- Adjustable height tolerance   +/- 10 mm
- Angle inclination to ground   10 - 60 °
- Water consumption, approximately   0.15 liter/m2
- Washing performance,
depending on program   2.0 m2/min max.

Temperature range

Certification   -25°C … +70°C

    CE

Power and Water supply

Communication

Frontend Online

AWS

GSM

IoT

BLE Mesh Network
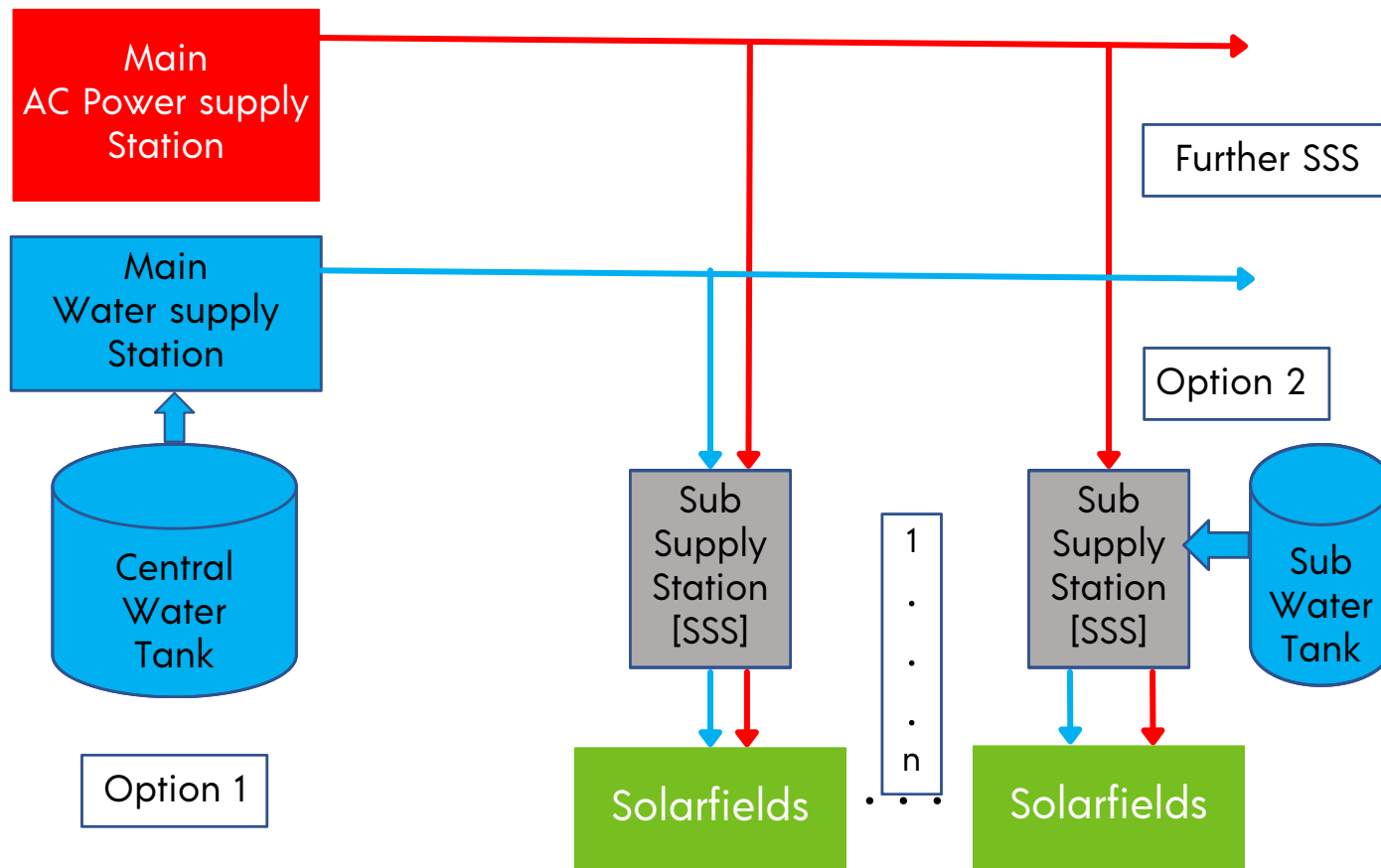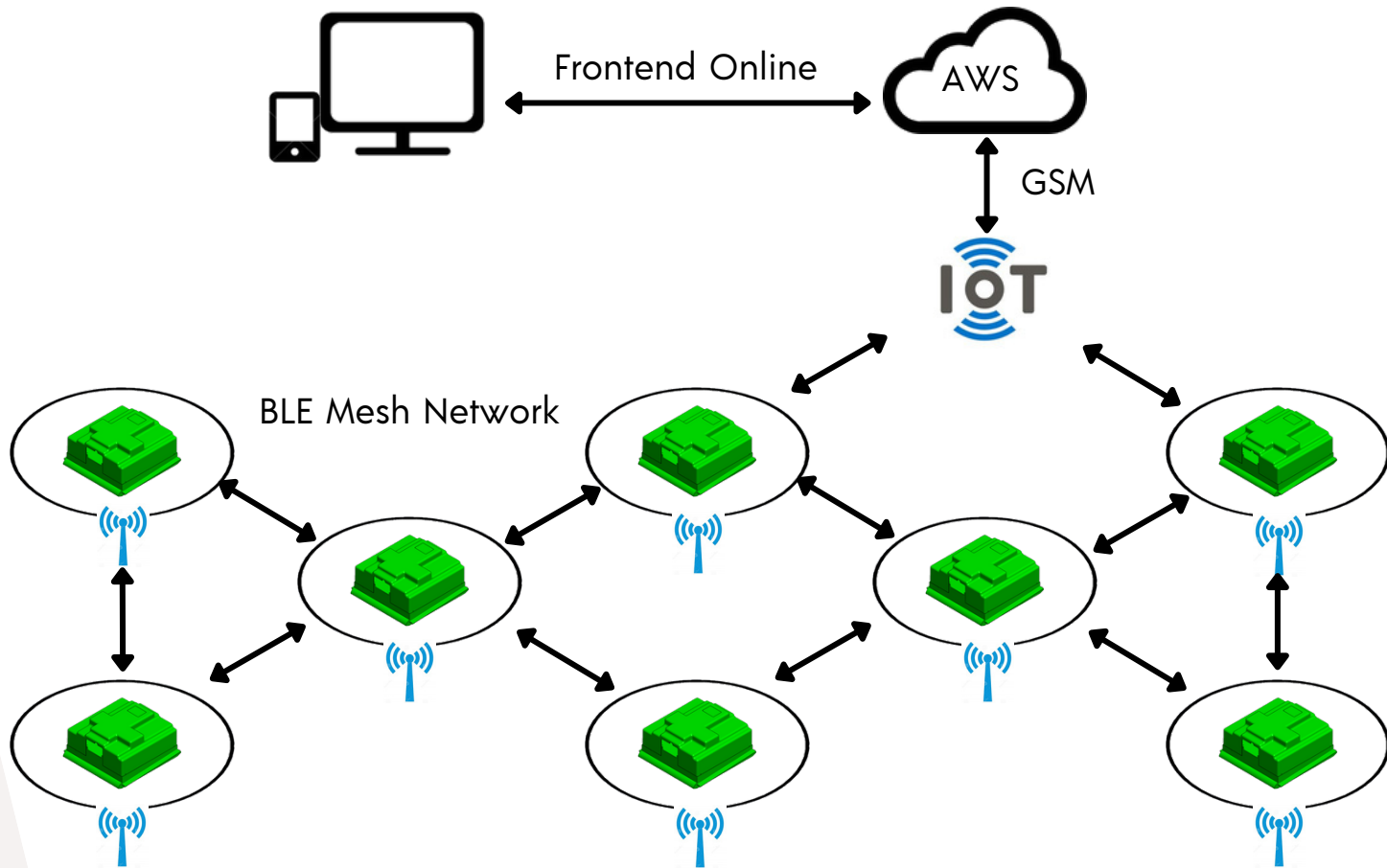
AWS = Amazon web services
GSM = Global system for mobile communication
IoT = Internet of Things
BLE = Bluetooth low energy

Programing Washing cycles

Frontend-Software

- Activate manually one or more Washing robot units [WRU]
- Activate automatically one or more WRU
- Optional:
  Activate automatically one or more WRU, based on the Wash-On-Demand program
- Get completion and failure feedbacks

Solarfield-Software

- Get WashOn command
- Constant parameter setting for SolarField dimension
- Free programable process sequences, like MoveHorizontal, Change MoveDirection, MoveVertical, Switch on/off Brush, Switch on/off Water
- Send completion and failure status information

Fully Automated labour-free
Solar Panel Cleaning Robot

**Increasing energy output
up to 35%**

THANK YOU VERY MUCH FOR YOUR INTEREST.

www.solar-ct.ai

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