raindancer

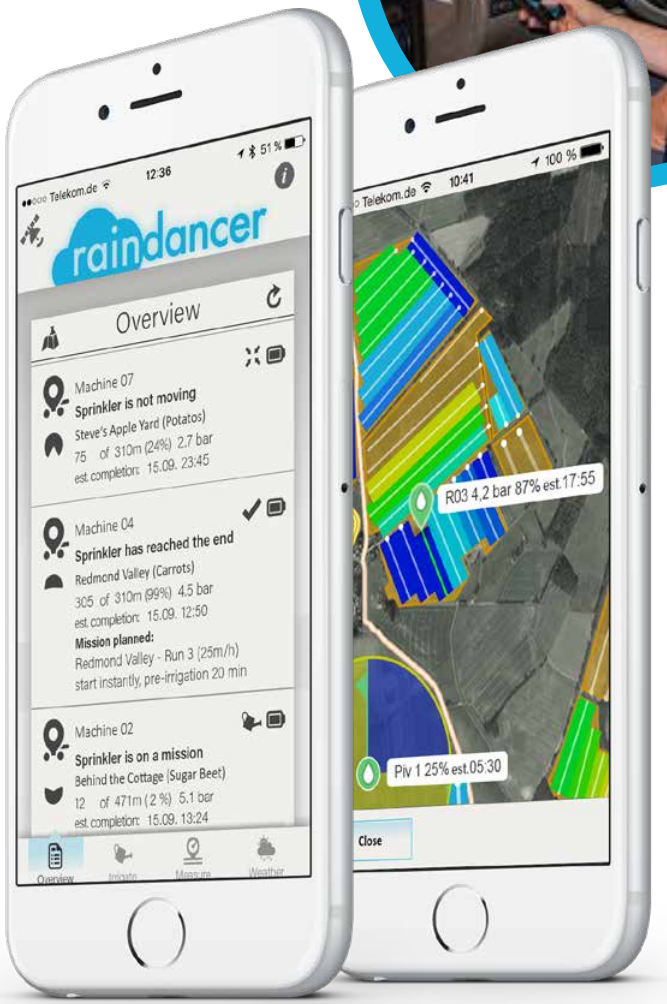
GPS-Fleet Management

for your Irrigation Equipment

raindancer® - GPS Fleet Management

Using raindancer, you are able to monitor and to control irrigation via Smartphone or PC.

Using raindancer is very easy and it is available for **every irrigation machine.**



What is it about?

- Information at a Glance
- Handling Malfunctions
- Dispatching and Scheduling Relocations
- Team Management
- Remote Control
- Documentation

how does it work?

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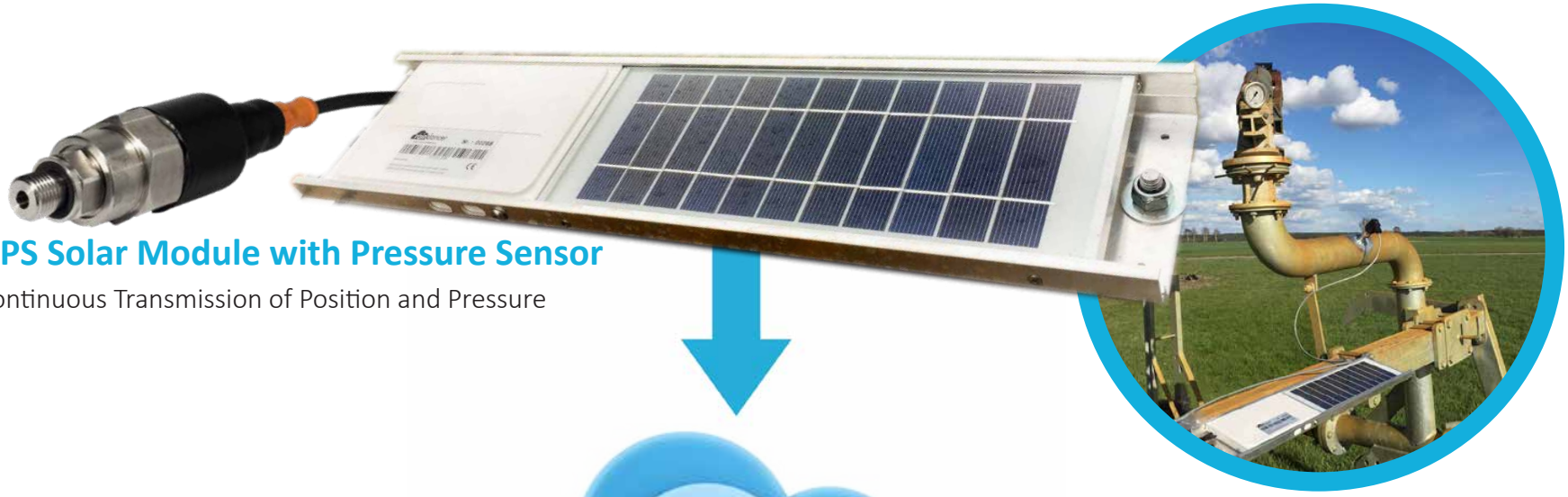
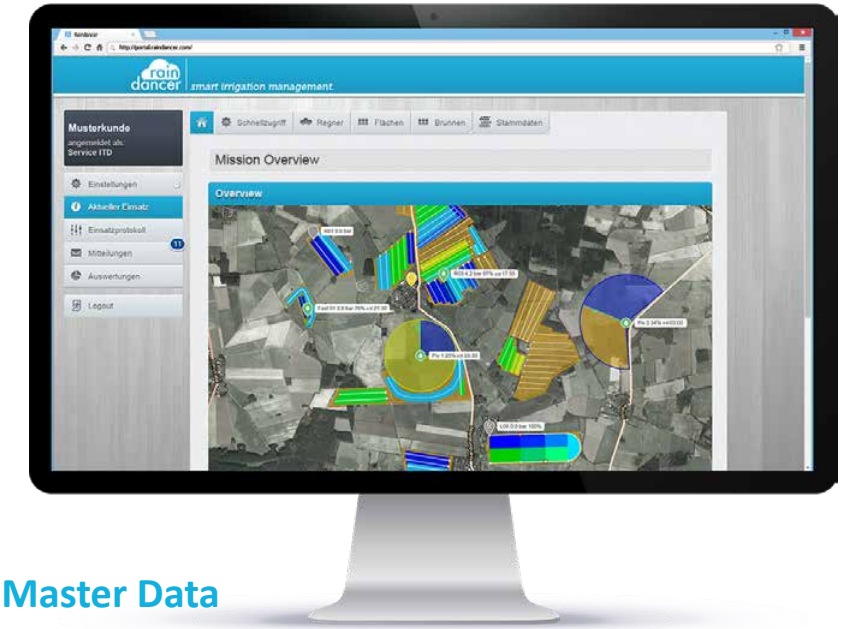


GPS Solar Module with Pressure Sensor

Continuous Transmission of Position and Pressure

Smartphone

iPhone / Android



Maintain Master Data

Web-Browser (Internet Explorer, Firefox, Chrome)

- Fields with Field Borders
- Hose Reels, Wells, Pumps and Meter Units
- Teams, Users and Farms

Hardware and Installation

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- GPS Receiver with Solar-Powered Energy Supply
  (5-day Battery Life)
- Pressure Sensor with Cable
- Installation only on the Gun Carriage
  (no installation on the reel)
- Suitable for All Irrigation Machines

Current position and pressure is transmitted to the raindancer software.

Circular and Linear Irrigators

Hose Reel

Operation Overview

Irrigation runs are detected automatically, providing a comprehensive monitoring experience:

Operation Overview

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Current States of All Your Machines

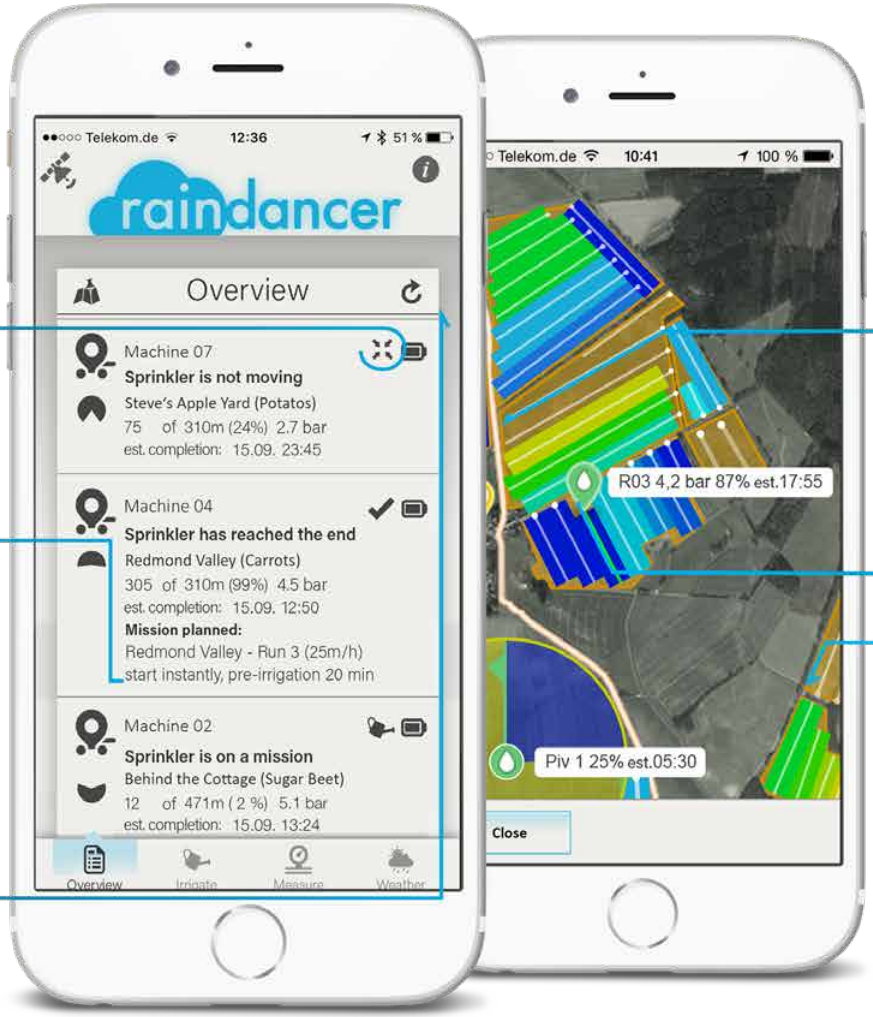
- Malfunctions
- Completed, Ready for Relocation
- Irrigating

Every Detail About the Current Operation

- Field
- Distance and Current Progress
- Current Water Pressure
- Current Working Angles
- Estimated Completion
- Scheduled Relocation
  Field, Lane, Irrigation Amount

Intelligent Order

- Machines that requires Action at Top



Keep an Overview

- Completed Irrigation Runs
- Pending Lanes

Monitor the Progress

- Location of the Machine
- Estimated Completion
- Water Pressure

Details About Completed Operations

- Time of Completion
- Amounts, Distances

Order:

- Machines with Malfuncti ons
- Machines Awaiti ng Relocati on
- Operati ng Machines Ordered by Esti mated Time of Completi on
- Machines Currently not Operati ng

Irrigatior Details

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Status Information

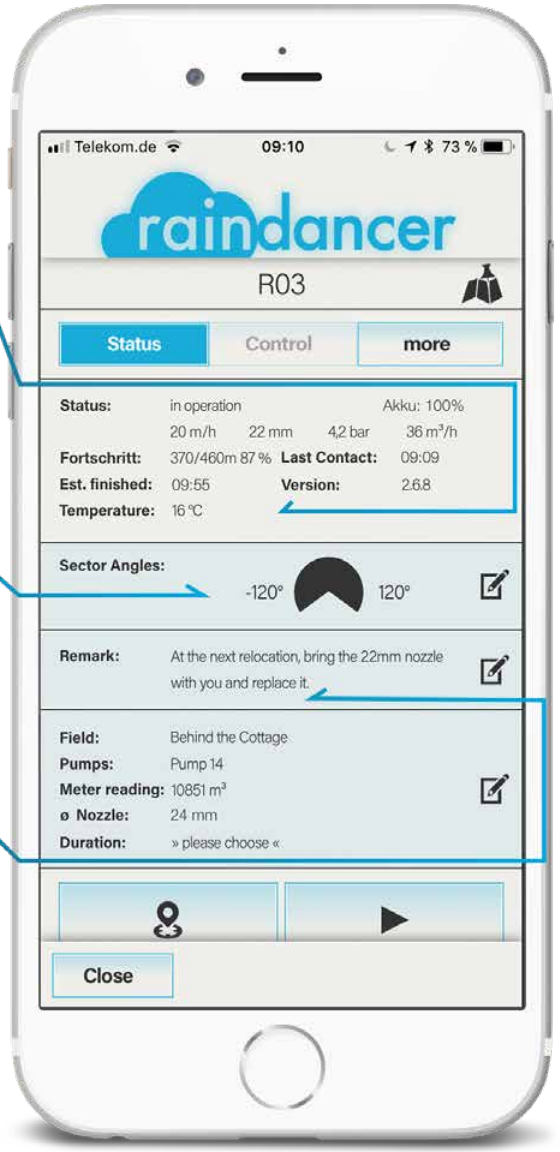
- Pressure
- Irrigation Quantity
- Speed
- Flow Rate
- etc.

Advanced Functions of the raindancer PRO Module

- Temperature at the Machine
- Current Water Meter Reading
- Sectors of Current Irrigation

Operation Details

- Irrigation-Related Remarks
  Help to Organize Daily Work Routine
- Operation Details, Such as
  Fields or Pumps
  Recognized Automatically



Text Messages on Malfunctions

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- No Movement
- Pressure Too Low or Too High
- The Gun Carriage Is Tilted
- No shutdown at destination
- Critical Areas Will Be Reached
  (e.g. House, Street)

Planning Relocations

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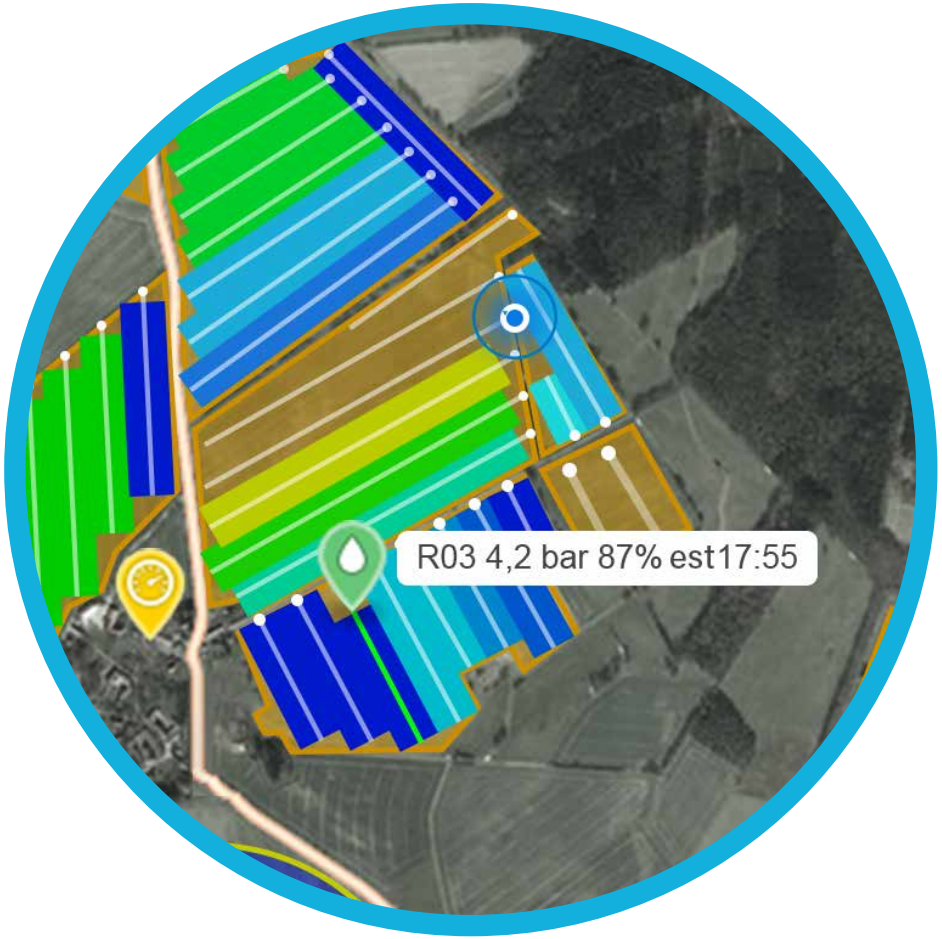
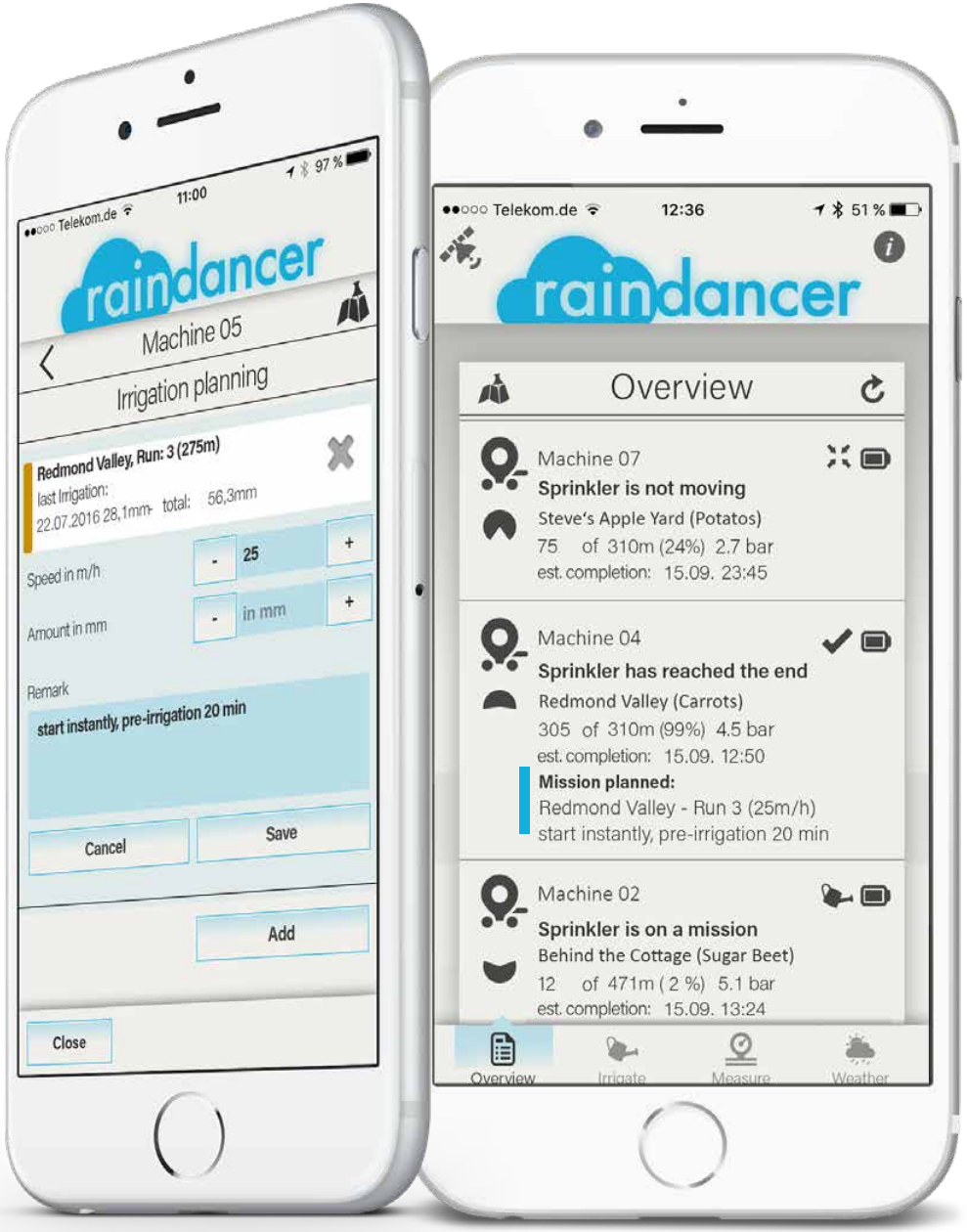
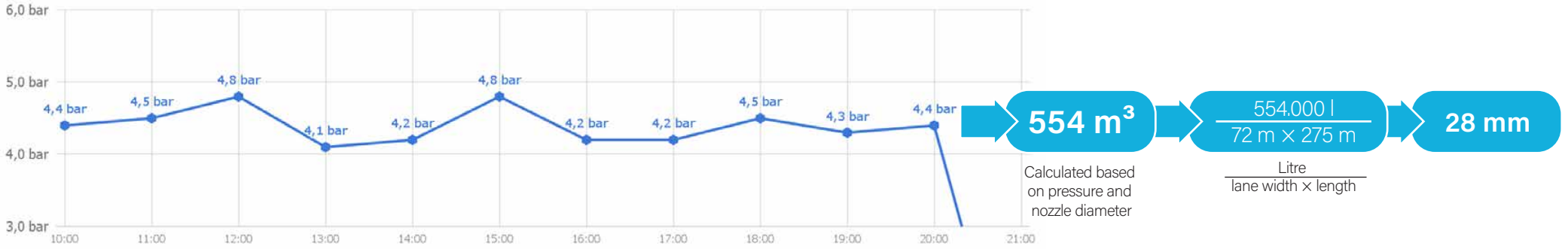
- The App Shows the Employees the New Operational Area
  (Field, Lane)
- The Employee will Find the Correct Lane Without any Problem, even in Difficult Areas





Calculating Irrigation Amounts



The used nozzle can be adjusted on the smartphone

Calculating Irrigation Amounts

- Based on the Pressure and the Gun Parameters, the Irrigation Amount will be Calculated
- The Quantity (m^3 and mm) is Assigned to the Irrigation Run and Booked.

Optional: Connection a Water Meter

- A Water Meter can be Connected for Precise Data, for Water Extraction.
- raindancer PRO Modul is necessary.

Report and Analysis

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- Automatic Logging
  (Wells, Fields, Irrigator, Amounts, etc.)
- Reports for Authorities
- Management Views
- Distribution Between Farms
- Export to Excel
- Access via API Possible
  (e.g. field index or own applications)

Microsoft Excel®
Source: http://products.office.com

Mission Protocol

Missions

Mission Time	Irrigator	Field	Well	mm	m³	h	m
09.06.2016 12:04:47 09.06.2016 22:09:59	Machine 01	Behind the Cottage	Well 1	26	318	7,5	133
09.06.2016 10:42:37 10.06.2016 06:38:25	Machine 02	Behind the Cottage	Well 1	23	895	19,8	486
09.06.2016 09:44:56 10.06.2016 01:43:29	Machine 05	Behind the Cottage	Well 1	21	656	15,9	396
09.06.2016 08:57:25 09.06.2016 18:38:22	Machine 05	Behind the Highway	Well 15	21	444	9,7	247
09.06.2016 06:37:51 09.06.2016 08:12:11	Machine 01	Behind the Highway	Well 15	28	475	0,4	192
08.06.2016 21:20:39 09.06.2016 07:19:29	Machine 05	Behind the Cottage	Well 1	25	328	10,3	167
08.06.2016 20:44:06 09.06.2016 04:54:24	Machine 01	Redmond Valley	Well 23	21	448,5	9,9	249
08.06.2016 15:49:24 09.06.2016 08:16:24	Machine 01	Redmond Valley	Well 23	26	870	16,3	423
08.06.2016 12:09:53 09.06.2016 05:04:51	Machine 02	Behind the Cottage	Well 1	22	722	17,0	416

Export Reports to Excel

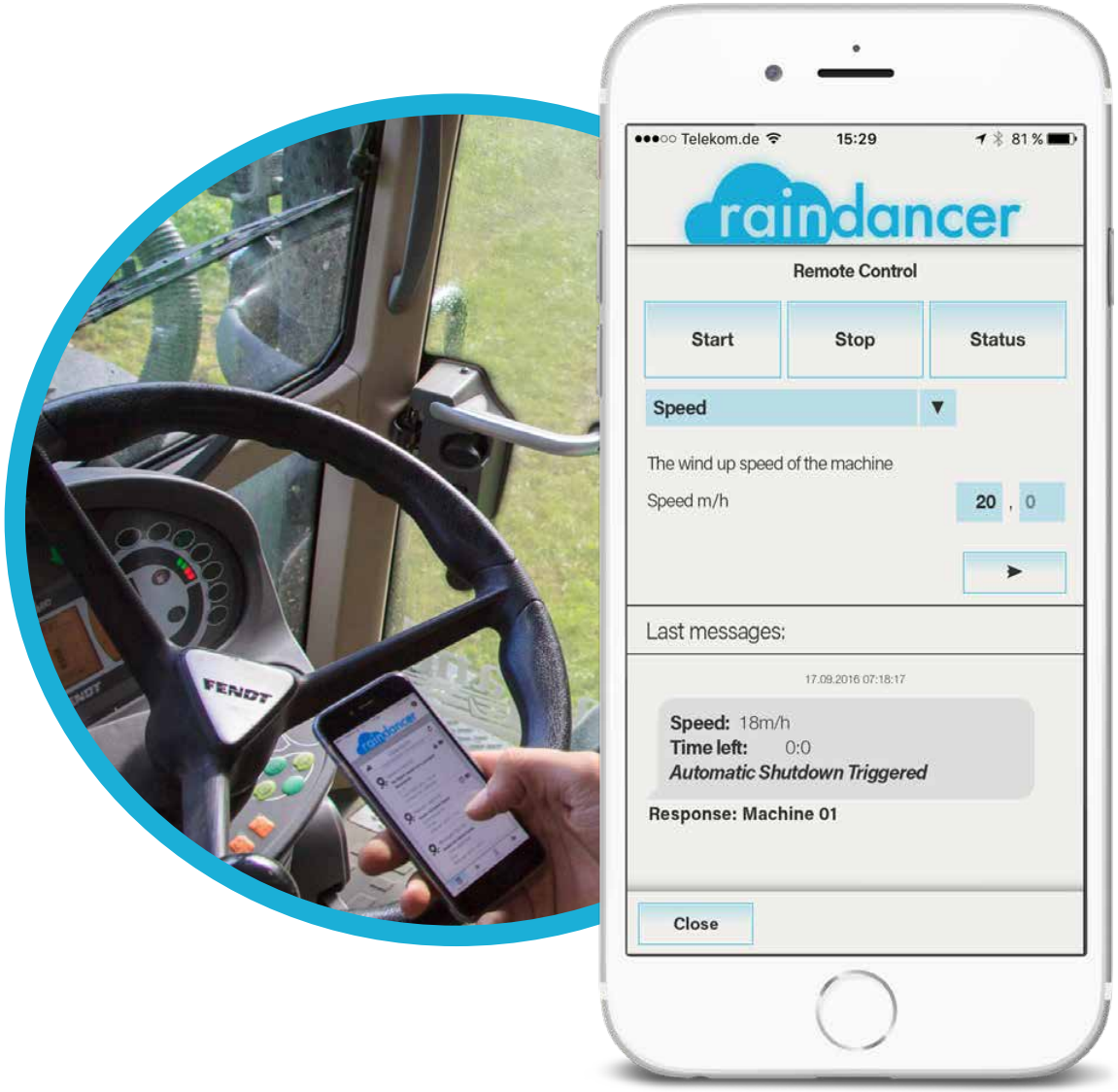
Select by Time Spans, Areas, etc.

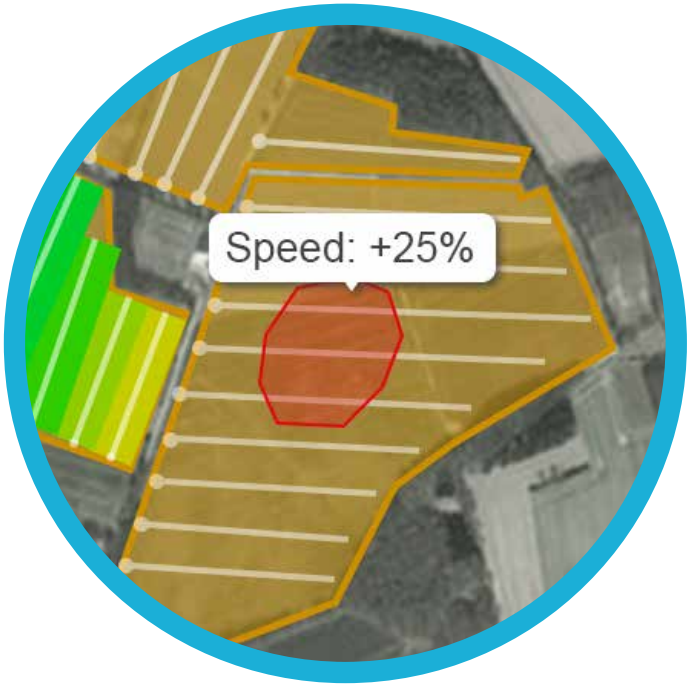
Register

Entnahmestelle / Brunnen	Abrechnungs Art	Benutzername	Schlag	Startzeit	Endzeit	mm	h	m3	m3 Zaehlerstand Start	m3 Zaehlerstand Ende	Entfernung Start
Brunnen 1	m3	Max Muster	Waldinsel	03.07.2015 16:27:59	04.07.2015 11:56:06	27	20	975	56773	57097	458
Brunnen 1	m3	Max Muster	Waldinsel	03.07.2015 16:28:26	04.07.2015 16:05:56	29	24	1180	57097	57421	517
Brunnen 1	m3	Max Muster	Waldinsel	04.07.2015 12:21:35	04.07.2015 23:10:07	25	11	540	57421	57745	256
Brunnen 1	m3	Max Muster	Waldinsel	04.07.2015 16:53:01	05.07.2015 12:59:36	29	20	1005	57745	58069	440
Brunnen 1	m3	Max Muster	Waldinsel	05.07.2015 05:02:44	06.07.2015 00:47:32	27	20	985	58069	58393	464
Brunnen 1	m3	Max Muster	Waldinsel	05.07.2015 13:45:12	06.07.2015 13:31:01	29	24	1190	58393	58717	521
Brunnen 1	m3	Max Muster	Waldinsel	06.07.2015 05:55:07	07.07.2015 00:58:08	27	19	955	58717	59041	448
Brunnen 1	m3	Max Muster	Waldinsel	06.07.2015 14:46:02	07.07.2015 14:13:54	30	24	1175	59041	59365	507
Brunnen 1	m3	Max Muster	Waldinsel	07.07.2015 05:08:48	08.07.2015 00:19:36	27	19	960	59365	59689	453
Brunnen 4	m3	Max Muster	Talrand	07.07.2015 16:07:12	08.07.2015 06:32:52	28	14	720	59689	60013	315
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 05:08:11	17.06.2015 21:05:43	21	16	880	60013	60337	522
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 05:08:30	17.06.2015 19:23:54	25	14	786	60337	60661	397
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 05:08:50	17.06.2015 22:12:01	22	17	941	60661	60985	545
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 19:24:16	18.06.2015 18:35:20	25	23	1276	60985	61309	668
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 22:36:25	18.06.2015 16:30:26	22	18	984	61309	61633	584
Brunnen 4	m3	Max Muster	Talrand	17.06.2015 22:37:09	18.06.2015 13:33:31	22	15	820	61633	61957	482
Brunnen 4	m3	Max Muster	Talrand	18.06.2015 13:46:03	19.06.2015 00:04:42	21	10	566	61957	62281	333

Remote Controlling the Irrigator

- Start, Stop and Change Speed





+ Partial area-specific irrigation VRI

- If the irrigator enters / leaves the partial area, the preset speed is automatically changed.

only raindancer-compatible control units

AutoSpeed

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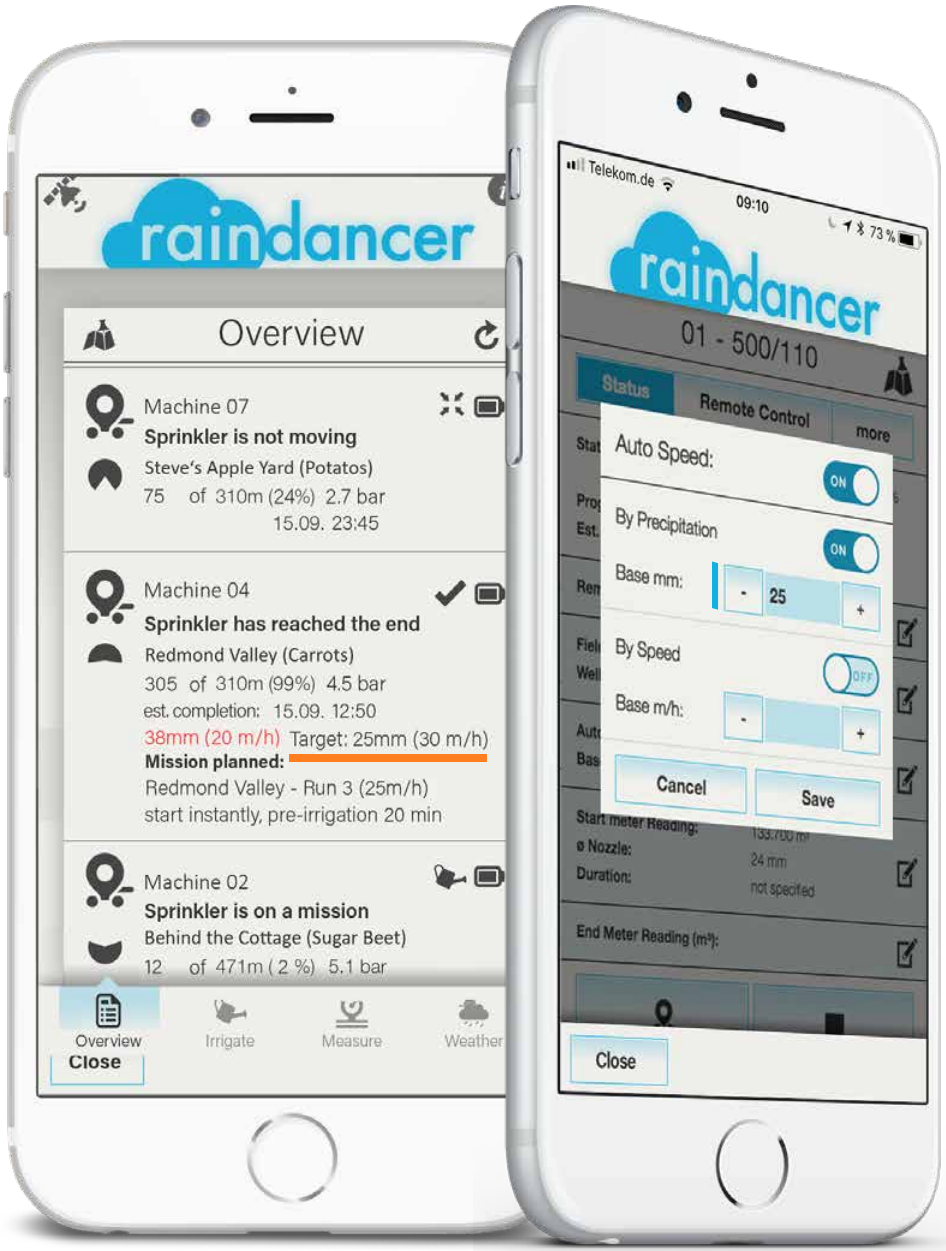
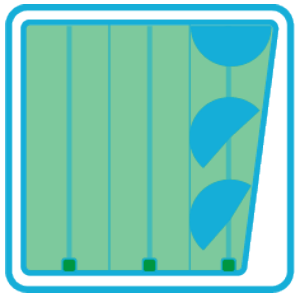
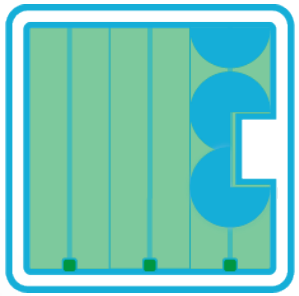


- Specify desired irrigation amount in mm.
- The system calculates the speed on the basis of the nozzle, the pressure and the working width.
- If a parameter changes due to narrows, headland or pressure drop, the speed is adjusted automatically.
- The application of Water remains constant over the entire irrigation run.





only raindancer-compatible control units . For machines without remote control, the calculated values can also be set manually.

Remote Control of Pumps

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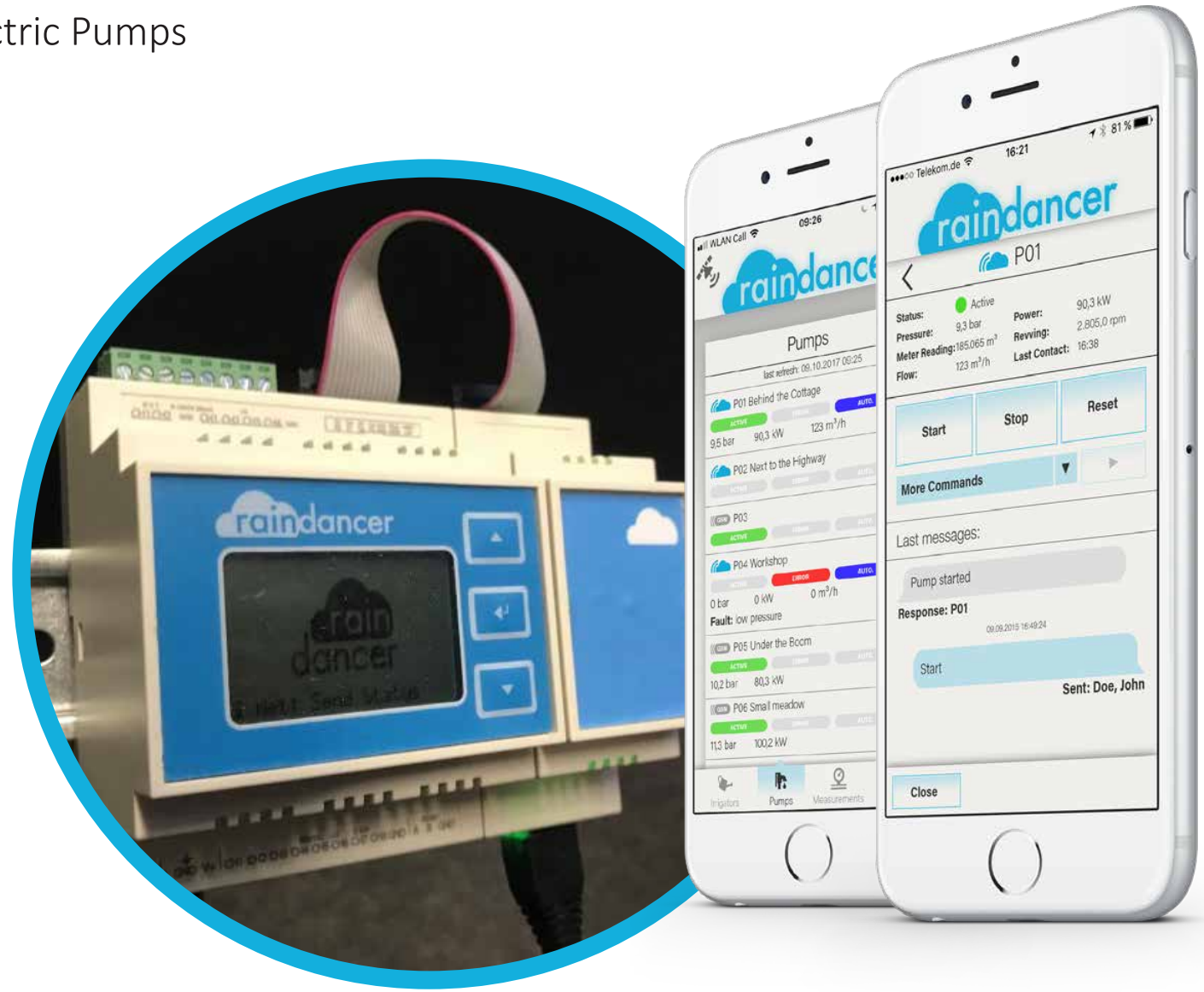
- Can be Retrofitted to Most Electric Pumps
- Communication via Internet
  (3G/LTE cellular or existing LAN)
- Monitor Status in Real-Time:
  (Flow Rate, Meter Reading, Power, Pressure)
- Remote Control
  (Start, Stop, Query Status and Reset)
- Notification in Case of Malfunction
- Working in Shared Networks

Optional: automatic regulation according to pressure demand at the irrigator



The raindancer beacon should be connected by a professional. The actual functionality depends on the conditions at the pumping station.
Existing GSM/SMS based controls can in most cases also be integrated into the raindancer software.

Sector Control

- Irrigation Starts Towards the Hosereel
- No Pre-Irrigation Required
- Automatically Set Angles According to Fields Shape and Obstacles
- Adjustable Default Angles for the Sector-Stops
  (e.g. 360° or 270°)
- The Speed Will Be Changed Automatically According to The Irrigated Area
- Manually Alter the Sector Angles via Smartphone Remote Control
  (e.g. according to changed Wind Situations)

Sector Control Examples

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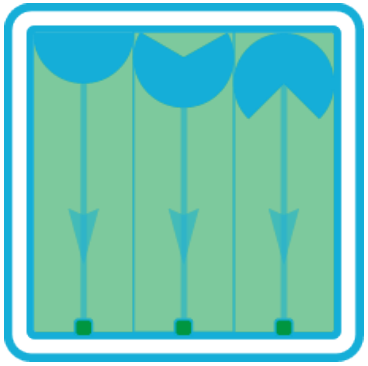
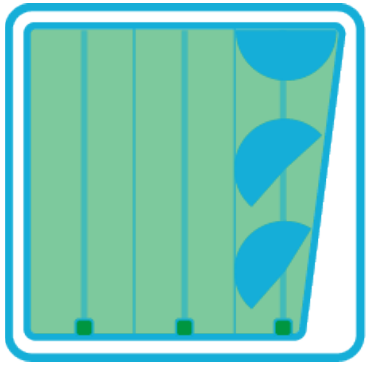
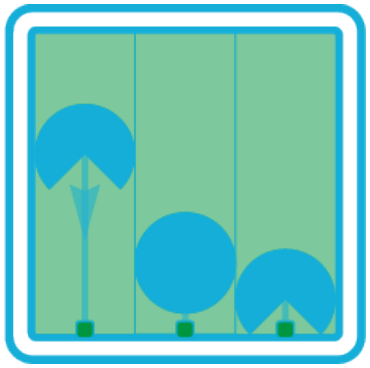


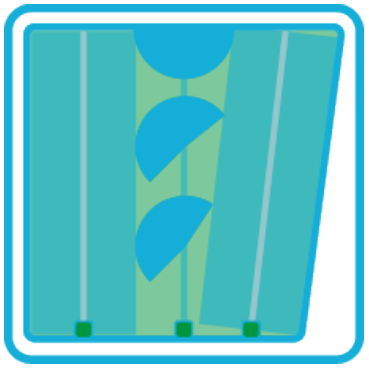
- Reach Into Every Corner
- No Pre-Irrigation required
- Irrigate Evenly



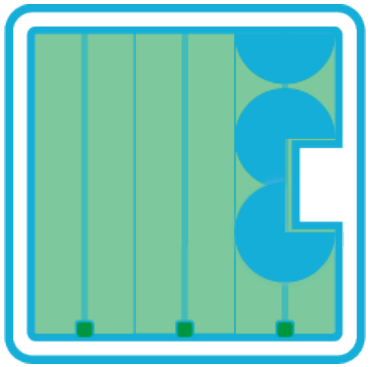
- Adapt to Curved And Angled Shapes
- Gradual Adjustments



- Get More Water In Front Of Machine



- Prevent Double Irrigation
- Take Previous Runs into Account



- Irrigate Around Obstacles

Self-Driving Machines in Curves:

- Limit Irrigation Sector
- Increase Speed

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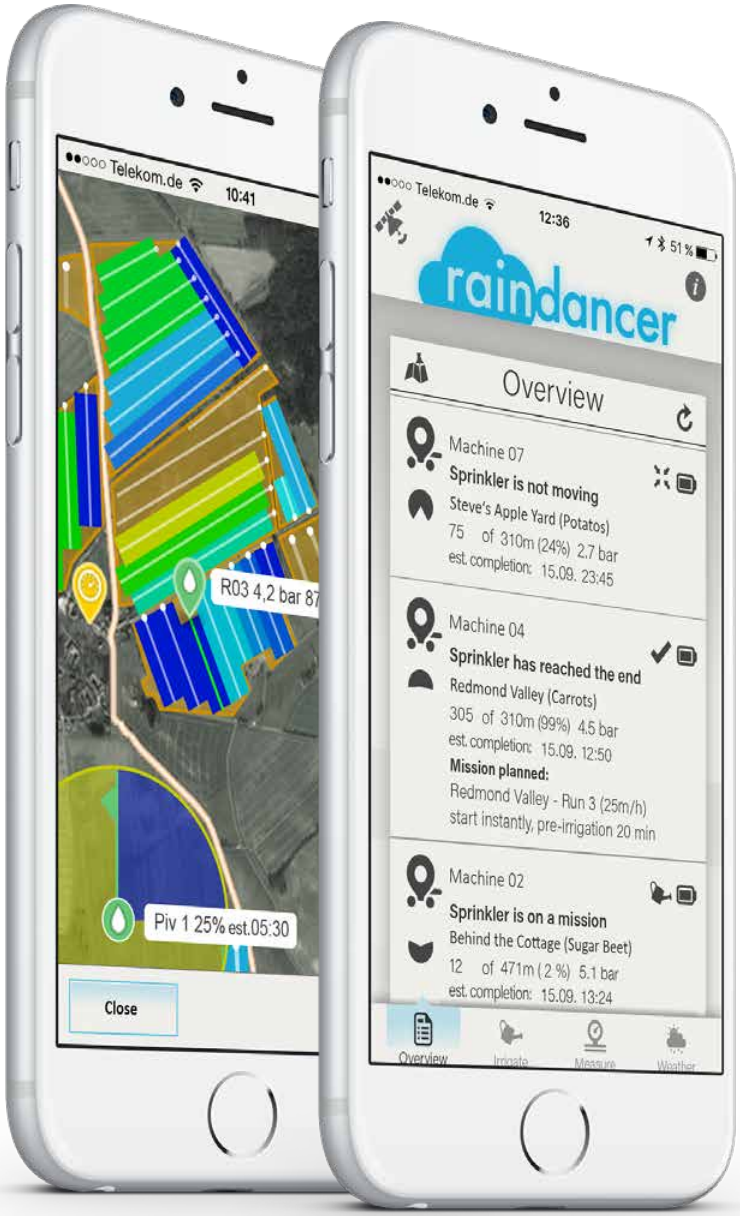


Enjoy your new freedom and

Save time and reduce wasted journeys.

Simply put, it is a pleasure to work with raindancer.

Quote of a customer:

„The first and the last what I did every day in summer:
I‘ve thought of you.“

If you like, we would be happy to get you in contact with customers, to talk about their experiences using raindancer.

Arrange a non-obligation consultation today!

Product Overview

raindancer **GPS Modul**

- Pressure Sensor
- Tilt Sensor

PRO Version

+ raindancer Sector Control
+ Interface for Additional Sensors

Pressure Sensors

- Compact and Robust Stainless Steel Housing
- Optional : **Ceramic Measuring Cell**
  - » Better Frost Resistance
  - » Pressure Resistant up to 75 Bar

raindancer **Beacon**

- Pump Control
- Remote Control via Internet
- Monitoring
- If Applicable, Automatic Control

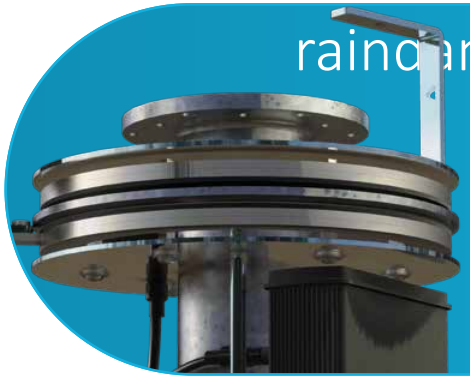
Water Meter

for connection to the PRO module

Mounting Kit

for simple mounting on the irrigator

raindancer **Sector Control**



- The angles are determined on their field boundaries.
- Stop points will be adjusted automatically.
- Manual adjustments are possible via App.

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ZIM Zentrales Innovationsprogramm Mittelstand

Made in Germany