



Learn how Scapigliato **remotely monitors** the leachate level, pump status, and **prevents failure**.

32

Wells monitored in real-time

< 2

Months Implementation

12%

Decrease in operating costs

"Thanks to IoT and the automation of the plants, we can ensure continuous monitoring of flows and greater efficiency of our leachate management processes".

Matteo Giovannetti, Plant Management Manager

The Challenges

An increasing number of companies are involved in organizing specific solutions to **address the various environmental problems** in recent years, mainly caused by the non-recycling of waste or the decrease in the volume of natural energy sources. Companies working in these sectors, therefore, need sophisticated and **efficient equipment** to be constantly **updated and monitored**.

Scapigliato, an Italian company that manages waste treatment and disposal plants, was looking for a solution capable of **optimizing its production processes**, particularly, for improving the **management and monitoring of the leachate** produced in its landfill.

With regard to the leachate, the plants consist of several wells, all equipped with a leachate level indicator and a pump which, whenever the level exceeds the threshold value, the pump will automatically turn on to empty the well until the level falls below a certain measure. In order to record the daily level of leachate in all wells of the landfill, the company used traditional paper tools and, then later, transferred the data into tables. Therefore, the **reduction of manual work**, the **transmission of data from the plant** and the **resolution of the critical issues** related to the operation of the automatic leachate extraction system, together with the compliance with the prescriptive framework contained in the authorization and the malfunction of these pumps were the main reasons why Scapigliato decided to turn to Zerynth with the aim of improving safety and compensating for damage to equipment.



COMPANY NAME:

Scapigliato Srl

LOCATION:

Rosignano Marittimo

INDUSTRY:

Environmental services

PROFILE:

Scapigliato deals with the management and maintenance of landfills and waste treatment plants.

RESULTS:

Increased Automation on data analysis
24/7 remote monitoring

Improved Quality
100% early detection of anomalies

Decreased Consumption
ZERO operational costs for data recording

The Solution

To meet Scapigliato's needs, the Zerynth team provided the company with an **industrial IoT device 4ZeroBox**. Thanks to the internal presence of a GSM module, it is possible to monitor each leachate well and the entire operating process of the pumps. In this way it is possible to **measure the fill level of the wells** and the activation of the emptying pumps.

The proposed solution consisted of a network of microcontroller boards interfaced with the automation systems of the leachate wells and coordinated by the Zerynth Device Manager software. Finally, a **web-based dashboard** allows the monitoring of leachate performance, with related views of the processing of the acquired data.

Custom Dashboards

Zerynth has provided Scapigliato with a **set of dashboards** capable of managing information about the status of the pumps (on / off), the level of the head in the wells and the total run time of each pump.

The dashboard also allows for secure monitoring of pump performance through **early detection of anomalies**, simplified data reporting, and complete **elimination of manual work**. Furthermore, thanks to the presence of the GSM module, Scapigliato can track data in real time from different locations **without the need for a Wi-Fi / Ethernet connection**.

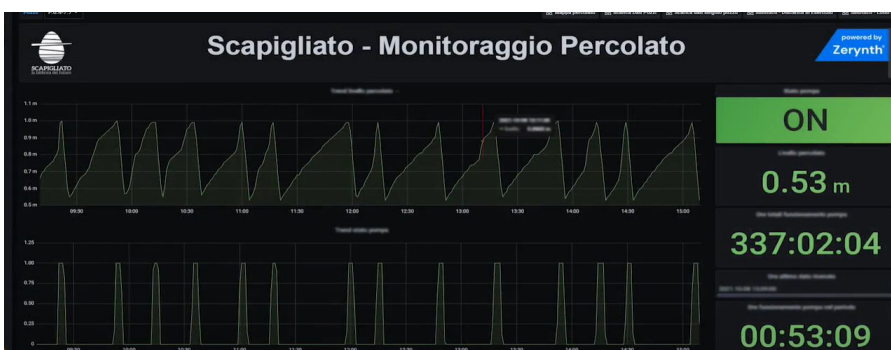
PRODUCTS USED:

**4ZeroBox,
Zerynth Device Manager,
Zerynth Storage,
Zerynth Dashboards.**



4ZeroBox – MAIN FEATURES

- Data Acquisition, logging and visualization.
- Can be retrofitted to legacy and modern machines.
- Improved visibility on equipment efficiency.
- Predictive maintenance to prevent costly repairs and unplanned downtime.
- 16+ different industrial sensor channels, for acquiring sensor data.
- Wifi and Ethernet for sending and receiving data, monitoring and for controlling devices.
- MicroSD for local and secure data logging without internet connections.
- Industrial Relays for remotely controlling the assets.
- Edge Processing Capabilities and Ready for AI on the Edge Applications.
- Easy to expand with GSM 2G, 3G, GPS, Motor drivers, displays, and additional sensor channels.



The Results

Scapigliato has successfully completed its digital journey with **an IoT solution capable of real-time monitoring** for all 32 wells. Thanks to the help of Zerynth, in just 1 month it was able to implement all the IoT devices and configure the data processing functions.

Thanks to the reliability of the Zerynth platform, **production data cannot be lost**, because Zerynth stores both at-the-edge and in persistent **cloud storage**, implementing various data stores and dispatch logic.

Now, thanks to Zerynth systems, levels are automatically recorded at more accurate time intervals, and Scapigliato can **remotely monitor** the status of pumps, detecting failures or anomalies, without having to check the wells around the landfill.



Why Scapigliato chose Zerynth

Zerynth provided excellent **industrial IoT experience** and expertise for the requirements needed to **optimize the monitoring of leachate**.

One of the most significant advantages of the application provided by the Zerynth team was the ability to work even in the absence of an Ethernet / Wi-Fi connection, which is very useful considering that Scapigliato works in open and connectionless places.

As a result, **operating costs** have been **reduced by 12%**, and efficiency and safety have been increased, thanks again to the advantage of being able to take advantage of **real-time monitoring**.

P.4.0.1	OFF	0.93 m
P.4.0.2	OFF	0.96 m
P.5.0.1	OFF	0.62 m
P.5.0.2	OFF	0.31 m
P.5.4-4.1	OFF	0.74 m
P.6.0.1	OFF	0.90 m
P.6.0.2	OFF	0.98 m
P.6.0.3	OFF	0.82 m
P.6.4-7.4	ON	2.29 m
P.6.4-7.5	OFF	1.15 m
P.6.4-7.7	OFF	0.73 m
P.6.4-8.1	OFF	1.25 m
P.6.4-8.3	ON	1.58 m
P.6.4-9.2	OFF	1.20 m
P.6.5-3.6	OFF	0.56 m

"The introduction of technologies capable of guaranteeing added value to the company that are easily usable by operators is the winning element for the realization of the digitalization processes of companies. In this sense, Zerynth concretely contributes to the digital development of Scapigliato's activities".

Leonello Trivelli – Innovation Manager, Scapigliato



About Zerynth

Zerynth helps companies easily get their industrial processes digitized and bring innovative connected products to the world. The Zerynth IoT Platform is a full set of hardware–software tools designed by IoT experts to enable digital transformation in a fast, flexible and secure way.

Founded in 2015, Zerynth has grown steadily. Today Zerynth has 30+ team members with deep IoT expertise and industry knowledge with over 3000 successful IoT implementations in companies across many industries. Headquartered in Italy, Zerynth provides support globally thanks to an extensive network of partners in Europe and pan-global locations.

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